

Specifications Guide

Americas Crude Oil

Latest update: January 2022

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DEFINITIONS OF THE TRADING LOCATIONS FOR WHICH PLATTS PUBLISHES DAILY INDEXES OR ASSESSMENTS

The following specifications guide contains the primary specifications for S&P Global Platts crude oil assessments in the Americas. All the assessments listed here employ Platts Assessments Methodology, as published at https://www.spglobal.com/platts/plattscontent/_assets/_files/en/our-methodology/methodology-specifications/platts-assessments-methodology-guide.pdf.

These guides are designed to give Platts subscribers as much information as possible about a wide range of methodology and specification questions.

This guide is current at the time of publication. Platts may issue further updates and enhancements to this guide and will announce these to subscribers through its usual publications of record. Such updates will be included in the next version of this guide. Platts editorial staff and managers are available to provide guidance when assessment issues require clarification.

UNITED STATES

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	TYPICAL SIZE	CURRENCY	UOM
PIPELINE ASSESSMENTS												
WTI M1	PCACG00	PCACG03	AAFV00		ex-tank	Cushing	M+1	25,000	-	-	US \$	Barrels
WTI M2	PCACH00	PCACH03	AAFV00		ex-tank	Cushing	M+2	25,000	-	-	US \$	Barrels
WTI M3	AAGIT00	AAGIT03	AAGIU00		ex-tank	Cushing	M+3	25,000	-	-	US \$	Barrels
WTI EFP M1	AAGVT00	AAGVT03	AAGVT02		ex-tank	Cushing	M+1	25,000	-	-	US \$	Barrels
WTI EFP M2	AAGVU00	AAGVU03	AAGVU02		ex-tank	Cushing	M+2	25,000	-	-	US \$	Barrels
WTI EFP M3	AAGVV00	AAGVV03	AAGVV02		ex-tank	Cushing	M+3	25,000	-	-	US \$	Barrels
WTI (Midland)	PCACJ00	PCACJ03	AAFV00		Delivered	Midland, Texas	M+1	25,000	-	-	US \$	Barrels
WTI (Midland) vs 1st Line WTI	AAGVZ00	AAGWA00	AAGWA02		Delivered	Midland, Texas	M+1	25,000	-	-	US \$	Barrels
WTI (Midland) M2	AAYZA00	AAYZA03	AAYZA02		Delivered	Midland, Texas	M+2	25,000	-	-	US \$	Barrels
WTI (Midland) M2 vs 2nd Line WTI	AAXXF00	AAXXF03	AAXXF02		Delivered	Midland, Texas	M+2	25,000	-	-	US \$	Barrels
WTI MEH	AAYRG00	AAYRG03			FIP	Houston	M+1	25,000	-	-	US \$	Barrels
WTI MEH vs 1st Line WTI	AAYRH00	AAYRH03			FIP	Houston	M+1	25,000	-	-	US \$	Barrels
WTI MEH M2	AAXXE00	AAXXE03			FIP	Houston	M+2	25,000	-	-	US \$	Barrels
WTI MEH M2 vs 2nd Line WTI	AAYYA00	AAYYA03			FIP	Houston	M+2	25,000	-	-	US \$	Barrels
WTI-Delta	AAEJK00	AAEJL00	AAEJK03		ex-tank	Cushing	M+1	25,000	-	-	US \$	Barrels
P-Plus WTI	PCACI00	PCACI03	AAFCT00		ex-tank	Cushing	M+1	25,000	-	-	US \$	Barrels
P-5 WTI	AAFEN00	AAFE000	AAFE002		ex-tank	Cushing	M+1	25,000	-	-	US \$	Barrels
Bakken Williston	AAXPP00	AAXPP03	AAXPP02		Delivered	Williston Basin	M+1	25,000	-	-	US \$	Barrels
Bakken Williston vs WTI CMA	AASRX00	AASRX03			Delivered	Williston Basin	M+1	25,000	-	-	US \$	Barrels
Bakken Clearbrook	AASRU00	AASRU13	AASRU03		Delivered	Clearbrook, Minnesota	M+1	25,000	-	-	US \$	Barrels
Bakken Clearbrook vs NYMEX WTI CMA	AASRW00	AASRW13	AASRW03		Delivered	Clearbrook, Minnesota	M+1	25,000	-	-	US \$	Barrels
Bakken Guernsey	AASRR00	AASRR13	AASRR03		Delivered	Guernsey, Wyoming	M+1	25,000	-	-	US \$	Barrels
Bakken Guernsey vs NYMEX WTI CMA	AASRV00	AASRV13	AASRV03		Delivered	Guernsey, Wyoming	M+1	25,000	-	-	US \$	Barrels
Bakken USGC Pipe	ABAKA00	ABAKA03			Delivered	Nederland/Beaumont, Texas	M+1	25,000			US \$	Barrels
Bakken USGC Pipe vs NYMEX WTI CMA	ABAKB00	ABAKB03			Delivered	Nederland/Beaumont, Texas	M+1	25,000			US \$	Barrels
Bonito	PCAI00	PCAIH03	AAFCI00		Delivered	St. James, Louisiana	M+1	25,000	-	-	US \$	Barrels
Bonito vs 1st Line WTI	AAGWF00	AAGWG00	AAGWG02		Delivered	St. James, Louisiana	M+1	25,000	-	-	US \$	Barrels
Eugene Island	PC AFC00	PC AFC03	AAFCJ00		Delivered	St. James, Louisiana	M+1	25,000	-	-	US \$	Barrels

