

OBVERSE

HIGHLANDER RESOURCES, INC.  
LLOYD BLAKE  
BLAKE-WOLF RUN UNIT #1  
WA-5  
SUR. EL. - 2120.5' GR.  
WALLACE 7 1/2'

API Well No. 45 - - -  
State County Permit

Date: December 5, 1983

Operator's  
Well No. One (1) Wolf Run-Blake  
Permit No. WA-5



VIRGINIA OIL AND GAS INSPECTOR  
DEPARTMENT OF LABOR AND INDUSTRY  
DIVISION OF MINES  
219 Wood Avenue  
Big Stone Gap, Virginia 24219-2799  
Phone 703-523-0335

REPORT OF COMPLETION OF WELL WORK

Pursuant to Regulation 4.06 of the Regulations under the Virginia Oil and Gas Act, the undersigned well operator reports completion of the type(s) of well work specified below on the referenced well in Tyler District, Washington County, Virginia:

WELL TYPE: Oil \_\_\_ / Gas  / Enhanced recovery \_\_\_ / Waste disposal \_\_\_ /  
If "Gas", Production  / Underground storage \_\_\_ /

Exempt by Code § 45.1-300.B.1 from general oil and gas conservation law: Yes \_\_\_ / No  /

WELL WORK: Drill  / Deepen \_\_\_ / Redrill \_\_\_ / Stimulate  /  
Plug off old formation \_\_\_ / Perforate new formation  /  
Plug  / Replug \_\_\_ /  
Other physical change in well (specify) \_\_\_\_\_

The well work was done as shown in the Appendix(es) applicable to the type(s) of well work involved. If the well work included the drilling of a new well, the certification of the location is on the reverse hereof.

CONFIDENTIALITY STATUS UNDER CODE OF VIRGINIA § 45.1-332:

\_\_\_ Ninety days from the filing of this report,

or

Two years from 4/17, 1981, the date on which the referenced well was completed, the well being an exploratory well as defined in Code of Virginia § 45.1-288.21.

APPLICANT: Highlander Resources, Inc.  
By: Rocky Arrell  
Its Corporate Secretary - Rocky Arrell  
Address: P. O. Box 1018 \* Graham, Texas 76046  
Telephone: 817-549-5490

Date: December 5, 19 83

Operator's  
Well No. One(1) Wolf Run-Blake

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

DRILLING CONTRACTOR Ray Resources, Inc.  
Charleston, West Virginia  
Address: \_\_\_\_\_  
Telephone: \_\_\_\_\_

GEOLOGICAL TARGET FORMATION Top/Devonian

DEPTH OF COMPLETED WELL 7140' feet Chemung

DRILLING RIG Rotary X / Cable tool    /

GEOLOGICAL DATA Depth Thickness  
Top Bottom

Fresh water: refer to geologic report of Charles S. Bartlett, Jr., attached  
240', 398', 3809'

Salt water:

	Name	MINING IN AREA?		
		Yes	No	Mined Out
Coal seams: <u>NONE</u>	_____			

	Name
Oil and gas: <u>1525' show of gas (Fido)</u>	_____
<u>1640'</u>	"
<u>4528'</u>	<u>(Little Valley)</u>

The data on depth of strata is based on the source(s) checked below:

- Applicant's own drilling experience in the area
- Information supplied by the coal operator in the area
- Information already in the possession of the Inspector
- As follows: electric log correlation with well sample returns

OTHER GENERAL INFORMATION

An electric log survey was x/ was not \_\_\_/ conducted pursuant to Code of Virginia § 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 \_\_\_/ did not x/ 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 § 45.1-333.B.3.

Deviation surveys were \_\_\_/ were not x/ required under Code of Virginia § 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 § 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 additional sheets if such are required.

CASING AND TUBING PROGRAM

PRELIMINARY INFORMATION

Is the subject well underlaid by the red shales? Yes \_\_\_ / No x /  
 If "Yes", was a coal protection string set to the red shales? Yes \_\_\_ / No \_\_\_ /

PROGRAM DETAILS

	Size	Top	Bottom	Length	Perforated	
					From	To
<u>Conductor</u>	11-3/4"	ground	598'			

Casing circulated and cemented in to the surface:

7 7/8"      14'      4180'      4166'      top of cement at 4120'

Coal protection casing set under the special rule of Code of Virginia § 45.1-334.B:

N/A

Other casing and tubing left in the well:

none

Liners left in well, under Code of Virginia § 45.1-336 or otherwise:

none

Other casing used in drilling but not left in the well:

NA      none

Packers or bridge plugs:      Kind      Size      Set At

NA      none

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

well is now temporarily abandoned, pending casing removal and fiaal plugging

SAMPLES AND CUTTINGS

will \_\_\_ / will not \_\_\_ / be available for examination by a member of the  
 Virginia Geological Survey;  
 will \_\_\_ / will not \_\_\_ / be furnished the Virginia Geological Survey upon  
 request;



DRILLER'S LOG

Compiled by C.S. Bartlett, Jr., Phd.

<u>Geologic Age</u>	<u>Formation</u>	<u>General Lithology</u>	<u>Color</u>	<u>Depth (feet)</u>		<u>Thickness</u>	<u>Remarks</u>
				<u>Top</u>	<u>Bottom</u>		



**BARTLETT & ASSOCIATES**  
 GEOLOGICAL CONSULTANTS

102 S. COURT STREET  
 ABINGDON, VIRGINIA 24210  
 703/628-~~XXXX~~  
 4136

TO: Mr. W. D. Hale  
 Highlander Resources  
 P.O. Box 1123  
 Graham, Texas 76046

FROM: Charles S. Bartlett, Jr., Ph.D.

RE: Summary and completion recommendations - Highlander #1 Blake,  
 Wolf Run Prospect, Washington County, Virginia.

FORMATION TOPS:

<u>NAME</u>	<u>TOP</u>	<u>BASE</u>	<u>NOTES</u>
Pennington Formation	spud in	515'	H2O @ 240, mist drill, 1" flow H2O @ 398'.
Cove Creek Limestone	515'	1530'	
Fido Sandstone	1530'	1587'	Gas show @ 1525', @ 1640' continuous flare, estimated 500 MCF gradual blow down to gas on conn. in 2 days.
Gasper Limestone	1587'	2615'	Top 889' low to Early Grove #1 Dorton.
Ste. Genevieve Limestone	2615'	3940'	Top 869' low to #1 Dorton. H2O @ 3809', mud up.
St. Louis (Hillsdale) Fm.	3940'	4355'	Top 897' low to #1 Dorton. Lost circulation @ 3964'. Est 8500 BBL. wtr. lost. Set 8 5/8" @ 4180'. ? wtr. @ 4319', squeeze w/150 sacks, Mist drill.
Little Valley Formation	4355'	5030'	Top 894' low to #1 Dorton. Gas flare @ 4528', continuous blow w/ slugs of H2O, est. 500 + MCI H2O increase @ 4630' mud up @ 4665', gas kick in mud @ 4885'.
McCrary Formation	5030'	6300'	Top 754' low to #1 Dorton, gas kick in mud @ 5101'.
Price Formation	6300'	7090'	Top 1734' low to #1 Dorton
Hayters Sand Mbr.	6350'	6425'	
Greendale Mbr.	6425'	7050'	
Big Stone Gap Shale	7050'	7054'	
Berea Sand	7054'	7090'	Top 1877' low to Early Grove #2 Ridgeway.

DRILLER'S LOG

Compiled by C.S. Bartlett, Jr., Phd.

<u>Geologic Age</u>	<u>Formation</u>	<u>General Lithology</u>	<u>Color</u>	<u>Depth (feet)</u>		<u>Thickness</u>	<u>Remarks</u>
				<u>Top</u>	<u>Bottom</u>		



**BARTLETT & ASSOCIATES**  
GEOLOGICAL CONSULTANTS

102 S. COURT STREET  
ABINGDON, VIRGINIA 24210  
703/628-~~2111~~  
4136

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Highlander Resources  
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Graham, Texas 76046

FROM: Charles S. Bartlett, Jr., Ph.D.

RE: Summary and completion recommendations - Highlander #1 Blake,  
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Berea Sand	7054'	7090'	Top 1877' low to Early Grove #2 Ridgeway.
Chemung Formation	7090'	7140'	T.D.

Legal Location: Sec. - Top - Rng. WALLACE QUADRANGLE  
 Lease Name: BLAKE  
 Well No. 1  
 Test No. 2  
 Field Area: WILDCAT  
 County: WASHINGTON  
 State: VIRGINIA  
 Tested Interval: 6300' - 6480'  
 Lease Owner/Company Name: HIGHLANDER RESOURCES

FLUID SAMPLE DATA		Date	Ticket Number
Sampler Pressure _____ P.S.I.G. at Surface		5-6-81	930210
Recovery: Cu. Ft. Gas _____	cc. Oil _____	Kind of D.S.T. OPEN HOLE	Halliburton Location HENDERSON
cc. Water _____	cc. Mud _____	Tester BLAND	Witness SHREVE
Tot. Liquid cc. _____	Gravity _____ * API @ _____ *F.	Drilling Contractor RAY RESOURCES	NM
Gas/Oil Ratio _____ cu. ft./bbl.		EQUIPMENT & HOLE DATA	
	RESISTIVITY _____ *F. _____ ppm	Formation Tested	Price Sand
	CHLORIDE CONTENT _____ ppm	Elevation	2123' Ft.
Recovery Water _____ @ _____ *F. _____ ppm		Net Productive Interval	- Ft.
Recovery Mud _____ @ _____ *F. _____ ppm		All Depths Measured From	Kelly Bushing
Recovery Mud Filtrate _____ @ _____ *F. _____ ppm		Total Depth	6480' Ft.
Mud Pit Sample _____ @ _____ *F. _____ ppm		Main Hole/Casing Size	7 7/8"
Mud Pit Sample Filtrate _____ @ _____ *F. _____ ppm		Drill Collar Length	- I.D. -
Mud Weight 10.5 vis 51 sec.		Drill Pipe Length	6262' I.D. 3.826"
		Packer Depth(s)	6292' - 6300' Ft.
		Depth Tester Valve	6276' Ft.

