

SECURE-FX TRANSMISSION
AUG 28 '93 09:40AM ARI EXPLOR/DRILLING
08/28/93 07:24 ARCD KDOULM II + 907 265 1393

P.6
NO. 904 602

LOGGING SYSTEMS Minerals Management Service
Anchorage, Alaska

DEPTH 11125
OPERATION PLUG
FOOTAGE

NO. 31
DATE Aug 28 83
TIME 04 00

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

OPERATOR	ARCO ALASKA, INC.	WELL NAME	KUVLUM NO. 2	FIELD/BLOCK	OCS BLK 872 NR-4
CONTRACTOR	CANMAR	RIG NAME	KULLUK	AREA	BEAUFORT SEA
START DATE	Jul 28 93	LOC.	OFFSHORE	STATE	ALASKA

LOGGING DATA

AVG	MAX	AT	SURVEY DATA	4.05 Deg at 11125'
GAS	GAS	DEPTH	LITHOLOGY	40 % CLAY 60% SILTSTONE
(units)	(units)	(feet)	SAMPLE DEPTH	11125
BACKGROUND	NA		TRIP CHLORIDES	
CONNECTION			LAG DOWN DP	
TRIP	1231	8/26/83	LAG OFF BOTTOM	
FLOWLINE TEMP		degrees F		
			DRILL RATE RPM	
			CORRECTED 'D' EXP.	
			SHALE DENSITY g/cc	NA
			EWR REX.	

FORMATION PRESSURE DATA

	CASING			BOTTOM HOLE			OPEN HOLE							
PORE PRESSURE	1800	psi	8.7	ppg	5727	psi	0.9	ppg	_____	psi	_____	ppg	_____	ft
FRACTURE PRESSURE	3081	psi	14.9	ppg	0545	psi	16.5	ppg	_____	psi	_____	ppg	_____	ft
ECD	_____	psi	_____	ppg	_____	psi	_____	ppg	_____	psi	_____	ppg	_____	ft

MUD DATA

ENT DATA

HYDRAULIC DATA

TIME	1600 E4 AUG 83	BIT NO.	6	PUMPS	1.	ID1800	ID1800
TYPE	GENERIC #2	TYPE	D6-40H	SIZE inches	6.5X12	6.5X12	6.5X12
WEIGHT IN	10.8	IADC CODE	PDC	CAPACITY gal/stk	4.81	4.81	4.81
FUNNEL VIS.	5665	SIZE	12.25	PUMP RATE stks/min			
PV/VP	28/35	JET8	5.15	FLOW RATE gal/min			
QEL8	4/16	DEPTH OUT	11125	PRESSURE psi		STATIC	
pH	8.5	ROT NR6.	26.1	PD SURF / DS psi			
FILT/CAKE API	3.4/2	FOOTAGE	1025	ANN / DT psi			
HP/IT	8.2 @ 150	AVG h/hr	85	JET VELOCITY ft/sec			
Pm	1.7	GRADE	4.4 X 1/8	JET IMPACT lbs			
PI/MM	1.3/3.7	HOLE DEV.	4.03	BIT HP			
CHLORIDES ppm	17000	COST/FT	517	HP RATIO / HP/INZ			
CALCIUM ppm	280	RPM	162	REDUCED 1		psi at	stk/min
OIL/WATER/SOLIDS	TR/12/88	WOB	11	RATE 2		psi at	stk/min
DAILY/CUM. COST							

ANNULAR DATA

		LENGTH - FT.	VOLUME BBL6/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBL6
5X20	DP-RISER	171	.3644			
5X13 3/8	DP-CSG	3906	.1286			
5X12.25	DP-HOLE	8098	.1215			
5X12.25	UC-HOLE	476	.0836			

PIPE DATA

DRILL STRING				CASING:	RISE	COND.	SURF.	INT.
	DP	HWDP	DC	DEPTH	171	301	1017	3879
OD-inches	5.0	5.0	8		21.0	30	20	13.375
ID-inches	4.276	3.0	2.875		20.0	26	10.75	12.415
CAP-lbs/ft	.0178	.0067	.0076		.3887	.7616	.3408	.1498
DISP-bbls/ft	.0075	.0181	.0545		NA	.113	.0479	.024
LENGTH-ft	1021	728	478		170.5	85	811	3772
WEIGHT-lbs/ft	19.5	49	149			310	133	68

REMARKS AND RECOMMENDATIONS

[illegible]

LOGGING SYSTEMS

Anchorage, Alaska Aug 27 99

TIME 01 00

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

LOGGING DATA

FORMATION PRESSURE DATA

MUD DATA

BIT DATA

HYDRAULIC DATA

ANNULAR DATA

PIPE DATA

REMARKS AND RECOMMENDATIONS[illegible]

OCS District Office
No. 2562 P. 4/9
AUG 26 1993 NO. 887 004

Minerals Management Service
~~SYSTEMS~~ Prudhoe Bay, Alaska

LOGGING SYSTEMS

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

NO. 20
DATE AUG 29 1961
TIME 04 00

OPERATOR	ARCO ALASKA INC.	WELL NAME	KUVLUM NO. 2	FIELD/BLOCK	OCB BLK 872 NH-4
CONTRACTOR	CANMAN	RIG NAME	KULLUK	AREA	BEAUFORT SEA
START DATE	Jul 28 83	LOC.	OFFSHORE	STATE	ALASKA

AVG	MAX	AT	SURVEY DATA	4.03 Deg at 11125'
GAS	GAS	DEPTH	LITHOLOGY	40 % CLAY 60% SILTSTONE
(units)	(units)	(feet)	SAMPLE DEPTH	11125
BACKGROUND	NA		TRIP CHLORIDES	
CONNECTION			LAG DOWN DP	
TRIP			LAG OFF BOTTOM	
FLOWLINE TEMP		degrees F		DRILL RATE RHR
				CORRECTED D'EXP.
				SHALE DENSITY g/cc
				NA
				EWB Res.

	CASING		BOTTOM HOLE		OPEN HOLE									
PORE PRESSURE	1800	psi	8.7	ppg	5727	psi	8.9	ppg	_____	psi	_____	ppg	_____	ft
FRACUTURE PRESSURE	3081	psi	14.9	ppg	2646	psi	18.5	ppg	_____	psi	_____	ppg	_____	ft
ECD	_____	psi	_____	ppg	_____	psi	_____	ppg	_____	psi	_____	ppg	_____	ft

HYDRAULIC DATA

TIME	1900 24 AUG 03	BIT NO.	8	PUMPS	1.	ID1800	2.	ID1800
TYPE	GENERIC #2	TYPE	D8-40H	SIZE inches		6.5X12		6.5X12
WEIGHT IN	10.9	IADC CODE	PDC	CAPACITY gal/stk		4.91		4.91
FUNNEL VIS.	08	SIZE	12.25	PUMP RATE stks/min				
PV/YP	28/32	JETS	5-15	FLOW RATE gal/min				
GELS	3/14	DEPTH OUT	11125	PRESSURE psi		STATIC		
PH	8.5	ROY MRS.	23.1	PD SURF / D8 psi				
FILT/CAKE API	2.8/7	FOOTAGE	1625	ANN / BIT psi				
HP-HT	8.8 @ 150	AVG ft/hr	86	JET VELOCITY ft/sec				
	.3	GRADE	4-4 X 1/8	JET IMPACT lbs				
	.15/1.4	HOLE DEV.	4.03	BIT HP				
RIDES apm	17000	COST/FT	517	HP RATIO / HP/IN2				
CALCIUM ppm	990	RPM	152	REDUCED 1		psi at		stk/min
OIL/WATER/SOLIDS	FR/12/88	WOB	11	RATE 2		psi at		stk/min
DAILY/CUM. COST								

		LENGTH - FT.	VOLUME BBL@/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBL@
5X20	DP-RISER	171	.3844			
5X13 3/8	DP-GSG	3908	.1255			
5X12.25	DP-HOLE	6008	.1215			
8X12.25	DC-HOLE	478	.0836			

	DP	HWDP	DRILL STRING	DC	CASING: DEPTH	RISE 171	COND. 301	SURF. 1917	INT. 3878
OD-Inches	5.0	5.0		8		21.0	90	20	13.375
ID-Inches	4.276	3.0		2.875		20.0	28	18.75	12.415
CAP-bbls/ft	.0178	.0067		.0078		.3887	.7816	.3406	.1498
DISP-bbls/ft	.0075	.0181		.0545		NA	.113	.0476	.024
LENGTH-ft	8921	726		476		170.5	83	811	3772
WEIGHT-lbs/ft	105	49		140			310	133	68

MW _____ GPM _____ JETS _____ ft/mi = _____ sec/std

E LOG LOGGING TOOL STUCK AT 8200'. TWP IN HOLE STRIPPING OVER WIHLINE TO RECOVER FISH. RECOVER FISH. POOH. RIH FOR
 ANOUT RUN. CIRCULATE AND CONDITION HOLE.

ADT D WALTERS

Received
District Office

NLP-62 WMO

Sperry-Sun
DRILLING SERVICES
A Baroid Company

LOGGING SYSTEMS

Minerals Management Service

Anchorage, Alaska DATE Aug 25 96
TIME 04 00

DEPTH 11125
OPERATION E LOG
FOOTAGE

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

OPERATOR	ARCO ALASKA, INC.
CONTRACTOR	GANMAR
START DATE	Jul 28 93

WELL NAME KUVLUM NO. 2
RIG NAME KULLUK
LOC. OFFSHORE

FIELD/BLOCK	OC8 BLK 672 NR6-4
AREA	BEAUFORT SEA
STATE	ALASKA

LOGGING DATA

	AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA LITHOLOGY SAMPLE DEPTH TRIP CHLORIDES LAG DOWN DP LAG OFF BOTTOM	4.04 Deg at 11125' 40 % CLAY 60% SILTSTONE 11125	DRILL RATE ft/hr CORRECTED 'D' EXP. SHALE DENSITY g/cc EWR Res.
BACKGROUND CONNECTION TRIP FLOWLINE TEMP	NA					NA

FORMATION PRESSURE DATA

	CASING			BOTTOM HOLE			OPEN HOLE						
PORE PRESSURE	1800	psi	6.7	ppg	5727	psi	8.8	ppg	_____	psi	_____	ppg	_____
FRACTURE PRESSURE	3081	psi	14.0	ppg	9545	psi	16.5	ppg	_____	psi	_____	ppg	_____
ECG	_____	psi	_____	ppg	_____	psi	_____	ppg	_____	psi	_____	ppg	_____

MUD DATA

ENT DATA

HYDRAULIC DATA

TIME	1900 24 AUG 83	BIT NO.	8	PUMPS	1.	1D1600	2.	1D1600
TYPE	GENERIC #2	TYPE	DB-40H	SIZE inches		6.5X12		6.5X12
WEIGHT IN	10.9	IADC CODE	PDC	CAPACITY gal/stk		4.91		4.91
FUNNEL VIS.	88	SIZE	12.25	PUMP RATE stks/min				
PV/VP	28/32	JETS	5-15	FLOW RATE gal/min				
GELS	3/14	DEPTH OUT	11125	PRESSURE psi				STATIC
pH	8.5	ROT HRG.	35.1	PD SUPP / DO psi				
FILT/CAKE API	2.8/1	FOOTAGE	1625	ANN / BIT psi				
HF-HT	6.8 @ 130	AVG ft/hr	85	JET VELOCITY ft/sec				
Pm	3	GRADE	4.4-X-1/8	JET IMPACT lbs				
PI/AM	.15/1.4	MOLE DEV.	4.03	BIT HP				
CHLORIDES ppm	17000	COAT/FT	517	HP RATIO / HP/IN2				
CALCIUM ppm	980	RPM	152	REDUCED 1		psi at		stk/min
OIL/WATER/SOLIDS	TR/12/68	WOB	11	RATE 2		psi at		stk/min
DAILY/CUM. COST								

ANNULAR DATA

		LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBL/S
5X20	DP-RISER	171	.3644			/
8X13 3/4	DP-CDG	3006	.1255			
5X12.25	DP-HOLE	6098	.1215			
8X12.25	DC-HOLE	478	.0836			

PIPE DATA

	DP	HWDP	DRILL STRING	DC	CASING: DEPTH	RIGER	COND.	SURF.	INT.
OD-inches	5.0	5.0		8		171	901	1017	3078
ID-inches	4.276	3.0		2.875		21.0	30	20	13.375
GAP-bbls/l	.0178	.0087		.0076		20.0	28	18.75	12.415
DISP-bbls/ft	.0075	.0181		.0545		.3887	.7510	.5100	.1400
LENGTH-ft	9921	720		470		NA	113	.0479	.0241
WEIGHT-lbs/l	18.5	40		149		170.5	95	811	3772
							310	133	68

REMARKS AND RECOMMENDATIONS

[illegible]

ADT D. WALTERS

၇၇၆

NO. 28
DATE Aug 28 50
TIME 04 00

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

OPERATOR	ARCO ALASKA, INC.	WELL NAME	KUYLUM NO. 2	FIELD/BLOCK	OCS BLK 672 NR0-1
CONTRACTOR	CANMAR	RIG NAME	KULLUK	AREA	BEAUFORT SEA
START DATE	JUL 28 93	LOC.	OFFSHORE	STATE	ALASKA

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA LITHOLOGY SAMPLE DEPTH TRIP CHLORIDES LAG DOWN DP LAG OFF BOTTOM	4.03 Deg at 11125' 40 % CLAY 60% SILTSTONE 11125	DRILL RATE 11/1r CORRECTED "D" EXP. SHALE DENSITY g/cc EWR Res.
BACKGROUND CONNECTION TRIP FLOWLINE TEMP	NA				NA