UNITED STATES

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	TYPICAL SIZE	CURRENCY	UOM
Eugene Island vs 1st Line WTI	AAGWD00	AAGWE00	AAGWE02		Delivered	St. James, Louisiana	M+1	25,000	-	-	US \$	Barrels
HLS (1st month)	PCABD00	PCABD03	AAFCK00		Delivered	Empire, Louisiana	M+1	25,000	-	-	US \$	Barrels
HLS (1st month) vs 1st Line WTI	AAGWP00	AAGWQ00	AAGWQ02		Delivered	Empire, Louisiana	M+1	25,000	-	-	US \$	Barrels
HLS (2nd month)	AAURE00	AAURE13	AAURE03		Delivered	Empire, Louisiana	M+2	25,000	-	-	US \$	Barrels
HLS (2nd month) vs 2nd Line WTI	AAURF00	AAURF13	AAURF03		Delivered	Empire, Louisiana	M+2	25,000	-	-	US \$	Barrels
Kern River	PCABJ00	PCABJ03	AAFCL00	AAIROO	Delivered	Kern County, California	M+1	25,000	-	-	US \$	Barrels
Light Houston Sweet (LHS)	AAXEW00	AAXEW03			FIP	Houston	M+1	25,000	-	-	US \$	Barrels
Light Houston Sweet (LHS) M2	AARY00		AARY02		FIP	Houston	M+2	25,000	-	-	US \$	Barrels
Line 63/Hynes	PCABM00	PCABM03	AAFCE00		Delivered	Hynes Station, California	M+1	25,000	-	-	US \$	Barrels
P-Plus Line 63	PCAFV00	PCAFV03	AAFCE00		Delivered	Hynes Station, California	M+1	25,000	-	-	US \$	Barrels
LOOP Sour M1	AALSM01	AALSR03			In-cavern title transfer	LOOP Clovelly Hub, Louisiana	M+1	25,000	-	-	US \$	Barrels
LOOP Sour vs WTI M1	AALOM01	AALOP03			In-cavern title transfer	LOOP Clovelly Hub, Louisiana	M+1	25,000	-	-	US \$	Barrels
LOOP Sour vs Mars M1	AALPM01	AALPR03			In-cavern title transfer	LOOP Clovelly Hub, Louisiana	M+1	25,000	-	-	US \$	Barrels
LOOP Sour M2	AALSM02	AALSS03			In-cavern title transfer	LOOP Clovelly Hub, Louisiana	M+2	25,000	-	-	US \$	Barrels
LOOP Sour vs WTI M2	AALOM02	AALQ03			In-cavern title transfer	LOOP Clovelly Hub, Louisiana	M+2	25,000	-	-	US \$	Barrels
LOOP Sour vs Mars M2	AALPM02	AALPS03			In-cavern title transfer	LOOP Clovelly Hub, Louisiana	M+2	25,000	-	-	US \$	Barrels
LOOP Sour M3	AALSM03	AALSV03			In-cavern title transfer	LOOP Clovelly Hub, Louisiana	M+3	25,000	-	-	US \$	Barrels
LOOP Sour vs WTI M3	AALOM03	AALOR03			In-cavern title transfer	LOOP Clovelly Hub, Louisiana	M+3	25,000	-	-	US \$	Barrels
LOOP Sour vs Mars M3	AALPM03	AALPT03			In-cavern title transfer	LOOP Clovelly Hub, Louisiana	M+3	25,000	-	-	US \$	Barrels
LLS (1st month)	PCABN00	PCABN03	AAFCE00	AAIQ00	Delivered	St. James, Louisiana	M+1	25,000	-	-	US \$	Barrels
LLS (1st month) vs 1st Line WTI	AAGWN00	AAGWO00	AAGWO02		Delivered	St. James, Louisiana	M+1	25,000	-	-	US \$	Barrels
LLS (2nd month)	AAURC00	AAURC13	AAURC03		Delivered	St. James, Louisiana	M+2	25,000	-	-	US \$	Barrels
LLS (2nd month) vs 2nd Line WTI	AAURD00	AAURD13	AAURD03		Delivered	St. James, Louisiana	M+2	25,000	-	-	US \$	Barrels
Mars M1	AAMBR00	AAMBS00	AAMBS02	AAIIM00	Delivered	LOOP Clovelly Hub, Louisiana	M+1	25,000	-	-	US \$	Barrels
Mars M1 vs WTI	AAGWH00	AAGWK00	AAGWK02		Delivered	LOOP Clovelly Hub, Louisiana	M+1	25,000	-	-	US \$	Barrels
Mars M2	AAMBU00	AAMBV00	AAMBV02		Delivered	LOOP Clovelly Hub, Louisiana	M+2	25,000	-	-	US \$	Barrels
Mars M2 vs WTI	AAKTH00	AAKTI00	AAKTI02		Delivered	LOOP Clovelly Hub, Louisiana	M+2	25,000	-	-	US \$	Barrels
Mars M3	AAMBX00	AAMBY00	AAMBY02		Delivered	LOOP Clovelly Hub, Louisiana	M+3	25,000	-	-	US \$	Barrels
Mars M3 vs WTI	AAMB000	AAMB000	AAMB002		Delivered	LOOP Clovelly Hub, Louisiana	M+3	25,000	-	-	US \$	Barrels
Mars M1 vs Mars M2 Spread	AAWFC00				Delivered	LOOP Clovelly Hub, Louisiana	M+1	25,000	-	-	US \$	Barrels
Mars M2 vs Mars M3 Spread	AAWFD00				Delivered	LOOP Clovelly Hub, Louisiana	M+2	25,000	-	-	US \$	Barrels
Mars M2 vs Dubai M1	MVDM021				Delivered	LOOP Clovelly Hub, Louisiana	M+2	25,000	-	-	US \$	Barrels
Mars M3 vs Dubai M2	MVDM032				Delivered	LOOP Clovelly Hub, Louisiana	M+3	25,000	-	-	US \$	Barrels
Poseidon	AABHK00	AABHL00	AAFCE00		Delivered	Houma, Louisiana	M+1	25,000	-	-	US \$	Barrels
Poseidon vs 1st Line WTI	AAGWL00	AAGWM00	AAGWM02		Delivered	Houma, Louisiana	M+1	25,000	-	-	US \$	Barrels
SGC	AASOI00	AASOI03	AASOI02		Delivered	Nederland, Texas	M+1	25,000	-	-	US \$	Barrels
SGC vs 1st Line WTI	AASOJ00	AASOJ03	AASOJ02		Delivered	Nederland, Texas	M+1	25,000	-	-	US \$	Barrels
Thums/Long Beach	PCACD00	PCACD03	AAFCE00	AAIU00	Delivered	Long Beach, California	M+1	25,000	-	-	US \$	Barrels
Thunder Horse	AAWZK00	AAWZK03	AAWZK02		Delivered	LOOP Clovelly Hub, Louisiana	M+1	25,000	-	-	US \$	Barrels
Thunder Horse vs 1st Line WTI	AAWZL00	AAWZL03	AAWZL02		Delivered	LOOP Clovelly Hub, Louisiana	M+1	25,000	-	-	US \$	Barrels
WCS Ex-Cushing	AAWTY00	AAWTY03			ex-tank	Cushing	M+1	25,000	-	-	US \$	Barrels
WCS Ex-Cushing (C\$/CM)	AAWUA00	AAWUA03			ex-tank	Cushing	M+1	25,000	-	-	C \$	cm
WCS Ex-Cushing vs WTI CMA	AAWTZ00	AAWTZ03			ex-tank	Cushing	M+1	25,000	-	-	US \$	Barrels

UNITED STATES

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	TYPICAL SIZE	CURRENCY	UOM
WCS Ex-Nederland	AAAY00	AAAY03			FIP	Nederland, Texas	M+1	25,000	-	-	US \$	Barrels
WCS Ex-Nederland vs WTI CMA	AAAX00	AAAX03			FIP	Nederland, Texas	M+1	25,000	-	-	US \$	Barrels
WTS Midland M1	PCACK00	PCACK03	AAFCS00		Delivered	Midland, Texas	M+1	25,000	-	-	US \$	Barrels
WTS Midland M1 vs 1st Line WTI	AAGWB00	AAGWC00	AAGWC02		Delivered	Midland, Texas	M+1	25,000	-	-	US \$	Barrels
WTS Midland M2	AAURG00	AAURG13	AAURG03		Delivered	Midland, Texas	M+2	25,000	-	-	US \$	Barrels
WTS Midland M2 vs 2nd Line WTI	AAURH00	AAURH13	AAURH03		Delivered	Midland, Texas	M+2	25,000	-	-	US \$	Barrels
Wyoming Sweet	PCACM00	PCACM03	PCACL03		Delivered	Guernsey, Wyoming	M+1	25,000	-	-	US \$	Barrels
Wyoming Sweet vs 1st Line WTI	AAGWR00	AAGWS00	AAGWS02		Delivered	Guernsey, Wyoming	M+1	25,000	-	-	US \$	Barrels

