



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 3-30-80 Time 0600
 Present Depth 14,300' Previous Depth 14,202' Footage 24 Hrs. 98
 Formation(s) LISBURNE Top 13,748'
 Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 14,199-14,290' Sampling Interval 5 ft. Sample Quality good
 Lag Time: 126 min. @ 14,300 ft.

Interval	Description	Avg. Drill Rate min./ft.
14,199-14,245'	Dol.; bf, bf - gy, f. - med xl, hd, tt, NOSCF; intbdd Sh (10-30%), dk gy, hd, sil, in pt w/dol rhombs; Cht (0-20%) lt gy - wh, tripolitic, sl trnsl, some brn, some tn.	12.7
14,245-14,280'	Dol: bf - wh, f. xl, med hd, tt, NOSCF; w/thn Cht intbds a/a.	14.0
14,280-14,290'	Sh: dk gy, hd, sil, in pt dol; intbdd w/Dol a/a and mnr Cht a/a.	16.0

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 12 Connection nil Trip 20 @ 14,199' Peaks 19 @ 14,210'
25 @ 14,205'
28 @ 14,225'

Mud: Wt. 10.8 Vls 48 W.L. 6.0 ph 11 cc Oil % Cl₂ 250 Temp. 90 °F. in 94 °F. out

Data Unit:

Depth	Shale Density	De Exponent	Pore Pressure
14,200'	2.54	1.54	10.63
14,250'	2.43	1.60	10.58

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist DAVE YOUNG



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 3-31-80 Time 0600
Present Depth 14,376' Previous Depth 14,300' Footage 24 Hrs. 76'
Formation(s) LISBURNE Top 13,748'
Present Activity: RIH w/new bit.

LITHOLOGIC DESCRIPTION

Interval Reported 14,290-14,365' Sampling Interval 5 ft. Sample Quality good
Lag Time: 123 min. @ 14,300 ft.

Interval	Description	Avg. Drill Rate min./ft.
14,290-14,305'	Dol: wh - bf, and bf - gy, f. - med xl, w/intxl gilsonite in pt. hd, tt, NOSCF; intbdd w/Sh (10-30%) dk gy, hd, sil; and Cht (20-30%) med gy - bf, tripolitic.	14.5
14,305-14,335'	Dol: a/a, in pt replaced by sil; w/Cht (10%) wh, trns1, sl tripolitic.	13.0
14,335-14,365'	Dol: a/a, f. xl; intbdd w/Cht (30-50%) wh, clr, tn, trns1, in pt tripolitic.	14.0

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 9 Connection nil Trip nil Peaks 12 @ 14,365'

Mud: Wt. 10.8 Vis 48 W.L. 6.0 ph 11.0 cc Oil - % Cl₂ 250 Temp. 90 °F. in 95 °F. out

Data Unit:

Depth	Shale Density	De Exponent	Pore Pressure
14,300'	2.54	1.62	10.55
14,350'	2.58	1.50	10.58

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist DAVE YOUNG



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 4-1-80 Time 0600
 Present Depth 14,461' Previous Depth 14,376' Footage 24 Hrs. 85
 Formation(s) LISBURNE Top 13,748
 Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 14,365-14,450' Sampling Interval 5 ft. Sample Quality good
 Lag Time: 113 min. @ 14,450 ft.

Interval	Description	Avg. Drill Rate min./ft.
14,365-14,395'	Pred Dol. wh - bf, f. xl, mod hd - hd, in pt sil, tt, NOSCF; in pt Dol w/dk gy mot and dk strn on micro frags; intbdd w/Sh (10%) dk gy, hd, sil; and Cht (20-30%) wh w/gy mot, lt gy, bf, trnsl, in pt tripolitic.	14.0
14,395-14,400'	Dol: brn - gy, arg, com crinoid stems, in pt wh - bf a/a; intbdd w/Sh a/a and Cht, dk brn w/conchoidal frags, and bf, tripolitic.	14.0
14,400-14,425'	Pred Dol. wh - bf, f. xl, hd, tt, in pt sil; intbdd w/Cht (10-50%) a/a.	14.0
14,425-14,450'	Dol. becoming dk gy downward, f. xl, hd, arg; intbdd w/Sh a/a, dk gy, hd, sil; and Cht (20-40%) dk gy, lt gy - wh, and tn - wh	13.0

SHOW DESCRIPTION (Gas and/or Oil)

Ditch Gas (Units): Background 10 Connection - Trip 66 @ 14,376' Peaks 22 @ 14,435'

Mud: Wt. 10.8 Vis 47 W.L. 6.2 ph 11 cc Oil - % Cl₂ 200 Temp. 84 °F. in 89 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Port Pressure
14,400'	2.61	1.53	10.71
14,450'	2.61	1.53	10.65

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	14,140-14,370'	1	Bx #57
Unwashed Ditch (USGS)	14,140-14,370'	1	Bx #57
GeoChem (canned)			
Cores	No.		

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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 4-15-80 Time 0600

Present Depth 15,262' Previous Depth 15,224' Footage 24 Hrs. 38

Formation(s) LISBURNE/KAYAK TRANSITION Top 15,082'

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 15,220-15,250' Sampling Interval 5 ft. Sample Quality good
Lag Time: 127 min. @ 15,250 ft.

Interval	Description	Avg. Drill Rate min./ft.
15,220-15,250'	Sh: gy - brn - dk gy, mod hd - hd, calc, micropyr, in pt sil; intbdd w/Ls (10-30%), bf - brn - gy, f. xl, mod hd, arg, in pt dol grdg to Dol; w/intbdd Slst (0-10%); dk gy, hd; and Chc (0-10%), trnsl - dk gy - brn, conchoidal frac.	20.0

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	
15,225'	10	nil			14000					

Ditch Gas (Units): Background 8 Connection nil Trip 20 @ 15,224 Peaks

Mud: Wt. 10.8 Vis 45 W.L. 6.2 ph 10 cc Oil - % Cl₂ 200 Temp. 87 °F. in 93 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
15,250'	NA	1.71	10.43

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist DAVE YOUNG



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 4-25-80 Time 0600

Present Depth 15,659' Previous Depth 15,642' Footage 24 Hrs. 17

Formation(s) LISBURNE Top 15,402'

Present Activity: Cutting Core #16 (Top core at 15,655')

LITHOLOGIC DESCRIPTION

Interval Reported 15,635-15,655' Sampling Interval 5 ft. Sample Quality fair - good
Lag Time: 1.45 min. @ 15,655 ft.

Interval	Description	Avg. Drill Rate min./ft.
15,635-15,645'	Ls: dk gy brn, mot, arg, med xl, a/a.	21.4 107
15,645-15,655'	Dol: bf, micro - f. xl, v. sil, w. ind, dns, stylolitic, chalky in pt; NOSCF, no gas, v.p. - nil por; w/mnr Cht: bf - lt gy brn, mot dk gy.	8.8 - 15.0 49 75

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units): Background 9 Connection nil Trip 48 @ 15,655' Peaks none

Mud: Wt. 10.8 Vis 47 W.L. 4.7 ph. 9.5 cc Oil 0 % Cl₂ 200 Temp. 83 °F. in 88 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Core Pressure
15,650'	2.60	1.55	10.36

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist DAVE FENEX



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 4-26-80 Time 0600
 Present Depth 15,676' Previous Depth 15,659' Footage 24 Hrs. 17
 Formation(s) LISBURNE Top 15,402'
 Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 15,655-15,663' Sampling Interval - ft. Sample Quality -
 Lag Time: 135.8 min. @ 15,660 ft.

