

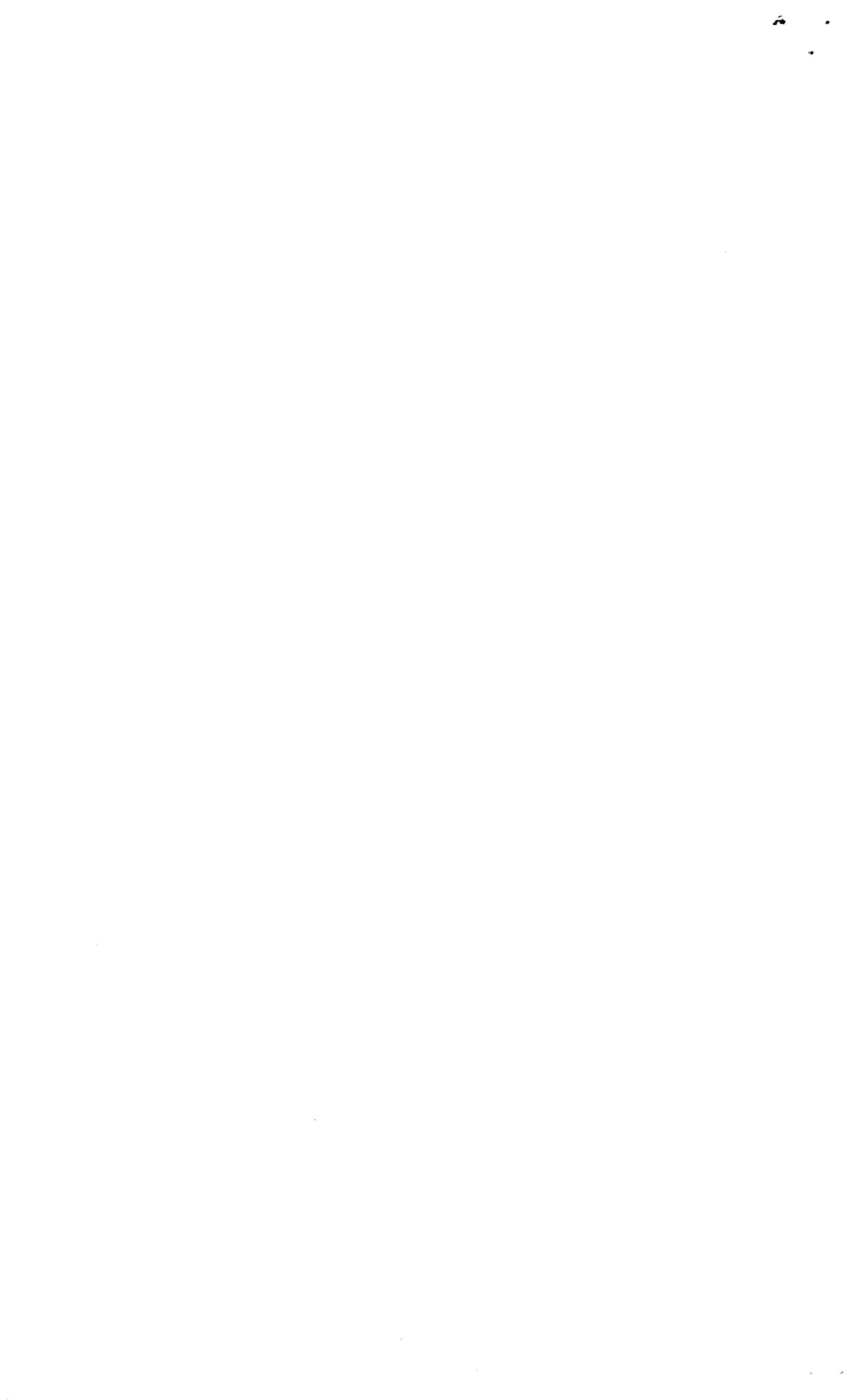
(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. _____ DRAWING NO. <u>1</u> SCALE <u>1" = 2000'</u> MINIMUM DEGREE OF ACCURACY <u>1 in 10,000</u> PROVEN SOURCE OF ELEVATION <u>BM: Elev. 1440</u> <u>7700' NW of Location</u>	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) <u>David L. Jackson</u> R.P.E. _____ L.L.S. <u>708</u>	
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STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY OIL AND GAS DIVISION		DATE <u>August 24</u> , 19 <u>87</u> OPERATOR'S WELL NO. <u>17</u> API WELL NO. <u>47 005 1473</u>
WELL TYPE: OIL ___ GAS <u>X</u> LIQUID INJECTION ___ WASTE DISPOSAL ___ (IF "GAS,") PRODUCTION ___ STORAGE ___ DEEP ___ SHALLOW <u>X</u>		STATE COUNTY PERMIT <u>47 005 1473</u>
LOCATION: ELEVATION <u>2473</u> WATERSHED <u>West Fork of Pond Fork</u> DISTRICT <u>Crook</u> COUNTY <u>Boone</u> QUADRANGLE <u>Pilot Knob 7 1/2' 547 006 6 Bell Knob EC</u>		COUNTY NAME PERMIT
SURFACE OWNER <u>Western Pocahontas Corp.</u> ACREAGE <u>2396</u> OIL & GAS ROYALTY OWNER <u>Western Pocahontas Corp.</u> LEASE ACREAGE <u>2396</u> LEASE NO. <u>8087</u>		
PROPOSED WORK: DRILL <u>X</u> CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____		OCT 5 1987
PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ TARGET FORMATION <u>Weir</u> ESTIMATED DEPTH <u>4200</u> WELL OPERATOR <u>Natural Resource Management Corp.</u> DESIGNATED AGENT <u>Dave Cash, Natural Resource Management Corp.</u> ADDRESS <u>681 Andersen Drive, Foster Plaza VI Pittsburgh, PA 15220</u> ADDRESS <u>312 Sixth Ave. Charleston WV 25303</u>		