FORMATION PRESSURE DATA

	CASING				BOTTOM HOLE				OPEN HOLE			
PORE PRESSURE	1800	psi	8.7	ppg	5727	psi	9.0	ppg		psi		ppg
FRACTURE PRESSURE	3081	psi	14.0	ppg	9545	psi	18.5	ppg		psi		ppg
ECD		psi		ppg		psi		ppg		psi		ppg

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME	1900 22 AUG 83	BIT NO.	8	PUMPS	1.	ID1800	2	ID1800
TYPE	GENERIC #2	TYPE	DB-40H	SIZE inches		6.5X12		6.5X12
WEIGHT IN FUNNEL VIS.	10.8	IADC CODE	PDC	CAPACITY gal/mtk		4.91		4.91
PV/YP	61	SIZE	12.25	PUMP RATE stks/min				
GELS	20/34	JET#	5-15	FLOW RATE gal/min				
PH	4/14	DEPTH OUT	11125	PRESSURE psi		STATIC		
FILT/CAKE API	6.9	ROT HR#.	25.1	PD SURF / DS psi				
HP+H1	3.2/1	FOOTAGE	1825	ANN / BIT psi				
	7.6 @ 150	AVG ft/hr	85	JET VELOCITY ft/sec				
	.3	GRADE	4-4-X-1/8	JET IMPACT lbs				
	.15/1.3	HOLE DEV.	4.08	BIT HP				
CHLORIDES ppm	17000	COST/FT	517	HP RATIO / HP/IN2				
CALCIUM ppm	R20	RPM	152	REDUCED 1		psi at		stk/min
OIL/WATER/SOLIDS	TR/12/88	WOB	11	RATE 2		psi at		stk/min
DAILY/CUM. COST								

ANNULAR DATA

		LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBL/
5X20	DP-RISE	171	.3844			
5X13 3/8	DP-C&G	3008	.1255			
5X12.25	DP-HOLE	6088	.1215			
8X12.25	DC-HOLE	476	.0838			

PIPE DATA

	DRILL STRING				CASING:	RISER	COND.	SURF.	INT.
	DP	HWDP	DC		DEPTH	171	301	1017	3976
OD-inches	5.0	5.0	6			21.0	30	20	13.375
ID-inches	4.278	3.0	2.875			20.0	28	18.75	12.415
CAP-6bls/ft	.0179	.0067	.0078			.0087	.7616	.3408	.1490
DISP-6bls/ft	.0075	.0161	.0545			NA	.113	.0479	.024
LENGTH-ft	9921	728	476			170.5	85	811	3772
WEIGHT-lbs/ft	19.5	49	149				310	133	68

REMARKS AND RECOMMENDATIONS


MW _____ GPM _____ JETS _____ ft/ml = _____ sec/std

F.O.G. HOLE TAKING 5 - 1.0 BBLS/MR

ADT D. WALTERS

3:03AM

ARCO ALASKA INC


 No. 2479
 District Office

sperry-sun
DRILLING SERVICES *LOGGING SYSTEMS*

A Borden Company

DEPTH 11125
OPERATION E LOG
FOOTAGE

APPLIED DRILLING TECHNOLOGY
MORNING REPORT 5/10/76

NO. 75
DATE Aug 22 93
TIME 04 00
Service

OPERATOR	ARCO ALASKA, INC.	WELL NAME	KUVLUM NO. 2	FIELD/BLK	COGB BLK 872 NR6-4
CONTRACTOR	CANMAR	RIG NAME	KULLUK	AREA	BEAUFORT SEA
START DATE	Jul 28 83	LOC.	OFFSHORE	STATE	ALASKA

LOGGING DATA

	AVC	MAX	AT	SURVEY DATA		4.03 Deg at 11125'
	GAB	GAS	DEPTH	LITHOLOGY		40 % CLAY 60% SILTSTONE
	(units)	(units)	(feet)	SAMPLE DEPTH		11125
BACKGROUND	NA			TRIP CHLORIDES		
CONNECTION				LAG DOWN DP		
TRIP				LAG OFF BOTTOM		
FLOWLINE TEMP			degrees F	DRILL RATE 11/hr		
				CORRECTED 'D' EXP.		
				SHALE DENSITY g/cc		NA
				EWR Res.		

FORMATION PRESSURE DATA

	CASING			BOTTOM HOLE			OPEN HOLE			
PORE PRESSURE	1800	psi	2.7	ppg	3727	psi	2.9	ppg		ft
FRACTURE PRESSURE	3081	psi	14.9	ppg	9545	psi	16.5	ppg		ft
ECD		psi		ppg		psi		ppg		ft

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME	2100 21 AUG 83	BIT NO.	6	PUMPS	1.	ID1000	2.	ID1600
TYPE	GENERIC #2	TYPE	D8-40H	SIZE inches		8.5X12		11.5X12
WEIGHT IN	10.9	IADC CODE	PDC	CAPACITY gal/stk		4.91		4.91
FUNNEL VIB.	05	SIZE	12.25	PUMP RATE stks/min				
PV/VP	28/37	JETS	5-15	FLOW RATE gal/min				
GELS	3/12	DEPTH OUT	11125	PRESSURE psi		STATIC		
pH	8.5	ROT HRS.	25.1	PD SURF / D8 psi				
FILT/CAKE API	2.6/1	FOOTAGE	1625	ANN / BIT psi				
HP4HT	7.0 @ 150	AVG ft/hr	95	JET VELOCITY ft/sec				
p.m	3	GRADE	4-4-X-1/8	JET IMPACT lbs				
PI/MI	151/4	HOLE DEV.	4.03	BIT WP				
CHLORIDES ppm	17000	COST/FT	517	HP RATIO / HP/IN2				
CALCIUM ppm	840	RPM	152	REDUCED 1		psi at		stk/min
OIL/WATER/SOLIDS	TR/12/84	WOB	11	RATE 2		psi at		stk/min
DAILY/CUM. COST								

ANNULAR DATA

		LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBLs
5X20	DP-RIBER	171	.3644			
6X18 9/8	DP-C39	3900	.1255			
5X12.25	DP-HOLE	6008	.1215			
8X12.25	DC-HOLE	476	.0936			

PIPE DATA

DRILL STRING					CASING:	RIGER	COND.	SURF.	INT.
	DP	HWDP	DC		DEPTH	171	301	1017	3079
OD-inches	5.0	5.0	8			21.0	30	20	19.375
ID-inches	4.278	3.0	2.876			20.0	28	18.75	12.415
CAP-bbls/ft	.0179	.0087	.0078			.3667	.7616	.3408	.1498
DISP-bbls/ft	.0075	.0181	.0545			NA	.119	.0679	.024
LENGTH-ft	9921	728	478			170.5	95	811	9772
WEIGHT-lbs/ft	19.5	49	148				310	133	68


REMARKS AND RECOMMENDATIONS

[illegible]

NO. 100 100

08/23/53 06.38
SECURE-FX TRANSMISSION
ARCO KVVLM 11 - 907 253 1292

SECURE-FX TRANSMISSION

009  No. 2479 P. 6/13

163

NOLOGY, Anchorage, Alaska

FIELD/BLOCK	OCB BLK 672 NR5 4
AREA	BEAUFORT SEA
STATE	ALASKA

SECURE-FX TRANSMISSION
AUG 20 '93 07:10AM ALASKA EXPLOR/DRILLING
SECURE-FX TRANSMISSION
08/21/93 06:23 ARCO KUULUM 11 - 907 265 1393

RECEIVED
District Office

P.6
NO. B23 004

Minerals Management Service
Anchorage, Alaska

sperry-sun
A BARTCO COMPANY
LOGGING SYSTEMS

WELL
LOCATION 11125
COTAGE 574

APPLIED DRILLING TECHNOLOGY MORNING REPORT

DATE 20
TIME 04 00

OPERATOR	ARCO ALASKA, INC.	WELL NAME	KUULUM NO. 2	FIELD/BLOCK	OC6 BLK 672 NR6-4
CONTRACTOR	CANMAR	RIG NAME	KULLUK	AREA	BEAUFORT SEA
START DATE	08/20/93	LOC.	OFFSHORE	STATE	ALASKA

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA	4.03 Deg at 11125'
40	130	10555	LITHOLOGY	40 % CLAY 60% SILTSTONE
BACKGROUND CONNECTION TRIP	10	10827	SAMPLE DEPTH	11125
TRIP	883	10551	TRIP CHLORIDES	
FLOWLINE TEMP		degrees F	LAG DOWN DP	
			LAG OFF BOTTOM	
			DRILL RATE ft/m	20
			CORRECTED 'D' EXP.	
			SHALE DENSITY g/cc	NA
			EWR Res.	

FORMATION PRESSURE DATA

CASING			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE	1800 psi	8.7 ppg	5432 psi	9.9 ppg		psi	ppg	ft
FRACTURE PRESSURE	3081 psi	14.0 ppg	8053 psi	16.5 ppg		psi	ppg	ft
ECD		ppg		ppg		psi	ppg	ft

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME	24:00 AUG 19 93	BIT NO.	8	PUMPS	1. ID1600	2. ID1600
TYPE	GENERIC #2	TYPE	DS-40H	SIZE inches	5.5X12	5.5X12
WEIGHT IN	10.7	LAND CODE	PDC	CAPACITY gal/stk	4.01	4.91
FUNNEL VISC.	69	SIZE	12.25	PUMP RATE stks/min		
PV/VP	27/34	JET	5-15	FLOW RATE gal/min		
GELS	3/8	DEPTH OUT	11125	PRESSURE psi		STATIC
pH	8.8	ROT HRG.	25.1	PD SURF / DS psi		
FILT/CAKE API	2.1 - 1/32	FOOTAGE	1025	ANN / BIT psi		
IIP+HT	8.0 @ 150	AVG RAV	65	JET VELOCITY ft/sec		
MI	2/1.3	GRADE		JET IMPACT lbs		
CHLORIDES ppm	17000	HOLE DEV.	4.03	BIT HP		
CALCIUM ppm	860	COST/FT	517	HP RATIO / HP/IN2		
OIL/WATER/SOLIDS	TR/11.5/86.5	RPM	152	REDUCED 1	psi at	stk/min
DAILY/CUM. COST		WOR	11	RATE 2	psi at	stk/min

ANNULAR DATA

		LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL. BBL/S
5X20	DP-RISER	171	.8644			
5X13 3/8	DP-CSG	3906	.1255			
5X12.25	DP-HOLE	6093	.1215			
8X12.25	DC-HOLE	476	.0836			

PIPE DATA

	DP	HWDP	DC	CASING DEPTH	RISER	COND.	SURF.
OD-inches	5.0	5.0	5	171	901	1017	3878
ID-inches	4.278	3.0	2.875	21.0	30	20	13.975
CAP-bbls/ft	.0176	.0087	.0076	20.0	20	18.75	12.415
DISP-bbls/ft	.0075	.0161	.0545	3027	.7616	.3408	.1488
LENGTH-ft	8819	728	478	NA	.113	.0479	.024
WEIGHT-lbs/ft	19.5	49	149	170.5	95	811	3772
					310	139	68

REMARKS AND RECOMMENDATIONS

MW 10.5 GPM 700 JETS TFA: 75 ft/mi = 15 sec/stk
4 AFTER SHORT TRIP SHORT TRIP GAS = 883. DRILL AHEAD WITH BIT NO 8 THRU SILTSTONE/CLAY TO 11125', SHORT TRIP TO SHOE TO
ADDITION HOLE TO RUN E LOGS. HOLE PULLED TIGHT AT 10281-10291' AND 6057-6787'.

ADT

D. WALTERS

SECURE-FX TRANSMISSION
AUG 19 '93 08:03AM HULL EXPLOR/DRILLING
08/20/93 05:55 ARCO KULUM 11 + 907 265 1393

Minerals Management Service
District Office

P.6
NO.820 004

SPARTY-AIR
LOGGING SYSTEMS
A DASHI COMPANY

Minerals Management Service
District Office

WELL ID: 10551
STATION: 5. TRIP
STAGE: 1051

APPLIED DRILLING TECHNOLOGY MORNING REPORT

DATE: Aug 19 93
TIME: 04 00

OPERATOR	ARGO ALASKA, INC.	WELL NAME	KULUM NO. 2	FIELD/BLOCK	OCS BLK 672 NR0-4
CONTRACTOR	CANMAR	RIG NAME	KULLUK	AREA	BEAUFORT SEA
START DATE	Jul 28 93	LOC.	OFFSHORE	STATE	ALASKA

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA	80.2 3370 1.45 P 10852
BACKGROUND CONNECTION TRIP	92	10456	LITHOLOGY	80% CLAY 40% SLTSTONE TR SANDSTONE
FLOWLINE TEMP	105	degrees F	SAMPLE DEPTH	9500
			TRIP CHLORIDE	
			LAG DOWN DP	1505
			LAG OFF BOTTOM	11750
			DRILL RATE ft/hr	05
			CORRECTED 'D' EXP.	81
			SHALE DENSITY g/cc	NA
			EWB Rec.	3.5

FORMATION PRESSURE DATA

CASING			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE	1800	psi	8.7	ppg	5432	psi	8.9	ppg
FRACTURE PRESSURE	3081	psi	14.9	ppg	9053	psi	16.5	ppg
ECD	2113	psi	10.7	ppg	5870	psi	10.0	ppg

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME	24:00 AUG 18 93	BIT NO.	6	RR5	PUMPS	1. ID1600	2. ID1600
TYPE	GENERIC 22	TYPE	D9-40H	D9-40H	SIZE inches	6.6X12	6.6X12
WEIGHT IN	10.5	IADC CODE	PDC	PDC	CAPACITY gal/sk	4.91	4.91
FUNNEL VISC.	64	SIZE	12.25	12.25	PUMP RATE stks/min	69	69
PV/YP	28/34	JETS	3-13	2-14, 3-13	FLOW RATE gal/min	678	
GELS	4/12	DEPTH OUT		9500	PRESSURE psi		3200
PH	8.0	ROT HRG.	11.6	27.4	PD SURF / D0 psi		100/2400
FILT/CAKE API	3.4 - 1/32	FOOTAGE	1051	2768	ANN / BIT psi		100/600
HPHT	6.8 @ 150	AVG ft/hr	90	101	JET VELOCITY ft/sec		252
	.45	GRADE	INC	40% - 1/8	JET IMPACT lbs		929
CHLORIDES ppm	25/1.5	HOLE DEV.			BIT HP		985
CALCIUM ppm	17000	COST/FT	503	331	HP RATIO / HP/IN2		19% - 2.0/IN2
OIL/WATER/SOLIDS	920	RPM	155	180	REDUCED 1		psi at stk/min
DAILY/CUM. COST	TR/10/90	WOB	8-10	14	RATE 2		psi at stk/min

ANNULAR DATA

	LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBL/S
5X20 DP-RISER	171	.3644	44	321	
5X13 3/8 DP-C&G	3908	.1255	129	385	
5X12.25 DP-HOLE	6090	.1215	133	359	
8X12.25 OC-HOLE	478	.0836	183	410	

PIPE DATA

DRILL STRING				CASING: RISER COND. SURF.			
	DP	HWDP	DC	DEPTH	171	301	1017
OD-inches	5.0	5.0	6		21.0	30	20
ID-inches	4.278	3.0	2.875		20.0	20	16.75
CAP-bbls/ft	.0178	.0087	.0076		3807	7818	3408
DISP-bbls/ft	.0075	.0181	.0545		NA	.113	.0478
LENGTH-ft	9347	728	478		170.5	95	811
WEIGHT-lbs/ft	10.5	49	149			310	133

REMARKS AND RECOMMENDATIONS

MW 10.5 GPM 700 JETS TFA: 75 ft/mi = 15 sec/std

DRILL AHEAD WITH BIT NO. 6. MAX GAS FROM BOTTOM ON TRIP - 1543 UNITS. VERY GOOD PENETRATION RATES WITH NEW BIT.