CARGO ASSESSMENTS

Platts AGS	AGSAA00	AGSAA03			FOB	USGC	15-45 days	550,000	800,000	700,000	US \$	Barrels
Platts AGS vs NYMEX WTI Strip	AGSAC00	AGSAC03			FOB	USGC	15-45 days	550,000	800,000	700,000	US \$	Barrels
Platts AGS vs Dated Brent Strip	AGSAB00	AGSAB03			FOB	USGC	15-45 days	550,000	800,000	700,000	US \$	Barrels
WTI FOB USGC	AAABA00	AAABA03			FOB	USGC	15-45 days	550,000	800,000	700,000	US \$	Barrels
WTI FOB USGC vs NYMEX WTI Strip	AAAZ00	AAAZ03			FOB	USGC	15-45 days	550,000	800,000	700,000	US \$	Barrels
WTI FOB USGC vs Dated Brent Strip	AWTUA00	AWTUA03			FOB	USGC	15-45 days	550,000	800,000	700,000	US \$	Barrels
ANS	PCAAD00	PCAAD03	AAFFL02		Delivered	Long Beach, California	M+1	300,000	-	-	US \$	Barrels
ANS vs NYMEX WTI CMA	AAGWX00	AAGWY00	AAGWY02		Delivered	Long Beach, California	M+1	300,000	-	-	US \$	Barrels
ANS vs ICE Brent CMA	AANSA00	AANSA03			Delivered	Long Beach, California	M+2	300,000	-	-	US \$	Barrels
Bakken FOB USGC	ABAKC00	ABAKC03			FOB	USGC	15-45 days	500,000	700,000	600,000	US \$	Barrels
Bakken FOB USGC vs NYMEX WTI Strip	ABAKD00	ABAKD03			FOB	USGC	15-45 days	500,000	700,000	600,000	US \$	Barrels
Bakken FOB USGC vs Dated Brent Strip	ABAKE00	ABAKE03			FOB	USGC	15-45 days	500,000	700,000	600,000	US \$	Barrels
Eagle Ford Crude FOB USGC	AAAT00	AAAT03			FOB	USGC	15-45 days	550,000	800,000	700,000	US \$	Barrels
Eagle Ford Crude FOB USGC vs NYMEX WTI Strip	AAAYU00	AAAYU03			FOB	USGC	15-45 days	550,000	800,000	700,000	US \$	Barrels
Eagle Ford Crude FOB USGC vs Dated Brent Strip	AEFCA00	AEFCA03			FOB	USGC	15-45 days	550,000	800,000	700,000	US \$	Barrels
Eagle Ford Condensate FOB USGC	AAAR00	AAAR03			FOB	USGC	15-45 days	550,000	800,000	700,000	US \$	Barrels
Eagle Ford Condensate FOB USGC vs NYMEX WTI Strip	AAAS00	AAAS03			FOB	USGC	15-45 days	550,000	800,000	700,000	US \$	Barrels
Eagle Ford Condensate FOB USGC vs Dated Brent Strip	AEFCB00	AEFCB03			FOB	USGC	15-45 days	550,000	800,000	700,000	US \$	Barrels
Americas Dated Brent	AAQBF00	AAQBF03	AAQBF02					600,000	600,000	-	US \$	Barrels

REGIONAL MARKERS AND POSTING AVERAGES

Americas Crude Marker M1	AAQHN00	AAQHN13	AAQHN03		Delivered	USGC	M+1	25,000	-	-	US \$	Barrels
Americas Crude Marker M2	AAQH000	AAQH013	AAQH003		Delivered	USGC	M+2	25,000	-	-	US \$	Barrels
Americas Crude Marker M3	AAQHP00	AAQHP13	AAQHP03		Delivered	USGC	M+3	25,000	-	-	US \$	Barrels
Eagle Ford Marker	AAAJ00	AAAJ03	AAAJ02				M+1	-	-	-	US \$	Barrels
Eagle Ford Postings Average	AAAH00	AAAH03	AAAH02					-	-	-	US \$	Barrels
Eagle Ford Postings Average vs Eagle Ford Marker	AAAI00	AAAI03	AAAI02					-	-	-	US \$	Barrels

US CRUDE ASSESSMENTS AT ASIA CLOSE

WTI MEH	AAZDF00	AAZDF03			FIP	Houston	M+1	25,000	-	-	US \$	Barrels
WTI MEH M2	AAZDG00	AAZDG03			FIP	Houston	M+2	25,000	-	-	US \$	Barrels
LLS (1st month)	AAZDC00	AAZDC03			Delivered	St. James, Louisiana	M+1	25,000	-	-	US \$	Barrels

UNITED STATES

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	TYPICAL SIZE	CURRENCY	UOM
LLS (2nd month)	AAZDD00	AAZDD03	AAURC03		Delivered	St. James, Louisiana	M+2	25,000	-	-	US \$	Barrels
LOOP Sour M1	AAZDA00	AAZDA03			In-cavern title transfer	LOOP Clovelly Hub, Louisiana	M+1	25,000	-	-	US \$	Barrels
LOOP Sour M2	AAZDB00	AAZDB03			In-cavern title transfer	LOOP Clovelly Hub, Louisiana	M+2	25,000	-	-	US \$	Barrels
SGC	AAZDE00	AAZDE03			Delivered	Nederland, Texas	M+1	25,000	-	-	US \$	Barrels

