

CAPLINE SYSTEM
CRUDE OIL PROPERTIES AND QUALITY INDICATORS
 Approved Crude List - 4nd Quarter, 2006

Updated
 January 9, 2007

Section I. Crudes Approved, Moved and Capline Assay Reported																						
MnMn	See Foot-notes	Crude Name	Product Code	Country	Assay Date	Density	RVP	Sulfur	a)Pour Point	Carbon Residue	Viscosity (SSU)			b) H2S	Metals (ppm)				TAN E	SALT	Organic Chlorides (ppm)	
						(API@60)	(psia)	(%)	(degF)	(%)	@60 F	@80 F	@100 F	(ppm)	Whole	Pitch	Whole	Pitch	(mg KOH/g)	(lb/MB)	Whole	Naphtha
Sweet - Low Metals Group																						
		ABO	82909	Nigeria	07/05/05	39.5	6.2	0.14	<-27.4	1.1	38.9	36.5	34.3	<1	0.4	6.2	3.7	54.0	0.76	8	<1	1.2
	☑	AMENAM BLEND	82985	Nigeria	02/03/06	39.7	6.4	0.09	55.0	0.6	64.7	38.9	34.2	<1	4.1	7.6	25.0	31.0	0.30	7	<1	<1
		ALBA COND./QUA IBO 50/50 BLND.	83014	Eq. Guinea	01/11/06	42.5	6.2	0.07	0.0	0.6	36.0	34.0	32.0	<1	0.2	41.8	2.0	6.3	0.20	3	-	-
	☑	BONNY LIGHT	82337	Nigeria	10/28/03	33.4	4.5	0.16	-5.8	1.2	52.7	43.9	39.7	<1	0.5	5.2	3.7	43.0	0.26	18	<1	<1
		BRASS RIVER	82325	Nigeria	11/01/05	35.2	3.6	0.14	-0.4	0.8	43.8	39.7	36.6	<1	0.4	6.6	2.4	36.0	0.29	13	<1	<1
		BONGA	82396	Nigeria	11/10/06	29.5	3.4	0.29	<-27.4	1.3	68.8	55.1	46.4	<1	0.6	6.6	2.3	21.0	0.58	4	<1	<1
	☑	BRENT	82288	U. K.	05/08/04	38.6	5.6	0.38	5.0	1.6	47.4	41.8	37.6	<1	5.5	39.0	1.1	7.6	<0.05	3	<1	1.1
	☑	CABINDA	82345	Angola	03/03/03	32.4	2.7	0.13	59.0	3.5	-	-	73.5	<1	1.7	6.0	17.0	63.0	0.17	3	<1	<1
		DRAUGEN	82575	Norway	11/16/05	37.6	6.2	0.19	<-27.4	1.7	44.0	39.4	36.6	<1	1.4	8.9	1.1	7.1	0.32	2	<1	1.6
	☑	EA CRUDE	82991	Nigeria	06/16/04	35.1	3.9	0.08	26.6	0.0	43.0	39.5	36.6	<1	<0.1	0.5	0.9	22.0	0.14	1	<1	<1
		EKOFISK	82307	Norway	11/11/05	37.5	4.2	0.22	26.6	2.0	53.0	49.9	44.3	<1	1.7	9.2	2.3	13.0	0.10	11	<1	<1
		ERHA	82390	Nigeria	05/13/06	32.7	2.5	0.20	0.0	1.2	62.8	60.7	42.6	<1	0.3	2.7	3.7	30.0	0.36	8	<1	<1
	☑	ESCRAVOS	82338	Nigeria	12/21/04	34.3	3.6	0.16	10.4	1.3	48.1	42.7	39.6	<1	0.6	8.2	4.5	71.0	0.57	3	<1	<1