SISTIVITY DATA INDICATING INCREASING PORE PRESSURE GRADIENT CONTINUOUS TO ABOUT 10,000'. RAISED PORE PRESSURE ESTIMATE

9.8 PPG AT THIS DEPTH. TREND APPEARS TO STABILIZE BELOW 10,000'. DRILL TO 10551'. SHORT TRIP PAST 9,500' TO CONDITION THE

HOLE.

ADJ J. PATTON

sperry-sun
DRILLING SERVICES **LOGGING SYSTEMS**
A Borehole Company

IN 9500
NATION RIR
FOOTAGE 0

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

NO. 21
DATE AUG 17 93
TIME 04 00

OPERATOR	ARCO ALASKA, INC.	WELL NAME	KULUM NO. 2	FIELD/BLOCK	DCS BLK 672 NBS-4
CONTRACTOR	CANMAR	RIG NAME	KULLUK	AREA	BEAUFORT SEA
START DATE	Jul 28 93	LOC.	OFFSHORE	STATE	ALASKA

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA	80 @ 8378
0	350	8. REM	LITHOLOGY	80 % CLAY 40% SILTSTONE TR SANDSTONE
CONNECTION	185	9488	SAMPLE DEPTH	9500
TRIP	025	7898	TRIP CHLORIDES	
FLOWLINE TEMP	80	degrees F	LAG DOWN DP	1345
			LAG OFF BOTTOM	10450
			DRILL RATE ft/hr	88
			CORRECTED 'D' EXP.	88
			SHALE DENSITY g/cc	NA
			EWB Res.	3.5

FORMATION PRESSURE DATA

CASING			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE	1800	psi	8.7	ppg	3844	psi	8.7	ppg
FRACTURE PRESSURE	3081	psi	14.8	ppg	6544	psi	16.2	ppg
ECD	2131	psi	10.8	ppg	4212	psi	10.6	ppg

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME	24:00 AUG 17 93	BIT NO.	8	RRS	PUMPS	1. ID1600	2. ID1600
TYPE	GENERIC #2	TYPE	DS-40H	DS-40H	SIZE inches	6.5X12	6.5X12
WEIGHT IN	10.4	IADC CODE	PDC	PDC	CAPACITY gal/stk	4.91	4.91
FUNNEL VIS.	88	SIZE	12.25	12.25	PUMP RATE stks/min	69	70
PV/VP	20/35	JETS	5-15	2-14, 3-10	FLOW RATE gal/min	800	
GELS	4/7	DEPTH OUT		9500	PRESSURE psi	3600	
pH	6.8	ROT HRS.		27.4	PD SURF / DS psi	100/2450	
FILT/CAKE API	2.9 - 1/32	FOOTAGE		2788	ANN / BIT psi	105/845	
HP-HI	6.8 @ 150	AVG ft/hr		101	JET VELOCITY ft/sec	618	
		GRADE		INC	JET IMPACT lbz	1170	
		HOLE DEV.			BIT HP	380	
		COST/FT		331	HP RATIO / HP/IN2	26% - 3.3/IN2	
		RFM		180	REDUCED 1	psi at	stks/min
		WOB		14	RATE 2	psi at	stks/min
CHLORIDES ppm	17500						
CALCIUM ppm	920						
OIL/WATER/SOLIDS	TR/10/90						
DAILY/CUM. COST							

ANNULAR DATA

	LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBLs
5X20 DP-RISE	171	.3644	45	361	
5X13 3/8 DP-C60	3906	.1255	130	452	
5X12.25 DP-HOLE	5046	.1216	134	403	
5X12.25 DO-HOLE	470	.0936	195	466	

PIPE DATA

	DP	HWDP	DC	CASING DEPTH	RISE	COND.	SURF.
OD inches	5.0	5.0	8	171	301	1017	3978
ID inches	4.276	3.0	2.675	21.0	30	20	13.975
CAP-bbls/ft	.0178	.0087	.0079	20.0	28	18.75	12.415
DISP-bbls/ft	.0075	.0181	.0545	3887	.7910	.3408	.1498
LENGTH-ft	6296	728	470	NA	.115	.0479	.024
WEIGHT-lbs/ft	19.5	49	149	170.5	95	811	3772
					310	139	68

REMARKS AND RECOMMENDATIONS

MW 10.4 GPM 700 JETS TFA: 75 ft/mi = 15 sec/std
UMP OUT OF HOLE ON FIRST 20 STANDS. HOLE PULLED GOOD FOR THE REST OF THE WAY OUT. TEST BOP. PICK UP ADDITIONAL
HILL PIPE ON THE WAY BACK IN.

ADT J. PATTON

sperry-sun
DRILLING SERVICES **LOGGING SYSTEMS**
A Borel Company

DEPTH 8500
OPERATION FOOT
CONTACT 1435

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

No. 20
DATE Aug 17 93
TIME 04 00

OPERATOR	ARCO ALASKA INC.	WELL NAME	KULUM NO. 2	FIELD/BLOCK	CCS BLK 672 NR6-4
CONTRACTOR	CANMAR	RIG NAME	KULLUK	AREA	BEAUFORT SEA
START DATE	JUL 20 93	LOG.	OFFSHORE	STATE	ALASKA

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA	80 m 8370
90	1513	9020	LITHOLOGY	80% CLAY 40% SILTSTONE TR SANDSTONE
CONNECTION	166	8468	SAMPLE DEPTH	9500
TRIP	825	7888	TRIP CHLORIDES	
FLOWLINE TEMP	85	degrees F	LAG DOWN DP	1345
			LAG OFF BOTTOM	10450
			DRILL RATE ft/hr	88
			CORRECTED 'D' EXP.	88
			SHALE DENSITY g/cc	NA
			GWR Res.	3.5

FORMATION PRESSURE DATA

CASING			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE	1800	psi	8.7	PPG	3844	psi	8.7	PPG
FRACTURE PRESSURE	3081	psi	14.9	PPG	6544	psi	18.2	PPG
ECD	2151	psi	10.	PPG	4212	psi		PPG

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME	24:00 AUG 16 93	BIT NO.	CB-1	RR5	PUMPS	1.	ID1000	2.	ID1600
TYPE	GENERIC #2	TYPE	RO-412	06-40H	SIZE inches		6.5X12		6.5X12
WEIGHT IN	10.4+	IADC CODE	CORE #1	PDC	CAPACITY gal/stk		4.91		4.91
FUNNEL VIS.	70	SIZE	8.5	12.25	PUMP RATE stks/min		89		70
PV/VP	90/40	JETS	TFA: 7	2-14, 3-13	FLOW RATE gal/min		888		
GELS	9/15	DEPTH OUT	8732	9500	PRESSURE psi		3600		
pH	8.8	ROT HRG.	0	27.4	PD SURF / DP psi		100/2450		
FILT/CAKE API	2.9 - 1/32	FOOTAGE	2	2768	ANN / BIT psi		105/945		
MP-HT	0.8 @ 150	AVG ft/hr	3.3	101	JET VELOCITY ft/sec		319		
Fm	.3	GRADE		INC	JET IMPACT lbs		1179		
PI/MF	1/1.4	HOLE DEV.			BIT HP		990		
CHLORIDES ppm	17000	COST/FT	NA	331	HP RATIO / HP/IN2		26% - 3.2/IN2		
CALCIUM ppm	820	RPM	80	160	REDUCED 1		psi at	stks/min	
OIL/WATER/SOLIDS	TR/10.5/80.5	WOB	10	14	RATE 2		psi at	stks/min	
DAILY/CUM. COST									

ANNULAR DATA

		LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBL/s
SX20	DP-RISER	171	.3644	45	361	
SX10 3/8	DP-CEG	3908	.1255	130	432	
SX12.25	DP-HOLE	5048	.1215	134	409	
8X12.25	DC-HOLE	476	.0836	195	466	

PIPE DATA

	DP	HWDP	DC	CASING DEPTH	RISER	COND.	SURF.
OD-inches	5.0	5.0	8	171	301	1017	3978
ID-inches	4.276	3.0	2.872	21.0	30	20	13.375
CAP-lbs/ft	.0178	.0087	.0078	20.0	26	19.75	12.415
DISP-lbs/ft	.0075	.0181	.0545	3887	7616	.0408	.1498
LENGTH-ft	8286	728	476	NA	113	.0479	.024
WEIGHT-lbs/ft	19.5	49	149	170.5	95	811	3772
					310	133	66

REMARKS AND RECOMMENDATIONS

MW 10.4 GPM 850 JETS TFA: 88 ft/ml = 15 sec/std

DRILL AHEAD WITH BIT NO. 5. SLIGHT INCREASE IN BACKGROUND GAS AND CONNECTION GAS LOGGED WITH INCREASING DEPTH. RAISED PORE PRESSURE ESTIMATE TO REFLECT TREND DEVELOPING ON D-EXPONENT AND RESISTIVITY PLOT. CURRENT ESTIMATE IS 8.7 PPG AT THIS DEPTH. THE MUD WEIGHT WAS RAISED IN TWO STAGES TO 10.4 PPG FOR ADDITIONAL OVERBALANCE. CBU AT 8500. FOOT

ADT J. PATTON

sperry-sun
DRILLING SERVICE LOGGING SYSTEMS
A Baroid Company

DEPTH 7865
OPERATION DRILLING
FOOTAGE 550

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

No. 19
DATE Aug 16 93
TIME 04 00

OPERATOR <u>ARCO ALASKA, INC.</u>	WELL NAME <u>KULUK NO. 2</u>	FIELD/BLOCK <u>CC9 BLK 972 N16-4</u>
CONTRACTOR <u>CANMAR</u>	RIG NAME <u>KULLUK</u>	AREA <u>BEAUFORT SEA</u>
START DATE <u>JUL 28 93</u>	LOC. <u>OFFSHORE</u>	STATE <u>ALASKA</u>

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA	85 at 7024'
40	160	7250	LITHOLOGY	40 % CLAY 60% SLTSTONE
CONNECTION	NA	7608	SAMPLE DEPTH	7070
TRIP	825		TRIP CHLORIDES	
FLOWLINE TEMP	01 degrees F		LAG DOWN DP	880
			LAG OFF BOTTOM	7650
			DRILL RATE ft/hr	160
			CORRECTED D-EXP.	76
			SHALE DENSITY g/cc	NA
			EWR Res.	7

FORMATION PRESSURE DATA

CAGING			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE	1800 psi	6.7 ppg	2844 psi	9.4 ppg				
FRACTURE PRESSURE	3081 psi	14.9 bbs	8544 psi	16 ppg				
ECD	2151 psi	10.3 ppg	4212 psi	10.3 ppg				

MUD DATA

TIME	24:00 AUG 15 93
TYPE	GENERIC #2
WEIGHT IN	10.0
FUNNEL VIS.	59
PV/YP	25/30
GEL9	3/8
PH	8.9
FILT/CAKE API	2.8 - 1/32
HP/HT	8.0 @ 150
Fm	.3
PI/MI	1/1.3
CHLORIDES ppm	17500
CALCIUM ppm	880
OIL/WATER/SOLIDS	TR/9/21
DAILY/CUM. COST	

BIT DATA

BIT NO.	CB-1	RR5
TYPE	RC-412	D8-40H
IADC CODE	CORE #1	PDC
SIZE	6.5	18.85
JETS	TFA: 7	2-16, 3-13
DEPTH OUT	8732	
ROT HR9.	.9	12.1
FOOTAGE	3	1133
AVG ft/hr	3.9	94
GRADE		INC
HOLE DEV.		
COST/FT	NA	598
RPM	00	100
WOB	10	15

HYDRAULIC DATA

PUMPS	1. ID1800	2. ID1800
SIZE inches	6.5X12	6.5X12
CAPACITY gal/stk	4.91	4.91
PUMP RATE stks/min	72	71
FLOW RATE gal/min	704	
PRESSURE psi	2800	
PD SURF / DS psi	100/1678	
ANN / BIT psi	65/980	
JET VELOCITY ft/sec	320	
JET IMPACT lbs	1195	
BIT HP	395	
HP RATIO / HP/IN2	33% - 3.3/IN2	
REDUCED 1	psi at stk/min	
RATE 2	psi at stk/min	

ANNULAR DATA

		LENGTH - FT.	VOLUME BBLs/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBLs
5X20	DP-RISER	171	.8644	46	295	
5X13 3/8	DP-CSG	3905	.1255	134	380	
5X12 25	DP-HOLE	3411	.1215	138	338	
8X12 25	DC-HOLE	476	.0838	201	393	

PIPE DATA

	DP	HWDP	DC	CASING DEPTH	RISER	COND.	SURF.
OD-inches	5.0	5.0	8	171	307	1017	3978
ID-inches	4.276	3.0	2.875	21.0	80	20	13.075
CAP-bbls/ft	.0178	.0087	.0076	20.0	28	18.75	12.415
DISP-bbls/ft	.0075	.0181	.0545	3887	7610	3408	1498
LENGTH-ft	6661	728	470	NA	113	.0478	.024
WEIGHT-lbs/ft	10.5	49	140	170.5	95	611	3772
					310	133	68

REMARKS AND RECOMMENDATIONS

MW 10.0 GPM 700 JETS TFA: 68 ft/ml = 15 sec/std

DRILL AHEAD LOOKING FOR CORE POINT. PRESSURE TEND STARTING TO DEVELOPE ON D-EXPONENT PLOT AT 7000'. INCREASE HOP APPROXIMATELY 50% BY ADDING WEIGHT ON BIT AND ADDITIONAL RPM BELOW 7500'. SLIGHT INCREASE IN GAS LOGGED FROM BOTTOMS UP ON CONNECTIONS. RAISED PORE PRESSURE ESTIMATE TO 9.4 PPG AT 7075'. DRILL TO 7090'. CBU, POOH TO SHOE. PUMP OUT OF THE HOLE ON STANDS 9,10,11, AND 12. REPAIR TOP DRIVE. RIN. DRILL AHEAD. BOTTOMS UP FROM TRIP = 825 UNITS.

