

Arthur D. Little, Inc.

Environmental Monitoring and Analysis

Minerals Management Service - Shelikof Strait and Outermost Cook Inlet

1997 Final Data (Surrogate Corrected) - CIC - BIOMARKER

Field ID	Cook Inlet Crude				Cook Inlet Crude			
Lab ID	BI86				BI86			
SDG	SDGEB001				SDGS001			
File	DZ2240.D				DZ0235.D			
Sample Type	CIC				CIC			
Matrix	Oil				Oil			
Sample Size	5.09 mg				5.09 mg			
Weight Basis	OIL				OIL			
Associated Blank	NA				NA			
Field Date	NA				NA			
Extract Date	NA				NA			
Analysis Date	9/5/1997				8/21/1997			
Min Reporting Limit	4.9				4.9			
Units	ug/g	T	%D	Q	ug/g	T	%D	Q
BIOMARKER								
T4-C23Diterpane	5.1	6	1.7		5.7	6	5	
S4-Diacholestane	48	50	14		44	50	-2	
S5-Diacholestane	33	36	11		32	36	-2.8	
T9-C29Tricyclitriterpane	ND				ND			
T10-C29Tricyclitriterpane	ND				ND			
T11-Trisnorhopane(TS)	18	19	16		16	19	-5.3	
T12-Trisnorhopane(TM)	15	16	12		14	16	0	
S24-Methylcholestane	18	26	-15		24	26	3.8	
S25-Ethylcholestane	40	46	4.3		41	46	-2.2	
S28-Ethylcholestane	42	47	6.4		42	47	-2.1	
T15-Norhopane	57	63	7.9		56	63	-1.6	
T18-Oleanane	ND				ND			
T19-Hopane	120	120	17		110	120	0	
T21-Homohopane	45	48	12		44	48	2.1	
T22-Homohopane	30	34	5.9		30	34	-3	
Total S/T	470				460			
5B(H)-Cholane	120				110			
D66-Dotriacontane	147	&			122			

Arthur D. Little, Inc.

Environmental Monitoring and Analysis

Minerals Management Service - Shelikof Strait and Outermost Cook Inlet

1997 Final Data (Surrogate Corrected) - CIC - BIOMARKER

Field ID	Cook Inlet Crude				Cook Inlet Crude			
Lab ID	BI86				BI86			
SDG	SDGS010				SDGS002			
File	DZ2446.D				DZ2081.D			
Sample Type	CIC				CIC			
Matrix	Oil				Oil			
Sample Size	5.09 mg				5.09 mg			
Weight Basis	OIL				OIL			
Associated Blank	NA				NA			
Field Date	NA				NA			
Extract Date	NA				NA			
Analysis Date	9/19/1997				8/25/1997			
Min Reporting Limit	4.9				4.9			
Units	ug/g	T	%D	Q	ug/g	T	%D	Q
BIOMARKER								
T4-C23Diterpane	10	6	13		5	6	-3.3	
S4-Diacholestane	75	50	2		43	50	0	
S5-Diacholestane	54	36	2.8		31	36	0	
T9-C29Tricyclitriterpane	ND				ND			
T10-C29Tricyclitriterpane	ND				ND			
T11-Trisnorhopane(TS)	28	19	0		16	19	0	
T12-Trisnorhopane(TM)	22	16	-6.2		14	16	0	
S24-Methylcholestane	35	26	-7.7		22	26	0	
S25-Ethylcholestane	76	46	13		40	46	0	
S28-Ethylcholestane	66	47	-4.3		41	47	2.1	
T15-Norhopane	87	63	-6.4		54	63	0	
T18-Oleanane	ND				ND			
T19-Hopane	180	120	0		100	120	0	
T21-Homohopane	65	48	-8.3		41	48	0	
T22-Homohopane	44	34	-12		29	34	0	
Total S/T	740				440			
5B(H)-Cholane	68				116			
D66-Dotriacontane	78				146 &			

Arthur D. Little, Inc.

