Sable Island Condensate

Origin: Nova Scotia, Canada

		Data	Notes	Reference ID
API Gravity				
		39.9		SL Ross 82
Sulphur (weight %)				
		0.03		EETD 86
Flash Point (°C)				
Evaporation (volume %)				
0		16	*(a)*	SL Ross 82
		-11		EETD 86
41		81	*(a)*	SL Ross 82
71		135	*(a)*	SL Ross 82
82		147	*(a)*	SL Ross 82
(a) open cup				
Fire Point (°C)				
Evaporation (volume %)				
0		16		SL Ross 82
41		84		SL Ross 82
71		141		SL Ross 82
82		161		SL Ross 82
Hydrogen Sulphide (ppm)				
		0		SL Ross 82
Density (g/mL)				
Evaporation (volume %)	Temperature (°C)			
0	0	0.8780		Mackay 82a
	5	0.8340		SL Ross 82
		0.8760		Mackay 82a
	10	0.8750		Mackay 82a
	15	0.8230		SL Ross 82
		0.8740		Mackay 82a
	20	0.8720		Mackay 82a
	25	0.8690		Mackay 82a
41	5	0.8750		SL Ross 82
	15	0.8690		SL Ross 82
71	5	0.8850		SL Ross 82
	15	0.8700		SL Ross 82
82	5	0.9140		SL Ross 82
	15	0.8990		SL Ross 82

Sable Island Condensate

		Data	Notes	Reference ID
Pour Point (°C)				
Evaporation (volume %)				
0		-22		SL Ross 82
		3		Mackay 82a
		-51		EETD 86
41		3		SL Ross 82
71		18		SL Ross 82
82		27		SL Ross 82
Dynamic Viscosity (mPa·s or cP)				
Evaporation (volume %)	Temperature (°C)			
0	0	13		Mackay 82a
	5	3		SL Ross 82
		5		Mackay 82a
	10	3		Mackay 82a
	15	2		SL Ross 82
		3		Mackay 82a
	20	3		Mackay 82a
	25	2		Mackay 82a
41	5	88		SL Ross 82
	15	6		SL Ross 82
71	5	2,250		SL Ross 82
	15	320		SL Ross 82
82	5	6,600		SL Ross 82
	15	2,450		SL Ross 82
Hydrocarbon Groups (weight %)				
	Saturates	88		Mackay 82a
		81		SL Ross 82
	Aromatics	11		Mackay 82a
	Resins	0		Mackay 82a
	Asphaltenes	1		Mackay 82a
	Waxes	2		Mackay 82a
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
	Room temperature	18.4		Mackay 82a
Distillation (°C)				
	Total Distillate (volume %)			
	15	103		SL Ross 82
	30	123		SL Ross 82
	50	156		SL Ross 82
	70	220		SL Ross 82

		Data	Notes	Reference ID
Aqueous Solubility (mg/L)				
	Temperature (°C)			
0	20 (approx.)	14	*(a)*	MacLean 89
		12	*(a)*	MacLean 89
	22	76	*(a)*	Suntio 86
	Unknown	58	*(a)*	SL Ross 82
		75	*(a)*	SL Ross 82
42		8	*(b)*	SL Ross 82
		5	*(b)*	SL Ross 82

(a) fresh water; (b) salt water; (c) distilled water

Acute Toxicity of Water Soluble Fraction (mg/L)				
	Test Organism			
48h EC50	Daphnia magna	0.4	*(a)*	MacLean 89
		2	*(b)*	EETD 89
	Artemia spp.	2	*(a)*	MacLean 89
		10	*(b)*	EETD 89
48h LC50	Daphnia magna	3	*(a)*	MacLean 89
		18	*(b)*	EETD 89
	Artemia spp.	3	*(a)*	MacLean 89
		13	*(b)*	EETD 89

(a) results based on fluorescence spectroscopy; (b) results based on GC purge-and-trap analysis

Saharan Blend

Origin: Algeria

Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".

The sample analyzed by ESD was received in 1997 and was identified as 'Sahara Blend'.

API Gravity

Data	Notes	Reference ID
45.5		OGJ 99
43.6		ESD 97

Equation(s) for Predicting Evaporation

Short term (<5 days): %Ev = (0.001 + 0.013T)sqrt(t)
Long term: %Ev = (1.09 + 0.045T)ln(t)
Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)

ESD 98

Sulphur (weight %)

Evaporation (weight %)	Data	Notes	Reference ID
0	0.05		OGJ 99
	0.10		ESD 97
14	0.09		ESD 97
28	0.09		ESD 97
42	0.10		ESD 97

Flash Point (°C)

Evaporation (weight %)	Data	Notes	Reference ID
0	-24		ESD 97
14	28		ESD 97
29	75		ESD 97
42	> 95		ESD 97

Reid Vapour Pressure (kPa)

Data	Notes	Reference ID
60		OGJ 99

Density (g/mL)

Evaporation (weight %)	Temperature (°C)	Data	Notes	Reference ID
0	0	0.8192		ESD 97
	15	0.8078		ESD 97
	25	0.8029		ESD 98
14	0	0.8454		ESD 97
	15	0.8336		ESD 97
	25	0.8271		ESD 98
29	0	0.8654		ESD 97
	15	0.8528		ESD 97
	25	0.8461		ESD 98
42	0	0.8805		ESD 97
	15	0.8678		ESD 97
	25	0.8607		ESD 98

		Data	Notes	Reference ID
Pour Point (°C)				
Evaporation (weight %)				
0		< -29		OGJ 99
		-8		ESD 97
14		-9		ESD 97
29		0		ESD 97
42		10		ESD 97
Dynamic Viscosity (mPa s or cP)				
Evaporation (weight %)	Temperature (°C)			
0	0	9		ESD 97
	15	4		ESD 97
	25	3		ESD 98
14	0	19		ESD 97
	15	7		ESD 97
	25	5		ESD 98
28	0	70		ESD 97
	15	19		ESD 97
	25	13		ESD 98
42	0	230	*(a)*	ESD 97
	15	53		ESD 97
	25	28		ESD 98
(a) slightly non-newtonian				
Saybolt Viscosity (SUS)				
	Temperature (°C)			
	21	37		OGJ 99

Saharan Blend

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
Evaporation (weight %)				
0	Saturates	76		ESD 98
	Aromatics	21		ESD 98
	Resins	3		ESD 98
	Asphaltenes	1		ESD 98
14	Saturates	77		ESD 98
	Aromatics	20		ESD 98
	Resins	3		ESD 98
	Asphaltenes	1		ESD 98
28	Saturates	72		ESD 98
	Aromatics	23		ESD 98
	Resins	4		ESD 98
	Asphaltenes	1		ESD 98
42	Saturates	69		ESD 98
	Aromatics	24		ESD 98
	Resins	6		ESD 98
	Asphaltenes	1		ESD 98
Adhesion (g/m²)				
Evaporation (weight %)				
0		2	*SD = 2*	ESD 97
14		5	*SD = 0*	ESD 97
28		12	*SD = 1*	ESD 97
42		22	*SD = 2*	ESD 97

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
Evaporation (weight %)				
0	Benzene	2,360		ESD 97
	Toluene	4,257		ESD 97
	Ethylbenzene	674		ESD 97
	Xylenes	6,076		ESD 97
	C3-benzenes	10,079		ESD 97
	Total BTEX	13,367		ESD 97
	Total VOCs	23,446		ESD 97
14	Benzene	849		ESD 97
	Toluene	3,957		ESD 97
	Ethylbenzene	661		ESD 97
	Xylenes	5,872		ESD 97
	C3-benzenes	11,134		ESD 97
	Total BTEX	11,339		ESD 97
	Total VOCs	22,474		ESD 97
28	Benzene	30		ESD 97
	Toluene	45		ESD 97
	Ethylbenzene	98		ESD 97
	Xylenes	1,314		ESD 97
	C3-benzenes	7,481		ESD 97
	Total BTEX	1,486		ESD 97
	Total VOCs	8,968		ESD 97
42	Benzene	0		ESD 97
	Toluene	2		ESD 97
	Ethylbenzene	1		ESD 97
	Xylenes	3		ESD 97
	C3-benzenes	9		ESD 97
	Total BTEX	5		ESD 97
	Total VOCs	16		ESD 97

Saharan Blend

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	26.1		ESD 97
	15	24.8		ESD 97
	25	24.3		ESD 00
14	0	28.0		ESD 97
	15	26.8		ESD 97
	25	26.2		ESD 00
28	0	29.4		ESD 97
	15	27.5		ESD 97
	25	27.8		ESD 00
42	0	50.3		ESD 97
	15	28.6		ESD 97
	25	28.9		ESD 00
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	23.6		ESD 97
	15	20.5		ESD 97
	25	7.8		ESD 00
14	0	25.3		ESD 97
	15	22.4		ESD 97
	25	8.7		ESD 00
28	0	24.4		ESD 97
	15	19.1		ESD 97
	25	9.9		ESD 00
42	0	NM		ESD 97
	15	19.1		ESD 97
	25	6.1		ESD 00
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	25.7		ESD 97
	15	22.8		ESD 97
	25	10.9		ESD 00
14	0	27.0		ESD 97
	15	24.8		ESD 97
	25	12.7		ESD 00
28	0	27.2		ESD 97
	15	22.3		ESD 97
	25	13.2		ESD 00
42	0	NM		ESD 97
	15	22.4		ESD 97
	25	12.0		ESD 00

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (weight %)	Boiling Point (°C)			
0	40	8		ESD 97
	60	10		ESD 97
	80	15		ESD 97
	100	19		ESD 97
	120	20		ESD 97
	140	23		ESD 97
	160	27		ESD 97
	180	32		ESD 97
	200	36		ESD 97
	250	47		ESD 97
	300	57		ESD 97
	350	67		ESD 97
	400	76		ESD 97
	450	83		ESD 97
	500	88		ESD 97
	550	93		ESD 97
	600	96		ESD 97
	650	98		ESD 97
	700	99		ESD 97
14	60	1		ESD 97
	80	4		ESD 97
	100	6		ESD 97
	120	7		ESD 97
	140	10		ESD 97
	160	15		ESD 97
	180	21		ESD 97
	200	26		ESD 97
	250	38		ESD 97
	300	51		ESD 97
	350	63		ESD 97
	400	72		ESD 97
	450	81		ESD 97
	500	87		ESD 97
	550	92		ESD 97
	600	96		ESD 97
	650	98		ESD 97
	690	100		ESD 97
28	140	1		ESD 97
	160	3		ESD 97
	180	7		ESD 97
	200	12		ESD 97

Saharan Blend

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (weight %)	Boiling Point (°C)			
28	250	26		ESD 97
	300	41		ESD 97
	350	55		ESD 97
	400	66		ESD 97
	450	76		ESD 97
	500	84		ESD 97
	550	90		ESD 97
	600	95		ESD 97
	650	98		ESD 97
42	250	10		ESD 97
	300	27		ESD 97
	350	45		ESD 97
	400	59		ESD 97
	450	71		ESD 97
	500	81		ESD 97
	550	88		ESD 97
	600	93		ESD 97
	650	97		ESD 97
	700	99		ESD 97
Yield on Crude (volume %)				
	Boiling Range (°C)			
	Light ends (IBP-71)	10		OGJ 99
	Light naphtha (71-143)	18		OGJ 99
	Heavy naphtha (143-199)	14		OGJ 99
	Kerosene (199-260)	14		OGJ 99
	Diesel (260-335)	13		OGJ 99
	Light gas oil (335-413)	9		OGJ 99
	Heavy gas oil (513-500)	12		OGJ 99
	Residue (>500)	10		OGJ 99

Origin: Russia		**Data**	**Notes**	**Reference ID**
API Gravity				
		32.3		ESD 99
Equation(s) for Predicting Evaporation				
%Ev = (4.16 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 99
Sulphur (weight %)				
Evaporation (weight %)				
0		0.25		ESD 99
42		0.39		ESD 99
Flash Point (°C)				
Evaporation (weight %)				
0		-10		ESD 99
42		> 100		ESD 99
Density (g/mL)				
Evaporation (weight %)	Temperature (°C)			
0	0	0.8742		ESD 99
	15	0.8632		ESD 99
	25	0.8559		ESD 99
42	0	0.9303		ESD 99
	15	0.9201		ESD 99
	25	0.9131		ESD 99
Pour Point (°C)				
Evaporation (weight %)				
0		< -75		ESD 99
42		-32		ESD 99
Dynamic Viscosity (mPa s or cP)				
Evaporation (weight %)	Temperature (°C)			
0	0	6		ESD 99
	15	4		ESD 99
	25	3		ESD 99
42	0	144		ESD 99
	15	52		ESD 99
	25	31		ESD 99

Sakhalin

		Data	Notes	Reference ID
Chemical Dispersibility (volume %)				
Evaporation (weight %)				
0	Corexit 9500	84		ESD 99
	Corexit 9527	76		ESD 99
25	Corexit 9500	49		ESD 99
	Corexit 9527	73		ESD 99
45	Corexit 9500	31		ESD 99
	Corexit 9527	49		ESD 99
Hydrocarbon Groups (weight %)				
Evaporation (weight %)				
0	Saturates	61		ESD 99
	Aromatics	32		ESD 99
	Resins	6		ESD 99
	Asphaltenes	1		ESD 99
42	Saturates	56		ESD 99
	Aromatics	32		ESD 99
	Resins	10		ESD 99
	Asphaltenes	2		ESD 99
Adhesion (g/m²)				
Evaporation (weight %)				
0		8	*SD = 2*	ESD 99
42		29	*SD = 4*	ESD 99
Volatile Organic Compounds (ppm)				
Evaporation (weight %)				
0	Benzene	1,690		ESD 99
	Toluene	21,465		ESD 99
	Ethylbenzene	2,670		ESD 99
	Xylenes	23,386		ESD 99
	C3-benzenes	21,853		ESD 99
	Total BTEX	49,212		ESD 99
	Total VOCs	71,065		ESD 99
42	Benzene	23		ESD 99
	Toluene	3		ESD 99
	Ethylbenzene	1		ESD 99
	Xylenes	1		ESD 99
	C3-benzenes	70		ESD 99
	Total BTEX	29		ESD 99
	Total VOCs	98		ESD 99

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	26.1		ESD 00
	15	24.4		ESD 00
	25	25.3		ESD 00
42	0	31.2		ESD 00
	15	30.3		ESD 00
	25	29.8		ESD 00
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	14.3		ESD 00
	15	14.0		ESD 00
	25	10.0		ESD 00
42	0	9.9		ESD 00
	15	11.3		ESD 00
	25	4.3		ESD 00
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	15.1		ESD 00
	15	16.3		ESD 00
	25	13.7		ESD 00
42	0	11.2		ESD 00
	15	15.7		ESD 00
	25	6.9		ESD 00

Saladin

Origin: Australia

Data from OGJ 99 were originally published in 1993 as part of a series entitled "Export Crudes for the '90s".

		Data	Notes	Reference ID
API Gravity				
		48.2		OGJ 99
Sulphur (weight %)				
		0.02		OGJ 99
Water Content (volume %)				
		< 0.0		OGJ 99
Flash Point (°C)				
		-32	*(a)*	OGJ 99
Reid Vapour Pressure (kPa)				
		33		OGJ 99
Density (g/mL)				
	Temperature (°C)			
	15	0.7869		OGJ 99
Pour Point (°C)				
		-30		OGJ 99
Kinematic Viscosity (mm²/s or cSt)				
	Temperature (°C)			
	20	2		OGJ 99
	40	1		OGJ 99
Hydrocarbon Groups (weight %)				
	Asphaltenes	0		OGJ 99
	Waxes	1		OGJ 99
Yield on Crude (volume %)				
	Boiling Range (°C)			
	Naphtha (21-190)	48		OGJ 99
	Kerosene (140-260)	42		OGJ 99
	Gas oil (250-350)	21		OGJ 99
	Vacuum gas oil (350-450)	7		OGJ 99
	Residue (>450)	2		OGJ 99
Metals (ppm)				
	Copper	< 0.5		OGJ 99
	Iron	< 1		OGJ 99
	Nickel	2		OGJ 99
	Sodium	< 1		OGJ 99
	Vanadium	< 0.5		OGJ 99
Other Elements (weight %)				
	Nitrogen	0.01		OGJ 99

		Data	Notes	Reference ID
Origin: Indonesia				
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".				
API Gravity				
		38.0		OGJ 99
Sulphur (weight %)				
		0.49		OGJ 99
Reid Vapour Pressure (kPa)				
		4		OGJ 99
Pour Point (°C)				
		-26		OGJ 99
Kinematic Viscosity (mm²/s or cSt)				
	Temperature (°C)			
	38	4		OGJ 99
Hydrocarbon Groups (weight %)				
	Waxes	8		OGJ 99
Yield on Crude (volume %)				
	Boiling Range (°C)			
	Gasoline (C5-94)	1		OGJ 99
	Naphtha (94-149)	11		OGJ 99
	Kerosene (149-260)	35		OGJ 99
	Gas oil (260-344)	22		OGJ 99
	Residue (>344)	31		OGJ 99

Salmon

		Data	Notes	Reference ID
Origin: Iran				
Synonyms: Sassan				
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".				
API Gravity				
		33.9		OGJ 99
Sulphur (weight %)				
		1.91		OGJ 99
Pour Point (°C)				
		-21		OGJ 99
Saybolt Viscosity (SUS)				
	Temperature (°C)			
	25	52		OGJ 99
	37.8	44		OGJ 99
Hydrocarbon Groups (weight %)				
	Waxes	2		OGJ 99
Yield on Crude (volume %)				
	Boiling Range (°C)			
	Straight run gasoline (10-93)	11		OGJ 99
	Naphtha (93-191)	16		OGJ 99
	Kerosene (191-232)	8		OGJ 99
	Gas oil (232-371)	24		OGJ 99
	Residual oil (>371)	40		OGJ 99
	Residual oil (>577)	12		OGJ 99

		Data	Notes	Reference ID
Origin: Ghana				
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".				
API Gravity				
		37.4		OGJ 99
Sulphur (weight %)				
		0.10		OGJ 99
Yield on Crude (volume %)				
	Boiling Range (°C)			
	C1-C3	0		OGJ 99
	Gasoline (46-82)	9		OGJ 99
	Gasoline (82-104)	3		OGJ 99
	Naphtha (104-121)	3		OGJ 99
	Naphtha (121-160)	7		OGJ 99
	Heavy naphtha (160-182)	4		OGJ 99
	Kerosene (182-260)	16		OGJ 99
	Gas oil (260-316)	11		OGJ 99
	Gas oil (316-343)	5		OGJ 99
	Gas oil (343-504)	21		OGJ 99
	Vacuum bottoms (>504)	20		OGJ 99

Sanga Sanga

Origin: Indonesia

Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".

