

NWSHELF - SUMMARY OF MAJOR CUTS

	Whole Crude	Light Naphtha	Medium Naphtha	Heavy Naphtha	Kero	Atm Gas Oil	Light VGO	Heavy VGO	Vacuum Resid	Atm Resid
TBP Temp At Start, °C	Start	10	80	150	200	260	340	400	400	340
TBP Temp At End, °C	End	80	150	200	260	340	400	400	End	End
TBP Temp At Start, °F	Start	55	175	300	400	500	650	750	750	650
TBP Temp At End, °F	End	175	300	400	500	650	750	750	End	End
Yield at Start, vol%		6.1	35.2	69.5	84.1	92.6	98.0	100.0	100.0	98.0
Yield at End, vol%		35.2	69.5	84.1	92.6	98.0	100.0	100.0	100.0	100.0
Yield of Cut (wt% of Crude)		25.9	35.2	15.7	9.5	6.4	2.4			2.4
Yield of Cut (vol% of Crude)		29.1	34.3	14.6	8.4	5.4	2.0	0.0	0.0	2.0
Gravity, °API	61.2	84.6	56.0	48.1	39.0	32.9	26.0			26.0
Specific Gravity	0.7344	0.6546	0.7547	0.7879	0.8299	0.8608	0.8983			0.8983
Sulfur, wt%	0.01	0.00	0.00	0.00	0.01	0.04	0.07			0.07
Mercaptan Sulfur, ppm	1	0	1	2	2	1	1			1
Nitrogen, ppm	13			0	2	41	428			428
Hydrogen, wt%	15.3	16.3	14.6	15.3	14.9	14.5	13.8			13.8
Viscosity @ 40 °C (104 °F), cSt	1			0.92	1.92	3.76	21.5			22
Viscosity @ 50 °C (122 °F), cSt	0.555			0.829	1.63	3.02	14.7			14.7
Viscosity @ 100 °C (212 °F), cSt	0.420			0.543	0.878	1.35	3.90			3.90
Viscosity @ 135 °C (275 °F), cSt	0.364			0.439	0.651	0.926	2.17			2.17
Freeze Point, °C				-74.000	-43.000	-13.000	24.0			24.0
Freeze Point, °F				-101	-46	8	75			75
Pour Point, °C	-51			-74	-39	-20	9			9
Pour Point, °F	-60			-101	-38	-4	48			48
Smoke Point, mm (ASTM)				29	23	19	16			16
Aniline Point, °C				56	61	68	77			77
Aniline Point, °F				132	142	155	170			170
Total Acid Number, mg KOH/g	0.02			0.0	0.1	0.1	0.1			0.1
Cetane Index, ASTM D976				35	43	46	43			43
Diesel Index				63	56	51	44			44
Characterization Factor (K Factor)	12.3	12.7	11.6	11.8	11.7	11.6	11.7			11.7
Research Octane Number, Clear		70.2	60.1	43.7						
Motor Octane Number, Clear		68.7	58.1							
Paraffins, vol%		89.2	40.6	37.8	44.3	22.8	19.8			19.8
Naphthenes, vol%		10.8	53.3	50.9	35.2	53.4	55.1			55.1
Aromatics, vol%		0.0	6.1	11.3	20.3	23.2	24.4			24.4
Thiophenes, vol%				0.0	0.1	0.6	0.6			0.6
Molecular Weight	111	97	107	141	172	209	284			284
Gross Heating Value, MM BTU/bbl	5.25	4.79	5.34	5.53	5.74	5.90	6.08			6.08
Gross Heating Value, kcal/kg	11340	11610	11230	11120	10990	10880	10750			10750
Gross Heating Value, MJ/kg	47.5	48.6	47.0	46.5	46.0	45.5	45.0			45.0
Heptane Asphaltenes, wt%	0.0						0.1			0.1
Micro Carbon Residue, wt%	0.0						0.4			0.4
Ramsbottom Carbon, wt%	0.0						0.3			0.3
Vanadium, ppm	0						1			1
Nickel, ppm	0						1			1
Iron, ppm	0						3			3

NWSHELF - DISTILLATION SUMMARY

	Whole Crude	Light Naphtha	Medium Naphtha	Heavy Naphtha	Kero	Atm Gas Oil	Light VGO	Heavy VGO	Vacuum Resid	Atm Resid
TBP Temp At Start, °C		10	80	150	200	260	340	400	400	340
TBP Temp At End, °C		80	150	200	260	340	400	400	End	End
TBP Temp At Start, °F		55	175	300	400	500	650	750	750	650
TBP Temp At End, °F		175	300	400	500	650	750	750	End	End
Yield at Start, vol%		6.1	35.2	69.5	84.1	92.6	98.0	100.0	100.0	98.0
Yield at End, vol%		35.2	69.5	84.1	92.6	98.0	100.0	100.0	100.0	100.0
Yield of Cut (wt% of Crude)		25.9	35.2	15.7	9.5	6.4	2.4			2.4
Yield of Cut (vol% of Crude)		29.1	34.3	14.6	8.4	5.4	2.0	0.0	0.0	2.0
TBP Distillation, vol%	°C Start	10	80	150	200	260	340	400	400	340
	°C 5%	22	81	151	207	262	346			346
	°C 10%	27	83	153	209	264	349			349
	°C 30%	34	97	162	219	273	359			359
	°C 50%	47	102	172	231	286	371			371
	°C 70%	63	118	183	243	304	382			382
	°C 90%	70	136	197	254	329	384			384
	°C 95%	72	139	201	258	337				
	°C End	80	180	200	260	340	400	400	End	End
TBP Distillation, vol%	°F Start	50	175	300	400	500	650	750	750	650
	°F 5%	72	177	304	404	503	655			655
	°F 10%	80	181	307	408	507	660			660
	°F 30%	93	206	323	426	523	679			679
	°F 50%	116	215	342	447	546	699			699
	°F 70%	145	245	362	469	580	719			719
	°F 90%	158	276	387	490	624	723			723
	°F 95%	161	282	393	496	638				
	°F End	175	350	400	500	650	750	750	End	End