FORM 16	Data	API WELL NO. State 9/15/87	County	195 - 21030 Permit
NS-231 ANR PRODICO, PENN VA. 10216 EL2476.17 FLAT GAP	Name VIRGINIA OIL A P. O. ABINGDON,	AND GAS INSPECT BOX 1416 VA 24210 528-8115	FOR	3733
Oil and Gas Act	to Regulation 4.06 of the undersigned well work specified below Wise County, Vir	l operator rep	orts comp	oletion of the
WELL TYPE:	Oil/ Gas_X / Disposal/ If " Storage/ Exempt by Code Sect and gas conservation Drill X / Deepen Plug off old format Plug/ Replug (specify	Gas", Producti ion 45.1-300.B n law: yes/ Redrill_ ion/ Perfo	on_X/ .l. from _/ no _/ Sti rate new	Underground general oil _/ mulate_X/ formation_X/
	ork was done as shown well work involved.	in the Append	ix(es) ap	plicable to
CONFIDENTIALITY	STATUS UNDER CODE OF	VIRGINIA SECT	ION 45.1-	332.
OR Two refe	years from the film years from erenced well was <u>COMPI</u> y well as defined in C	19 , the	e date on l being a	n explora-
	APPLICA BY	111 E. C	Operatio apitol St	mpany ns Manager ., Ste 400 Jackson, MS 39201

Form 16
Appendix A, Sheet 1 (Reverse)
Continued from Obverse side

OTHER GENERAL INFORMATION

An electric log survey was X / was not X / conducted pursuant to Code of Virginia Section 45.1-333.B.2, at the coal owner's or operator's request.

An electric log survey was X / was not ___ / run for other purposes. This survey did X / did not ___ / disclose the vertical location of a coal seam.

Note: If a coal seam was located, the part of the survey from the surface through the coal is attached in accordance with Code of Virginia Section 45.1-333.B.3.

Deviation surveys were \underline{X} / were not $\underline{\hspace{0.5cm}}$ / required under Code of Virginia Section 45.1-333.C "to the bottom of the lowest published coal seam depth."

Note: If deviation surveys were required, the survey results are attached.

A continuous survey was ___/ was not X / required under Code of Virginia Section 45.1-333.C.

Note: If a continuous directional survey was required, the survey results are attached.

CHANGES IN THE PERMITTED WELL WORK

The well operator did___/ did not__X/ make any change(s) in the permitted well work, verbally approved by the Inspector or Assistant Inspector under Regulation 4.03 of the Regulations under the Virginia Oil and Gas Act, for the purpose of insuring successful completion of the well work.

Note: The nature and purpose of each such change, if any, is set out below or on additionnal sheets if such are required.

FORM 16
APPENDIX A,
SHEET 1, (OBVERSE)

API	WELL	NO.	4.5	- 195 -	21030
			State	County	Permit
Date	:	9/1	5/87		
Oper	ator	s W	ell		
Name		102	16		

REPORT OF COMPLETION OF WELL WORK IF DRILLING, REDRILLING, OR DEEPENING IS INVOLVED

DRILLING CO	NTRACTOR_	Ray	Resour	ces	an ann ann an an airte an airte an	
TELEPHONE_					entralismentum egyan eljam egyan	Bruddinskin digitaanin administra
GEOLOGICAL DEPTH OF CO DATE DRILLI DATE DRILLI	MPLETED WE NG COMMENC	ELL 5,95 ED 7/10	8' 5981 /87	Shale, Wein	r Big Lime	
DRILLING RI		ACCOMMENDATION OF THE PARTY AND THE PARTY AN	CABLE	TOOL	_/	
GEOLOGICAL		Depth Bottom	Thickne	ess		
Fresh Water	1	2 7	1/2"			
Salt water	N	ot Measur	e d			
			-			
				Name	MINING IN AR Yes No Min	EA ed Gut
Coal Seams	284'	286.5	2.5	Dorcheat	X	
	1462	1463	1	Unknown	X	*
Oil	1904	1907	3	Unkown Formation	X	
	No	ne				
Gas 5160-55	5.0		Ţ.o.	Formation		
4816-51 4476-47 3676-36	3 6 7 4		Mi d Upj	wer Devoniar ddle Devonia per Devoniar g Lime	an .	
т	he data òr	depth of			the source(s) checked
below:	X Applica X Informa Informa	nt's own tion supp	drilling lied by ady in	g experience the coal op	e in the area perator in the of the Inspect	area