US CRUDE ASSESSMENTS AT LONDON CLOSE

WTI M1	AAQAR00	AAQAR13	AAQAR03		ex-tank	Cushing	M+1	25,000	-	-	US \$	Barrels
WTI M1 (Euro)	AAPYT00	AAPYT03			ex-tank	Cushing	M+1	25,000	-	-	Euro	Barrels
WTI M2	AAQAT00	AAQAT13	AAQAT03		ex-tank	Cushing	M+2	25,000	-	-	US \$	Barrels
WTI M2 (Euro)	AAWFJ00	AAWFJ03			ex-tank	Cushing	M+2	25,000	-	-	Euro	Barrels
WTI M3	AAQAV00	AAQAV13	AAQAV03		ex-tank	Cushing	M+3	25,000	-	-	US \$	Barrels
WTI M3 (Euro)	AAWFK00	AAWFK03			ex-tank	Cushing	M+3	25,000	-	-	Euro	Barrels
WTI EFP M1	AAQAS00	AAQAS13	AAQAS03		ex-tank	Cushing	M+1	25,000	-	-	US \$	Barrels
WTI EFP M2	AAQAU00	AAQAU13	AAQAU03		ex-tank	Cushing	M+2	25,000	-	-	US \$	Barrels
WTI EFP M3	AAQAW00	AAQAW13	AAQAW03		ex-tank	Cushing	M+3	25,000	-	-	US \$	Barrels
WTI MEH M1	AAYZ00	AAYZ03			FIP	Houston	M+1	25,000	-	-	US \$	Barrels
WTI MEH M1 (Euro)	AAZSA00	AAZSA03			FIP	Houston	M+1	25,000	-	-	Euro	Barrels
WTI MEH M2	AAZYD00	AAZYD03			FIP	Houston	M+1	25,000	-	-	US \$	Barrels
WTI MEH M2 (Euro)	AAZVA00	AAZVA03			FIP	Houston	M+1	25,000	-	-	Euro	Barrels
Mars M1	AAQAX00	AAQAX13	AAQAX03		Delivered	LOOP Clovelly Hub, Louisiana	M+1	25,000	-	-	US \$	Barrels
Mars M1 vs WTI	AAQAY00	AAQAY13	AAQAY03		Delivered	LOOP Clovelly Hub, Louisiana	M+1	25,000	-	-	US \$	Barrels
Mars M1 (Euro)	AAPYU00	AAPYU03			Delivered	LOOP Clovelly Hub, Louisiana	M+1	25,000	-	-	Euro	Barrels
Mars M2	AAQAZ00	AAQAZ13	AAQAZ03		Delivered	LOOP Clovelly Hub, Louisiana	M+2	25,000	-	-	US \$	Barrels
Mars M2 vs WTI	AAQBA00	AAQBA13	AAQBA03		Delivered	LOOP Clovelly Hub, Louisiana	M+2	25,000	-	-	US \$	Barrels
Mars M2 (Euro)	AAWFI00	AAWFI03			Delivered	LOOP Clovelly Hub, Louisiana	M+2	25,000	-	-	Euro	Barrels
LLS (1st month)	AAQBB00	AAQBB13	AAQBB03		Delivered	St. James, Louisiana	M+1	25,000	-	-	US \$	Barrels
LLS (1st month) vs 1st Line WTI	AAQBC00	AAQBC13	AAQBC03		Delivered	St. James, Louisiana	M+1	25,000	-	-	US \$	Barrels
LLS (1st month) (Euro)	AAWEP00	AAWEP03			Delivered	St. James, Louisiana	M+1	25,000	-	-	Euro	Barrels
LLS (2nd month)	AAQBD00	AAQBD13	AAQBD03		Delivered	St. James, Louisiana	M+2	25,000	-	-	US \$	Barrels
LLS (2nd month) vs 2nd Line WTI	AAQBE00	AAQBE13	AAQBE03		Delivered	St. James, Louisiana	M+2	25,000	-	-	US \$	Barrels
LLS (2nd month) (Euro)	AAWFH00	AAWFH03			Delivered	St. James, Louisiana	M+2	25,000	-	-	Euro	Barrels

US CRUDE PIPELINES

Pipeline Name	Ownership	Capacity (Mb/d)	Origin	Destination
BridgeTex	BridgeTex LLC (OMERS Infrastructure, Magellan Midstream & Plains All American)	440	Colorado City, TX	Houston, TX
Cactus I	Plains All American	390	McCamey, TX	Gardendale, TX
Cactus II	Plains All American	670	McCamey, TX	Corpus Christi, TX
EPIC	EPIC Midstream	600	Orla/Wink/Crane, TX	Corpus Christi, TX
Gray Oak	Phillips 66	900	Orla/Wink/Crane, TX	Corpus Christi, TX
Longhorn	Magellan Midstream Partners	275	Crane/Barnhart, TX	Houston, TX
Midland-ECHO I	Enterprise Products Partners LP	620	Midland, TX	Houston, TX
Midland-ECHO II	Enterprise Products Partners LP	200	Midland, TX	Houston, TX
Midland-ECHO III	Enterprise Products Partners LP	450	Midland, TX	Houston, TX
Permian Express	Energy Transfer LP	640	Permian Basin	Nederland, TX
Wink-to-Webster	ExxonMobil/Lotus Midstream	1050	Wink, TX	Webster/Houston, TX

United States

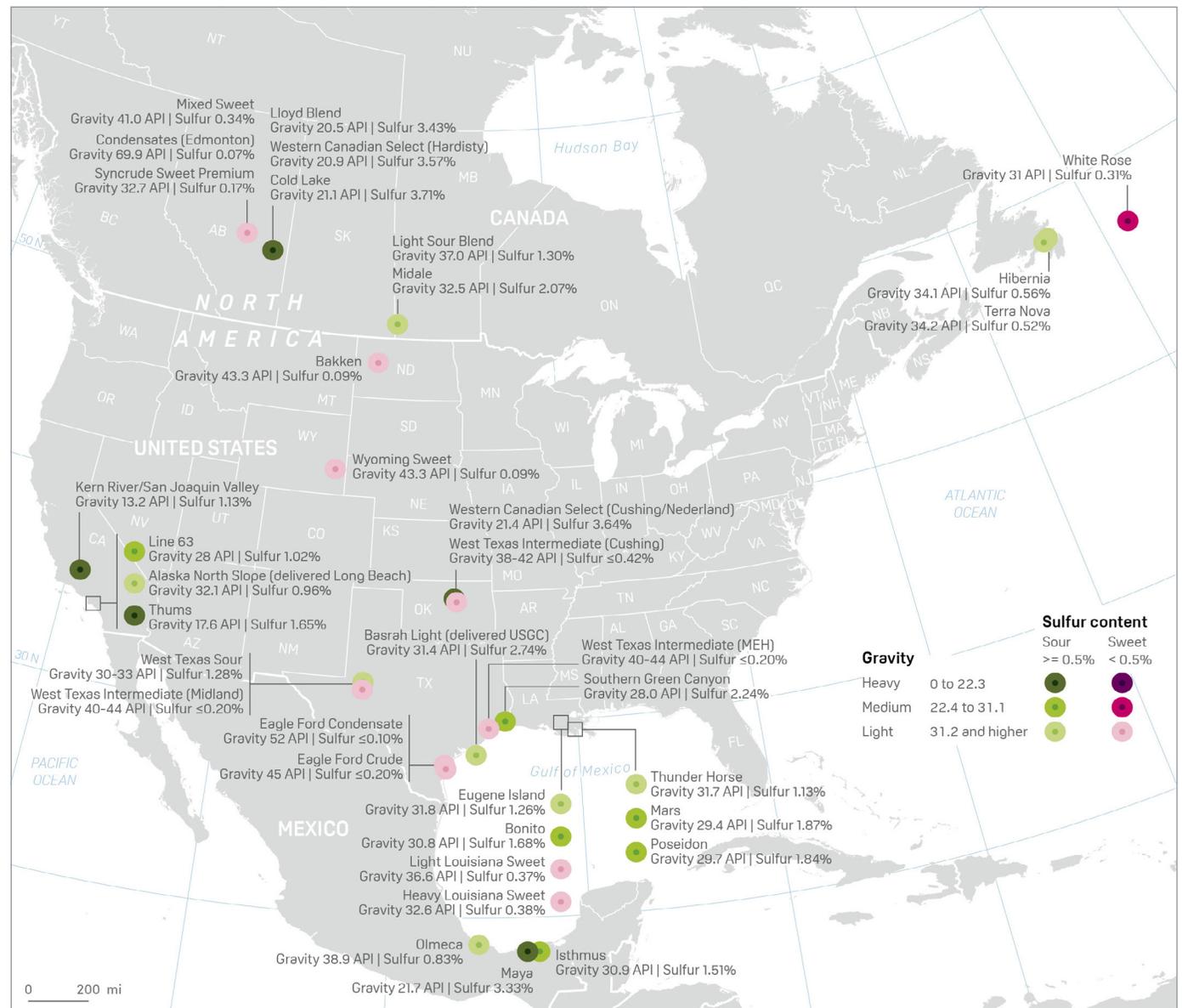
US pipeline crude assessments

Platts assesses the value of a variety of crudes in the US as a flat price and as a differential against common pricing bases. The spot month assessments for all US domestic pipeline barrels, with the exception of Bakken, change on the first business day after the 25th of the calendar month unless otherwise specified. For instance, from January 26 through February 25, the front month for US domestic pipeline barrels is March. On February 26, the front month switches to April. If the 26th falls on a weekend or holiday, the next business day marks the beginning of the new trading month.