Interval	Description	Avg. Drill Rate min./ft.
15,655-15,663'	Core #16, Cut 8', Rec. 3'	12 - 47 40 25 ^d
	15,655-15,658' - Dol: v. calc in pt, med gy brn to bf, grds from f. - crs xl, stylolitic w/bk carb mat on stylolites, isolated large pods f. - med xl dol; abnt near vert fracs, calcite filled; scat med gy - brn to gy brn Cht nodules; some near hztl lams; some fos ghosts; scat blk gilsonite in intxl pore space in crs xl dol; nil - v.p. intxl por; NOSCF.	
	15,658-15,663' - No recovery.	

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	

Ditch Gas (Units): Background 8 Connection - Trip 42 @ 15,663' Peaks none

Mud: Wt 10.8 Vis 46 W.L. 4.8 ph 9.5 cc Oil - % Cl₂ 200 Temp. 78 °F. in 83 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paico)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No. 16, 15,655-15,658'	1	

Geologist DAVE FENEX



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 4-27-80 Time 0600
 Present Depth 15,747' Previous Depth 15,676' Footage 24 Hrs. 71
 Formation(s) LISBURNE Top 15,402'
 Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 15,663-15,745' Sampling Interval 5 ft. Sample Quality fair - good
 Lag Time: 130 min. @ 15,700 ft.

Interval	Description	Avg. Drill Rate min./ft.
15,663-15,670'	Dol: bf, a/a.	7.0 35
15,670-15,709'	Ls: calcarenite, med - dk gy brn, arg, becomes chalky in pt, stylolitic in pt, com large fos frags, rr com blk phosphate pels, mod w. ind, dns; grds to Ls, calcilutite, arg, crypto-microxl, w. ind, dns, brittle; w/isolated Cht nodules, blk to gy brn; some calcite filled frags.	12 - 17 60 - 15
15,709-15,721'	Dol: bf, crs xl, v. p. intxl por a/a, circ spls at 15,718' due to drilling break, no shows.	3 - 8 15 40
15,721-15,745'	Ls: calcarenite a/a grdg to calcilutite a/a.	14.5 - 18.5 12 92

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)				
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅
15,718'	16		10	11					
15,730'	35		12	12					

Ditch Gas (Units): Background 10 + 12 Connection - Trip - Peaks 35 @ 15,730'

Mud: Wt. 10.8 Vis 44 W.L. 5.0 ph 9.5 cc Oil - % Cl₂ 200 Temp. 78 °F. in 84 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Por Pressure
15,700'	No shale	1.54	10.39

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		



HUSKY OIL NPR OPERATIONS, INC.
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DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 4-28-80 Time 0600

Present Depth 15,809' Previous Depth 15,747' Footage 24 Hrs. 62

Formation(s) LISBURNE Top 15,402'

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 15,745-15,800' Sampling Interval 5 ft. Sample Quality fair - good
Lag Time: 140 min. @ 15,800 ft.

Interval	Description	Avg. Drill Rate min./ft.
15,745-15,753'	Ls: calcarenite and calcilutite a/a.	18.0 10
15,753-15,800'	Dol: bf - med gy brn, mot, sl arg in pt, f. - crs xl, mod w. ind, nil - v. p. intxl por w/occ scat gilsonite in pore space, NOSCF; w/com Cht nodules, clr, pale brn, dk gy.	9.0 17

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	

Ditch Gas (Units): Background 9 Connection - Trip 45 @ 15,777' Peaks 14 @ 15,750'

Mud: Wt. 10.8 Vis 44 W.L. 5.2 ph 9.5 cc Oil - %Cl₂ 200 Temp. 82 °F. in 87 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Port Pressure
15,750'	-	1.55	10.45
15,800'	-	1.51	10.47

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	15,590-15,790'		Bx #66
Unwashed Ditch (USGS)	15,590-15,790'		Bx #66
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 4-29-80 Time 0600
 Present Depth 15,902' Previous Depth 15,809' Footage 24 Hrs. 93
 Formation(s) LISBURNE Top 15,402'
 Present Activity: POH for Core #17

LITHOLOGIC DESCRIPTION

Interval Reported 15,800-15,902' Sampling Interval 5 ft. Sample Quality f. - good
 Lag Time: 146 min. @ 15,900 ft.

Interval	Description	Avg. Drill Rate min./ft.
15,800-15,815'	Dol: bf - med lt gy brn, f. xl, a/a.	11.5 - 14.5
15,815-15,845'	Dol: med gy brn, mot and grds to dk gy brn, f. - med xl, v. arg, grds to v.f. - cryptoxl, becomes in pt chalky, abnt dk gy arg veins, mod w. ind.	8.7 - 13.5
15,845-15,890'	Dol: pred bf - med gy brn, rexlized, w/med - crs xls, mod ind, chalky in pt, sl arg in pt, nil - v.p. por, NOSCF; w/abnt Cht nodules, dk gy - brn - trnsal.	8.5 - 12.0
15,890-15,902'	Dol: med dk gy brn, arg, f. - med xl, w. ind, dns, nil por, NOSCF.	13.5 - 23.0

REQUEST: Paleo Report #33.

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GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units): Background 8 Connection nil Trip - Peaks 12 @ 15,825'

Mud: Wt. 10.8 Vis 43 W.L. 5.0 ph 9.5 cc Oil - % Cl₂ 200 Temp. 87 °F. in 93 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
15,850'	-	1.48	10.46
15,900'	-	1.51	10.47

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)	15,460-15,810'	1, Bx #48	
Cores	No.		

Geologist DAVE FENEK



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 4-30-80 Time 0600
 Present Depth 15,911' Previous Depth 15,902' Footage 24 Hrs. 9
 Formation(s) LISBURNE Top 15,402'
 Present Activity: RIH w/new bit

LITHOLOGIC DESCRIPTION

Interval Reported 15,902-15,911' Sampling Interval core ft. Sample Quality good
 Lag Time: 148 min. @ 15,911 ft.

Interval	Description	Avg. Drill Rate min./ft.
15,902-15,911'	Core #17, Cut 9', Rec. 4.8' (53%)	30.0 (16-40)
	15,902-15,906.8' (4.8') - Dol: bf - tn, med - crs xl, rexlized, w. ind, dns, nil por, stylolitic; w/occ Cht nodules, dk gy; w/ireg pods Dol: dk gy brn, arg, sil, f. xl, stylolitic, abnt small calcite blebs, dns, nil por, abnt calcite filled fracs throughout core w/dip of 50-60° to core axis.	
	15,906.8-15,911' (4.2') - No recovery.	

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units): Background 7 Connection - Trip 50 @ 15,902' Peaks none

Mud: Wt. 10.8 Vis 43 W.L. 5.2 ph 9.5 cc Oil - % Cl₂ 200 Temp. 80 °F. in 84 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Core Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No. 17, 15,902-15,911'	2	

Geologist DAVE FENEX



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-1-80 Time 0600
 Present Depth 16,004' Previous Depth 15,911' Footage 24 Hrs. 93
 Formation(s) LISBURNE Top 15,402'
 Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 15,911-15,995' Sampling Interval 5 ft. Sample Quality fair - good
 Lag Time: 139 min. @ 16,000 ft.

Interval	Description	Avg. Drill Rate min./ft.
15,911-15,955'	Dol: bf - tn, med - crs xl, a/a; grds to Dol: mot med - dk gy - brn, arg, f. xl, w. ind, dns; w/abnt Cht nodules; tn - blk, a/a, occ calcite filled frac.	11.0 - 13.6
15,955-15,995'	Pred Dol: tn - med gy brn, mot, med xl - occ crs xl, arg in pt, mod w. ind, dns; w/abnt Cht nodules a/a.	8.8 - 11.0

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units): Background 8 Connection n11 Trip 45 @ 15,911' Peaks 12 @ 15,955'

Mud: Wt 10.8 Vis 43 W.L. 5.4 ph 9.5 cc Oil - % Cl₂ 200 Temp. 79 °F. in 86 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Porosity
15,950'	-	1.55	10.49

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	15,790-15,970'	1, Bx #67	1
Unwashed Ditch (USGS)	15,790-15,970'	1, Bx #67	2
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-2-80 Time 0600
 Present Depth 16,067' Previous Depth 16,004' Footage 24 Hrs. 63'
 Formation(s) LISBURNE Top 15,402'
 Present Activity: Testing BOPE

LITHOLOGIC DESCRIPTION

Interval Reported 15,995-16,060' Sampling Interval 5 ft. Sample Quality fair - good
 Lag Time: 140 min. @ 16,060 ft.

