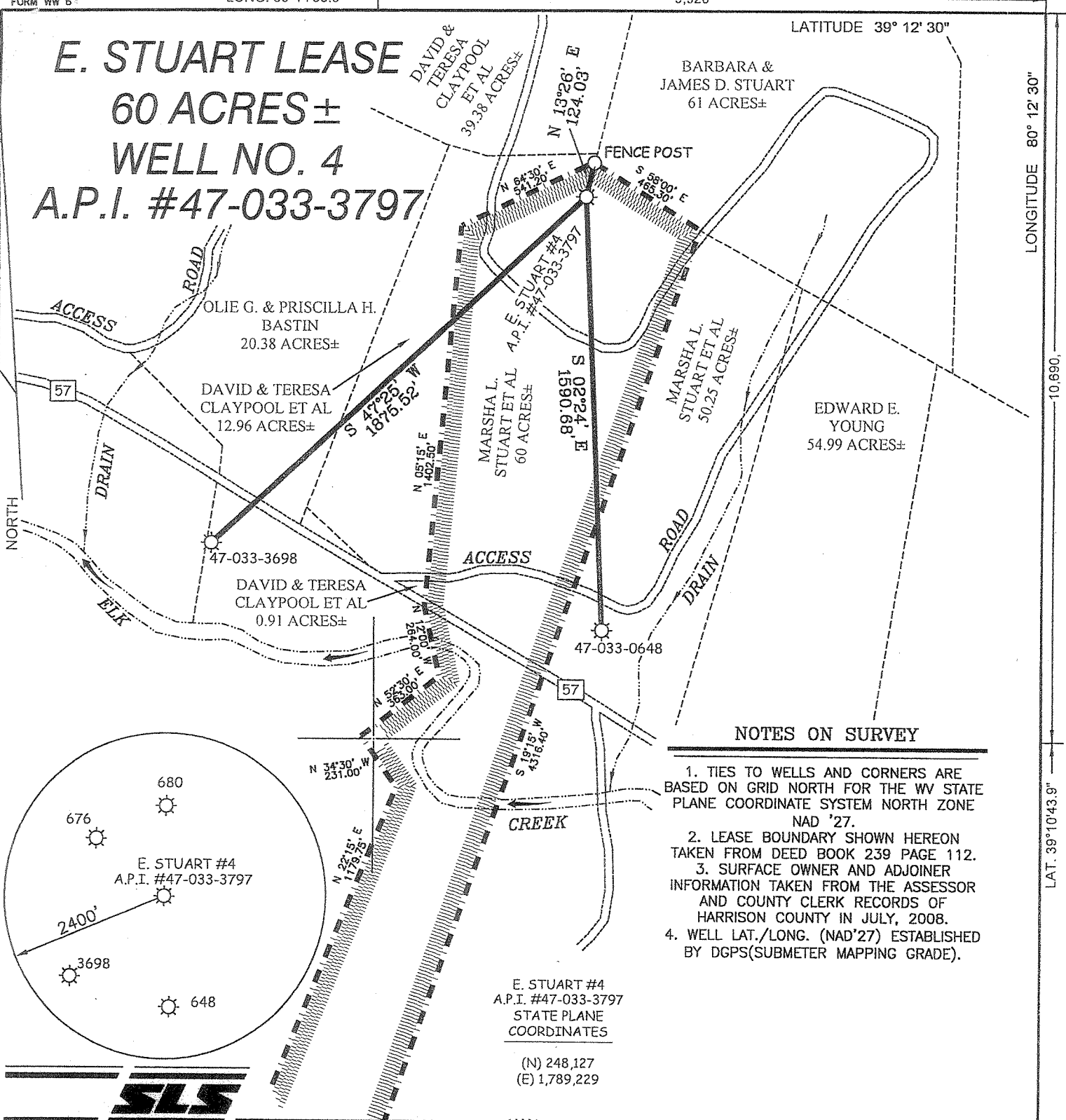


# E. STUART LEASE

## 60 ACRES±

### WELL NO. 4

#### A.P.I. #47-033-3797



#### NOTES ON SURVEY

1. TIES TO WELLS AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '27.
2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 239 PAGE 112.
3. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF HARRISON COUNTY IN JULY, 2008.
4. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(SUBMETER MAPPING GRADE).