		Data	Notes	Reference ID
API Gravity				
		25.7		OGJ 99
Sulphur (weight %)				
		0.17		OGJ 99
Reid Vapour Pressure (kPa)				
		6		OGJ 99
Pour Point (°C)				
		-15		OGJ 99
Saybolt Viscosity (SUS)				
	Temperature (°C)			
	38	151		OGJ 99
Yield on Crude (volume %)				
	Boiling Range (°C)			
	Naphtha (IBP-177)	13		OGJ 99
	Kerosene (177-232)	12		OGJ 99
	Diesel (232-343)	42		OGJ 99
	Fuel oil (>343)	33		OGJ 99
Metals (ppm)				
	Nickel	0.9		OGJ 99

Origin: California, USA		**Data**	**Notes**	**Reference ID**
API Gravity				
		22.1		ESD 91
Equation(s) for Predicting Evaporation				
%Ev = (1.63 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 96
Sulphur (weight %)				
Evaporation (volume %)				
0		2.85		ESD 93
11		3.22		ESD 93
22		3.41		ESD 93
Water Content (weight %)				
Evaporation (volume %)				
0		1.8		ESD 98
11		0.5		ESD 98
22		0.1		ESD 98
Flash Point (°C)				
Evaporation (volume %)				
0		-24		ESD 91
11		45		ESD 92
22		> 90		ESD 92
Reid Vapour Pressure (kPa)				
		25		ESD 91
Density (g/mL)				
Evaporation (volume %)	Temperature (°C)			
0	0	0.9327		ESD 91
	15	0.9202		ESD 91
11	0	0.9587		ESD 91
	15	0.9479		ESD 91
22	0	0.9783		ESD 91
	15	0.9672		ESD 91
Pour Point (°C)				
Evaporation (volume %)				
0		-3		ESD 91
11		6		ESD 91
22		27		ESD 91

Santa Clara

		Data	Notes	Reference ID
Dynamic Viscosity (mPa·s or cP)				
Evaporation (volume %)	Temperature (°C)			
0	0	1,278		ESD 91
	15	304		ESD 91
11	0	23,700	*(a)*	ESD 91
		45,570	*(b)*	ESD 91
	15	1,859		ESD 91
22	0	577,100	*(b)*	ESD 91
	15	22,760		ESD 91
Shear rate = (a) 10/s; (b) 1/s				
Emulsion Formation				
Evaporation (weight%)				
0	Visual stability	meso		ESD 98
	Viscosity (mPa·s)	2,700		ESD 98
	Complex modulus (mPa)	18,000		ESD 98
	Water content (wt %)	61		ESD 98
11	Visual stability	meso		ESD 98
	Viscosity (mPa·s)	20,000		ESD 98
	Complex modulus (mPa)	700,000		ESD 98
	Water content (wt %)	50		ESD 98
22	Visual stability	meso		ESD 98
	Viscosity (mPa·s)	100,000		ESD 98
	Complex modulus (mPa)	360,000		ESD 98
	Water content (wt %)	39		ESD 98
Chemical Dispersibility (volume %)				
Evaporation (volume %)				
0	Corexit 9500	6		ESD 98
	Corexit 9527	0		ESD 91
	Dasic LTS	0		ESD 91
	Enersperse 700	5		ESD 91
11	Corexit 9500	4		ESD 98
	Corexit 9527	0		ESD 98
	Dasic LTS	0		ESD 98
	Enersperse 700	0		ESD 98
22	Corexit 9500	0		ESD 98
	Corexit 9527	8		ESD 97
	Dasic LTS	7		ESD 97
	Enersperse 700	7		ESD 97

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
Evaporation (volume %)				
0	Saturates	36		ESD 96
	Aromatics	22		ESD 96
	Resins	29		ESD 96
	Asphaltenes	13		ESD 91
	Waxes	6		ESD 91
11	Saturates	32		ESD 96
	Aromatics	28		ESD 96
	Resins	27		ESD 96
	Asphaltenes	13		ESD 96
	Waxes	4		ESD 98
22	Saturates	28		ESD 96
	Aromatics	32		ESD 96
	Resins	23		ESD 96
	Asphaltenes	17		ESD 96
	Waxes	5		ESD 98
Adhesion (g/m²)				
Evaporation (volume %)				
0		55	*SD = 11*	ESD 96
11		69	*SD = 6*	ESD 96
22		112	*SD = 19*	ESD 96

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
Evaporation (volume %)				
0	Benzene	150		ESD 94
	Toluene	660		ESD 94
	Ethylbenzene	510		ESD 94
	Xylenes	1,060		ESD 94
	C3-benzenes	2,420		ESD 94
	Total BTEX	2,370		ESD 94
	Total VOCs	4,800		ESD 94
11	Benzene	90		ESD 94
	Toluene	330		ESD 94
	Ethylbenzene	380		ESD 94
	Xylenes	940		ESD 94
	C3-benzenes	1,790		ESD 94
	Total BTEX	1,750		ESD 94
	Total VOCs	3,540		ESD 94
22	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	0		ESD 94
	C3-benzenes	200		ESD 94
	Total BTEX	0		ESD 94
	Total VOCs	200		ESD 94
Surface Tension (mN/m or dynes/cm)				
Evaporation (volume %)	Temperature (°C)			
0	0	30.9		ESD 91
	15	28.7		ESD 91
11	0	NM		ESD 91
	15	28.0		ESD 91
22	0	NM		ESD 91
	15	31.8		ESD 91
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (volume %)	Temperature (°C)			
0	0	28.6		ESD 91
	15	23.3		ESD 91
11	0	NM		ESD 91
	15	21.6		ESD 91
22	0	NM		ESD 91
	15	31.6		ESD 91

		Data	Notes	Reference ID
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (volume %)	Temperature (°C)			
0	0	30.3		ESD 91
	15	25.7		ESD 91
11	0	NM		ESD 91
	15	24.9		ESD 91
22	0	NM		ESD 91
	15	NM		ESD 91

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (volume %)	Boiling Point (°C)			
0	40	2		ESD 94
	60	2		ESD 94
	80	6		ESD 94
	100	8		ESD 94
	120	10		ESD 94
	140	11		ESD 94
	160	12		ESD 94
	180	14		ESD 94
	200	15		ESD 94
	250	21		ESD 94
	300	26		ESD 94
	350	33		ESD 94
	400	39		ESD 94
	450	47		ESD 94
	500	55		ESD 94
	550	63		ESD 94
	600	70		ESD 94
	650	77		ESD 94
	700	82		ESD 94
11	60	1		ESD 96
	80	1		ESD 96
	100	2		ESD 96
	120	2		ESD 96
	140	3		ESD 96
	160	5		ESD 96
	180	7		ESD 96
	200	9		ESD 96
	250	14		ESD 96
	300	21		ESD 96
	350	29		ESD 96
	400	37		ESD 96
	450	46		ESD 96
	500	55		ESD 96
	550	63		ESD 96
	600	70		ESD 96
	650	76		ESD 96
	700	82		ESD 96
22	180	1		ESD 96
	200	2		ESD 96
	250	7		ESD 96
	300	14		ESD 96

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (volume %)	Boiling Point (°C)			
22	350	23		ESD 96
	400	32		ESD 96
	450	43		ESD 96
	500	52		ESD 96
	550	61		ESD 96
	600	69		ESD 96
	650	76		ESD 96
	700	82		ESD 96

		Data	Notes	Reference ID
Metals (ppm)				
Evaporation (volume %)				
0	Aluminum	< 5		Cao 92
	Barium	< 0.3		Cao 92
	Cadmium	< 0.5		Cao 92
	Calcium	42		Cao 92
	Chromium	< 2		Cao 92
	Cobalt	< 1		Cao 92
	Copper	< 0.6		Cao 92
	Iron	115		Cao 92
	Lead	< 3		Cao 92
	Magnesium	2		Cao 92
	Manganese	< 0.3		Cao 92
	Mercury	< 15		Cao 92
	Molybdenum	2		Cao 92
	Nickel	77		Cao 92
	Selenium	< 15		Cao 92
	Strontium	0.2		Cao 92
	Tin	< 15		Cao 92
	Titanium	< 0.6		Cao 92
	Vanadium	193		Cao 92
	Zinc	< 0.6		Cao 92
11	Barium	0.6		Cao 92
	Chromium	< 2		Cao 92
	Copper	< 0.6		Cao 92
	Iron	155		Cao 92
	Lead	< 3		Cao 92
	Magnesium	3		Cao 92
	Molybdenum	2		Cao 92
	Nickel	97		Cao 92
	Titanium	2		Cao 92
	Vanadium	250		Cao 92
	Zinc	< 0.6		Cao 92
22	Barium	0.7		Cao 92
	Chromium	< 2		Cao 92
	Copper	< 0.6		Cao 92
	Iron	155		Cao 92
	Lead	< 3		Cao 92
	Magnesium	3		Cao 92
	Molybdenum	< 0.6		Cao 92
	Nickel	101		Cao 92
	Titanium	2		Cao 92
	Vanadium	240		Cao 92

		Data	Notes	Reference ID
Metals (ppm)				
Evaporation (volume %)				
22	Zinc	0.6		Cao 92
Aqueous Solubility (mg/L)				
	Room temperature	11	*(a)*	ESD 91

(a) fresh water

Acute Toxicity of Water Soluble Fraction (mg/L)				
	Test Organism			
48h LC50	Daphnia magna	8	*(a)*	Harris 94

(a) results based on GC purge-and-trap analysis

Sarir

		Data	Notes	Reference ID
Origin: Libya				
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".				
API Gravity				
		38.3		OGJ 99
Sulphur (weight %)				
		0.18		OGJ 99
Density (g/mL)				
	Temperature (°C)			
	15	0.8329		OGJ 99
Pour Point (°C)				
		-4		OGJ 99
Kinematic Viscosity (mm²/s or cSt)				
	Temperature (°C)			
	50	5		OGJ 99
Metals (ppm)				
	Nickel	14		OGJ 99
	Vanadium	6		OGJ 99

Origin: Nova Scotia, Canada		**Data**	**Notes**	**Reference ID**
API Gravity				
		53.2		ESD 99
Equation(s) for Predicting Evaporation				
%Ev = (6.90 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 00
Sulphur (weight %)				
Evaporation (weight %)				
0		0.02		ESD 99
25		0.01		ESD 99
49		0.01		ESD 99
64		0.02		ESD 99
Flash Point (°C)				
Evaporation (weight %)				
0		< -30		ESD 99
24		23		ESD 99
44		53		ESD 99
64		95		ESD 99
Density (g/mL)				
Evaporation (weight %)	Temperature (°C)			
0	0	0.7772		ESD 99
	15	0.7655		ESD 99
	25	0.7579		ESD 99
25	0	0.8060		ESD 99
	15	0.7949		ESD 99
	25	0.7875		ESD 99
44	0	0.8246		ESD 99
	15	0.8139		ESD 99
	25	0.8067		ESD 99
64	0	0.8477		ESD 99
	15	0.8356		ESD 99
	25	0.8286		ESD 99
Pour Point (°C)				
Evaporation (weight %)				
0		-22		ESD 99
24		-12		ESD 99
44		-10		ESD 99
64		-2		ESD 99

Scotian Light

		Data	Notes	Reference ID
Dynamic Viscosity (mPa s or cP)				
Evaporation (weight %)	Temperature (°C)			
0	0	2		ESD 99
	15	1		ESD 99
	25	1		ESD 99
25	0	3		ESD 99
	15	2		ESD 99
	25	2		ESD 99
44	0	4		ESD 99
	15	2		ESD 99
	25	2		ESD 99
64	0	13		ESD 99
	15	5		ESD 99
	25	4		ESD 99
Hydrocarbon Groups (weight %)				
Evaporation (weight %)				
0	Saturates	92		ESD 99
	Aromatics	8		ESD 99
	Resins	1		ESD 99
	Asphaltenes	0		ESD 99
25	Saturates	89		ESD 99
	Aromatics	10		ESD 99
	Resins	1		ESD 99
	Asphaltenes	0		ESD 99
44	Saturates	85		ESD 99
	Aromatics	14		ESD 99
	Resins	1		ESD 99
	Asphaltenes	0		ESD 99
64	Saturates	60		ESD 99
	Aromatics	38		ESD 99
	Resins	1		ESD 99
	Asphaltenes	0		ESD 99
Adhesion (g/m²)				
Evaporation (weight %)				
0		0	*SD = 0*	ESD 99
25		2	*SD = 1*	ESD 99
44		3	*SD = 0*	ESD 99
64		9	*SD = 1*	ESD 99

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
Evaporation (weight %)				
0	Benzene	41		ESD 99
	Toluene	279		ESD 99
	Ethylbenzene	233		ESD 99
	Xylenes	1,826		ESD 99
	C3-benzenes	4,258		ESD 99
	Total BTEX	2,379		ESD 99
	Total VOCs	6,637		ESD 99
25	Benzene	23		ESD 99
	Toluene	169		ESD 99
	Ethylbenzene	251		ESD 99
	Xylenes	2,053		ESD 99
	C3-benzenes	5,476		ESD 99
	Total BTEX	2,495		ESD 99
	Total VOCs	7,971		ESD 99
44	Benzene	31		ESD 99
	Toluene	10		ESD 99
	Ethylbenzene	83		ESD 99
	Xylenes	873		ESD 99
	C3-benzenes	5,174		ESD 99
	Total BTEX	997		ESD 99
	Total VOCs	6,171		ESD 99
64	Benzene	30		ESD 99
	Toluene	4		ESD 99
	Ethylbenzene	0		ESD 99
	Xylenes	2		ESD 99
	C3-benzenes	38		ESD 99
	Total BTEX	36		ESD 99
	Total VOCs	73		ESD 99

Scotian Light

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	23.6		ESD 00
	15	23.0		ESD 00
	25	22.1		ESD 00
25	0	25.8		ESD 00
	15	24.6		ESD 00
	25	24.4		ESD 00
44	0	27.3		ESD 00
	15	26.4		ESD 00
	25	25.8		ESD 00
64	0	26.9		ESD 00
	15	27.8		ESD 00
	25	27.4		ESD 00
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	17.9		ESD 00
	15	21.3		ESD 00
	25	15.4		ESD 00
25	0	16.0		ESD 00
	15	16.0		ESD 00
	25	17.0		ESD 00
44	0	15.0		ESD 00
	15	17.8		ESD 00
	25	15.6		ESD 00
64	0	10.5		ESD 00
	15	13.2		ESD 00
	25	12.7		ESD 00
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	19.4		ESD 00
	15	22.4		ESD 00
	25	18.8		ESD 00
25	0	17.2		ESD 00
	15	18.8		ESD 00
	25	18.7		ESD 00
44	0	17.0		ESD 00
	15	18.8		ESD 00
	25	18.0		ESD 00
64	0	15.4		ESD 00
	15	16.0		ESD 00
	25	15.9		ESD 00

		Data	Notes	Reference ID
Origin: Indonesia				
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".				
API Gravity				
		31.7		OGJ 99
Sulphur (weight %)				
		0.11		OGJ 99
Reid Vapour Pressure (kPa)				
		18		OGJ 99
Pour Point (°C)				
		-7		OGJ 99
Kinematic Viscosity (mm²/s or cSt)				
	Temperature (°C)			
	38	3		OGJ 99
Yield on Crude (volume %)				
	Boiling Range (°C)			
	Gasoline (C5-100)	2		OGJ 99
	Naphtha (100-175)	20		OGJ 99
	Kerosene (175-250)	22		OGJ 99
	Gas oil (250-350)	36		OGJ 99
	Fuel oil (>350)	22		OGJ 99

Seria Light

		Data	Notes	Reference ID
Origin: Brunei				
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".				
API Gravity				
		36.2		OGJ 99
Sulphur (weight %)				
		0.07		OGJ 99
Reid Vapour Pressure (kPa)				
		41		OGJ 99
Pour Point (°C)				
		2		OGJ 99
Saybolt Viscosity (SUS)				
	Temperature (°C)			
	27	37		OGJ 99
Yield on Crude (volume %)				
	Boiling Range (°C)			
	IBP-45	6		OGJ 99
	Gasoline (45-104)	10		OGJ 99
	Naphtha (104-199)	21		OGJ 99
	Light distillate (199-288)	27		OGJ 99
	Light gas oil (232-343)	32		OGJ 99
	Heavy gas oil (343-522)	19		OGJ 99
	Vacuum residue (>522)	3		OGJ 99

		Data	Notes	Reference ID
Origin: United Arab Emirates				
Data from OGJ 99 were originally published in 1985 as part of a series entitled "Guide to Export Crudes for the '80s".				
API Gravity				
		49.7		OGJ 99
Sulphur (weight %)				
		0.10		OGJ 99
Reid Vapour Pressure (kPa)				
		70		OGJ 99
Density (g/mL)				
	Temperature (°C)			
	15	0.7809		OGJ 99
Pour Point (°C)				
		-32		OGJ 99
Kinematic Viscosity (mm²/s or cSt)				
	Temperature (°C)			
	20	1		OGJ 99
	37.8	1		OGJ 99
Yield on Crude (volume %)				
	Boiling Range (°C)			
	Gasoline (C5-93)	22		OGJ 99
	Naphtha (93-160)	22		OGJ 99
	Heavy naphtha (160-204)	12		OGJ 99
	Kerosene (160-271)	26		OGJ 99
	Diesel (271-343)	11		OGJ 99
	Gas oil (343-454)	9		OGJ 99
	Residue (>454)	4		OGJ 99
Metals (ppm)				
	Iron	0		OGJ 99
	Nickel	0		OGJ 99
	Vanadium	0		OGJ 99

Shengli

		Data	Notes	Reference ID
Origin: China				
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".				
API Gravity				
		24.2		OGJ 99
Sulphur (weight %)				
		1.00		OGJ 99
Reid Vapour Pressure (kPa)				
		0		OGJ 99
Pour Point (°C)				
		21		OGJ 99
Saybolt Viscosity (SUS)				
	Temperature (°C)			
	50	48		OGJ 99
Yield on Crude (volume %)				
	Boiling Range (°C)			
	Light ends (IBP-71)	2		OGJ 99
	Light naphtha (71-143)	3		OGJ 99
	Heavy naphtha (143-199)	4		OGJ 99
	Kerosene (199-260)	6		OGJ 99
	Diesel (260-349)	12		OGJ 99
	Light gas oil (349-416)	10		OGJ 99
	Heavy gas oil (416-566)	26		OGJ 99
	Bottoms (>566)	36		OGJ 99

		Data	Notes	Reference ID
Origin: Gulf of Mexico, USA				
High water content. Oil tested as received, unless noted otherwise.				ESD 94
API Gravity				
		26.1		ESD 94
Equation(s) for Predicting Evaporation				
%Ev = (2.71 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 97
Sulphur (weight %)				
Evaporation (weight %)				
0		0.39		ESD 94
17		0.34		ESD 94
43		0.73		ESD 94
53		0.87		ESD 94
Water Content (weight %)				
Evaporation (weight %)				
0		30.5		ESD 94
17		27.4		ESD 95
43		4.9		ESD 95
53		0.1		ESD 95
Flash Point (°C)				
Evaporation (weight %)				
0		11		ESD 94
17		> 95		ESD 94
43		> 95		ESD 94
53		> 95		ESD 94
Density (g/mL)				
Evaporation (weight %)	Temperature (°C)			
0	0	0.9063		ESD 94
	15	0.8972		ESD 94
	25	0.8916		ESD 94
17	0	0.9175		ESD 94
	15	0.9103		ESD 94
	25	0.9047		ESD 94
43	0	0.9088		ESD 94
	15	0.8977		ESD 94
	25	0.8904		ESD 94
53	0	0.9185		ESD 94
	15	0.9076		ESD 94
	25	0.9007		ESD 94