	☑	FOINAVEN	82424	U. K.	06/12/00	26.6	0.6	0.40	42.8	2.0	478.5	188.6	110.6	<1	4.6	18.8	2.7	10.3	0.16	8	<1	2.0
	☑	FORCADOS	82331	Nigeria	01/21/06	29.1	3.3	0.19	-16.6	0.9	125.7	55.5	47.2	<1	1.2	-	2.9	-	0.43	87	<1	<1
	☑	FORTIES	82308	U.K.	07/02/05	43.6	6.5	0.21	10.4	1.0	36.9	35.2	32.8	<1	1.6	22.0	0.7	9.1	0.13	15	-	-
	☑	GALEOTA	82314	Trinidad	08/24/03	37.8	6.0	0.19	53.6	0.2	-	37.7	35.1	<1	0.1	-	0.1	-	0.60	4	-	-
		GIRASSOL	82583	Angola	10/24/05	30.5	2.2	0.35	-5.8	3.2	124.3	97.7	70.8	<1	4.9	19.0	11.0	43.0	0.36	11	<1	<1
		HEAVY LA SWEET	82720	USA	09/14/06	35.1	4.2	0.28	<-27.4	1.6	54.3	46.9	42.1	<1	0.8	5.6	2.0	17.0	0.43	85	<1	2.0
	☑	HIBERNIA	82139	Canada	08/16/03	34.4	3.2	0.41	42.8	2.3	-	52.0	49.9	<1	1.0	4.5	1.0	4.3	<0.05	12	<1	<1
		HUNGO/LLS BLEND	82967	USA	12/11/04	33.4	3.2	0.46	-16.6	2.7	65.5	52.9	46.1	<1	6.4	34.0	7.7	44.0	0.54	70	<1	<1
	☑	KISSANJE	83007	Angola	01/20/06	30.2	3.3	0.44	<-27.4	3.7	125.7	88.8	60.3	<1	2.5	8.7	8.0	26.0	0.54	4	<1	<1
		LA MISSISSIPPI SWEET	82723	USA	09/14/06	38.7	4.7	0.40	0.0	2.3	46.1	51.4	38.3	<1	3.1	29.0	3.5	24.0	0.14	38	<1	<1
		LIGHT LOUISIANA SWEET	82722	USA	09/18/06	35.4	3.1	0.33	<-27.4	1.2	53.7	46.0	41.4	<1	1.5	14.0	1.8	16.0	0.70	113	<1	1.1
		LLS/SAHARAN (30/70)	83008	USA	08/23/05	42.6	8.2	0.17	-34.0	1.1	39.0	37.0	35.0	<1	1.3	14.0	1.4	14.7	0.16	-	-	-
	☑	NEMBA	82255	Angola	01/10/06	40.2	6.3	0.21	-10.0	2.0	43.9	39.9	36.6	<1	2.8	22.0	5.1	45.0	<0.05	3	<1	<1
	☑	N'KOSSA	82135	Congo	09/22/05	42.0	5.5	0.05	53.6	2.2	48.6	40.3	37.1	<1	0.2	1.1	1.7	14.0	0.04	2	<1	<1
		OSEBERG	82271	Norway	04/26/03	38.7	5.2	0.22	15.8	1.8	45.1	39.4	38.5	<1	1.1	8.6	1.1	8.9	0.11	7	<1	<1
	☑	OSO CONDENSATE	82403	Nigeria	11/13/06	45.3	6.9	0.05	25.0	0.3	-	33.4	31.9	<1	0.1	-	0.4	-	0.12	4	<1	1.1
		PALANCA	82266	Angola	02/19/05	36.8	4.5	0.18	37.4	1.6	57.4	48.0	42.3	<1	1.4	7.8	1.2	9.5	<0.05	4	<1	<1
		PORT HUDSON	82864	USA	03/03/05	41.6	3.1	0.15	-11.2	0.8	38.8	36.3	34.3	<1	1.3	21.0	1.6	26.0	0.22	31	<1	<1
