STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPT. OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

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March 29, 1991

Conoco Inc.
3201 'C' Street
Anchorage, Alaska 99503

Attention: David L.Bowler
Division Manager

Subject: Milne Point Unit
Schrader Bluff Participating Area and Commingling of Kuparuk and Schrader Bluff Production Through Common Milne Point Unit Facilities

Dear Mr. Bowler:

The Division of Oil and Gas has reviewed Conoco's application for a Participating Area for the Schrader Bluff Pool in the Milne Point Unit. The division has also reviewed additional information provided by Conoco at several meetings held between division staff and Conoco representatives following the submittal of Conoco's application.

After consideration of all the information currently available, the Schrader Bluff Participating Area, as outlined in Exhibit 1, has been determined to meet the criteria for the formation of a participating area as set out in 11 AAC 83.303(a) & (b), 11 AAC 83.351 and Article 11 of the Milne Point Unit Agreement. Therefore, the Schrader Bluff Participating Area, as outlined in Exhibit 1, is hereby approved with an effective date of 12:01 a.m. March 23, 1991.

Pursuant to 11 AAC 83.371 and Article 12 of the Milne Point Unit Agreement, the allocation of production and cost (Tract Participation %) for the Schrader Bluff Participating Area shall be as set forth in Exhibit 2 to this decision.

The issue of commingling the production from the Kuparuk Pool and the Schrader Bluff Pool was addressed by Conoco in letters dated November 11, 1990, January 22, 1991, and March 8, 1991. While uncertainty still exists regarding a proper method of determining the individual well test rate for each well for each month, enough information has been exchanged between Conoco and the division to go forward with the basic concepts outlined in Conoco's earlier letters and the discussions between Conoco and the division concerning the allocation of production between the two participating areas. The approach advocated

by both parties is one of volume accounting based on a well test allocation methodology for measuring and allocating gas and hydrocarbon fluids between the two participating areas. The division conditionally approves this volume accounting based on individual well tests for the period March 23, 1991 to July 31, 1991 (four months of production) as acceptable and satisfactory for royalty purposes for allocating gas and hydrocarbon fluids between the Kuparuk Participating Area and the Schrader Bluff Participating Area within the Milne Point Unit.

By this approval, no precedent is established with regard to the approval of commingling hydrocarbons from other formations or pools. Any future request to use well tests to allocate hydrocarbon production between separate formations will be evaluated on a case by case basis. This approval is subject to the following conditions.

1. The proposed method of using an arithmetic average of all the valid well tests of each well during the month will be acceptable to the division during the March 23, 1991 to July 31, 1991 period.

2. Milne Point Unit Operators will perform a minimum of <u>two valid well tests per well per month</u> on each well that produces hydrocarbons processed through the Milne Point Unit processing facility. Well test frequency will be maximized using all available test separator capacity at each drill site, within the constraints imposed by operating conditions. Optimum test duration at stabilized rates will be determined in accordance with standard industry practices by the Unit Operator on a well by well basis. The Unit Operator will use its best efforts to obtain valid well tests at uniform time intervals.

3. Determination of water cut, gas to oil ratio, back pressure adjustments (if any), and API gravity will be consistent with well parameters as outlined in Exhibit 3.

4. Allocations will be performed using the same allocation factor for the Kuparuk and Schrader Bluff pools. The allocation factor will be determined as outlined in Exhibit 4.

5. The Unit Operator will provide the Division of Oil and Gas with a monthly allocation report by the twenty-first day of the following month. The division reserves the right to request any other pertinent information. The monthly allocation report, as in Exhibit 7, must include a monthly oil, gas, and water allocation factor to be applied uniformly to the commingled production, a summary of monthly allocation (by well) formatted as in Exhibit 5, and specific well test data for all tests, as formatted in Exhibit 6.

6. The Division of Oil and Gas reserves the right to review the well test allocations to insure compliance with the methodology prescribed in this decision. Such review may include but is not limited to, inspection of facilities, equipment, well test data, and separator back-pressure adjustments.

7. After four full months of allocating commingled production (March 23, 1991 to July 31, 1991), the allocation methodology will be reviewed by the Division of Oil and Gas. The well test data, allocation factors, any alternate methods of allocating production, and other relevant factors will be evaluated at that time. Following review, the division, in its discretion, may require revision of the allocation procedure. Subsequent reviews may be requested by either the division or the Unit Operator. Revision of the allocation procedure shall only be made with the written consent of, or upon the written direction of, the division.

8. In order to account for the gas produced from each participating area and the gas used as fuel from each participating area for Milne Point Unit production operations, the Unit Operator must submit a monthly gas volume disposition report as in Exhibit 8. This gas disposition report should be submitted with the monthly royalty report to the division.

