

CAPLINE SYSTEM

CRUDE OIL PROPERTIES AND QUALITY INDICATORS

Approved Crude List - 2nd Quarter, 2006

Updated
August 28, 2006

Section I. Crudes Approved, Moved and Capline Assay Reported																						
Mnm	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
AME	<input checked="" type="checkbox"/>	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
AQB		ALBA COND./QUA IBO 50/50 BLND.	83014	New Guinea Nigeria	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	-	-
BNL		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
BSR		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
BRN	<input checked="" type="checkbox"/>	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
CAB	<input checked="" type="checkbox"/>	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
DRAUG		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
EAN	<input checked="" type="checkbox"/>	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
EKO		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		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
ESC	<input checked="" type="checkbox"/>	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
FON	<input checked="" type="checkbox"/>	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
FOR		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
FOT	<input checked="" type="checkbox"/>	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	-	-
GAL	<input checked="" type="checkbox"/>	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	-	-
GIR		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
HLS		HEAVY LA SWEET	82720	USA	01/29/06	32.6	2.6	0.37	-16.6	2.3	70.7	56.2	47.8	<1	2.4	9.5	5.0	19.0	0.69	27	<1	2.4
HBA	<input checked="" type="checkbox"/>	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
HULL		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
KISS		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
LMS		LA MISSISSIPPI SWEET	82723	USA	04/10/06	40.1	5.6	0.38	<-27.4	1.9	43.6	39.5	36.3	<1	3.8	28.0	2.6	20.0	0.23	130	<1	1.2
LLS		LIGHT LOUISIANA SWEET	82722	USA	01/14/06	37.3	3.9	0.35	<-27.4	1.2	48.4	43.2	39.1	<1	2.1	15.0	2.3	15.0	0.59	126	<1	1.6
LLSA		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	-	-	-
NBA	<input checked="" type="checkbox"/>	NEMBA	82255	Angola	01/10/06	43.4	6.5	0.16	<-27.4	1.1	37.0	35.0	33.4	<1	1.8	14.0	1.7	12.0	<0.05	10	<1	<1
NKS	<input checked="" type="checkbox"/>	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
OSB		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	<input checked="" type="checkbox"/>	OSO CONDENSATE	82403	Nigeria	04/08/06	44.9	9.3	0.09	32.0	0.6	33.0	-	-	<1	0.7	9.2	0.8	10.0	0.20	27	<1	<1
PAL		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
PHD		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
SAH	<input checked="" type="checkbox"/>	SAHARAN BLEND	82298	Middle East	06/05/06	43.8	7.0	0.08	<-27.9	1.0	39.9	36.3	34.1	<1	0.5	3.4	0.3	1.7	<0.05	35	<1	<1
STB		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
SCH	<input checked="" type="checkbox"/>	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
SLS		SOUTH LOUISIANA SWEET	82586	USA	05/18/05	34.9	3.0	0.38	-5.6	2.0	63.7	50.9	44.9	<1	2.3	20.3	3.3	29.1	0.26	80	<1	<1
TROL	<input checked="" type="checkbox"/>	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
WHSW		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
XIK	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	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
ZFR		ZAFIRO	82252	Equatorial New 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
ZUASW		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																						
CUS	<input checked="" type="checkbox"/>	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
KWI	<input checked="" type="checkbox"/>	QUA IBOE	82339	Nigeria	01/22/06	36.3	4.7	0.13	59.0	1.1	-	42.1	38.5	<1	0.5	3.6	4.5	43.0	0.36	4	<1	<1

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CPC	<input checked="" type="checkbox"/>	CPC BLEND	CAP00	Kazakstan	10/06/05	43.3	5.5	0.55	-22.0	0.9	37.9	35.3	33.5	<1	2.6	25.0	1.5	15.0	<0.05	<1	<1	<1
ESS	<input checked="" type="checkbox"/>	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
HUN		HUNGO	82965	Angola	12/09/04	28.8	2.9	0.70	-16.6	4.9	147.4	107.4	70.1	<1	14.0	49.0	17.0	59.0	0.52	53	<1	<1
OMA		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

Mnmm	See Foot-notes	Crude Name	Product Code	Country	Assay Date	Density	RVP	Sulfur	a)Pour	Carbon	Viscosity (SSU)			b) Metals (ppm)				TAN E	SALT	Organic Chlorides (ppm)	
						(API@60)	(psia)	(%)	Point (degF)	Residue (%)	@60 F	@80 F	@100 F	H2S (ppm)	Vanadium	Nickel	Whole	Pitch	Whole	Pitch	(mg KOH/g)