Interval	Description	Avg. Drill Rate min./ft.
<u>15,995-16,035'</u>	<u>Dol: med gy brn, mot, sl arg, chalky in pt, f. xl; grds to Dol: bf, med - crs xl, dns, some free calcite as prob frac fill; w/abnt Cht: dk gy - brn - trnsl.</u>	<u>10.0 - 15.0</u>
<u>16,035-16,060'</u>	<u>Dol: dk gy brn - blk, v. arg, f. xl, rr fos frag, w. ind, dns, grds to Dol: med gy, chalky in pt; w/v. abnt Cht nodules a/a.</u>	<u>12.5 - 15.0</u>

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	

Ditch Gas (Units): Background 8 Connection nil Trip - Peaks 14 @ 16,050'

Mud: Wt. 10.6 Vis 46 W.I. 5.8 ph 9.5 cc Oil - % Cl₂ 200 Temp. 79 °F. in 88 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
<u>16,000'</u>	<u>-</u>	<u>1.50</u>	<u>10.49</u>
<u>16,050'</u>	<u>-</u>	<u>1.58</u>	<u>10.35</u>

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
<u>Washed & Dried Ditch</u>			
<u>Unwashed Ditch (Paleo)</u>			
<u>Unwashed Ditch (USGS)</u>			
<u>GeoChem (canned)</u>			
<u>Cores</u>	<u>No.</u>		

Geologist DAVE FENEX



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-3-80 Time 0600
 Present Depth 16,131' Previous Depth 16,067' Footage 24 Hrs. 64'
 Formation(s) LISBURNE Top 15,402'
 Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 16,060-16,120' Sampling Interval 5 ft. Sample Quality f. - good
 Lag Time: 150 min. @ 16,120 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,060-16,072'	Dol: dk gy brn - blk, f. xl, v. arg; grds to Mrlst:blk, v. w. ind, brittle, w/abnt calcite filled frac; abnt Cht (30%) nodules; a/a.	19.0
16,072-16,082'	Dol: bf mot to lt gy brn, chalky in pt, med - crs xl, w/rexl fos casts, large brachiopod frag, w. ind, nil por, NOSCF.	9.0 - 10.0
16,082-16,120'	Dol: med dk gy brn, arg, chalky in pt, f. - med xl, rexl, fos casts, w. ind, dns, grds to Mrlst: blk, cryptoxl, dns, nil por, w/abnt calcite filled frac; sl. less arg towards base; abnt Cht nodules: a/a.	11.0 - 14.0

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	

Ditch Gas (Units): Background 9 Connection nil Trip 23 @ 16,067' Peaks 14 @ 16,112'

Mud: Wt. 10.5 Vis 48 W.L. 6.0 ph 9.5 cc Oil 0 % Cl₂ 200 Temp. 80 °F. in 86 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Porosity
16,100'	2.62	1.60	10.29

Dispatched Samples:

Type	Interval	No. of Boxes	Ser No.
Washed & Dried Ditch	15,410-16,100'	2 Bx #19	162
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-4-80 Time 0600
 Present Depth 16,229' Previous Depth 16,131' Footage 24 Hrs. 98
 Formation(s) LISBURNE Top 15,402'
 Present Activity: Tripping for bit.

LITHOLOGIC DESCRIPTION

Interval Reported 16,120-16,220' Sampling Interval 5 ft. Sample Quality f. - good
 Lag Time: 152 min. @ 16,225 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,120-16,145'	Ls: med gy brn - mot, calcarenitic, dol, rexl to med - crs xl, com fos casts, some sparry cmt, chalky in pt, rr thin strks blk pels of phosphate (?), w. ind, dns, nil por; grds to Ls: dk gy - brn - blk, v. arg, grdg in pt to Mrist, cryptoxl - microxl, dns, calcite filled frac; abnt Cht nodules; a/a.	8.0 - 18.0
16,145-16,220'	Ls: calcarenitic, bf - mot gy brn, rexl med - crs xl, abnt fos, chalky in pt, mod w. ind, dns, becomes arg in pt, nil por; grds to Ls: calcilititic, gy brn - blk, crypto - micro - xl, w. ind, nil por, w/some Cht nodules.	8.0

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	

Ditch Gas (Units): Background 11 Connection nil Trip - Peaks 16 @ 16,190'

Mud: Wt 10.4 Vis 46 w.I. 5.8 ph 9.5 cc Oil - % Cl₂ 200 Temp. 86 °F. in 92 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
16,150'	-	1.59	10.1
16,200'	-	1.40	10.1

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist: DAVE FENEX



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 4-17-80 Time 0600

Present Depth 15,328' Previous Depth 15,298' Footage 24 Hrs. 30

Formation(s) LISBURNE/KAYAK TRANSITION Top 15,082'

Present Activity: RIH w/core bbl

LITHOLOGIC DESCRIPTION

Interval Reported 15,290-15,328' Sampling Interval 5 ft. Sample Quality good
Lag Time: 131 min. @ 15,328 ft.

Interval	Description	Avg. Drill Rate min./ft.
15,290-15,300'	Pred Ls: bf - brn, mot, f. - med grn, rexized bioclastic packst, w/crinoids and shell frag, mod hd, arg, no por, NOSCF; intbdd w/Sh: dk gy, hd, calc, micropyr.	17.0
15,300-15,328'	Pred Sh: dk gy, hd, calc, micropyr, in pt slty, microlam, becomes noncalc at 15,323', micromica, w/com calcite filled frac; intbdd w/Ls (20-70%): a/a, in pt micropyr, in pt chalky; w/tr Cht: lt brn, mot.	20.0

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	
15,320	12	1			2200					

Ditch Gas (Units): Background 7 Connection nil Trip - Peaks none

Mud: Wt. 10.8 Vis 47 W.L. 6.2 ph 9.5 cc Oil 0 % Cl₂ 200 Temp. 78 °F. in 85 °F. out

Data Unit

Depth	Shale Density	Dc Exponent	Pore Pressure	Calcineter Calc/Dol
15,300'	2.63	1.66	10.45	23 / 10

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	15,220-15,320'	1 Bx #63	1
Unwashed Ditch (USGS)	15,220-15,320	1 Bx #63	2
GeoChem (canned)			
Cores	No.		

Geologist DAVE YOUNG



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

DAILY GEOLOGICAL REPORT

WELL LISBURN #1 Date 5-5-80 Time 0600

Present Depth 16,290' Previous Depth 16,229' Footage 24 Hrs. 61

Formation(s) PERMO-TRIASSIC (?) Top 16,243'

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 16,220-16,270' Sampling Interval 5' ft. Sample Quality f. - good
Lag Time: 133 min. @ 16,286 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,220-16,243'	LS: a/a, w/some f. dis pyr, calc filled frags.	12.0
16,243-16,270'	Sltst: metatztc (breaks across the grn), lt gy mot to dk gy, v. arg. com bright green glau pels. abnt micro to f. dis pyr, com pyr nodules, com red hematite incls, v. w. ind, dns; w/intbdd Sh, dk gy - brn, smooth to slty tex, plty, sil, w. ind.	13.0 - 17.0
REQUEST: Geochem qt cans Geochem boxes		

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	

Ditch Gas (Units): Background 8 Connection - Trip 38 @ 16,229' Peaks -

Mud: Wt 10.4 Vis 45 W.I. 6.0 ph 9.5 cc Oil 0 % Cl₂ 200 Temp. 88 °F. in 94 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
16,250'	-	1.52	10.13

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	15,970-16,220'	1, Bx #68	
Unwashed Ditch (USGS)	15,970-16,220'	1, Bx #68	
GeoChem (canned)	15,810-16,140'	1, Bx #49	
Cores	No.		

