



HUSKY OIL NPR OPERATIONS, INC.
U.S. GEOLOGICAL SURVEY/ONPRA

DRILL STEM TEST REPORT FORM

WELL NAME LISBURNE #1 DST. NO. 4 DATE 5-30 to 6-1-80

Formation Tested SHUBLIK Hole Size 9 5/8" csg.
 Test Interval 7022-7104' Drill Collar Length None I.D. _____
 Total Depth PBTD 7230' Drill Pipe Length 6989' I.D. 4.276"
 Choke Size: Surface 1/8" & 1/4" Bottom Hole 3/4" Packer Depth(s) 6983.8 Ft.
 Btm tail pipe 7014' Depth Tester Valve _____ Ft.
 Cushion Type None Amount _____

TEST DATA

Tool open at 2326 hrs, 5-30-80 xx
 Initial flow period 120 min.
 Initial shut-in period 244 min.
 Final flow period 480 min.
 Final shut-in period 960 min.
 Unsetted packer at 0532 hrs, 6-1-80 xxi

RESISTIVITY CHLORIDE DATA

Recovery Water	Resistivity	Chloride Content
<u>None</u>	@ _____ OF.	_____ ppm
Recovery Mud	@ _____ OF.	_____ ppm
Recovery Mud Filtrate	@ _____ OF.	<u>400</u> ppm
Mud Pit Sample	@ _____ OF.	_____ ppm
Mud Pit Sample Filtrate	@ _____ OF.	<u>200</u> ppm
Mud Weight <u>10.2</u>	vis _____	<u>38</u> cp

Description of initial flow period Opened w/strong blow thru 1/8" choke, FWHP 75 psi in 4 min, changed to 1/4" choke in 14 min w/190 psi FWHP, GTS* in 28 min w/FWHP 220 psi. FWHP declined to 125 psi in 1 hr, 4 min, and further declined to 65 psi in 2 hrs. (end of FP)
 Description of final flow period Opened thru 1/4" choke w/60 psi FWHP increasing to 136 psi in 25 min at calculated rate of 213 MCFPD and specific gravity 0.60, pressure declined slowly thruout remainder of flow period to 10 psi at end of period (8 hrs).

PRESSURE DATA

TEMPERATURE	Gauge No. <u>J-109</u>	Gauge No. <u>J-313</u>	Gauge No. <u>J-379</u>	Gauge No. <u>J-867</u>
	Depth: <u>6959</u> ft.	Depth: <u>6965</u> ft.	Depth: <u>7005</u> ft.	Depth: <u>7010</u> ft.
Est. OF.	48 Hour Clock	48 Hour Clock	48 Hour Clock	48 Hour Clock
	Blanked Off No	Blanked Off No	Blanked Off Yes	Blanked Off Yes
Actual <u>118</u> OF.	Pressures		Pressures	
	Field	Office	Field	Office
Initial Hydrostatic	<u>3751</u>		<u>3753</u>	
First Period FLOW	Initial		<u>319</u>	
	Final		<u>205</u>	
	Closed In		<u>1266</u>	
Second Period FLOW	Initial		<u>268</u>	
	Final		<u>171</u>	
	Closed In		<u>2273</u>	
Third Period FLOW	Initial			
	Final			
	Closed In			
Final Hydrostatic	<u>3725</u>		<u>3709</u>	

RECOVERY DATA

Cushion	Type	Amount	Depth Back Pres. Valve	Surface Choke	Bottom Choke
<u>None</u>					
Recovered	<u>932'/16.6 bbls</u>	Feet/bbl of <u>slightly gas cut rat hole mud and filtrate</u>			
Recovered		Feet/bbl of			
Recovered (Spl Chamber #1)		Feet/bbl of <u>182 cu. ft. gas, no liquid.</u>			
Recovered		Feet/bbl of			

Remarks *Separator bypassed for 1st 30 min. of IFP.

FLOW DATA FROM NORELCO SEPARATOR FINAL FLOW PERIOD				
Time Into FFP	Tubing Press.	Choke	Flow Rate	Specific Gravity
<u>25 min.</u>	<u>136 psi</u>	<u>1/4"</u>	<u>213 MCFPD</u>	<u>0.60</u>
<u>100 min</u>	<u>67 psi</u>	<u>1/4"</u>	<u>55 MCFPD</u>	<u>0.60</u>
<u>265 min</u>	<u>33 psi</u>	<u>1/4"</u>	<u>17 MCFPD</u>	<u>0.64</u>
<u>370 min</u>	<u>30 psi</u>	<u>1/4"</u>	<u>11 MCFPD</u>	<u>0.64</u>
<u>480 min (Final shut in) too small to calculate rate.</u>				