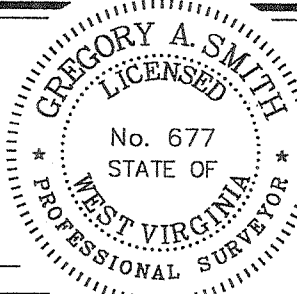
E. STUART #4  
A.P.I. #47-033-3797  
STATE PLANE  
COORDINATES

(N) 248,127  
(E) 1,789,229



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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677  
*Gregory A. Smith*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
DATE FEBRUARY 17, 20 09  
OPERATORS WELL NO. E. STUART #4  
API WELL NO. 47 - 033 - 3797 W  
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 7125P4 (277-08)  
PROVEN SOURCE OF ELEVATION DGPS (SUBMETER MAPPING GRADE) SCALE 1" = 500'

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS



WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 1,343' WATERSHED ELK CREEK  
DISTRICT ELK COUNTY HARRISON QUADRANGLE BROWNTON 7.5'

SURFACE OWNER MARSHA L. STUART ET AL ACREAGE 60±  
ROYALTY OWNER MARSHA L. STUART ET AL LEASE ACREAGE 60±

PROPOSED WORK: LEASE NO. \_\_\_\_\_  
DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER \_\_\_\_\_  
PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION 5TH SAND-BAYARD  
ESTIMATED DEPTH 2,650'

WELL OPERATOR PETROLEUM DEVELOPMENT CORP. DESIGNATED AGENT ALAN H. SMITH **MAR 27 2009**  
ADDRESS 120 GENESIS BOULEVARD ADDRESS 120 GENESIS BOULEVARD  
BRIDGEPORT, WV 26330 BRIDGEPORT, WV 26330