The spot month does not roll with the expiration of the front month NYMEX light sweet crude futures contract. After the expiry of the related front-month crude futures contract, Platts continues to assess the prompt cash month in relation to WTI values that factor in intermonth spreads in the cash WTI market.

In markets where commodities trade at differentials to futures contracts, the official prevailing futures settlement prices are used in the assessment process. Market participants submitting bids and offers on a differential exchange for physical (EFP) basis to futures contracts during the Platts MOC assessment process should be explicit in their positions, including the month of reference for the EFP. The minimum volume for US domestic pipeline grades reflects 1,000 b/d of ratable crude, for a minimum of 25,000 barrels in total, delivered over the course of the pipeline month.

West Texas Intermediate (WTI): Platts assesses WTI at Cushing, Oklahoma; Midland, Texas; the Magellan East Houston (MEH) terminal and on an FOB basis in the US Gulf Coast. Platts assesses WTI Cushing three months forward, and WTI Midland and WTI MEH two months forward.



Source: Platts

WTI Calendar Delta: The WTI Calendar Delta reflects the spread between front month cash WTI and the front month NYMEX light sweet crude calendar month average (CMA). The latter reflects the average of the front month NYMEX light sweet crude settlement values over a calendar month, in line with the US domestic pipeline roll schedule. The WTI Calendar Delta fluctuates with first/second and first/third month WTI spreads, and with bids/offers in the market. It rolls to the next month on the first business day after the 25th of the month.

P-Plus WTI: The assessment reflects the price of WTI sold into Cushing on the basis of “postings plus.” P-plus deals are invoiced at a later date on the basis of a differential to an average of one or more crude oil postings. For example, a deal done at P-plus 75 cents would be invoiced at 75 cents more than the previously agreed-upon postings basis.

Bakken: Platts assesses the value of Bakken crude at four locations: for injection into the Dakota Access Pipeline (DAPL) in the Williston Basin; for injection at Guernsey, Wyoming; for injection at Clearbrook, Minnesota; and in pipe and loaded onto Aframax-sized vessels on an FOB basis at the Nederland/Beaumont terminals on the US Gulf Coast. In the event DAPL is not operating normally, that assessment may reflect Bakken crude for injection at other Williston locations. Platts Bakken assessments are published as a flat price and as a differential to the NYMEX light sweet crude CMA. These assessments, including the NYMEX light sweet crude CMA basis, follow the pipeline schedule published by Canada’s Crude Oil Logistics Committee. The volumes assessed reflect 1,000 b/d of ratable crude, for a minimum of 25,000 barrels in total, delivered over the course of the pipeline month.

Bonito: This assessment reflects barrels delivered to St James, Louisiana.

Eugene Island: This assessment reflects barrels delivered to St. James, Louisiana.

Heavy Louisiana Sweet (HLS): This assessment reflects barrels delivered to Empire, Louisiana.

Kern River: This assessment reflects barrels delivered to Station 31 in Kern County, California. This crude is synonymous with San Joaquin Valley (SJV) heavy.

Light Houston Sweet (LHS): This assessment reflects the value of light sweet crude flowing into Houston, Texas, from the Permian Basin, Eagle Ford and Cushing, Oklahoma. The assessment is for crude delivered on a Free In Pipe (FIP) basis out of three Houston terminals: Magellan East Houston Terminal, Enterprise Crude Houston (ECHO) Terminal and Enterprise Houston Ship Channel terminal, formerly known as the Oil Tanking Houston Terminal. As Houston crude transportation infrastructure develops, Platts may consider additional terminals for inclusion in its LHS assessment basis. Platts reflects WTI Midland specifications in Houston in its LHS assessment, and may normalize Domestic Light Sweet and Eagle Ford crude bids, offers and transactions at Houston to a WTI Midland specification basis.

Light Louisiana Sweet (LLS): This assessment reflects barrels delivered to St. James, Louisiana.

Line 63: This assessment reflects a blend of crudes delivered to Hynes Station, California, on Plains All American Pipeline’s Line 63.

P-Plus Line 63: This assessment reflects the price of Line 63 crude sold into Hynes Station on Plains All American Pipeline’s Line 63 on the basis of ?@posting plus.?A P-Plus deals are invoiced at a later date on the basis of a differential to an average of one or more crude postings for Buena Vista crude.

LOOP Sour: This assessment reflects the value of LOOP Sour crude traded in cavern via title transfer at the Louisiana Offshore Oil Port terminal near Galliano, Louisiana on the US Gulf Coast. LOOP Sour is a medium sour crude blend comprised of two domestic US crudes -- Mars and Poseidon -- and three Middle

Eastern crude grades -- Arab Medium, Kuwait Export Crude and Basrah Light. The quality of LOOP Sour crude changes depending on the amount of the five crudes delivered into the blend but will be within the range of the five component crude grades. In 2019, LOOP sour API gravity averaged 29.93 degrees and sulfur content averaged 2.11%, according to LOOP, LLC.

Platts publishes an outright price and differentials versus both WTI and Mars for LOOP Sour one, two and three calendar months forward. The front-month LOOP Sour price reflects barrels trading one calendar month forward, with trading shifting to the next month on the first business day after the 25th day of the calendar month. The minimum volume reflected for the LOOP Sour assessments is 25,000 barrels.

Mars: This assessment reflects barrels for delivery to LOOP Clovelly Hub in Louisiana.

Poseidon: This assessment reflects barrels delivered to Houma, Louisiana.

Southern Green Canyon (SGC): This assessment reflects barrels delivered to Nederland, Texas.

Thums: This assessment reflects barrels delivered to Long Beach, California.

Thunder Horse: This assessment reflects barrels delivered to LOOP Clovelly Hub in Louisiana.

WCS: Platts assesses Western Canadian Select crude at two locations in the US – at Cushing, Oklahoma and on a Free In Pipe (FIP) basis at Port Arthur/Nederland, Texas. Platts publishes WCS ex-Cushing and WCS ex-Nederland as outright prices, and as differentials to the NYMEX light sweet crude CMA. These assessments, including the NYMEX light sweet crude CMA basis, follow the pipeline schedule published by Canada’s Crude Oil Logistics Committee. The quality reflects typical specifications for WCS.

West Texas Sour (WTS): This assessment reflects barrels delivered to Midland, Texas.

Wyoming Sweet: This assessment reflects barrels delivered to Guernsey, Wyoming.