Cushion	TYPE NONE	AMOUNT	Depth Back Pres. Valve NONE	Surface Choke .75"	Bottom Choke .75"
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Recovered	30'	Feet of	very salty gassy cut drilling mud
Recovered		Feet of	
Recovered		Feet of	
Recovered		Feet of	
Recovered		Feet of	

Remarks: SEE PRODUCTION TEST DATA SHEET...

TEMPERATURE	Gauge No. 2552		Gauge No. 2551		Gauge No.		TIME (00:00-24:00 hrs.)	
	Depth:	2552	Depth:	2551	Depth:			
Est. 121 *F.	24	Hour Clock	24	Hour Clock	Hour Clock	Tool Opened 1250		
Actual *F.	Blanked Off	NO	Blanked Off	YES	Blanked Off	Opened Bypass 1625		
	Pressures		Pressures		Pressures		Reported	Computed
	Field	Office	Field	Office	Field	Office	Minutes	Minutes
Initial Hydrostatic	3481	3495.0	3511	3511.5				
First Period Flow	Initial	26	27.8	65	46.0			
	Final	26	27.8	65	46.0		35	
	Closed in	114	98.3	131	115.1		60	
Second Period Flow	Initial	26	27.8	65	59.2			
	Final	26	27.8	65	49.3		60	
	Closed in	32	42.6	65	59.2		60	
Third Period Flow	Initial							
	Final							
	Closed in							
Final Hydrostatic	3399	3409.2	3412	3430.7				

**FLUID SAMPLE DATA**

Sampler Pressure \_\_\_\_\_ P.S.I.G. at Surface

Recovery: Cu. Ft. Gas \_\_\_\_\_  
 cc. Oil \_\_\_\_\_  
 cc. Water \_\_\_\_\_  
 cc. Mud \_\_\_\_\_  
 Tot. Liquid cc. \_\_\_\_\_

Gravity \_\_\_\_\_ \* API @ \_\_\_\_\_ \*F.

Gas/Oil Ratio \_\_\_\_\_ cu. ft./bbl.

Date 4-21-81 Ticket Number 151296

Kind of D.S.T. OPEN HOLE TEST Halliburton Location HENDERSON

Tester STEVE RAINWATER Witness DAVE SHREVE

Drilling Contractor RAY RESOURCES TJH S

**EQUIPMENT & HOLE DATA**

Formation Tested Mc Cready

Elevation 2123' Ft.

Net Productive Interval \_\_\_\_\_ Ft.

All Depths Measured From Kelly Bushing

Total Depth 5184' Ft.

Main Hole/Casing Size 7 7/8"

Drill Collar Length \_\_\_\_\_ I.D. \_\_\_\_\_

Drill Pipe Length 4770' I.D. 3.826"

Packer Depth(s) 4802' - 4810' Ft.

Depth Tester Valve 4786' Ft.

	RESISTIVITY	CHLORIDE CONTENT
Recovery Water	_____ @ _____ *F. _____ ppm	
Recovery Mud	_____ @ _____ *F. _____ ppm	
Recovery Mud Filtrate	_____ @ _____ *F. _____ ppm	
Mud Pit Sample	_____ @ _____ *F. _____ ppm	
Mud Pit Sample Filtrate	_____ @ _____ *F. _____ ppm	
Mud Weight	10.0 vis 37 sec.	

TYPE	AMOUNT	Depth Back Ft.	Surface Choke	Bottom Choke
Cushion			.75"	.75"

Recovered	AMOUNT	Depth Back Ft.	Surface Choke	Bottom Choke
Recovered	1260 Feet of saltwater.		.75"	.75"
Recovered	Feet of			
Recovered	Feet of			
Recovered	Feet of			
Recovered	Feet of			

Remarks SEE PRODUCTION TEST DATA SHEET . . .

TEMPERATURE	Gauge No. 2552	Gauge No. 2551	Gauge No.	TIME		
	Depth: 4787 Ft.	Depth: 4838 Ft.	Depth: Ft.	(00:00-24:00 hrs.)		
Est. 110 *F.	24 Hour Clock	24 Hour Clock	Hour Clock	Tool Opened 0829		
	Blanked Off NO	Blanked Off YES	Blanked Off	Opened Bypass 1308		
Actual *F.	Pressures		Pressures	Reported Minutes		
	Field	Office	Field	Computed Minutes		
Initial Hydrostatic	2498	2503.2	2556	2539.4		
First Period Flow	Initial	525	521.3	543	557.1	
	Final	607	616.7	624	650.3	35 36
	Closed in	920	904.5	935	936.2	63 62
Second Period Flow	Initial	689	649.6	690	687.9	
	Final	706	703.9	722	735.2	91 87
	Closed in	920	896.3	935	926.4	90 94
Third Period Flow	Initial					
	Final					
	Closed in					
Final Hydrostatic	2482	2485.3	2507	2521.3		

Legal Location Sec. - Twp. - Rng. WALLACE QUADRANGLE

Lease Name BLAKE

Well No. 1

Test No. 1

Field Area WILDCAT

County WASHINGTON

State VIRGINIA

Tested Interval 4810' - 5184'

Lease Owner/Company Name HIGHLANDER RESOURCES

API Well No. 45 - -  
State County Permit

Date: December 5, 1983

Operator's  
Well No. One (1) ~~WOLF Run-Blake~~  
Permit No. WA-5

VIRGINIA OIL AND GAS INSPECTOR  
DEPARTMENT OF LABOR AND INDUSTRY  
DIVISION OF MINES  
219 Wood Avenue  
Big Stone Gap, Virginia 24219-2799  
Phone 703-523-0335



REPORT OF COMPLETION OF WELL WORK

Pursuant to Regulation 4.06 of the Regulations under the Virginia Oil and Gas Act, the undersigned well operator reports completion of the type(s) of well work specified below on the referenced well in Tyler District, Washington ~~black~~ County, Virginia:

WELL TYPE: Oil \_\_\_ / Gas x / Enhanced recovery \_\_\_ / Waste disposal \_\_\_  
If "Gas", Production x / Underground storage \_\_\_

Exempt by Code § 45.1-300.B.1 from general oil and gas conservation law: Yes \_\_\_ / No x

WELL WORK: Drill x / Deepen \_\_\_ / Redrill \_\_\_ / Stimulate x /  
Plug off old formation \_\_\_ / Perforate new formation x /  
Plug x / Replug \_\_\_ /  
Other physical change in well (specify) \_\_\_\_\_

The well work was done as shown in the Appendix(es) applicable to the type(s) of well work involved. If the well work included the drilling of a new well, the certification of the location is on the reverse hereof.

CONFIDENTIALITY STATUS UNDER CODE OF VIRGINIA § 45.1-332:

\_\_\_ Ninety days from the filing of this report,

or

x Two years from 4/17, 1981, the date on which the referenced well was completed, the well being an exploratory well as defined in Code of Virginia § 45.1-288.21.

APPLICANT: Highlander Resources, Inc.

By Rocky Arrell  
Its Corporate Secretary - Rocky Arrell

Address: P. O. Box 1018 \* Graham, Texas 76046

Telephone: 817+549-5490



OTHER GENERAL INFORMATION

An electric log survey was x/ was not\_\_\_/ conducted pursuant to Code of Virginia § 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\_\_\_/ did notx/ 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 § 45.1-333.B.3.

Deviation surveys were\_\_\_/ were notx/ required under Code of Virginia § 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 notx/ required under Code of Virginia § 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 notx/ 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 additional sheets if such are required.



CASING AND TUBING PROGRAM

## PRELIMINARY INFORMATION

Is the subject well underlain by the red shales? Yes \_\_\_/ No x/  
 If "Yes", was a coal protection string set to the red shales? Yes \_\_\_/ No \_\_\_/

PROGRAM DETAILS

<u>Size</u>	<u>Top</u>	<u>Bottom</u>	<u>Length</u>	<u>Perforated</u>	
				<u>From</u>	<u>To</u>
<u>Conductor</u> 11-3/4"	ground	598'			

Casing circulated and cemented in to the surface:

7 7/8"      14'      4180'      4166'      top of cement at 4120'

Coal protection casing set under the special rule of Code of Virginia § 45.1-334.B:

N/A

Other casing and tubing left in the well:

none

Liners left in well, under Code of Virginia § 45.1-336 or otherwise:

none

Other casing used in drilling but not left in the well:

N/A      none

Packers or bridge plugs:      Kind      Size      Set At

none

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

well is now temporarily abandoned, pending casing removal and final plugging

## SAMPLES AND CUTTINGS

will \_\_\_/ will not \_\_\_/ be available for examination by a member of the  
 Virginia Geological Survey;  
 will \_\_\_/ will not \_\_\_/ be furnished the Virginia Geological Survey upon  
 request;  
 will \_\_\_/ will not \_\_\_/ require sacks to be furnished by the Survey.  
 samples are being held by Charles S. Bartlett, Jr.'s office in Abingdon, VA



DRILLER'S LOG

Compiled by C.S. Bartlett, Jr., Phd.

<u>Geologic Age</u>	<u>Formation</u>	<u>General Lithology</u>	<u>Color</u>	<u>Depth (feet)</u>		<u>Thickness</u>	<u>Remarks</u>
				<u>Top</u>	<u>Bottom</u>		



**BARTLETT & ASSOCIATES**  
 GEOLOGICAL CONSULTANTS

102 S. COURT STREET  
 ABINGDON, VIRGINIA 24210  
 703/628-~~XXXX~~  
 4136

TO: Mr. W. D. Hale  
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FORMATION TOPS:

<u>NAME</u>	<u>TOP</u>	<u>BASE</u>	<u>NOTES</u>
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Little Valley Formation	4355'	5030'	Top 894' low to #1 Dorton. Gas flare @ 45 continuous blow w/ slugs of H2O, est. 500 + H2O increase @ 4630' mud up @ 4665', gas kick in mud @ 4885'.
McCrary Formation	5030'	6300'	Top 754' low to #1 Dorton, gas kick in mud 5101'.
Price Formation	6300'	7090'	Top 1734' low to #1 Dorton
Hayters Sand Mbr.	6350'	6425'	
Greendale Mbr.	6425'	7050'	
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Chemung Formation	7090'	7140'	T.D.

Legal Location  
Sec. - Twp. - Rng.