		Data	Notes	Reference ID
Pour Point (°C)				
Evaporation (weight %)				
0		-15		ESD 94
17		-26		ESD 94
43		-26		ESD 94
53		-2		ESD 94
The normal pour point trend is not followed, due to a high water content in the fresh oil.				
Dynamic Viscosity (mPa·s or cP)				
Evaporation (weight %)	Temperature (°C)			
0	0	74		ESD 94
	15	34		ESD 94
	25	22		ESD 94
17	0	146		ESD 94
	15	70		ESD 94
	25	43		ESD 94
43	0	200		ESD 94
	15	74		ESD 94
	25	42		ESD 94
53	0	714		ESD 94
	15	194		ESD 94
	25	104		ESD 94

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
Evaporation (weight %)				
0	Saturates	68	*(a)*	ESD 95
	Aromatics	23	*(a)*	ESD 95
	Resins	7	*(a)*	ESD 95
	Asphaltenes	2	*(a)*	ESD 95
	Waxes	5		ESD 97
17	Saturates	59	*(a)*	ESD 95
	Aromatics	19	*(a)*	ESD 95
	Resins	6	*(a)*	ESD 95
	Asphaltenes	17	*(a)*	ESD 95
	Waxes	4		ESD 98
43	Saturates	64		ESD 95
	Aromatics	26		ESD 95
	Resins	8		ESD 95
	Asphaltenes	2		ESD 95
	Waxes	4		ESD 98
53	Saturates	60		ESD 95
	Aromatics	28		ESD 95
	Resins	9		ESD 95
	Asphaltenes	4		ESD 95
	Waxes	4		ESD 98

(a) approximate: corrected for initial water content of oil

Adhesion (g/m²)			
Evaporation (weight %)			
0	22	*SD = 2*	ESD 95
17	32	*SD = 3*	ESD 95
43	30	*SD = 3*	ESD 95
53	42	*SD = 2*	ESD 95

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
Evaporation (weight %)				
0	Benzene	180		ESD 94
	Toluene	610		ESD 94
	Ethylbenzene	220		ESD 94
	Xylenes	1,100		ESD 94
	C3-benzenes	1,490		ESD 94
	Total BTEX	2,110		ESD 94
	Total VOCs	3,600		ESD 94
17	Benzene	40		ESD 94
	Toluene	80		ESD 94
	Ethylbenzene	120		ESD 94
	Xylenes	690		ESD 94
	C3-benzenes	1,850		ESD 94
	Total BTEX	930		ESD 94
	Total VOCs	2,780		ESD 94
43	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	0		ESD 94
	C3-benzenes	570		ESD 94
	Total BTEX	0		ESD 94
	Total VOCs	570		ESD 94
53	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	0		ESD 94
	C3-benzenes	0		ESD 94
	Total BTEX	0		ESD 94
	Total VOCs	0		ESD 94

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	28.1		ESD 94
	15	27.1		ESD 94
	25	26.4		ESD 94
17	0	29.5		ESD 94
	15	28.6		ESD 94
	25	28.0		ESD 94
43	0	30.0		ESD 94
	15	29.3		ESD 94
	25	29.0		ESD 94
53	0	31.2		ESD 94
	15	30.2		ESD 94
	25	29.3		ESD 94
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	28.1		ESD 94
	15	30.7		ESD 94
	25	27.2		ESD 94
17	0	27.9		ESD 94
	15	30.7		ESD 94
	25	25.1		ESD 94
43	0	24.6		ESD 94
	15	28.3		ESD 94
	25	23.3		ESD 94
53	0	27.0		ESD 94
	15	23.7		ESD 94
	25	23.8		ESD 94
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	30.0		ESD 94
	15	31.5		ESD 94
	25	30.0		ESD 94
17	0	29.2		ESD 94
	15	32.4		ESD 94
	25	27.8		ESD 94
43	0	25.2		ESD 94
	15	29.7		ESD 94
	25	24.7		ESD 94
53	0	26.2		ESD 94
	15	26.4		ESD 94
	25	25.5		ESD 94

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
The fresh oil sample was dried with sodium sulphate prior to analysis.				
Evaporation (weight %)	Boiling Point (°C)			
0	40	1		ESD 94
	60	1		ESD 94
	80	4		ESD 94
	100	8		ESD 94
	120	12		ESD 94
	140	13		ESD 94
	160	15		ESD 94
	180	20		ESD 94
	200	24		ESD 94
	250	34		ESD 94
	300	45		ESD 94
	350	55		ESD 94
	400	63		ESD 94
	450	70		ESD 94
	500	76		ESD 94
	550	81		ESD 94
	600	85		ESD 94
	650	88		ESD 94
	700	91		ESD 94
17	140	2		ESD 96
	160	4		ESD 96
	180	8		ESD 96
	200	12		ESD 96
	250	25		ESD 96
	300	37		ESD 96
	350	50		ESD 96
	400	60		ESD 96
	450	70		ESD 96
	500	79		ESD 96
	550	86		ESD 96
	600	91		ESD 96
	650	95		ESD 96
	700	98		ESD 96
43	180	2		ESD 95
	200	5		ESD 95
	250	17		ESD 95
	300	30		ESD 95
	350	43		ESD 95
	400	55		ESD 95
	450	66		ESD 95

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
The fresh oil sample was dried with sodium sulphate prior to analysis.				
Evaporation (weight %)	Boiling Point (°C)			
43	500	75		ESD 95
	550	83		ESD 95
	600	89		ESD 95
	650	94		ESD 95
	700	98		ESD 95
53	250	5		ESD 95
	300	18		ESD 95
	350	32		ESD 95
	400	44		ESD 95
	450	57		ESD 95
	500	67		ESD 95
	550	76		ESD 95
	600	83		ESD 95
	650	88		ESD 95
	700	92		ESD 95

Ship Shoal Block 269

Origin: Gulf of Mexico, USA		Data	Notes	Reference ID
API Gravity				
		38.7		ESD 94
Equation(s) for Predicting Evaporation				
%Ev = (3.37 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 96
Sulphur (weight %)				
Evaporation (weight %)				
0		0.41		ESD 94
13		0.47		ESD 94
26		0.45		ESD 94
39		0.64		ESD 94
Water Content (weight %)				
		0.3		ESD 94
Flash Point (°C)				
Evaporation (weight %)				
0		-7		ESD 94
13		46		ESD 94
26		84		ESD 94
39		> 95		ESD 94
Density (g/mL)				
Evaporation (weight %)	Temperature (°C)			
0	0	0.8420		ESD 94
	15	0.8309		ESD 94
	25	0.8236		ESD 94
13	0	0.8627		ESD 94
	15	0.8517		ESD 94
	25	0.8446		ESD 94
26	0	0.8773		ESD 94
	15	0.8657		ESD 94
	25	0.8588		ESD 94
39	0	0.8914		ESD 94
	15	0.8796		ESD 94
	25	0.8725		ESD 94
Pour Point (°C)				
Evaporation (weight %)				
0		-42		ESD 94
13		-19		ESD 94
26		-20		ESD 94
39		-2		ESD 94

		Data	Notes	Reference ID
Dynamic Viscosity (mPa·s or cP)				
Evaporation (weight %)	Temperature (°C)			
0	0	8		ESD 94
	15	5		ESD 94
	25	4		ESD 94
13	0	20		ESD 94
	15	7		ESD 94
	25	4		ESD 94
26	0	58		ESD 94
	15	18		ESD 94
	25	11		ESD 94
39	0	182		ESD 94
	15	44		ESD 94
	25	25		ESD 94
Chemical Dispersibility (volume %)				
Evaporation (weight %)				
	Corexit 9500	36		ESD 00
	Corexit 9527	10		ESD 94
	Dasic LTS	15		ESD 94
	Enersperse 700	10		ESD 94
13	Corexit 9500	27		ESD 00
26		23		ESD 00

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
Evaporation (weight %)				
0	Saturates	79		ESD 95
	Aromatics	15		ESD 95
	Resins	6		ESD 95
	Asphaltenes	0		ESD 95
	Waxes	5		ESD 97
13	Saturates	71		ESD 95
	Aromatics	23		ESD 95
	Resins	5		ESD 95
	Asphaltenes	0		ESD 95
	Waxes	5		ESD 98
26	Saturates	70		ESD 95
	Aromatics	24		ESD 95
	Resins	6		ESD 95
	Asphaltenes	1		ESD 95
	Waxes	5		ESD 98
39	Saturates	67		ESD 95
	Aromatics	26		ESD 95
	Resins	6		ESD 95
	Asphaltenes	1		ESD 95
	Waxes	5		ESD 98
Adhesion (g/m²)				
Evaporation (weight %)				
0		7	*SD = 3*	ESD 95
13		15	*SD = 2*	ESD 95
26		25	*SD = 3*	ESD 95
39		30	*SD = 3*	ESD 95

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
Evaporation (weight %)				
0	Benzene	1,230		ESD 94
	Toluene	4,500		ESD 94
	Ethylbenzene	850		ESD 94
	Xylenes	6,300		ESD 94
	C3-benzenes	6,160		ESD 94
	Total BTEX	12,890		ESD 94
	Total VOCs	19,050		ESD 94
13	Benzene	150		ESD 94
	Toluene	2,390		ESD 94
	Ethylbenzene	850		ESD 94
	Xylenes	7,210		ESD 94
	C3-benzenes	9,650		ESD 94
	Total BTEX	10,600		ESD 94
	Total VOCs	20,250		ESD 94
26	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	400		ESD 94
	C3-benzenes	3,360		ESD 94
	Total BTEX	400		ESD 94
	Total VOCs	3,760		ESD 94
39	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	0		ESD 94
	C3-benzenes	0		ESD 94
	Total BTEX	0		ESD 94
	Total VOCs	0		ESD 94

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	26.9		ESD 94
	15	25.9		ESD 94
	25	25.6		ESD 94
13	0	28.7		ESD 94
	15	27.5		ESD 94
	25	27.1		ESD 94
26	0	29.7		ESD 94
	15	28.6		ESD 94
	25	25.7		ESD 94
39	0	30.7		ESD 94
	15	29.9		ESD 94
	25	29.1		ESD 94
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	17.3		ESD 94
	15	15.1		ESD 94
	25	13.1		ESD 94
13	0	19.9		ESD 94
	15	20.3		ESD 94
	25	16.9		ESD 94
26	0	20.9		ESD 94
	15	20.4		ESD 94
	25	17.3		ESD 94
39	0	18.0		ESD 94
	15	16.7		ESD 94
	25	13.3		ESD 94
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	19.9		ESD 94
	15	20.9		ESD 94
	25	19.1		ESD 94
13	0	20.9		ESD 94
	15	23.8		ESD 94
	25	21.4		ESD 94
26	0	23.0		ESD 94
	15	23.5		ESD 94
	25	21.8		ESD 94
39	0	19.2		ESD 94
	15	20.1		ESD 94
	25	18.1		ESD 94

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (weight %)	Boiling Point (°C)			
0	40	1		ESD 94
	60	2		ESD 94
	80	4		ESD 94
	100	8		ESD 94
	120	12		ESD 94
	140	15		ESD 94
	160	20		ESD 94
	180	25		ESD 94
	200	30		ESD 94
	250	43		ESD 94
	300	56		ESD 94
	350	68		ESD 94
	400	77		ESD 94
	450	84		ESD 94
	500	90		ESD 94
	550	94		ESD 94
	600	97		ESD 94
	650	99		ESD 94
13	100	1		ESD 95
	120	2		ESD 95
	140	6		ESD 95
	160	10		ESD 95
	180	15		ESD 95
	200	20		ESD 95
	250	35		ESD 95
	300	49		ESD 95
	350	63		ESD 95
	400	73		ESD 95
	450	81		ESD 95
	500	88		ESD 95
	550	92		ESD 95
	600	96		ESD 95
	650	98		ESD 95
	700	99		ESD 95
26	160	1		ESD 95
	180	4		ESD 95
	200	8		ESD 95
	250	24		ESD 95
	300	41		ESD 95
	350	56		ESD 95
	400	68		ESD 95

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (weight %)	Boiling Point (°C)			
26	450	78		ESD 95
	500	85		ESD 95
	550	91		ESD 95
	600	95		ESD 95
	650	98		ESD 95
	700	99		ESD 95
39	250	9		ESD 95
	300	28		ESD 95
	350	47		ESD 95
	400	61		ESD 95
	450	73		ESD 95
	500	82		ESD 95
	550	89		ESD 95
	600	94		ESD 95
	650	97		ESD 95
	700	99		ESD 95

		Data	Notes	Reference ID
Origin: Russia				
Data from OGJ 99 were originally published in 1993 as part of a series entitled "Export Crudes for the '90s".				
API Gravity				
		37.8		OGJ 99
Sulphur (weight %)				
		0.42		OGJ 99
Density (g/mL)				
	Temperature (°C)			
	15	0.8358		OGJ 99
Pour Point (°C)				
		-17		OGJ 99
Kinematic Viscosity (mm²/s or cSt)				
	Temperature (°C)			
	20	7		OGJ 99
	50	4		OGJ 99
Yield on Crude (weight %)				
	Boiling Range (°C)			
	C1-C4	1		OGJ 99
	Gasoline (62-180)	22		OGJ 99
	Kerosene (120-240)	25		OGJ 99
	Diesel (180-350)	32		OGJ 99
	Residue (>350)	44		OGJ 99

Sirri

		Data	Notes	Reference ID
Origin: Iran				
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".				
API Gravity				
		30.9		OGJ 99
Sulphur (weight %)				
		2.30		OGJ 99
Reid Vapour Pressure (kPa)				
		65		OGJ 99
Pour Point (°C)				
		-9		OGJ 99
Kinematic Viscosity (mm²/s or cSt)				
	Temperature (°C)			
	10	20		OGJ 99
	38	7		OGJ 99
Hydrocarbon Groups (weight %)				
	Asphaltenes	1		OGJ 99
	Waxes	3		OGJ 99
Yield on Crude (volume %)				
	Boiling Range (°C)			
	C1-C4	7		OGJ 99
	Light gasoline (C5-80)	5		OGJ 99
	Heavy gasoline (80-180)	15		OGJ 99
	Gas oil (180-350)	30		OGJ 99
	Residue (>350)	46		OGJ 99
Metals (ppm)				
	Iron	3		OGJ 99
	Nickel	12		OGJ 99
	Vanadium	41		OGJ 99

		Data	Notes	Reference ID
Origin: Libya				
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".				
API Gravity				
		43.3		OGJ 99
Sulphur (weight %)				
		0.43		OGJ 99
Reid Vapour Pressure (kPa)				
		70		OGJ 99
Pour Point (°C)				
		-3		OGJ 99
Yield on Crude				
	Boiling Range (°C)			
Weight %	C2-C4	3		OGJ 99
Volume %	Naphtha (IBP-180)	40		OGJ 99
	Gas oil (180-350)	30		OGJ 99
	Residue (>350)	26		OGJ 99

Skua

		Data	Notes	Reference ID
Origin: Australia				
Data from OGJ 99 were originally published in 1994.				
API Gravity				
		41.9		OGJ 99
Sulphur (weight %)				
		0.06		OGJ 99
Water Content (volume %)				
		0.0		OGJ 99
Reid Vapour Pressure (kPa)				
		38		OGJ 99
Density (g/mL)				
	Temperature (°C)			
	15	0.8154		OGJ 99
Pour Point (°C)				
		12		OGJ 99
Kinematic Viscosity (mm²/s or cSt)				
	Temperature (°C)			
	20	3		OGJ 99
Hydrocarbon Groups (weight %)				
	Waxes	6		OGJ 99
Yield on Crude (volume %)				
	Boiling Range (°C)			
	Naphtha (21-70)	5		OGJ 99
	Naphtha (70-190)	26		OGJ 99
	Kerosene (190-230)	9		OGJ 99
	Gas oil (230-360)	36		OGJ 99
	Vacuum gas oil (360-400)	3		OGJ 99
	Residue (400+)	4		OGJ 99
Metals (ppm)				
	Nickel	0.5		OGJ 99
	Vanadium	< 0.5		OGJ 99
Other Elements (weight %)				
	Nitrogen	0.02		OGJ 99

		Data	Notes	Reference ID
Origin: North Sea, Norway				
Data from Statoil 99 are for a sample collected in February 1999. The assay was prepared by Statoil PKS.				
API Gravity				
		57.5		Statoil 99
Sulphur (weight %)				
		0.04		Statoil 99
Water Content (weight %)				
		< 0.0		Statoil 99
Flash Point (°C)				
		< 10		Statoil 99
Reid Vapour Pressure (kPa)				
		71		Statoil 99
Hydrogen Sulphide (weight %)				
		ND		Statoil 99
ND: not detectable				
Density (g/mL)				
	Temperature (°C)			
	15	0.7484		Statoil 99
Pour Point (°C)				
		-30		Statoil 99
Kinematic Viscosity (mm²/s or cSt)				
	Temperature (°C)			
	20	1		Statoil 99
	50	1		Statoil 99
Hydrocarbon Groups (weight %)				
	Waxes	< 3		Statoil 99
Volatile Organic Compounds (weight %)				
	Benzene	2		Statoil 99
	Toluene	4		Statoil 99
	Ethylbenzene	1		Statoil 99
	Xylenes	4		Statoil 99

Sleipner Condensate

		Data	Notes	Reference ID
Boiling Point Distribution (BP vs weight %)				
	C#, Boiling Point (°C)			
	C5, 36	17		Statoil 99
	C6, 69	26		Statoil 99
	C7, 99	39		Statoil 99
	C8, 126	55		Statoil 99
	C9, 151	65		Statoil 99
	C10, 175	72		Statoil 99
	C11, 196	76		Statoil 99
	C12, 217	79		Statoil 99
	C13, 236	83		Statoil 99
	C14, 254	85		Statoil 99
	C15, 271	88		Statoil 99
	C16, 287	90		Statoil 99
	C17, 303	92		Statoil 99
	C18, 317	93		Statoil 99
	C19, 331	94		Statoil 99
	C20, 344	95		Statoil 99
	C22, 369	97		Statoil 99
	C24, 391	98		Statoil 99
	C26, 412	98		Statoil 99
	C28, 431	99		Statoil 99
	C30, 449	99		Statoil 99
	C32, 466	100		Statoil 99
	C34, 481	100		Statoil 99
Yield on Crude				
	Boiling Range (°C)			
	C5-65	19		Statoil 99
	65-90	12		Statoil 99
	90-150	29		Statoil 99
	150-180	8		Statoil 99
	180-240	10		Statoil 99
	240-320	10		Statoil 99
	>320	6		Statoil 99
Metals (ppm)				
	Arsenic	< 1		Statoil 99
	Lead	< 1		Statoil 99
	Mercury	< 3		Statoil 99
	Nickel	< 0.1		Statoil 99
	Sodium	< 0.1		Statoil 99
	Vanadium	< 0.1		Statoil 99