US cargo assessments

Platts AGS: This assessment reflects the value of an Aframax cargo of WTI Midland crude loading 15-45 days forward on an FOB basis from locations along the US Gulf Coast, including Corpus Christi, Texas City, Houston, Beaumont, Nederland and Port Arthur. Platts WTI Midland is currently the only grade reflected in the Platts AGS assessment. The most competitive location, on a cargo-size normalized basis, sets the value for the Platts AGS assessment. The assessment reflects a typical volume of 700,000 barrels. Bids, offers, and trades that are smaller or larger than the cargo-size typical may be normalized to reflect the freight economics of the typical cargo size using that day's US to UK Aframax freight assessment (Platts symbol: TDUCF00). The assessment reflects light, sweet crude supplied directly from the Permian Basin on one or more of the following designated pipelines: BridgeTex, Longhorn, Midland-to-Echo I/II/III, Cactus I/II, EPIC, Gray Oak, Permian Express, and Wink-to-Webster. In addition to pipeline provenance, Platts AGS reflects crude that meets the Platts WTI Midland specifications outlined below. Crude delivered as a result of the of bids or offers published in the Platts Market On Close assessment process must meet the Platts WTI Midland specifications and should not contain any previously cracked or refined material. The Platts AGS assessment is published as an outright price, and as differentials to a Dated Brent forward strip and a NYMEX WTI forward strip, aligned to the assessment's 15-45 day loading window.

WTI FOB USGC: This assessment reflects the value of an Aframax cargo of Platts WTI Midland crude loading 15-45 days forward on an FOB basis from locations along the US Gulf Coast, including Corpus Christi, Texas City, Houston, Beaumont, Nederland and Port Arthur. The most competitive location, on

a cargo-size normalized adjusted basis, sets the value for the WTI FOB USGC assessment. The assessment reflects a typical volume of 700,000 barrels. Bids, offers, and trades that are smaller or larger than the cargo-size typical may be normalized to reflect the freight economics of the typical cargo size using that day's US to UK Aframax freight assessment (Platts symbol: TDUCF00). The assessment reflects WTI Midland crude supplied directly from the Permian Basin on one or more of the following designated pipelines: BridgeTex, Longhorn, Midland-to-Echo I/II, Cactus I/II/III, EPIC, Gray Oak, Permian Express, and Wink-to-Webster. In addition to pipeline provenance, WTI FOB USGC reflects crude that meets the Platts WTI Midland specifications outlined below. Crude delivered as a result of the of bids or offers published in the Platts Market On Close assessment process must meet the Platts WTI Midland specifications and should not contain any previously cracked or refined material. The WTI FOB USGC assessment is published as an outright price, and as differentials to a Dated Brent forward strip and a NYMEX WTI forward strip, aligned to the assessment's 15-45 day loading window.

Alaska North Slope (ANS): This assessment reflects a minimum volume of 300,000 barrels basis delivered to Long Beach, California. The pricing basis for ANS is the NYMEX light sweet crude CMA and the ICE Brent CMA. Platts rolls its assessment to reflect deliveries in the second calendar month forward from the first publishing day of each month. For example, on Nov. 1, the Platts ANS assessment will reflect crude delivered in January; and on Dec. 1, the assessment will reflect crude delivered in February.

Bakken FOB USGC: This assessment reflects an Aframax cargo, with a typical volume of 600,000 barrels, loading 15-45 days forward from terminals along the US Gulf Coast. Bids, offers, and trades that are smaller or larger than the cargo-size typical may be normalized to reflect the freight economics of the typical cargo size using that day's US to UK Aframax freight assessment (Platts symbol: TDUCF00). The quality reflects the typical specifications of Bakken crude.

Eagle Ford Crude and Condensate FOB USGC: Platts assesses the value of crude oil and condensate produced in the Eagle Ford formation in southern Texas on an FOB US Gulf Coast basis. The assessments reflect an Aframax cargo, with a typical volume of 700,000 barrels, loading 15-45 days forward from terminals along the US Gulf Coast. The most competitive location sets the values for the Eagle Ford crude and condensate FOB USGC assessments. The Eagle Ford crude assessment reflects barrels with a typical API gravity of 45 degrees and a maximum sulfur content of 0.2%. The Eagle Ford condensate assessment reflects barrels with a typical API gravity of 52 degrees and maximum sulfur content of 0.1%.

Americas Crude Marker

The Americas Crude Marker (ACM) reflects tradable sour crude values on the US Gulf Coast. The ACM assessment is composed of Mars, Southern Green Canyon (SGC), Poseidon and Thunder Horse. These four sour grades are produced off the US Gulf Coast and are transported via pipeline to US Gulf Coast refineries, where the streams can be delivered to Texas/Louisiana refineries.

The ACM reflects the most competitive grade. This methodology enables each of the four grades to operate as relief valves, with those crude oils forming the assessment at times when any particular grade is tight or subject to supply constraints.

Eagle Ford Marker

Due to variability inherent to Eagle Ford, the Platts Eagle Ford Marker (EFM) represents the value of a 47 degree API barrel of Eagle Ford crude oil, based on its product yield. To determine these yields, Platts has gathered a variety of Eagle Ford crude assays ranging from 40 degrees API to 62 degrees API from many sources. Platts analyzed the relative yields to extrapolate median yield percentages by volume for LPGs, light naphtha, heavy naphtha, kerosene, middle distillates, gasoil, and residual fuel oil.

The base of the Eagle Ford Marker, called Eagle Ford Yield, is calculated by applying these median yields for a 47 degree API crude to Platts US Gulf Coast LPG and refined product assessments. This yield is calculated using Platts assessments for propane, isobutane, normal butane, non-Targa natural gasoline, standard naphtha barge, jet fuel, ULSD, VGO 0.5% S and high sulfur fuel oil.

Platts uses its prompt refined oil product price assessments as the basis for the Eagle Ford Yield, with exceptions being the diesel (ULSD Colonial Pipeline) and jet fuel (Jet 54 Colonial Pipeline). Due to the prompt nature of the front pipeline cycle product assessments into the Colonial Pipeline as they approach scheduling day, Platts uses the second cycle assessments for the Eagle Ford Yield and the LLS Yield.

A simple yield approach may result in relatively high calculated values in times of healthy refining margins, and the opposite in times of relative weakness in the value of refined products. To account for this, Platts compares the relative value of the Eagle Ford gross product worth to the gross product worth of Light Louisiana Sweet, and applies this relationship to the actual spot price of LLS. This approach creates a safety net for the Eagle Ford Marker value, to ensure that the published value is not overstated in times of strong refining margins, nor understated in times of weak refining margins.

Platts selected LLS, the local US Gulf Coast sweet crude benchmark, as the comparative variable for the Eagle Ford Marker. The spot price of LLS provides a better reflection of US Gulf Coast supply and demand fundamentals for light, sweet crude. LLS' gross product worth is calculated using the same product prices as the Eagle Ford Yield. This LLS yield calculation is subtracted from the Eagle Ford Yield value to establish a price relationship. This relationship is applied to the spot price of LLS to arrive at the Eagle Ford Marker assessment.

For example, the Eagle Ford Yield is \$100/b and the LLS Yield is \$105/b. The relationship between Eagle Ford and LLS based

on these yield calculations is -\$5/b. The LLS front-month price is assessed at \$100/b. Based on this spot price for LLS and the -\$5/b relationship between the yield calculations of Eagle Ford and LLS, the Eagle Ford Marker would be \$95/b.

Eagle Ford Postings Average

In addition to the Eagle Ford Marker, Platts also publishes a daily average of the available Eagle Ford postings from the following three companies: Energy Transfer Partners, Plains All American Pipeline and Enterprise Products Partners. Platts also publishes the differential between the Eagle Ford Postings Average and the Eagle Ford Marker.