CASING AND TUBING PROGRAM

PRELIMINARY INFORMATION

				underlaid									
If	Yes	, was a c	coal	protection	str	ring	set	to	the	red	shales?	Yes X /	No

SIZE TOP BOTTOM LENGTH FROM TO

CONDUCTOR:

CASING CIRCULATED AND CEMENTED IN TO SURFACE:	13-3/8"	Surf.	32.5	32.5
COAL PROTECTION CASING SET UNDER SPECIAL RULE OF CODE OF VIRGINIA 45.1-334.B:	10-3/4" 7" 4-1/2"	Surf. Surf.	3359	501 3359 5964
OTHER CASING AND TUBING LEFT IN WELL;	7"	Surf.	3359	3359
LINERS LEFT IN WELL UNDER CODE OF VIRGINIA SECTION 45.1-336 OR OTHERWISE:	4-1/2"	Surf.	5964	5964

PACKERS OR BRIDGE PLUGS: KIND SIZE SET AT

REMARKS: SHUT DOWN DEPTHS, DATES; FISHING JOB DEPTHS, DATES; CAVING; ETC.)

SAMPLES AND CUTTINGS

WILL X	WILL	NOT	BE AVAILABLE FOR EXAMINATION BY A MEMBER OF THE
		`	VIRGINIA DIVISION OF MINERAL RESOURCES
WILL X	WILL	NOT	BE FURNISHED THE VIRGINIA DIVISION OF MINERAL
			RESOURCES UPON REQUES'T
WILL	WILL	NOT	REQUIRE SACKS TO BE FURNISHED BY THE VIRGINIA
			DIVISION OF MINERAL RESOURCES.

Compiled by	Roswell K. B	arranco					
Geologic Age	<u>Formation</u>	General <u>Lithology</u>	Color		(feet) Bottom	Thickness	Remarks
Pennsylvanian	Wise & Norton	Sandstone		0	1286	1286	
	Lee	Sandstone & Shale		1286	2710	1424	
Mississippian	Bluestone	Sandstone & Shale		2710	2827	117	
	Ravencliff	Sandstone		2827	2920	93	
	Hinton	Sandstone & Shale		2920	3130	210	
	Maxton	Sandstone		3130	3295	165	
	Bluefield	Sandstone, Shale & Limestone		3295	3528	233	
	Greenbrier (Big Lime)	Limestone		3528	4044	516	
	Injun	Sandstone & Shale		4044	4044	0	
	Weir	Siltstone		4044	4254	210	
	Sunbury	Shale		4254	4462	208	
	Berea	Siltstone		4462	4528	66	
Devonian	Devonian	Shale		4528	5924	1396	
	Decollement			5084	5284	200	
Silurian	Corniferous	Limestone		5924	5981 (T.D.)	57	

(Complete on supplemental sheets as necessary).

21030

APPENDIX TO REPORT OF COMPLETION OF WELL WORK ON A WELL DRILLED IN SEARCH OF OIL OR GAS

DISCOVERY OF OIL OR INDICATIONS THEREOF
Indicated potential flow before stimulation N/A BOT Gravity and grade: N/A
DISCOVERY OF GAS OR INDICATIONS THEREOF
Indicated potential flow before stimulation N/A MCFOR Rock pressure: Not psig N/A hour test Measurable RECORD OF STIMULATION
Full description of stimulation: Zone 1: Lower Devonian Formation 75 Quality Foam Frac; 42,500#s 20/40, 900,000 SCF of N2
Perforated 5160-5550 # Perfs. 73 Perf. Size .375 Breakdown 5960 psig. Avg. Injection 4270 psig. Avg. I.R. 75 BPM Init. S.I.P. 2580 psig 15 Min. S.I.P. 180 psig
Zone 2: Middle Devonian Formation 75 Quality Foam Frac; 30,000#s 20740, 7,500#s 10/20 1,200,000 SCF of N ₂ Perforated 4816-5136 # Perfs. 69 Perf. Size .375 Breakdown 3379 psig. Avg. Injection 4316psig. Avg.I.R. 68 BPM Init. S.I.P.2360psig 15 Min. S.I.P.2200psig
Zone 3: Upper Devonian Formation 75 Quality Foam Frac; 34,608#s 20/40, 7,392#s 10/20 997,000 SCF of N ₂ Perforated 4476-4774 # Perfs. 69 Perf. Size .375 Breakdown 2398 psig. Avg. Injection 3985 psig. Avg.I.R. 90 BPM Init. S.I.P.2160psig 15 Min. S.I.P.1542 psig
Final production () natural (X) after stimulation
BOD MCFD Tested Pressure Tested Zone 1: Lower Devonian Commingled
Zone 2: Middle Devonian Commingled
Zone 3: Upper Devonian 179 MCFPD
Final production if gas zones are comingled:MCFD
hours tostade nois ' hours tostad