Geologist DAVE PENEX



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 4-18-80 Time 0600
 Present Depth 15,348' Previous Depth 15,328' Footage 24 Hrs. 20
 Formation(s) LISBURNE/KAYAK TRANSITION Top 15,082'
 Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 15,328-15,340' Sampling Interval core ft. Sample Quality good
 Lag Time: 129 min. @ 15,343 ft.

Interval	Description	Avg. Drill Rate min./ft.
15,328-15,342'	Core #14, Cut 14', Rec. 12' (86%)	30.0
		19.0 - 42.0
	15,328-15,333' - Pred Sh: dk gy, mod hd, noncalc, subfis, highly slickensided, w/pyr in large 2-4 cm patches and lenses intbdd w/Ls.	
	15,333-15,339.5' - Pred Ls: bf - gy, mot, contorted bdg. w/intgran shly and pyr patches w/occ Sh: dk gy, hd, sil - sl calc, v. p. bdg on shale ptgs indicating dips of 20-40°, no por, NOSCF, v. sl bleed gas, few calcite filled frac w/50° dip.	
	15,339.5-15,340' - Sh: a/a.	
	15,340-15,342' - No recovery.	

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	
15,330'	7	0			1000					

Ditch Gas (Units): Background 6 Connection nil Trip 12 @ 15,328' Peaks none

Mud: Wt. 10.8 Vis 47 W.L. 6.3 ph 9.5 cc Oil 0 % Cl₂ 200 Temp. 73 sp. in 81 sp. out

Data Unit:

Depth	Shale Density	De Exponent	Pore Pressure
15,330'	2.64	-	-

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No. 14, 15,328-15,340'	4	

Geologist DAVE YOUNG



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 4-19-80 Time 0600
Present Depth 15,466' Previous Depth 15,348' Footage 24 Hrs. 118
Formation(s) LISBURNE/KAYAK TRANSITION Top 15,082'
Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 15,342-15,450' Sampling Interval 5 ft. Sample Quality F. - good
Lag Time: 128 min. @ 15,450 ft.

Interval	Description	Avg. Drill Rate min./ft.
15,342-15,402'	Sh: dk gy - blk, fis, flky, sil, metallic luster, organic (?) slickensided, mod w. ind, rr micropyr in pt, pyr nodules; w/Cht (30-40%): smokey - dk gy - lt trnsl - orange; abnt strks Dol: med - dk gy, arg, w/rhombs of med - crs xls, v.p. intxl por, NOSCF.	8.0 - 10.0 <i>45-50</i>
15,402-15,425'	Ls: bf - med gy brn, mot, calcilutitic, w/some indistinct fos frag, occ sparry calcite, chalky in pt, dns, stylolitic, w/dk gy - blk Cht nodules, nil por; w/occ Dol strks a/a.	13.5 - 17.0 <i>61 85</i> <i>73</i>
15,425-15,450'	Ls: a/a, grds to calcarenite, w/sparry calcite cmt, chalky in pt, stylolitic, no por, NOSCF.	9.0 - 13.0 <i>45-65</i> <i>55</i>

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	

Ditch Gas (Units): Background 9 Connection nil Trip 20 @ 15,342' Peaks 11 @ 15,440'

Mud: Wt 10.8 Vis 44 W.L. 5.3 ph 9.5 cc Oil 0 % Cl₂ 200 Temp. 82 °F. in 88 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
15,350'	2.64	1.66	10.52
15,400'	2.60	1.43	10.59

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch	14,730-15,410'	2, Bx #18	162
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)	15,180-15,460'	1, Bx #47	
Cores	No.		

Geologist DAVE FENEX



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 4-20-80 Time 0600
 Present Depth 15,527' Previous Depth 15,466' Footage 24 Hrs. 61
 Formation(s) LISBURNE (5TH PLATE) Top 15,402'
 Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 15,450-15,515' Sampling Interval 5 ft. Sample Quality £. - good
 Lag Time: 131 min. @ 15,520 ft.

Interval	Description	Avg. Drill Rate min./ft.
15,450-15,485'	Ls: bf - med gy brn a/a, grds to med - dk gy brn, chalky in pt, becomes calcilititic, w. ind, dns, stylolitic; w/abnt blk cht nodules, no por, NOSCF.	11.0 - 14.0 55-70
15,485-15,515'	Ls: bf, calcarenitic, w/v. large fos frag in micritic mtx, occasional sparry calcite cmt, w. ind, dns, no por; w/intbdd Ls: med dk gy brn, dolomitic, med xl, suc. rr large fos frag, mod ind, nil - v.p. por, occ blk gilsonite filling pore space, no fluor, no cut; w/abnt cht nodules.	12.5 - 16.0 4-80

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units): Background 10 Connection nil Trip 85 @ 15,492' Peaks 13 @ 15,475'

Mud: Wt. 10.8 Vis. 44 W.L. 5.5 ph 9.5 cc Oil - % Cl₂ 200 Temp. 75 °F. in 81 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Core Pressure
15,450'	2.61	1.58	10.59
15,500'	2.59	1.52	10.60

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist DAVE FENEX



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 4-21-80 Time 0600
 Present Depth 15,596' Previous Depth 15,527' Footage 24 Hrs. 69'
 Formation(s) LISBURNE (PLATE #5 ?) Top 15,402'
 Present Activity: RIH w/core barrel for Core #15

LITHOLOGIC DESCRIPTION

Interval Reported 15,515-15,590' Sampling Interval 5' ft. Sample Quality f. - good
 Lag Time: 132.2 min. @ 15,596' ft.

Interval	Description	Avg. Drill Rate min./ft.
15,515-15,540'	Intbdd Ls, bf calcarenite a/a; and Ls dk - med gy - brn, arg, rexlized, med xl euhedral calcite, rr - com fos frags.	11.0 - 15.0
15,540-15,565'	Dol, bf to rr dk gy brn mot, crypto to med xl, w. ind, rr indistinct fos ghosts, stylolitic, chalky in pt, becomes arg towards base, nil por; w/cht nodules, dk gy brn - transl, and lt orange, tr pyr nodules.	11.0 - 15.0 45 - 70
15,565-15,590'	Pred Dol, dk gy - med gy brn, arg, f. - med xl, some indistinct fos shadows, w. ind, nil por; w/thn strks Dol, bf, a/a; tr cht a/a.	14.0 - 20

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	
12,570'	18				240					

Ditch Gas (Units): Background 12 Connection - Trip - Peaks a/a

Mud: Wt. 10.8 Vis 44 W.L. 5.4 ph cc Oil % Cl₂ 200 Temp. 86 °F. in 92 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
15,500'	2.59	1.52	10.60
15,550'	2.61	1.55	10.43

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist DAVE FENEX



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 4-22-80 Time 0600
Present Depth 15,598' Previous Depth 15,596' Footage 24 Hrs. 2'
Formation(s) LISBURNE Top 15,402'
Present Activity: Fishing, jars parted at pin, top fish at 15,072'

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.
15,596-15,598'	Core #15, Cut 2', Rec. 0'; core head reamed out on outside (appears to have been jammed w/Cht on outside).	16.0 - 18.0

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	
15,595'	12									

Ditch Gas (Units): Background 10 Connection - Trip 64 @ 15,596' Peaks a/a

Mud: Wt. 10.8 Vis 47 W.L. 5.4 ph 9.5 cc Oil - % Cl₂ 200 Temp. 77 °F. in 86 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist DAVE FENEX



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

WELL LISBURNE #1 Date 4-23-80 Time 0600
Present Depth 15,603' Previous Depth 15,598' Footage 24 Hrs. 5
Formation(s) LISBURNE Top 15,402'
Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported None Sampling Interval _____ ft. Sample Quality _____
Lag Time: 132 min. @ 15,600 ft.