WALLACE QUADRANGLE

Field Area  
Meo. From Tester Valve  
WILDCAT

County

WASHINGTON

State  
VIRGINIA

FLUID SAMPLE DATA

Date 4-21-81 Ticket Number 151296

Sampler Pressure \_\_\_\_\_ P.S.I.G. at Surface  
Recovery: Cu. Ft. Gas \_\_\_\_\_  
cc. Oil \_\_\_\_\_  
cc. Water \_\_\_\_\_  
cc. Mud \_\_\_\_\_  
Tot. Liquid cc. \_\_\_\_\_

Kind of D.S.T. OPEN HOLE TEST Halliburton Location HENDERSON

Tester STEVE RAINWATER Witness DAVE SHREVE

Drilling Contractor RAY RESOURCES TJH S

Gravity \_\_\_\_\_ \* API @ \_\_\_\_\_ \* F.  
Gas/Oil Ratio \_\_\_\_\_ cu. ft./bbl.

EQUIPMENT & HOLE DATA

Formation Tested Mc Cready  
Elevation 2123' Ft.  
Net Productive Interval \_\_\_\_\_ Ft.  
All Depths Measured From Kelly Bushing  
Total Depth 5184' Ft.  
Main Hole/Casing Size 7 7/8"  
Drill Collar Length \_\_\_\_\_ I.D.  
Drill Pipe Length 4770' I.D. 3.826"  
Packer Depth(s) 4802' - 4810' Ft.  
Depth Tester Valve 4786' Ft.

RESISTIVITY CHLORIDE CONTENT  
Recovery Water \_\_\_\_\_ @ \_\_\_\_\_ \* F. \_\_\_\_\_ ppm  
Recovery Mud \_\_\_\_\_ @ \_\_\_\_\_ \* F. \_\_\_\_\_ ppm  
Recovery Mud Filtrate \_\_\_\_\_ @ \_\_\_\_\_ \* F. \_\_\_\_\_ ppm  
Mud Pit Sample \_\_\_\_\_ @ \_\_\_\_\_ \* F. \_\_\_\_\_ ppm  
Mud Pit Sample Filtrate \_\_\_\_\_ @ \_\_\_\_\_ \* F. \_\_\_\_\_ ppm  
Mud Weight 10.0 vis 37 sec.

TYPE	AMOUNT	Depth Back Ft.	Surface Choke	Bottom Choke
Cushion		Pres. Valve	.75"	.75"

Recovered 1260 Feet of saltwater.

Recovered \_\_\_\_\_ Feet of \_\_\_\_\_

Recovered \_\_\_\_\_ Feet of \_\_\_\_\_

Recovered \_\_\_\_\_ Feet of \_\_\_\_\_

Recovered \_\_\_\_\_ Feet of \_\_\_\_\_

Remarks SEE PRODUCTION TEST DATA SHEET . . . .

TEMPERATURE	Gauge No. 2552	Gauge No. 2551	Gauge No.	TIME (00:00-24:00 hrs.)			
	Depth: 4787 Ft.	Depth: 4838 Ft.	Depth: _____ Ft.				
Est. 110 *F.	24 Hour Clock	24 Hour Clock	Hour Clock	Tool Opened 0829			
Actual _____ *F.	Blanked Off NO	Blanked Off YES	Blanked Off	Open Bypass 1308			
	Field	Office	Field	Office	Reported	Computed	
Initial Hydrostatic	2498	2503.2	2556	2539.4	Minutes	Minutes	
First Period	Flow Initial	525	521.3	543	557.1	_____	_____
	Flow Final	607	616.7	624	650.3	35	36
	Closed in	920	904.5	935	936.2	63	62
Second Period	Flow Initial	689	649.6	690	687.9	_____	_____
	Flow Final	706	703.9	722	735.2	91	87
	Closed in	920	896.3	935	926.4	90	94
Third Period	Flow Initial					_____	_____
	Flow Final						
	Closed in						
Final Hydrostatic	2482	2485.3	2507	2521.3			

FLUID SAMPLE DATA				Date 5-6-81		Ticket Number 930210	
Sampler Pressure _____ P.S.I.G. at Surface				Kind of D.S.T. <b>OPEN HOLE</b>		Halliburton Location <b>HENDERSON</b>	
Recovery: Cu. Ft. Gas _____				Tester <b>BLAND</b>		Witness <b>SHREVE</b>	
cc. Oil _____				Drilling Contractor <b>RAY RESOURCES</b> <span style="float:right">NM</span>			
cc. Water _____				EQUIPMENT & HOLE DATA			
cc. Mud _____				Formation Tested <b>Price Sand</b>			
Tot. Liquid cc. _____				Elevation <b>2123'</b> <span style="float:right">Ft.</span>			
Gravity _____ * API @ _____ *F.		Gas/Oil Ratio _____ cu. ft./bbl.		Net Productive Interval _____ <span style="float:right">Ft.</span>			
RESISTIVITY		CHLORIDE CONTENT		All Depths Measured From <b>Kelly Bushing</b>			
Recovery Water _____ @ _____ *F. _____ ppm		Recovery Mud _____ @ _____ *F. _____ ppm		Total Depth <b>6480'</b> <span style="float:right">Ft.</span>			
Recovery Mud Filtrate _____ @ _____ *F. _____ ppm		Mud Pit Sample _____ @ _____ *F. _____ ppm		Main Hole/Casing Size <b>7 7/8"</b>			
Mud Pit Sample Filtrate _____ @ _____ *F. _____ ppm		Mud Weight <b>10.5</b> vis <b>51</b> sec.		Drill Collar Length _____ I.D. _____			
				Drill Pipe Length <b>6262'</b> I.D. <b>3.826"</b>			
				Packer Depth(s) <b>6292' - 6300'</b> <span style="float:right">Ft.</span>			
				Depth Tester Valve <b>6276'</b> <span style="float:right">Ft.</span>			
Cushion		TYPE <b>NONE</b>		Depth Back Pres. Valve <b>NONE</b>		Surface Choke <b>.75"</b> Bottom Choke <b>.75"</b>	
Recovered <b>30'</b> Feet of <b>very salty gassy cut drilling mud</b>							
Recovered _____ Feet of _____							
Recovered _____ Feet of _____							
Recovered _____ Feet of _____							
Recovered _____ Feet of _____							
Remarks <b>SEE PRODUCTION TEST DATA SHEET...</b>							
TEMPERATURE		Gauge No. <b>2552</b>		Gauge No. <b>2551</b>		Gauge No. _____	
Depth: _____ Ft.		Depth: <b>6277'</b> Ft.		Depth: <b>6319'</b> Ft.		TIME (00:00-24:00 hrs.)	
Est. <b>121</b> *F.		Hour Clock <b>24</b>		Hour Clock <b>24</b>		Tool Opened <b>1250</b>	
Blanked Off <b>NO</b>		Blanked Off <b>YES</b>		Blanked Off _____		Opened Bypass <b>1625</b>	
Actual _____ *F.		Pressures		Pressures		Pressures	
		Field Office		Field Office		Field Office	
Initial Hydrostatic		<b>3481 3495.0</b>		<b>3511 3511.5</b>		Reported _____ Computed _____	
Flow Initial		<b>26 27.8</b>		<b>65 46.0</b>		Minutes _____ Minutes _____	
Flow Final		<b>26 27.8</b>		<b>65 46.0</b>		<b>35</b>	
Closed in		<b>114 98.3</b>		<b>131 115.1</b>		<b>60</b>	
Flow Initial		<b>26 27.8</b>		<b>65 59.2</b>		_____	
Flow Final		<b>26 27.8</b>		<b>65 49.3</b>		<b>60</b>	
Closed in		<b>32 42.6</b>		<b>65 59.2</b>		<b>60</b>	
Flow Initial		_____		_____		_____	
Flow Final		_____		_____		_____	
Closed in		_____		_____		_____	
Final Hydrostatic		<b>3399 3409.2</b>		<b>3412 3430.7</b>		_____	

Legal Location Sec. - Twp. - Rng. **WALLACE QUADRANGLE**  
 Lease Name **WILDCAT**  
 Well No. **WASHINGTON**  
 Test No. **VIRGINIA**  
 Tested Interval  
 County  
 State

API Well No. 45 - - -  
State County Permit

WA-5  
WALLACE-7 1/2'

Date: December 5, 19 83

Operator's  
Well No. One (1) Wolf Run-Blake  
Permit No. WA-5

VIRGINIA OIL AND GAS INSPECTOR  
DEPARTMENT OF LABOR AND INDUSTRY  
DIVISION OF MINES  
219 Wood Avenue  
Big Stone Gap, Virginia 24219-2799  
Phone 703-523-0335



REPORT OF COMPLETION OF WELL WORK

Pursuant to Regulation 4.06 of the Regulations under the Virginia Oil and Gas Act, the undersigned well operator reports completion of the type(s) of well work specified below on the referenced well in Tyler District, Washington County, Virginia:

WELL TYPE: Oil    / Gas x / Enhanced recovery    / Waste disposal    /  
If "Gas", Production x / Underground storage    /

Exempt by Code § 45.1-300.B.1 from general oil and gas conservation law: Yes    / No x /

WELL WORK: Drill x / Deepen    / Redrill    / Stimulate x /  
Plug off old formation    / Perforate new formation x /  
Plug x / Replug    /  
Other physical change in well (specify)   

The well work was done as shown in the Appendix(es) applicable to the type(s) of well work involved. If the well work included the drilling of a new well, the certification of the location is on the reverse hereof.

CONFIDENTIALITY STATUS UNDER CODE OF VIRGINIA § 45.1-332:

   Ninety days from the filing of this report,

or

x Two years from 4/17, 19 81, the date on which the referenced well was completed, the well being an exploratory well as defined in Code of Virginia § 45.1-288.21.

APPLICANT: Highlander Resources, Inc.