meludes show

API	No.	45	195		2103	(
-----	-----	----	-----	--	------	---

APPENDIX TO REPORT OF COMPLETION OF WELL WORK ON A WELL DRILLED IN SEARCH OF OIL OR GAS

DISCOVERY OF OIL OR INDICATIONS THEREOF
Indicated potential flow before stimulation N/A BOD Gravity and grade: N/A
DISCOVERY OF GAS OR INDICATIONS THEREOF
Indicated potential flow before stimulation N/A MCFD Rock pressure: Not psig N/A hour test Measurable
RECORD OF STIMULATION
Full description of stimulation: Zone 1: Big Lime Formation My-T-Acid (Alpha) frac, 75 hbls 28% HCL and 120 Bbls Cel H20 with 28 bbls H20 Flush Perforated 3676-3686 # Perfs. 3420 Perf. Size Breakdown psig. Avg. Injection psig. Avg. I.R. 14 BPM Init. S.I.P3067 psig 15 Min. S.I.P.2487 psig
Zone 2:Formation
Perforated # Perfs. Perf. Size Breakdown psig. Avg. Injection psig.
Avg.I.RBPM Init. S.I.Ppsig 15 Min. S.I.Ppsig
Zone 3:Formation
Perforated # Perfs. Perf. Size Breakdown psig. Avg. Injection psig. Avg.I.R. BPM Init. S.I.P. psig 15 Min. S.I.P. psig
Final production () natural () after stimulation
Zone 4 BOD MCFD Tested Pressure Tested Zone 4 Big Lime 189
Zone 2:
Zone 3:
Final production if gas zones are comingled:531_MCFD
hours tested: psig. hours tested

Results

Depth From	· Depth To	Survey
	2619'	2-1/40
SURFACE	2960'	3-1/40
,	3331'	5-1/2° 4-1/2°
	3526' 4198'	4-1/4° 3-1/4°
	4490' 4510'	10-1/4° :9-1/4°
1	4774' 4920'	12-3/4° 11-3/4°
	5074 ' 5480 '	13° 17°
	5789' 5910'	220
	:	•
4.		
	,	•

Flat Gap WS-231

Stratigraphic Data Source	(8. P.)	2) Jacobie		
	1	V		
		Datum		
Formation.	Top	(Subsea)	Thickness	
Little Lime	3528	-1042	126	
Top breenbrien	3654	-1168	389	
Bose Dreembru	4043	-1557	211	
- Lund way	4254	-1768	208	1.6
Barra	4462	-1976	_116	
Der. Shale (Cleveland)	41578	-2092	. 13	3.5
Three Liele	4591	-2105	ファ	
- u Huran	4668	-2182	41	
M. Hunon	4709	-2223	3/2	,
L. Huron	5021.	- 2535	260	
Olembangy	5281	-27.95	641	
Remarks Camperous	5922	-3436	59	V
10	5981	-3495	•	
			1-1	1
1			. 9	
References	****			
	. •			
,				
Released to Open File: Con	mpletion _		•	
	Samples			
	P CHILD W			

(Note: UTM measurements in meters, all others in feet)