Environmental Monitoring and Analysis

Minerals Management Service - Shelikof Strait and Outermost Cook Inlet

1997 Final Data (Surrogate Corrected) - CIC - BIOMARKER

Field ID		Cook Inlet Crude			
Lab ID		BI86			
SDG		SDGS003			
File		DZ2081.D			
Sample Type		CIC			
Matrix		Oil			
Sample Size		5.09 mg			
Weight Basis		OIL			
Associated Blank		NA			
Field Date		NA			
Extract Date		NA			
Analysis Date		8/25/1997			
Min Reporting Limit		4.9			
Units		ug/g	T	%D	Q
BIOMARKER					
T4-C23Diterpane	5	6	-3.3		
S4-Diacholestane	43	50	0		
S5-Diacholestane	31	36	0		
T9-C29Tricyclitriterpane	ND				
T10-C29Tricyclitriterpane	ND				
T11-Trisnorhopane(TS)	16	19	0		
T12-Trisnorhopane(TM)	14	16	0		
S24-Methylcholestane	22	26	0		
S25-Ethylcholestane	40	46	0		
S28-Ethylcholestane	41	47	2.1		
T15-Norhopane	54	63	0		
T18-Oleanane	ND				
T19-Hopane	100	120	0		
T21-Homohopane	41	48	0		
T22-Homohopane	29	34	0		
Total S/T	440				
5B(H)-Cholane	116				
D66-Dotriacontane	146	&			

Arthur D. Little, Inc.

Environmental Monitoring and Analysis

Minerals Management Service - Shelikof Strait and Outermost Cook Inlet

1997 Final Data (Surrogate Corrected) - CIC - BIOMARKER

Field ID	Cook Inlet Crude				Cook Inlet Crude			
Lab ID	BI86				BI86			
SDG	SDGS004				SDGS004			
File	DZ2240.D				DZ2293.D			
Sample Type	CIC				CIC			
Matrix	Oil				Oil			
Sample Size	5.09 mg				5.09 mg			
Weight Basis	OIL				OIL			
Associated Blank	NA				NA			
Field Date	NA				NA			
Extract Date	NA				NA			
Analysis Date	9/5/1997				9/9/1997			
Min Reporting Limit	4.9				4.9			
Units	ug/g	T	%D	Q	ug/g	T	%D	Q
BIOMARKER								
T4-C23Diterpane	5.1	6	1.7		5.4	6	6.7	
S4-Diacholestane	48	50	14		42	50	0	
S5-Diacholestane	33	36	11		30	36	0	
T9-C29Tricyclitriterpane	ND				ND			
T10-C29Tricyclitriterpane	ND				ND			
T11-Trisnorhopane(TS)	18	19	16		17	19	5.3	
T12-Trisnorhopane(TM)	15	16	12		13	16	-6.2	
S24-Methylcholestane	18	26	-15		19	26	-12	
S25-Ethylcholestane	40	46	4.3		39	46	0	
S28-Ethylcholestane	42	47	6.4		36	47	-8.5	
T15-Norhopane	57	63	7.9		47	63	-13	
T18-Oleanane	ND				47			
T19-Hopane	120	120	17		93	120	-8.3	
T21-Homohopane	45	48	12		36	48	-12	
T22-Homohopane	30	34	5.9		24	34	-18	
Total S/T	470				450			
5B(H)-Cholane	120				118			
D66-Dotriacontane	147 &				115			

Arthur D. Little, Inc.

Environmental Monitoring and Analysis

Minerals Management Service - Shelikof Strait and Outermost Cook Inlet

1997 Final Data (Surrogate Corrected) - CIC - BIOMARKER

Field ID		Cook Inlet Crude			
Lab ID		BI86			
SDG		SDGS005			
File		DZ2293.D			
Sample Type		CIC			
Matrix		Oil			
Sample Size		5.09 mg			
Weight Basis		OIL			
Associated Blank		NA			
Field Date		NA			
Extract Date		NA			
Analysis Date		9/9/1997			
Min Reporting Limit		4.9			
Units		ug/g	T	%D	Q
BIOMARKER					
T4-C23Diterpane	5.4	6	6.7		
S4-Diacholestane	42	50	0		
S5-Diacholestane	30	36	0		
T9-C29Tricyclitriterpane	ND				
T10-C29Tricyclitriterpane	ND				
T11-Trisnorhopane(TS)	17	19	5.3		
T12-Trisnorhopane(TM)	13	16	-6.2		
S24-Methylcholestane	19	26	-12		
S25-Ethylcholestane	39	46	0		
S28-Ethylcholestane	36	47	-8.5		
T15-Norhopane	47	63	-13		
T18-Oleanane	ND				
T19-Hopane	93	120	-8.3		
T21-Homohopane	36	48	-12		
T22-Homohopane	24	34	-18		
Total S/T	400				
5B(H)-Cholane	118				
D66-Dotriacontane	115				

Arthur D. Little, Inc.