By Rocky Arrell  
Its Corporate Secretary - Rocky Arrell

Address: P. O. Box 1018 \* Graham, Texas 76046

Telephone: 817+549-5490



WA-5

Date: December 5, 19 83

Operator's  
Well No. One(1) Wolf Run-Blake

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

DRILLING CONTRACTOR Ray Resources, Inc.  
Charleston, West Virginia  
Address: \_\_\_\_\_  
Telephone: \_\_\_\_\_

GEOLOGICAL TARGET FORMATION Top/Devonian

DEPTH OF COMPLETED WELL 7140' feet Chemung

DRILLING RIG Rotary x / Cable tool    /

GEOLOGICAL DATA      Depth      Thickness  
                         Top      Bottom

Fresh water:      refer to geologic report of Charles S. Bartlett, Jr., attached

Salt water:

	Name	MINING IN AREA?		
		Yes	No	Mined Out
Coal seams:	_____			

Oil and gas:	_____
--------------	-------

The data on depth of strata is based on the source(s) checked below:  
\_\_\_ Applicant's own drilling experience in the area  
\_\_\_ Information supplied by the coal operator in the area  
\_\_\_ Information already in the possession of the Inspector  
\_\_\_ As follows: electric log correlation with well sample returns



OTHER GENERAL INFORMATION

An electric log survey was x/ was not \_\_\_/ conducted pursuant to Code of Virginia § 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 \_\_\_/ did not x/ 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 § 45.1-333.B.3.

Deviation surveys were \_\_\_/ were not x/ required under Code of Virginia § 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 § 45.1-333.C.

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

CHANGES IN THE PERMITTED WELL WORK

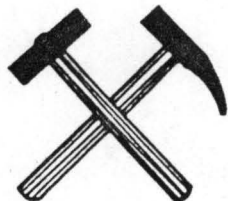
The well operator did \_\_\_/ did not x/ make any change(s) in the permitted well work, verbally approved by the Inspector or Assistant Inspector under Regulation 4.03 of the Regulations under the Virginia Oil and Gas Act, for the purpose of insuring successful completion of the well work.

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

DRILLER'S LOG

Compiled by C.S. Bartlett, Jr., Phd.

<u>Geologic Age</u>	<u>Formation</u>	<u>General Lithology</u>	<u>Color</u>	<u>Depth (feet)</u>		<u>Thickness</u>	<u>Remarks</u>
				<u>Top</u>	<u>Bottom</u>		



**BARTLETT & ASSOCIATES**  
 GEOLOGICAL CONSULTANTS

102 S. COURT STREET  
 ABINGDON, VIRGINIA 24210  
 703/628-~~3333~~  
 4136

TO: Mr. W. D. Hale  
 Highlander Resources  
 P.O. Box 1123  
 Graham, Texas 76046

FROM: Charles S. Bartlett, Jr., Ph.D.

RE: Summary and completion recommendations - Highlander #1 Blake,  
 Wolf Run Prospect, Washington County, Virginia.

FORMATION TOPS:

<u>NAME</u>	<u>TOP</u>	<u>BASE</u>	<u>NOTES</u>
Pennington Formation	spud in	515'	H2O @ 240, mist drill, 1" flow H2O @ 398'.
Cove Creek Limestone	515'	1530'	
Fido Sandstone	1530'	1587'	Gas show @ 1525', @ 1640' continuous flare, estimated 500 MCF gradual blow down to gas on conn. in 2 days.
Gasper Limestone	1587'	2615'	Top 889' low to Early Grove #1 Dorton.
Ste. Genevieve Limestone	2615'	3940'	Top 869' low to #1 Dorton. H2O @ 3809', mud up
St. Louis (Hillsdale) Fm.	3940'	4355'	Top 897' low to #1 Dorton. Lost circulation @ 3964'. Est 8500 BBL. wtr. lost. Set 8 5/8" @ 4180'. ? wtr. @ 4319', squeeze w/150 sacks, Mist drill.
Little Valley Formation	4355'	5030'	Top 894' low to #1 Dorton. Gas flare @ 4528' continuous blow w/ slugs of H2O, est. 500 + MC H2O increase @ 4630' mud up @ 4665', gas kick in mud @ 4885'.
McCrary Formation	5030'	6300'	Top 754' low to #1 Dorton, gas kick in mud @ 5101'.
Price Formation	6300'	7090'	Top 1734' low to #1 Dorton
Hayters Sand Mbr.	6350'	6425'	
Greendale Mbr.	6425'	7050'	
Big Stone Gap Shale	7050'	7054'	
Berea Sand	7054'	7090'	Top 1877' low to Early Grove #2 Ridgeway.
Chemung Formation	7090'	7140'	T.D.



CASING AND TUBING PROGRAM

PRELIMINARY INFORMATION

Is the subject well underlaid by the red shales? Yes \_\_\_ / No x /  
 If "Yes", was a coal protection string set to the red shales? Yes \_\_\_ / No \_\_\_ /

PROGRAM DETAILS

Size	Top	Bottom	Length	Perforated	
				From	To
<u>Conductor</u> 11-3/4"	ground	598'			

Casing circulated and cemented in to the surface:

14' 4180' 4166' top of cement at 4120'

Coal protection casing set under the special rule of Code of Virginia § 45.1-334.B:

N/A

Other casing and tubing left in the well:

none

Liners left in well, under Code of Virginia § 45.1-336 or otherwise:

none

Other casing used in drilling but not left in the well:

N/A none

Packers or bridge plugs: Kind Size Set At

N/A none

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

well is now temporarily abandoned, pending casing removal and fiaal plugging

SAMPLES AND CUTTINGS

will \_\_\_ / will not \_\_\_ / be available for examination by a member of the Virginia Geological Survey;  
 will \_\_\_ / will not \_\_\_ / be furnished the Virginia Geological Survey upon request;  
 will \_\_\_ / will not \_\_\_ / require sacks to be furnished by the Survey.  
 samples are being held by Charles S. Bartlett, Jr.'s office in Abingdon, VA

FLUID SAMPLE DATA		Date 4-21-81	Ticket Number 151296
Sampler Pressure _____ P.S.I.G. at Surface		Kind of D.S.T. OPEN HOLE TEST	Halliburton Location HENDERSON
Recovery: Cu. Ft. Gas _____		Tester STEVE RAINWATER	Witness DAVE SHREVE
cc. Oil _____		Drilling Contractor RAY RESOURCES TJH S	
cc. Water _____		EQUIPMENT & HOLE DATA	
cc. Mud _____		Formation Tested Mc Cready	
Tot. Liquid cc. _____		Elevation 2123' Ft.	
Gravity _____ ° API @ _____ ° F.		Net Productive Interval _____ Ft.	
Gas/Oil Ratio _____ cu. ft./bbl.		All Depths Measured From Kelly Bushing	
RESISTIVITY _____ CHLORIDE CONTENT _____		Total Depth 5184' Ft.	
Recovery Water _____ @ _____ ° F. _____ ppm		Main Hole/Casing Size 7 7/8"	
Recovery Mud _____ @ _____ ° F. _____ ppm		Drill Collar Length _____ I.D. _____	
Recovery Mud Filtrate _____ @ _____ ° F. _____ ppm		Drill Pipe Length 4770' I.D. 3.826"	
Mud Pit Sample _____ @ _____ ° F. _____ ppm		Packer Depth(s) 4802' - 4810' Ft.	
Mud Pit Sample Filtrate _____ @ _____ ° F. _____ ppm		Depth Tester Valve 4786' Ft.	
Mud Weight 10.0 vis 37 sec.			

TYPE	AMOUNT	Depth Back Ft.	Surface Choke	Bottom Choke
Cushion			.75"	.75"

Recovered	1260	Feet of	saltwater.	Meo. From Tester Valve
Recovered		Feet of		
Recovered		Feet of		
Recovered		Feet of		
Recovered		Feet of		

Remarks SEE PRODUCTION TEST DATA SHEET . . .

TEMPERATURE		Gauge No. 2552	Gauge No. 2551	Gauge No.	TIME (00:00-24:00 hrs.)	
Depth: 4787 Ft.		Depth: 4838 Ft.	Depth:			
24 Hour Clock		24 Hour Clock		Hour Clock		
Est. 110 °F.	Blanked Off NO	Blanked Off YES	Blanked Off	Tool Opened 0829		
Actual °F.	Pressures		Pressures		Opened Bypass 1308	
	Field	Office	Field	Office	Reported Minutes	
Initial Hydrostatic	2498	2503.2	2556	2539.4	Computed Minutes	
First Period	Flow Initial	525	521.3	543	557.1	
	Flow Final	607	616.7	624	650.3	35 36
	Closed in	920	904.5	935	936.2	63 62
Second Period	Flow Initial	689	649.6	690	687.9	
	Flow Final	706	703.9	722	735.2	91 87
	Closed in	920	896.3	935	926.4	90 94
Third Period	Flow Initial					
	Flow Final					
	Closed in					
	Final Hydrostatic	2482	2485.3	2507	2521.3	

Legal Location Sec. - Twp. - Rng. WALLACE QUADRANGLE  
 Lease Name BLAKE  
 Test No. 1  
 Field Area WILDCAT  
 County WASHINGTON  
 State VIRGINIA  
 Tested Interval 4810' - 5184'  
 Lease Owner/Company Name HIGHLANDER RESOURCES

BLAKE ( )  
 Lease Name  
 WALLACE QUADRANGLE  
 Well No. 1  
 Test No. 2  
 6300' - 6480'  
 Tested Interval  
 HIGHLANDER RESOURCES  
 Lease Owner/Company Name

FLUID SAMPLE DATA		Date	5-6-81	Ticket Number	930210
Sampler Pressure _____ P.S.I.G. at Surface	Recovery: Cu. Ft. Gas _____ cc. Oil _____ cc. Water _____ cc. Mud _____ Tot. Liquid cc. _____	Kind of D.S.T.	OPEN HOLE	Halliburton Location	HENDERSON
Gravity _____ * API @ _____ *F.	Gas/Oil Ratio _____ cu. ft./bbl.	Tester	BLAND	Witness	SHREVE
RESISTIVITY _____	CHLORIDE CONTENT _____	Drilling Contractor	RAY RESOURCES		NM
Recovery Water _____ @ _____ *F. _____ ppm	Recovery Mud _____ @ _____ *F. _____ ppm	EQUIPMENT & HOLE DATA			
Recovery Mud Filtrate _____ @ _____ *F. _____ ppm	Mud Pit Sample _____ @ _____ *F. _____ ppm	Formation Tested	Price Sand		
Mud Pit Sample Filtrate _____ @ _____ *F. _____ ppm	Mud Weight 10.5 vis 51 sec.	Elevation	2123' _____ Ft.		
		Net Productive Interval	_____ Ft.		
		All Depths Measured From	Kelly Bushing		
		Total Depth	6480' _____ Ft.		
		Main Hole/Casing Size	7 7/8"		
		Drill Collar Length	_____ I.D. _____		
		Drill Pipe Length	6262' _____ I.D. 3.826"		
		Packer Depth(s)	6292' - 6300' _____ Ft.		
		Depth Tester Valve	6276' _____ Ft.		