COUNTY NAME

PERMIT

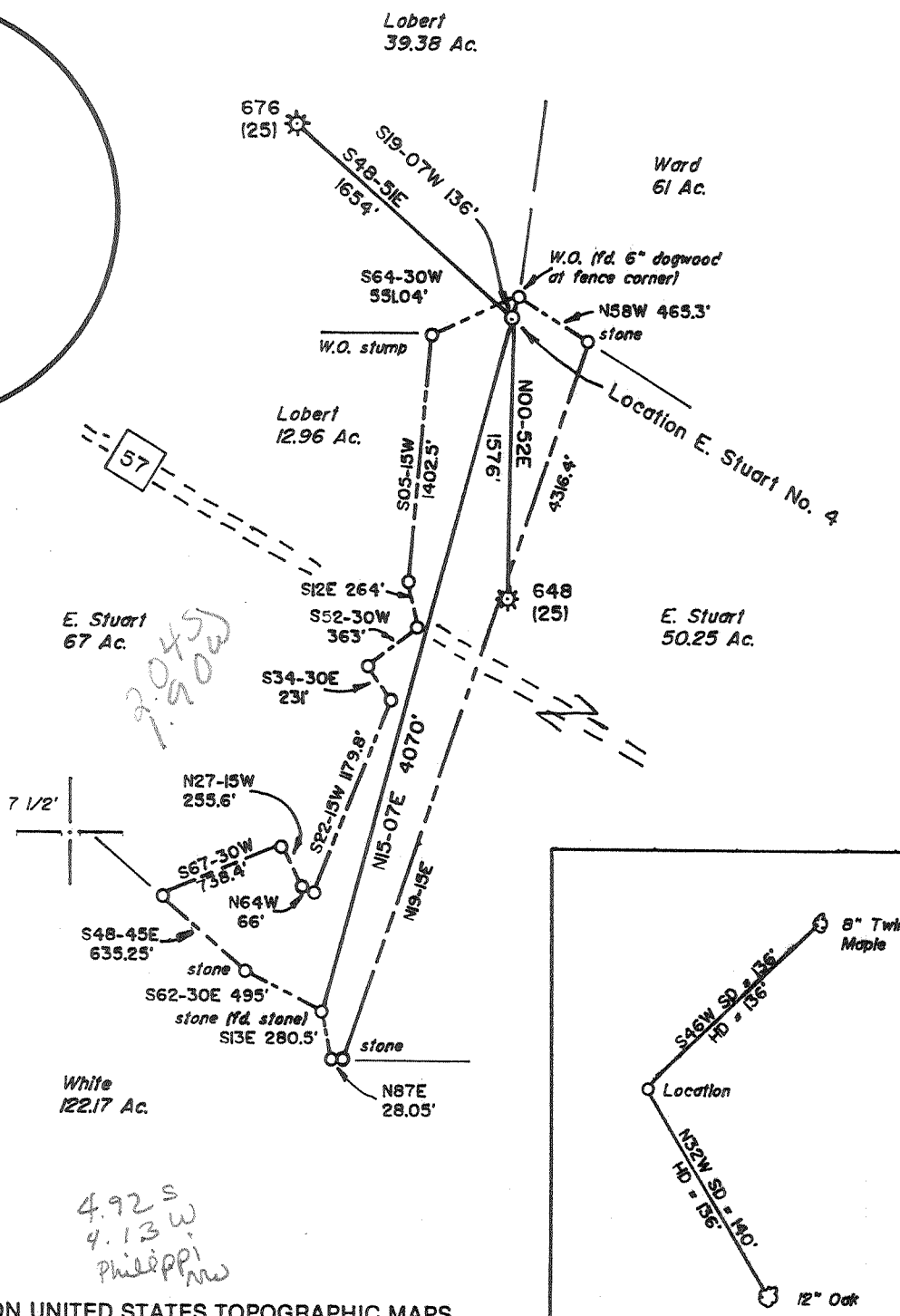
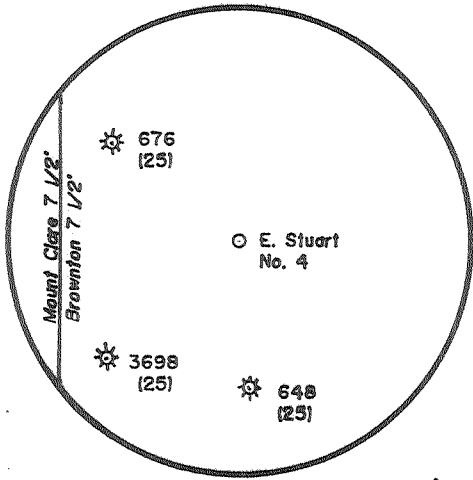
HAR

3797 W

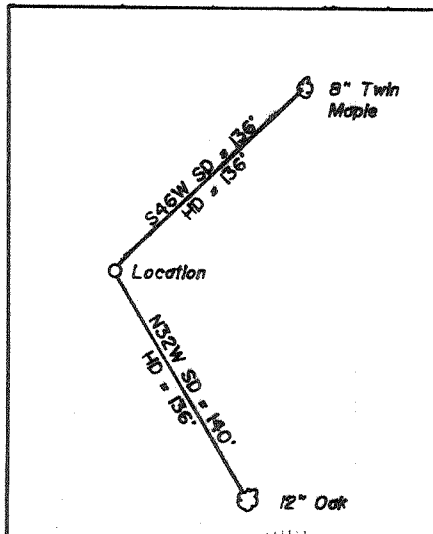
*Jamie 1/21/91*

LATITUDE 39-12-30 N

LONGITUDE 80-12-30 W



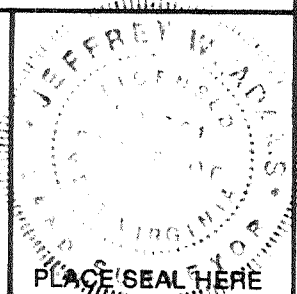
NORTH



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

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_ / \_\_\_\_\_  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY 1 in 200  
 PROVEN SOURCE OF ELEVATION BM 3200' SE of Location: Elevation 1020'