Americas Dated Brent

This assessment reflects the value of Dated Brent at the Americas market close of 2:30 pm Eastern Time, taking into account the rise or fall in the movement of Brent futures from the time of assessment of Dated Brent at the European market close of 4:30 pm London time until the Americas market close. Dated Brent reflects cargoes loading 10 days forward from the date of publication to one full month ahead.

US crude assessments at Asia close

These assessments reflect the outright price of WTI MEH, Light Louisiana Sweet, Southern Green Canyon and LOOP Sour at the Asian market close at 4:30 pm Singapore time, and are an addition to the existing set of assessments published at the Americas market close. Platts publishes the prompt month and next forward month for WTI MEH, LOOP Sour and LLS, and the prompt month for SGC.

The assessments reflect the price prevailing at the close of the market in Asia, taking into account the rise or fall in the cash WTI market from the time of the assessment at US market close at 2:30 pm ET until the Asian close. The assessments follow the US roll schedule, with the prompt month rolling over to the next

month on the first business day after the 25th of each month. In the absence of market indications, Platts uses prevailing spreads in relevant cash markets to determine a value for the new prompt month assessment on the first business day after the 25th of each month.

US crude assessments at London close

These assessments are aligned with the 4:30 pm London market close and are an addition to the existing set of assessments published at the Americas market close.

Platts publishes the prompt month and next forward month for LLS, Mars and WTI MEH, and the three most prompt months for WTI Cushing. Platts publishes an outright price as well as a differential for each of the three crudes — an EFP in the case of cash WTI relative to NYMEX light sweet crude futures, and a differential to same-month cash WTI in the case of Mars and LLS. These assessments are published in US dollars per barrel as well as euros per barrel.

Platts WTI Midland specifications

Platts global suite of WTI assessments, including both pipeline and cargo, reflects the Platts WTI Midland specifications:

Sulfur: 0.2% or less by weight as determined by ASTM Standard D-4294;

Gravity: Not less than 40 degrees American Petroleum Institute (API), nor more than 44 degrees API as determined by ASTM Standard D5002;

Mercaptans: 75 parts per million (ppm) or less as determined by ASTM Standard UOP-163;

Iron: 10 ppm or less as determined by ASTM Standard D5708 Method B;

Vanadium: 2 ppm or less as determined by ASTM Standard D5708 Method B;

Nickel: 2 ppm or less as determined by ASTM Standard D5708 Method B;

Vapor pressure: Less than 9.5 pounds per square at 100F and 4:1 V/L ratio as determined by ASTM Standard D6377;

Basic Sediment, water and other impurities: Less than 1% as determined by ASTM Standard D4007.

CANADA

Assessment	CODE	Mavg	Pavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	TYPICAL SIZE	CURRENCY	UOM
PIPELINE ASSESSMENTS											
Cold Lake Hardisty	AASZX00	AASZX03		Delivered	Hardisty, Alberta	M+1	25,000	-	-	US \$	Barrels
Cold Lake Hardisty vs WTI CMA	AASZZ00	AASZZ03		Delivered	Hardisty, Alberta	M+1	25,000	-	-	US \$	Barrels
Cold Lake Hardisty (C\$/CM)	AASZY00	AASZY03		Delivered	Hardisty, Alberta	M+1	25,000	-	-	C \$	cu m
Condensates	AALSF00	AALSG00		Delivered	Edmonton, Alberta	M+1	25,000	-	-	US \$	Barrels
Condensates vs WTI CMA	AALSJ00	AALSK00		Delivered	Edmonton, Alberta	M+1	25,000	-	-	US \$	Barrels
Condensates (C\$/CM)	AALSH00	AALSI00		Delivered	Edmonton, Alberta	M+1	25,000	-	-	C \$	cu m
Light Sour Blend	AALRX00	AALRY00		Delivered	Cromer, Manitoba	M+1	25,000	-	-	US \$	Barrels
Light Sour Blend vs WTI CMA	AALSD00	AALSE00		Delivered	Cromer, Manitoba	M+1	25,000	-	-	US \$	Barrels
Light Sour Blend (C\$/CM)	AALRZ00	AALSA00		Delivered	Cromer, Manitoba	M+1	25,000	-	-	C \$	cu m
Lloyd Blend	AALRK00	AALRL00		Delivered	Hardisty, Alberta	M+1	25,000	-	-	US \$	Barrels
Lloyd Blend vs WTI CMA	AALRP00	AALRQ00		Delivered	Hardisty, Alberta	M+1	25,000	-	-	US \$	Barrels
Lloyd Blend (C\$/CM)	AALRM00	AALRO00		Delivered	Hardisty, Alberta	M+1	25,000	-	-	C \$	cu m
Midale	AAUCC00	AAUCC03		Delivered	Cromer, Manitoba	M+1	25,000	-	-	US \$	Barrels
Midale vs WTI CMA	AAUCE00	AAUCE03		Delivered	Cromer, Manitoba	M+1	25,000	-	-	US \$	Barrels
Midale (C\$/CM)	AAUCD00	AAUCD03		Delivered	Cromer, Manitoba	M+1	25,000	-	-	C \$	cu m
Mixed Sweet	AALRR00	AALRS00		Delivered	Edmonton, Alberta	M+1	25,000	-	-	US \$	Barrels
Mixed Sweet vs WTI CMA	AALRV00	AALRW00		Delivered	Edmonton, Alberta	M+1	25,000	-	-	US \$	Barrels
Mixed Sweet (C\$/CM)	AALRT00	AALRU00		Delivered	Edmonton, Alberta	M+1	25,000	-	-	C \$	cu m
Syncrude Sweet Premium	AASOK00	AASOK03		Delivered	Edmonton, Alberta	M+1	25,000	-	-	US \$	Barrels
Syncrude Sweet Premium vs WTI CMA	AASOM00	AASOM03		Delivered	Edmonton, Alberta	M+1	25,000	-	-	US \$	Barrels
Syncrude Sweet Premium (C\$/CM)	AASOL00	AASOL03		Delivered	Edmonton, Alberta	M+1	25,000	-	-	C \$	cu m
WCS Hardisty	AAPPN00	AAPPN03		Delivered	Hardisty, Alberta	M+1	25,000	-	-	US \$	Barrels
WCS Hardisty vs WTI CMA	AAPPP00	AAPPP03		Delivered	Hardisty, Alberta	M+1	25,000	-	-	US \$	Barrels
WCS Hardisty (C\$/CM)	AAPP000	AAPP003		Delivered	Hardisty, Alberta	M+1	25,000	-	-	C \$	cu m
WTI CMA	AAVSN00	AAVSN03	AAVSN02	-	-	-	-	-	-	US \$	Barrels
CARGO ASSESSMENTS											
Hibernia	AAJKK00	AAJKL00			FOB	Whiffen Head, Newfoundland	30-60 days	-	-	675,000	US \$ Barrels
Hibernia vs Canada Dated Brent Strip	AAJKM00	AAJKN00			FOB	Whiffen Head, Newfoundland	30-60 days	-	-	675,000	US \$ Barrels
Hibernia (C\$/CM)	AALSN00	AALSO00			FOB	Whiffen Head, Newfoundland	30-60 days	-	-	675,000	C \$ cu m
Terra Nova	AAJUH00	AAJUI00			FOB	Whiffen Head, Newfoundland	30-60 days	-	-	675,000	US \$ Barrels
Terra Nova vs Canada Dated Brent Strip	AAJUJ00	AAJUK00			FOB	Whiffen Head, Newfoundland	30-60 days	-	-	675,000	US \$ Barrels
Terra Nova (C\$/CM)	AALSP00	AALSQ00			FOB	Whiffen Head, Newfoundland	30-60 days	-	-	675,000	C \$ cu m
White Rose	AAVJX00	AAVJX03			FOB	Sea Rose Terminal, Newfoundland	30-60 days	-	-	900,000	US \$ Barrels
White Rose vs Canada Dated Brent Strip	AAVJY00	AAVJY03			FOB	Sea Rose Terminal, Newfoundland	30-60 days	-	-	900,000	US \$ Barrels
White Rose (C\$/CM)	AAVPI00	AAVPI03			FOB	Sea Rose Terminal, Newfoundland	30-60 days	-	-	900,000	C \$ cu m
33-63 Day Dated Strip (Canada Dated Brent Strip)	AALEJ00	AALEJ03			-	-	-	-	-	US \$	Barrels