Interval	Description	Avg. Drill Rate min./ft.
	No spls to surface.	

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)				
			Before	After	C1	C2	C3	C4	C5

Ditch Gas (Units): Background 6-7 Connection nil Trip 148 @ 15,598' Peaks _____

Mud: Wt. 10.8 Vis 46 W.L. 5.0 ph 9.5 cc Oil - % Cl₂ 200 Temp. 72 °F. In 82 °F. out _____

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist DAVE FENEX



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 4-24-80 Time 0600
 Present Depth 15,642' Previous Depth 15,603' Footage 24 Hrs. 39
 Formation(s) LISBURNE Top 15,402'
 Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 15,598-15,635' Sampling Interval 5 ft. Sample Quality fair - good
 Lag Time: 127.6 min. @ 15,610 ft.

Interval	Description	Avg. Drill Rate min./ft.
<u>15,598-15,605'</u>	<u>Dol: dk gy brn, mot, arg, f. - med xl, w. ind, dns, nil por; w/Cht: (30-40%) dk gy - smoky gy - trns - pale orange.</u>	<u>14.0 - 14.8</u> <u>70-75</u>
<u>15,605-15,635'</u>	<u>Ls: bf - med gy brn, calcarenitic, arg, f. - med xl, stylolitic chalky in pt, w. ind, nil por; grds to Ls: calcilutitic, dk gy, arg, crypto - microxl, dns, nil por; w/mnr Cht: a/a, occ free calcite as prob frac fill.</u>	<u>19.5 - 21.5</u> <u>98 108</u>

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units): Background 10 Connection nil Trip 104 @ 15,613' Peaks 15 @ 15,615'
 Mud: Wt 10.8 Vis 47 W.L 4.8 ph 9.5 cc Oil - % Cl₂ 200 Temp. 75 °F. in 80 °F. out
 Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
<u>15,600'</u>	<u>2.60</u>	<u>1.55</u>	<u>10.40</u>

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
<u>Washed & Dried Ditch</u>			
<u>Unwashed Ditch (Paleo)</u>			
<u>Unwashed Ditch (USGS)</u>			
<u>GeoChem (canned)</u>			
<u>Cores</u>	<u>No.</u>		

DAVE FENEX



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-6-80 Time 0600
 Present Depth 16,302' (corrected up from 16,319') Previous Depth 16,290' Footage 24 Hrs. 29'
 Formation(s) LISBURNE Top 16,280' (top plate #6)
 Present Activity: Circ on btm w/core bbl for Core #18

LITHOLOGIC DESCRIPTION

Interval Reported 16,270-16,319' Sampling Interval 5' ft. Sample Quality fair - good
 Lag Time: 152 min. @ 16,300 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,270-16,280'	Sltst: qtztc a/a.	14.0
16,280-16,319'	Ls: calcarenite, mod gy brn, arg, chalky in pt, f. dis pyr, rr green glau pels, abnt fos frags, mod w. ind, occ Cht nodules, dns, nil por, NOSCF.	8.0 - 10.0

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	

Ditch Gas (Units): Background 12 Connection _____ Trip _____ Peaks _____

Mud: Wt. 10.4 Vis 48 W.L. 6.0 ph 9.5 cc Oil _____ % Cl₂ 200 Temp. NR °F. in NR °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Porc Pressure
16,300'	-	1.42	10.25

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-7-80 Time 0600

Present Depth 16,328' Previous Depth 16,302' Footage 24 Hrs. 26'

Formation(s) LISBURNE Top 16,280'

Present Activity: Reaming core hole

LITHOLOGIC DESCRIPTION

Interval Reported: 16,302-16,328' Sampling Interval _____ ft. Sample Quality _____
Lag Time: 149 min. @ 16,328 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,302-16,328'	Core #18, Cut 26', Rec. 22.5' (87%)	19.0
16,302-16,306.5' (4.5')	Ls: calcilutite, v. dk gy brn, arg. v.f. - f. xl. pred rexl lime mud, abnt v.f. - f. micro dis pyr, scat fos frags, v.w. ind, dns, nil por. NOSCF.	
16,306.5-16,318' (11.5')	Ls: calcilutitic to calcarenitic, med gy brn mot, less arg than above, mod w. ind, abnt scat fos frags, abnt scat near hztl lams; occ thn 1-3" near hztl strks Sltst, blk, v. arg, v. calc, rr large fos frags, occ blk Chr nod. v.w. ind, dns.	
16,318-16,320' (2')	Sltst: blk, v. arg, v. calc, rr large fos frags, w/hztl slickensides.	
16,320-16,324.5' (4.5')	Ls: calcilutitic, calcarenitic, med gy brn mot, med crs xl a/a.	
16,324.5-16,328' (3.5')	No recovery.	

NOTE: BEDDING APPEARS ESSENTIALLY HZTL WITH LITTLE OR NO FRACTURING OF ROCKS.

Ditch Gas (Units): Background 6 Connection _____ Trip 24 @ 16,302' Peaks _____

Mud: Wt. 10.4 Vis 50 W.I. 6.2 ph 9.5 cc Oil 0 % Cl₂ 200 Temp. 72 °F. in 84 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
16,328'		1.5	10.2

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (P&S)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No. 18, 16,302-16,328'	8	



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-16-80 Time 0600
 Present Depth 16,895' Previous Depth 16,874' Footage 24 Hrs. 21
 Formation(s) LISBURNE Top 15,402'
 Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 16,859-16,890' Sampling Interval 5 ft. Sample Quality fair - good
 Lag Time: 147 min. @ 16,890 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,859-16,875.5'	Core #19, Cut 16.5', Rec. 12', (73%)	
16,859-16,869' (10')	Ls: calcarenitic - calcilutite, mod gy brn - dk gy brn, pred lime mud mtx, rxcl, gy - brn, f. - mod xl, becomes v. arg; grds to Sh blk, abnt, large fos frags (crinoids and brachiopods), rr near vert closed calc filled microfracs, convoluted structure, abnt blk Cht nods, w. ind, dns; abnt Sh lams; w/intbdd Sh, blk, smooth tex, micropyr, sil, plty, w. ind, brittle, in 1/4" - 1/2" intbds.	20
16,869-16,871' (2')	Ls: dk gy brn, v. arg, cryptoxl, v. w. ind, dns; w/abnt blk bdg and nodular Cht.	38
16,871-16,875.5' (4.5')	No recovery.	
16,875.5-16,890'	Ls: a/a w/Cht nods; and intercalated Sh, a/a.	15

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)				
			Before	After	C1	C2	C3	C4	C5
16,880'	12								

Ditch Gas (Units): Background 10 Connection 0 Trip 40 @ 16,875' Peaks _____

Mud: Wt. 10.2 Vis 43 W.L. 6.0 ph 9.3 cc Oil - % Cl₂ 200 Temp. 90 °F. In 96 °F. out _____

Data Unit:

Depth	Shale Density	Dc Exponent	Core Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No. 19 16,859-16,875.5'	4	

Geologist DAVE FENEX



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-17-80 Time 0600
 Present Depth 16,940' Previous Depth 16,895' Footage 24 Hrs. 45
 Formation(s) LISBURNE Top 15,402'

Present Activity: Tripping

LITHOLOGIC DESCRIPTION

Interval Reported 16,890-16,930' Sampling Interval 5 ft. Sample Quality f. - good
 Lag Time: 149.5 min. @ 16,940 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,890-16,930'	Ls: calcilititic - calcarenitic, med - lt gy brn, mot, arg, f. - med xl w/rr - com large fos frags, w. ind, dns, rr pyr incls; grds to Ls: calcilititic, dk gy brn, v. arg, cryptoxl; w/thn, intbdd strks Sh: blk, organic, subfis - fis, occ pity, micro- pyr, mod ind, smooth tex.	15.0 - 18.5 (f) 25 - 29 (Sh)