6-6 unnamed (0)

H.T. HALL 44073 FORM WW-6



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DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

State of West Virginia
DEPARTMENT OF ENERGY
Oil and Gas Division

Date November 13, 1987
Operator's Well No. #17
Farm Western Pocahontas
API No. 47 - 005 - 1473

WELL OPERATOR'S REPORT
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil / Gas x / Liquid Injection / Waste Disposal /
(If "Gas," Production x / Underground Storage / Deep / Shallow x /)

LOCATION: Elevation: 2473' GL Watershed West Fork of Pond Fork
District: Crook County Boone Quadrangle Pilot Knob 7.5'

COMPANY Natural Resource Management Corporation

ADDRESS 681 Andersen Drive, Foster Plaza VI
Pittsburgh, PA 15220

DESIGNATED AGENT Dave Cash, NRM

ADDRESS 312 Sixth Avenue
Charleston, WV 25303

SURFACE OWNER Western Pocahontas Corporation

ADDRESS c/o CSX Oil & Gas, P. O. Box 4826
Houston, TX 77210

MINERAL RIGHTS OWNER same as surface owner

ADDRESS

OIL AND GAS INSPECTOR FOR THIS WORK Rodney G.

Dillon ADDRESS P. O. Box 1526
Sophia, WV 25921

PERMIT ISSUED September 30, 1987

DRILLING COMMENCED October 14, 1987

DRILLING COMPLETED October 19, 1987

IF APPLICABLE: PLUGGING OF DRY HOLE ON
CONTINUOUS PROGRESSION FROM DRILLING OR
REWORKING. VERBAL PERMISSION OBTAINED
CN

Casing & Tubing	Used in Drilling	Left in Well	Current fill up Cu. ft.
Size 20-16 Cond.			
13 3/8"	38'	38'	conductor
9 5/8	1637'	1637'	545 sks
8 5/8			
7			
5 1/2			
4 1/2	4202'	4202'	75 sks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Weir Sandstone Depth 4200 feet

Depth of completed well 4230 feet Rotary X / Cable Tools

Water strata depth: Fresh 80 feet; Salt n/a feet

Coal seam depths: 209-215, 330-339, 410-414, Is coal being mined in the area? Yes
427-433, 970-974, 1033-1040, 1068-1071, 1206-1211

OPEN FLOW DATA

Producing formation Weir Sandstone Pay zone depth 3964 - 4102 feet

Gas: Initial open flow TSTM Mcf/d Oil: Initial open flow Bbl/d

Final open flow 330 Mcf/d Final open flow Bbl/d

Time of open flow between initial and final tests 24 hours

Static rock pressure 810 psig (surface measurement) after 72 hours shut in

(If applicable due to multiple completion--)

Second producing formation n/a Pay zone depth feet

Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d

Final open flow Mcf/d Oil: Final open flow Bbl/d

Time of open flow between initial and final tests hours

Static rock pressure psig (surface measurement) after hours shut in

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

Spotted 500 gal. 15% HCL and 500 gal. MeOH. Perforated ^{Lower Weir} 4091' - 4102', 12 holes. Formation broke on hydrostatic. Pumped 350 bbls. 30# gel water 2% KCL. 21,000# 20/40 sand, 150 SCF N₂/bbl. Average treating rate 13 BPM. Average pressure 1225 PSI. Flushed 500 gal. 15% HCL and 500 gal. MeOH. Seated frac ball. Perforated 3964' - 3974', 11 holes. Formation broke at 2250 PSI. Pumped 350 bbls. 30# gel water 2% KCL, 21,000# 20/40 sand, 300 SCF N₂/bbl. Average treating rate 15.2 BPM. Average pressure 1700 PSI. ISIP A/F 720² PSI. Flowed well back on 1/2" choke.
 ↳ upper weir