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 ENERGY.  
 (SIGNED) Jeffrey W. Adams  
 R.P.E. \_\_\_\_\_ L.L.S. 791



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



DATE December 31, 19 90  
 OPERATOR'S WELL NO. E. Stuart No. 4  
 API WELL NO. \_\_\_\_\_

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
 LOCATION: ELEVATION 1342 WATER SHED Elk Creek  
 DISTRICT Elk 5 COUNTY Harrison  
 QUADRANGLE Brownton 7 1/2'  
 SURFACE OWNER Edward L. Stuart ACREAGE 60  
 OIL & GAS ROYALTY OWNER Edward L. Stuart LEASE ACREAGE 60

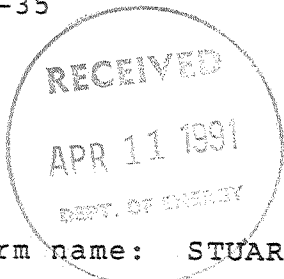
LEASE NO. 432100  
 PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE \_\_\_ PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
 TARGET FORMATION Benson 687 ESTIMATED DEPTH 5000  
 WELL OPERATOR Petroleum Development Corporation DESIGNATED AGENT Eric R. Stearns  
 ADDRESS P.O. Box 26, Bridgeport, WV 26330 ADDRESS P.O. Box 26, Bridgeport, WV 26330

JAN 28 1991

COUNTY NAME  
 PERMIT

*6-6 Elk Creek - Overfield (155)*



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

Well Operator's Report of Well Work

Farm name: STUART, EDWARD Operator Well No.: STUART #4

LOCATION: Elevation: 1342.00 Quadrangle: BROWNTON

District: ELK County: HARRISON  
Latitude: 10700 Feet South of 39 Deg. 12Min. 30 Sec.  
Longitude: 9950 Feet West of 80 Deg. 12 Min. 30 Sec.

Company: PETROLEUM DEVELOPMENT COR  
P. O. BOX 26  
BRIDGEPORT, WV 26330-0026

Agent: ERIC R. STEARNS

Inspector: STEVE CASEY  
Permit Issued: 01/25/91  
Well work Commenced: 02/18/91  
Well work Completed: 02/24/91  
Verbal Plugging \_\_\_\_\_  
Permission granted on: \_\_\_\_\_  
Rotary x Cable \_\_\_\_\_ Rig \_\_\_\_\_  
Total Depth (feet) 4685'  
Fresh water depths (ft) \_\_\_\_\_  
165  
Salt water depths (ft) \_\_\_\_\_

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
11 3/4"	22'		
8 5/8"	1341'	1341'	310 sks
4 1/2"	4647'	4647'	375 sks

Is coal being mined in area (Y/N)? n  
Coal Depths (ft): 98-102; 267-271; 520-525;  
892-896; 1037-1040

OPEN FLOW DATA

Producing formation Benson Pay zone depth (ft) 4569-4572  
Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow 251 MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure 700 psig (surface pressure) after 72 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.

For: PETROLEUM DEVELOPMENT CORP.