DAVE YOUNG

Prepared by



HUSKY OIL NPR OPERATIONS, INC.
U.S. GEOLOGICAL SURVEY/ONPRA

REVISED 6-3-80

DRILL STEM TEST REPORT FORM

WELL NAME LISBURNE #1 DST. NO. 4 DATE 5-30 to 6-1-80

Formation Tested SHUBLIK Hole Size 9 5/8" csg.
 Test Interval 7022-7104' Drift Collar Length None I.D. _____
 Total Depth PBTD 7230' Drill Pipe Length 6989' I.D. 4.276"
 Choke Size: Surface 1/8" & 1/4" Bottom Hole 3/4"
 Packer Depth(s) 6983.8 Ft.
 Btm tail pipe 7014'
 Depth Tester Valve _____ Ft.
 Cushion Type None Amount _____

TEST DATA

RESISTIVITY/CHLORIDE DATA

Tool open at 2326 hrs, 5-30-80 xx
 Initial flow period 120 min.
 Initial shut-in period 244 min.
 Final flow period 480 min.
 Final shut-in period 960 min.
 Unseated packer at 0532 hrs, 6-1-80 xx

Recovery Water None @ _____ °F. _____ ppm
 Recovery Mud _____ @ _____ °F. _____ ppm
 Recovery Mud Filtrate _____ @ _____ °F. 400 ppm
 Mud Pit Sample _____ @ _____ °F. _____ ppm
 Mud Pit Sample Filtrate _____ @ _____ °F. 200 ppm
 Mud Weight 10.2 vis 38 cp

Description of initial flow period Opened w/strong blow thru 1/8" choke, FWHP 75 psi in 4 min, changed to 1/4" choke in 14 min w/190 psi FWHP, GTS in 28 min w/FWHP 220 psi. FWHP declined to 125 psi in 1 hr. 4 min. and further declined to 65 psi in 2 hrs. (end of FP)
 Description of final flow period Opened thru 1/4" choke w/60 psi FWHP increasing to 136 psi in 25 min at calculated rate of 213 MCFPD and specific gravity 0.60, pressure declined slowly thruout remainder of flow period to 10 psi at end of period (8 hrs).

PRESSURE DATA

TEMPERATURE	Gauge No. J-109		Gauge No. J-313		Gauge No. J-379		Gauge No. J-867	
	Depth: 6959 ft.		Depth: 6965 ft.		Depth: 7005 ft.		Depth: 7010 ft.	
Est.	48 Hour Clock		48 Hour Clock		48 Hour Clock		48 Hour Clock	
°F.	Blanked Off No		Blanked Off No		Blanked Off Yes		Blanked Off Yes	
Actual 119 °F.	Pressures		Pressures		Pressures		Pressures	
	Field	Office	Field	Office	Field	Office	Field	Office
Initial Hydrostatic	3751		3753		3776		3781	
First Period FLOW	Initial	320	319		327		322	
	Final	205	205		228		223	
	Closed In	1266	1262		1274		1271	
Second Period FLOW	Initial	269	268		276		272	
	Final	171	171		175		173	
	Closed In	2273	2269		2285		2295	
Third Period FLOW	Initial							
	Final							
	Closed In							
Final Hydrostatic	3725		3709		3756		3756	

RECOVERY DATA

Cushion None Type Amount Depth Back Pres. Valve Surface Choke Bottom Choke Bottom Choke

Recovered 932' / 16.6 bbls Feet/bbl of slightly gas cut rat hole mud and filtrate

Recovered _____ Feet/bbl of _____

Recovered (Spl Chamber #1) 0.81 cu. ft. gas, no liquid. Feet/bbl of _____

Recovered _____ Feet/bbl of _____

Remarks *Separator bypassed for 1st 30 min. of IFP.

FLOW DATA FROM NORELCO SEPARATOR FINAL FLOW PERIOD

Time Into FFP	Tubing Press.	Choke	Flow Rate	Specific Gravity
25 min.	136 psi	1/4"	213 MCFPD	0.60
100 min	67 psi	1/4"	55 MCFPD	0.60
265 min	33 psi	1/4"	17 MCFPD	0.64
370 min	30 psi	1/4"	11 MCFPD	0.64

480 min (Final shut in) too small to calculate rate.