FORM 16		A	PI WELL NO.	45 -	195 -	21030
		Date:	State 9/15/87	County	Permit	
- 1		Operator	's Well			
W5-231		Name1	0216	161718700		
Vo			60	1/210. 25	23	
	UTDCIN	TA OTT AND	GAS INSPEC	TOP CO	(3)	
ANR PRODUCTION	CO. VIRGIN	P. O. BO	x 1416	C.	3	
PENN VIRGINIA	A	BINGDON, VA	A 24210			
10216		703-628	-8115	.1	53/	
FLAT GAP 7/2			10	0	\$37	
EL-2476.17	REPORT O	F COMPLETIO	ON OF WELL W	VORK?	7	
Pursuant to Oil and Gas Act type(s) of well District, 19 87.	work specifie	gned well o ed below or	perator report the reference	orts componed well	oletion of in Glader	the
WELL TYPE:	Oil/ (Gas X / F	nhanced rec	overv	/ Waste	
	Disposal	/ If "Gas	", Producti	on_X/	Undergrou	nd
1	Storage		45 1 000 -			
WELL WORK:	Exempt by Co and gas cons Drill X / Plug off old Plug / F	servation l Deepen_ d formation	aw: yes/ Redrill_ / Perfo	_/ no_ / Sti rate new	/ mulate X formation	-/ x /
	(specify					
The well we the type(s) of	ork was done a well work invo		the Append	ix(es) ap	plicable	0
CONFIDENTIALITY	STATUS UNDER	CODE OF VI	RGINIA SECT	ION 45.1-	332.	
				,		
X Nine	ety days from	the filing	of this re	port		
Two	years from		, 19, the			
refe	erenced well w	as COMPLET	ED, the wel	l being a	n explora-	
tory	y well as defi	ned in Cod	e of Virgin	ia Sectio	n 45.1-288	. 21.
			ANR Prod	uction Co	mpany	
		BY C.E	District	Operation	ns Manage:	
		ADDRESS			Ste 400	
	`	TELEPHONE	601/961-		Jackson	
					39201	

Form 16
Appendix A, Sheet 1 (Reverse)
Continued from Obverse side

OTHER GENERAL INFORMATION

An electric log survey was X / was not / conducted pursuant to Code of Virginia Section 45.1-333.B.2, at the coal owner's or operator's request.

An electric log survey was $\frac{X}{X}$ / was not ___ / run for other purposes. This survey did $\frac{X}{X}$ / did not ___ / disclose the vertical location of a coal seam.

Note: If a coal seam was located, the part of the survey from the surface through the coal is attached in accordance with Code of Virginia Section 45.1-333.B.3.

Deviation surveys were X / were not X / required under Code of Virginia Section 45.1-333.C "to the bottom of the lowest published coal seam depth."

Note: If deviation surveys were required, the survey results are attached.

A continuous survey was ___/ was not X / required under Code of Virginia Section 45.1-333.C.

Note: If a continuous directional survey was required, the survey results are attached.

CHANGES IN THE PERMITTED WELL WORK

The well operator did___/ did not__X_/ make any change(s) in the permitted well work, verbally approved by the Inspector or Assistant Inspector under Regulation 4.03 of the Regulations under the Virginia Oil and Gas Act, for the purpose of insuring successful completion of the well work.

Note: The nature and purpose of each such change, if any, is set out below or on additionnal sheets if such are required.

FORM 16 APPENDIX A, SHEET 1, (OBVERSE)

API	WELL	NO.	4.5	195	21030
				County	Permit
Date	:	9/1	5/87		
Oper	ator	's W	ell		
Name	3	102	16		

REPORT OF COMPLETION OF WELL WORK IF DRILLING, REDRILLING, OR DEEPENING IS INVOLVED

DRILLING COM ADDRESS	NTRACTO	R	Ray Resou	ırces		
GEOLOGICAL TO DEPTH OF COMDATE DRILLING RIGHT	MPLETED IG COMMI IG COMPI	WELL 5, ENCED 7, LETED 7,	958' 10/87 21/87	n Shale, Wet	ir Big Lim	•
GEOLOGICAL D		Depth Cop Botto	Thick	ness.		
Fresh Water		127	1/2"			
Salt water		Not Meas	ured			
a				Name	MINING IN	N AREA Mined Cut
Coal Seams	284' 1462 1904	286. 1463 1907	5 2.5 1 3	Dorcheat Unknown Unkown Formation	X X X	
011		None		r or macro	••	
5160-555 4816-513 4476-477 3676-368	4		I U	Formation Lower Devonia Middle Devonia Upper Devonia Big Lime	an ian	
pelow:	X Appl X Info Info	icant's or rmation s rmation a	wn drilli upplied k lready in	ing experience of the coal of possession	ce in the a operator in of the Ins	the area pector

Form 16
Appendix A, Sheet 2 (Obverse)