By: Eric R. Stearns  
Date: April 5, 1991

APR 19 1991

Stuart #4

STAGE	FORMATION	PERFS	80/100 SKS	20/40 SKS	ACID GAL	N2 (MCF)
1ST	Benson	13(4569-4572)	0	600	500	85

W E L L L O G

FORMATION	TOP FEET	BOTTOM FEET	REMARKS: FRESH & SALT WATER, COAL, OIL & GAS
KB - GL	0	10	
sand, shale, RR	10	1614	1/2" Stream H2O @ 165'
Little Lime	1614	1639	Coal 98-102;267-271
sand, shale	1639	1673	Coal 520-525;892-896
Big Lime	1673	1749	Coal 1037-1040
Big Injun	1749	1835	
sand, shale	1835	2034	gas chk @ 1883' No Show
Antz	2034	2052	
sand, shale	2052	2073	
30 ft	2073	2128	
sand, shale	2128	2137	gas chk @ 2069' No Show
30 ft	2137	2167	
sand, shale	2167	2301	gas chk @ 2224' No Show
Gordon	2301	2329	
sand, shale	2329	2449	gas chk @ 2349' No Show
4th	2449	2532	
sand, shale	2532	2574	gas chk @ 2537' No Show
5th	2574	2612	
sand, shale	2612	2642	
Bayard	2642	2654	
sand, shale	2654	2932	
Speechley	2932	3344	gas chk @ 3291' No Show
sand, shale	3344	3411	
Balltown	3411	3760	gas chk @ 3664' No Show
sand, shale	3760	3782	
Bradford	3782	3880	gas chk @ 3850' No Show
sand, shale	3880	4276	
Riley	4276	4446	gas chk @ 4417' No Show
sand, shale	4446	4548	gas chk @ 4508' No Show
Benson	4548	4544	gas chk @ 4603' 40/10-1"H2O
sand, shale	4544	4700	Drillers TD No Show
		4685	DC's 12/10-1"H2O Logger TD

WR-35  
Rev (9-11)

State of West Virginia  
Department of Environmental Protection  
Office of Oil and Gas  
Well Operator's Report of Well Work

DATE: 10/16/2012  
API #: 47-033-03797 W

Farm name: Stuart, Marsha L., Et Al Operator Well No.: E. Stuart 4

LOCATION: Elevation: 1343' GL Quadrangle: Brownlon 7.5

District: Elk County: Harrison  
Latitude: 10,700 Feet South of 39 Deg. 12 Min. 30 Sec.  
Longitude 9,950 Feet West of 80 Deg. 12 Min. 30 Sec.

Company: Petroleum Development Corporation

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
<u>120 Genesis Boulevard</u> <u>Bridgeport, WV 26330</u>	<u>11 3/4"</u>	<u>22'</u>	<u>0</u>	<u>—</u>
Agent: <u>Bob Williamson</u>	<u>8 5/8"</u>	<u>1341'</u>	<u>1341'</u>	<u>386</u>
Inspector: <u>Tim Bennett</u>	<u>4 1/2"</u>	<u>4647'</u>	<u>4647'</u>	<u>634</u>
Date Permit Issued: <u>03/23/2009</u>				
Date Well Work Commenced: <u>8/19/2009</u>				
Date Well Work Completed: <u>8/19/2009</u>				
Verbal Plugging:				
Date Permission granted on:				
Rotary <input type="checkbox"/> Cable <input type="checkbox"/> Rig <input checked="" type="checkbox"/>				
Total Vertical Depth (ft.): <u>4685'</u>				
Total Measured Depth (ft.): <u>4685'</u>				
Fresh Water Depth (ft.): <u>165'</u>				
Salt Water Depth (ft.): <u>None Reported</u>				
Is coal being mined in area (N/Y)? <u>N</u>				
Coal Depths (ft.): <u>98-102, 267-71, 520-25, 892-98, 1037-40</u>				
Void(s) encountered (N/Y) Depth(s) <u>N</u>				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Bayard Pay zone depth (ft) 2644

Gas: Initial open flow 750 MCF/d Oil: Initial open flow — Bbl/d

Final open flow 193 MCF/d Final open flow — Bbl/d

Time of open flow between initial and final tests — Hours

Static rock Pressure 150 psig (surface pressure) after 72 Hours

Second producing formation 5th Sand (commingled) Pay zone depth (ft) 2584

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

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the 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.