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	
16,925'	18				3600					

Ditch Gas (Units): Background 14 Connection 22 @ 16,925' Trip 40 @ 16,875' Peaks 18 @ 16,925'

Mud: Wt 10.1 Vis 43 W.L. 5.8 ph 9.5 cc Oil - % Cl₂ 200 Temp. 85 °F. in 91 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
16,900'	2.61	1.63	9.90

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch	16,100-16,900'	2, Bx #20	162
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist DAVE FENEX



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-18-80 Time 0600
 Present Depth 16,969' Previous Depth 16,940' Footage 24 Hrs. 30
 Formation(s) LISBURNE Top 15,402'
 Present Activity: POH for core

LITHOLOGIC DESCRIPTION

Interval Reported 16,930-16,970' Sampling Interval 5 ft. Sample Quality f. - good
 Lag Time: 146 min. @ 16,970 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,930-16,950'	Inrbdd Sh and Ls; Sh: blk. a/a; w/Ls: calcilutitic. brn. f. xl a/a.	18.0 - 22.0
16,950-16,958'	Sh: blk. organic, a/a w/rz pyr nod.	22.0 - 40.0
16,958-16,969'	Ls: calcilutitic, dk gy brn, f. xl, v. arg, w. ind, dns; grds to calcarenite, mot gy brn, f. xl mtx, abnt large fos frag. mod. w. ind. dns. nil por.	7.0 - 19.0

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	
16,945'	18				3600					

Ditch Gas (Units): Background 16 Connection nil Trip 38 @ 16,940' Peaks 18 @ 16,945'

Mud: Wt. 10.2 Vis 44 W.L. 5.8 ph 9.5 cc Oil 0 % Cl₂ 200 Temp. 84 °F. in 87 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
16,950'	2.73	1.70	9.85

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-19-80 Time 0600
Present Depth 16,998' Previous Depth 16,982' (corrected from 16,969') Footage 24 Hrs. 16'
Formation(s) LISBURNE Top 15,402'
Present Activity: Cutting Core #20, 16,982-16,998 at report time

LITHOLOGIC DESCRIPTION

Interval Reported 157' at 16,995' Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.
	NOTE: Cuttings during coring have been pred Sh and calcilutite w/mnr - tr calcarenite; avg core rate 40 min/ft, min rate 3.7 min/ft at 16,985'	

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)				
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅

Ditch Gas (Units): Background 8 Connection - Trip 36 @ 16,983' Peaks _____

Mud: Wt. 10.2 Vis 44 W.L. 5.8 ph 9.5 cc Oil - % Cl₂ 200 Temp. 84 °F. in 87 °F. out _____

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
<u>16,950'</u>	<u>2.73</u>	<u>1.70</u>	<u>9.85</u>

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-20-80 Time 0600
 Present Depth 17,000' Previous Depth 16,998' Footage 24 Hrs. 2'
 Formation(s) LISBURNE Top 15,402'
 Present Activity: RIH to cond for logs

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
 Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.
16,982-17,000'	Core #20, Cut 18', Rec. 14.5' (81%)	
	16,982-16,996.5' (14.5') - Ls: calcilitic, finely calcarenitic, dk gy brn, f, xl, rr com large fos frags (crinoids, pelecypods or brachiopods), v. arg, rr near vert closed frags, abnt Sh lams, no obvious dip, rr blk Cht nuds, w. ind, brittle, dns, nil por.	
	16,996.5-17,000 (3.5') - No recovery.	
	Ran Temperature log to 15,900', ran out of cable.	

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units):

Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. 10.2 Vis 43 W.L. 5.8 ph 9.5 cc Oil - % Cl₂ 200 Temp. - °F. In - °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch	16,900-17,000'	2	1&2 (Bx #21)
Unwashed Ditch (Paleo)	16,770-17,000'	1	Bx #72
Unwashed Ditch (USGS)	16,770-17,000'	1	Bx #72
GeoChem (canned)	16,930-17,000'	1	Bx #53
Cores	No. 20, 16,982-16,996.5'	5 (Hand carried by Fenex)	

Geologist DAVE FENEX, DAVE YOUNG, ARMOUR KANE



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date May 21, 1980 Time 0600
 Present Depth 17,000' Previous Depth 17,000' Footage 24 Hrs. 0
 Formation(s) LISBURNE Top 15,402'
 Present Activity: Logging (see below)

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
 Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.
	Have run logs as follows:	
	Temp Survey - 16,954' to surface (max temp 208°F.)	
	DLL/GR - 16,992-13,650'	
	BECS/GR - Running at report time	

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peals _____

Mud: Wt. 10.2 Vis 44 W.L. 5 ph 9.5 cc Oil - % Cl₂ 200 Temp. - °F. in - °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-22-80 Time 0600
 Present Depth 17,000 Previous Depth 17,000 Footage 24 Hrs. 0
 Formation(s) LISBURNE Top 15,402'
 Present Activity: Logging (rigging up for Dipmeter)

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
 Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.
	<u>Have run the following logs:</u>	
	DLL/GR - 16,965-13,650'	
	BHCS/GR/TTI - 16,966-13,650'	
	CNL/FDC/CAL/GR - 16,980-13,650'	
	BDT (Dipmeter) - Prep to run at report time.	
	<u>Formation Tops</u>	
	4th Plate Lisburne 13,736'	
	5th Plate Lisburne (?) 15,340'	
	<i>FDC - CNL max. pm. 2%</i>	
	<i>FDC - CAL max. pm. 2% (± 1%)</i>	
	<i>Cross plotting not done yet, so 2% is pretty rough estimates</i>	

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl₂ _____ Temp. _____ °F. in _____ °F. out _____

Data Unit: _____

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-23-80 Time 0600
 Present Depth 17,000' Previous Depth 17,000' Footage 24 Hrs. 0
 Formation(s) LISBURNE Top 15,340' (?) log
 Present Activity: Logging Temp Log

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
 Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.
	<u>Ran the following logs past 24 hrs.</u>	
	<u>HDT Dipmeter - 13,645-16,979'</u>	
	<u>CBL/VDL/GR/CCL - 6500-12,500'</u>	
	<u>Velocity Survey - 4500-16,942' - 25 shots, 4 misfires</u>	
	<u>HRT Temp Log - Running at report time</u>	

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. 10 Vis. 43 W.L. 5.0 ph. 9.5 cc Oil. - % Cl₂ 200 Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-24-80 Time 0600

Present Depth PBTD approx 13,400' Previous Depth 17,000' Footage 24 Hrs. _____

Formation(s) _____ Top _____

Present Activity: POH after setting 3 cmt plugs at 16,100', 15,200', and 13,500'; prep to pick up scraper.

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl₂ _____ Temp. _____ °F. in _____ °F. out _____

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-25-80 Time 0600

Present Depth PBD 13,400' Previous Depth - Footage 24 Hrs. -

Formation(s) LISBURNE Top _____

Present Activity: Picking up test tools at report time for DST #1; perforated 11,826-11,841';
11,728-11,742', 11,618-11,638'.