The Plan of Development for the Schrader Bluff Participating Area will be addressed separately and is not approved by this decision.

Sincerely,

James E. Eason
Director

Attachments

cc: Harold Heinze, Commissioner, DNR
Dave Johnston, Commissioner, AOGCC
Bonnie Johannsen, ADOL
Dudley Platt, ADOR

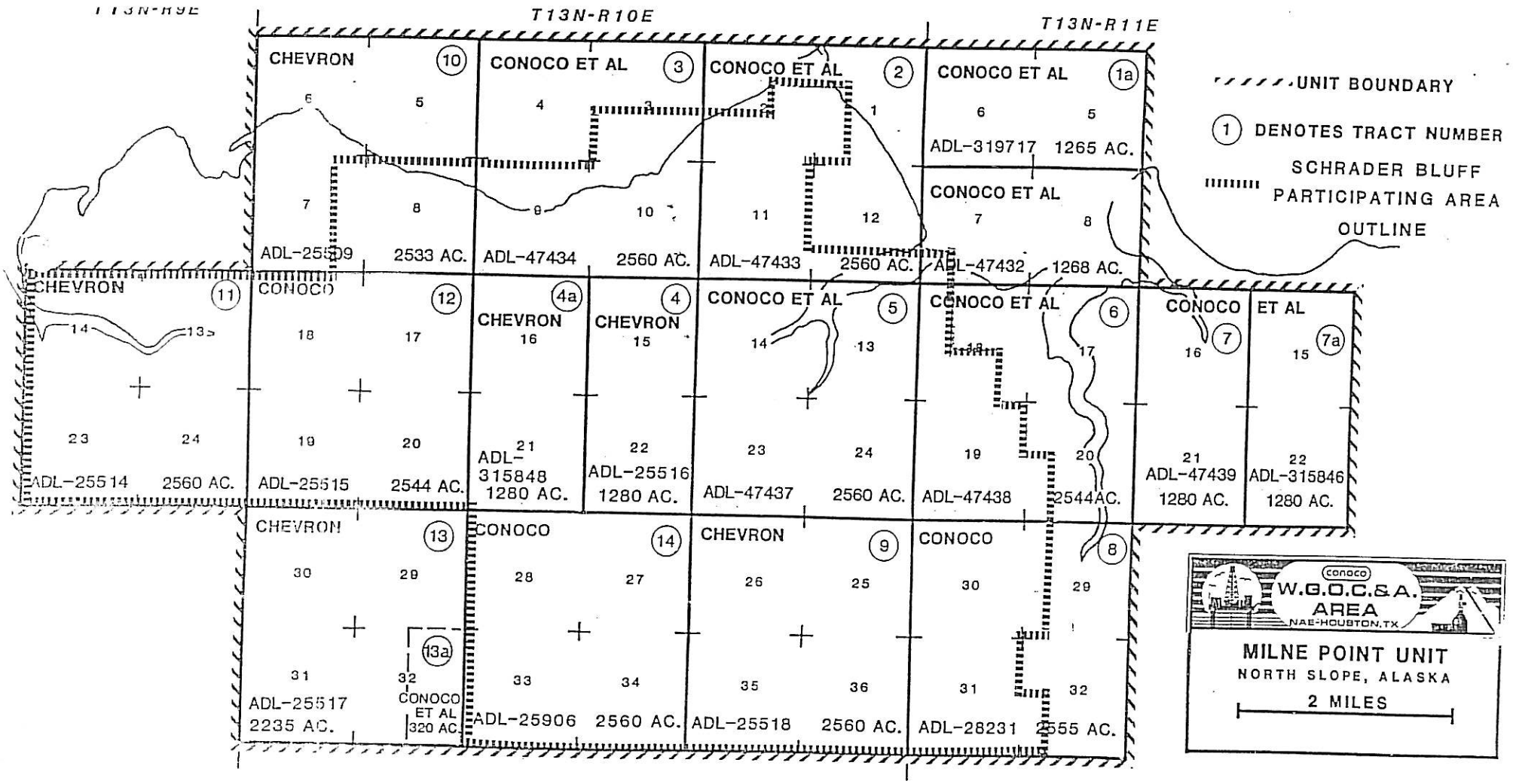
T13N-R10E
T13N-R11E
UNIT BOUNDARY
1 DENOTES TRACT NUMBER
SCHRADER BLUFF PARTICIPATING AREA OUTLINE
CHEVRON
CONOCO ET AL
CONOCO
ADL-25509 2533 AC.
ADL-47434 2560 AC.
ADL-47433 2560 AC.
ADL-319717 1265 AC.
ADL-47432 1268 AC.
ADL-25514 2560 AC.
ADL-25515 2544 AC.
ADL-315848 1280 AC.
ADL-25516 1280 AC.
ADL-47437 2560 AC.
ADL-47438 2544AC.
ADL-47439 1280 AC.
ADL-315846 1280 AC.
ADL-25517 2235 AC.
CONOCO ET AL 320 AC.
ADL-25906 2560 AC.
ADL-25518 2560 AC.
ADL-28231 2555 AC.
W.G.O.C.&A. AREA
NAE-HOUSTON,TX
MILNE POINT UNIT
NORTH SLOPE, ALASKA
2 MILES