Environmental Monitoring and Analysis

Minerals Management Service - Shelikof Strait and Outermost Cook Inlet

1997 Final Data (Surrogate Corrected) - CIC - BIOMARKER

Field ID	Cook Inlet Crude				Cook Inlet Crude			
Lab ID	BI86				BI86			
SDG	SDGS006				SDGS007			
File	DX6513.D				DZ2337.D			
Sample Type	CIC				CIC			
Matrix	Oil				Oil			
Sample Size	5.09 mg				5.09 mg			
Weight Basis	OIL				OIL			
Associated Blank	NA				NA			
Field Date	NA				NA			
Extract Date	NA				NA			
Analysis Date	1/9/1998				9/12/1997			
Min Reporting Limit	4.9				4.9			
Units	ug/g	T	%D	Q	ug/g	T	%D	Q
BIOMARKER								
T4-C23Diterpane	6	6	17		6	6	10	
S4-Diacholestane	46	50	8		44	50	-4	
S5-Diacholestane	20	36	-33		34	36	2.8	
T9-C29Tricyclitriterpane	ND				ND			
T10-C29Tricyclitriterpane	ND				ND			
T11-Trisnorhopane(TS)	21	19	32		18	19	5.3	
T12-Trisnorhopane(TM)	14	16	0		14	16	-6.2	
S24-Methylcholestane	20	26	-12		24	26	0	
S25-Ethylcholestane	34	46	-13		44	46	4.3	
S28-Ethylcholestane	36	47	-11		41	47	-4.3	
T15-Norhopane	49	63	-9.5		52	63	-9.5	
T18-Oleanane	ND				ND			
T19-Hopane	100	120	0		110	120	0	
T21-Homohopane	37	48	-10		40	48	-8.3	
T22-Homohopane	26	34	-12		26	34	-15	
Total S/T	410				450			
5B(H)-Cholane	117				110			
D66-Dotriacontane	110				134 &			

Arthur D. Little, Inc.

Environmental Monitoring and Analysis

Minerals Management Service - Shelikof Strait and Outermost Cook Inlet

1997 Final Data (Surrogate Corrected) - CIC - BIOMARKER

Field ID	Cook Inlet Crude
Lab ID	BI86
SDG	SDGS007
File	DZ2337.D
Sample Type	CIC
Matrix	Oil
Sample Size	5.09 mg
Weight Basis	OIL
Associated Blank	NA
Field Date	NA
Extract Date	NA
Analysis Date	9/12/1997
Min Reporting Limit	4.9
Units	ug/g T %D Q

BIOMARKER				
T4-C23Diterpane	6	6	10	
S4-Diacholestane	44	50	-4	
S5-Diacholestane	34	36	2.8	
T9-C29Tricyclitriterpane	ND			
T10-C29Tricyclitriterpane	ND			
T11-Trisnorhopane(TS)	18	19	5.3	
T12-Trisnorhopane(TM)	14	16	-6.2	
S24-Methylcholestane	24	26	0	
S25-Ethylcholestane	44	46	4.3	
S28-Ethylcholestane	41	47	-4.3	
T15-Norhopane	52	63	-9.5	
T18-Oleanane	ND			
T19-Hopane	110	120	0	
T21-Homohopane	40	48	-8.3	
T22-Homohopane	26	34	-15	

Total S/T 450

5B(H)-Cholane	110
D66-Dotriacontane	134 &

Arthur D. Little, Inc.