Sour Group

AXL		ARABIAN EXTRA LIGHT	82375	Saudi Arabia	10/17/05	38.3	5.0	1.23	<-27.4	2.4	45.4	40.5	37.6	1.0	5.8	33.0	2.0	12.0	<0.05	2	<1	<1
ABL		ARABIAN LIGHT	82376	Saudi Arabia	01/20/06	33.0	4.6	1.98	<-27.4	3.6	72.7	58.7	46.9	<1	14.0	67.0	4.1	17.0	<0.05	3	<1	<1
BS		BONITO SOUR	82743	USA	01/26/06	35.4	4.1	1.02	<-27.4	2.6	60.5	51.6	44.2	<1	7.5	36.0	3.1	15.0	0.76	73	<1	<1
EIC		EUGENE ISLAND	82725	USA	01/30/06	33.7	4.1	1.15	<-27.4	3.0	67.5	55.3	47.3	<1	12.0	57.0	4.8	24.0	0.81	87	<1	1.7
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	02/03/06	29.7	3.5	1.82	<-27.4	5.3	120.5	85.6	64.6	<1	37.0	104.0	16.0	45.0	0.62	97	<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	01/29/06	29.8	3.4	1.64	<-27.4	4.9	121.6	85.6	66.6	<1	27.0	97.0	11.0	37.0	0.78	97	<1	<1
URA		URALS	82370	C.I.S. Euro	02/17/06	32.1	5.1	1.36	-10.0	3.6	79.1	62.5	50.4	<1	36.0	144.0	12.0	47.0	<0.05	6	<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	01/28/06	27.3	3.8	2.95	<-27.4	8.1	259.4	169.4	126.4	<1	62.0	144.0	20.0	45.0	0.25	2	<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	01/19/06	31.0	3.9	2.56	-22.0	5.8	99.5	71.3	58.2	<1	36.0	114.0	11.0	37.0	0.20	2	<1	<1
BAS		BASRAH LIGHT	82383	Iraq	01/24/06	30.5	5.2	2.90	<-27.4	5.9	99.8	70.5	57.6	<1	47.0	151.0	13.0	42.0	0.17	58	<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	05/05/05	30.5	4.8	2.70	-22.0	6.3	110.2	83.5	60.0	<1	34.0	120.0	11.0	39.0	0.12	5	<1	<1
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

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	-	-
PSOYO	<input checked="" type="checkbox"/>	PALANCA/SOYO	82460	Angola	01/01/99	37.8	7.8	0.16	45.0	1.5	48.7	42.7	40.5	<1	1.7	15.4	1.5	13.1	0.05	27	<1	<1
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	-	-
BCSR	<input checked="" type="checkbox"/>	BAYOU CHOCTAW - SOUR	82174	USA	05/01/98	32.2	3.6	1.43	11.0	4.0	76.8	57.0	47.3	100	40.3	240.0	11.1	66.0	0.13	<50	<0.1	-
KMB2		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

Date

Sweet - Low Metals/ High Metals Groups

Approved

Intermediate Group

Sour / High Sulfur Sour Groups

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HYDROCARBON

FOOTNOTES

AMENAM	Must be monitored for pour point depression.
BAYOU CHOCTAW - SOUR	!! Due to Hydrogen Sulfide results- Take safety precautions !!
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.
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.
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.
PALANCA/SOYO BLEND	Must be monitored for pour point depression.
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.
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.

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Approved Crude List - 2nd 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

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
ALBA CONDENSATE	02/13/06	3
NAPHTHA - KOCH	07/06/05	3
KUWAIT/MARS BLEND (50/50)	09/30/04	1
DJENO	07/05/97	1
GULLFAKS	07/17/03	1
KITINA	09/21/02	1
LION CRUDE	03/01/04	1
NORNE	03/17/03	1
ORIENTE	01/05/01	1
VASCONIA	02/09/02	1
MARIB LIGHT (ALIF)	05/12/98	1
ODUDU	11/27/98	1
BONGA	01/24/06	2
BASRAH/MAYA BLEND (20/80)	00/00/01	1
FORCADOS/OSO COND BLEND	02/28/05	1
HAMACA	03/30/04	1

- 1 Crudes not moved within three (3) years will be removed from the list.
- 2 Newly approved crudes that have not moved within six (6) months will be removed from the list.
- 3 Crudes w/API > 50.0 will be removed from the list.