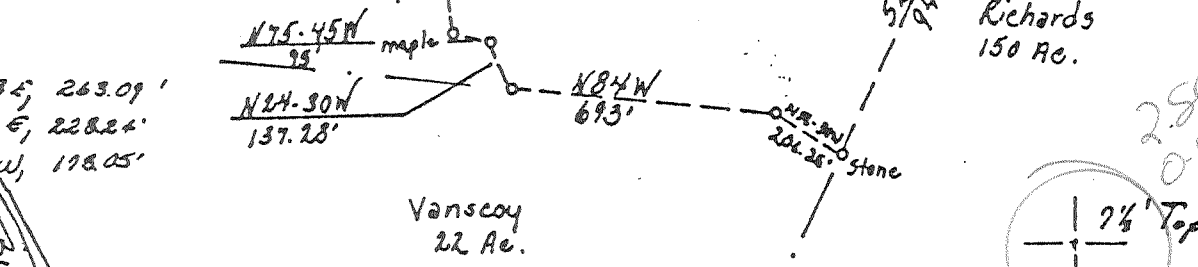
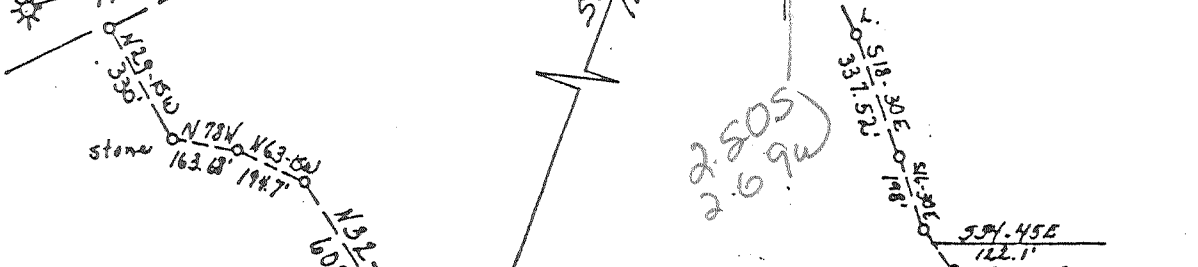
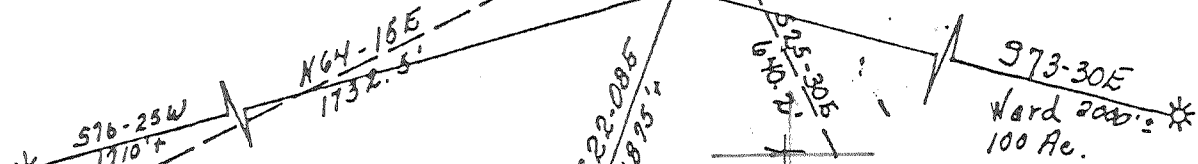


LATITUDE 39°15'

LONGITUDE 80°32'30"

Webb
40 Ac.



- A- N72-18E, 263.09'
- B- S27-15E, 228.24'
- C- S71-06W, 178.05'

FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 500'
 MINIMUM DEGREE OF ACCURACY 1 in 200
 PROVEN SOURCE OF ELEVATION USGS BM MT. OLIVE CHURCH, 1896 USGS BIG ISAAC

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) Wayne D. Norton
 R.P.E. _____ L.L.S. 624
 Norton Surveys & Consulting, Inc.

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6 (8-78)



DATE December 30, 19 80
 OPERATOR'S WELL NO. Morgan # A-1
 API WELL NO. _____
47 - 017 - 2923-F
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION STORAGE ___ DEEP ___ SHALLOW
 LOCATION: ELEVATION 1390' WATER SHED Big Isaac Creek
 DISTRICT GREENBRIER 4 COUNTY Doddridge
 QUADRANGLE Big Isaac 252 123 NE 3
 SURFACE OWNER Orz E. Morgan ACREAGE 72
 OIL & GAS ROYALTY OWNER Orz E. Morgan LEASE ACREAGE 72
 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) _____