	Data	Notes	Reference ID
Other Elements (ppm)			
	20.00		Statoil 99

Sockeye

Origin: California, USA		Data	Notes	Reference ID
API Gravity				
		26.2		ESD 91
Equation(s) for Predicting Evaporation				
%Ev = (2.14 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 97
Sulphur (weight %)				
Evaporation (volume %)				
0		2.29		ESD 93
13		2.67		ESD 93
22		2.87		ESD 93
Water Content (weight %)				
Evaporation (volume %)				
0		0.1		ESD 98
13		< 0.1		ESD 98
22		< 0.1		ESD 98
Flash Point (°C)				
Evaporation (volume %)				
0		-17		ESD 91
13		57		ESD 92
22		> 90		ESD 92
Reid Vapour Pressure (kPa)				
		21		ESD 91
Density (g/mL)				
Evaporation (volume %)	Temperature (°C)			
0	0	0.9081		ESD 91
	15	0.8965		ESD 91
13	0	0.9277		ESD 91
	15	0.9166		ESD 91
22	0	0.9374		ESD 91
	15	0.9264		ESD 91
Pour Point (°C)				
Evaporation (volume %)				
0		-12		ESD 91
13		-3		ESD 91
22		3		ESD 91

		Data	Notes	Reference ID
Dynamic Viscosity (mPa·s or cP)				
Evaporation (volume %)	Temperature (°C)			
0	0	114		ESD 91
	15	45		ESD 91
13	0	601		ESD 91
	15	163		ESD 91
22	0	3,723		ESD 91
	15	628		ESD 91
Emulsion Formation				
Evaporation (volume %)				
0	Visual stability	stable		ESD 98
	Viscosity (mPa·s)	690,000		ESD 98
	Complex modulus (mPa)	6,500,000		ESD 98
	Water content (wt %)	87		ESD 98
13	Visual stability	stable		ESD 98
	Viscosity (mPa·s)	200,000		ESD 98
	Complex modulus (mPa)	1,300,000		ESD 98
	Water content (wt %)	81		ESD 98
22	Visual stability	stable		ESD 98
	Viscosity (mPa·s)	250,000		ESD 98
	Complex modulus (mPa)	1,400,000		ESD 98
	Water content (wt %)	79		ESD 98
Chemical Dispersibility (volume %)				
Evaporation (volume %)				
0	Corexit 9500	24		ESD 94
	Corexit 9527	5		ESD 91
	Dasic LTS	0		ESD 91
	Enersperse 700	5		ESD 91
13	Corexit 9500	9		ESD 98
22		5		ESD 98

Sockeye

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
Evaporation (volume %)				
0	Saturates	48		ESD 96
	Aromatics	31		ESD 96
	Resins	13		ESD 96
	Asphaltenes	8		ESD 96
	Waxes	6		ESD 98
13	Saturates	44		ESD 96
	Aromatics	32		ESD 96
	Resins	15		ESD 96
	Asphaltenes	9		ESD 96
	Waxes	5		ESD 98
22	Saturates	39		ESD 96
	Aromatics	34		ESD 96
	Resins	15		ESD 96
	Asphaltenes	11		ESD 96
	Waxes	5		ESD 98
Adhesion (g/m²)				
Evaporation (volume %)				
0		31	*SD = 4*	ESD 96
13		30	*SD = 5*	ESD 96
22		44	*SD = 5*	ESD 96

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
Evaporation (volume %)				
0	Benzene	1,040		ESD 94
	Toluene	2,290		ESD 94
	Ethylbenzene	1,190		ESD 94
	Xylenes	4,080		ESD 94
	C3-benzenes	6,870		ESD 94
	Total BTEX	8,610		ESD 94
	Total VOCs	15,470		ESD 94
12	Benzene	90		ESD 94
	Toluene	650		ESD 94
	Ethylbenzene	780		ESD 94
	Xylenes	2,900		ESD 94
	C3-benzenes	6,540		ESD 94
	Total BTEX	4,420		ESD 94
	Total VOCs	10,970		ESD 94
22	Benzene	0		ESD 94
	Toluene	40		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	40		ESD 94
	C3-benzenes	750		ESD 94
	Total BTEX	80		ESD 94
	Total VOCs	830		ESD 94
Surface Tension (mN/m or dynes/cm)				
Evaporation (volume %)	Temperature (°C)			
0	0	28.1		ESD 91
	15	27.8		ESD 91
13	0	29.1		ESD 91
	15	29.0		ESD 91
22	0	NM		ESD 91
	15	29.6		ESD 91
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (volume %)	Temperature (°C)			
0	0	18.3		ESD 91
	15	16.8		ESD 91
13	0	19.8		ESD 91
	15	17.2		ESD 91
22	0	NM		ESD 91
	15	19.6		ESD 91

Sockeye

		Data	Notes	Reference ID
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (volume %)	Temperature (°C)			
0	0	21.7		ESD 91
	15	19.1		ESD 91
13	0	20.9		ESD 91
	15	20.8		ESD 91
22	0	NM		ESD 91
	15	21.0		ESD 91

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (volume %)	Boiling Point (°C)			
0	40	2		ESD 94
	60	2		ESD 94
	80	4		ESD 94
	100	6		ESD 94
	120	9		ESD 94
	140	12		ESD 94
	160	15		ESD 94
	180	18		ESD 94
	200	21		ESD 94
	250	30		ESD 94
	300	39		ESD 94
	350	48		ESD 94
	400	57		ESD 94
	450	66		ESD 94
	500	74		ESD 94
	550	82		ESD 94
	600	88		ESD 94
	650	94		ESD 94
	700	98		ESD 94
13	80	1		ESD 96
	100	1		ESD 96
	120	1		ESD 96
	140	3		ESD 96
	160	5		ESD 96
	180	8		ESD 96
	200	11		ESD 96
	250	21		ESD 96
	300	31		ESD 96
	350	43		ESD 96
	400	53		ESD 96
	450	63		ESD 96
	500	73		ESD 96
	550	81		ESD 96
	600	88		ESD 96
	650	93		ESD 96
	700	98		ESD 96
22	180	1		ESD 96
	200	2		ESD 96
	250	11		ESD 96
	300	22		ESD 96
	350	33		ESD 96

Sockeye

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (volume %)	Boiling Point (°C)			
22	400	43		ESD 96
	450	54		ESD 96
	500	64		ESD 96
	550	72		ESD 96
	600	79		ESD 96
	650	85		ESD 96
	700	89		ESD 96

		Data	Notes	Reference ID
Metals (ppm)				
Evaporation (volume %)				
0	Aluminum	< 5		Cao 92
	Barium	< 0.3		Cao 92
	Cadmium	< 0.5		Cao 92
	Calcium	34		Cao 92
	Chromium	< 2		Cao 92
	Cobalt	< 1		Cao 92
	Copper	< 0.6		Cao 92
	Iron	4		Cao 92
	Lead	< 3		Cao 92
	Magnesium	< 1		Cao 92
	Manganese	< 0.3		Cao 92
	Mercury	< 15		Cao 92
	Molybdenum	2		Cao 92
	Nickel	42		Cao 92
	Selenium	< 15		Cao 92
	Strontium	0.2		Cao 92
	Tin	< 15		Cao 92
	Titanium	2		Cao 92
	Vanadium	125		Cao 92
	Zinc	< 0.6		Cao 92
13	Barium	< 0.3		Cao 92
	Chromium	< 2		Cao 92
	Copper	< 0.6		Cao 92
	Iron	8		Cao 92
	Lead	< 3		Cao 92
	Magnesium	< 1		Cao 92
	Molybdenum	1		Cao 92
	Nickel	49		Cao 92
	Titanium	3		Cao 92
	Vanadium	139		Cao 92
	Zinc	< 0.6		Cao 92
22	Barium	< 0.3		Cao 92
	Chromium	< 2		Cao 92
	Copper	< 0.6		Cao 92
	Iron	12		Cao 92
	Lead	< 3		Cao 92
	Magnesium	1		Cao 92
	Molybdenum	2		Cao 92
	Nickel	61		Cao 92
	Titanium	2		Cao 92
	Vanadium	173		Cao 92

Sockeye

		Data	Notes	Reference ID
Metals (ppm)				
Evaporation (volume %)				
22	Zinc	< 0.6		Cao 92
Aqueous Solubility (mg/L)				
	Room temperature	28	*(a)*	ESD 91
(a) fresh water				
Acute Toxicity of Water Soluble Fraction (mg/L)				
	Test Organism			
48h LC50	Daphnia magna	12	*(a)*	Harris 94
(a) results based on GC purge-and-trap analysis				

Origin: California, USA		**Data**	**Notes**	**Reference ID**
API Gravity				
		19.8		ESD 97
Equation(s) for Predicting Evaporation				
%Ev = (1.38 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 99
Sulphur (weight %)				
		4.17		ESD 97
Water Content (weight %)				
		0.6		ESD 98
Flash Point (°C)				
		-6		ESD 97
Density (g/mL)				
	Temperature (°C)			
	0	0.9461		ESD 97
	15	0.9350		ESD 97
	25	0.9303		ESD 98
Pour Point (°C)				
		-24		ESD 97
Dynamic Viscosity (mPa s or cP)				
	Temperature (°C)			
	0	2,037		ESD 97
	15	550		ESD 97
	25	310		ESD 98
Emulsion Formation				
	Visual stability	stable		ESD 98
	Viscosity (mPa·s)	39,000		ESD 98
	Complex modulus (mPa)	110,000		ESD 98
	Water content (wt %)	74		ESD 98
Chemical Dispersibility (volume %)				
	Corexit 9500	0	*(a)*	ESD 99
(a) visual				
Hydrocarbon Groups (weight %)				
Evaporation (weight %)				
0	Saturates	34		ESD 98
	Aromatics	32		ESD 98
	Resins	21		ESD 98
	Asphaltenes	13		ESD 98
Adhesion (g/m²)				
		68	*SD = 10*	ESD 98

Sockeye Comingled

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
	Benzene	752		ESD 97
	Toluene	3,479		ESD 97
	Ethylbenzene	867		ESD 97
	Xylenes	3,166		ESD 97
	C3-benzenes	4,957		ESD 97
	Total BTEX	8,263		ESD 97
	Total VOCs	13,220		ESD 97
Surface Tension (mN/m or dynes/cm)				
	Temperature (°C)			
	0	29.9		ESD 97
	15	28.7		ESD 97
	25	28.2		ESD 00
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
	Temperature (°C)			
	0	19.4		ESD 97
	15	18.2		ESD 97
	25	NM		ESD 00
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
	Temperature (°C)			
	0	21.6		ESD 97
	15	20.7		ESD 97
	25	NM		ESD 00

	Data	Notes	Reference ID
Boiling Point Distribution (weight %)			
Boiling Point (°C)			
40	3		ESD 97
60	4		ESD 97
80	6		ESD 97
100	7		ESD 97
120	7		ESD 97
140	9		ESD 97
160	11		ESD 97
180	13		ESD 97
200	16		ESD 97
250	22		ESD 97
300	28		ESD 97
350	36		ESD 97
400	44		ESD 97
450	52		ESD 97
500	59		ESD 97
550	66		ESD 97
600	72		ESD 97
650	78		ESD 97
700	83		ESD 97

Sockeye Sour

Origin: California, USA		Data	Notes	Reference ID
API Gravity				
		18.8		ESD 97
Equation(s) for Predicting Evaporation				
%Ev = (1.32 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 97
Sulphur (weight %)				
Evaporation (weight %)				
0		4.41		ESD 97
10		4.71		ESD 97
19		5.02		ESD 97
Water Content (weight %)				
Evaporation (weight %)				
0		0.6		ESD 98
10		0.1		ESD 98
19		< 0.1		ESD 98
Flash Point (°C)				
Evaporation (weight %)				
0		-3		ESD 97
10		67		ESD 97
19		> 95		ESD 97
Density (g/mL)				
Evaporation (weight %)	Temperature (°C)			
0	0	0.9514		ESD 97
	15	0.9409		ESD 97
	25	0.9362		ESD 98
10	0	0.9787		ESD 97
	15	0.9682		ESD 97
	25	0.9616		ESD 98
19	0	1.0006		ESD 97
	15	0.9838		ESD 97
	25	0.9840		ESD 98
Pour Point (°C)				
Evaporation (weight %)				
0		-22		ESD 97
10		-3		ESD 97
19		18		ESD 97

		Data	Notes	Reference ID
Dynamic Viscosity (mPa s or cP)				
Evaporation (weight %)	Temperature (°C)			
0	0	3,281		ESD 97
	15	821		ESD 97
	25	470		ESD 98
10	0	63,950		ESD 97
	15	8,708		ESD 97
	25	3,351		ESD 98
19	0	22,920,000	*(a)*	ESD 97
	15	475,200		ESD 97
	25	97,280		ESD 98
(a) shear rate = 0.01/s				
Emulsion Formation				
Evaporation (weight%)				
0	Visual stability	stable		ESD 98
	Viscosity (mPa·s)	32,000		ESD 98
	Complex modulus (mPa)	120,000		ESD 98
	Water content (wt %)	74		ESD 98
10	Visual stability	meso		ESD 98
	Viscosity (mPa·s)	79,000		ESD 98
	Complex modulus (mPa)	300,000		ESD 98
	Water content (wt %)	60		ESD 98
19	Visual stability	none		ESD 98
	Water content (wt %)	10		ESD 98
Chemical Dispersibility (volume %)				
Evaporation (weight %)				
0	Corexit 9500	0		ESD 99
10		0	*(a)*	ESD 99
19		0	*(a)*	ESD 99
(a) inferred				

Sockeye Sour

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
Evaporation (weight %)				
0	Saturates	38		ESD 98
	Aromatics	29		ESD 98
	Resins	20		ESD 98
	Asphaltenes	13		ESD 98
10	Saturates	29		ESD 98
	Aromatics	31		ESD 98
	Resins	22		ESD 98
	Asphaltenes	17		ESD 98
19	Saturates	26		ESD 98
	Aromatics	30		ESD 98
	Resins	22		ESD 98
	Asphaltenes	24		ESD 98
Adhesion (g/m²)				
Evaporation (weight %)				
0		75	*SD = 8*	ESD 98
10		98	*SD = 17*	ESD 98
19		605	*SD = 61*	ESD 98
Volatile Organic Compounds (ppm)				
Evaporation (weight %)				
0	Benzene	444		ESD 97
	Toluene	2,494		ESD 97
	Ethylbenzene	826		ESD 97
	Xylenes	2,983		ESD 97
	C3-benzenes	4,753		ESD 97
	Total BTEX	6,748		ESD 97
	Total VOCs	11,500		ESD 97
10	Benzene	30		ESD 97
	Toluene	500		ESD 97
	Ethylbenzene	376		ESD 97
	Xylenes	1,576		ESD 97
	C3-benzenes	3,850		ESD 97
	Total BTEX	2,483		ESD 97
	Total VOCs	6,333		ESD 97
19	Benzene	0		ESD 97
	Toluene	3		ESD 97
	Ethylbenzene	3		ESD 97
	Xylenes	3		ESD 97
	C3-benzenes	16		ESD 97
	Total BTEX	9		ESD 97
	Total VOCs	26		ESD 97

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	30.3		ESD 97
	15	28.9		ESD 97
	25	27.9		ESD 00
10	0	NM		ESD 97
	15	30.8		ESD 97
	25	29.8		ESD 00
19	0	NM		ESD 97
	15	NM		ESD 97
	25	NM		ESD 98
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	24.8		ESD 97
	15	20.1		ESD 97
	25	NM		ESD 00
10	0	NM		ESD 97
	15	NM		ESD 97
	25	NM		ESD 00
19	0	NM		ESD 97
	15	NM		ESD 97
	25	NM		ESD 98
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	23.1		ESD 97
	15	22.9		ESD 97
	25	NM		ESD 00
10	0	NM		ESD 97
	15	NM		ESD 97
	25	NM		ESD 00
19	0	NM		ESD 97
	15	NM		ESD 97
	25	NM		ESD 98

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (weight %)	Boiling Point (°C)			
0	40	3		ESD 97
	60	4		ESD 97
	80	6		ESD 97
	100	7		ESD 97
	120	7		ESD 97
	140	9		ESD 97
	160	11		ESD 97
	180	13		ESD 97
	200	15		ESD 97
	250	21		ESD 97
	300	27		ESD 97
	350	35		ESD 97
	400	42		ESD 97
	450	50		ESD 97
	500	58		ESD 97
	550	65		ESD 97
	600	71		ESD 97
	650	78		ESD 97
	700	83		ESD 97
10	140	1		ESD 97
	160	2		ESD 97
	180	4		ESD 97
	200	6		ESD 97
	250	13		ESD 97
	300	20		ESD 97
	350	29		ESD 97
	400	39		ESD 97
	450	49		ESD 97
	500	58		ESD 97
	550	66		ESD 97
	600	74		ESD 97
	650	81		ESD 97
	700	87		ESD 97
19	250	4		ESD 97
	300	11		ESD 97
	350	21		ESD 97
	400	32		ESD 97
	450	43		ESD 97
	500	53		ESD 97
	550	62		ESD 97
	600	70		ESD 97

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (weight %)	Boiling Point (°C)			
19	650	78		ESD 97
	700	85		ESD 97

Sockeye Sweet

Origin: California, USA		Data	Notes	Reference ID
API Gravity				
		29.4		ESD 97
Equation(s) for Predicting Evaporation				
%Ev = (2.39 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 97
Sulphur (weight %)				
Evaporation (weight %)				
0		1.10		ESD 97
8		1.53		ESD 97
17		1.67		ESD 97
27		1.81		ESD 97
Water Content (weight %)				
Evaporation (weight %)				
0		0.3		ESD 98
8		< 0.1		ESD 98
17		< 0.1		ESD 98
27		< 0.1		ESD 98
Flash Point (°C)				
Evaporation (weight %)				
0		-9		ESD 97
8		47		ESD 97
17		83		ESD 97
27		> 95		ESD 97
Density (g/mL)				
Evaporation (weight %)	Temperature (°C)			
0	0	0.8905		ESD 97
	15	0.8792		ESD 97
	25	0.8741		ESD 98
8	0	0.9061		ESD 97
	15	0.8945		ESD 97
	25	0.8878		ESD 98
17	0	0.9207		ESD 97
	15	0.9089		ESD 97
	25	0.9019		ESD 98
27	0	0.9348		ESD 97
	15	0.9229		ESD 97
	25	0.9155		ESD 98