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. _____ Vis _____ W.L. _____ ph _____ cc Oil _____ % Cl₂ _____ Temp. _____ °F. in _____ °F. out _____

Data Unit:

Depth	Shale Density	Dc Exponent	Porosity

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-8-80 Time 0600
 Present Depth 16,455' Previous Depth 16,327' Footage 24 Hrs. 127'
 Formation(s) LISBURNE Top 16,280'
 Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 16,328-16,440' Sampling Interval 5' ft. Sample Quality fair - good
 Lag Time: 149 min. @ 16,450 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,328-16,335'	Ls: calcarenitic, calcilutitic, med dk gy mot, arg, f. - med xl a/a.	8.5
16,335-16,360'	Ls: calcarenitic, calcilutitic a/a, becomes v. dol; grds to Dol, mot gy brn, arg, f. - med xl, w. ind, dns, nil por; w/thn Ls intbds, calcilutitic, dk gy brn - blk, cryptoxl - microxl, v. arg, w. ind, dns, rr - com Cht nod.	9.5 - 11.0
16,360-16,385'	Ls: calcarenitic, dol a/a; grds to calcilutitic Ls, mot med gy brn, chalky, micro - v.f. xl, mod w. ind; w/intbdd Ls, calcilutitic, dk gy brn - blk, cryptoxl, v. arg a/a; rr pyr incls. and abnt Cht nod.	9 - 12
16,385-16,440'	Ls: calcarenitic, decrease in dol, med gy brn - bf mot, clean - v. arg, med - crs xl, abnt blk Cht nod, rr calc filled frags, abnt fos frags; w/intbdd Ls, calcilutite, dk gy brn, cryptoxl a/a.	8 - 12

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)				
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅
16,365'	14								
16,395'	16								
16,425'	12								

Ditch Gas (Units): Background 5 Connection - Trip 15 @ 16,328' Peaks a/a

Mud: Wt. 10.4 Vis 43 W.L. 5.8 ph 9 cc Oil - % Cl₂ 200 Temp. 84 °F. in 92 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
16,450'		1.64	10.22

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)	16,140-16,340'	1	Bx #50
Cores	No.		

DAVE FENEX

Geologist:



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

WELL LISBURNE #1 Date 5-26-80 Time 0600

Present Depth PBD 13,400' Previous Depth - Footage 24 Hrs. -

Formation(s) LISBURNE Top

Present Activity: Prep to POH w/test tools after running DST #1.

LITHOLOGIC DESCRIPTION

Interval Reported Sampling Interval ft. Sample Quality
Lag Time: min. @ ft.

Interval	Description	Avg. Drill Rate min./ft.
	Preliminary results DST #1:	
	Weak blow throughout initial and final flow periods.	
	Reversed out and recovered approx 14 bbls fluid of apparent mud filtrate, no indication of gas or oil and 3000' water cushion.	

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units): Background Connection Trip Peaks

Mud: Wt 10.2 Vis 38 W.L. 8.5 ph 9.0 cc Oil - % Cl₂ 200 Temp. °F. in °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Porosity

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist DAVE YOUNG



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-27-80 Time 0600

Present Depth PBTD 11,528' Previous Depth _____ Footage 24 Hrs. _____

Formation(s) _____ Top _____

Present Activity: Running csg scraper; prep for DST #2.

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.
	See attached for preliminary results of DST #1	

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. 10.2 Vis 40 W.L. 8.0 ph 9.0 cc Oil _____ % Cl₂ 200 Temp. _____ °F. In _____ °F. out _____

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist DAVE YOUNG



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-28-80 Time 0600
Present Depth PBTD 7680' Previous Depth - Footage 24 Hrs. -
Formation(s) LISBURNE Top _____
Present Activity: POH w/test tools after attempting DST #2

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.
	Preliminary Description of DST #2	
	Perforated 9 5/8" casing at 7645-7662' w/4 shots/ft.	
	1st Flow Period: (60 min) Opened tool w/no blow, recycled tool to check for seat and tool operation resulting in approx 17 min shut in.	
	2nd Flow Period: (53 min) Opened tool w/no blow throughout period. Shut in well for 147 min. POH w/test tools.	

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. 10.3 Vis 41 W.L. 6.5 pH 9.0 cc Oil - % Cl₂ 200 Temp. _____ °F. in _____ °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-29-80 Time 0600

Present Depth FBTD 7680' Previous Depth Footage 24 Hrs.

Formation(s) LISBURNE Top

Present Activity: Final shut in of DST #3 (Retest of interval 7645-7662')

LITHOLOGIC DESCRIPTION

Interval Reported Sampling Interval ft. Sample Quality
Lag Time: min. @ ft.

Interval	Description	Avg. Drill Rate min./ft.
	NOTE: Analysis of pressure data DST #2 indicates test was misrun due to plugging and/or malfunction of tool.	
	Summary DST #3 Results To Date	
	1st Flow Period: (1 hr) Opened tool w/moderate blow increasing to strong blow in 46 min, FWHP TSTM, shut in for 2 hrs.	
	2nd Flow Period: (8 hrs) Opened w/moderate blow increasing to moderately strong blow in 5 hrs and continuing thruout remainder of period w/FWHP 15 psi. No fluid to surface. Shut in well at 0511 hrs, 5-29-80 for 16 hr. PBU.	

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units): Background Connection Trip Peaks

Mud: Wt. 10.2 Vis 36 W.I. 7.5 ph 9.0 cc Oil - % Cl₂ 200 Temp. °F. in °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Porosity

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		

Geologist DAVE YOUNG



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-30-80 Time 0600
Present Depth PSTD 7230' Previous Depth 7680' Footage 24 Hrs. _____
Formation(s) SHUBLIK Top _____
Present Activity: POH after setting and cementing retainer at 7605'

LITHOLOGIC DESCRIPTION

Interval Reported _____ Sampling Interval _____ ft. Sample Quality _____
Lag Time: _____ min. @ _____ ft.

Interval	Description	Avg. Drill Rate min./ft.

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units): Background _____ Connection _____ Trip _____ Peaks _____

Mud: Wt. 10.1 Vis 39 W.L. 6.5 ph. 9.0 cc Oil _____ % Cl₂ 250 Temp. _____ °F. In _____ °F. out _____

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-9-80 Time 0600

Present Depth 16,497' Previous Depth 16,455' Footage 24 Hrs. 42

Formation(s) LISBURNE Top 16,280'

Present Activity: RIH w/new bit

LITHOLOGIC DESCRIPTION

Interval Reported 16,440-16,490' Sampling Interval 5' ft. Sample Quality fair - good
Lag Time: 147 min. @ 16,497 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,440-16,490'	Pred Ls: calcarenitic, bf - mot lt gy brn, micropyr, f. - med xl, abnt lrg fos frags, chalky in pt, becomes arg and dk gy brn towards btm; w/intbdd Ls calcilutitic, dk gy brn, arg, cryptoxl a/a.	10 - 13

GAS OCCURENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C ₁	C ₂	C ₃	C ₄	C ₅	
16,475'	14				2800					

Ditch Gas (Units): Background 12 Connection 14 @ 16,440' Trip 15 @ 16,328' Peaks

Mud: Wt. 10.4 Vis 47 W.I. 5.8 ph 9.5 cc Oil 0 %Cl₂ 200 Temp. 85 °F. in 92 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
16,400'		1.45	10.22
16,497'		1.63	10.23

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	16,220-16,410'	1	Bx #69
Unwashed Ditch (USGS)	16,220-16,410'	1	Bx #69
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-10-80 Time 0600

Present Depth 16,592' Previous Depth 16,497' Footage 24 Hrs. 95'

Formation(s) LISBURNE Top 16,280' (Plate #6)

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 16,490-16,580' Sampling Interval 5' ft. Sample Quality fair - good
Lag Time: 147 min. @ 16,590 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,490-16,505'	Ls: calcarenite, bf - dk gy brn a/a, arg, micropyr, w/strks calcilutite a/a.	12 - 15
16,505-16,530'	Ls: calcilutitic, dk gy brn - blk, cryptoxl, some grd to f. xl, sl calcarenitic, pyr, calc filled frags.	13.8 - 18
16,530-16,580'	Ls: calcarenitic - calcilutitic, mot lt - dk gy brn, med - crs xl, abnt large fos frags, mod w. ind, chalky in pt, v. arg in pt, abnt blk cht nods, calc filled frags, becoming less arg downward: w/thn strks Calcilutite, blk, cryptoxl a/a.	9.5 - 12