  
Signature

10/16/2012  
Date

10/19/2012

ETK Creek (overfield) (ISS) 6-6

Were core samples taken? Yes \_\_\_\_\_ No **XX**

Were cuttings caught during drilling? Yes \_\_\_\_\_ No **XX**

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list JW Wireline GR/CCL from 3200 - 1800.

**NOTE: IN THE AREA BELOW 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 THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.**

**Perforated Intervals, Fracturing, or Stimulating:**

8/19/2009: MIRU JW Wireline & run GR/CCL log from 3200-1800. Set SBP @ 2680' & RU BJ & bullhead 20% HCl in front of treated water & pressure test casing to 3486 psi. Held OK. Bleed off pressure & RU JW & perforate 12 holes from 2644-50 @ 2 SPF.  
RU BJ pumped a 30 Q N2 assist X-link with 15,989 lbs of 20/40 sand & 323 bbls treated fluid & 120.6 MSCF of N2. Break at 4117 psi & avg treating foam rate was 24 BPM & ATP was 2914 psi. Well screened out. RDMO BJ & JW. 8/20/2009: RU EC Rig & clean sand to below perms. Set CBP at 2610'. Spot tubing for 2nd zone. BJ RU & spot 12 bbls acid over upper zone. EC pulled tbg & RU JW & perf 2584-92 w/16 holes. RDMO BJ. 8/25/2009: RU Universal & pumped a 30 Q N2 assist X-link with 216 sx of 20/40 sand & 575 bbls treated fluid & 120.0 MSCF of N2. Break at 2278 psi & avg treating foam rate was 18.9 BPM & ATP was 2754 psi.  
Plug Back Details Including Plug Type and Depth(s): BP's at 2680 & 2610 were drilled out & hole cleaned to original TD.

**Formations Encountered:** \_\_\_\_\_ **Top Depth** \_\_\_\_\_ / \_\_\_\_\_ **Bottom Depth**  
**Surface:** \_\_\_\_\_

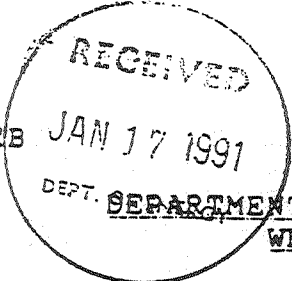
See Attached WR-35 & "Well Log" from original completion of this well (47-033-3797).

Stuart #4

STAGE	FORMATION	PERFS	80/100 SKS	20/40 SKS	ACID GAL	N2 (MCF)
1ST	Benson	13(4569-4572)	0	600	500	85

W E L L L O G

FORMATION	TOP FEET	BOTTOM FEET	REMARKS: FRESH & SALT WATER, COAL, OIL & GAS
KB - GL	0	10	
sand, shale, RR	10	1614	
Little Line	1614	1639	1/2" Stream H2O @ 165'
sand, shale	1639	1673	Coal 98-102;267-271
Big Lime	1673	1749	Coal 520-525;892-896
Big Injun	1749	1835	Coal 1037-1040
sand, shale	1835	2034	
antz	2034	2052	gas chk @ 1883' No Show
sand, shale	2052	2073	
ft	2073	2128	
sand, shale	2128	2137	gas chk @ 2069' No Show
30 ft	2137	2167	
sand, shale	2167	2301	gas chk @ 2224' No Show
Gordon	2301	2329	
sand, shale	2329	2449	gas chk @ 2349' No Show
4th	2449	2532	
sand, shale	2532	2574	gas chk @ 2537' No Show
5th	2574	2612	
sand, shale	2612	2642	
Bayard	2642	2654	
sand, shale	2654	2932	
Speechley	2932	3344	gas chk @ 3291' No Show
sand, shale	3344	3411	
Balltown	3411	3760	gas chk @ 3664' No Show
sand, shale	3760	3782	
Bradford	3782	3880	gas chk @ 3850' No Show
sand, shale	3880	4276	
Riley	4276	4446	gas chk @ 4417' No Show
sand, shale	4446	4548	gas chk @ 4508' No Show
Benson	4548	4544	gas chk @ 4603' 40/10-1"H2O
sand, shale	4544	4700	Drillers TD No Show
			DC's 12/10-1"H2O
		4685	Logger TD