	☑	SAHARAN BLEND	82298	Algeria	09/17/06	44.2	7.1	0.08	<-27.4	0.9	38.4	36.0	33.8	<1	0.2	2.5	0.2	1.0	<0.05	8	<1	<1
		SANTA BARBARA	82251	Venezuela	05/03/06	39.3	4.8	0.48	<-27.4	0.9	39.5	37.5	34.4	<1	6.1	77.0	1.4	17.0	<0.05	3	<1	<1
	☑	SCHIEHALLION	82441	Scotland	04/23/05	25.6	1.1	0.46	37.4	3.0	372.2	186.6	110.9	2.0	7.2	30.2	4.4	18.2	0.31	22	<1	<1
		SOUTH LOUISIANA SWEET	82586	USA	09/18/06	31.8	3.3	0.41	<-27.4	2.5	89.8	66.5	52.6	<1	1.8	7.1	4.6	16.0	0.21	40	<1	<1
	☑	TROLL EXPORT	82421	Norway	07/20/04	28.4	1.9	0.24	10.4	1.6	121.6	75.2	62.2	<1	0.8	3.9	0.8	3.5	1.00	<1	<1	<1
		WEST HACKBERRY SWEET	82267	USA	10/29/05	39.1	5.4	0.27	10.4	1.8	45.2	40.7	37.5	<1	3.9	20.0	4.0	20.0	0.11	<1	<1	<1
	☑	XIKOMBA	82982	Angola	09/27/04	34.6	5.0	0.41	32.0	3.6	84.9	51.4	42.1	<1	5.3	13.0	28.0	65.0	0.15	18	<1	<1
	☑	YOHO CRUDE	82810	Nigeria	05/29/06	39.4	4.1	0.08	55.0	0.6	33.8	36.5	44.0	<1	0.2	4.5	0.9	24.0	0.34	21	<1	<1
		ZAFIRO	82252	Equatorial Guinea	12/23/04	30.7	2.3	0.27	10.4	2.8	73.6	57.7	48.4	<1	2.5	16.0	13.0	82.0	0.73	6	<1	<1
		ZUATA SWEET	82576	Angola	08/18/05	30.8	2.3	0.14	<-27.4	<0.1	63.1	50.2	44.3	<1	0.8	-	0.2	-	<0.05	2	<1	3.4
Sweet - High Metals Group																						
	☑	CUSIANA	82419	Columbia	07/19/05	43.0	6.8	0.12	42.8	0.8	37.9	34.0	32.9	<1	3.1	64.0	1.0	19.0	<0.05	2	6.5	17.1
	☑	QUA IBOE	82339	Nigeria	10/25/06	35.6	4.5	0.12	55.0	1.1	75.0	43.4	39.0	<1	0.4	7.8	3.3	59.0	0.36	6	<1	<1
Intermediate Group																						
	☑	CPC BLEND	CAP00	Kazakstan	07/17/06	43.6	6.2	0.54	<-27.4	0.8	37.5	35.0	33.2	<1	1.8	30.0	0.9	19.0	<0.05	2	<1	<1
	☑	ES SIDER	82329	Libya	06/05/06	36.5	5.4	0.40	-5.0	3.0	70.6	51.8	45.5	25.6	1.6	8.6	5.5	30.0	<0.05	13	<1	<1
	☑	HUNGO	82965	Angola	10/26/06	29.5	3.1	0.60	-16.6	4.8	119.5	90.6	69.4	<1	13.0	51.0	16.0	51.0	0.45	6	<1	<1
		OLMECA	82385	Mexico	09/17/05	38.7	4.8	0.89	<-27.4	0.9	42.5	38.9	36.2	4.0	8.9	58.0	1.5	8.5	0.05	7	<1	1.9