ADT J. PATTON

sperry-sun
DRILLING SERVICES
A Halliburton Company

LOGGING SYSTEMS

DEPTH 7206
OPERATION DRILLING
FOOTAGE 1/2

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

NO. 15
DATE Aug 13, 93
TIME 04:00

OPERATOR	ARCO ALASKA, INC.	WELL NAME	KULUM NO. 2	FIELD/BLOCK	008 BLK 672 NR6-4
CONTRACTOR	CANMAR	RIG NAME	KULUM	AREA	BEAUFORT SEA
START DATE	Jul 28 93	LOC.	OFFSHORE	STATE	ALASKA

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA	45 N 7084'
BACKGROUND	464	6755	LITHOLOGY	40 % CLAY 60% SILTSTONE
CONNECTION	90	7127	SAMPLE DEPTH	7070
TRIP	98	8732	TRIP CHLORIDES	
FLOWLINE TEMP	83	degrees F	LAG DOWN DP	998
			LAG OFF BOTTOM	7660
			DRILL RATE ft/hr	80
			CORRECTED 'D' EXP.	75
			SHALE DENSITY g/cc	NA
			EWI Res.	5

FORMATION PRESSURE DATA

CASING			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE	1800 psi	8.7 ppg	3372 psi	9.0 ppg				
FRACTURE PRESSURE	3081 psi	14.9 ppg	5820 psi	15.8 ppg				
ECD	2151 psi	10.9 ppg	3880 psi	10.4 ppg				

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME	24:00 AUG 14 93	BIT NO.	CB-1	RRS	PUMPS	1. ID1600	2. ID1600
TYPE	GENERIC #2	TYPE	RC-412	DB-40M	SIZE inches	6.5X12	6.5X12
WEIGHT IN	10.1	IADC CODE	CORE #1	PDC	CAPACITY gal/stk	4.01	4.01
FUNNEL VISC.	90	SIZE	8.5	12.25	PUMP RATE stks/min	71	70
PV/VP	24/34	JETS	TRAI. 7	2-14, 3-13	FLOW RATE gal/min	603	
GELS	5/12	DEPTH OUT	6732	NA	PRESSURE psi	2050	
pH	8.9	ROT HRS.	.0	5.8	PD SURF / D9 psi	100/1610	
FILT/CAKE API	3.0 - 1/32	FOOTAGE	3	473	ANN / BIT psi	70/840	
HPHI	6.8 @ 150	AVG R/TW	3.3	84	JET VELOCITY ft/sec	322	
Pm	.3	GRADE		INC	JET IMPACT lbs	1170	
Pt/M	.1/1.3	HOLE DEV.			BIT HP	380	
CHLORIDES ppm	17000	COST/FT	NA	650	HP RATIO / HP/IN2	36% - 3.2/IN2	
CALCIUM ppm	920	RPM	60	130	REDUCED 1	psi at stk/min	
OIL/WATER/SDI/D9	TR/11/89	WOB	70	6-10	RATE 2	psi at stk/min	
DAILY/CUM. COST							

ANNULAR DATA

	LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT. VEL FT/MIN	ANN-VOL BBL
5X20 DP-RISE	171	.3844	45	334	
5X13 3/8 DP-CSG	3900	.1255	132	396	
5X12.25 DP-HOLE	2751	.1215	136	369	
8X12.25 DC-HOLE	476	.0836	197	423	

PIPE DATA

	DP	HWDP	DC	CASING: DEPTH	RISE	COND.	SURF.
OD-Inches	5.0	5.0	8	171	301	1017	3978
ID-Inches	4.276	3.0	2.875	21.0	30	30	13.375
CAP-bbls/ft	.0178	.0087	.0078	20.0	28	18.75	12.415
DISP-bbls/ft	.0075	.0181	.0545	.3887	.7816	.3408	.1498
LENGTH-ft	6001	728	476	NA	.113	.0479	.024
WEIGHT-lbs/ft	18.5	49	148	170.5	85	811	8772
					310	133	99

REMARKS AND RECOMMENDATIONS

MW 10.0 GPM 600 JETS 3-13,1-11 ft/ml = 15 sec/stk

RIH FOR CORE NO. 1. ATTEMPT TO CORE. MAX TRIP GAS FROM BOTTOM - 245 UNITS. POOH AFTER PENETRATING 3 FEET OF HOLE.

CORE BIT APPEARED TO BALL UP WITH CLAY. RIH BIT NO. 5. DRILL AHEAD.

ADT J. PATTON

sperry-sun
DRILLING SERVICES LOGGING SYSTEMS
A Borel Company

DEPTH 9720
OPERATION RIH/CORE #1
FOOTAGE 138

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

NO. 17
DATE Aug 14 83
TIME 04 00

OPERATOR	ARGO ALASKA, INC.	WELL NAME	KUULUM No. 2	FIELD/BLOCK	OC'S BLK 672 NR-4
CONTRACTOR	CANMAR	RIG NAME	KULLUK	AREA	BEAUFORT SEA
START DATE	JUL 28 93	LOC.	OFFSHORE	STATE	ALASKA

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA	1.25 at 8625'
45	525	8700	LITHOLOGY	30% CLAY 30% SILTSTONE 40% SAND
BACKGROUND CONNECTION TRIP	85	8562	SAMPLE DEPTH	8728
TRIP	142	8593	TRIP CHLORIDES	
FLOWLINE TEMP	88	degrees F	LAG DOWN DP	940
			LAG OFF BOTTOM	7500
			DRILL RATE ft/hr	85
			CORRECTED 'D' EXP.	72
			SHALE DENSITY g/cc	NA
			EWR Res.	15

FORMATION PRESSURE DATA

CASING			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE	1800 psi	8.7 ppq	3149 psi	8.0 ppq		psi	ppq	n
FRACTURE PRESSURE	3081 psi	14.9 ppq	5484 psi	15.7 ppq		psi	ppq	k
ECD	2108 psi	10.2 ppq	3589 psi	10.2 ppq		psi	ppq	k

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME	24:00 AUG 13 93	BIT NO.	8	5	PUMPS	1. ID1600	2. ID1600
TYPE	GENERIC #2	TYPE	CB-1	DS-40 PDC	SIZE inches	6.5X12	6.5X12
WEIGHT IN	10.0	IADC CODE			CAPACITY gal/stk	4.91	4.91
FUNNEL VIS.	79	SIZE	8.5	12.25	PUMP RATE stks/min	71	71
PV/VP	26/32	JETS	TFA: 7	2-14, 3-13	FLOW RATE gal/min	700	
GELS	5/10	DEPTH OUT		8728	PMESURE psi		8840
pH	8.0	ROT HRS.		1.8	PD SURF / D6 psi		100/1800
FILT/CAKE API	2.0 - 1/32	FOOTAGE		138	ANN / BIT psi		50/250
HP-MT		AVG ft/hr		76	JET VELOCITY ft/sec		326
Pm	5	GRADE		INC	JET IMPACT lbs		1180
PI/M	1/1.3	HOLE DEV.			BIT HP		387
CHLORIDES ppm	17300	COST/FT		1380	HP RATIO / HP/IN2		36% - 3.3/IN2
CALCIUM ppm	1040	RPM		130	REDUCED 1		psi at stk/min
OIL/WATER/SOLIDS	5/90.5/9	WOB		5-10	RATE 2		psi at stk/min
DAILY/CUM. COST							

ANNULAR DATA

	LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBL/s
5X20 DP-RISEH	171	.0844	48	314	
5X13 9/8 DP-CSG	3606	.1256	133	380	
5X12.25 DP-HOLE	2284	.1215	137	399	
5X12.25 DC-HOLE	476	.0836	199	414	

PIPE DATA

	DRILL STRING			CASING DEPTH	RISEH	COND.	SURF.
	DP	HWDP	DC				
OD-inches	5.0	5.0	8	171	301	1017	3978
ID-inches	4.278	3.0	2.875	21.0	30	20	13.375
CAP-bbls/ft	.0178	.0087	.0076	20.0	26	18.75	12.415
DISP-bbls/ft	.0075	.0181	.0645	3887	7818	3408	1488
LENGTH-ft	5525	728	478	NA	.173	.0479	.024
WEIGHT-lbs/ft	19.5	49	149	170.5	95	811	3772
					310	133	58

REMARKS AND RECOMMENDATIONS

MW 10.0 GPM 600 JETS 3-13,1-11 ft/mi = 15 sec/std

RIH WITH NB # 3 REAM LAST TWO STANDS TO BOTTOM. DRILL AHEAD. BREAK IN BIT WITH LOW WEIGHT ON BIT. DRILL AHEAD TO 8728'.
CIRCULATE OUT HOLE VOLUME ON POTENTIAL SHOW INDICATED BY MWD TOOL. ZERO DISCHARGE DRILL CUTTINGS FROM ZONE OF INTEREST. MAX GAS FROM SAND FORMATION AT 8700' = 525 UNITS. CIRCULATE AND CONDITION HOLE FOR CORING. BACKGROUND GAS TO LESS THAN 50 UNITS. POOH. HOLE PULLED GOOD ON THIS TRIP. PICK UP CORE BARREL. RIH FOR CORE NO. 1.

ADT J. PATTON

sperry-sun
DRILLING SERVICES **LOGGING SYSTEMS**
A Baroid Company

AUG 13 1993

Minerals Management Service
Anchorage, Alaska
DATE: Aug 13 93
TIME: 0400

DEPTH 6593
FORMATION POOH
PAGE 668

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

OPERATOR	ARCO ALASKA, INC.	WELL NAME	KUYLUM NO. 2	FIELD/BLOCK	OCS BLK 672 NR6-4
CONTRACTOR	CANMAR	RIG NAME	KULLUK	AREA	BEAUFORT SEA
START DATE	Jul 28 93	LOC.	OFFSHORE	STATE	ALASKA

LOGGING DATA

AVG GAS (UNITS)	MAX GAS (UNITS)	AT DEPTH (feet)	SURVEY DATA	1.40 at 6593'
40	125	6593	LITHOLOGY	80 % CLAY 20% SALTSTONE
BACKGROUND CONNECTION TRP	85	6562	SAMPLE DEPTH	6580
85	4525		TRIP CHLORIDES	
FLOWLINE TEMP	94	degrees F	LAG DOWN DP	805
			LAG OFF BOTTOM	7250
			DRILL RATE ft/hr	45
			CORRECTED D'EXP.	1.32
			SHALE DENSITY g/cc	NA
			EWR Res.	1.5

FORMATION PRESSURE DATA

CASINO			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE	1800	psi	8.7	ppg	3120	psi	9.1	ppg
FRACTURE PRESSURE	3081	psi	14.9	ppg	5383	psi	15.7	ppg
ECD	2108	psi	10.2	ppg	6581	psi	10.3	ppg

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME	24:00 AUG 12 93	BIT NO.	4	RRS	PUMPS	1.	ID1000	2.	ID1000
TYPE	GENERIC #2	TYPE	FDTC	FDTC/H.O.	SIZE inches	6.5X12	6.5X12	6.5X12	6.5X12
WEIGHT IN	10.0+	IADC CODE			CAPACITY gal/stk	4.91	4.91	4.91	4.91
FUNNEL VIS.	59	SIZE	12.25	12.25/17.5	PUMP RATE stks/min	82	83	83	83
FV/VF	22/28	JETS	4-12's	TFA:1.44	FLOW RATE gal/min	815			
GELS	5/8	DEPTH OUT	6593	1005	PRESSURE psi	3250			
pH	9.1	ROT HRS.	34.1	10.1	PD SURF / Dc psi	100/1920			
FILT/CAKE API	2.7 - 1/32	FOOTAGE	2588	2887	ANN / BIT psi	50/1780			
		AVG R/H	76	284	JET VELOCITY ft/sec	447			
		GRADE	INC	INC	JET IMPACT lbs	1422			
CHLORIDES ppm	17000	HOLE DEV.	1.4 @ 6593'		BIT HP	640			
CALCIUM ppm	820	COST/FT	370	NA	HP RATIO / HP/IN2	55% - 5.4/IN2			
OIL/WATER/SOLIDS	0/91.5/8.5	RPM	130	145	REDUCED 1	psi at	stks/min		
DAILY/CUM. COST		WOB	40	10-20	RATE 2	psi at	stks/min		