		Data	Notes	Reference ID
Pour Point (°C)				
Evaporation (weight %)				
0		-20		ESD 97
8		-14		ESD 97
17		-4		ESD 97
27		5		ESD 97
Dynamic Viscosity (mPa s or cP)				
Evaporation (weight %)	Temperature (°C)			
0	0	43		ESD 97
	15	20		ESD 97
	25	14		ESD 98
8	0	98		ESD 97
	15	39		ESD 97
	25	25		ESD 98
17	0	373	*(a)*	ESD 97
	15	103		ESD 97
	25	58		ESD 98
27	0	1,530	*(a)*	ESD 97
	15	321		ESD 97
	25	159		ESD 98
(a) slightly non-newtonian				
Emulsion Formation				
Evaporation (weight%)				
0	Visual stability	none		ESD 98
	Water content (wt %)	5		ESD 98
8	Visual stability	none		ESD 98
	Water content (wt %)	1		ESD 98
17	Visual stability	meso		ESD 98
	Viscosity (mPa·s)	8,200		ESD 98
	Complex modulus (mPa)	31,000		ESD 98
	Water content (wt %)	82		ESD 98
27	Visual stability	stable		ESD 98
	Viscosity (mPa·s)	48,000		ESD 98
	Complex modulus (mPa)	510,000		ESD 98
	Water content (wt %)	75		ESD 98
Chemical Dispersibility (volume %)				
Evaporation (weight %)				
0	Corexit 9500	16		ESD 99
8		17		ESD 99
17		14		ESD 99
27		15		ESD 99

Sockeye Sweet

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
Evaporation (weight %)				
0	Saturates	55		ESD 98
	Aromatics	31		ESD 98
	Resins	10		ESD 98
	Asphaltenes	4		ESD 98
8	Saturates	56		ESD 98
	Aromatics	30		ESD 98
	Resins	10		ESD 98
	Asphaltenes	4		ESD 98
17	Saturates	50		ESD 98
	Aromatics	32		ESD 98
	Resins	13		ESD 98
	Asphaltenes	5		ESD 98
27	Saturates	48		ESD 98
	Aromatics	33		ESD 98
	Resins	14		ESD 98
	Asphaltenes	6		ESD 98
Adhesion (g/m²)				
Evaporation (weight %)				
0		25	*SD = 2*	ESD 98
8		21	*SD = 1*	ESD 98
17		28	*SD = 11*	ESD 98
27		25	*SD = 4*	ESD 98

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
Evaporation (weight %)				
0	Benzene	1,674		ESD 97
	Toluene	4,325		ESD 97
	Ethylbenzene	1,652		ESD 97
	Xylenes	6,797		ESD 97
	C3-benzenes	10,228		ESD 97
	Total BTEX	14,448		ESD 97
	Total VOCs	24,676		ESD 97
8	Benzene	298		ESD 97
	Toluene	3,109		ESD 97
	Ethylbenzene	1,358		ESD 97
	Xylenes	5,780		ESD 97
	C3-benzenes	10,521		ESD 97
	Total BTEX	10,545		ESD 97
	Total VOCs	21,066		ESD 97
17	Benzene	6		ESD 97
	Toluene	12		ESD 97
	Ethylbenzene	106		ESD 97
	Xylenes	750		ESD 97
	C3-benzenes	5,359		ESD 97
	Total BTEX	874		ESD 97
	Total VOCs	6,233		ESD 97
27	Benzene	0		ESD 97
	Toluene	3		ESD 97
	Ethylbenzene	1		ESD 97
	Xylenes	5		ESD 97
	C3-benzenes	21		ESD 97
	Total BTEX	8		ESD 97
	Total VOCs	29		ESD 97

Sockeye Sweet

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	28.7		ESD 97
	15	27.7		ESD 97
	25	27.1		ESD 00
8	0	30.0		ESD 97
	15	28.8		ESD 97
	25	28.0		ESD 00
17	0	31.1		ESD 97
	15	30.0		ESD 97
	25	28.8		ESD 00
27	0	DNF		ESD 97
	15	30.6		ESD 97
	25	29.9		ESD 00
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	7.8		ESD 97
	15	15.9		ESD 97
	25	8.1		ESD 00
8	0	17.8		ESD 97
	15	17.9		ESD 97
	25	13.6		ESD 00
17	0	17.9		ESD 97
	15	18.5		ESD 97
	25	13.2		ESD 00
27	0	DNF		ESD 97
	15	16.5		ESD 97
	25	NM		ESD 00
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	13.7		ESD 97
	15	14.8		ESD 97
	25	8.0		ESD 00
8	0	19.1		ESD 97
	15	16.3		ESD 97
	25	13.5		ESD 00
17	0	20.1		ESD 97
	15	17.6		ESD 97
	25	8.0		ESD 00
27	0	DNF		ESD 97
	15	16.5		ESD 97
	25	NM		ESD 00

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (weight %)	Boiling Point (°C)			
0	40	2		ESD 97
	60	4		ESD 97
	80	7		ESD 97
	100	9		ESD 97
	120	9		ESD 97
	140	12		ESD 97
	160	16		ESD 97
	180	20		ESD 97
	200	23		ESD 97
	250	34		ESD 97
	300	44		ESD 97
	350	54		ESD 97
	400	63		ESD 97
	450	73		ESD 97
	500	81		ESD 97
	550	87		ESD 97
	600	92		ESD 97
	650	96		ESD 97
	700	99		ESD 97
8	120	2		ESD 97
	140	4		ESD 97
	160	7		ESD 97
	180	11		ESD 97
	200	15		ESD 97
	250	26		ESD 97
	300	38		ESD 97
	350	50		ESD 97
	400	60		ESD 97
	450	70		ESD 97
	500	79		ESD 97
	550	86		ESD 97
	600	92		ESD 97
	650	96		ESD 97
	700	98		ESD 97
17	160	1		ESD 97
	180	3		ESD 97
	200	7		ESD 97
	250	19		ESD 97
	300	32		ESD 97
	350	45		ESD 97
	400	56		ESD 97

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (weight %)	Boiling Point (°C)			
17	450	68		ESD 97
	500	78		ESD 97
	550	86		ESD 97
	600	92		ESD 97
	650	96		ESD 97
	700	99		ESD 97
27	250	8		ESD 97
	300	22		ESD 97
	350	37		ESD 97
	400	50		ESD 97
	450	63		ESD 97
	500	74		ESD 97
	550	84		ESD 97
	600	90		ESD 97
	650	96		ESD 97
	700	99		ESD 97

Origin: Iran

Synonyms: Cyrus

Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".

		Data	Notes	Reference ID
API Gravity				
		18.1		OGJ 99
Sulphur (weight %)				
		3.30		OGJ 99
Reid Vapour Pressure (kPa)				
		2		OGJ 99
Hydrogen Sulphide (weight %)				
		0		OGJ 99
Pour Point (°C)				
		-12		OGJ 99
Kinematic Viscosity (mm²/s or cSt)				
	Temperature (°C)			
	20	1,381		OGJ 99
Yield on Crude (volume %)				
	Boiling Range (°C)			
	C1-C5	1		OGJ 99
	Naphtha (C5-93)	3		OGJ 99
	Naphtha (93-160)	5		OGJ 99
	Kerosene (160-271)	12		OGJ 99
	Gas oil (271-343)	10		OGJ 99
	Residue (>343)	70		OGJ 99
Metals (ppm)				
	Nickel	35		OGJ 99
	Vanadium	101		OGJ 99

Souedie

	Data	Notes	Reference ID
Origin: Syria			

Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".

API Gravity

24.9		OGJ 99

Sulphur (weight %)

3.82		OGJ 99

Pour Point (°C)

-30		OGJ 99

Kinematic Viscosity (mm²/s or cSt)

Temperature (°C)			
10	88		OGJ 99

Yield on Crude (volume %)

Boiling Range (°C)			
C1-C4	1		OGJ 99
Light naphtha (C5-65)	3		OGJ 99
Heavy naphtha (65-175)	13		OGJ 99
Kerosene (175-225)	6		OGJ 99
Gas oil (225-360)	20		OGJ 99
Heavy gas oil (360-425)	10		OGJ 99
Residue (>425)	47		OGJ 99

Origin: Alberta, Canada		**Data**	**Notes**	**Reference ID**
API Gravity				
		34.8		EETD 84
Flash Point (°C)				
		7		EETD 84
Fire Point (°C)				
		< 11		Twardus 80
Density (g/mL)				
Evaporation (volume %)	Temperature (°C)			
0	0	0.8610		EETD 84
		0.8520		Mackay 82a
	5	0.8500		Mackay 82a
	10	0.8470		Mackay 82a
	15	0.8500		EETD 84
		0.8420		Mackay 82a
	20	0.8400		Mackay 82a
	25	0.8360		Mackay 82a
10	20	0.8610		Mackay 82a
20		0.8750		Mackay 82a
Pour Point (°C)				
Evaporation (volume %)				
0		6		Mackay 82a
		-50		Twardus 80
10		6		Mackay 82a
20		9		Mackay 82a
Dynamic Viscosity (mPa·s or cP)				
	Temperature (°C)			
	0	24		Mackay 82a
		27		Twardus 80
	5	17		Mackay 82a
	10	11		Mackay 82a
		19		Twardus 80
	15	8		Mackay 82a
	20	7		Mackay 82a
		10		Twardus 80
	25	6		Mackay 82a

Sour Blend

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
Evaporation (volume %)				
0	Saturates	82		Mackay 82a
	Aromatics	13		Mackay 82a
	Resins	2		Mackay 82a
	Asphaltenes	2		Mackay 82a
	Waxes	6		Mackay 82a
10	Saturates	77		Mackay 82a
	Aromatics	15		Mackay 82a
	Resins	4		Mackay 82a
	Asphaltenes	5		Mackay 82a
	Waxes	8		Mackay 82a
20	Saturates	73		Mackay 82a
	Aromatics	16		Mackay 82a
	Resins	4		Mackay 82a
	Asphaltenes	7		Mackay 82a
	Waxes	10		Mackay 82a
Surface Tension (mN/m or dynes/cm)				
	Temperature (°C)			
	15	25.6		EETD 85
	Room temperature	24.1		Twardus 80
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (volume %)	Temperature (°C)			
0	15	0.8		EETD 84
	20	20.7		Mackay 82a
10		20.7		Mackay 82a
20		26.3		Mackay 82a
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
	Temperature (°C)			
	15	13.0		EETD 85
	Room temperature	27.5		Twardus 80

		Data	Notes	Reference ID
Distillation (°C)				
	Total Distillate (volume %)			
	IBP	45		Twardus 80
	10	95		Twardus 80
	20	130		Twardus 80
	30	180		Twardus 80
	40	235		Twardus 80
	50	300		Twardus 80
	60	345		Twardus 80
	70	380		Twardus 80
	80	385		Twardus 80
	85	390		Twardus 80

South Louisiana

Origin: Louisiana, USA		Data	Notes	Reference ID
API Gravity				
		37.0		API 81
Sulphur (weight %)				
		0.21		API 81
Density (g/mL)				
	Temperature (°C)			
	15.6	0.8390		API 81
Chemical Dispersibility (volume %)				
	Corexit 9527	55		EETD 89
	Dasic LTS	30		EETD 89
	Enersperse 700	30		EETD 89
Distillation (°C)				
	Total Distillate (volume %)			
	5	76		API 81
	10	105		API 81
	15	132		API 81
	20	156		API 81
	25	178		API 81
	30	203		API 81
	35	221		API 81
	40	239		API 81
	45	254		API 81
	50	271		API 81
	55	284		API 81
	60	302		API 81
	65	321		API 81
	70	341		API 81
	75	362		API 81
	80	384		API 81
	85	411		API 81
	90	440		API 81
	95	468		API 81
	FBP	530		API 81
Metals (ppm)				
	Nickel	1		API 81
	Vanadium	0.9		API 81
Other Elements (weight %)				
	Nitrogen	0.03		API 81

		Data	Notes	Reference ID
Aqueous Solubility (mg/L)				
		23	*(a)*	Anderson 74
		38	*(b)*	Murray 84
(a) salt water; (b) distilled water				
Acute Toxicity of Water Soluble Fraction (mg/L)				
	Test Organism			
24h LC50	Neanthes arenaceodentata	18		Rossi 76
	Capitella capitata	> 20		Rossi 76
	Mysidopsis almyra	12		Anderson 74
	Palaemoneted pugio	> 17		Anderson 74
	Penaeus aztecus	> 20		Anderson 74
	Menidia beryllina	10		Anderson 74
	Fundulus similis	17		Anderson 74
	Cyprinodon variegatus	> 20		Anderson 74
48h LC50	Platynereis dumerilii	12		Neff 76
	Neanthes arenaceodentata	14		Rossi 76
	Capitella capitata	16		Rossi 76
	Mysidopsis almyra	9		Anderson 74
	Leander tenuicornis	10		Neff 76
	Palaemoneted pugio	> 17		Neff 76
	Penaeus aztecus	> 20		Neff 76
	Menidia beryllina	9		Neff 76
	Fundulus similis	17		Neff 76
	Cyprinodon variegatus	> 20		Neff 76
96h LC50	Platynereis dumerilii	10		Neff 76
	Neanthes arenaceodentata	13		Rossi 76
	Capitella capitata	12		Rossi 76
	Leander tenuicornis	6		Neff 76
	Palaemoneted pugio	> 17		Neff 76
	Penaeus aztecus	> 20		Neff 76
	Menidia beryllina	6		Neff 76
	Fundulus similis	17		Neff 76
	Cyprinodon variegatus	> 20		Neff 76

		Data	Notes	Reference ID
Acute Toxicity, Oil in Water Emulsion (mg/L)				
	Test Organism			
24h LC50	Mysidopsis almyra	165		Anderson 74
	Palaemonetes pugio	1,700		Anderson 74
	Penaeus aztecus	> 1,000		Anderson 74
	Menidia beryllina	7,600		Anderson 74
	Fundulus similis	6,610		Anderson 74
	Cyprinodon variegatus	80,000		Anderson 74
48h LC50	Mysidopsis almyra	38		Anderson 74
	Palaemonetes pugio	1,650		Anderson 74
	Penaeus aztecus	> 1,000		Anderson 74
	Menidia beryllina	5,000		Anderson 74
	Fundulus similis	6,000		Anderson 74
	Cyprinodon variegatus	33,000		Anderson 74
96h LC50	Palaemonetes pugio	200		Anderson 74
	Penaeus aztecus	> 1,000		Anderson 74
	Menidia beryllina	3,700		Anderson 74
	Fundulus similis	6,000		Anderson 74
	Cyprinodon variegatus	29,000		Anderson 74

Origin: Gulf of Mexico, USA		Data	Notes	Reference ID
API Gravity				
		35.8		ESD 94
Equation(s) for Predicting Evaporation				
%Ev = (2.91 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 96
Sulphur (weight %)				
Evaporation (weight %)				
0		0.28		ESD 94
17		0.28		ESD 94
25		0.30		ESD 94
38		0.38		ESD 94
Water Content (weight %)				
		0.1		ESD 94
Flash Point (°C)				
Evaporation (weight %)				
0		-4		ESD 94
17		61		ESD 94
25		90		ESD 94
38		> 95		ESD 94
Density (g/mL)				
Evaporation (weight %)	Temperature (°C)			
0	0	0.8565		ESD 94
	15	0.8453		ESD 94
	25	0.8377		ESD 94
17	0	0.8831		ESD 94
	15	0.8709		ESD 94
	25	0.8636		ESD 94
25	0	0.8931		ESD 94
	15	0.8809		ESD 94
	25	0.8736		ESD 94
38	0	0.9099		ESD 94
	15	0.8979		ESD 94
	25	0.8906		ESD 94
Pour Point (°C)				
Evaporation (weight %)				
0		-9		ESD 94
17		-3		ESD 94
25		9		ESD 94
38		12		ESD 94

		Data	Notes	Reference ID
Dynamic Viscosity (mPa·s or cP)				
Evaporation (weight %)	Temperature (°C)			
0	0	19		ESD 94
	15	9		ESD 94
	25	5		ESD 94
17	0	69		ESD 94
	15	22		ESD 94
	25	13		ESD 94
25	0	216		ESD 94
	15	41		ESD 94
	25	24		ESD 94
38	0	1,170	*(a)*	ESD 94
		3,960	*(b)*	ESD 94
		31,500	*(c)*	ESD 94
	15	161		ESD 94
	25	74		ESD 94
Shear rate = (a) 100/s; (b) 10/s; (c) 1/s				
Chemical Dispersibility (volume %)				
	Corexit 9500	28		ESD 95
	Corexit 9527	45		ESD 93
	Dasic LTS	15		ESD 93
	Enersperse 700	10		ESD 93

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
Evaporation (weight %)				
0	Saturates	71		ESD 95
	Aromatics	20		ESD 95
	Resins	8		ESD 95
	Asphaltenes	1		ESD 95
	Waxes	7		ESD 97
17	Saturates	67		ESD 95
	Aromatics	26		ESD 95
	Resins	7		ESD 95
	Asphaltenes	1		ESD 95
	Waxes	6		ESD 98
25	Saturates	64		ESD 95
	Aromatics	27		ESD 95
	Resins	8		ESD 95
	Asphaltenes	1		ESD 95
	Waxes	7		ESD 98
38	Saturates	61		ESD 95
	Aromatics	28		ESD 95
	Resins	9		ESD 95
	Asphaltenes	2		ESD 95
	Waxes	7		ESD 98
Adhesion (g/m²)				
Evaporation (weight %)				
0		11	*SD = 3*	ESD 95
17		13	*SD = 2*	ESD 95
25		19	*SD = 2*	ESD 95
38		36	*SD = 7*	ESD 95

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
Evaporation (weight %)				
0	Benzene	1,620		ESD 94
	Toluene	4,900		ESD 94
	Ethylbenzene	480		ESD 94
	Xylenes	4,430		ESD 94
	C3-benzenes	4,570		ESD 94
	Total BTEX	11,430		ESD 94
	Total VOCs	16,000		ESD 94
17	Benzene	90		ESD 94
	Toluene	670		ESD 94
	Ethylbenzene	270		ESD 94
	Xylenes	2,960		ESD 94
	C3-benzenes	6,010		ESD 94
	Total BTEX	3,990		ESD 94
	Total VOCs	10,000		ESD 94
25	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	140		ESD 94
	C3-benzenes	2,070		ESD 94
	Total BTEX	140		ESD 94
	Total VOCs	2,210		ESD 94
38	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	0		ESD 94
	C3-benzenes	0		ESD 94
	Total BTEX	0		ESD 94
	Total VOCs	0		ESD 94

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	27.7		ESD 94
	15	26.8		ESD 94
	25	26.0		ESD 94
17	0	29.6		ESD 94
	15	28.7		ESD 94
	25	28.0		ESD 94
25	0	30.8		ESD 94
	15	29.4		ESD 94
	25	28.8		ESD 94
38	0	DNF		ESD 94
	15	30.3		ESD 94
	25	29.8		ESD 94
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	14.5		ESD 94
	15	18.7		ESD 94
	25	16.0		ESD 94
17	0	16.1		ESD 94
	15	20.4		ESD 94
	25	17.2		ESD 94
25	0	NM		ESD 94
	15	18.9		ESD 94
	25	15.6		ESD 94
38	0	DNF		ESD 94
	15	16.2		ESD 94
	25	11.6		ESD 94
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	17.6		ESD 94
	15	19.6		ESD 94
	25	18.0		ESD 94
17	0	18.6		ESD 94
	15	21.3		ESD 94
	25	19.9		ESD 94
25	0	NM		ESD 94
	15	21.8		ESD 94
	25	18.6		ESD 94
38	0	DNF		ESD 94
	15	18.8		ESD 94
	25	16.3		ESD 94

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (weight %)	Boiling Point (°C)			
0	40	2		ESD 94
	60	3		ESD 94
	80	8		ESD 94
	100	11		ESD 94
	120	16		ESD 94
	140	17		ESD 94
	160	19		ESD 94
	180	23		ESD 94
	200	27		ESD 94
	250	39		ESD 94
	300	51		ESD 94
	350	62		ESD 94
	400	71		ESD 94
	450	79		ESD 94
	500	86		ESD 94
	550	91		ESD 94
	600	94		ESD 94
	650	97		ESD 94
	700	99		ESD 94
17	120	1		ESD 95
	140	2		ESD 95
	160	5		ESD 95
	180	9		ESD 95
	200	13		ESD 95
	250	26		ESD 95
	300	41		ESD 95
	350	54		ESD 95
	400	65		ESD 95
	450	75		ESD 95
	500	82		ESD 95
	550	88		ESD 95
	600	93		ESD 95
	650	96		ESD 95
	700	98		ESD 95
25	180	2		ESD 95
	200	5		ESD 95
	250	18		ESD 95
	300	34		ESD 95
	350	49		ESD 95
	400	61		ESD 95
	450	72		ESD 95

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (weight %)	Boiling Point (°C)			
25	500	80		ESD 95
	550	87		ESD 95
	600	92		ESD 95
	650	95		ESD 95
	700	98		ESD 95
38	250	4		ESD 95
	300	20		ESD 95
	350	38		ESD 95
	400	52		ESD 95
	450	65		ESD 95
	500	76		ESD 95
	550	84		ESD 95
	600	90		ESD 95
	650	94		ESD 95
	700	98		ESD 95

South Pass Block 67

	Data	Notes	Reference ID
Origin: Gulf of Mexico, USA			
High water content. The oil also contains approximately 10 wt% sand. Oil tested as received, unless noted otherwise.			ESD 94
API Gravity			
	16.4		ESD 94
Equation(s) for Predicting Evaporation			
%Ev = (2.17 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)			ESD 96
Sulphur (weight %)			
Not measured due to high sand and water content.			