033-3797

Issued 11/25/91  
Expires 11/25/93  
Page \_\_\_ of \_\_\_

FORM WW-2B

JAN 17 1991

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

- 1) Well Operator: Petroleum Development Corporation 38200 (5) 266
- 2) Operator's Well Number: Stuart #4 3) Elevation: 1342'
- 4) Well type: (a) Oil \_\_\_ / or Gas XX  
(b) If Gas: Production XX / Underground Storage \_\_\_ /  
Deep \_\_\_ / Shallow XX /
- 5) Proposed Target Formation(s): Benson 435
- 6) Proposed Total Depth: 5000 feet
- 7) Approximate fresh water strata depths: 45, 432, 667
- 8) Approximate salt water depths: n/a
- 9) Approximate coal seam depths: 569, 666, 887
- 10) Does land contain coal seams tributary to active mine? Yes \_\_\_ / No XX /
- 11) Proposed Well Work: Drill & Stimulate New Well
- 12)

**CASING AND TUBING PROGRAM**

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	
Conductor	11 3/4	H-40	42	30	----	----
Fresh Water						
Coal						
Intermediate	8 5/8	LS	20/23	1325	1325	380578-11.3
Production	4 1/2	J-55	10.5	5000	5000	380578-11.5
Tubing						380578-11.1
Liners					50	

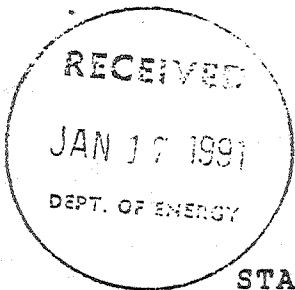
PACKERS : Kind \_\_\_\_\_  
Sizes \_\_\_\_\_  
Depths set \_\_\_\_\_

For Division of Oil and Gas Use Only

858422

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





1) Date: January 10, 1991  
2) Operator's well number  
E. Stuart #4  
3) API Well No: 47 - 033 - 3797  
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 Edward Stuart  
Address 207 Davisson Street  
Bridgeport, WV 26330  
(b) Name \_\_\_\_\_  
Address \_\_\_\_\_  
(c) Name \_\_\_\_\_  
Address \_\_\_\_\_  
6) Inspector Stephen Casey  
Address Rt. 2, Box 232D  
Jane Lew, WV 26378  
Telephone (304) - 745-4888

5) (a) Coal Operator:  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
(b) Coal Owner(s) with Declaration  
Name Same as surface  
Address \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
(c) Coal Lessee with Declaration  
Name \_\_\_\_\_  
Address \_\_\_\_\_

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        on the above named parties, by:

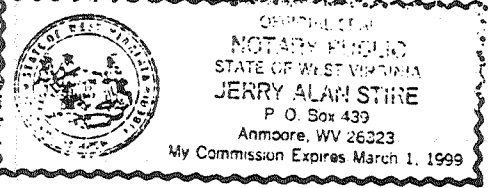
- Personal Service (Affidavit attached)
- XX Certified Mail (Postmarked postal receipt attached)
- Publication (Notice of Publication attached)

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 Petroleum Development Corporation  
By: [Signature]  
Its: Geologist  
Address P.O. Box 26  
Bridgeport, WV 26330  
Telephone 304-842-6256



Subscribed and sworn before me this 10th day of January, 1991

My commission expires March 1, 1991 Notary Public