DAVE YOUNG

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HUSKY OIL NPR OPERATIONS, INC. **PR**IMINARY REPORT
 U.S. GEOLOGICAL SURVEY/ONPRA **Corrected**

DRILL STEM TEST REPORT FORM

WELL NAME LISBURNE #1 DST. NO. 1 DATE 5/25-26/80

Formation Tested LISBURNE Hole Size 7 5/8" csg
 Perfs: 11,826-11,841', 11,728-11,742' pipe
 Test Interval 11,618-11,638' 5" Drill Pipe Length 2681' I.D. 4.276"
 Total Depth FBD 13,400' 3 1/2" Drill Pipe Length 8061' I.D. 2.602"
 Choke Size: Surface 1/4" Bottom Hole 3/4" Packer Depth(s) 11,584' Ft.
 Depth Tester Valve 11,529' Ft.
 Cushion Type Fresh water Amount 3000'

TEST DATA

Tool open at 1723 hrs, 5-25-80 hrs.
 Initial flow period 60 min.
 Initial shut-in period 124 min.
 Final flow period 118 min.
 Final shut-in period 303 min.
 Unseated packer at 0338 hrs, 5-26-80 hrs.

RESISTIVITY/CHLORIDE DATA

	Resistivity	Chloride Content
Recovery Water (Filtrate)	@ <u> </u> OF.	<u>400</u> ppm
Recovery Mud	@ <u> </u> OF.	<u> </u> ppm
Recovery Mud Filtrate	@ <u> </u> OF.	<u>400</u> ppm
XXXXXXXXXX Cushion	@ <u> </u> OF.	<u>200</u> ppm
Mud Pit Sample Filtrate	@ <u> </u> OF.	<u>200</u> ppm
Mud Weight	<u>10.2</u> vis	<u>38</u> cp

Description of initial flow period Opened w/faint blow, decreasing through period.

Description of final flow period Opened w/weak blow continuing throughout period. SFP less than or equal to 1 psi. No fluid to surface.

PRESSURE DATA

TEMPERATURE	Gauge No. J-234	Gauge No. J-241	Gauge No. J-554	Gauge No. J-1317
	Depth: 11,559 ft.	Depth: 11,565' ft.	Depth: 11,605 ft.	Depth: 11,609 ft.
	48 Hour Clock	48 Hour Clock	48 Hour Clock	96 Hour Clock
Est. OF.	Blanked Off No	Blanked Off No	Blanked Off Yes	Blanked Off Yes
Actual 164 OF.	Pressures		Pressures	
	Field	Office	Field	Office
Initial Hydrostatic	6204	6221	6218	6227
First Period FLOW	Initial	3932	3976	4032
	Final	4993	5033	5088
	Closed In	5012	5015	5069
Second Period FLOW	Initial	4770	4829	4847
	Final	5030	5033	5088
	Closed In	5012	5015	5069
Third Period FLOW	Initial			
	Final			
Closed In				
Final Hydrostatic	6185	6202	6199	6208

RECOVERY DATA

Cushion	Type	Amount	Depth Back Pres. Valve	Surface Choke	Bottom Choke	Mts. From Tester Valve
Recovered	3000'	Feet/bbl of water cushion, Chlorides 200 ppm				
Recovered	2100'/13.8 bbls	Feet/bbl of mud filtrate, Chlorides 400 ppm				
Recovered		Feet/bbl of				
Recovered		Feet/bbl of				

Remarks Sample chamber: Pressure 1090 psi, recovered 1 cu. ft. gas and 1850 cc mud filtrate.

Recovered water cushion Chlorides 200 ppm
Filtrate Recovery fluid Chlorides 400 ppm.

DAVE YOUNG
 Prepared by

HUSKY

HUSKY OIL & GAS OPERATIONS, INC.
U.S. GEOLOGICAL SURVEY/ONPRA

REVISED PRELIMINARY REPORT
NOTE: REPLACES PRELIMINARY
REPORT ISSUED ON
5-27-80

DRILL STEM TEST REPORT FORM

WELL NAME LISBURNE #1 DST. NO. 1 DATE 5-25 - 26, 1980 (Revised 5-30-80)
Formation Tested LISBURNE Hole Size 7 5/8" csg
Perfs: 11,826-11,841', 11,728-11,742' 5" Drill Pipe Length 2681' I.D. 4.276'
Test Interval 11,618-11,638' 3 1/2" Drill Pipe Length 8061' I.D. 2.602"
Total Depth PBD 13,400' Packer Depth(s) 11,584' Ft.
Choke Size: Surface 1/4" Bottom Hole 3/4" Depth Tester Valve 11,529' Ft.
Cushion Type Fresh water Amount 3000'

TEST DATA

Tool open at 1723 hrs, 5-25-80
1st open * 34 min.
1st shut in 38 min (recycled tool)
2nd flow period 60 min.
2nd shut-in period 124 min.
Final flow period 118 min.
Final shut-in period 303 min.
Unseated packer at 0338 hrs, 5-26-80

RESISTIVITY CHLORIDE DATA

Recovery Water (Filtrate) @ OF. Chloride Content 400 ppm
Recovery Mud @ OF. 400 ppm
Recovery Mud Filtrate @ OF. 400 ppm
Cushion @ OF. 200 ppm
Mud Pit Sample Filtrate @ OF. 200 ppm
Mud Weight 10.2 vis 38 cp

Description of 1st flow period Opened w/no blow, reset tool and packer.
Description of 2nd flow period Opened w/faint blow, decreasing through period.
Description of final flow period Opened w/weak blow continuing throughout period. SFP less than or equal to 1 psi. No fluid to surface.