CAPLINE SYSTEM
CRUDE OIL PROPERTIES AND QUALITY INDICATORS

Updated
 January 9, 2007

Approved Crude List - 4nd Quarter, 2006

Mnmn	See Foot- notes	Crude Name	Product Code	Country	Assay Date	Density	RVP	Sulfur	a)Pour Point	Carbon Residue	Viscosity (SSU)			b) H2S	Metals (ppm)				TAN E	SALT	Organic Chlorides (ppm)	
						(API@60)	(psia)	(%)	(degF)	(%)	@60 F	@80 F	@100 F	(ppm)	Vanadium	Nickel		(mg KOH/g)	(lb/MB)	Whole	Naphtha	
Sour Group																						
AXL		ARABIAN EXTRA LIGHT	82375	Saudi Arabia	10/02/06	38.7	4.1	1.18	<-27.4	2.1	44.3	39.9	37.2	<1	3.9	32.0	1.4	12.0	<0.05	1	<1	<1
ABL		ARABIAN LIGHT	82376	Saudi Arabia	10/22/06	33.6	3.5	1.98	<-27.4	3.9	57.6	51.8	45.4	82.0	13.0	48.0	3.5	12.0	<0.05	1	<1	1.2
BS		BONITO SOUR	82743	USA	09/18/06	33.9	4.1	1.09	<-27.4	3.0	66.0	53.2	45.9	<1	6.8	45.0	2.9	45.0	0.71	30	<1	<1
EIC		EUGENE ISLAND	82725	USA	09/18/06	33.3	4.5	1.29	<-27.4	3.1	67.3	56.3	48.4	<1	14.0	73.0	5.9	31.0	0.62	140	<1	<1
FUR		FURRIAL	82374	Venezuela	03/19/02	30.0	2.8	1.06	<-27.4	4.3	93.5	69.0	53.6	<1	38.0	179.0	8.2	35.0	0.09	3	<1	<1
ITM		ISTHMUS	82387	Mexico	10/19/05	32.7	3.4	1.57	<-27.4	4.9	68.3	55.7	50.2	23	74.0	300.0	14.0	57.0	0.10	6	<1	<1
MARS		MARS BLEND	82754	USA	09/18/06	30.1	3.7	1.88	<-27.4	5.2	110.2	77.0	60.8	<1	39.0	132.0	17.0	55.0	0.62	40	<1	<1
MMB		MARS/MESA BLEND (40/60)	82428	Loop	09/08/00	30.1	3.1	1.65	-22.0	5.1	100.0	70.9	57.6	<1	48.0	156.0	14.0	49.0	0.27	85	<1	<1
MSA		MESA 30	82369	Venezuela	05/01/05	30.1	3.3	1.09	<-27.4	4.6	93.8	82.3	61.9	<1	42.0	217.0	9.1	46.0	0.18	12	<1	<1
PSD		POSEIDON	82749	USA	09/18/06	30.0	4.4	1.98	<-27.4	5.5	133.2	91.7	61.8	<1	53.0	170.0	16.0	46.0	0.54	194	<1	<1
URA		URALS	82370	C.I.S. Euro	10/24/06	31.8	3.6	1.24	<-27.4	3.6	80.2	62.3	52.2	<1	28.0	127.0	11.0	50.0	<0.05	1	<1	1.1
ZMNB		ZUATA MEDIUM/NAPHTHA BLEND	83000	USA	04/05/05	27.0	1.7	0.97	<-27.4	4.3	144.3	95.3	71.7	<1	144.0	769.0	30.0	161.0	0.41	15	<1	<1
High Sulfur Sour Group																						
ABH		ARABIAN HEAVY	82378	Saudi Arabia	10/22/06	27.7	3.3	2.99	<-27.4	8.0	221.4	145.9	97.3	<1	45.0	171.0	13.0	54.0	0.20	1	<1	<1
ABL17		ARABIAN LIGHT / SEG 17 BLEND	82987	USA	04/21/04	32.1	3.4	2.19	<-27.4	5.2	78.8	59.8	50.1	<1	27.0	110.0	7.8	31.0	0.12	3	<1	<1
AHL		ARAB HEAVY/ARAB LIGHT (20/80)	83006	USA	06/01/05	32.6	4.3	2.06	-10.0	5.0	77.0	60.0	51.0	0.0	26.3	107.4	7.9	32.2	0.12	23	-	-
ABM		ARABIAN MEDIUM	82377	Saudi Arabia	10/31/06	31.3	4.0	2.61	<-27.4	5.6	95.2	72.5	56.6	<1	25.0	183.0	7.0	57.0	0.15	<1	<1	<1
BAS		BASRAH LIGHT	82383	Iraq	10/18/06	30.3	4.6	3.12	<-27.4	6.1	99.3	82.4	58.0	<1	36.0	129.0	10.0	31.0	0.10	22	<1	<1