EXHIBIT 1

MILNE POINT UNIT
INITIAL SCHRADER BLUFF
PARTICIPATING AREA

Tract	Lease Serial No.	State Lands Description	Participating Acres	Working Interest Owners	Interest in Tract	Tract Participation %
1	ADL-47432	T13, R11E, UM Sec. 7: SW1/4 SW1/4	37	Conoco OXY	0.86 0.14	0.00991
2	ADL-47433	T13,R10E, UM Sec 1: W1/2 SW1/4, SW1/4 NW1/4 Sec 2: S1/2, S1/2 NE1/4 Sec 11: All Sec 12: S1/2 S1/2	1320	Conoco OXY	0.86 0.14	1.34488
3	ADL-47434	T13N, R10E, UM Sec 3: S1/2 Sec 9, 10: All	1600	Conoco OXY	0.8775 0.1225	3.23868
4	ADL-25516	T13N, R10E, UM Sec 15, 22: All	1280	Chevron	1.00	( )
4a	ADL-315848	T13N, R10E, UM Sec 16, 21: All	1280	Chevron	1.00	( ) (12.63192) ( )
5	ADL-47437	T13N, R10E, UM Sec 13, 14, 23, 24: All	2560	Conoco OXY	0.86 0.14	( ) 13.30419
6	ADL-47438	T13N, R11E, UM Sec 18: W1/2 NW1/4, SW1/4, W1/2 SE1/4 Sec 19: All Sec 20: W1/2 SW1/4	1024	Conoco OXY	0.86 0.14	3.42107
8	ADL-28231	T13N, R11E, UM Sec 29: W1/2 W1/2 Sec 30, 31: All Sec 32: W1/2 SW1/4	1515	Conoco	1.00	5.08796
9	ADL-25518	T13N, R10E, UM Sec 25, 26, 35, 36: All	2560	Chevron	1.00	19.04320
10	ADL-25509	T13N, R10E, UM Sec 7: E1/2 E1/2 Sec 8: All	800	Chevron	1.00	1.05539
11	ADL-25514	T13N, R9E, UM Sec 13, 14, 23, 24: All	2560	Chevron	1.00	4.91815
12	ADL-25515	T13N, R10E, UM Sec 17, 18, 19, 20: All	2544	Conoco	1.00	10.33604
14	ADL-25906	T13N, R10E, UM Sec 27, 28, 33, 34: All	2560	Conoco	1.00	25.60862

Attachment 2

MILNE POINT UNIT
INITIAL SCHRADER BLUFF
PARTICIPATING AREA

State Lands Tract	Description	Participating Acres	Tract Participation %	Lease Serial No.	Basic Royalty Percentage	Working Interest Owners	Interest in Tract
1	T13N, R11E, UM Sec. 7: SW¼ SW¼	37	0.00991	ADL-47432	20%	Conoco OXY	0.86 0.14
2	T13N, R10E, UM Sec 1: W½ SW¼, SW¼ NW¼ Sec 2: S½, S½ NE¼ Sec 11: All Sec 12: S½ S½	1320	1.34488	ADL-47433	20%	Conoco OXY	0.86 0.14
3	T13N, R10E, UM Sec 3: S½ Sec 9, 10: All	1600	3.23868	ADL-47434	20%	Conoco OXY	0.8775 0.1225
4	T13N, R10E, UM Sec 15, 22: All	1280	(((12.63192)	ADL-25516	12.5%	Chevron	1.00
4a	T13N, R10E, UM Sec 16, 21: All	1280	((	ADL-315848	12.5%	Chevron	1.00
5	T13N, R10E, UM Sec 13, 14, 23, 24: All	2560	13.30419	ADL-47437	20%	Conoco OXY	0.86 0.14
6	T13N, R11E, UM Sec 18: W½ NW¼, SW¼, W½ SE¼ Sec 19: All Sec 20: W½ SW¼	1024	3.42107	ADL-47438	20%	Conoco OXY	0.86 0.14
8	T13N, R11E, UM Sec 29: W½ W½ Sec 30, 31: All Sec 32: W½ SW¼	1515	5.08796	ADL-28231	12.5%	Conoco	1.00
9	T13N, R10E, UM Sec 25, 26, 35, 36: All	2560	19.04320	ADL-25518	12.5%	Chevron	1.00
10	T13N, R10E, UM Sec 7: E½ E½ Sec 8: All	800	1.05539	ADL-25509	12.5%	Chevron	1.00
11	T13N, R9E, UM Sec 13, 14, 23, 24: All	2560	4.91815	ADL-25514	12.5%	Chevron	1.00
12	T13N, R10E, UM Sec 17, 18, 19, 20: All	2544	10.33604	ADL-25515	12.5%	Conoco	1.00
14	T13N, R10E, UM Sec 27, 28, 33, 34: All	2560	25.60862	ADL-25906	12.5%	Conoco	1.00