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	
16,570'	23									

Ditch Gas (Units): Background 12 Connection nil Trip 22 @ 16,497' Peaks
Mud: Wt. 10.3 Vis 43 W.L. 5.8 ph 9.5 cc Oil - % Cl₂ 200 Temp. 83 °F. in 90 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
16,500'		1.50	10.22
16,550'		1.57	10.10

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-11-80 Time 0600
 Present Depth 16,669' Previous Depth 16,592' Footage 24 Hrs. 77
 Formation(s) LISBURNE Top 16,280'
 Present Activity: Tripping for bit

LITHOLOGIC DESCRIPTION

Interval Reported 16,580-16,660' Sampling Interval 5' ft. Sample Quality fair - good
 Lag Time: 148 min. @ 16,669 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,580-16,615'	Intbdd ls: calcarenite - calcilutite, gy - dk gy brn, chalky in pt. a/a; intbdd w/Calcilutite, dk gy brn, crypto - microxl, arg, a/a, some calc filled frac and Cht nods.	10 - 14
16,615-16,650'	Pred ls: calcilutite, sl calcarenitic, gy - dk gy brn, v. arg, v.f. - f. xl, w/tr large scat fos frags, mod w/ind, dns, nil por, NOSCF; w/some calcilutite, cryptoxl; com hik Cht nods and calc filled frac, rr pyr incl.	12 - 14

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units): Background 12 Connection - Trip 22 @ 16,497' Peaks -

Mud: Wt 10.3 Vis 44 W.L. 5.6 ph 9.5 cc Oil - % Cl₂ 200 Temp. 89 °F. in 96 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
16,600'		1.51	10.14
16,650'		1.60	10.11

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	16,410-16,590'	1	Bx #70
Unwashed Ditch (USGS)	16,410-16,590'	1	Bx #70
GeoChem (canned)			
Cores	No.		

Geologist DAVE FENEX



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-12-80 Time 0600

Present Depth 16,751' Previous Depth 16,669' Footage 24 Hrs. 82

Formation(s) LISBURNE Top 16,280'

Present Activity: Drilling

LITHOLOGIC DESCRIPTION

Interval Reported 16,660-16,740' Sampling Interval 5 ft. Sample Quality fair - good
Lag Time: 155 min. @ 16,822 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,660-16,675'	Ls: calcarenitic - calcilititic, med dk gy brn a/a, w/abnt Cht nods.	12 - 14
16,675-16,710'	Dol: med med dk gy brn, v. arg, f. - med xl, some fos frags, w. ind, dns; w/abnt Cht nods.	11 - 14
16,710-16,740'	Dol: pred bf - tn, rexl, indst fos frags, v. sil, w. ind, dns; w/abnt Cht nods, brn, lt trnsl brn, opaque, lt gy.	8 - 11

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	
16,670'	15									

Ditch Gas (Units): Background 13 Connection - Trip 30 @ 16,669' Peaks

Mud: Wt. 10.2 Vis 43 w.L. 6.0 ph. 9.5 cc Oil - % Cl₂ 200 Temp. 83 °F. in 94 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
16,700'		1.58	9.99
16,750'		1.44	10.15

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)	16,330-16,690'	1	Bx #51
Cores	No.		

Geologist DAVE FENEX



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-13-80 Time 0600
 Present Depth 16,808' Previous Depth 16,751' Footage 24 Hrs. 57'
 Formation(s) LISBURNE Top 16,280'
 Present Activity: Tripping

LITHOLOGIC DESCRIPTION

Interval Reported 16,740-16,800' Sampling Interval 5 ft. Sample Quality fair - good
 Lag Time: 152 min. @ 16,800 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,740-16,745'	Dol: bf - tn; a/a w/about Cht nods.	10.0
16,745-16,760'	Dol: mot dk gy brn, v. arg, f. - med xl, suc, w. ind, dns; w/40-50% Cht nods a/a.	10.0 - 13.7
16,760-16,778'	Cht: blk, trasl, gy brn to pale orange.	16.8
16,778-16,792'	Dol: a/a, v. arg, w/about Cht nods a/a.	13.8
16,792-16,800'	Cht: a/a.	17.0 - 18.4

REQUEST: Wellsite Sample Transmittal forms.

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GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units): Background 9 Connection - Trip - Peaks -

Mud: Wt. 10.2 Vis. 44 W.L. 5.8 ph. 9.5 cc Oil - % Cl₂ 200 Temp. 90 °F. in 96 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Port Pressure
16,750'		1.44	10.01
16,800'		1.60	9.96

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)	16,590-16,770'	1	Bx #71
Unwashed Ditch (USGS)	16,590-16,770'	1	Bx #71
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-14-80 Time 0600
Present Depth 16,859' Previous Depth 16,808' Footage 24 Hrs. 51'
Formation(s) LISBURNE Top 15,402'
Present Activity: Tripping

LITHOLOGIC DESCRIPTION

Interval Reported: 16,800-16,850' Sampling Interval 5 ft. Sample Quality fair-good
Lag Time: 152 min. @ 16,850 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,800-16,830'	Fred Dol and Cht a/a.	18 - 20
16,830-16,850'	Ls: calcarenite, med mot gy brn, grds to dk gy brn, v. arg. in pt chalky, in pt f. xl w/abnt crs fos frags, w. ind, dns; w/strks Ls, calcilutite, cryptoxl, v. arg, w. ind, dns, w/some calc filled fracs, abnt Cht nods a/a; w/some intbdd Sh, blk, organic, subfis, plty, micropyr, sl calc, sil, w. ind.	18 - 20

GAS OCCURENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	
16,850'	210				42,000					

Ditch Gas (Units): Background 5-7 Connection - Trip - Peaks 210 @ 16,850'

Mud: Wt. 10.1 Vls 43 W.L. 5.8 ph 9.5 cc Oil - % Cl₂ 200 Temp. 90 °F. in 96 °F. out

Data Unit:

Depth	Shale Density	De Exponent	Porc Pressure
16,850'		1.70	10.00

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		



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

DAILY GEOLOGICAL REPORT

WELL LISBURNE #1 Date 5-15-80 Time 0600
 Present Depth 16,874' Previous Depth 16,859' Footage 24 Hrs. 15
 Formation(s) LISBURNE Top 15,402'
 Present Activity: Cutting Core #19,; cut 15' at report time.

LITHOLOGIC DESCRIPTION

Interval Reported 16,850-16,859' Sampling Interval 5' ft. Sample Quality fair - good
 Lag Time: 156 min. @ 16.880 ft.

Interval	Description	Avg. Drill Rate min./ft.
16,850-16,859'	Pred Sh, blk organic, subfis to plty, smooth - eltry tex, sl calc, micropyr, sil, w. ind; w/some ls a/a, calcilutite and calcarenite a/a, w/Cht nods a/a.	14.5 - 16.0

GAS OCCURRENCE/SHOWS

INTERVAL	Total Gas Units	Cuttings Gas Units	Background Gas Units		CHROMATOGRAPH (PPM)					
			Before	After	C1	C2	C3	C4	C5	

Ditch Gas (Units): Background 7 Connection - Trip 55 @ 16,859' Peaks -

Mud: Wt. 10.2 Vis 43 W.L. 5.8 ph 9.0 cc Oil - % Cl₂ 200 Temp 90 °F. in 96 °F. out

Data Unit:

Depth	Shale Density	Dc Exponent	Pore Pressure
16,850'	2.61	1.70	10.0

Dispatched Samples:

Type	Interval	No. of Boxes	Set No.
Washed & Dried Ditch			
Unwashed Ditch (Paleo)			
Unwashed Ditch (USGS)			
GeoChem (canned)			
Cores	No.		