Water Content

Evaporation (weight %)			
0	42.2		ESD 94
22	41.0		ESD 94
45	24.2		ESD 95
64	0.3		ESD 95

Flash Point (°C)

Evaporation (weight %)			
0	-1		ESD 94
22	> 95		ESD 94
45	> 95		ESD 94
64	> 95		ESD 94

Density (g/mL)

Evaporation (weight %)	Temperature (°C)			
0	0	0.9678		ESD 94
	15	0.9564		ESD 94
	25	0.9473	*(a)*	ESD 94
22	0	1.0066		ESD 94
	15	0.9928		ESD 94
	25	0.9909		ESD 94
45	0	0.9724		ESD 94
	15	0.9510		ESD 94
	25	0.9546		ESD 94
64	0	0.9458		ESD 94
	15	0.9306		ESD 94
	25	0.9250		ESD 94

(a) difficult to get a consistent value; believe this is an emulsion breaking down at high temperatures.

		Data	Notes	Reference ID
Pour Point (°C)				
Evaporation (weight %)				
0		13	*(a)*	ESD 94
		-9	*(b)*	ESD 94
22		7		ESD 94
45		13		ESD 94
64		3		ESD 94
Oil had an initial brown colour (a). After heating there was a noticeable black layer (b), about 1 mm thick, at the top of the pour point tube.				
Dynamic Viscosity (mPa·s or cP)				
Evaporation (weight %)	Temperature (°C)			
0	0	89		ESD 94
	15	39		ESD 94
	25	24		ESD 94
22	0	356		ESD 94
	15	110		ESD 94
	25	80		ESD 94
45	0	435		ESD 94
	15	108		ESD 94
	25	64		ESD 94
64	0	1,630		ESD 94
	15	236		ESD 94
	25	131		ESD 94
Hydrocarbon Groups (weight %)				
Sand caused high variability in the analysis. Complete data is reported only for the 64% evaporated oil. The sand was removed from this oil by decanting..				
Evaporation (weight %)				
0	Waxes	5		ESD 97
22		4		ESD 98
45		4		ESD 98
64	Saturates	53		ESD 94
	Aromatics	27		ESD 94
	Resins	10		ESD 94
	Asphaltenes	10		ESD 94
	Waxes	7		ESD 98
Adhesion (g/m²)				
Evaporation (weight %)				
0		30	*SD = 4*	ESD 95
22		35	*SD = 3*	ESD 95
45		35	*SD = 10*	ESD 95
64		40	*SD = 9*	ESD 95

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
Evaporation (weight %)				
0	Benzene	970		ESD 94
	Toluene	2,550		ESD 94
	Ethylbenzene	320		ESD 94
	Xylenes	2,450		ESD 94
	C3-benzenes	2,590		ESD 94
	Total BTEX	6,300		ESD 94
	Total VOCs	8,890		ESD 94
22	Benzene	0		ESD 94
	Toluene	40		ESD 94
	Ethylbenzene	40		ESD 94
	Xylenes	660		ESD 94
	C3-benzenes	2,020		ESD 94
	Total BTEX	740		ESD 94
	Total VOCs	2,760		ESD 94
45	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	0		ESD 94
	C3-benzenes	290		ESD 94
	Total BTEX	0		ESD 94
	Total VOCs	290		ESD 94
64	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	0		ESD 94
	C3-benzenes	0		ESD 94
	Total BTEX	0		ESD 94
	Total VOCs	0		ESD 94

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	29.9		ESD 94
	15	26.2		ESD 94
	25	25.8		ESD 94
22	0	29.9		ESD 94
	15	29.1		ESD 94
	25	28.4		ESD 94
45	0	32.0		ESD 94
	15	30.0		ESD 94
	25	28.9		ESD 94
64	0	DNF		ESD 94
	15	30.9		ESD 94
	25	30.0		ESD 94
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	NM		ESD 94
	15	30.7		ESD 94
	25	23.2		ESD 94
22	0	NM		ESD 94
	15	30.5		ESD 94
	25	23.3		ESD 94
45	0	NM		ESD 94
	15	27.0		ESD 94
	25	22.3		ESD 94
64	0	DNF		ESD 94
	15	25.9		ESD 94
	25	25.0		ESD 94
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	NM		ESD 94
	15	32.9		ESD 94
	25	24.1		ESD 94
22	0	NM		ESD 94
	15	31.3		ESD 94
	25	27.0		ESD 94
45	0	NM		ESD 94
	15	30.7		ESD 94
	25	26.0		ESD 94
64	0	DNF		ESD 94
	15	29.7		ESD 94
	25	26.6		ESD 94

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Fresh, 22%, and 45% evaporated oils were dried with sodium sulphate prior to analysis.				
Evaporation (weight %)	Boiling Point (°C)			
0	40	1		ESD 94
	60	2		ESD 94
	80	4		ESD 94
	100	8		ESD 94
	120	12		ESD 94
	140	16		ESD 94
	160	21		ESD 94
	180	26		ESD 94
	200	31		ESD 94
	250	42		ESD 94
	300	53		ESD 94
	350	64		ESD 94
	400	72		ESD 94
	450	80		ESD 94
	500	86		ESD 94
	550	91		ESD 94
	600	95		ESD 94
	650	98		ESD 94
22	140	1		ESD 96
	160	3		ESD 96
	180	6		ESD 96
	200	10		ESD 96
	250	24		ESD 96
	300	38		ESD 96
	350	52		ESD 96
	400	64		ESD 96
	450	74		ESD 96
	500	82		ESD 96
	550	88		ESD 96
	600	93		ESD 96
	650	96		ESD 96
	700	99		ESD 96
45	180	1		ESD 96
	200	3		ESD 96
	250	15		ESD 96
	300	31		ESD 96
	350	47		ESD 96
	400	59		ESD 96
	450	70		ESD 96
	500	79		ESD 96

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Fresh, 22%, and 45% evaporated oils were dried with sodium sulphate prior to analysis.				
Evaporation (weight %)	Boiling Point (°C)			
45	550	86		ESD 96
	600	91		ESD 96
	650	95		ESD 96
	700	98		ESD 96
64	250	2		ESD 95
	300	15		ESD 95
	350	33		ESD 95
	400	48		ESD 95
	450	61		ESD 95
	500	72		ESD 95
	550	82		ESD 95
	600	89		ESD 95
	650	94		ESD 95
	700	98		ESD 95

South Pass Block 93

		Data	Notes	Reference ID
Origin: Gulf of Mexico, USA				
High water content. Oil tested as received, unless noted otherwise.				ESD 94
API Gravity				
		33.4		ESD 94
Equation(s) for Predicting Evaporation				
%Ev = (1.50 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 96
Sulphur (weight %)				
Evaporation (weight %)				
0		0.43		ESD 94
11		0.36		ESD 94
21		0.35		ESD 94
34		0.43		ESD 94
Water Content (weight %)				
		9.0	*(a)*	ESD 94
(a) approximate; settles quickly after shaking				
Flash Point (°C)				
Evaporation (weight %)				
0		-7		ESD 94
11		58		ESD 94
21		90		ESD 94
34		> 95		ESD 94
Density (g/mL)				
Evaporation (weight %)	Temperature (°C)			
0	0	0.8710		ESD 94
	15	0.8574		ESD 94
	25	0.8530		ESD 94
11	0	0.8833		ESD 94
	15	0.8637		ESD 94
	25	0.8591		ESD 94
21	0	0.8847		ESD 94
	15	0.8698		ESD 94
	25	0.8647		ESD 94
34	0	0.8950		ESD 94
	15	0.8832		ESD 94
	25	0.8755		ESD 94

		Data	Notes	Reference ID
Pour Point (°C)				
Evaporation (weight %)				
0		-15	*(a)*	ESD 94
11		8		ESD 94
21		12		ESD 94
34		16		ESD 94
(a) During cooling a brown layer about 1 mm thick formed at the bottom of the pour point tube.				
Dynamic Viscosity (mPa·s or cP)				
Evaporation (weight %)	Temperature (°C)			
0	0	55		ESD 94
	15	19		ESD 94
	25	10		ESD 94
11	0	112		ESD 94
	15	23		ESD 94
	25	12		ESD 94
21	0	174		ESD 94
	15	32		ESD 94
	25	19		ESD 94
34	0	889	*(a)*	ESD 94
		5,820	*(b)*	ESD 94
		32,800	*(c)*	ESD 94
	15	80		ESD 94
	25	45		ESD 94
Shear rate = (a) 100/s; (b) 10/s; (c) 1/s				
Chemical Dispersibility (volume %)				
	Corexit 9527	25		ESD 94
	Dasic LTS	25		ESD 94
	Enersperse 700	25		ESD 94

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
Evaporation (weight %)				
0	Saturates	73	*(a)*	ESD 95
	Aromatics	20	*(a)*	ESD 95
	Resins	4	*(a)*	ESD 95
	Asphaltenes	3	*(a)*	ESD 95
	Waxes	8		ESD 97
11	Saturates	74		ESD 95
	Aromatics	20		ESD 95
	Resins	4		ESD 95
	Asphaltenes	2		ESD 95
	Waxes	6		ESD 98
21	Saturates	73		ESD 95
	Aromatics	21		ESD 95
	Resins	4		ESD 95
	Asphaltenes	2		ESD 95
	Waxes	7		ESD 98
34	Saturates	71		ESD 95
	Aromatics	22		ESD 95
	Resins	5		ESD 95
	Asphaltenes	3		ESD 95
	Waxes	8		ESD 98
(a) approximate: corrected for initial water content of oil				
Adhesion (g/m²)				
Evaporation (weight %)				
0		25	*SD = 3*	ESD 95
11		15	*SD = 1*	ESD 95
21		24	*SD = 2*	ESD 95
34		40	*SD = 3*	ESD 95

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
Evaporation (weight %)				
0	Benzene	1,240		ESD 94
	Toluene	2,180		ESD 94
	Ethylbenzene	350		ESD 94
	Xylenes	1,780		ESD 94
	C3-benzenes	3,270		ESD 94
	Total BTEX	5,540		ESD 94
	Total VOCs	8,810		ESD 94
11	Benzene	180		ESD 94
	Toluene	910		ESD 94
	Ethylbenzene	320		ESD 94
	Xylenes	1,730		ESD 94
	C3-benzenes	4,320		ESD 94
	Total BTEX	3,140		ESD 94
	Total VOCs	7,450		ESD 94
21	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	50		ESD 94
	Xylenes	330		ESD 94
	C3-benzenes	2,410		ESD 94
	Total BTEX	380		ESD 94
	Total VOCs	2,790		ESD 94
34	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	0		ESD 94
	C3-benzenes	0		ESD 94
	Total BTEX	0		ESD 94
	Total VOCs	0		ESD 94

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	31.4		ESD 94
	15	28.2		ESD 94
	25	27.4		ESD 94
11	0	30.9		ESD 94
	15	29.0		ESD 94
	25	28.5		ESD 94
21	0	34.7		ESD 94
	15	29.6		ESD 94
	25	28.8		ESD 94
34	0	DNF		ESD 94
	15	30.4		ESD 94
	25	29.6		ESD 94
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	NM		ESD 94
	15	24.7		ESD 94
	25	22.0		ESD 94
11	0	NM		ESD 94
	15	24.3		ESD 94
	25	23.0		ESD 94
21	0	NM		ESD 94
	15	26.7		ESD 94
	25	25.0		ESD 94
34	0	DNF		ESD 94
	15	22.6		ESD 94
	25	20.7		ESD 94
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	NM		ESD 94
	15	26.5		ESD 94
	25	25.8		ESD 94
11	0	NM		ESD 94
	15	26.0		ESD 94
	25	23.5		ESD 94
21	0	NM		ESD 94
	15	28.0		ESD 94
	25	27.3		ESD 94
34	0	DNF		ESD 94
	15	24.9		ESD 94
	25	23.8		ESD 94

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
The fresh oil was dried with sodium sulphate prior to analysis.				
Evaporation (weight %)	Boiling Point (°C)			
0	40	1		ESD 94
	60	2		ESD 94
	80	3		ESD 94
	100	5		ESD 94
	120	7		ESD 94
	140	9		ESD 94
	160	12		ESD 94
	180	15		ESD 94
	200	18		ESD 94
	250	28		ESD 94
	300	42		ESD 94
	350	57		ESD 94
	400	70		ESD 94
	450	81		ESD 94
	500	89		ESD 94
	550	94		ESD 94
	600	98		ESD 94
	650	99		ESD 94
11	120	1		ESD 95
	140	2		ESD 95
	160	5		ESD 95
	180	7		ESD 95
	200	10		ESD 95
	250	21		ESD 95
	300	36		ESD 95
	350	52		ESD 95
	400	65		ESD 95
	450	77		ESD 95
	500	86		ESD 95
	550	92		ESD 95
	600	96		ESD 95
	650	98		ESD 95
	700	99		ESD 95
21	160	1		ESD 95
	180	3		ESD 95
	200	5		ESD 95
	250	16		ESD 95
	300	32		ESD 95
	350	49		ESD 95
	400	63		ESD 95

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
The fresh oil was dried with sodium sulphate prior to analysis.				
Evaporation (weight %)	Boiling Point (°C)			
21	450	76		ESD 95
	500	85		ESD 95
	550	92		ESD 95
	600	96		ESD 95
	650	98		ESD 95
	700	99		ESD 95
34	250	4		ESD 95
	300	19		ESD 95
	350	39		ESD 95
	400	57		ESD 95
	450	72		ESD 95
	500	83		ESD 95
	550	91		ESD 95
	600	96		ESD 95
	650	98		ESD 95
	700	99		ESD 95

Origin: Gulf of Mexico, USA		**Data**	**Notes**	**Reference ID**
API Gravity				
		35.1		ESD 94
Equation(s) for Predicting Evaporation				
%Ev = (2.77 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 96
Sulphur (weight %)				
Evaporation (weight %)				
0		0.32		ESD 94
11		0.28		ESD 94
22		0.38		ESD 94
35		0.35		ESD 94
Water Content (weight %)				
Evaporation (weight %)				
0		0.1		ESD 94
11		< 0.1		ESD 98
22		< 0.1		ESD 98
35		< 0.1		ESD 98
Flash Point (°C)				
Evaporation (weight %)				
0		5		ESD 94
11		58		ESD 94
22		89		ESD 94
35		> 95		ESD 94
Density (g/mL)				
Evaporation (weight %)	Temperature (°C)			
0	0	0.8595		ESD 94
	15	0.8487		ESD 94
	25	0.8415		ESD 94
11	0	0.8740		ESD 94
	15	0.8632		ESD 94
	25	0.8565		ESD 94
22	0	0.8856		ESD 94
	15	0.8748		ESD 94
	25	0.8677		ESD 94
35	0	0.8992		ESD 94
	15	0.8877		ESD 94
	25	0.8808		ESD 94

South Timbalier Block 130

		Data	Notes	Reference ID
Pour Point (°C)				
Evaporation (weight %)				
0		-27		ESD 94
11		-23		ESD 94
22		-18		ESD 94
35		-9		ESD 94
Dynamic Viscosity (mPa·s or cP)				
Evaporation (weight %)	Temperature (°C)			
0	0	12		ESD 94
	15	7		ESD 94
	25	5		ESD 94
11	0	20		ESD 94
	15	10		ESD 94
	25	6		ESD 94
22	0	47		ESD 94
	15	19		ESD 94
	25	11		ESD 94
35	0	147		ESD 94
	15	48		ESD 94
	25	27		ESD 94
Chemical Dispersibility (volume %)				
	Corexit 9500	31		ESD 00
	Corexit 9527	10	*(a)*	ESD 95
	Dasic LTS	20		ESD 93
	Enersperse 700	20		ESD 93

(a) UV/VIS quantitation

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
Evaporation (weight %)				
0	Saturates	78		ESD 95
	Aromatics	16		ESD 95
	Resins	5		ESD 95
	Asphaltenes	0		ESD 95
	Waxes	4		ESD 97
11	Saturates	72		ESD 95
	Aromatics	22		ESD 95
	Resins	5		ESD 95
	Asphaltenes	0		ESD 95
	Waxes	4		ESD 98
22	Saturates	71		ESD 95
	Aromatics	23		ESD 95
	Resins	6		ESD 95
	Asphaltenes	0		ESD 95
	Waxes	4		ESD 98
35	Saturates	68		ESD 95
	Aromatics	23		ESD 95
	Resins	8		ESD 95
	Asphaltenes	1		ESD 95
	Waxes	4		ESD 98
Adhesion (g/m²)				
Evaporation (weight %)				
0		11	*SD = 1*	ESD 95
11		18	*SD = 3*	ESD 95
22		28	*SD = 2*	ESD 95
35		27	*SD = 4*	ESD 95