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
<u>FROM DRILLER'S LOG:</u>					
Sand & Shale			0	630	FW @ 80'
Shale			630	1825	
Sand & Shale			1825	1865	SW - none reported
Sand			1865	1970	
Shale			1970	2015	
Salt Sand			2015	2780	
Sand & Shale			2780	2920	
Lime			2920	2975	
Shale & Lime			2975	3130	
Lime			3130	3880	
Sand & Shale			3880	4230	GC @ 3883' - NS
	DTD		4230'		GC @ TD - TSTM
	LTD		4237'		
<u>FROM CDL:</u>					
Princeton SS			2662	2726	
Ravenclyff SS			2746	2807	
Avis LS			2860	2894	
Maxton Stray SS			2940	2982	
Upper Maxton SS			3001	3071	
Maxton SS			3074	3218	
Lower Maxton SS			3224	3311	
Little Lime			3417	3479	
Big Lime			3516	3855	
Upper Weir SS			3965	3996	
Lower Weir SS			4091	4103	

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DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

(Attach separate sheets as necessary)

NATURAL RESOURCE MANAGEMENT CORPORATION

Well Operator

By: Paul J. Shuleski
 Date: Paul J. Shuleski, Regional Geology Manager
 November 13, 1987

Note: Regulation 2.02(i) provides as follows:
 "The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including ³⁵⁰ ~~all~~, encountered in the drilling of a well."

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SEP 14 1987



1) Date: August 24, 19 87
2) Operator's Well No. Western Pocahontas #17
3) API Well No. 47 State 005 County 1473 Permit

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

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

- 4) WELL TYPE: A Oil Gas B (If "Gas", Production Underground storage Deep Shallow 540
- 5) LOCATION: Elevation: 2473' GR Watershed: West Fork
District: Crook 10491 County: Boone 005 Quadrangle: Pilot Knob 7-1/2'
- 6) WELL OPERATOR Natural Resource CODE: 34550 7) DESIGNATED AGENT Dave Cash
Address Management Corp., 681 Andersen Dr., Foster Plaza VI., Pittsburgh, PA 15220 Address Natural Resource Management Corp., 312 Sixth Ave., Charleston, WV 25303
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Jerry Holcomb Address Rt 2, Box 159 - Hwy #34 Hamlin, WV 25523
- 9) DRILLING CONTRACTOR: Name Unknown at this time. Address _____
- 10) PROPOSED WELL WORK: Drill / Drill deeper / Redrill / Stimulate / Plug off old formation / Perforate new formation / Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, Weir
- 12) Estimated depth of completed well, 4200 feet
- 13) Approximate trata depths: Fresh, 713, 80, 1080, 1560 feet; salt, None feet.
- 14) Approximate coal seam depths: 215', 365', 435', Is coal being mined in the area? Yes / No
- 15) CASING AND TUBING PROGRAM 455', 935', 1045', 1205', 1577 FROM 800-1317, 1320, 1324

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well		
Conductor	13-3/8		48	X		30	30		Kinds
Fresh water						1620	1620		
Coal	9-5/8		32.3	X		1500	1500	cts by 38 GSR 18-11.22+11.3	
Intermediate	7		20	X		2600	2600	100 sks OR by 38 GSR 18-11.1	
Production	4-1/2		10.5	X		4200	4200	as required by 38 GSR 18-11.1	
Tubing									
Liners									Perforations: Top Bottom

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-005-1473 Date September 30 19 87

This permit covering the well operator and well location shown below is evidence of permission granted to drill in accordance with the pertinent legal requirements subject to the conditions contained herein and on the reverse hereof. Notification must be given to the District Oil and Gas Inspector, (Refer to No. 8) Prior to the construction of roads, locations and pits for any permitted work. In addition, the well operator or his contractor shall notify the proper district oil and gas inspector 24 hours before actual permitted work has commenced.)

The permitted work is as described in the Notice and Application, plat, and reclamation plan, subject to any modifications and conditions specified on the reverse hereof.
Permit expires September 30, 1989 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <input checked="" type="checkbox"/>	Plat: <input checked="" type="checkbox"/>	Casing: <input checked="" type="checkbox"/>	Fee: 230 1303	Other: <input checked="" type="checkbox"/>
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NOTE: Keep one copy of this permit posted at the drilling location.

Director, Division of Oil and Gas File

See the reverse side of the APPLICANT'S COPY for instructions to the well operator.