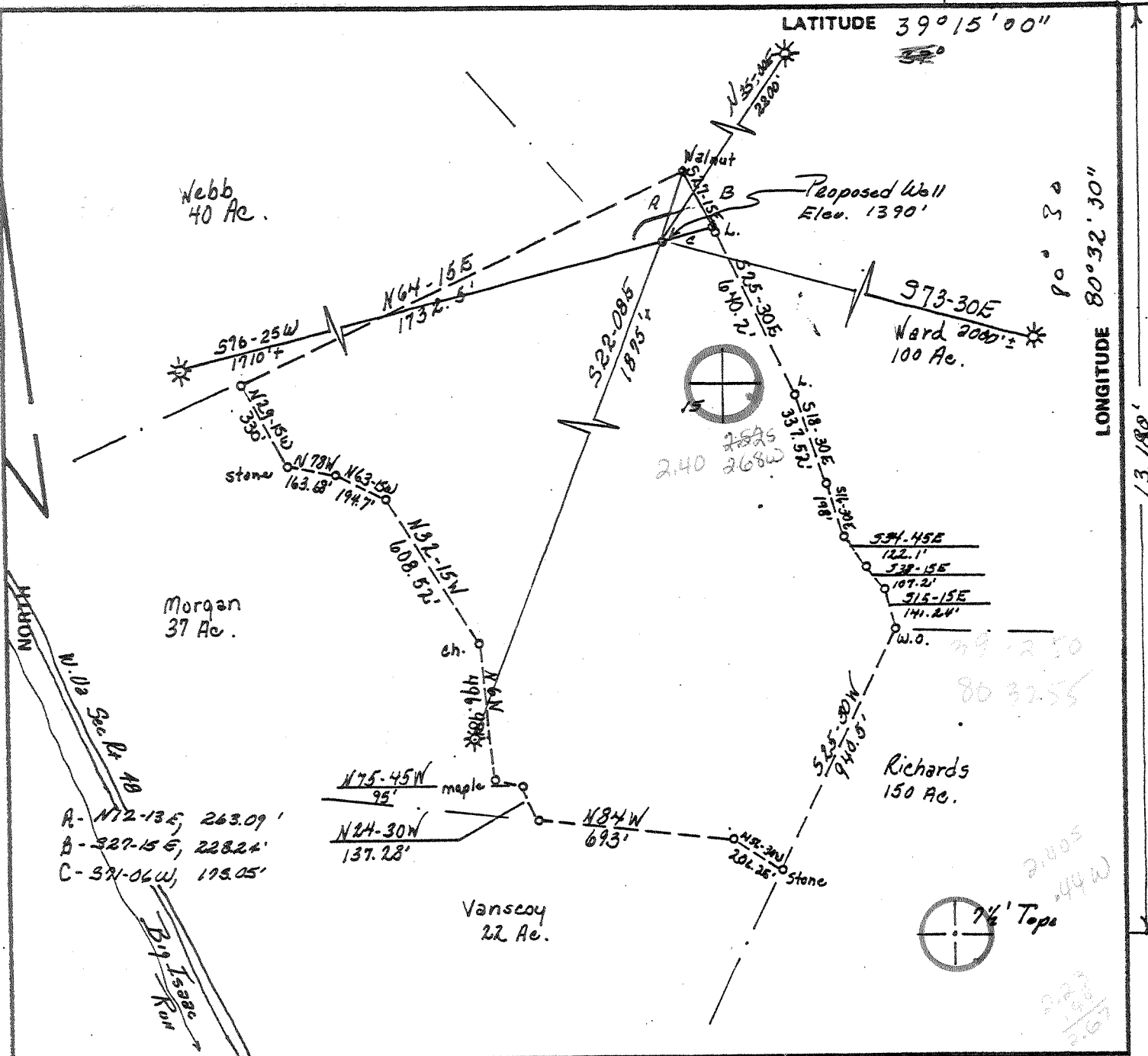
AUG 17 1987

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION Devonian shale ESTIMATED DEPTH 5400'
 WELL OF NATURAL RESOURCE MANAGEMENT CORP. IATED AGENT, Dave Cash
 ADDRESS: 681 Andersen Drive, Foster Plaza VI ADDRESS: NATURAL RESOURCE MANAGEMENT CORP.
 Pittsburgh, PA 15220 312 Sixth Ave., Charleston, WV 25303
 dwwo b-1049 meathouse Fork-Bristol (146)

2400'

LATITUDE 39° 15' 00"

LONGITUDE 80° 32' 30"



FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 500'
 MINIMUM DEGREE OF ACCURACY 1 in 200
 PROVEN SOURCE OF ELEVATION USGS BM MT. OLIVE CHURCH, 1276' USGS BIG ISAAC

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) Harold D. Norton
 R.P.E. _____ L.L.S. 624

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6 (8-78)



DATE December 30, 19 80
 OPERATOR'S WELL NO. Morgan # A-1
 API WELL NO. _____
47 - 017 - 2923
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS.") PRODUCTION STORAGE ___ DEEP ___ SHALLOW
 LOCATION: ELEVATION 1390' WATER SHED Big Isaac Creek
 DISTRICT GREEN RIVER COUNTY Doddridge
 QUADRANGLE Big Isaac Woods 15' NE
 SURFACE OWNER Orz E. Morgan ACREAGE 72
 OIL & GAS ROYALTY OWNER Orz E. Morgan LEASE ACREAGE 72
 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) _____
 PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION Devonian shale ESTIMATED DEPTH 5400'
 WELL OPERATOR ARM Petroleum Corp DESIGNATED AGENT R. L. Hopkins
 ADDRESS Box 816 ADDRESS Box 816
Buckhannon, W. Va. 26201 Buckhannon, W. Va. 26201



RECEIVED
FEB 03 1988

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

State of West Virginia
DEPARTMENT OF ENERGY
Oil and Gas Division

Date February 1, 1988
Operator's
Well No. A#1
Farm Morgan
API No. 47 - 017 - 2923 FRAC

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: 1390' GL Watershed Big Isaac Creek
District: Greenbriar County Doddridge Quadrangle Big Isaac 7.5'

COMPANY Natural Resource Management Corporation

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

DESIGNATED AGENT Dave Cash
Natural Resource Management Corp.

ADDRESS 312 Sixth Ave., Charleston, WV 25303

SURFACE OWNER Mona L. Morgan

ADDRESS Rt. 3, Salem, WV 26426

MINERAL RIGHTS OWNER See attached sheet.

ADDRESS

OIL AND GAS INSPECTOR FOR THIS WORK Mike

Underwood ADDRESS Rt. 2, Box 135
Salem, WV 26426

PERMIT ISSUED August 10, 1987

STIMULATION DRILLING COMMENCED September 11, 1987

STIMULATION DRILLING COMPLETED September 11, 1987

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

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.	SEE INITIAL WELL		
13-10"	RECORD DATED MAY 14,	1981	
9 5/8			
8 5/8			
7			
5 1/2			
4 1/2			
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION SEE INITIAL WELL RECORD Depth feet

Depth of completed well feet Rotary / Cable Tools

Water strata depth: Fresh feet; Salt feet

Coal seam depths: Is coal being mined in the area?

OPEN FLOW DATA

Producing formation SEE INITIAL WELL RECORD Pay zone depth feet

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 measurement) after hours shut in

(If applicable due to multiple completion--)

Second producing formation Benson Pay zone depth 5169 feet

Gas: Initial open flow 37 Mcf/d Oil: Initial open flow Bbl/d

Final open flow 460 Mcf/d Oil: Final open flow Bbl/d

Time of open flow between initial and final tests hours

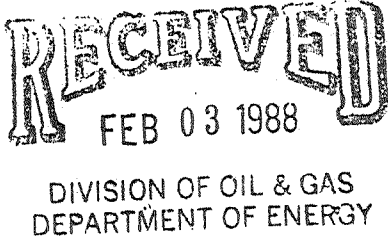
Static rock pressure 1475 psig (surface measurement) after 48 hours shut in

FEB 16 1988

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

Set frac plug at 5281'. Spotted 500 gal. 15% HCL and 500 gal. MeOH. Perfed 5149' to 5169' with 15 holes. Brokedown Benson at 1700#. Pumped 35,000# 20/40 sand, 481 bbls gel water 2% KCL, 150 SCF N₂/bbl. Average treating rate 21 BPM. Average pressure 2600 PSI. ISIP A/F 1600 PSI.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
SEE INTITAL WELL RECORD DATED			MAY 14, 1981.		

(Attach separate sheets as necessary)

NATURAL RESOURCE MANAGEMENT CORPORATION

Well Operator

By:

Paul J. Shubert
Paul J. Shubert, Regional Geology Manager

Date:

2/1/88

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 coal, encountered in the drilling of a well."