Cushion	TYPE	AMOUNT	Depth Back	Surface	Bottom
		NONE	Ft. Pres. Valve	Choke	Choke
			NONE	.75"	.75"

Recovered	30'	Feet of	very salty gassy cut drilling mud	Meo. From Tester Valve
Recovered		Feet of		
Recovered		Feet of		
Recovered		Feet of		
Recovered		Feet of		
Recovered		Feet of		

Remarks SEE PRODUCTION TEST DATA SHEET...

TEMPERATURE	Gauge No. 2552	Gauge No. 2551	Gauge No.	TIME (00:00-24:00 hrs.)	
	Depth: 6277' Ft.	Depth: 6319' Ft.	Depth: _____ Ft.		
Est. 121 *F.	24 Hour Clock	24 Hour Clock	Hour Clock	Tool Opened 1250	
Actual *F.	Blanked Off NO	Blanked Off YES	Blanked Off	Opened Bypass 1625	
	Pressures		Pressures		
	Field	Office	Field	Office	
Initial Hydrostatic	3481	3495.0	3511	3511.5	
First Period	Flow Initial	26	27.8	65	46.0
	Flow Final	26	27.8	65	46.0
	Closed in	114	98.3	131	115.1
Second Period	Flow Initial	26	27.8	65	59.2
	Flow Final	26	27.8	65	49.3
	Closed in	32	42.6	65	59.2
Third Period	Flow Initial				
	Flow Final				
Final Hydrostatic	3399	3409.2	3412	3430.7	

COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF LABOR AND INDUSTRY  
DIVISION OF MINES AND QUARRIES  
BIG STONE GAP, VIRGINIA 24219  
PHONE 703-523-0335

#1 Wolf Run Unit  
WILDCAT  
Washington Co., VA

APPLICATION FOR PERMIT TO (DRILL) (REDRILL) (DEEPEN) OIL OR GAS WELL

(Required by Section 45.1-115, Code of Virginia, 1950, 1954 and the 1966 Cumulative Supplement. To be accompanied by Permit fee of twenty-five dollars and bond and surety therefor, as specified by Section cited. To be submitted in duplicate, one copy to be returned to applicant after action by Division of Mines and Quarries.

TO: Division of Mines and Quarries  
Drawer V  
Big Stone Gap, Virginia 24219

Abingdon, Virginia 24210

Place

October 30, 1980 (Amended: 2/15/81)

Date

Gentlemen:

The undersigned hereby makes application for a Permit to drill, ~~redrill~~, or ~~deepen~~ (strike out two) a well for oil or gas on the L. Denver Blake Farm, comprising 55 acres, in the Tyler

District of Washington County, Virginia, having the fee title thereto, or as the case may be, under grant or ~~lease~~ dated September 10, 1980 made by L. Denver Blake et ux to W. D. Hale

and recorded on the 16th day of September, 1980 in the office of the County Clerk for the said County in Book 632 page 166.

The proposed location of the well is shown on a location plat or map submitted to the Division of Mines and Quarries, by the undersigned, together with Notice of Intention to Drill, Redrill or Deepen a Well for Oil or Gas on the day of 19.

The proposed well will be known as Well No. one (1) of HIGHLANDER RESOURCES, INC. (company, etc.) It is proposed to drill this well to a depth of about 7,500 feet.

The proposed location is about 400 feet distant from the nearest property or lease line; about N/A feet distant from the nearest mining opening, or quarry (strike out words not applicable) and/or about 5,000 feet distant from the nearest ~~drilling~~, abandoned, ~~producing~~, or ~~applied for~~ (strike out words not applicable) oil or gas (strike out words not applicable) well. one hundred(\$100)

There is enclosed herewith a certified check or U.S. Postal Money Order, in the amount of ~~twenty-five (\$25.)~~, payable to the Treasurer of Virginia, covering fee fro a Permit to Drill a Well for Cil or Gas, as required by Section 45.1-115, Code of Virginia, 1950, 1954 and the 1966 Cumulative Supplement. Bond and Surety therefor to insure compliance with the provisions of Chapter 8, Title 45, Code of Virginia, 1950 and the 1966 Supplement, for this well, in the amount of \$ 7,000.00 is submitted herewith of (give status of) \$5,000.00 Stabilization Bond-DMQ5A + \$2,000.00 Indemnity Bond-DMQ5B

Correspondence regarding this well should be addressed to

HIGHLANDER RESOURCES, INC. P. O. BOX 1018 GRAHAM, TEXAS 76046

Signature of officer or certifying party:

Rocky Arrell Name  
Secretary-Treasurer

Title

Very truly yours,

HIGHLANDER RESOURCES, INC.  
a/k/a HXR Company of Texas

~~Drilling Company~~ or Operator

102 South Court Street, Suite 200

Street

Abingdon, Virginia 24210

City or Town

VIRGINIA

State

Space below this line is for the use of the Board only.  
ACTION OF DIVISION OF MINES AND QUARRIES

Received on December 29, 1980.

Approved and Permit (no. 395) granted on March 11, 1981

Denied

Reasons for denial

DIVISION OF MINES AND QUARRIES

By

Title

File No. WA-5 Well No. HR-1 Permit No. 395



Commonwealth of Virginia  
DEPARTMENT OF LABOR AND INDUSTRY  
Division of Mines  
Big Stone Gap, Virginia

#1 Wolf Run Unit  
WILDCAT  
Washington, Co., VA

REVISED APPLICATION

~~REDELL~~  
NOTICE OF INTENTION TO DRILL OIL OR GAS WELL  
~~DEELEN~~

(One copy of this report and three identical copies of a plat or map, on a scale not smaller than 400 feet to the inch, and showing information required by Section 45-114, Code of Virginia, 1950, must be submitted to the Division of Mines, and copies sent by registered mail to all persons defined in above law, prior to obtaining a permit to drill.)

TO: DIVISION OF MINES Abingdon, Virginia 24210  
BIG STONE GAP, VIRGINIA Place  
October 30, 1980, 19 Date  
Gentlemen: (Amended: 2/15/81)

The undersigned proposes to begin as soon as a permit therefor is obtained from the Division of Mines, to drill, redrill or deepen (strike out two) a well for oil or gas on the L. Denver Blake Farm, comprising 55 acres, in the Tyler District of Washington County, Virginia, having the fee title thereto, or as the case may be, under grant or lease dated September 10, 1980, made by L. Denver Blake et ux to W. D. Hale and recorded on the 16th day of September, 1980 in the office of the County Clerk for said County in Book 632, page 166.

The proposed location of the well, as shown on the attached plat or map, is about 6,200 feet West of 82° 12' 30" and about 7,125 feet South of 36° 42' 30".

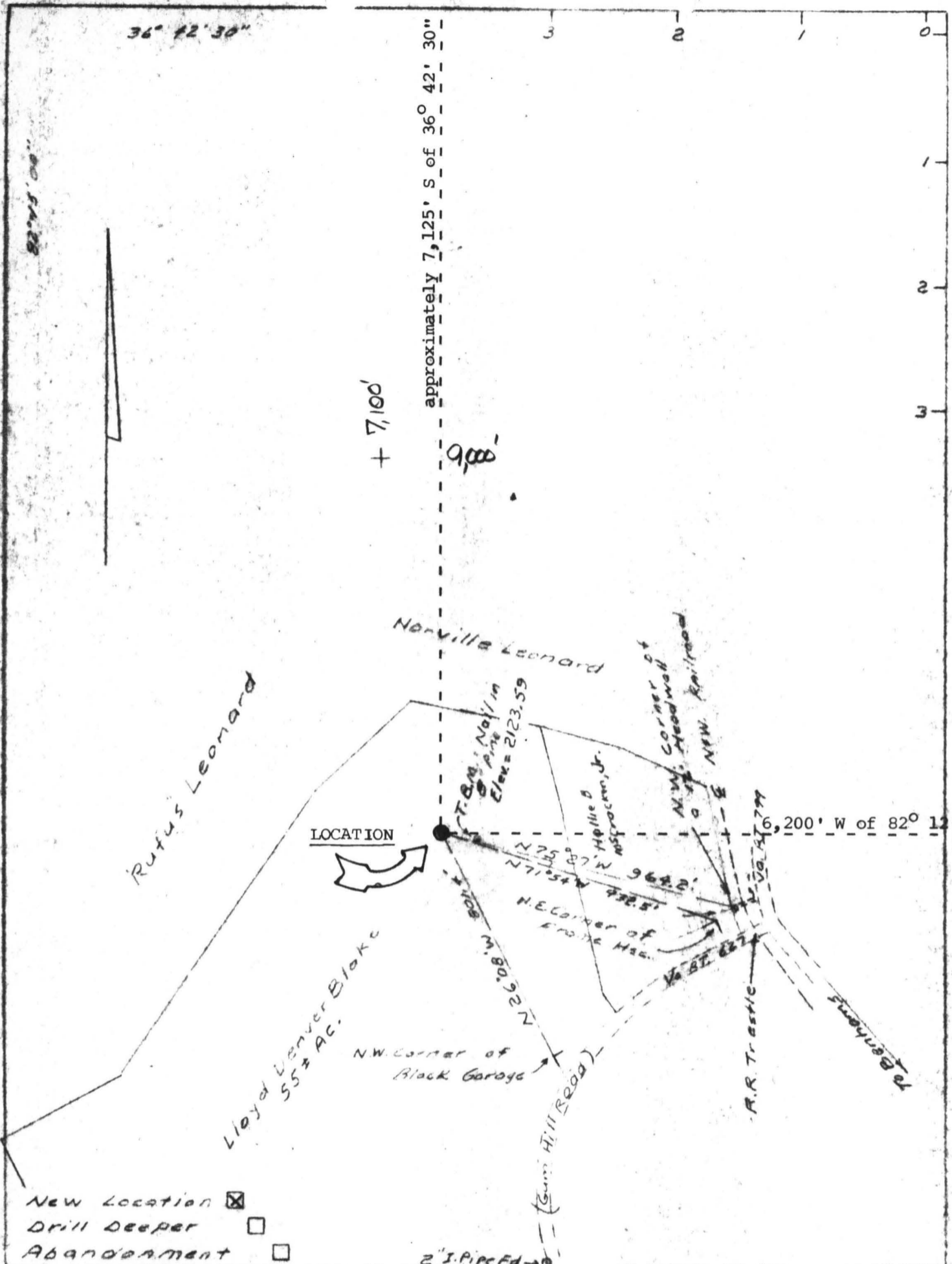
It is proposed to drill this well to a depth of about 7,500 feet. Samples or cuttings therefrom will be available for examination by a member of the staff of the Virginia Geological Survey. Cuttings will not be furnished the Survey.