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
Evaporation (weight %)				
0	Benzene	980		ESD 94
	Toluene	3,300		ESD 94
	Ethylbenzene	1,020		ESD 94
	Xylenes	5,910		ESD 94
	C3-benzenes	8,190		ESD 94
	Total BTEX	11,210		ESD 94
	Total VOCs	19,400		ESD 94
11	Benzene	90		ESD 94
	Toluene	670		ESD 94
	Ethylbenzene	450		ESD 94
	Xylenes	2,780		ESD 94
	C3-benzenes	5,610		ESD 94
	Total BTEX	3,990		ESD 94
	Total VOCs	9,600		ESD 94
22	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	90		ESD 94
	C3-benzenes	1,780		ESD 94
	Total BTEX	90		ESD 94
	Total VOCs	1,870		ESD 94
35	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	0		ESD 94
	C3-benzenes	0		ESD 94
	Total BTEX	0		ESD 94
	Total VOCs	0		ESD 94

		Data	Notes	Reference ID
Surface Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	27.8		ESD 94
	15	26.5		ESD 94
	25	26.3		ESD 94
11	0	29.1		ESD 94
	15	28.4		ESD 94
	25	27.8		ESD 94
22	0	30.0		ESD 94
	15	29.2		ESD 94
	25	28.5		ESD 94
35	0	30.7		ESD 94
	15	30.2		ESD 94
	25	29.5		ESD 94
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	16.4		ESD 94
	15	18.6		ESD 94
	25	16.2		ESD 94
11	0	18.4		ESD 94
	15	19.2		ESD 94
	25	16.4		ESD 94
22	0	18.5		ESD 94
	15	18.9		ESD 94
	25	15.6		ESD 94
35	0	14.8		ESD 94
	15	15.0		ESD 94
	25	12.7		ESD 94
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	20.1		ESD 94
	15	21.1		ESD 94
	25	18.7		ESD 94
11	0	20.6		ESD 94
	15	22.1		ESD 94
	25	19.6		ESD 94
22	0	20.3		ESD 94
	15	20.4		ESD 94
	25	19.2		ESD 94
35	0	17.7		ESD 94
	15	17.3		ESD 94
	25	15.9		ESD 94

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (weight %)	Boiling Point (°C)			
0	40	1		ESD 94
	60	1		ESD 94
	80	4		ESD 94
	100	7		ESD 94
	120	11		ESD 94
	140	12		ESD 94
	160	15		ESD 94
	180	20		ESD 94
	200	25		ESD 94
	250	39		ESD 94
	300	54		ESD 94
	350	66		ESD 94
	400	76		ESD 94
	450	84		ESD 94
	500	90		ESD 94
	550	94		ESD 94
	600	97		ESD 94
	650	99		ESD 94
11	120	1		ESD 95
	140	2		ESD 95
	160	6		ESD 95
	180	11		ESD 95
	200	16		ESD 95
	250	32		ESD 95
	300	48		ESD 95
	350	62		ESD 95
	400	73		ESD 95
	450	82		ESD 95
	500	89		ESD 95
	550	93		ESD 95
	600	96		ESD 95
	650	98		ESD 95
22	180	2		ESD 95
	200	6		ESD 95
	250	23		ESD 95
	300	41		ESD 95
	350	57		ESD 95
	400	69		ESD 95
	450	80		ESD 95
	500	87		ESD 95
	550	92		ESD 95

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (weight %)	Boiling Point (°C)			
22	600	96		ESD 95
	650	98		ESD 95
	700	99		ESD 95
35	250	9		ESD 95
	300	29		ESD 95
	350	48		ESD 95
	400	63		ESD 95
	450	75		ESD 95
	500	84		ESD 95
	550	90		ESD 95
	600	94		ESD 95
	650	97		ESD 95
	700	99		ESD 95

Soybean Oil

		Data	Notes	Reference ID
Two samples of oil, one containing dye, were provided by CEDRE. The samples were received in November, 1998.				
API Gravity				
		21.6		ESD 98
	With dye	21.6		ESD 98
Sulphur (weight %)				
		0.00		ESD 99
	With dye	0.00		ESD 99
Flash Point (°C)				
		> 100		ESD 98
	With dye	> 100		ESD 98
Density (g/mL)				
	Temperature (°C)			
	0	0.9335		ESD 98
		0.9337	*(a)*	ESD 98
	15	0.9232		ESD 98
		0.9232	*(a)*	ESD 98
	25	0.9161		ESD 98
		0.9163	*(a)*	ESD 98
(a) with dye				
Pour Point (°C)				
		-10		ESD 98
	With dye	-10		ESD 98
Dynamic Viscosity (mPa s or cP)				
	Temperature (°C)			
	0	153		ESD 98
		154	*(a)*	ESD 98
	15	73		ESD 98
		73	*(a)*	ESD 98
	25	47		ESD 98
		48	*(a)*	ESD 98
(a) with dye				
Hydrocarbon Groups (weight %)				
	Saturates	2		ESD 99
		3	*(a)*	ESD 99
	Aromatics	0		ESD 99
		1	*(a)*	ESD 99
	Resins	97		ESD 99
		96	*(a)*	ESD 99
	Asphaltenes	0		ESD 99
		0	*(a)*	ESD 99

	Data	Notes	Reference ID
Adhesion (g/m²)			
	15	*SD = 3*	ESD 98
With dye	43	*SD = 2*	ESD 98
Volatile Organic Compounds (ppm)			
Benzene	11		ESD 99
	26	*(a)*	ESD 99
Toluene	3		ESD 99
	3	*(a)*	ESD 99
Ethylbenzene	0		ESD 99
	0	*(a)*	ESD 99
Xylenes	0		ESD 99
	2	*(a)*	ESD 99
C3-benzenes	2		ESD 99
	1	*(a)*	ESD 99
Total BTEX	15		ESD 99
	31	*(a)*	ESD 99
Total VOCs	17		ESD 99
	32	*(a)*	ESD 99

(a) with dye

Surface Tension (mN/m or dynes/cm)

Temperature (°C)			
0	32.4		ESD 00
	32.3	*(a)*	ESD 00
15	31.8		ESD 98
	31.6	*(a)*	ESD 98
25	31.2		ESD 00
	31.4	*(a)*	ESD 00

(a) with dye

Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)

These measurements were very difficult to make with the Kruss automatic tensiometer. The instrument had difficulty determining the endpoint. The data shown were taken when the ring broke through the interface , as would have been done with a manual instrument.

Temperature (°C)			
0	NM		ESD 00
	NM	*(a)*	ESD 00
15	9.2		ESD 98
	7.8	*(a)*	ESD 98
25	6.3		ESD 00
	5.2	*(a)*	ESD 00

(a) with dye

	Data	Notes	Reference ID
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)			
These measurements were very difficult to make with the Kruss automatic tensiometer. The instrument had difficulty determining the endpoint. The data shown were taken when the ring broke through the interface , as would have been done with a manual instrument.			
Temperature (°C)			
0	NM		ESD 00
	NM	*(a)*	ESD 00
15	10.5		ESD 98
	9.8	*(a)*	ESD 98
25	NM		ESD 00
	NM	*(a)*	ESD 00

(a) with dye

Origin: Angola		**Data**	**Notes**	**Reference ID**
API Gravity				
		33.7		OGJ 99
Sulphur (weight %)				
		0.23		OGJ 99
Pour Point (°C)				
		18		OGJ 99
Kinematic Viscosity (mm²/s or cSt)				
	Temperature (°C)			
	38	10		OGJ 99
Hydrocarbon Groups (weight %)				
	Asphaltenes	1		OGJ 99
	Waxes	15		OGJ 99
Yield on Crude				
	Boiling Range (°C)			
Weight %	C1-C5	2		OGJ 99
Volume %	Gasoline (C5-80)	4		OGJ 99
	Heavy naphtha (80-150)	10		OGJ 99
	Gas oil (230-340)	20		OGJ 99
	Heavy gas oil (340-510)	26		OGJ 99
	Residue (>340)	52		OGJ 99
Metals (ppm)				
	Nickel	15		OGJ 99
	Vanadium	5		OGJ 99

Spray Oil

		Data	Notes	Reference ID
Synonyms:	Dormant Oil Foliage Oil Plant Spray Oil			
Colour				
		Light brown		CHRIS 91
Flash Point (°C)				
		min 60		CHRIS 91
Flammability Limits in Air (volume %)				
		0.6 to 4.6		CHRIS 91
Odour Threshold (ppm)				
		1.00		CHRIS 91
Density (g/mL)				
	Temperature (°C)			
	15	0.8194		CHRIS 91
Dynamic Viscosity (mPa·s or cP)				
	Temperature (°C)			
	15	2		CHRIS 91
Biological Oxygen Demand (%)				
	Time (days)			
	5	53		CHRIS 91

		Data	Notes	Reference ID
Origin: North Sea, Norway				
Data from OGJ 99 were originally published in 1990.				
API Gravity				
		37.8		OGJ 99
		37.8		ESD 93
Equation(s) for Predicting Evaporation				
%Ev = (2.67 + 0.060T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 96
Sulphur (weight %)				
Evaporation (weight %)				
0		0.26		ESD 97
		0.28		OGJ 99
13		0.30		ESD 97
23		0.34		ESD 97
37		0.43		ESD 97
Water Content (volume %)				
		< 0.1		OGJ 99
Flash Point (°C)				
Evaporation (weight %)				
0		-12		ESD 94
13		32		ESD 95
17		38		Daling 91
23		72		ESD 95
28		64		Daling 91
37		> 95		ESD 95
38		111		Daling 91
Density (g/mL)				
Evaporation (weight %)	Temperature (°C)			
0	0	0.8478		ESD 93
	15	0.8354		ESD 93
13	0	0.8770		ESD 95
	15	0.8642		ESD 95
23	0	0.8903		ESD 94
	15	0.8778		ESD 94
37	0	0.9074		ESD 94
	15	0.8957		ESD 94

Statfjord

		Data	Notes	Reference ID
Pour Point (°C)				
Evaporation (weight %)				
0		-3		OGJ 99
		0		Daling 91
		-2		ESD 93
13		3		ESD 95
17		21		Daling 91
23		17		ESD 95
28		24		Daling 91
37		24		ESD 95
38		27		Daling 91
Dynamic Viscosity (mPa·s or cP)				
Evaporation (weight %)	Temperature (°C)			
0	0	31		ESD 93
	13	7		Daling 91
	15	6		ESD 93
13	0	101		ESD 95
	15	17		ESD 95
17	13	20		Daling 91
23	0	380		ESD 94
	15	47		ESD 94
28	13	57		Daling 91
37	0	1,846	*(a)*	ESD 94
		7,227	*(b)*	ESD 94
		88,750	*(c)*	ESD 94
	15	241		ESD 94
38	13	221		Daling 91
shear rate = (a) 100/s; (b) 10/s; (c) 1/s				
Kinematic Viscosity (mm²/s or cSt)				
	Temperature (°C)			
	20	6		OGJ 99
Chemical Dispersibility (volume %)				
Relatively low dispersibility with Finasol OSR-5. (Daling 91)				
	Corexit 9500	40		ESD 95
	Corexit 9527	35		ESD 93
	Dasic LTS	15		ESD 93
	Enersperse 700	15		ESD 93

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
Evaporation (weight %)				
0	Saturates	68		ESD 94
	Aromatics	26		ESD 94
	Resins	6		ESD 94
	Asphaltenes	2		ESD 94
	Waxes	8		ESD 98
13	Saturates	62		ESD 96
	Aromatics	30		ESD 96
	Resins	7		ESD 96
	Asphaltenes	1		ESD 96
	Waxes	7		ESD 98
23	Saturates	60		ESD 96
	Aromatics	32		ESD 96
	Resins	7		ESD 96
	Asphaltenes	2		ESD 96
	Waxes	8		ESD 98
37	Saturates	55		ESD 96
	Aromatics	33		ESD 96
	Resins	10		ESD 96
	Asphaltenes	2		ESD 96
	Waxes	8		ESD 98
38	Saturates	50		Daling 91
	Aromatics	43		Daling 91
	Resins	6		Daling 91
	Asphaltenes	1		Daling 91
	Waxes	7		Daling 91
Adhesion (g/m²)				
Evaporation (weight %)				
0		14	*SD = 2*	ESD 95
13		16	*SD = 3*	ESD 95
23		20	*SD = 4*	ESD 95
37		62	*SD = 10*	ESD 95

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
Evaporation (weight %)				
0	Benzene	2,920		ESD 94
	Toluene	8,660		ESD 94
	Ethylbenzene	1,340		ESD 94
	Xylenes	6,510		ESD 94
	C3-benzenes	6,270		ESD 94
	Total BTEX	19,430		ESD 94
	Total VOCs	25,690		ESD 94
13	Benzene	260		ESD 96
	Toluene	6,720		ESD 96
	Ethylbenzene	1,470		ESD 96
	Xylenes	7,600		ESD 96
	C3-benzenes	8,070		ESD 96
	Total BTEX	16,050		ESD 96
	Total VOCs	24,120		ESD 96
23	Benzene	0		ESD 96
	Toluene	230		ESD 96
	Ethylbenzene	320		ESD 96
	Xylenes	2,350		ESD 96
	C3-benzenes	5,340		ESD 96
	Total BTEX	2,900		ESD 96
	Total VOCs	8,240		ESD 96
37	Benzene	0		ESD 96
	Toluene	0		ESD 96
	Ethylbenzene	0		ESD 96
	Xylenes	0		ESD 96
	C3-benzenes	0		ESD 96
	Total BTEX	0		ESD 96
	Total VOCs	0		ESD 96
Surface Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	28.5		ESD 94
	15	26.1		ESD 94
13	0	29.3		ESD 95
	15	28.3		ESD 95
23	0	30.4		ESD 95
	15	29.4		ESD 95
37	0	DNF		ESD 95
	15	31.0		ESD 95

		Data	Notes	Reference ID
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	27.6		ESD 94
	13	23.0		Daling 91
	15	23.2		ESD 94
13	0	23.3		ESD 95
	15	24.7		ESD 95
17	13	16.0		Daling 91
23	0	18.0		ESD 95
	15	25.0		ESD 95
28	13	15.0		Daling 91
37	0	DNF		ESD 95
	15	22.0		ESD 95
38	13	16.0		Daling 91
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	27.3		ESD 94
	15	24.4		ESD 94
13	0	22.6		ESD 95
	15	25.0		ESD 95
23	0	29.4		ESD 95
	15	25.2		ESD 95
37	0	DNF		ESD 95
	15	22.9		ESD 95

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (weight %)	Boiling Point (°C)			
0	40	2		ESD 96
	60	3		ESD 96
	80	3		ESD 96
	100	5		ESD 96
	120	17		ESD 96
	140	20		ESD 96
	160	23		ESD 96
	180	26		ESD 96
	200	30		ESD 96
	250	39		ESD 96
	300	49		ESD 96
	350	59		ESD 96
	400	68		ESD 96
	450	77		ESD 96
	500	84		ESD 96
	550	89		ESD 96
	600	94		ESD 96
	650	97		ESD 96
	700	99		ESD 96
13	100	2		ESD 95
	120	4		ESD 95
	140	8		ESD 95
	160	12		ESD 95
	180	16		ESD 95
	200	20		ESD 95
	250	31		ESD 95
	300	43		ESD 95
	350	55		ESD 95
	400	65		ESD 95
	450	75		ESD 95
	500	83		ESD 95
	550	90		ESD 95
	600	94		ESD 95
	650	98		ESD 95
	700	99		ESD 95
23	140	1		ESD 95
	160	3		ESD 95
	180	6		ESD 95
	200	10		ESD 95
	250	22		ESD 95
	300	36		ESD 95

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (weight %)	Boiling Point (°C)			
23	350	49		ESD 95
	400	60		ESD 95
	450	72		ESD 95
	500	81		ESD 95
	550	88		ESD 95
	600	93		ESD 95
	650	97		ESD 95
	700	99		ESD 95
37	250	6		ESD 95
	300	20		ESD 95
	350	36		ESD 95
	400	50		ESD 95
	450	64		ESD 95
	500	76		ESD 95
	550	85		ESD 95
	600	91		ESD 95
	650	96		ESD 95
	700	98		ESD 95
Yield on Crude (weight %)				
	Boiling Range (°C)			
	Light ends	4		OGJ 99
	Gasoline (C5-65)	3		OGJ 99
	Light naphtha (65-90)	4		OGJ 99
	Naphtha (90-150)	12		OGJ 99
	Heavy naphtha (150-180)	6		OGJ 99
	Light gas oil (180-240)	10		OGJ 99
	Gas oil (240-320)	16		OGJ 99
	Gas oil (320-375)	10		OGJ 99
	Heavy gas oil (375-420)	6		OGJ 99
	Heavy gas oil (420-525)	17		OGJ 99
	Heavy gas oil (525-565)	4		OGJ 99
	Residue (>565)	10		OGJ 99
Metals (ppm)				
	Nickel	< 1		OGJ 99
	Sodium	13		OGJ 99
	Vanadium	1		OGJ 99

Sumatran Heavy

Origin: Indonesia
Synonyms: Duri

Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".