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

Oil and Gas Division
WELL RECORD

Union Drilling
Rig #1

Rotary X Oil _____
Cable _____ Gas _____
Recycling _____ Comb. _____
Water Flood _____ Storage _____
Disposal _____ (Kind)

Quadrangle Big Isaac 7 1/2

Permit No. 47-017-2923

Company <u>NRM Petroleum Corporation</u>	Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Address <u>P.O. Box 816, Buckhannon, WV 26201</u>	Size			
Farm <u>Morgan</u> Acres <u>72</u>	20-16			
Location (waters) <u>Big Isaac Creek</u>	Cond.			
Well No. <u>A #1</u> Elev. <u>1390'</u>	12 1/2 <u>11 3/4</u>	151.55	151.55	
District <u>Greenbrier</u> County <u>Doddridge</u>	9 5/8			
The surface of tract is owned in fee by <u>Ora E. Morgan</u>	8 5/8	1358.90	1358.90	320 Sks. (4-4-81)
Address <u>Rt. 3, Box 94, Salem, WV</u>	7			
Mineral rights are owned by <u>Same</u>	5 1/2			
Address _____	4 1/2	-	5616.25	140 Sks. (4-8-81)
Drilling Commenced <u>3-31-81</u>	3			
Drilling Completed <u>4-8-81</u>	2			
Initial open flow <u>48 M</u> cu. ft. _____ bbls.	Liners Used			
Final production <u>855</u> cu. ft. per day _____ bbls.				
Well open <u>4</u> hrs. before test <u>2000</u> RP.				

Well treatment details:

Attach copy of cementing record.

Alexander Perforations - 12 holes, 5491-5500
Alexander Frac - Breakdown 2000#, average pressure 2850#, average rate 30.9 BPM, total fluid 444 bbl., shut-in pressure 1400#
10,000# of 80/100 sand and 30,000# of 20/40 sand.

855MCF

Coal was encountered at _____ Feet _____ Inches
Fresh water _____ Feet _____ Salt Water _____ Feet _____
Producing Sand Alexander Depth 5491-5500

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Formation Depths Taken From Driller's Log Book --						
Clay			0	2		
Sand and Shale			2	36		
Sand			36	88		
Sand and Shale			88	124		
Sand, Shale and Red Rock			124	555		
Sand and Shale			555	783		
Shale and Red Rock			783	801		
Sand and Shale			801	915		
Sand			915	960		
Sand and Shale			960	-		
Formation Depths Taken From Gamma Ray Log -- EKB 1395' --						
Sand and Shale			-	2198		
Little Lime			- 2198	2216		
Shale			2216	2238		
Big Lime			- 2238	2286		
Big Injun			2286	2396		
Shale			2396	2416		
Weir			2416	2573		
Shale			2573	2647		

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MAY 14 1981

OIL & GAS DIVISION
DEPT. OF MINES

Gas Chk. @ 2308' - No Show (Odor)

JUN 4 1981

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	Remarks
Berea			- 2647	2671		
Siltstone and Shale			2671	2854		
Gordon Stray - Gordon			2854	2987	Gas Chk. @ 2933'	- 15 M
Siltstone and Shale			2987	3511		
Warren			3511	3552		
Shale			3552	3572		
Siltstone and Shale			3572	3716		
Upper Speechley			3716	3768		
Siltstone and Shale			3768	3848		
Speechley			3848	3894		
Siltstone and Shale			3894	3998		
Balltown			3998	4166		
Siltstone and Shale			4166	4336		
Siltstone			4336	4435		
Siltstone and Shale			4335	5148	Gas Chk. @ 4462'	- No Show
Benson			- 5148	5175	Gas Chk. @ 4775'	- No Show
Siltstone and Shale			5175	5436	Gas Chk. @ 5430'	- 37 M
Alexander			5436	5576		
Siltstone and Shale			5576		Gas Chk. @ 5740'	- 40 M
TOTAL DEPTH				5755	Gas Chk. @ TD (In Collars)	- 48 M

Well Logged By Allegheny Nuclear Surveys

Initial Open Flow - 48 Mcf per day

Date 5-12, 1981

APPROVED NRM Petroleum Corporation Owner

Richard L. Hopkins



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

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JAN - 2 1981

Oil and Gas Division OIL & GAS DIVISION
DEPT. OF MINES
OIL AND GAS WELL PERMIT APPLICATION

TO THE DEPARTMENT OF MINES,
Charleston, W. Va.