Environmental Monitoring and Analysis

Minerals Management Service - Shelikof Strait and Outermost Cook Inlet

1997 Final Data (Surrogate Corrected) - CIC - BIOMARKER

Field ID	Cook Inlet Crude				Cook Inlet Crude			
Lab ID	BI86				BI86			
SDG	SDGS009				SDGSOD			
File	DZ2395.D				DX6551.D			
Sample Type	CIC				CIC			
Matrix	Oil				Oil			
Sample Size	5.09 mg				5.09 mg			
Weight Basis	OIL				OIL			
Associated Blank	NA				NA			
Field Date	NA				NA			
Extract Date	NA				NA			
Analysis Date	9/16/1997				1/11/1998			
Min Reporting Limit	4.9				4.9			
Units	ug/g	T	%D	Q	ug/g	T	%D	Q
BIOMARKER								
T4-C23Diterpane	5.8	6	12		6.9	6	27	
S4-Diacholestane	43	50	0		45	50	0	
S5-Diacholestane	28	36	-11		28	36	-14	
T9-C29Tricyclitriterpane	ND				ND			
T10-C29Tricyclitriterpane	ND				ND			
T11-Trisnorhopane(TS)	16	19	0		23	19	32	
T12-Trisnorhopane(TM)	14	16	0		16	16	12	
S24-Methylcholestane	20	26	-12		19	26	-19	
S25-Ethylcholestane	45	46	13		36	46	-13	
S28-Ethylcholestane	40	47	-2.1		36	47	-15	
T15-Norhopane	53	63	-3.2		50	63	-13	
T18-Oleanane	ND				ND			
T19-Hopane	100	120	0		110	120	0	
T21-Homohopane	39	48	-6.2		39	48	-10	
T22-Homohopane	26	34	-12		25	34	-18	
Total S/T	430				430			
5B(H)-Cholane	115				110			
D66-Dotriacontane	119				117			

Arthur D. Little, Inc.

Environmental Monitoring and Analysis

Minerals Management Service - Shelikof Strait and Outermost Cook Inlet

1997 Final Data (Surrogate Corrected) - CIC - BIOMARKER

Field ID		Cook Inlet Crude			
Lab ID	BI86				
SDG	SDGSOD				
File	DY7262.D				
Sample Type	CIC				
Matrix	Oil				
Sample Size	5.09 mg				
Weight Basis	OIL				
Associated Blank	NA				
Field Date	NA				
Extract Date	NA				
Analysis Date	1/15/1998				
Min Reporting Limit	4.9				
Units	ug/g	T	%D	Q	
BIOMARKER					
T4-C23Diterpane	7.2	6	22		
S4-Diacholestane	44	50	-10		
S5-Diacholestane	26	36	-25		
T9-C29Tricyclitriterpane	ND				
T10-C29Tricyclitriterpane	ND				
T11-Trisnorhopane(TS)	22	19	16		
T12-Trisnorhopane(TM)	15	16	-6.2		
S24-Methylcholestane	22	26			
S25-Ethylcholestane	43	46	-4.4		
S28-Ethylcholestane	42	47	-8.5		
T15-Norhopane	57	63	-7.9		
T18-Oleanane	ND				
T19-Hopane	120	120	0		
T21-Homohopane	46	48	-2.1		
T22-Homohopane	33	34	0		
Total S/T	480				
5B(H)-Cholane	102				
D66-Dotriacontane	112				

Arthur D. Little, Inc.

Environmental Monitoring and Analysis

Minerals Management Service - Shelikof Strait and Outermost Cook Inlet

1997 Final Data (Surrogate Corrected) - CIC - BIOMARKER

Field ID		Cook Inlet Crude			
Lab ID		BI86			
SDG		SDGS005			
File		DZ2293.D			
Sample Type		CIC			
Matrix		Oil			
Sample Size		5.09 mg			
Weight Basis		OIL			
Associated Blank		NA			
Field Date		NA			
Extract Date		NA			
Analysis Date		9/9/1997			
Min Reporting Limit		4.9			
Units		ug/g	T	%D	Q
BIOMARKER					
T4-C23Diterpane	5.4	6	6.7		
S4-Diacholestane	42	50	0		
S5-Diacholestane	30	36	0		
T9-C29Tricyclitriterpane	ND				
T10-C29Tricyclitriterpane	ND				
T11-Trisnorhopane(TS)	17	19	5.3		
T12-Trisnorhopane(TM)	13	16	-6.2		
S24-Methylcholestane	19	26	-12		
S25-Ethylcholestane	39	46	0		
S28-Ethylcholestane	36	47	-8.5		
T15-Norhopane	47	63	-13		
T18-Oleanane	ND				
T19-Hopane	93	120	-8.3		
T21-Homohopane	36	48	-12		
T22-Homohopane	24	34	-18		
Total S/T	400				
5B(H)-Cholane	118				
D66-Dotriacontane	115				