A plat or map, in triplicate, on a scale not smaller than 400 feet to the inch, showing the proposed location of the well and other information, required in Section 45-114, Code of Virginia, 1950, is attached hereto. Copies of the plat and notice of intention to drill, redrill or deepen the aforementioned well have been sent to all interested persons as required by Section 45-114, above cited, as follows (List names and mail address of each. Use back of sheet if additional space is required):

- 1. L. Denver Blake 7420 Poplar Avenue Baltimore, Maryland 21224
- 2. Norville E. Leonard Route 2, Box 326 Bristol, VA 24201
- 3. H. B. McCracken Route 2 Bristol, VA 24201
- 4. William A. Leonard Route 2, Box 445 Bristol, VA 24201
- 5. Sam McCracken Route 2 Bristol, VA 24201
- 6. Charles Almaroad Route 2 Bristol, VA 24201

Signature of officer or certifying party:  
Rocky Arrell  
Rocky Arrell Name  
Secretary-Treasurer Title

Very truly yours,  
HIGHLANDER RESOURCES, INC.  
a/k/a HXR Company of Texas  
~~Drilling Company or Operator~~  
102 South Court Street, Suite 200  
Street Address  
Abingdon, VA 24210  
City or Town, and State



- New Location
- Drill Deeper
- Abandonment

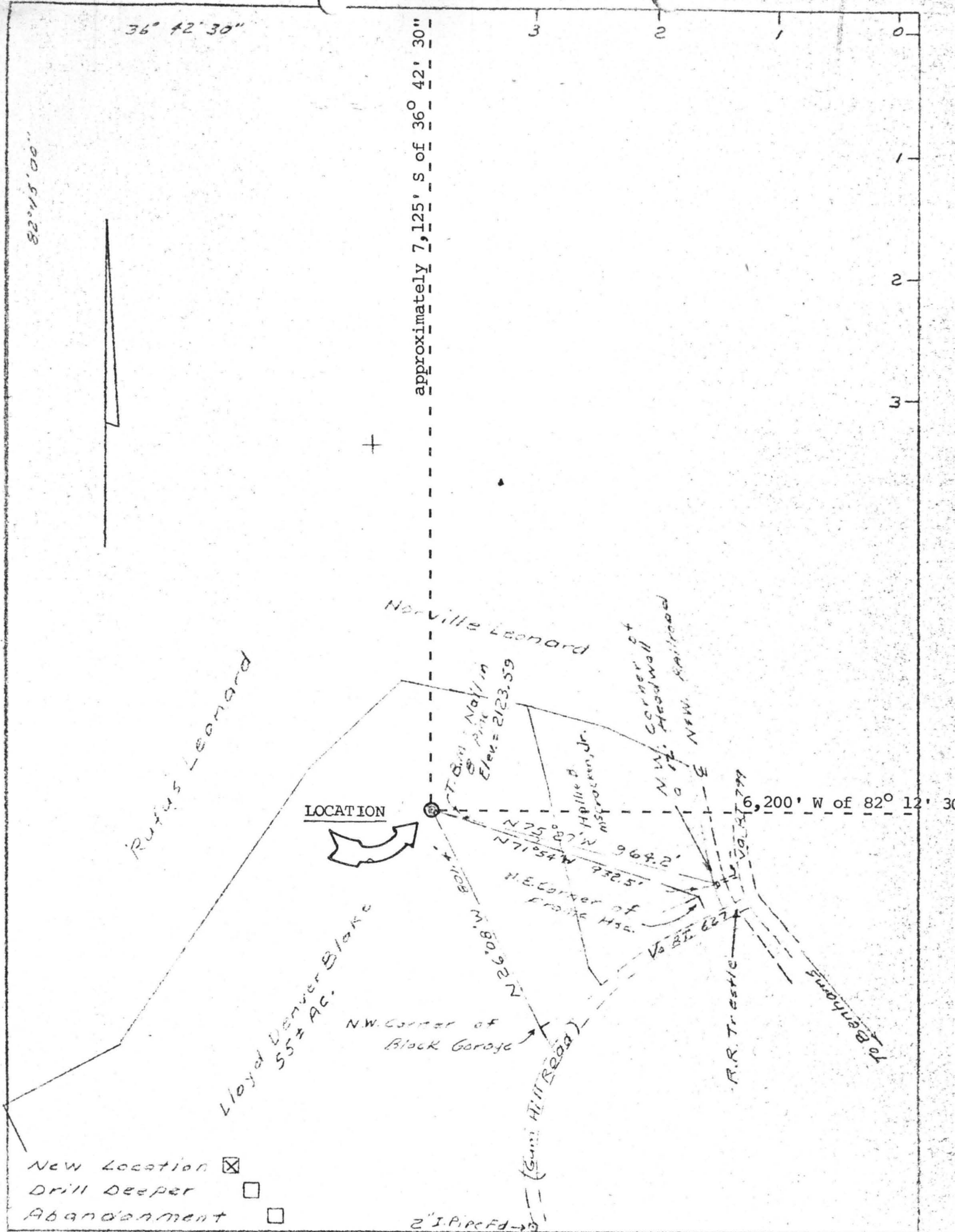
2" S.P. Fire Rd.

Company Highlander Resources Inc.  
 Address 103 S. Court St., Abingdon, Va.  
 Farm Lloyd Denver Blake  
 Tract \_\_\_\_\_ Acres 55± Lease No. \_\_\_\_\_  
 Well (Farm) No. 1 Serial No. \_\_\_\_\_  
 Elevation (Spirit Level) 2120.5  
 Quadrangle Wallace, Va.  
 County Washington District Tyler  
 Surveyor Charles D. Clark  
 Surveyor's Certificate No. 748 Va. \_\_\_\_\_  
 File No. \_\_\_\_\_ Drawing No. \_\_\_\_\_  
 Date 12-3-80 Scale 1" = 400'

Commonwealth of Virginia  
 Division of Mines  
 Big Stone Gap Va.  
**WELL LOCATION MAP**  
 File No. \_\_\_\_\_

● Denotes location of well on United States Topographic Maps, Scale 1 to 24,000, latitude and longitude lines being represented by border lines as shown

- Denotes one inch spaces on border lines of original tracing.



- New Location
- Drill Deeper
- Abandonment

Company Highlander Resources Inc.  
 Address 102 S Court St, Abingdon, Va  
 Farm Lloyd Denver Blake  
 Tract \_\_\_\_\_ Acres 55± Lease No. \_\_\_\_\_  
 Well (Farm) No. 1 Serial No. \_\_\_\_\_  
 Elevation (Spirit Level) 2120.5'  
 Quadrangle Wallace, Va.  
 County Washington District Tyler  
 Surveyor Charles D. Clark  
 Surveyor's Certificate No. 748 Va.  
 File No. \_\_\_\_\_ Drawing No. \_\_\_\_\_  
 Date 12-3-80 Scale 1" = 400'

Commonwealth of Virginia  
 Division of Mines  
 Big Stone Gap Va.  
**WELL LOCATION MAP**  
 File No. \_\_\_\_\_

⊕ Denotes location of well on United States Topographic Maps, Scale 1 to 24,000, latitude and longitude lines being represented by border lines as shown

- Denotes one inch spaces on border lines of original tracing.

Commonwealth of Virginia  
DEPARTMENT OF LABOR AND INDUSTRY  
Division of Mines  
Big Stone Gap, Virginia

#1 Wolf Run Unit  
WILDCAT  
Washington, Co., VA

REVISED APPLICATION

NOTICE OF INTENTION TO ~~REDRILL~~ DRILL OIL OR GAS WELL  
~~DEEPEN~~

(One copy of this report and three identical copies of a plat or map, on a scale not smaller than 400 feet to the inch, and showing information required by Section 45-114, Code of Virginia, 1950, must be submitted to the Division of Mines, and copies sent by registered mail to all persons defined in above law, prior to obtaining a permit to drill.)

TO: DIVISION OF MINES Abingdon, Virginia 24210  
BIG STONE GAP, VIRGINIA Place  
October 30, 1980, 19 Date

Gentlemen: (Amended: 2/15/81)

The undersigned proposes to begin as soon as a permit therefor is obtained from the Division of Mines, to drill, ~~redrill~~ or ~~deepen~~ (strike out two) a well for oil or gas on the L. Denver Blake Farm, comprising 55 acres, in the Tyler District of Washington County, Virginia, having the fee title thereto, or as the case may be, under grant or lease dated September 10, 1980, made by L. Denver Blake et ux to W. D. Hale and recorded on the 16th day of September, 1980 in the office of the County Clerk for said County in Book 632, page 166.

The proposed location of the well, as shown on the attached plat or map, is about 6,200 feet West of 82° 12' 30" and about 7,125 feet South of 36° 42' 30".

It is proposed to drill this well to a depth of about 7,500 feet. Samples or cuttings therefrom will be available for examination by a member of the staff of the Virginia Geological Survey. Cuttings will not be furnished the Survey.