UNITLAND/105B/JR

EXHIBIT 3

WELL TEST PARAMETERS

A. Determination of water cut percentage:

Spin out testing utilizing standard API field procedures is an acceptable method for determining water cut. An alternate method, proposed by Conoco, is the use of a microwave absorption meter for on-line water cut measurement. For the four month trial period, both a shake-out and a microwave adsorption meter determination of water cut will be required in order to evaluate both approaches.

B. Determination of true formation gas-oil ratio:

The ratio of the gas produced to the oil produced for a given well is referred to as the "GOR." The units for this measurement are "standard cubic feet of gas per barrel of stock tank oil." The parameter is determined by measuring the gas production off the test separator, subtracting any measured gas lift gas, and dividing this by the calculated oil rate off the test separator. The calculated oil rate is determined by measuring the liquid rate of the separator and then subtracting the amount of produced water as determined in step A.

C. Determination of oil gravity (degrees API) and oil gravity allocation:

The procedure outlined in Conoco's letter of November 12, 1990 under the topic of Gravity Allocation is acceptable during the four month trial period. Conoco will provide the baseline Kuparuk Formation oil gravity data from the eight proposed monitor wells within 30 days of this approval. Conoco will also amend the Kuparuk Formation oil gravity determination schedule as initially proposed in the November 12, 1990 letter within 30 days of this approval.

D. Determination of test separator back pressure adjustment:

Prior to commingling production at the Milne Point production facility, the the Unit Operator will conduct field tests to quantify the impact of separator back pressure on production from each Kuparuk Participating Area drill site. Prior to the four month review meetings, the Unit Operator will make similar determinations for the Schrader Bluff Participating Area test separators. The Division of Oil and Gas may require periodic field tests to quantify separator back pressure adjustments.

EXHIBIT 4

MILNE POINT
ALLOCATION METHODOLOGY

A. Conduct valid well tests to determine oil, gas, and water production rates for each well.

B. Calculate the adjusted daily sales oil volume as follows:
Adjusted daily LACT Volume = daily LACT Meter Volume minus BS&W

All hydrocarbons delivered to the LACT meter in liquid form shall be treated as oil for purposes of allocation.

C. Total monthly Unit Production = Summation of the Adjusted daily LACT Volumes for the month as determined in step B.

D. Theoretical individual well oil production = monthly arithmetic average of all valid individual well tests times the number of days produced (total hours/24) during the month.

E. Theoretical monthly participating area oil production = summation of theoretical individual well oil production for all wells in the particular participating area. The two approved participating areas are the Kuparuk and the Schrader Bluff.

F. Production Allocation Factor = Total monthly Unit Production divided by the summation of the theoretical monthly participating area oil production for all the approved participating areas.

G. Allocated monthly participating area production = Theoretical monthly participating area production times the production allocation factor.

H. Calculate each well's allocated daily production volume as:
Allocated individual well oil production = theoretical individual well oil production times production allocation factor.

I. Specific gravity = 141.5/(API gravity + 131.5)

J. API gravity = (141.5/specific gravity) - 131.5

K. Total monthly Unit gravity production = Summation of the product of the adjusted daily LACT volumes times the daily LACT meter measured specific gravity for each day of the month.

EXHIBIT 4

MILNE POINT
ALLOCATION METHODOLOGY

L. Kuparuk Participating Area (PA) monthly gravity production = Kuparuk PA allocated monthly production times its specific gravity (Kuparuk oil specific gravity to be determined as per "C", Exhibit 3).

M. Schrader Bluff PA monthly gravity production = total monthly Unit gravity production minus Kuparuk PA monthly gravity production.