EMX	<input checked="" type="checkbox"/>	EAST MS MIX	82521	USA	09/03/03	30.9	3.0	2.10	15.8	7.3	106.7	78.5	57.3	23	23.0	87.0	8.0	31.0	0.26	250	<1	<1
KIR		KIRKUK	82384	IRAQ	03/11/03	33.9	4.6	2.26	-0.4	4.9	62.9	52.3	45.6	<1	31.0	128.0	13.0	53.0	0.12	75	<1	<1
KUW		KUWAIT	82380	Kuwait	10/21/06	30.2	3.8	2.73	<-27.4	6.6	118.5	86.4	64.3	<1	29.0	109.0	8.3	36.0	<0.05	<1	<1	<1
Section II. Crudes Approved, Moved, Pending Capline Assay																						
Sweet - Low Metals/ High Metals Groups																						
BCSW		BAYOU CHOCTAW - SWEET	82268	USA	09/08/05	36.0	4.3	0.40	32.0	1.1	54.7	45.5	41.2	<1	5.5	31.0	3.8	21.0	0.16	25	<1	<1
OKON	<input checked="" type="checkbox"/>	OKONO	82584	Nigeria	02/09/02	41.9	7.7	0.06	64.4	0.4	39.0	35.0	33.0	-	<2	4.0	2.0	57.0	0.34	13	-	-
RABL	<input checked="" type="checkbox"/>	RABI LIGHT	82999	Gabon	07/15/04	37.7	3.8	0.15	71.6	-	88.0	65.0	54.0	<1	1.2	3.0	10.0	69.0	0.08	-	-	-
Sour / High Sulfur Sour Groups																						
BASM		BASRAH LIGHT/MARS BLN (75/25)	82554	USA	09/30/04	32.1	5.3	2.16	-38.2	4.7	118.0	74.0	56.7	<1	11.9		37.1		0.18	33	-	-
KMB2	<input checked="" type="checkbox"/>	KUWAIT/MARS BLEND (33/67)	82187	USA	09/30/04	30.5	5.2	2.00	-40.0	5.3	106.0	76.0	59.0	1.0	37.0	74.0	14.0	28.0	0.40	175	-	-
MUB2		MARS/URALS BLEND (33/67)	82183	USA	09/27/04	31.2	4.9	1.53	-7.5	4.2	89.0	67.0	57.0	-	134.7	198.5	43.8	69.7	0.22	40	-	-
MUB		MARS/URALS BLEND (50/50)	82998	USA	07/09/04	31.1	5.4	1.57	-16.0	4.4	89.0	70.0	55.0	-	37.6	172.7	12.1	58.3	0.38	104	-	-
Section III. Crudes Approved, Not Moved																						
Sweet - Low Metals/ High Metals Groups																						
ZUE		ZUEITINA	83016	Libya	03/16/06	37.9	4.4	0.47	32.0	2.4	60.0	49.0	43.0	-	1.6	9.9	7.3	45.8	0.38	5	-	-
COS		COSSACK	50021	Australia	10/16/06	47.3	6.4	0.03	-18.0	0.4	65.0	54.0	47.0	-	0.0	3.0	0.1	27.0	0.04	-	-	-
SGCB		SOUTHERN GREEN CANYON BLD	83005	USA	04/21/05	31.5	4.4	2.19	<-27.4	6.0	90.8	69.2	56.1	<1	74.0	291.0	19.0	74.0	0.56	64	<1	2.7
AZE		AZERI LIGHT	83015	Azerbaijan	04/01/06	34.8	5.9	0.15	-8.0	1.4	66.0	55.0	48.0	<5	0.2	1.6	3.3	21.7	0.26	7	-	-
Intermediate Group																						
TH		THUNDER HORSE	83019	USA	07/01/06	32.7	4.4	0.62	-23.0	3.9	70.7	57.0	49.0	-	9.2	-	12.5	-	0.08	-	-	-
Sour / High Sulfur Sour Groups																						
SLI	<input checked="" type="checkbox"/>	SOUTH LOUISIANA INTERMEDIATE	82779	USA	03/20/06	29.8	4.1	0.66	-70.6	3.3	105.1	77.2	58.7	<1	6.4	-	6.4	-	1.34	8	-	-
HUMB		HUNGO/MARS BLEND	83018	Angola	07/01/06	28.4	3.3	1.24	-16.0	1.2	133.6	97.2	73.0	-	28.0	120.0	18.0	77.0	0.66	-	-	-