DATE December 31, 1980

Surface Owner Ora E. Morgan
Address Rt 3, Box 94, Salem, WV
Mineral Owner Ora E. Morgan, et al
Address Rt 3, Box 94, Salem, WV
Coal Owner _____
Address _____
Coal Operator _____
Address _____

Company NRM Petroleum Corporation
Address PO Box 816, Buckhannon, WV
Farm Morgan Acres 72
Location (waters) Big Issac Creek
Well No. Morgan A#1 Elevation 1390'
District Greenbrier County Doddridge
Quadrangle Big Isaac

THIS PERMIT MUST BE POSTED AT THE WELL SITE

All provisions being in accordance with Chapter 22,
of the W. Va. Code, the location is hereby approved
for drilling. This permit shall expire if
operations have not commenced by 9-6-81.

INSPECTOR
TO BE NOTIFIED Paul Garrett

ADDRESS 321 Beech Street, Clarksburg, WV

PHONE : 622-3871

J. G. Huggins
Deputy Director O&G Gas Division

GENTLEMEN:

The undersigned well operator is entitled to drill upon the above named farm or tract of land for oil and gas, having fee title thereto, (or as the case may be) under grant or lease dated _____ 19____ by _____ made to _____ and recorded on the _____ day of _____ 19____ in _____ County. Book _____ Page _____
BEING RECORDED RWH
 NEW WELL _____ **DRILL DEEPER** _____ **REDRILL** _____ **FRACTURE OR STIMULATE**
OIL AND GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1969.

The enclosed plat was prepared by a registered engineer or licensed land surveyor and all coal owners and/or operators have been notified as of the above date.

The above named coal owners and/or operator are hereby notified that any objection they wish to make, or are required to make by Section 3 of the Code, must be received by, or filed with the Department of Mines within ten (10) days.

Copies of this notice and the enclosed plat were mailed by registered mail, or delivered to the above named coal operators or coal owners at their above shown respective address _____ day _____ before, or on the same day with the mailing or delivery of this copy to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL
GEOPHYSICAL LOGS DIRECTLY TO:

WEST VIRGINIA GEOLOGICAL AND
ECONOMIC SURVEY
P. O. BOX 879
MORGANTOWN, WEST VIRGINIA 26505
AC-304 - 392-6331

Address
of
Well Operator

Very truly yours, [Signature]
(Sign Name) _____
Well Operator

PO Box 816
Street
Buckhannon
City or Town
WV
State

*SECTION 3 . . . If no objections are filed or found by the Department of mines, within said period of ten days from the receipt of notice and plat by the department of mines, to said proposed location, the department shall forthwith issue to the well operator a permit reciting the filing of such plat, that no objections have been made by the coal operators or found thereto by the department and that the same is approved and the well operator authorized to proceed.

BLANKET BOND

47-017-2923 PERMIT NUMBER

"I have read and understand the reclamation requirements as set forth in Chapter 22, Article 4, Section 12-b and will carry out the specified requirements."

Signed by _____

THIS IS AN ESTIMATE ONLY
ACTUAL INFORMATION WILL BE SUBMITTED ON OG-10 UPON COMPLETION

PROPOSED WORK ORDER TO X DRILL _____ DEEPEN _____ FRACTURE-STIMULATE _____
 DRILLING CONTRACTOR: (If Known) _____ RESPONSIBLE AGENT: _____
 NAME Union Drilling NAME Rickard L. Hopkins
 ADDRESS Drawer 40, Buckhannon, WV ADDRESS PO Box 816, Buckhannon, WV
 TELEPHONE 472-4610 TELEPHONE 472-9113
 ESTIMATED DEPTH OF COMPLETED WELL: 5400' ROTARY X CABLE TOOLS _____
 PROPOSED GEOLOGICAL FORMATION: Devonian Shale
 TYPE OF WELL: OIL _____ GAS X COMB _____ STORAGE _____ DISPOSAL _____
 RECYCLING _____ WATER FLOOD _____ OTHER _____

TENTATIVE CASING PROGRAM:

CASING AND TUBING SIZE	USED FOR DRILLING	FEET IN WELL	CEMENT USED OR SACKS REQUIRED
20 - 1 1/2			
13 - 10			
9 - 5/8			
8 - 5/8	1200'	1200	cement to surface
7			
5 1/2			
4 1/2	5400'	5400	540 300 sks cement
1			Perf. Top
2			Perf. Bottom
LINKS			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS 365' FEET _____ SALT WATER _____ FEET _____
 APPROXIMATE COAL DEPTHS 305-365'
 IS COAL BEING MINED IN THE AREA? _____ BY WHOM? _____

TO DRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, \$100.00 PERMIT FEE, PERFORMANCE BOND AND PERMANENT COPY OF PLAT.

TO DRILL DEEPER OR REDRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, SHOWING ORIGINAL PERMIT NUMBER AND PERFORMANCE BOND ON WELLS DRILLED PRIOR TO 1929, A PERMANENT COPY OF THE PLAT AND THE ORIGINAL WELL RECORD MUST ALSO BE SUBMITTED.

TO FRACTURE - STIMULATE:

OIL AND/OR GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1929, FIVE (5) COPIES OG - 1, PERFORMANCE BOND, PERMANENT PLAT AND ORIGINAL WELL RECORD.

OIL AND/OR GAS WELL ORIGINALLY DRILLED ON AND/OR AFTER JUNE 5, 1929, FIVE COPIES OG - 1, SHOWING ORIGINAL PERMIT NUMBER, AND PERFORMANCE BOND.

Required forms must be filed within ninety (90) days of completion for bond release. Inspector to be notified twenty-four (24) hours in advance.

The following waiver must be completed by the coal operator if the permit is to be issued within ten days of receipt thereof.

WAIVER: I the undersigned, Agent for _____ Coal Company, Owner or Operator of the coal under this lease have examined and place on our mine maps this proposed well location.

We the _____ Coal Company have no objections to said well being drilled at this location, providing operator has complied with all rules and regulations in Articles 4, 5, and 7, Chapter 22 of the West Virginia Code.

 For Coal Company

 Official Title



1) Date: July 16, 19 87
 2) Operator's Well No. MORGAN A#1
 3) API Well No. 47 - 017 - 2923 - FRAC
 State County Permit

FORM WW-2(B) FILE COPY
 (Obverse)
RECEIVED
 JUL 22 1987

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)
- 5) LOCATION: Elevation: 1390' GL Watershed: Big Isaac Creek
 District: Greenbriar County: Doddridge Quadrangle: Big Isaac 7.5' 252
- 6) WELL OPERATOR NATURAL RESOURCE CODE: 34550 7) DESIGNATED AGENT Dave Cash
 Address MANAGEMENT CORP., 681 Andersen Drive, Foster Plaza VI, Pittsburgh, PA 15220 Address Natural Resource Management Corp. 312 Sixth Ave., Charleston, WV 25303
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED 1046 Name Mike Underwood 9) DRILLING CONTRACTOR:
 Address Rt. 2 Box 135 Salem, WV 26426 Name Unknown at this time
 Address _____
- 10) PROPOSED WELL WORK: Drill / Drill deeper / Redrill / Stimulate /
 Plug off old formation / Perforate new formation / ~~None~~
 Other physical change in well (specify) Set stage plug @ + 5260' perf & stim
- 11) GEOLOGICAL TARGET FORMATION, Benson ~~new formation~~ comingled prod.
 12) Estimated depth of completed well, 5150 feet
 13) Approximate trata depths: Fresh, None feet; salt, None feet.
 14) Approximate coal seam depths: None Is coal being mined in the area? Yes / No

15) CASING AND TUBING PROGRAM

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	<u>11</u>					<u>151</u>	<u>151</u>		Kinds
Fresh water									
Coal									Sizes
Intermediate	<u>8 5/8</u>					<u>1358</u>	<u>1358</u>	<u>320 SKS</u>	Depths set
Production	<u>4 1/2</u>						<u>5616</u>	<u>140 SKS</u>	
Tubing									Perforations: Top Bottom
Liners									

- Existing; see attached well record

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-017-2923-FRAC Date August 10 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 August 10 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"/>	Fee: <u>221</u> <u>1340</u>	Other: <input checked="" type="checkbox"/>
---	--	--------------------------------	--

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.