CASING AND TUBING PROGRAM

PRELIMINARY INFORMATION				٠.		
Is the subject well underlaid If Yes, was a coal protection	d by the	red shall set to	les? Ye the Y ed	s <u>X</u> /shales?	No/ Yes_X_/	No.
	SIZE	TOP	BOTTOM	LENGTH	PERFORAT FROM	TONS
CONDUCTOR:						
CASING CIRCULATED AND CEMENTED IN TO SURFACE:	13-3/8"	Surf.	32.5	5 32	2.5	
COAL PROTECTION CASING SET UNDER SPECIAL RULE OF CODE OF VIRGINIA 45.1-334.B:	10-3/4" 7" 4-1/2"	Surf.	501 3359 5964	501 3359 5964)	
OTHER CASING AND TUBING LEFT IN WELL;	7"	Surf.	3359	3359		
LINERS LEFT IN WELL UNDER CODE OF VIRGINIA SECTION 45.1-336 OR OTHERWISE:	4-1/2"	Surf.	5964	5964		
PACKERS OR BRIDGE PLUGS:	KIND N/A	SIZ	E	SET AT		
REMARKS: SHUT DOWN DEPTHS, DA		SHING JO	B DEPTHS	G, DATES;	CAVING;	ı

SAMPLES AND CUTTINGS

WILL X	WILL	NOT	BE AVAILABLE FOR EXAMINATION BY A MEMBER OF THE
		-	VIRGINIA DIVISION OF MINERAL RESOURCES
WILL X	WILL	NOT	BE FURNISHED THE VIRGINIA DIVISION OF MINERAL
			RESOURCES UPON REQUES'T
WILL	WILL	NOT	REQUIRE SACKS TO BE FURNISHED BY THE VIRGINIA
			DIVISION OF MINERAL RESOURCES.

Compiled by	Roswell K. B	arranco				٧.	
Geologic Age	<u>Formation</u>	General <u>Lithology</u>	Color	<u>Depth</u> Top	(feet) Bottom	Thickness	Remarks
Pennsy lvanian	Wise & Norton	Sandstone		0	1286	1286	
	Lee	Sandstone & Shale		1286	2710	1424	
Mississippian	Bluestone	Sandstone & Shale		2710	2827	117	
	Ravencliff	Sandstone		2827	2920	93	
	Hinton	Sandstone & Shale		2920	3130	210	
	Maxton	Sandstone		3130	3295	165	
	Bluefield	Sandstone, Shale & Limestone		3295	3528	233	
	Greenbrier (Big Lime)	Limestone		3528	4044	516	
	Injun	Sandstone & Shale		4044	4044	0	
	Weir	Siltstone		4044	4254	210	
	Sunbury	Shale		4254	4462	208	
	Berea	Siltstone		4462	4528	66	
Devonian	Devonian	Shale		4528	5924	1396	
	Decollement			5084	5284	200	
Silurian	Corniferous	Limestone		5924	5981 (T.D.)	57	

(Complete on supplemental sheets as necessary).

APPENDIX TO REPORT OF COMPLETION OF WELL WORK ON A WELL DRILLED IN SEARCH OF OIL OR GAS

DISCOVERY OF OIL OR INDICATIONS THEREOF
Indicated potential flow before stimulation N/A BOD Gravity and grade: N/A
DISCOVERY OF GAS OR INDICATIONS THEREOF
Indicated potential flow before stimulation N/A MCFD Rock pressure: Not psig N/A hour test Measurable
RECORD OF STIMULATION
Full description of stimulation: Zone 1: Lower Devonian Formation 75 Quality Foam Frac; 42,500#s 20/40, 900,000 SCF of N2
Perforated 5160-5550 # Perfs. 73 Perf. Size .375 Breakdown 5960 psig. Avg. Injection 4270 psig. Avg. I.R. 75 BPM Init. S.I.P. 2580 psig 15 Min. S.I.P. 180 psig
Zone 2: Middle Devonian Formation 75 Quality Foam Frac; 30,000#s 20/40, 7,500#s 10/20 1,200,000 SCF of N2
Perforated 4816-5136 # Perfs. 69 Perf. Size .375
Perforated 4816-5136 # Perfs. 69 Perf. Size .375 Breakdown 3379 psig. Avg. Injection 4316psig. Avg.I.R. 68 BPM Init. S.I.P. 2360psig 15 Min. S.I.P. 2200psig
Zone 3: Upper Devonian Formation 75 Quality Foam Frac: 34.608#s 20/40, 7.392#s 10/20
997,000 SCF of N ₂ Perforated 4476-4774 # Perfs. 69 Perf. Size .375 Breakdown 2398 psig. Avg. Injection 3985 psig. Avg.I.R. 90 BPM Init. S.I.P.2160psig 15 Min. S.I.P.1542 psig
Final production () natural (X) after stimulation
Hours Rock Hours BOD MCFD Tested Pressure Tested Zone 1: Lower Devonian Commingled
Zone 2: Middle Devonian Commingled
Zone 3: Upper Devonian 179 MCFPD
Final production if gas zones are comingled:MCFD
hours tosted. neig hours tosted