PRESSURE DATA

TEMPERATURE	Gauge No. J-234		Gauge No. J-241		Gauge No. J-254		Gauge No. J-1317	
	Depth: 11,559 ft.	Hour Clock	Depth: 11,565 ft.	Hour Clock	Depth: 11,605 ft.	Hour Clock	Depth: 11,609	Hour Clock
Est.	OF.	Blanked Off No	Blanked Off No	Blanked Off Yes	Blanked Off Yes	Blanked Off Yes	Blanked Off Yes	
Actual 164 OF.	Pressures		Pressures		Pressures		Pressures	
	Field	Office	Field	Office	Field	Office	Field	Office
Initial Hydrostatic	6204		6221		6218		6227	
* FLOW	Initial 2554		2584		2624		2593	
	Final 4937		4959		4995		4985	
	Closed In 6166		6221		6236		6227	
Second Period	Initial 3932		3926		4032		3984	
	Final 4993		5034		5088		5040	
	Closed In 5012		5015		5069		5022	
* FLOW	Initial 4770		4829		4847		4829	
	Final 5031		5033		5088		5040	
	Closed In 5012		5015		5069		5022	
Final Hydrostatic	6185		6203		6199		6208	

RECOVERY DATA

Cushion	Type	Amount	Depth Back Pres. Valve	Surface Choke	Bottom Choke	Tester Valve
Recovered	3000'	Fest/bbl of water cushion, Chlorides 200 ppm				
Recovered	2100'/13.8 bbls	Fest/bbl of rat hole mud and filtrate, Chlorides 400 ppm				
Recovered		Fest/bbl of				
Recovered		Fest/bbl of				

Remarks
* Surface mechanical indications on initial open indicated tool not open, chart analysis now indicates tool only momentarily opening on all periods.
1st Sample Chamber: Pressure 1090 psi, recovered 1 cu ft gas and 1850 cc mud filtrate.
2nd Sample Chamber: Will be analyzed in Anchorage.

Water cushion Chlorides 200 ppm
Recovery fluid Chlorides 400 ppm

DAVE YOUNG



HUSKY OIL NPR OPERATIONS, INC.
U.S. GEOLOGICAL SURVEY/ONPRA

PRELIMINARY REPORT

DRILL STEM TEST REPORT FORM

WELL NAME LISBURNE #1 DST. NO. 2 (misc) DATE 5-28-80

Formation Tested LISBURNE Hole Size 9 5/8" csg
 Test Interval 7645-7662' Drill Collar Length _____ I.D. _____
 Total Depth PBTD 7680' Drill Pipe Length (5") 7541' I.D. 4.276"
 Choke Size: Surface 1/4" Bottom Hole 3/4" Packer Depth(s) 7610 Ft.
 Depth Tester Valve 7555 Ft.
 Cushion Type None Amount _____

TEST DATA

Tool open at 0119 hrs, 5-28-80 hrs.
 Initial flow period 60 min.
 Initial shut-in period 11 (recycled tool) min.
 Final flow period 59 min.
 Final shut-in period 148 min.
 Unseated packer at 0557 hrs., 5-28-80 hrs.

RESISTIVITY/CHLORIDE DATA

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 _____ vis _____ cp

Description of initial flow period Opened tool w/no blow continued thruout period. Tool plugged after initial open.

Description of final flow period Opened tool w/no blow continued thruout period. Tool plugged.