ANNULAR DATA

		LENGTH-FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBL8
5X20	DP-RIBER	171	3844	40	281	
6X18 3/8	DP-CEG	3008	1255	117	351	
5X12.25	DP-HOLE	2139	1215	121	327	
8X12.25	DC-HOLE	476	0836	178	380	

PIPE DATA

	DP	HWOP	DC	CASING: DEPTH	RIBER	COND.	SURF.
OD-inches	5.0	5.0	8	171	301	1017	3978
ID-inches	4.276	3.0	2.875	21.0	30	20	13.375
CAP-bbls/ft	.0178	.0087	.0076	20.0	28	18.75	12.415
DisP-bbls/ft	.0076	.0181	.0546	3887	.7618	.3400	.1488
LENGTH-ft	4721	728	476	NA	.113	.0479	.024
WEIGHT-lbs/ft	19.5	49	149	170.5	95	611	3772
					310	133	88

REMARKS AND RECOMMENDATIONS

MW 10.0 GPM 800 JETS 3-13,1-11 ft/ml = 15 sec/stk

DRILL AHEAD WITH BIT NO. 4. RAISE MUD WEIGHT TO 10.0 PPG TO STABILIZE HOLE CONDITIONS ON TRIP. CONNECTION GAS AVERAGING 150 UNITS ABOVE BACKGROUND. DRILL TO 6593'. DRU. POOH ON SLOW PENETRATION RATES AND BIT HOURS. SMALL SHOWS NOTED ANDS LOGGED DURING THE LAST 100' OF DRILLING. BACKREAM WHILE PULLING OUT OF THE HOLE. AVERAGE GAS WHILE CIRCULATING WAS 100 UNITS. MAX GAS RECORDED FOR PAST 24 HRS WAS 344 UNITS - ALSO LOGGED FROM BACKREAMING OUT OF THE HOLE.

ADT J. PATTON

SECURE-FX TRANSMISSION
AUG 12 '93 06:35AM ARI EXPLOR/DRILLING
SECURE-FX TRANSMISSION
08/13/93 06:04 ARCO KUULUM II - 907 265 1393

Received
OS District Office

P.14
NO. 748 005

AUG 12 1993

Minerals Management Service
Anchorage, Alaska

sperry-sun
LOGGING SYSTEMS
A Baroid Company

DEPTH
OPERATION DRILLING
AGE 779

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

NU. 12
DATE Aug 12 93
TIME 04 00

OPERATOR	ARCO ALASKA, INC.	WELL NAME	KUULUM No. 2	FIELD/BLOCK	009 BLK 872 NFB-4
CONTRACTOR	CANMAR	RIG NAME	KULLUK	AREA	BEAUFORT SEA
START DATE	JUL 28 93	LOC.	OFFSHORE	STATE	ALASKA

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA	1.18 at 5773
35	250	5220	LITHOLOGY	60% CLAY 30% SILTSTONE 10% SAND
CONNECTION	02		SAMPLE DEPTH	5050
TRIP	05	4525	TRIP CHLORIDES	
FLOWLINE TEMP	94	degrees F	LAG DOWN DP	805
			LAG OFF BOTTOM	6800
			DRILL RATE f/hr	85
			CORRECTED 'D' EXP.	1.18
			SHALE DENSITY g/cc	NA
			EWR Res.	2.5

FORMATION PRESSURE DATA

CASING			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE	1800	psi	8.7	ppg	2775	psi	9.0	ppg
FRACTURE PRESSURE	3081	psi	14.9	ppg	4837	psi	15.7	ppg
ECD	2108	psi	10.2	ppg	8178	psi	10.3	ppg

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME	24:00 AUG 11 93	RIT NO.	4	RR3	PUMPS	1. ID1600	2. ID1600
TYPE	GENERIC #2	TYPE	FDTG	FDTG/H.O.	SIZE inches	6.5X12	6.5X12
WEIGHT IN	10.0	TAG CODE			CAPACITY gal/stk	4.91	4.91
FUNNEL VISC.	55	SIZE	12.25	12.25/17.5	PUMP RATE stks/min	66	60
PV/YP	20/23	JETS	4-12'S	TFA:1.44	FLOW RATE gal/min	670	
GELS	3/8	DEPTH OUT		4005	PRESSURE psi		3450
pH	9.8	ROT HR8.	21.4	10.1	PD SURF / DS psi		100/1200
FILT/CAKE API	3.0 - 1/32	FOOTAGE	1820	2087	ANN / BIT psi		95/2116
HP-HT		AVG ft/hr	90	295	JET VELOCITY ft/sec		487
Pm	7	GRADE	INC	INC	JET IMPACT lbf		1697
P	15/1.4	HOLE DEV.	1.18 @ 5773		BIT HP		825
CHLORIDES ppm	17500	COST/FT		NA	HP RATIO / HP/IN2		61% - 7.0/IN2
CALCIUM ppm	680	RPM	120	145	REDUCED 1		psi at stk/min
OIL/WATER/SOLIDS	0/81.5/8.8	WOB	45	10-20	RATE 2		psi at stk/min
DAILY/CUM. COST							

ANNULAR DATA

		LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBL/S
5X20	DP-RIGER	171	.3844	84	246	
5X13 3/8	DP-CAS	3800	.1265	127	302	
5X12.25	DP-HOLE	1452	.1215	131	282	
5X12.25	DC-HOLE	476	.0838	191	332	

PIPE DATA

	DP	HWDP	DC	CASING DEPTH	RIGER	COND.	SURF.
OD inches	5.0	5.0	8		171	301	1016
ID inches	4.276	4.0	2.875		21.0	30	20
CAP-bbls/ft	.0178	.0087	.0078		20.0	28	18.75
DISP-bbls/ft	.0075	.0181	.0545		.3987	.7818	.3408
LENGTH-ft	4721	726	478		NA	.119	.0479
WEIGHT-lbs/ft	19.5	49	149		170.5	85	812
						210	133

REMARKS AND RECOMMENDATIONS

MW 10.0 GPM 600 JETS 3-13,1-11 ft/ml = 15 sec/std

CONTROL DRILL WITH BIT NO. 4. CONSISTANT CONNECTION GAS READINGS AVERAGING ABOUT 50 UNITS ABOVE BACKGROUND.

DRILL TO 5526'. CBU. SHORT TRIP TO SHOE. HOLE TRYING TO SWAB WITH TIGHT HOLE ON THE WAY OUT. PUMP BACKREAM OUT OFF THE

NO EXCESS DRAG NOTED ON WAY BACK IN. MAX GAS RECORDED WHILE DRILLING AHEAD AFTER GETTING BACK TO BOTTOM - 95

UNITS. DRILL AHEAD.

ADT J. PATTON

SECURE-FX TRANSMISSION
AUG 11 '93 06:40AM, HRI EXPLOR/DRILLING
SECURE-FX TRANSMISSION
08/12/93 06:02 ARCO KUULUM II + 907 265 1393

Received
OCS District Office

P.4
NO. 732 001

Minerals Management Service
Barrow, Alaska

sperry-sun
DRILLING SERVICES LOGGING SYSTEMS
A Borel Company

DEPTH 5146
OPERATION DRILLING
FOOTAGE 1141

Mn. 14
DATE Aug 11 93
TIME 04 00

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

OPERATOR	ARCO ALASKA, INC.	WELL NAME	KUULUM NO. 2	FIELD/WORK	BEAUFORT SEA
CONTRACTOR	CANMAR	RIG NAME	KULUK	AREA	ALASKA
START DATE	Jul 28 93	LOG. OFFSHORE		STATE	

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA	48 @ 5043
105	228	4585	LITHOLOGY	70% CLAY 20% SILTSTONE 10% SAND
10		4005	SAMPLE DEPTH	5050
BACKGROUND CONNECTION TRIP			TRIP CHLORIDE	
			LAG DOWN DP	885
			LAG OFF BOTTOM	5950
FLOWLINE TEMP	80 degrees F		DRILL RATE ft/hr	105
			CORRECTED D' EXP.	1.03
			SHALE DENSITY g/cc	NA
			EWR Res.	2.5

FORMATION PRESSURE DATA

CASING			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE	1800 psi	8.7 PPG	2392 psi	8.9 PPG				
FRACTURE PRESSURE	3081 psi	14.0 PPG	4084 psi	15.3 PPG				
ECD	2068 psi	10.0 PPG	2703 psi	10.1 PPG				

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME	04:00 AUG 10 93	BIT NO.	4	RR3	PUMPS	1.	ID1800	2.	ID1800
TYPE	GENERIC #2	TYPE	FDTG	FDTG/H.O.	SIZE inches		6.5X12		6.5X12
WEIGHT IN	9.8+	IADC CODE			CAPACITY gal/stk		4.91		4.91
FUNNEL VIS.	55	SIZE	12.25	12.25/17.5	PUMP RATE stks/min		01		01
PV/VP	19/19	JETS	4-12/8	TFA 1.44	FLOW RATE gal/min		800		
GELS	3/4	DEPTH OUT		4005	PRESSURE psi		2725		
pH	9.8	ROT HRG.	12.4	18.1	PD SURF / DS psi		75/980		
FILT/CAKE API	3.2 - 1/8"	FOOTAGE	1141	2887	ANN / BIT psi		25/1065		
MPHT		AVG ft/hr	92	294	JET VELOCITY ft/sec		435		
Pm	1.0	GRADE	INC	INC	JET IMPACT lbs		1325		
PFAH	3/1.6	HOLE DEV.	48 @ 5043		BIT HP		580		
CHLORIDES ppm	17000	COST/FT		NA	HP RATIO / HP/IN2		51% - 5.0/IN2		
CALCIUM ppm	880	RPM	130	145	REDUCED 1		psi at		stk/min
OIL/WATER/SOLIDS	0/32/8	WOB	25	10-20	RATE 2		psi at		stk/min
DAILY/CUM. COST									

ANNULAR DATA

		LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBL8
5X20	DP-RISER	171	.0844	39	210	
5X13 3/8	DP-CSG	728	.1255	114	285	
8X13 3/8	DC-CSG	8771	.0878	118	247	
8X12.25	DC-HOLE	478	.0636	171	298	

PIPE DATA

DRILL STRING				CASING: RISER				COND. SURF.			
	OP	HWDP	DC	DEPTH							
OD-inches	5.0	5.0	8		171	301	1018		0077		
ID-inches	4.276	3.0	2.875		21.0	30	20		13.375		
CAP-bbls/l	.0178	.6087	.0076		20.0	26	18.75		12.415		
DISP-bbls/h	.0075	.0181	.0646		3887	7616	3408		1488		
LENGTH-ft	3970	728	478		NA	.113	.0478		.024		
WEIGHT-lbs/l	19.5	49	140		170.5	95	812		8771		
						810	133		88		

REMARKS AND RECOMMENDATIONS

MW 9.8 CPM 600 JETS 2-14, 1-13 (OR 4-12'S) ft/min = 15 sec/stk
RIM WITH NB 4. TAG CEMENT AT 3880' CBU. TEST CASING TO 3300 PSI. DRILL OUT CEMENT AND SHOULDER PLUS 10' OF NEW HOLE. CBU.
RUN EAK OFF TEST TO 14.0 PPG WITHOUT BREAKING DOWN FORMATION. DRILL AHEAD. CONNECTION GAS LOGGED BELOW 4300' AVERAGING
APP 60 UNITS OVER BACKGROUND. SLIGHT TREND NOTED ON PRESSURE PLOTS. RAISED PORE PRESSURE ESTIMATE TO 2.0 - 2.0 PPG.
DRILL AHEAD.

ADT J. PATTON

AUG 10 1993

sperry-sun
DRILLING SERVICES LOGGING SYSTEMS
 A Baroid Company

Geological Management Service
 Anchorage, Alaska
 No. 1-13
 DATE AUG 10 93
 TIME 04 00

DEPTH 4006
 OPERATION RHH
 FOOTAGE 0

APPLIED DRILLING TECHNOLOGY
 MORNING REPORT

OPERATOR	ARCO ALASKA, INC.	WELL NAME	KUVLUM NO. 2	FIELD/BLOCK	OCS BLK 672 NR 4
CONTRACTOR	CANMAR	RIG NAME	KULLUK	AREA	BEAUFORT SEA
START DATE	JUL 28 93	LOC.	OFFSHORE	STATE	ALASKA

LOGGING DATA

AVG GAB (units)	MAX GAB (units)	AT DEPTH (feet)	SURVEY DATA	39 at 3877
0			LITHOLOGY	00% CLAY 30% SILTSTONE 10% SAND
BACKGROUND CONNECTION	0		SAMPLE DEPTH	4005
TRIP	10	4005	TRIP CHLORIDES	
FLOWLINE TEMP	48	degrees F	LAG DOWN DP	570
			LAG OFF BOTTOM	4850
			DRILL RATE ft/hr	NA
			CORRECTED "D" EXP.	NA
			SHALE DENSITY g/cc	
			EWR Res.	