API	No.	45	195	21030
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APPENDIX TO REPORT OF COMPLETION OF WELL WORK ON A WELL DRILLED IN SEARCH OF OIL OR GAS

DISCOVERY OF OIL OR INDICATIONS THEREOF
Indicated potential flow before stimulation N/A BOD Gravity and grade: N/A
DISCOVERY OF GAS OR INDICATIONS THEREOF
Indicated potential flow before stimulation N/A MCFD Rock pressure: Not psig N/A hour test Measurable
RECORD OF STIMULATION
Full description of stimulation: Zone 1:Big_LimeFormation My-T-Acid (Alpha) frac, 75 hbls 28% HCL and 120 Bbls Gel H20 with 28 bbls H20 Flush
with 28 bbls H ₂ 0 Flush
Perforated 3676-3686 # Perfs. 3420 Perf. Size
with 28 bbls H ₂ 0 Flush Perforated 3676-3686 # Perfs. 3420 Perf. Size Breakdown psig. Avg. Injection psig. Avg. I.R. 14 BPM Init. S.I.P ₃₀₆₇ psig 15 Min. S.I.P. ₂₄₈₇ psig
Avg. 1.R. 14 bpm 11111. S.1.P306/psig 15 min. S.1.P.2487psig
Zone 2:Formation
Perforated # Perfs. Perf. Size
Perforated # Perfs. Perf. Size Breakdown psig. Avg. Injection psig. Avg.I.R. BPM Init. S.I.P. psig 15 Min. S.I.P. psig
Avg.1.kpsig 15 min. 5.1.Fpsig
Zone 3:Formation
Perforated # Perfs. Perf. Size Breakdown psig. Avg. Injection psig. Avg.I.R. BPM Init. S.I.P. psig 15 Min. S.I.P. psig
Breakdown psig. Avg. Injection psig.
Avg.I.RBPM Init. S.I.Ppsig 15 Min. S.I.Ppsig
Final production () natural () after stimulation
Hours Rock Hours
Zone 4 BOD MCFD Tested Pressure Tested **Tested Pressure Tested Pressure Test
Zone 2:
Zone 3:
Final production if gas zones are comingled:531_MCFD
hours tested: psig. hours tested

Depth From	· Depth To	Survey
SURFACE	189' 369'	1° 1/2°
,	. 572 ' 745 '	3/40
	806' 866'	3° 2°
	928 ' 990'	. 2 t 1/2°
	1051'	2° 1-3/4°
	1174' . 1236'	2-1/40
	1297' 1483'	2-1/4° 2-3/4°
	1545' 1606'	20
	1808' 1972'	20
	2099¹ 2282¹	2-1/40

Results

Depth From	· Depth To ·	Survey
	2619'	2-1/4°
SURFACE	2960'	3-1/40
,	3331' 3486'	5-1/2° 4-1/2°
	3526' 4198'	4-1/4° 3-1/4°
	4490' 4510'	10-1/4° :9-1/4°
1	4774' 4920'	12-3/4° 11-3/4°
	5074 ' 5480 '	-13° 17°
	5789' 5910'	220
	:	
7.		

	(FOR OFFICE	API Well	No.	45 -	-
	(USE ONLY:		Stat	e County	Permit
		Date:		9-16	, 19 87
		Operator	10		
		Well No.		10216	
		well no.			_
					1
					1
	VIRGINIA OIL	AND GAS II	NSPEC	TOR	V
	DEPARTMENT OF	LABOR AND	INDU	STRY	
		ION OF MINI			
	219	Wood Avenue	e		
	Big Stone Gap,	Virginia	2421	9-1799	
	Phone	703-523-0	335		
	WE	LL PLAT			
	es location of we				0-
	Maps, scale 1 to				
longitud	de lines are repr	esented by	bord	er lines	as

This plat is new__/ updated X /

longitude shown.

This plat is x / is not ___ / based on a mine coordinate system established for the areas of the well location.