PRESSURE DATA

TEMPERATURE	Gauge No. J-109		Gauge No. J-313		Gauge No. J-379		Gauge No. J-867	
	Depth: 7585 ft.		Depth: 7591 ft.		Depth: 7631 ft.		Depth: 7635 ft.	
Est.	48 Hour Clock		48 Hour Clock		48 Hour Clock		48 Hour Clock	
°F.	Blanked Off	No	Blanked Off	No	Blanked Off	Yes	Blanked Off	Yes
Actual 125 °F.	Pressures		Pressures		Pressures		Pressures	
	Field	Office	Field	Office	Field	Office	Field	Office
Initial Hydrostatic	4033		4027		4054		4068	
First Period FLOW	Initial	718		727		769		772
	Final	3070		3059		3081		3094
	Closed In	3083		3085		3094		3107
Second Period FLOW	Initial	2877		2855		2866		2869
	Final	3070		3072		3081		3094
	Closed In	3095		3097		3106		3119
Third Period FLOW	Initial							
	Final							
	Closed In							
Final Hydrostatic	4046		4041		4049		4063	

RECOVERY DATA

Cushion	Type	Amount	Depth Back Pres. Valve	Surface Choke	Bottom Choke
Recovered	110'/1-95	Feet/bbl of	Rat hole mud		
Recovered		Feet/bbl of			
Recovered		Feet/bbl of			
Recovered		Feet/bbl of			

Remarks Charts indicate tool was plugged essentially thruout rest after initial open of 1st flow period.

DAVE YOUNG

Prepared by

PRELIMINARY REPORT



HUSKY OIL NPR OPERATIONS, INC.
U.S. GEOLOGICAL SURVEY/ONPRA

DRILL STEM TEST REPORT FORM

WELL NAME LISBURNE #1 DST. NO. 3 DATE 5-28 - 29, 1980
 (retest)
 Formation Tested LISBURNE Hole Size 9 5/8"
 Test Interval 7645-7662' (retest) Drill Collar Length - I.D. _____
 Total Depth PBTD 7680' Drill Pipe Length 7541' I.D. 4.276"
 Choke Size: Surface 1/4" Bottom Hole 3/4" Packer Depth(s) 7610' Ft.
 Depth Tester Valve 7554.9 Ft.
 Cushion Type None Amount _____

TEST DATA

Tool open at 1804 hrs, 5-28-80 hrs.
 Initial flow period 67 min.
 Initial shut-in period 122 min.
 Final flow period 478 min.
 Final shut-in period 720 min.
 Unseated packer at 1711 hrs, 5-29-80 hrs.

RESISTIVITY/CHLORIDE DATA

Recovery Water (Spi chamber) @ _____ °F. Resistivity 3100 ppm Chloride Content
 Recovery Mud @ _____ °F. _____ ppm
 Recovery Mud Filtrate @ _____ °F. _____ ppm
 Mud Pit Sample @ _____ °F. _____ ppm
 Mud Pit Sample Filtrate @ _____ °F. 200 ppm
 Mud Weight 10.2 vis 38 cp

Description of initial flow period Opened tool w/moderate blow increasing to moderately strong blow in 46 min, FWRP less than or equal to 1 psi, shut in well for 2 hrs.

Description of final flow period Opened tool w/moderate blow increasing to moderately strong blow in 5 hrs and continuing thruout remainder of period w/FWRP 15 psi. No fluid to surface.

PRESSURE DATA

TEMPERATURE	Gauge No. J-109		Gauge No. J-3313		Gauge No. J-379		Gauge No. J-867	
	Depth: 7585'	ft.	Depth: 7590'	ft.	Depth: 7631'	ft.	Depth: 7635'	ft.
Est. 124 °F.	48	Hour Clock	48	Hour Clock	48	Hour Clock	48	Hour Clock
	Blanked Off	No	Blanked Off	No	Blanked Off	Yes	Blanked Off	Yes
Actual °F.	Pressures		Pressures		Pressures		Pressures	
	Field	Office	Field	Office	Field	Office	Field	Office
Initial Hydrostatic	4046		4053		4068		4071	
First Period FLOW	Initial	114	115		122		124	
	Final	500	510		522		529	
	Closed In	2902	2914		2919		2921	
Second Period FLOW	Initial	527	535		547		554	
	Final	1694	1695		1696		1740	
	Closed In	3069	3072		3077		3081	
Third Period FLOW	Initial							
	Final							
	Closed In							
Final Hydrostatic	4033		4040		4055		4058	

RECOVERY DATA

Cushion	Type	Amount	Depth Back Pres. Valve	Surface Choke	Bottom Choke	Mud From Tester Valve	
Recovered	10 bbls	000/bbl of	Rat hole mud and filtrate				
Recovered	61 bbls	000/bbl of	Formation water with sl sour odor				
Recovered		Feet/bbl of					

Remarks Recovery fluids on reverse out ranged from 2100 ppm Cl₂ at top of apparent formation water fluid to maximum 2900 ppm Cl₂ at btm of fluid column.
Sample chamber recovery: 2.14 cu ft "sour" gas and 1966 cc formation water w/3100 ppm Cl₂.

DAVE YOUNG

Prepared by