FORMATION PRESSURE DATA

CASING			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE	1800 psi	8.7 ppb	1801 psi	8.7 ppb				
FRACTURE PRESSURE		NA ppb	2020 psi	14.6 ppb				
ECD		ppb		ppb				

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME	24.00 AUG 9 93	BIT NO.	4	RR3	PUMPS	1. ID1600	2. ID1600
TYPE	GENERIC #2	TYPE	FDTC	FDTC/H.O.	SIZE inches	6.5X12	6.5X12
WEIGHT IN	9.8	IADC CODE			CAPACITY gal/stk	4.91	4.91
FUNNEL VLO.	31	SIZE	12.25	12.25/17.5	PUMP RATE stks/min		
PV/YP	15/17	JET	4-12's	YFA11.44	FLOW RATE gal/min		
GELS	3/4	DEPTH OUT		4005	PRESSURE psi	STATIC	
pH	9.2	ROT HRs.		10.1	PD SURF / DS psi		
FILT/CAKE API	3.0 - 1/32	FOOTAGE		2087	ANN / BIT psi		
HP+HT		AVG ft/hr		294	JET VELOCITY ft/sec		
Pm	1.0	GRADE		INC	JET IMPACT lbs		
P/m	3/15	HOLE DEV.		NA	BIT HP		
CHLORIDES ppm	10000	COST/FT			HP RATIO / HP/IN2		
CALCIUM ppm	600	RPM		145	REDUCED 1	psi at	stk/min
OIL/WATER/SOLIDS	0/92/8	WOB		10-20	RATE 2	psi at	stk/min
DAILY/CUM. COST							

ANNULAR DATA

	LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBL
5X20 DP-RISER	171	.3844			
5X13 3/8 DP-C6G		.1255			
8X13 3/8 DC-C6G		.0876			
8X12.25 DO-HOLE		.0928			

PIPE DATA

	DP	HWDP	DRILL STRING	DC	CASING: DEPTH	RISER	COND.	SURF.
OD-Inches	5.0	5.0		8	171	301	1018	5977
ID-Inches	4.270	3.0		2.975	21.0	30	20	13.375
CAP-bbls/ft	.0178	.0087		.0076	20.0	26	18.75	12.415
DISP-bbls/ft	.0075	.0181		.0546	3887	7616	3408	1498
LENGTH-ft		728		476	NA	.113	.0479	.024
WEIGHT-lbs/ft	18.5	49		149	170.5	95	812	3771
						310	199	88

REMARKS AND RECOMMENDATIONS

MW 9.8 GPM 600 JETS 2-14,1-13 (OR 4-12'S) ft/ml = 15 sec/std

COMPLETE CEMENTING JOB. GOOD RETURNS NOTED WHILE CEMENTING. RUN SCHLUMBERGER. RUN VSP AND TEMPERATURE LOGS.

TEST BOP. MAKE UP NEW BIT AND BHA. RHH.

ADT J. PATTON

sperry-sun
DRILLING SERVICES **LOGGING SYSTEMS**
A Baroid Company

DEPTH 4005
OPERATION CEMENT
FOOTAGE 0

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

NO. 12
DATE AUG 9 93
TIME 0400

OPERATOR <u>ARGO ALASKA, INC.</u>	WELL NAME <u>KUYLUM NO. 2</u>	FIELD/BLOCK <u>OGS BLK 872 NR8-4</u>
CONTRACTOR <u>CANMAR</u>	RIG NAME <u>KULLUK</u>	AREA <u>BEAUFORT SEA</u>
START DATE <u>JUL 28 93</u>	LOC. <u>OFFSHORE</u>	STATE <u>ALASKA</u>

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA <u>30 at 3977</u>	LITHOLOGY <u>60% CLAY 30% SILTSTONE 10% SAND</u>	SAMPLE DEPTH <u>4005</u>	TRIP CHLORIDES	LAG DOWN DP <u>4805</u>	LAG OFF BOTTOM <u>4850</u>	DRILL RATE ft/hr <u>NA</u>	CORRECTED "D" EXP. <u>NA</u>	SHALE DENSITY g/cc	GWR Rec.
BACKGROUND CONNECTION TRIP	5	0	10	4005	48	degrees F						

FORMATION PRESSURE DATA

CASING				BOTTOM HOLE				OPEN HOLE				
PORE PRESSURE	450	psi	8.5	ppg	1601	psi	9.7	ppg		psi		ppg
FRACTURE PRESSURE	597	psi	12.9	ppg	3030	psi	14.5	ppg		psi		ppg
ECD	524	psi	0.0	ppg	2082	psi	10.0	ppg		psi		ppg

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME <u>24:00 AUG 9 93</u>	BIT NO. <u>3</u>	RMS	PUMPS <u>1</u>	ID1600	2	ID1600
TYPE <u>GENERIC #2</u>	TYPE <u>FDYC</u>	FDTC/H.B.	SIZE inches	6.5X12	6.5X12	
WEIGHT IN <u>9.8</u>	IADC CODE		CAPACITY gal/stk	4.01	4.01	
FUNNEL VIS. <u>50</u>	SIZE <u>12.25</u>	12.25/17.5	PUMP RATE stks/min	87		
PV/YP <u>23/21</u>	JETS <u>3x14.1-10</u>	IFA 1.44	FLOW RATE gal/min	427		
GELS <u>3/4</u>	DEPTH OUT <u>4005</u>	4005	PRESSURE psi		410	
pH <u>9.4</u>	ROT HRG. <u>33.7</u>	10.1	PD SURF / D ₃ psi		50/353	
FILT/CAKE API <u>3.8 - 1/32</u>	FOOTAGE <u>2966</u>	2967	ANN / BIT psi		5/-	
HP-HT	AVG ft/hr <u>88</u>	294	JET VELOCITY ft/sec			
Pm <u>1.2</u>	GRADE <u>INC</u>	INC	JET IMPACT lbs			
PI/MH <u>4/1.4</u>	HOLE DEV. <u>.05</u>		BIT HP			
CHLORIDES ppm <u>16000</u>	COST/FT <u>311</u>	NA	HP RATIO / HP/IN2			
CALCIUM ppm <u>640</u>	RPM <u>122</u>	145	REDUCED 1		psi at	stk/min
OIL/WATER/SOLIDS <u>0/91.7/8.3</u>	WOB <u>14</u>	10-20	RATE 2		psi at	stk/min
DAILY/CUM. COST						

ANNULAR DATA

	LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBL
6X20	171	.3644	26	268	
13.375/18.75	847	.2038	61	367	
13.375/17.9	2950	.1298	82	371	

PIPE DATA

	DP	HWDP	DRILL STRING	DC	CASING DEPTH	RIGER	COND.	SURF.
OD-inches	5.0	5.0		8	171	301	1018	3977
ID-inches	4.270	3.0		2.875	21.0	30	20	13.375
CAP-bbls/ft	.0178	.0087		.0078	20.0	28	18.75	12.415
DISP-bbls/ft	.0075	.0181		.0545	3867	7016	3408	1488
LENGTH-ft					NA	.113	.0470	.004
WEIGHT-lbs/ft	10.5	49		149	170.5	85	812	3771
						310	193	68

REMARKS AND RECOMMENDATIONS

MW 9.6 GPM 600 JETS 2-14.1-13 (OR 4-12'S) 15 sec/stk
POOH. RIG UP FOR RUNNING CASING. RUN AND LAND ON LB/PT - 13 3/8" CASING TO 3977. CIRCULATE TO CONDITION HOLE BEFORE CEMENTING. GOOD RETURNS NOTED WHILE RUNNING CASING. MAX GAS FROM BOTTOMS UP - 10 UNITS. PUMP AND DISPLACE APP. 400 BBL OF CEMENT AND SPACER.

Minerals Management Service
Anchorage, Alaska

ADT J. PATTON

sperry-sun
DRILLING SERVICES
A Borel Company

LOGGING SYSTEMS

DEPTH 1000
OPERATION CIRCULATE
FOOTAGE 1100

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

NO. 11
DATE Aug 8 93
TIME 04 00

OPERATOR	ARCO ALASKA, INC.	WELL NAME	KUULUM NO. 2	FIELD/BLOCK	OC6 BLK 672 NR6-4
CONTRACTOR	CANMAR	RIG NAME	KULLUK	AREA	BEAUFORT SEA
START DATE	Jul 28 93	LOC	OFFSHORE	STATE	ALASKA

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA	39 at 3977
5	20	3850	LITHOLOGY	60 % CLAY 30% SILTSTONE 10% SAND
BACKGROUND CONNECTION	0		SAMPLE DEPTH	4005
TRIP	60	4005	TRIP CHLORIDES	
FLOWLINE TEMP	48 degrees F		LAG DOWN OF	550
			LAG OFF BOTTOM	2700
			DRILL RATE ft/hr	140
			CORRECTED D'EXP.	90
			SHALE DENSITY g/cc	
			EWB Res.	

FORMATION PRESSURE DATA

CASING			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE	450 psi	8.5 ppg	1801 psi	8.7 ppg				
FRACTURE PRESSURE	697 psi	12.0 ppg	3030 psi	14.5 ppg				
ECD	518 psi	9.8 ppg						

MUD DATA

TIME	24:00 AUG 7 93
TYPE	GENERIC #2
WEIGHT IN	9.8
FUNNEL VIS.	52
PV/VP	24/28
GELS	3/4
pH	9.3
FILT/CAKE API	5.2 - 1/32
HP-HT	
Pm	1.2
Pt/Mt	4/1.6
CHLORIDES ppm	10000
CALCIUM ppm	680
OIL/WATER/SOLIDS	0/91.7/8.3
DAILY/CUM. COST	

BIT DATA

BIT NO.	3	RRS
TYPE	FDTG	FDTG/H.O.
IADC CODE		
SIZE	12.25	12.25/17.5
JETS	3x14.1-10	TFA:1.44
DEPTH OUT	4005	4005
ROT HRS.	33.7	10.1
FOOTAGE	2986	2987
AVG ft/hr	88	294
GRADE	INC	INC
HOLE DEV.	.39	
COST/FT	311	NA
RFM	122	145
WOB	14	10-20

HYDRAULIC DATA

PUMPS	1. ID1800	2. ID1800
SIZE inches	6.5X12	6.5X12
CAPACITY gal/stk	4.91	4.91
PUMP RATE stk/min	115	115
FLOW RATE gal/min	1108	
PRESSURE psi		2475
PD SURF / DS psi		100/1815
ANN / BIT psi		10/550
JET VELOCITY ft/sec		250
JET IMPACT lbs		1440
BIT HP		365
HP RATIO / HP/IN2		28% - 1.5/IN2
REDUCED 1	psi at	stk/min
RATE 2	psi at	stk/min

ANNULAR DATA

SIZE	LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBL/S
5X20	195	.3844	71	221	
5X18.75	853	.3083	85	229	
5X17.5	2887	.2733	99	218	
5X12.25		.1215			
8X17.5	300	.2354	115	245	

PIPE DATA

DRILL STRING				CASING: DEPTH			
OD	HWDP	DC		301	1018		
OD-inches	5.0	5.0	8	30	20		
ID-inches	4.270	3.0	2.875	28	18.75		
CAP-bbls/ft	.0178	.0067	.0076	.7616	.3406		
DISP-bbls/ft	.0075	.0181	.0545				
LENGTH-ft	3278	428	300	90	790		
WEIGHT-lbs/ft	19.5	49	149	510	198		

REMARKS AND RECOMMENDATIONS

MW 9.8 GPM JETS 13 3/8" CSG 160 ft/ml = 15 sec/STK

OPEN HOLE TO 17.5' TO 4005'. CRU. SHORT TRIP TO SHOE. TIGHT HOLE CONDITIONS NOTED ON THE WAY OUT WITH THE HOLE TRYING TO SWAB. BACK REAM TO KEEP FROM SWABBING. WASH AND REAM TO BOTTOM. GAS FROM BOTTOM ON SHORT TRIP = #0 UNITS. CIRCULATE AND CONDITION HOLE FOR RUNNING CASING.

OC6 District Office

AUG 09 1993

ADT J. PATTON

Minerals Management Service
Anchorage, Alaska

sperry-sun
DRILLING SERVICES **LOGGING SYSTEMS**

DEPTH 2005
OPERATION OPEN HOLE
FOOTAGE 1887

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

No. 10
DATE Aug 7 '93
TIME 04.00

OPERATOR	ARCO ALASKA, INC.	WELL NAME	KUVLUM NO. 2	FIELD/BLOCK	OC# BLK 672 N86-4
CONTRACTOR	CANMAR	RIG NAME	KUVLUM	AREA	BEAUFORT SEA
START DATE	Jul 28 83	LOC.	OFFSHORE	STATE	ALASKA

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA	38 # 3977
5-10	22	2300	LITHOLOGY	60% CLAY 30% SILTSTONE 10% SAND
CONNECTION	0		SAMPLE DEPTH	4005
TRIP	NA	4005	TRIP CHLORIDES	
FLOWLINE TEMP	NA	degrees F	LAG DOWN DP	375
			LAG OFF BOTTOM	7100
			DRILL RATE ft/hr	375
			CORRECTED 'D' EXP.	60
			SHALE DENSITY g/cc	
			KWR Rec.	