Well operator	ANR PRODUCTION COMPANY
AddressJAC	KSON, MISSISSIPPI
Farm PVRC. MINERAL	KENNETH WAMPLER SURFACE
Tract 741 Acres	207.61 Lease No.
Elevation 2482.62'	
Quadrangle FLAT GAF	•
County WISE'	District GLADEVILLE
	X Registration No. 11439
Certified Land Survey	or Cert. No
File No.	Drawing No.
Date 10-14-86	

Certification of Well Plat

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 of the Virginia Well Review Board.

> Registered Engineer or Certified Land Surveyor in Charge

and the same of th	and the state of t
	OIL AND GAS WELL
	SUMMARY REPORT
API No. 45-195-21030	VDMR Well- Rep. No.
	DMQ File No. ws-231
Operator ANR PRODUCTION COMPA	MY
Farm PENN-VIRGINIA	A contract of the property of
Co. Well No. 10216	The second secon
County WISE	Quadrangle <u>FIAT GAP-7 112'</u>
Location (UTM) N 4,097,600; E	The state of the s
(Lat. and Long.)	
Field	Province APPALACHIAN PLATAFAUS
Elev. (specify) 2476.17' GR.	TD 5981 Form. at TD CONIFEROUS
	Age DEVONIAN
Date compl. or abandoned SE	PTEMBER 13, 1987
Result GAS WELL	
Gas Shows	
	; 4476-4774; 3676-3686
	Prod. Form. DEVONIAN:; BIG LIME
FINAL FLOW: 531,000 CU. FT.	Age DEVONIAN; MISSISSIPPIAN
	UALITY FOAM FRAC, 42,5000 POUNDS OF 20/40 SAND,
900,000 SCF OF N2. MIDDLE-DI	EVONIAN-75 QUALITY FOAM FRAC, 30,000 POUNDS OF
	0/20 SAND, 1,200,000 SCF OF N2. UPPER DEVONIAN-75
QUALITY FOAM FRAC, 34,608 POI	UNDS OF 20/40 SAND, 7392 POUNDS OF 10/20 SAND, SCF OF N2. BIG LIME-MY-T-ACID FRAC, 75 BARRELS OF
28% HCL AND 120 BARRELS OF GI	EL WATER WITH 28 BARRELS OF WATER FLUID.
Oil shows	
	at at
	at at
Coal <u>284-286.5</u> ; <u>1462-1463</u> ; <u>1904</u>	
Plat Plotted	Completion Report X
Samilar Interval Sh	ic Log
Description of the Control of the Co	Security of the relationship of the Control of the
Sample Interval	
Kemarks .	
Geophysical Logs S.P.	Res Gamma Neutron
Density Sonic	Other

Stratigraphic Data Source	ROSWELL BARRANEO				
Formation	Тор	Datum (Subsea)	Thickness		
WISE AND NORTON	0	+2476.17	_1286		
LEE	1286		_1424	5	
BLUESTONE	2710	-233.83	117		
RAVENCLIFF	2827	-350-83	93	poeties suppos	
HINTON	2920	-433.83	- 210		
MAXTON	3130	- 653.83	165	Tibel March	
BLUEFIELD	3295	-818.83	233	and this	
GREENBRIER	3528	<u>-1051.83</u>	_516111111	Wetterley of	
NUL/II	4044	<u>-1567.83</u>	0.5-1	9月,1987年35年4月	
WEIR	4044	-1567.83	210	LE Brand	
SUNBURY BEREA	4254	-1777.83	208		
PARTICION R	4462	-1985.83	66:		
DEVONIAN SHALE	. 4528 .	-2051.83	1896	The section in	
DECOLLEMENT	5084		200		
CORNIFEROUS	5924	_3647.83	57	1 240.12. P. 11.	
		The state of the s		V. Ac. Satistic	
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References _					
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to the second second at the second se		2.511		and the second second second	
de. Gent a standard generalist of a standard generalist standard standard standard standard standard standard stand	ole. Naver and ole-	Michael Committee Committe		auswer Polico:	
	Sign of B		s ::	中的中国和西部	
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(Note: UTM measurements in meters, all others in feet)