		Data	Notes	Reference ID
API Gravity				
		20.3		ESD 92
		21.1		OGJ 99
Equation(s) for Predicting Evaporation				
%Ev = (-0.11 + 0.013T)sqrt(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 97
Sulphur (weight %)				
Evaporation (volume %)				
0		0.20		OGJ 99
		0.18		ESD 93
5		0.19		ESD 93
Water Content (weight %)				
Evaporation (volume %)				
0		0.8		ESD 98
5		0.2		ESD 98
Flash Point (°C)				
Evaporation (volume %)				
0		54		ESD 92
5		> 90		ESD 92
Density (g/mL)				
Evaporation (volume %)	Temperature (°C)			
0	0	0.9428		ESD 92
	15	0.9312		ESD 92
5	0	0.9451		ESD 92
	15	0.9374		ESD 92
Pour Point (°C)				
Evaporation (volume %)				
0		18		ESD 92
		12		OGJ 99
5		22		ESD 92

		Data	Notes	Reference ID
Dynamic Viscosity (mPa·s or cP)				
Evaporation (volume %)	Temperature (°C)			
0	0	NM		ESD 92
	15	13,300	*(a)*	ESD 92
		117,500	*(b)*	ESD 92
5	0	NM		ESD 92
	15	12,900	*(a)*	ESD 92
		235,500	*(b)*	ESD 92
Shear rate = (a) 10/s; (b) 1/s				
Kinematic Viscosity (mm²/s or cSt)				
	Temperature (°C)			
	50	132		OGJ 99
Emulsion Formation				
Evaporation (volume %)				
0	Visual stability	none		ESD 98
	Water content (wt %)	21		ESD 98
5	Visual stability	none		ESD 98
	Water content (wt %)	2		ESD 98
Chemical Dispersibility (volume %)				
Evaporation (volume %)				
0	Corexit 9500	10		ESD 98
5		0		ESD 99
Hydrocarbon Groups (weight %)				
Evaporation (volume %)				
0	Saturates	46		ESD 95
	Aromatics	30		ESD 95
	Resins	13		ESD 95
	Asphaltenes	10		ESD 97
	Waxes	16		OGJ 99
		5		ESD 98
5	Saturates	45		ESD 97
	Aromatics	32		ESD 97
	Resins	16		ESD 97
	Asphaltenes	8		ESD 97
	Waxes	4		ESD 97
Adhesion (g/m²)				
Evaporation (volume %)				
0		92	*SD = 19*	ESD 96
5		115	*SD = 13*	ESD 96

Sumatran Heavy

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
Evaporation (volume %)				
0	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	50		ESD 94
	Xylenes	240		ESD 94
	C3-benzenes	990		ESD 94
	Total BTEX	290		ESD 94
	Total VOCs	1,280		ESD 94
5	Benzene	0		ESD 94
	Toluene	0		ESD 94
	Ethylbenzene	0		ESD 94
	Xylenes	0		ESD 94
	C3-benzenes	310		ESD 94
	Total BTEX	0		ESD 94
	Total VOCs	310		ESD 94
Surface Tension (mN/m or dynes/cm)				
Evaporation (volume %)	Temperature (°C)			
0	0	NM		ESD 92
	15	NM		ESD 92
5	0	NM		ESD 92
	15	NM		ESD 92
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (volume %)	Temperature (°C)			
0	0	NM		ESD 92
	15	NM		ESD 92
5	0	NM		ESD 92
	15	NM		ESD 92
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (volume %)	Temperature (°C)			
0	0	NM		ESD 92
	15	NM		ESD 92
5	0	NM		ESD 92
	15	NM		ESD 92

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (volume %)	Boiling Point (°C)			
0	120	1		ESD 94
	140	2		ESD 94
	160	2		ESD 94
	180	4		ESD 94
	200	5		ESD 94
	250	10		ESD 94
	300	16		ESD 94
	350	22		ESD 94
	400	29		ESD 94
	450	38		ESD 94
	500	46		ESD 94
	550	54		ESD 94
	600	63		ESD 94
	650	72		ESD 94
	700	81		ESD 94
5	180	1		ESD 96
	200	2		ESD 96
	250	7		ESD 96
	300	14		ESD 96
	350	21		ESD 96
	400	28		ESD 96
	450	39		ESD 96
	500	48		ESD 96
	550	56		ESD 96
	600	65		ESD 96
	650	75		ESD 96
	700	84		ESD 96
Yield on Crude (volume %)				
	Boiling Range (°C)			
	Light naphtha (C5-93)	1		OGJ 99
	Heavy naphtha (93-171)	3		OGJ 99
	Kerosene (171-238)	6		OGJ 99
	Gas oil (238-343)	15		OGJ 99
	Reduced crude (>650)	76		OGJ 99

Sumatran Heavy

		Data	Notes	Reference ID
Metals (ppm)				
	Barium	< 0.3		Cao 92
	Chromium	< 2		Cao 92
	Copper	< 0.6		Cao 92
	Iron	13		Cao 92
	Lead	< 3		Cao 92
	Magnesium	3		Cao 92
	Molybdenum	< 0.6		Cao 92
	Nickel	31		Cao 92
	Titanium	< 0.6		Cao 92
	Vanadium	1		Cao 92
	Zinc	0.6		Cao 92

		Data	Notes	Reference ID
Origin: Indonesia				
Synonyms: Minas				
Data from OGJ 99 were originally published in 1983 as part of a series entitled "Guide to Export Crudes for the '80s".				
API Gravity				
		32.9		ESD 92
		34.5		OGJ 99
Equation(s) for Predicting Evaporation				
%Ev = (0.96 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)				ESD 97
Sulphur (weight %)				
		0.07		ESD 93
		0.08		OGJ 99
Water Content (weight %)				
		0.2		ESD 98
Flash Point (°C)				
		17		ESD 92
Density (g/mL)				
	Temperature (°C)			
	0	0.8770		ESD 92
	15	0.8600		ESD 92
Pour Point (°C)				
		38		ESD 92
		36		OGJ 99
Dynamic Viscosity (mPa·s or cP)				
	Temperature (°C)			
	0	NM		ESD 92
	15	41,480	*(a)*	ESD 92
		322,800	*(b)*	ESD 92
Shear rate = (a) 10/s; (b) 1/s				
Kinematic Viscosity (mm²/s or cSt)				
	Temperature (°C)			
	50	12		OGJ 99
Emulsion Formation				
	Visual stability	none		ESD 98
	Water content (wt %)	13		ESD 98
Chemical Dispersibility (volume %)				
	Corexit 9500	0		ESD 98

Sumatran Light

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
	Saturates	70		ESD 95
	Aromatics	15		ESD 95
	Resins	6		ESD 95
	Asphaltenes	8		ESD 97
	Waxes	24		ESD 98
Adhesion (g/m²)				
Very waxy oil; difficult to measure				
		9	*SD = 2*	ESD 96
Volatile Organic Compounds (ppm)				
	Benzene	190		ESD 94
	Toluene	370		ESD 94
	Ethylbenzene	90		ESD 94
	Xylenes	840		ESD 94
	C3-benzenes	1,670		ESD 94
	Total BTEX	1,490		ESD 94
	Total VOCs	3,160		ESD 94
Surface Tension (mN/m or dynes/cm)				
	Temperature (°C)			
	0	NM		ESD 92
	15	NM		ESD 92
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
	Temperature (°C)			
	0	NM		ESD 92
	15	NM		ESD 92
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
	Temperature (°C)			
	0	NM		ESD 92
	15	NM		ESD 92

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
	Boiling Point (°C)			
	80	1		ESD 94
	100	3		ESD 94
	120	4		ESD 94
	140	6		ESD 94
	160	8		ESD 94
	180	10		ESD 94
	200	13		ESD 94
	250	20		ESD 94
	300	28		ESD 94
	350	38		ESD 94
	400	47		ESD 94
	450	60		ESD 94
	500	69		ESD 94
	550	75		ESD 94
	600	82		ESD 94
	650	87		ESD 94
	700	92		ESD 94
Yield on Crude (volume %)				
	Boiling Range (°C)			
	Light naphtha (C5-93)	3		OGJ 99
	Heavy naphtha (93-171)	9		OGJ 99
	Kerosene (171-238)	11		OGJ 99
	Gas oil (238-343)	20		OGJ 99
	Reduced crude (>343)	57		OGJ 99
Metals (ppm)				
	Barium	< 0.3		Cao 92
	Chromium	< 2		Cao 92
	Copper	2		Cao 92
	Iron	8		Cao 92
	Lead	< 3		Cao 92
	Magnesium	2		Cao 92
	Molybdenum	< 0.6		Cao 92
	Nickel	9		Cao 92
	Titanium	< 0.6		Cao 92
	Vanadium	0.7		Cao 92
	Zinc	< 0.6		Cao 92
Acute Toxicity of Water Soluble Fraction (mg/L)				
	Test Organism			
48h LC50	Daphnia magna	> 2	*(a)*	Harris 94

(a) results based on GC headspace analysis

Swanson River

Origin: Cook Inlet, Alaska, USA

Synonyms: Cook Inlet

	Data	Notes	Reference ID
This oil was analyzed as part of a project entitled "Assessment of the Freshwater Biodegradation Potential of Oils Commonly Transported in Alaska". The sample was collected at the Swanson River oil field, Kenai Peninsula.			Blenkinsopp 97
API Gravity			
	36.5		ESD 96
Equation(s) for Predicting Evaporation			
%Ev = (3.58 + 0.045T)ln(t) Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)			ESD 96

Sulphur (weight %)

Evaporation (weight %)	Data	Reference ID
0	0.13	ESD 97
40	0.13	ESD 97

Water Content (weight %)

Evaporation (weight %)	Data	Reference ID
0	0.2	ESD 98
40	< 0.1	ESD 98

Flash Point (°C)

Evaporation (weight %)	Data	Reference ID
0	-23	ESD 96
40	> 95	ESD 96

Density (g/mL)

Evaporation (weight %)	Temperature (°C)	Data	Reference ID
0	0	0.8534	ESD 96
	15	0.8420	ESD 96
40	0	0.9233	ESD 96
	15	0.9143	ESD 96

Pour Point (°C)

Evaporation (weight %)	Data	Reference ID
0	-23	ESD 96
40	10	ESD 96

Dynamic Viscosity (mPa·s or cP)

Evaporation (weight %)	Temperature (°C)	Data	Notes	Reference ID
0	0	12		ESD 96
	15	6		ESD 96
40	0	2,329	*(a)*	ESD 96
		8,800	*(b)*	ESD 96
		47,000	*(c)*	ESD 96
	15	152	*(d)*	ESD 96

Shear rate = (a) 50/s; (b) 10/s; (c) 1/s
(d) slightly non-newtonian

		Data	Notes	Reference ID
Emulsion Formation				
Evaporation (weight%)				
0	Visual stability	meso		ESD 98
	Viscosity (mPa·s)	2,900		ESD 98
	Complex modulus (mPa)	10,000		ESD 98
	Water content (wt %)	76		ESD 98
40	Visual stability	stable		ESD 98
	Viscosity (mPa·s)	29,000		ESD 98
	Complex modulus (mPa)	290,000		ESD 98
	Water content (wt %)	81		ESD 98
Chemical Dispersibility (volume %)				
Evaporation (weight %)				
0	Corexit 9500	36		ESD 98
	Corexit 9527	60		ESD 97
	Enersperse 700	4		ESD 97
40	Corexit 9500	10		ESD 98
Hydrocarbon Groups (weight %)				
Evaporation (weight %)				
0	Saturates	65		ESD 97
	Aromatics	25		ESD 97
	Resins	6		ESD 97
	Asphaltenes	5		ESD 97
40	Saturates	56		ESD 97
	Aromatics	29		ESD 97
	Resins	7		ESD 97
	Asphaltenes	7		ESD 97
Adhesion (g/m²)				
Evaporation (weight %)				
0		12	*SD = 2*	ESD 96
40		23	*SD = 2*	ESD 96

Swanson River

		Data	Notes	Reference ID
Volatile Organic Compounds (ppm)				
Evaporation (weight %)				
0	Benzene	873		ESD 97
	Toluene	2,571		ESD 97
	Ethylbenzene	1,988		ESD 97
	Xylenes	9,284		ESD 97
	C3-benzenes	7,042		ESD 97
	Total BTEX	14,716		ESD 97
	Total VOCs	21,758		ESD 97
40	Benzene	34		ESD 97
	Toluene	4		ESD 97
	Ethylbenzene	1		ESD 97
	Xylenes	1		ESD 97
	C3-benzenes	6		ESD 97
	Total BTEX	41		ESD 97
	Total VOCs	47		ESD 97
Surface Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	26.7		ESD 96
	15	27.0		ESD 96
40	0	DNF		ESD 96
	15	30.7		ESD 96
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	21.4		ESD 96
	15	23.8		ESD 96
40	0	DNF		ESD 96
	15	19.9		ESD 96
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	25.2		ESD 96
	15	24.6		ESD 96
40	0	DNF		ESD 96
	15	23.5		ESD 96

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
Evaporation (weight %)	Boiling Point (°C)			
0	40	4		ESD 96
	60	4		ESD 96
	80	6		ESD 96
	100	9		ESD 96
	120	14		ESD 96
	140	19		ESD 96
	160	23		ESD 96
	180	28		ESD 96
	200	32		ESD 96
	250	42		ESD 96
	300	53		ESD 96
	350	64		ESD 96
	400	72		ESD 96
	450	80		ESD 96
	500	86		ESD 96
	550	90		ESD 96
	600	94		ESD 96
	650	97		ESD 96
	700	98		ESD 96
40	250	9		ESD 96
	300	24		ESD 96
	350	41		ESD 96
	400	54		ESD 96
	450	67		ESD 96
	500	76		ESD 96
	550	84		ESD 96
	600	89		ESD 96
	650	93		ESD 96
	700	96		ESD 96

Sweet Blend

Origin: Alberta, Canada		Data	Notes	Reference ID
Flash Point (°C)				
		< 9	*(a)*	Twardus 80
(a) open cup				
Fire Point (°C)				
		10		Twardus 80
Density (g/mL)				
Evaporation (volume %)	Temperature (°C)			
0	0	0.8400		Mackay 82a
	5	0.8380		Mackay 82a
	10	0.8350		Mackay 82a
	15	0.8310		Mackay 82a
	20	0.8290		Mackay 82a
	25	0.8250		Mackay 82a
10	20	0.8470		Mackay 82a
20		0.8590		Mackay 82a
Pour Point (°C)				
Evaporation (volume %)				
0		-33		Mackay 82a
		-35		Twardus 80
10		-27		Mackay 82a
20		6		Mackay 82a
Dynamic Viscosity (mPa·s or cP)				
	Temperature (°C)			
	0	21		Mackay 82a
		20		Twardus 80
	5	12		Mackay 82a
	10	8		Mackay 82a
		14		Twardus 80
	15	5		Mackay 82a
	20	5		Mackay 82a
		8		Twardus 80
	25	4		Mackay 82a

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
Evaporation (volume %)				
0	Saturates	71		Mackay 82a
	Aromatics	21		Mackay 82a
	Resins	5		Mackay 82a
	Asphaltenes	4		Mackay 82a
	Waxes	2		Mackay 82a
10	Saturates	83		Mackay 82a
	Aromatics	12		Mackay 82a
	Resins	2		Mackay 82a
	Asphaltenes	3		Mackay 82a
	Waxes	3		Mackay 82a
20	Saturates	81		Mackay 82a
	Aromatics	13		Mackay 82a
	Resins	3		Mackay 82a
	Asphaltenes	4		Mackay 82a
	Waxes	3		Mackay 82a
Surface Tension (mN/m or dynes/cm)				
	Room temperature	24.0		Twardus 80
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (volume %)				
0	Room temperature	19.5		Mackay 82a
10		16.9		Mackay 82a
20		20.2		Mackay 82a
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
	Room temperature	27.3		Twardus 80
Distillation (°C)				
	Total Distillate (volume %)			
	0	50		Twardus 80
	10	95		Twardus 80
	20	130		Twardus 80
	30	185		Twardus 80
	40	230		Twardus 80
	50	280		Twardus 80
	60	335		Twardus 80
	70	370		Twardus 80
	80	380		Twardus 80
	90	385		Twardus 80
Aqueous Solubility (mg/L)				
	Temperature (°C)			
	Unknown	64	*(a)*	Murray 84

(a) distilled water

Synthetic

		Data	Notes	Reference ID
Origin: Alberta, Canada				
From Syncrude, August 1986.				
API Gravity				
		32.6		EETD 86
Sulphur (weight %)				
Evaporation (weight %)				
0		0.23		EETD 86
11		0.15		EETD 86
22		0.20		EETD 86
Flash Point (°C)				
		< -21		EETD 86
Reid Vapour Pressure (kPa)				
		42		ESD 91
Density (g/mL)				
Evaporation (weight %)	Temperature (°C)			
0	0	0.8721		EETD 86
	15	0.8614		EETD 86
11	0	0.8969		EETD 86
	15	0.8868		EETD 86
22	0	0.9160		EETD 86
	15	0.9058		EETD 86
Pour Point (°C)				
Evaporation (weight %)				
0		-72		EETD 86
11		-45		EETD 86
22		-36		EETD 86
Dynamic Viscosity (mPa·s or cP)				
Evaporation (weight %)	Temperature (°C)			
0	0	9		EETD 86
	15	5		EETD 86
11	0	16		EETD 86
	15	9		EETD 86
22	0	42		EETD 86
	15	19		EETD 86
Chemical Dispersibility (volume %)				
	Corexit 9500	40		ESD 94
	Dasic LTS	25		EETD 89
	Enersperse 700	65		EETD 89

		Data	Notes	Reference ID
Hydrocarbon Groups (weight %)				
	Saturates	82		EETD 86
	Aromatics	17		EETD 86
	Resins	1		EETD 86
	Asphaltenes	0		ESD 91
	Waxes	0		ESD 91
Volatile Organic Compounds (ppm)				
	Benzene	70		ESD 94
	Toluene	3,460		ESD 94
	Ethylbenzene	1,050		ESD 94
	Xylenes	4,390		ESD 94
	C3-benzenes	5,960		ESD 94
	Total BTEX	9,610		ESD 94
	Total VOCs	15,570		ESD 94
Surface Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	28.1		EETD 86
	15	25.7		EETD 86
11	0	31.0		EETD 86
	15	28.4		EETD 86
22	0	31.6		EETD 86
	15	30.1		EETD 86
Oil/Salt Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	29.3		EETD 86
	15	29.0		EETD 86
11	0	18.6		EETD 86
	15	29.6		EETD 86
22	0	17.8		EETD 86
	15	15.5		EETD 86
Oil/Fresh Water Interfacial Tension (mN/m or dynes/cm)				
Evaporation (weight %)	Temperature (°C)			
0	0	31.3		EETD 86
	15	30.8		EETD 86
11	0	20.1		EETD 86
	15	30.5		EETD 86
22	0	19.2		EETD 86
	15	18.2		EETD 86

Synthetic

		Data	Notes	Reference ID
Boiling Point Distribution (weight %)				
	Boiling Point (°C)			
	80	2		ESD 94
	100	5		ESD 94
	120	7		ESD 94
	140	10		ESD 94
	160	12		ESD 94
	180	15		ESD 94
	200	19		ESD 94
	250	32		ESD 94
	300	47		ESD 94
	350	64		ESD 94
	400	79		ESD 94
	450	91		ESD 94
	500	97		ESD 94
	550	99		ESD 94
Metals (ppm)				
	Barium	< 0.3		Cao 92
	Chromium	< 2		Cao 92
	Copper	< 0.6		Cao 92
	Iron	< 3		Cao 92
	Lead	< 3		Cao 92
	Magnesium	1		Cao 92
	Molybdenum	< 0.6		Cao 92
	Nickel	< 1		Cao 92
	Titanium	< 0.6		Cao 92
	Vanadium	< 0.6		Cao 92
	Zinc	< 0.6		Cao 92
Aqueous Solubility (mg/L)				
	Temperature (°C)			
	20 (approx.)	2	*(a)*	MacLean 89
		5	*(b)*	MacLean 89
	22	30	*(a)*	Suntio 86
	Unknown	44	*(c)*	Murray 84

(a) fresh water; (b) salt water; (c) distilled water

		Data	Notes	Reference ID
Acute Toxicity of Water Soluble Fraction (mg/L)				
	Test Organism			
48h EC50	Daphnia magna	0.2	*(a)*	MacLean 89
		3	*(b)*	EETD 89
	Artemia spp.	1	*(a)*	MacLean 89
		7	*(b)*	EETD 89
48h LC50	Daphnia magna	0.8	*(a)*	MacLean 89
		11	*(b)*	EETD 89
	Artemia spp.	2	*(a)*	MacLean 89
		9	*(b)*	EETD 89

(a) results based on fluorescence spectroscopy; (b) results based on GC purge-and-trap analysis