FORMATION PRESSURE DATA

CASING			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE	520 psi	8.5 ppg	1801 psi	8.7 ppg				
FRACTURE PRESSURE	897 psi	12.9 ppg	3020 psi	14.5 ppg				
ECD	518 psi	8.8 ppg						

MUD DATA

TIME	24:00 AUG 6 93
TYPE	GENERIC #2
WEIGHT IN	8.8
FUNNEL VIS.	88
PV/VP	28/30
GELS	3/6
PH	9.2
FILT/CAKE API	4.2 - 1/32
HPHT	
Pm	1.3
P/100	571.6
CHLORIDES ppm	16000
CALCIUM ppm	600
OIL/WATER/SOLIDS	0/01.7/8.3
DAILY/0UM. COST	

BIT DATA

BIT NO.	3	RR3
TYPE	FDTG	FDTG/H.O.
IADO CODE		
SIZE	12.25	12.25/17.5
JETS	3X14.1-10	1FA:1.44
DEPTH OUT	4005	NA
ROT WRS.	80.7	4.3
FOOTAGE	2888	1887
AVG ft/hr	88	449
GRADE	INC	INC
HOLE DEV.	.30	
COBT/FT	811	NA
RPM	122	180
WOB	14	10-20

HYDRAULIC DATA

PUMPS	1. ID1800	2. ID1800
SIZE inches	8.5X12	8.5X12
CAPACITY gal/min	4.91	4.91
PUMP RATE stk/min	115	115
FLOW RATE gal/min	1132	
PRESSURE psi	2200	
PD SURF / DS psi	100/1545	
ANN / BIT psi	5/550	
JET VELOCITY ft/sec	250	
JET IMPACT lbs	1440	
BIT HP	365	
HP RATIO / HP/IN2	28% - 1.5/IN2	
REDUCED 1	psi at stk/min	
RATE 2	psi at stk/min	

ANNULAR DATA

	LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBL/S
5X20	185	.3844	74	241	
5X18.75	853	.3083	88	248	
5X17.5	1587	.2733	99	238	
5X16.25		.1215			
5X15	300	.2364	115	203	

PIPE DATA

DRILL STRING				CASING:			
DP	HWDP	DC		DEPTH	301	1018	
60-inches	5.0	5.0	8	30	20		
10-inches	4.278	3.0	2.875	20	18.75		
CAP-bbls/ft	.0178	.0087	.0076	7618	.3408		
DISP-bbls/ft	.0073	.0181	.0546				
LENGTH-ft	2179	428	300	90	783		
WEIGHT-lbs/ft	18.5	49	149	310	108		

REMARKS AND RECOMMENDATIONS

MW 9.8 GPM JETS ft/ml = sec/stk

RUN ELECTRIC LOGS. MAKE UP NEW BOTTOM HOLE ASSEMBLY RR BIT & AND A 17.5' HOLE OPENER. RPH TO BOTTOM OF 20' CASING.

OPEN HOLE TO 17.5' FOR NEXT CASING RUN. GOOD PENETRATION RATES WHILE REAMING.

Received
OCS District Office

Aug 09 1993

ART J. PATTON

1993 08 06

sperry-sun

DRILLING SERVICES
A Baroid Company

LOGGING SYSTEMS

Minerals Management Service

Anchorage, Alaska

DEPTH 4005
OPERATION E-LOG
FOOTAGE 0

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

DATE Aug 6 88
TIME 04:00

OPERATOR	ARCO ALASKA, INC.	WELL NAME	KUVLUM NO. 2	FIELD/BLOCK	OCB BLK 672 NR6-4
CONTRACTOR	CANMAR	RIG NAME	KULLUK	AREA	BEAUFORT SEA
START DATE	Jul 28 88	LOC.	OFFSHORE	STATE	ALASKA

LOGGING DATA

AVG GAO (units)	MAX GAO (units)	AT DEPTH (feet)	SURVEY DATA	30 at 3277	DRILL RATE ft/hr	NA
			LITHOLOGY	60 % CLAY 30% SILTSTONE 10% SAND	CORRECTED 'D' EXP.	NA
BACKGROUND CONNECTION	0		SAMPLE DEPTH	4005	SHALE DENSITY g/cc	
TRIP	85	4005	TRIP CHLORIDES		LWR Res.	
FLOWLINE TEMP	NA	degrees F	LAG DOWN DP	520		
			LAG OFF BOTTOM	5800		

FORMATION PRESSURE DATA

CASING			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE	450 psi	8.5 ppg	1601 psi	8.7 ppg		psi	ppg	k
FRACTURE PRESSURE	897 psi	12.8 ppg	2577 psi	14 ppg		psi	ppg	k
ECD		ppg		ppg		psi	ppg	k

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME	2400 AUG 5 88	BIT NO.	3	PUMPS	1. ID1600	2. ID1600
TYPE	GENERIC #2	TYPE	FDTG	SIZE inches	0.5X12	0.5X12
WEIGHT IN	9.8	IADC CODE		CAPACITY gal/stk	4.91	4.91
FUNNEL VIS.	52	SIZE	12.5	PUMP RATE stks/min		
PV/VP	24/22	JET8	3x14.1-10	FLOW RATE gal/min		
GELS	3/5	DEPTH OUT	4005	PRESSURE psi	STATIC PAST	
pH	9.5	ROT HRS.	33.7	FD SURF / DO psi	24 HRS	
FILT/CAKE API	3.8/1	FOOTAGE	2968	ANN / BIT psi		
HP-MT		AVG ft/hr	88	JET VELOCITY ft/sec		
Pm	1.8	GRADE		JET IMPACT lba		
Pf/Mt	8/1.9	HOLE DEV.	.39	BIT HP		
CHLORIDES ppm	18000	COST/FT	311	HP RATIO / HP/IN2		
CALCIUM ppm	200	RPM	122	REDUCED 1	psi at	stk/min
OIL/WATER/SOLIDS	0/02.2/7.8	WOB	14	RATE 2	psi at	stk/min
DAILY/CUM. COST						

ANNULAR DATA

SIZE	LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBLs
5X20	165	.3844			
5X18.75	853	.3083			
5X17.5	22	.2733			
5X12.5	2121	.1215			
8X12.5	384	.0836			

PIPE DATA

DRILL STRING				CASING:			
OD-Inches	DP	HWDP	DC	DEPTH	301	1018	
5.0	5.0		8	30	20		
4.278	3.0		2.875	28	18.75		
.0178	.0067		.0078	Total	.0408		
.0078	.0181		.0565	90	703		
2503	858		384	310	133		
19.5	19		149				

REMARKS AND RECOMMENDATIONS

MW 9.8 GPM 900 JETS 4-14'S ft/ml = sec/std

POOH FOR E-LOGS. HOLE PULLED WITHOUT EXCESS DRAG. RIG UP SCHLUMBERGER. RUN ELECTRIC LOGS.

ADT J. PATTON

sperry-sun
DRILLING SERVICES LOGGING SYSTEMS
A Searoid Company

DEPTH 4005
OPERATION CIRC
FOOTAGE 489

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

AUG (No. 18)
DATE Aug 5 93
TIME 0400
Minerals Management Service
Anchorage, Alaska
Beaufort Sea

OPERATOR ARCO ALASKA, INC. WELL NAME KUVLUM NO. 2 FIELD/BLOCK BEAUFORT SEA
CONTRACTOR CANMAR RIG NAME KULLUK AREA BEAUFORT SEA
START DATE Jul 28 93 LOC. OFFSHORE STATE ALASKA

LOGGING DATA

	AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA LITHOLOGY 60% CLAY 30% SILTSTONE 10% SAND	39 at 3977
BACKGROUND	16	39	3775	SAMPLE DEPTH	4005
CONNECTION	0			TRIP CHLORIDES	
TRIP				LAG DOWN DP	
FLOWLINE TEMP			degrees F	LAG OFF BOTTOM	
				DRILL RATE ft/hr	
				CORRECTED 'D' EXP.	
				SHALE DENSITY g/cc	
				EWB Res.	

FORMATION PRESSURE DATA

	CASING	BOTTOM HOLE	OPEN HOLE
PORE PRESSURE	450 psi 8.5 ppd	1801 psi 8.7 ppd	
FRACTURE PRESSURE	807 psi 12.9 ppd	2577 psi 14 ppd	
ECD			

MUD DATA

BIT DATA

HYDRAULIC DATA

MUD DATA		BIT DATA		HYDRAULIC DATA	
TIME	2400 4 AUG 93	BIT NO.	3	PUMPS	1. 101600 2. 101600
TYPE	GENERIC #2	TYPE	FDTC	SIZE inches	6.5X12 6.5X12
WEIGHT IN	9.8	IADO CODE		CAPACITY gal/stk	4.91 4.91
FUNNEL VIS.	52	SIZE	12.5	PUMP RATE stks/min	
PV/YP	24/22	JETS	3x14.1-10	FLOW RATE gal/min	
GELS	3/5	DEPTH OUT	4005	PRESSURE psi	
uH	2.8	ROT HR6	33.7	PD SURF / D0 psi	
FILT/CAKE API	4.2/1	FOOTAGE	2088	ANN / BIT psi	
HP-HT		AVG ft/hr	88	JET VELOCITY ft/sec	
Pm	1.8	GRADE		JET IMPACT lbs	
P/MT	8/1.9	HOLE DEV.	.38	BIT HP	
CHLORIDES ppm	18000	COST/FT	311	HP RATIO / HP/IN2	
CALCIUM ppm	800	RPM	122	REDUCED 1 psi at stk/min	
OIL/WATER/SOLIDS	0/82.2/7.8	WOB	14	HATE 2 psi at stk/min	
DAILY/CUM. COST					

ANNULAR DATA

	LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBLs
5X20	165	.3844			
5X18.75	853	.3083			
5X17.5	22	.2733			
5X12.5	2121	.1216			
5X12.5	384	.0636			

PIPE DATA

DRILL STRING				CASING:			
	DP	HWDP	DC	DEPTH	301	1018	
OD-inches	5.0	5.0	8	30	20		
ID-inches	4.276	3.0	2.875	28	18.75		
CAP-bbls/ft	.0178	.0087	.0076	.7616	.3408		
DISP-bbls/ft	.0075	.0181	.0545				
LENGTH-ft	2500	858	384	60	793		
WEIGHT-lbs/ft	19.5	49	149	310	133		

REMARKS AND RECOMMENDATIONS

MW GPM JETS f/mi = sec/std
DRILL AHEAD THRU CLAY/SILTSTONE/SAND TO 4005'. CIRC OUT. POOH. PUMP AND BACH REAM FROM 3851' TO 1016'. MAX OVERPULL 60 K.
LAY DOWN MWD TOOL. RIH. CBU. MAX GAS 850. CIRC AND CONDITION HOLE. POOH FOR E LOGS.
ADT DON WALTERS

AUG 03 1993

sperry-sun

DRILLING SERVICES
A Borel Company

LOGGING SYSTEMS

Logistics Management Service

Anchorage, Alaska

DATE Aug 3 93

TIME 04 00

DEPTH 2275
OPERATION DRILL
FOOTAGE 1225

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

OPERATOR	ARCO ALASKA, INC.	WELL NAME	KUVIUM NO. 2	FIELD/BLOCK	OCS BLK 072
CONTRACTOR	CANMAN	RIG NAME	KULLUK	AREA	BEAUFORT SEA
START DATE	Jul 28 93	LOC.	OFFSHORE	STATE	ALASKA

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA	24 Deg. at 2210'
14	28	1185	LITHOLOGY	90% CLAY 10% SAND
BACKGROUND CONNECTION TRIP	0		SAMPLE DEPTH	2200
FLOWLINE TEMP	33	degrees F	TRIP CHLORIDES	
			LAG DOWN DP	252 silts
			LAG OFF BOTTOM	4015 silts
			DRILL RATE R/W	100
			CORRECTED TO EXP.	0.78
			SHALE DENSITY g/cc	
			EWR Rev.	2

FORMATION PRESSURE DATA

CASING	BOTTOM HOLE	OPEN HOLE
PORE PRESSURE 450 psi 8.5 ppg	1010 psi 8.5 ppg	psi ppg ft
FRACTURE PRESSURE 897 psi 12.8 ppg	psi ppg	psi ppg ft
ECD 524 psi 9.9 ppg	1175 psi 10.0 ppg	psi ppg ft

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME	2400 1 AUG 93	BIT NO.	3	PUMPS	1. ID1800 2. ID1800
TYPE	GENERIC #2	TYPE	FDTG	SIZE inches	6.5X12 6.5X12
WEIGHT IN	0.8	IADC CODE		CAPACITY gal/stk	4.91 4.91
FUNNEL VIS.	50	SIZE	12.5	PUMP RATE stks/min	88 88
PV/VP	24/21	JETS	3x14.1-10	FLOW RATE gal/min	334 334
GELS	4/5	DEPTH OUT		PRESSURE psi	2040
pH	9.8	ROT HR.	14.4	PD SURF / DS psi	83/802
FILT/CAKE API	4.6/1	FOOTAGE	1235	ANN / BIT psi	11/1438
HF-MT		AVG M/hr	85	JET VELOCITY ft/sec	405
Pm	1.3	GRADE		JET IMPACT lbs	1368
FI/MH	8/1.7	HOLE DEV.	.24	BIT HP	558
CHLORIDES ppm	16000	COST/FT		HP RATIO / HP/IN2	4.7hp/in2
CALCIUM ppm	840	RPM	125	REDUCED 1	psi at stk/min
OIL/WATER/SOLIDS	0/5.3/93.7	WOB	0	RATE 2	psi at stk/min
DAILY/CUM. COST					

ANNULAR DATA

	LENGTH - FT.	VOLUME BBL/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBL/8
8X12.5	384	.0836	181	319	34
5X12.5	631	.1215	131	281	104
5X17.5	23	.2733	58	213	8
5X18.75	853	.3083	50	223	270
5X20	185	.3844	44	218	80

PPE DATA

	DP	HWDP	DC	CASING DEPTH	301	1018
OD-inches	5.0	5.0	8		30	20
ID-inches	4.278	3.0	2.875		28	18.75
GAP-bbls/ft	.0176	.0067	.0079		.7818	.3406
DIAP-bbls/ft	.0076	.0181	.0545		80	793
LENGTH-ft	1170	656	304		310	133
WEIGHT-lbs/ft	18.5	48	140			

REMARKS AND RECOMMENDATIONS

MW	GPM	JETS	ft/ml	=	sec/std
RUN IN HOLE WITH 12.25" BIT NO. 3. DRILL AHEAD THRU CLAY/SAND WHILE CONTROL DRILLING AT 100M/H TO 2275'. NO APPARENT HOLE PROBLEMS.					
ADT					
DON WALTERS					

sperry-sun
DRILLING SERVICES
A Sperry Company

LOGGING SYSTEMS

DEPTH 1040
OPERATION TRIP
FOOTAGE 10

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

No. 6
DATE Aug 2 93
TIME 0600

OPERATOR ARCO ALASKA INC. WELL NAME KUVLUM NO. 2 FIELD/BLOCK 000 DLK 072
CONTRACTOR CANMAN RIG NAME KULLUK AREA BEAUFORT SEA
START DATE Jul 28 93 LOG. OFFSHORE STATE ALASKA