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HYDROCARBON

FOOTNOTES

AMENAM	Must be monitored for pour point depression.
BONNY LIGHT	Must be pour point suppressed if moved through LOOP cavern
BRENT	Must be monitored for pour point depression.
CABINDA	Must be monitored for pour point depression. ! Viscosity at 60 and 80F not accurately measured - too close to pour point.
CPC BLEND	Due to RVP, must be shipped on a case by case basis and approved prior to each nomination.
CUSIANA	Must be monitored for pour point depression. . Note: Cusiana continues to have HIGH Metals. Cusiana will be moved as a Sweet/ High Metals batch unless metals return to previous low levels. Due to RVP, to move in summer months, must be shipped on a case by case basis and approved prior to each nomination.
EA CRUDE	Must be monitored for pour point depression.
EAST MS MIX	!! Due to Hydrogen Sulfide results- Take safety precautions !!
ESCRAVOS	Must be monitored for pour point depression.
ES SIDER	!! Due to Hydrogen Sulfide results- Take safety precautions !!
FOINAVEN	Must be monitored for pour point depression.
FORCADOS	Must be pour point suppressed if moved through LOOP cavern
FORTIES	RVP and Acid Number were much higher than expected based on assay received
GALEOTA	Must be monitored for pour point depression.
HIBERNIA	Must be monitored for pour point depression.
HUNGO	Must be pour point suppressed if moved through LOOP cavern
KISSANJE	Must be pour point suppressed if moved through LOOP cavern
NEMBA	Must be monitored for pour point depression.
N'KOSSA	Must be monitored for pour point depression.
OKONO	Must be monitored for pour point depression.
OSO CONDENSATE	Due to RVP, must be shipped on a case by case basis and approved prior to each nomination. Also must be pour point suppressed if moved through LOOP cavern
QUA IBOE	Must be monitored for pour point depression.
RABI LIGHT	Must be monitored for pour point depression.
SAHARAN BLEND	Due to RVP, must be shipped on a case by case basis and approved prior to each nomination.
SCHIEHALLION	Must be monitored for pour point depression.
SOUTH LOUISIANA INTERMEDIATE	Put into Sour group due to Acid Number >1
TROLL EXPORT	Acid number on Troll Export continues to be higher than usual. Will continue to move with Sweet Low Metals group and will monitor.
XIKOMBA	Must be monitored for pour point depression.
YOHO CRUDE	Must be monitored for pour point depression.

a) POUR POINT may have been depressed in the sample taken for this assay.

b) Due to loss of H2S in sampling and shipping, H2S is likely higher than stated in this assay. TAKE precautions with all crude oils - sour or sweet.

Updated
January 9, 2007

CAPLINE SYSTEM
CRUDE OIL PROPERTIES AND QUALITY INDICATORS
 Approved Crude List - 4nd Quarter, 2006

NOTES

CRITERIA FOR GROUPING CRUDES ON CAPLINE

Group	Criteria		
	Sulfur %w	Ni + V(pitch) ppm	TAN mg KOH/g
Sweet - Low Metals	< 0.5	<= 100	<= 1.0
Sweet - High Metals	< 0.5	<= 250	<= 1.0
Intermediate	0.5 - 1.0	<= 550	<= 1.0
Sour	>1.0 - 2.0	<= 1200	<= 1.5
High Sulfur Sour	> 2.0	<= 1200	<= 2.0

POUR POINT REQUIREMENTS

Summer Start on or after April 1 and Clear of system by September 30 <= +55F
Winter Start October 1 - March 31 <= +35F
Note: If received via LOOP cavern, must be pour point suppressed due to storage in high pour point cavern

RVP LIMITATIONS

Year-Round RVP of <= 8.6 psi accepted year-round
Winter Start on or after October 1 and Clear of system by April 30 <= 9.6
 NOTE: Winter RVP > 9.6 Subject to Management Approval

CRUDES REMOVED AS OF THIS LISTING:

Crude	Assay or Approval Date	Reason Removed
PALANCA/SOYO	01/01/99	1
BAYOU CHOCTAW SOUR	05/01/98	1

- 1 Crudes not moved within three (3) years will be removed from the list.
- 2 Crudes w/API > 50.0 will be removed from the list.