A plat or map, in triplicate, on a scale not smaller than 400 feet to the inch, showing the proposed location of the well and other information, required in Section 45-114, Code of Virginia, 1950, is attached hereto. Copies of the plat and notice of intention to drill, ~~redrill~~ or ~~deepen~~ the aforementioned well have been sent to all interested persons as required by Section 45-114, above cited, as follows (List names and mail address of each. Use back of sheet if additional space is required):

- |    |                     |                    |                           |
|----|---------------------|--------------------|---------------------------|
| 1. | L. Denver Blake     | 7420 Poplar Avenue | Baltimore, Maryland 21224 |
| 2. | Norville E. Leonard | Route 2, Box 326   | Bristol, VA 24201         |
| 3. | H. B. McCracken     | Route 2            | Bristol, VA 24201         |
| 4. | William A. Leonard  | Route 2, Box 445   | Bristol, VA 24201         |
| 5. | Sam McCracken       | Route 2            | Bristol, VA 24201         |
| 6. | Charles Almaroad    | Route 2            | Bristol, VA 24201         |

Very truly yours,

Signature of officer or certifying party:

*Rocky Arrell*  
Rocky Arrell Name  
Secretary-Treasurer Title

HIGHLANDER RESOURCES, INC.  
a/k/a HXR Company of Texas

Drilling Company or Operator  
102 South Court Street, Suite 200  
Street Address  
Abingdon, VA 24210  
City or Town, and State

File WA-5 Date Received December 29, 1980 Well No. HR-1



COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF LABOR AND INDUSTRY  
DIVISION OF MINES AND QUARRIES  
BIG STONE GAP, VIRGINIA 24219  
PHONE 703-523-0335

#1 Wolf Run Unit  
WILDCAT  
Washington Co., VA

APPLICATION FOR PERMIT TO (DRILL) ~~(REDRILL)~~ ~~(DEEPEIN)~~ OIL OR GAS WELL

(Required by Section 45.1-115, Code of Virginia, 1950, 1954 and the 1966 Cumulative Supplement. To be accompanied by Permit fee of twenty-five dollars and bond and surety therefor, as specified by Section cited. To be submitted in duplicate, one copy to be returned to applicant after action by Division of Mines and Quarries.

TO: Division of Mines and Quarries  
Drawer V  
Big Stone Gap, Virginia 24219

Abingdon, Virginia 24210

Place

October 30, 1980 (Amended: 2/15/81)

Date

Gentlemen:

The undersigned hereby makes application for a Permit to drill, ~~redrill,~~ or ~~deepen~~ (strike out two) a well for oil or gas on the L. Denver Blake Farm, comprising 55 acres, in the Tyler District of Washington County, Virginia, having the fee title thereto, or as the case may be, under grant or lease dated September 10, 1980 made by L. Denver Blake et ux to W. D. Hale

and recorded on the 16th day of September, 1980 in the office of the County Clerk for the said County in Book 632 page 166.

The proposed location of the well is shown on a location plat or map submitted to the Division of Mines and Quarries, by the undersigned, together with Notice of Intention to Drill, Redrill or Deepen a Well for Oil or Gas on the          day of          19        .

The proposed well will be known as Well No. One (1) of HIGHLANDER RESOURCES, INC. (company, etc.) It is proposed to drill this well to a depth of about 7,500 feet.

The proposed location is about 400 feet distant from the nearest property or lease line; about N/A feet distant from the nearest mining opening, or quarry (strike out words not applicable) and/or about 5,000 feet distant from the nearest ~~drilling,~~ abandoned, ~~producing,~~ or ~~applied for~~ (strike out words not applicable) oil or gas (strike out words not applicable) well. one hundred (\$100)

There is enclosed herewith a certified check or U.S. Postal Money Order, in the amount of twenty-five (\$25.), payable to the Treasurer of Virginia, covering fee for a Permit to Drill a Well for Oil or Gas, as required by Section 45.1-115, Code of Virginia, 1950, 1954 and the 1966 Cumulative Supplement. Bond and Surety therefor to insure compliance with the provisions of Chapter 8, Title 45, Code of Virginia, 1950 and the 1966 Supplement, for this well, in the amount of \$ 7,000.00 is submitted herewith of (give status of) \$5,000.00 Stabilization Bond-DMQ5A + \$2,000.00 Indemnity Bond-DMQ5B

Correspondence regarding this well should be addressed to HIGHLANDER RESOURCES, INC. P. O. BOX 1018 GRAHAM, TEXAS 76046

Signature of officer or certifying party:  
Rocky Arrell  
Rocky Arrell Name  
Secretary-Treasurer  
Title

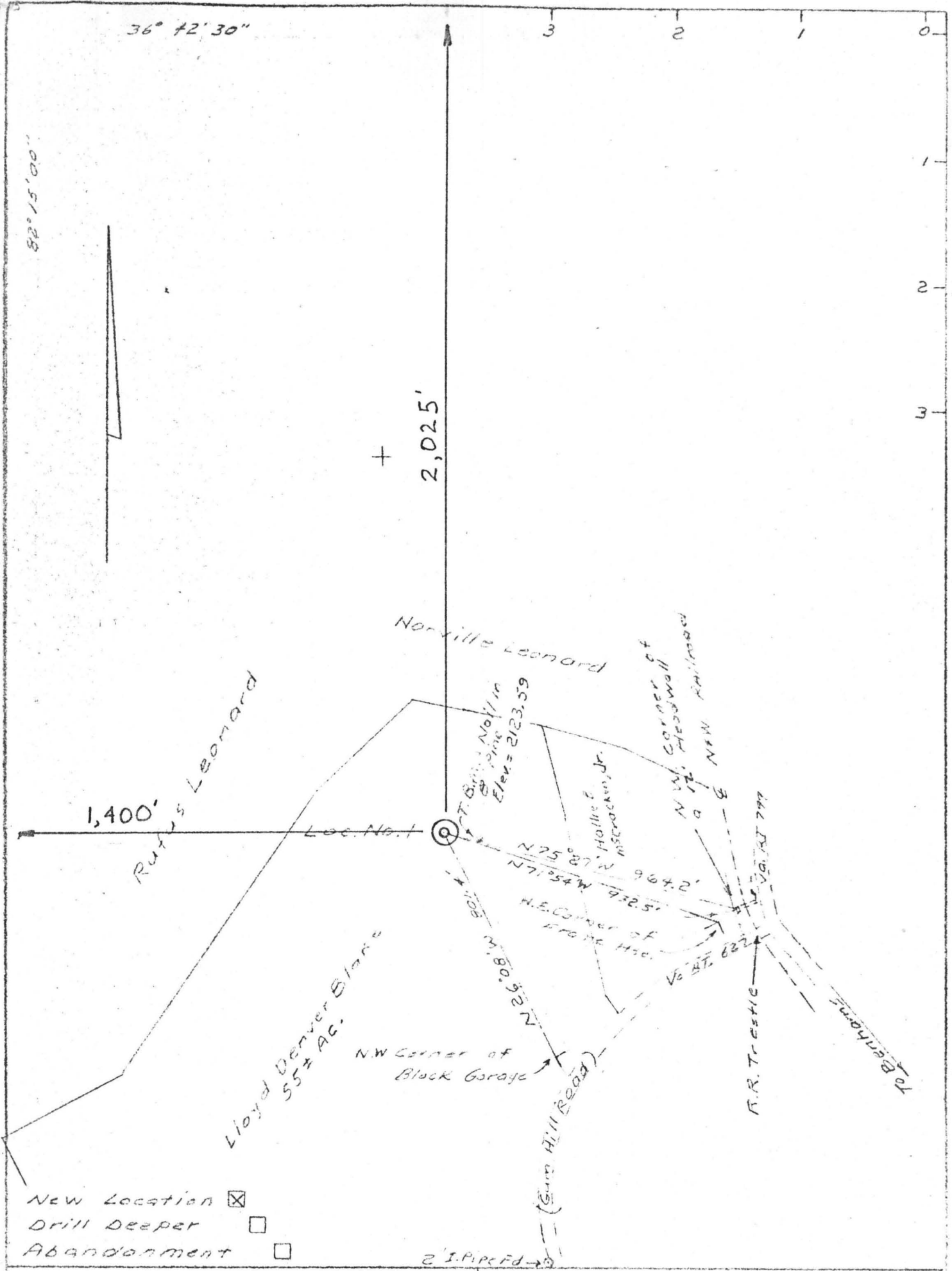
Very truly yours,  
HIGHLANDER RESOURCES, INC.  
a/k/a HXR Company of Texas  
Drilling Company or Operator  
102 South Court Street, Suite 200  
Street  
Abingdon, Virginia 24210  
City or Town  
VIRGINIA  
State

Space below this line is for the use of the Board only.  
ACTION OF DIVISION OF MINES AND QUARRIES

Received on December 29, 1980.  
Approved and Permit (no. 395) granted on March 11, 1981  
Denied  
Reasons for denial

DIVISION OF MINES AND QUARRIES  
By \_\_\_\_\_  
Title

File No. WA-5 Well No. HR-1 Permit No. 395



Company Highlander Resources Inc.  
 Address 103 S. Court St. Abingdon, Va.  
 Farm Lloyd Denver Blake  
 Tract \_\_\_\_\_ Acres 55± Lease No. \_\_\_\_\_  
 Well (Farm) No. 1 Serial No. \_\_\_\_\_  
 Elevation (Spirit Level) 2120.5  
 Quadrangle Wallace, Va.  
 County Washington District Tyler  
 Surveyor Charles D. Clark  
 Surveyor's Certificate No. 748 Va.  
 File No. \_\_\_\_\_ Drawing No. \_\_\_\_\_  
 Date 12-3-90 Scale 1" = 400'

Commonwealth of Virginia  
 Division of Mines  
 Big Stone Gap Va.  
**WELL LOCATION MAP**  
 File No. \_\_\_\_\_  
 ⊕ Denotes location of well on United States Topographic Maps, Scale 1 to 25,000, latitude and longitude lines being represented by border lines as shown  
 - Denotes one inch spaces on border lines of original tracing.

VIRGINIA DIVISION OF MINERAL RESOURCES  
 Box 3667, Charlottesville, VA 22903

INTERVAL SHEET

Page 1 of 4

Wa-005  
 Well Repository No.: W- 7333

Date rec'd: 03/24/94 Date Processed: 4/28/94

Sample Interval: from 90 to: 7140

PROPERTY: Lloyd Blake #1

Number of samples: 681

COMPANY: Highlander Resources, Inc.