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (ft)	SURVEY DATA 100% 1.5 D-8	LITHOLOGY 100% CLAY	SAMPLE DEPTH 1000	DRILL RATE ft/hr	CURRENTED TO EXP.	SHALE DENSITY g/cc	CWR Rec.
BACKGROUND CONNECTION TRIP	FLOWLINE TEMP NA degrees F		TRIP CHLORIDES	LAG DOWN DP	LAG OFF BOTTOM NA				

FORMATION PRESSURE DATA

CASING			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE 450 psi	8.5 ppg	500 psi	8.5 ppg	500 psi	8.5 ppg	500 psi	8.5 ppg	500 psi
FRACTURE PRESSURE 600 psi	12.0 ppg	600 psi	12.0 ppg	600 psi	12.0 ppg	600 psi	12.0 ppg	600 psi
ECO								

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME 2400 1 AUG 93	BIT NO. 3	2	PUMP 1. ID1000 2. ID1000
TYPE GENERIC #2	TYPE FULC	88386GJ4	SIZE inches 8.5X12 8.5X12
WEIGHT IN 0.8	IAUC CODE		CAPACITY gal/stk 4.01 4.01
FUNNEL VIS 50	SIZE 12.5	17.5	PUMP RATE gals/min
PV/YP 10/28	JET 3.14, 1-10	3-10, 1-11	FLOW RATE gal/min
QLIS 6/8	DEPTH OUT 1040		PRESSURE psi STATIC
PH 9.0	KDI HSE 2.8		PD SURF / Dc psi
FILT/CAKE API 4.0/1	FOOTAGE 10		ANN / BIT psi
HP HT	AVG ft/hr 3.8		JET VELOCITY ft/sec
Pm 2.2	GRADE		JET IMPACT lbs
P/MR 5/1.81, 1/2.4	HOLE DEV 1.5		BIT HP
CHLORIDES ppm 1/100	COBT/FT 4019		HP RATIO / HP/M2
CALCIUM ppm 400	RPM 61		REDUCED 1 psi at 1000/min
OIL/WATER/SOLIDS 0/5.0/84.4	WOB 8		RATE 2 psi at 1000/min
DAILY/CUM. COST			

ANNULAR DATA

LENGTH-FT.	VOLUME DBLS/FT.	VELOCITY FT/MIN	CRIT. VEL FT/MIN	ANN-VOL DBLS
8X12.5	.0836			
8X12.5	.1215			
8X17.5	.2733			
8X18.75	.3083			
8X20	.3644			

PIPE DATA

Minerals Management Service
Anchorage, Alaska

DP	HWDH	DC	CASING DEPTH	301	1010
OD-inches 5.0	5.0	8		20	20
ID-inches 4.276	4.0	2.875		20	18.75
CAP-DBL/ft .0176	.0087	.0078		7818	3408
DIGP-DBL/ft .00175	.0101	.0545			
LENGTH-ft 869	304			80	793
WEIGHT-lbs/ft 19.5	49	149		010	103

REMARKS AND RECOMMENDATIONS

MW GPM JETS ft/ml sec/min

RIG UP STACK AND DIV. HIFR. RUN STACK AND DIVERter TO P89. TEST STACK RIM AND TEST CASING TO 2200 psi. POOL. PICK UP BHA AND 17.5' BIT RIM. TAG CUT AT 003'. DRILL CMT TO 1008'. CHANGE HOLE OVER TO 8.8 ppg GENERIC #2 MUD. DRILL CMT, SHOE AND 10' OF NEW HOLE. PERFORM LEAK OFF TEST-170 psi-12.8 ppg. POOL. LAY DOWN BHA AND 17.5' BIT. PICK UP NEW BHA, MWL TOOL AND 12.25' BIT NO. 3.

ADT DON WALTERS

sperry-sun
DRILLING SERVICES
LOGGING SYSTEMS
A Bardon Company

DEPTH 1030
OPERATION DRLO
FOOTAGE 115

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

08 AUG 02 1993

No. 3
DATE Jul 31 93
TIME 04 00

OPERATOR ARGO ALASKA, INC. WELL NAME KUVLUM NO. 2 Anchorage FIELD BLOCK OCS BLK 672
CONTRACTOR OANMAR RIG NAME KULLUK AREA BEAUFORT SEA
START DATE Jul 28 93 LOC. OFFSHORE STATE ALASKA

LOGGING DATA

AVG GAS (units)	MAX GAS (units)	AT DEPTH (feet)	SURVEY DATA	1030 1.5 Deg
BACKGROUND CONNECTION TRIP	5	5	LITHOLOGY	NA
FLOWLINE TEMP	NA	degrees F	SAMPLE DEPTH	
			TRIP OIL/CLIDES	
			LAG DOWN DP	
			LAG OFF BOTTOM	NA
			DRILL RATE m/hr	80
			CORRECTED '0' EXP.	
			SHALE DENSITY g/cc	
			EWB Res.	

FORMATION PRESSURE DATA

CASING	BOTTOM HOLE	OPEN HOLE
PORE PRESSURE 133 psi 8.5 ppg	404 psi 8.5 ppg	
FRACTURE PRESSURE NA psi ppg		
ECD		

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME	TYPE	WEIGHT IN	FUNNEL VIS.	PV/YP	GELS	pH	FILT/CAKE API	HP-MT	Pm	PI/MF	CHLORIDES ppm	CALCIUM ppm	OIL/WATER/SOLIDS	DAILY/CUM. COST	
	SEA WATER	8.5													
BIT NO.	1	TYPE	ATXG1	IADC CODE	SIZE	JETS	3-21.1-22	DEPTH OUT	1030	MOT HRO.	30.0	FOOTAGE	810	AVG R/H	22.5
GRADE		HOLE DEV.	1.5	COST/FT	1020	HPM	111	WOB	21	PUMPS	1.	ID1600	2.	ID1600	
										SIZE inches	7.5x12	7.5x12			
										CAPACITY gal/ask	6.54	6.54			
										PUMP RATE stks/min					
										FLOW RATE gal/min					
										PRESSURE psi	STATIC				
										PD SURF / DS psi					
										ANNI / BIT psi					
										JET VELOCITY ft/sec					
										JET IMPACT lbs					
										BIT HP					
										HP RATIO / HP/AN2					
										REDUCED 1	psi at	stk/min			
										RATE 2	psi at	stk/min			

ANNULAR DATA

	LENGTH - FT.	VOLUME BBLs/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBLs
20X30	101	.4857			
20X26	704	.2881			

PIPE DATA

	DRILL STRING	CASING:
OD-Inches	5.0	DEPTH 301 1017
ID-Inches	4.276	30 20
OAP-bbls/ft	.0178	26 18.75
DISP-bbls/ft	.0075	7815 3408
LENGTH-ft		90 805
WEIGHT-lbs/ft	10.5 49	310 133

REMARKS AND RECOMMENDATIONS

MW GPM JETS ft/mi = sec/std
DRILL AHEAD WITH 26" BIT AND MUD MOTOR TO 1030'. PUMP SWEEP DROP SURVEY. SHORT TRIP TO 375' RH. CIRC HOLE UNTIL AIRFILT.
CLEAN. DISPLACE HOLE WITH 8.9 PPG MUD. POOH. RIG UP TO RUN 20" CSG. RUN 18 JTS OF 100 LB/FT 20" CSG. LAND CSG AT 1017'. CNT
20 AND 30 INCH CASING TO MUD LINE.
ADT DON WALTERS

sperry-sun
DRILLING SERVICES LOGGING SYSTEMS
A Borel Company

DEPTH 815
OPERATION DRILG
FOOTAGE 819

APPLIED DRILLING TECHNOLOGY
MORNING REPORT

NO. 2
DATE JUL 30 93
TIME 04 00

OPERATOR <u>ARCO ALASKA, INC.</u>	WELL NAME <u>KUVLUM NO. 2</u>	FIELD/BLOCK <u>OCS BLK 872</u>
CONTRACTOR <u>CANMAR</u>	RIG NAME <u>KULLUK</u>	AREA <u>BEAUFORT SEA</u>
START DATE <u>JUL 20 93</u>	LOC. <u>OFFSHORE</u>	STATE <u>ALASKA</u>

LOGGING DATA

AVG GAS (units) <u>5</u>	MAX GAS (units) <u>8</u>	AT DEPTH (feet) <u></u>	SURVEY DATA <u>NA</u>	LITHOLOGY <u>NA</u>	SAMPLE DEPTH <u></u>	TRIP CHLORIDES <u></u>	LAG DOWN DP <u></u>	LAG OFF BOTTOM <u>NA</u>	DRILL RATE ft/hr <u>85</u>	CORRECTED 'D' EXP. <u></u>	SHALE DENSITY g/cc <u></u>	SWR Max. <u></u>
BACKGROUND CONNECTION TRIP <u></u>	FLOWLINE TEMP <u>NA</u> degrees F											

FORMATION PRESSURE DATA

CASING			BOTTOM HOLE			OPEN HOLE		
PORE PRESSURE	<u>193</u> psi	<u>8.5</u> ppd	<u>404</u> psi	<u>8.5</u> ppd	<u></u> psi	<u></u> ppd	<u></u> psi	<u></u> ppd
FRACTURE PRESSURE	<u>NA</u> psi	<u></u> ppd	<u></u> psi	<u></u> ppd	<u></u> psi	<u></u> ppd	<u></u> psi	<u></u> ppd
ECD	<u>195</u> psi	<u>8.84</u> ppd	<u>419</u> psi	<u>8.8</u> ppd	<u></u> psi	<u></u> ppd	<u></u> psi	<u></u> ppd

MUD DATA

BIT DATA

HYDRAULIC DATA

TIME <u></u>	TYPE <u>SEA WATER</u>	WEIGHT IN <u>8.5</u>	FUNNEL VIS. <u></u>	PV/VP <u></u>	GELS <u></u>	pH <u></u>	FILT/CAKE API <u></u>	MP-HIT <u></u>	Pm <u></u>	P/M/ <u></u>	CHLORIDES ppm <u></u>	CALCIUM ppm <u></u>	OIL/WATER/SOLIDS <u></u>	DAILY/CUM. COST <u></u>
BIT NO. <u>1</u>	TYPE <u>ATXG1</u>	IADC CODE <u></u>	SIZE <u>26</u>	JETS <u>3-21,1-22</u>	DEPTH OUT <u></u>	ROT HRG. <u>33.4</u>	FOOTAGE <u>705</u>	AVG ft/hr <u>20.6</u>	GRADE <u></u>	HOLE DEV. <u></u>	COST/FT <u></u>	RPM <u>107</u>	WOB <u>22</u>	
PUMPS <u>1</u>	ID1600	2	ID1600	SIZE inches <u>7.5x12</u>	7.5x12	CAPACITY gal/stk <u>8.54</u>	8.54	PUMP RATE stks/min <u>80</u>	80	FLOW RATE gal/min <u>523</u>	523	PRESSURE psi <u>1900</u>	PD SURF / DS psi <u>170/991</u>	ANN / BIT psi <u>1/416</u>
JET VELOCITY ft/sec <u>234</u>	JET IMPACT lbs <u>1040</u>	BIT HP <u>245</u>	HP RATIO / HP/IN2 <u>5 hp/in2</u>	REDUCED 1 <u></u> psi at <u></u> stk/min	RATE 2 <u></u> psi at <u></u> stk/min									

ANNULAR DATA

LENGTH - FT.	VOLUME BBLs/FT.	VELOCITY FT/MIN	CRIT-VEL FT/MIN	ANN-VOL BBLs
<u>0.5X26</u>	<u>890</u>	<u>.636</u>	<u>42</u>	<u>390</u>
<u>5X26</u>	<u></u>	<u></u>	<u></u>	<u>14</u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>

PIPE DATA

DRILL STRING				CASING:			
OD	HWDP	DO	DEPTH	301			
OD-inches <u>5.0</u>	<u>5.0</u>	<u>5.5</u>	<u>30</u>	<u>30</u>	<u></u>	<u></u>	<u></u>
ID-inches <u>4.276</u>	<u>3.0</u>	<u>2.875</u>	<u>26</u>	<u>26</u>	<u></u>	<u></u>	<u></u>
CAP-bbls/ft <u></u>	<u>.0087</u>	<u>.0080</u>	<u>.7616</u>	<u>.7616</u>	<u></u>	<u></u>	<u></u>
DISP-bbls/ft <u></u>	<u>.0181</u>	<u>.0707</u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
LENGTH-ft <u></u>	<u>587</u>	<u>105</u>	<u>00</u>	<u>00</u>	<u></u>	<u></u>	<u></u>
WEIGHT-lbs/ft <u>19.5</u>	<u>49</u>	<u>195</u>	<u>310</u>	<u>310</u>	<u></u>	<u></u>	<u></u>

REMARKS AND RECOMMENDATIONS

MW GPM JETS ft/ml = acc/stk
LANU 90° CRG AT 301'. UNLATCH FROM CASING AND DRILL AHEAD WITH 26" BIT AND MUD MOTOR TO 815'. MONITORING WELL VIA GAS DET. OFFICE
TO SHALE SHAKERS BACKGROUND GAS 4-6 UNITS. MAX GAS 8 UNITS.

JUL 30 1993

Minerals Management Service
Anchorage, Alaska

AD1 DON WALTERS

MW	GPM	JETS	f/mi	sec/std
RIG UP TO RUN 80' CSG. RUN 30' CSG AND LOCK INTO PGB. PU 20' BIT, BHA AND MUD MOTOR. DRILL AND WASH CSG TO 200'. NO RUBER.				
GAS LIFT SYSTEM INSTALLED. BACKGROUND GAS 0-1 UNIT.				
ADI	DON WALTERS			