OIL AND GAS WELL SUMMARY REPORT

API No. 45-195-21030	VDMR Well Rep. No.
	DNQ File No. WS-23/
Operator ANR Production Company	
Farm Penn Virginia	•
Co. Hell 110. 102/6	
County Wife Quadr	rangle Flat Sup-7/2
Location (UTI) N4,097,600 : £354,750	UTM Zone
(Lat. and Long.)	
Field	Province appalachian Platen
Elev. (specify) 2476,17 GR, TD 5988	Form. at TD Comferons
Guital Flow-none Porton les 12	1097 Age Devonan.
Date compl., or abandoned September 13, Result Hal well	1201
Gas Shows 5/60-5550; 4816-5136; 4476-4	774; 3676-3686
Gas Pays	
Main Production Pro	d. Form. Brog Smil Derman
Final Flow-MANNOSI, WO CU.Fi.	Age Millippian : Dermian
Treatment: fower Devanian - 75 quely fram	
vo SCF of N2 Middle Devenin - 75 gualie	
17500 pounds of 10/20 Sand, 1200,000 S 134,608 pounds of 20/40 Sand, 7332 pounds Initial Production big fine - 1 acid (28, 3, 10/30 sand, 997, 000 SCF 9 102
	alpha) frac, 15 banels of 28% H
and 120 barrell of gel water.	
Oil shows	
Water FW Yes at 127 atat	at
SW at at	at
COOL 284-286-5; 1462-1463; 1904-1907	
Plat Plotted Completion	
Drillers Log Geologic Log	
Samples Interval Sheet	Proprieta de la composição de la composi
Sample Interval	
Remarks	
Geophysical Logs S.P Res Ge	
Density Sonic Other	

			•	
Formation	Тор.	Datum (Subsea)	Thickness	
will and norton		+2476.17	1286	e w
Bluestone	2710	<u>-233.83</u>	_/424	
Ravench 7	2827	<u>-350.83</u> -443.83	93	
Waxton	3/30	-653,83	165	
Blue field	3295	-818.83	233	
Jayin 1800	4044	-1567.83	210	
Suntury	4254	-1777.83	208	, r450°
Remarks Hill	4528	1-2051.83	13.96	14.
Decollement Coniferous	5084 592		200	· .W.
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(Note: UTN measurements in meters, all others in feet)

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OIL AND GAS WELL SUMMARY REPORT

API No. 45-195-21030	VDMR Well Rep. No.
	Dill File No. WS-23/
Operator . ANR Production Co	mpany
Farm Penn-Virginia	A.S. C. Senter
Co. Hell 110. 10216	3,1000
County WISC	Quadrangle Flat Hap-7/21
	5354,750 UTM Zone 17
(Lat. and Long.)	
Field	Province appalachian Platen
Elev. (specify) 2476,17 GR, TD 5	Form. at TD Comferns.
Quitail Elour-Mario	Age Dermian
Date compl. or abandoned Septemi	ber 13, 1987
Result Las well	
Gas Shows 5160-5550; A816-5736	4476-4774: 3676-3686
Gas Pays V	4
Main Production	Prod. Form. Devoman: Big Lime
Final Flow-531, coo CU.FT.	Age Olverian: mighthippia
Treatment: Lower Devouar - 15 quality	fram frae, 42,500 pounds of 20/40
, , ,	quality fram pac, 30,000 pointer, 20,
1 1500 pormas of 10/20 sand, 1,200,	ovo SCFQN2, Upper Derman - 75 gnal
Initial Production of Na. Big Jime	Sand, 7392 pounds of 10/20 squel 997,000
HCL and 120 banels of gel	Hora water with 28 famely gwar
Oil shows	
Water FW at 127	at at
SW at	atat
Coal 284-286,5; 1462-1463	1904-1907
Plat Plotted Com	pletion Report
Furillers Log X Geologic Log	
Samples Interval Sheet	
Sample Interval	
Damantes	
Geophysical Logs S.P Res _	Gamma Neutron

				•	
			Datum		
	.Formation.	Тор	(Subsea)	Thickness	11.
;	wife and norting	0	+2476.17	1286	
	Lee	1286	+1190,17	1424	
	Bluestone	2710	-233.83	117	The state of the s
•	Travenchff.	2827	-350.83	93	
	Henton.	2920	- 443,83	210	
	markon	3 130	-653.83	165	
	Bluefield	3295	-818.83	233	
	Greenbuer	3528	-1051.83	5/6	
	Jujun	4044	-1567,83.		
	wein	4044.	-1567.83	210	
	Sunbury	4254	-1777,83	208	, visco
Remar)	ko Berea	4462	-1985,83	66	110
	Devoman shale	4528	-2:051.83	1396	· · · · · · · · · · · · · · · · · · ·
	Derollemont	5084	-3A47.83	200	.間.
	Comfernis	5.924	1-3647,83	57	#V
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Samples More

(Note: UTM measurements in meters, all others in feet)