Total Depth: 7140

COUNTY: Washington (Wildcat)

Oil or Gas: Water: Exploratory:

From-To	From-To	From-To	From-To	From-To
-	400 - 10	50 - 60	1100 - 10	50 - 60
-	10 - 20	60 - 70	10 - 20	60 - 70
-	710 Sample	70 - 80	20 - 30	70 - 80
-	30 - 40	80 - 90	30 - 40	80 - 90
90 - 100	40 - 50	90 - 800	40 - 50	90 - 1500
100 - 10	50 - 60	800 - 10	50 - 60	1500 - 10
10 - 20	60 - 70	10 - 20	60 - 70	10 - 20
20 - 30	70 - 80	20 - 30	70 - 80	20 - 30
30 - 40	80 - 90	30 - 40	80 - 90	30 - 40
40 - 50	90 - 500	40 - 50	90 - 1200	40 - 50
50 - 60	710 Sample	50 - 60	1200 - 10	50 - 60
60 - 70	510 - 20	60 - 70	10 - 20	60 - 70
70 - 80	20 - 30	70 - 80	20 - 30	70 - 80
80 - 90	30 - 40	80 - 90	30 - 40	80 - 90
90 - 200	40 - 50	90 - 900	40 - 50	90 - 1600
200 - 10	50 - 60	900 - 10	50 - 60	1600 - 10
10 - 20	60 - 70	10 - 20	60 - 70	10 - 20
20 - 30	710 Sample	20 - 30	70 - 80	20 - 30
30 - 40	90 - 600	30 - 40	80 - 90	30 - 40
40 - 50		40 - 50	90 - 1300	40 - 50
50 - 60	600 - 10	50 - 60	1300 - 10	50 - 60
60 - 70	10 - 20	60 - 70	10 - 20	60 - 70
70 - 80	20 - 30	70 - 80	20 - 30	70 - 80
80 - 90	30 - 40	80 - 90	30 - 40	80 - 90
90 - 300	40 - 50	90 - 1000	40 - 50	90 - 1700
710 Sample	50 - 60	1000 - 10	50 - 60	1700 - 10
310 - 20	60 - 70	10 - 20	60 - 70	10 - 20
20 - 30	70 - 80	20 - 30	70 - 80	20 - 30
30 - 40	80 - 90	30 - 40	80 - 90	30 - 40
710 Sample	90 - 700	40 - 50	90 - 1400	40 - 50
50 - 60	700 - 10	50 - 60	1400 - 10	50 - 60
60 - 70	10 - 20	60 - 70	10 - 20	60 - 70
70 - 80	20 - 30	70 - 80	20 - 30	70 - 80
80 - 90	30 - 40	80 - 90	30 - 40	80 - 90
90 - 400	40 - 50	90 - 1100	40 - 50	90 - 1800

VIRGINIA DIVISION OF MINERAL RESOURCES  
 Box 3667, Charlottesville, VA 22903

INTERVAL SHEET  
 Continued

Page 2 of 4

Well Repository No.: W- 7333

From-To	From-To	From-To	From-To	From-To
1800 - 10	2200 - 10	2600 - 10	3000 - 10	3400 - 10
10 - 20	10 - 20	10 - 20	10 - 20	10 - 20
20 - 30	20 - 30	20 - 30	20 - 30	20 - 30
30 - 40	30 - 40	30 - 40	30 - 40	30 - 40
40 - 50	40 - 50	40 - 50	40 - 50	40 - 50
50 - 60	50 - 60	50 - 60	50 - 60	50 - 60
60 - 70	60 - 70	60 - 70	60 - 70	60 - 70
70 - 80	70 - 80	70 - 80	70 - 80	70 - 80
80 - 90	80 - 90	80 - 90	80 - 90	80 - 90
90 - 1900	90 - 2300	90 - 2700	90 - 3100	90 - 3500
1900 - 10	2300 - 10	2700 - 10	3100 - 10	3500 - 10
10 - 20	10 - 20	10 - 20	10 - 20	10 - 20
70 Sample	20 - 30	20 - 30	70 Sample	20 - 30
30 - 40	30 - 40	30 - 40	30 - 40	30 - 40
40 - 50	40 - 50	40 - 50	40 - 50	40 - 50
50 - 60	50 - 60	50 - 60	50 - 60	50 - 60
60 - 70	60 - 70	60 - 70	60 - 70	60 - 70
70 - 80	70 - 80	70 - 80	70 - 80	70 - 80
80 - 90	80 - 90	80 - 90	80 - 90	80 - 90
90 - 2000	90 - 2400	90 - 2800	90 - 3200	90 - 3600
2000 - 10	2400 - 10	2800 - 10	3200 - 10	3600 - 10
10 - 20	10 - 20	10 - 20	10 - 20	10 - 20
20 - 30	20 - 30	20 - 30	20 - 30	20 - 30
30 - 40	30 - 40	30 - 40	30 - 40	30 - 40
40 - 50	40 - 50	40 - 50	40 - 50	40 - 50
50 - 60	50 - 60	50 - 60	50 - 60	50 - 60
60 - 70	60 - 70	60 - 70	60 - 70	60 - 70
70 - 80	70 - 80	70 - 80	70 - 80	70 - 80
80 - 90	80 - 90	80 - 90	80 - 90	80 - 90
90 - 2100	90 - 2500	90 - 2900	90 - 3300	90 - 3700
2100 - 10	2500 - 10	2900 - 10	3300 - 10	3700 - 10
10 - 20	10 - 20	10 - 20	10 - 20	10 - 20
20 - 30	20 - 30	20 - 30	20 - 30	20 - 30
30 - 40	30 - 40	30 - 40	30 - 40	30 - 40
40 - 50	40 - 50	40 - 50	40 - 50	40 - 50
50 - 60	50 - 60	50 - 60	50 - 60	50 - 60
60 - 70	60 - 70	60 - 70	60 - 70	60 - 70
70 - 80	70 - 80	70 - 80	70 - 80	70 - 80
80 - 90	80 - 90	80 - 90	80 - 90	80 - 90
90 - 2200	90 - 2600	90 - 3000	90 - 3400	90 - 3800

VIRGINIA DIVISION OF MINERAL RESOURCES  
 Box 3667, Charlottesville, VA 22903

INTERVAL SHEET  
 Continued

Page 3 of 4

Well Repository No.: W-7333

From-To	From-To	From-To	From-To	From-To
3800-10	4400-10	4800-10	5200-10	5600-10
10-20	10-20	10-20	10-20	10-20
20-30	20-30	20-30	70 Sample	20-30
30-40	30-40	30-40	30-40	30-40
40-50	40-50	40-50	40-50	40-50
50-60	50-60	50-60	50-60	50-60
60-70	60-70	60-70	60-70	60-70
70-80	70-80	70-80	70-80	70-80
80-90	80-90	80-90	80-90	80-90
90-3900	90-4500	90-4400	90-5300	90-5700
3500-10	4500-10	4900-10	5300-10	5700-10
10-20	10-20	10-20	10-20	10-20
20-30	20-30	20-30	20-30	20-30
30-40	30-40	30-40	30-40	30-40
40-50	40-50	40-50	40-50	40-50
50-60	50-60	50-60	50-60	50-60
-	60-70	60-70	60-70	60-70
-	70-80	70-80	70-80	70-80
70 Samples	80-90	80-90	80-90	80-90
-	90-4600	90-5000	90-5400	90-5800
-	4600-10	5800-10	5400-10	5800-10
-	10-20	10-20	10-20	10-20
4220-30	20-30	20-30	20-30	20-30
30-40	30-40	30-40	30-40	30-40
40-50	40-50	40-50	40-50	40-50
50-60	50-60	50-60	50-60	50-60
60-70	-	60-70	60-70	60-70
70-80	70-80	70-80	70-80	70-80
80-90	80-90	80-90	80-90	80-90
90-4300	90-4700	90-5100	90-5300	90-5400
4300-10	4700-10	5700-10	5500-10	5900-10
10-20	10-20	-	10-20	10-20
20-30	20-30	70 Sample's	20-30	70 Sample
30-40	30-40	-	30-40	30-40
40-50	40-50	-	40-50	40-50
50-60	50-60	50-60	50-60	50-60
60-70	60-70	60-70	60-70	60-70
70-80	70-80	70-80	70-80	70-80
80-90	80-90	80-90	80-90	80-90
90-4400	90-4800	90-5200	90-5600	90-6000



VIRGINIA DIVISION OF MINERAL RESOURCES  
 Box 3667, Charlottesville, VA 22903

INTERVAL SHEET  
 Continued

Page 4 of 4

Well Repository No.: W- 7333

From-To	From-To	From-To	From-To	From-To
6000-10	6400-10	6800-10	95-7100	-
10-20	10-20	10-20	7100-05	-
20-30	20-30	20-30	05-10	-
30-40	30-40	30-40	10-15	-
40-50	40-50	40-50	15-20	-
50-60	50-60	50-60	20-25	-
60-70	60-70	60-70	25-30	-
70-80	70-80	70-80	30-35	-
80-90	80-90	80-90	35-40	-
90-6100	90-6500	90-6900	-	-
6100-10	6500-10	6900-10	-	-
10-20	10-20	10-20	-	-
20-30	20-30	20-30	-	-
30-40	30-40	30-40	-	-
40-50	40-50	40-50	-	-
50-60	50-60	50-60	-	-
60-70	60-70	60-70	-	-
70-80	70-80	70-80	-	-
80-90	80-90	80-90	-	-
90-6200	90-6600	90-95	-	-
6200-10	6600-10	95-7000	-	-
10-20	10-20	7000-05	-	-
20-30	20-30	05-10	-	-
30-40	30-40	10-15	-	-
40-50	40-50	15-20	-	-
50-60	50-60	20-25	-	-
60-70	60-70	25-30	-	-
70-80	70-80	30-35	-	-
80-90	80-90	35-40	-	-
90-6300	90-6700	40-45	-	-
6300-10	6700-10	45-50	-	-
10-20	10-20	50-55	-	-
20-30	20-30	55-60	-	-
30-40	30-40	60-65	-	-
40-50	40-50	65-70	-	-
50-60	50-60	70-75	-	-
60-70	60-70	75-80	-	-
70-80	70-80	80-85	-	-
80-90	80-90	85-90	-	-
90-6400	90-6800	90-95	-	-