N. Schrader Bluff PA gravity = Schrader Bluff PA monthly gravity production divided by the Schrader Bluff PA allocated production, then converted to API gravity.

O. Theoretical individual well gas production = monthly arithmetic average of all valid individual well tests times the number of days produced (total hours/24) during the month.

P. Compare the sum of theoretical daily gas production volumes for all wells to the total produced gas volume processed by the Milne Point Production Center.

Q. Adjust each well's theoretical daily gas production volume by a gas allocation factor which is calculated from:
Gas Allocation Factor = Total produced gas volume divided by the summation of theoretical daily gas volumes for all wells.

R. Allocated monthly participating gas area production = Theoretical monthly participating area production times the gas allocation factor.

S. Calculate each well's allocated daily gas production volume as:
Allocated individual well gas production volume = Theoretical gas production times gas allocation factor

EXHIBIT 5

Monthly Allocation Summary For
Kuparuk Participating Area and Schrader Bluff Participating Area
Wells

Month/Year _____

Well	Choke /64th	Total Liquid STB/D	Oil STB/D	Water STB/D	NGL STB/D	%WC	Form Gas MSCFD	Lift Gas MSCFD	Form GOR	Prod Time HRS	Ave Well Temp	Ave FTP PSIG

EXHIBIT 6

Well Test Report

Well _____

Test Parameter	Units	Current Test	Previous Test
Date of Start of Test:			
Time of Start of Test:			
Time of End of Test:			
Elapsed Time Since Test Start:	Hrs		
Separator Gross Fluid Rate:	BPD		
Separator Gas Rate:	MCFPD		
Water Cut Percentage:	Percent		
Oil Shrinkage Factor:	RB/STB		
Solution Gas Factor:	MSCF/STB		
Gross Fluid Rate (60 DEG F):	STBPD		
Net Oil Rate (60 DEG F):	STBPD		
Net Water Rate:	STBPD		
Formation Gas Rate:	MSCFD		
Formation GOR:	SCF/STB		
Lift Gas Rate:	MSCFPD		
Total Gas-Liquid Ratio:	SCF/STB		
Choke Position:	/64th		
Average Well Head Pressure:	PSIG		
Average Well Head Temperature:	DEG F		
Average Separator Pressure:	PSIG		
Average Separator Temperature:	DEG F		

Test Used for Allocation?

Special Considerations:

EXHIBIT 7

Month _____

Production Allocation Factor

	Oil	Water	Gas
Kuparuk			
Schrader Bluff			

Field Allocated Volumes

	Kuparuk	Schrader Bluff	Total
Oil (STB)			
Water (STB)			
Gas (MMSCF)			
NGL (STB)			
Oil Gravity (deg. API)			

Total Metered Volume (Oil and NGL) _____ STB

Oil Gravity of Combined Stream _____ deg. API

EXHIBIT 8

CONOCO, INC.
VOLUME ACCOUNTING
KUPARUK & SCHRADER BLUFF GAS DISPOSITION & RESERVE DEBIT REPORT
(VOLUMES ARE IN MCF AT 14.65 PSIA)
CALCULATIONS SUBJECT TO REVISION WHEN FINALIZED

Month Year

	CONOCO	OXY	CHEVRON	TOTAL
KUPARUK OWNERSHIP %	72.14934	10.47714	17.37352	100.00000
SCHRADER BLUFF OWNERSHIP %	59.42340	2.92794	37.64866	100.00000

GAS PROD KUPARUK
GAS PROD SCHRADER BLUFF
FUEL USAGES:
COMPRESSOR
WATER INJECTION
DRILL CAMP
POWER GENERATION
OTHER

TOTAL GAS USED FOR FUEL

SCHRADER BLUFF FUEL GAS
KUPARUK FUEL GAS

FLARE GAS
NGLs KUPARUK
NGLs SCHRADER BLUFF

KUPARUK NET INJECTION FOR MONTH
YEAR TO DATE
INCEPTION TO DATE

SCHRADER BLUFF NET INJECTION FOR MONTH
YEAR TO DATE
INCEPTION TO DATE

EXCESS FLARE VOLUMES SUBJECT TO TAXES AND PENALTY

EXCESS FLARE GAS

TOTAL KUPARUK GAS RESERVES DEBITS (Total Kup gas produced - net Kup injection)

DECEMBER
YEAR TO DATE
INCEPTION TO DATE

TOTAL SCHRADER BLUFF GAS RESERVE DEBITS (Total SB gas produced - net SB gas injection)

DECEMBER
YEAR TO DATE
INCEPTION TO DATE