Canada

Canadian pipeline assessments

The following spot assessments are published as outright prices and as differentials to the NYMEX light sweet crude CMA. Crudes are assessed for injection in the first forward month. These assessments, including the NYMEX light sweet crude CMA basis, follow the pipeline schedule published by Canada's Crude Oil Logistics Committee. The volume for Canadian pipeline grades reflects 1,000 b/d of ratable crude, for a minimum of 25,000 barrels in total, delivered over the course of the pipeline month. These assessments are published in US dollars per barrel as well as Canadian dollars per cubic meter.

Cold Lake (CL): This assessment reflects barrels injected at Hardisty, Alberta.

Condensates: This assessment reflects condensates injected at Edmonton, Alberta.

Light Sour Blend (LSB): This assessment reflects barrels injected at Cromer, Manitoba.

Lloyd Blend (LLB): This assessment reflects barrels injected at

Hardisty, Alberta.

Midale (MSM): This assessment reflects barrels injected at Cromer, Manitoba.

Mixed Sweet (MSW): This assessment reflects barrels injected at Edmonton, Alberta.

Syncrude Sweet Premium (SSP): This assessment reflects barrels injected at Edmonton, Alberta.

Western Canadian Select (WCS): This assessment reflects barrels injected at Hardisty, Alberta.

WTI Calendar Month Average: This assessment reflects the average of the front month NYMEX light sweet crude settlement values over a calendar month, in line with the pipeline schedule published by Canada's Crude Oil Logistics Committee.

Canadian cargo assessments

The following Canadian cargo assessments are based on spot transactions for cargoes loading 30 to 60 days forward from the date of publication. The outright price is derived from the forward value of Dated Brent with pricing typically 1-5 days after

loading. The Canadian cargo markets are assessed at 4:30 pm London time. These assessments are published in US dollars per barrel as well as Canadian dollars per cubic meter.

Hibernia: This assessment reflects barrels loading FOB terminal basis Whiffen Head, Newfoundland, Canada. The typical cargo size is 675,000 barrels.

Terra Nova: This assessment reflects barrels loading FOB terminal basis Whiffen Head, Newfoundland, Canada. The typical cargo size is 675,000 barrels.

White Rose: This assessment reflects barrels loading FOB basis Sea Rose, Newfoundland, Canada. The typical cargo size is 900,000 barrels.

33-63 Day Dated Strip (Canada Dated Brent Strip): This assessment reflects the value of Dated Brent at the London market close for the loading period reflected in Platts Canadian cargo assessments, with pricing typically occurring 1-5 days after loading. Dated Brent-related differentials for all Canadian crude cargoes reflect values relative to the value of Dated Brent that prevails at the time of loading.

LATIN AMERICA

Assessment	CODE	Mavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	TYPICAL SIZE	CURRENCY	UOM
Castilla Blend	AAVEQ00	AAVEQ03		FOB	Covenas	30-60 days	1 million	US \$	Barrels
Castilla Blend vs Latin America Brent Futures Strip	AAXBZ00	AAXBZ03		FOB	Covenas	30-60 days	1 million	US \$	Barrels
Castilla Blend vs Latin America Dated Brent Strip	AAXBK00	AAXBK03		FOB	Covenas	30-60 days	1 million	US \$	Barrels
Castilla Blend vs Latin America WTI Strip	AAVEQ01	AAVEQ05		FOB	Covenas	30-60 days	1 million	US \$	Barrels
Escalante	PCAGC00	PCAGC03	AAIIN00	FOB	Caleta Cordoba	30-60 days	1 million	US \$	Barrels
Escalante vs Latin America Brent Futures Strip	AAXB500	AAXB503		FOB	Caleta Cordoba	30-60 days	1 million	US \$	Barrels
Escalante vs Latin America Dated Brent Strip	AAXAX00	AAXAX03		FOB	Caleta Cordoba	30-60 days	1 million	US \$	Barrels
Escalante vs Latin America WTI Strip	PCAGO00	AAJJN00		FOB	Caleta Cordoba	30-60 days	1 million	US \$	Barrels
Liza	ALIZA00	ALIZA03		FOB	Liza Destiny FPSO	30-60 days	1 million	US \$	Barrels
Liza vs Latin American Brent Futures Strip	ALIZC00	ALIZC03		FOB	Liza Destiny FPSO	30-60 days	1 million	US \$	Barrels
Liza vs Latin America Dated Brent Strip	ALIZB00	ALIZB03		FOB	Liza Destiny FPSO	30-60 days	1 million	US \$	Barrels
Liza vs Latin America WTI Strip	ALIZD00	ALIZD03		FOB	Liza Destiny FPSO	30-60 days	1 million	US \$	Barrels
Loreto	PCAGH00	PCAGH03		FOB	Puerto Bayovar	30-60 days	450,000	US \$	Barrels
Loreto vs Latin America Brent Futures Strip	AAXBV00	AAXBV03		FOB	Puerto Bayovar	30-60 days	450,000	US \$	Barrels
Loreto vs Latin America Dated Brent Strip	AAXBG00	AAXBG03		FOB	Puerto Bayovar	30-60 days	450,000	US \$	Barrels
Loreto vs Latin America WTI Strip	PCAGQ00	AAJJR00		FOB	Puerto Bayovar	30-60 days	450,000	US \$	Barrels
Marlim	AAITF00	AAITG00		FOB	Sao Sebastiao	30-60 days	750,000	US \$	Barrels
Marlim vs Latin America Brent Futures Strip	AAXBY00	AAXBY03		FOB	Sao Sebastiao	30-60 days	750,000	US \$	Barrels
Marlim vs Latin America Dated Brent Strip	AAXBJ00	AAXBJ03		FOB	Sao Sebastiao	30-60 days	750,000	US \$	Barrels
Marlim vs Latin America WTI Strip	AAITL00	AAITM00		FOB	Sao Sebastiao	30-60 days	750,000	US \$	Barrels
Medanito FOB Argentina	AMTOA00	AMTOA03		FOB	Puerto Rosales	30-60 days	450,000	US \$	Barrels
Medanito FOB Argentina vs Latin America Brent Futures Strip	AMTOB00	AMTOB03		FOB	Puerto Rosales	30-60 days	450,000	US \$	Barrels
Medanito FOB Argentina vs Latin American Dated Brent Strip	AMTOD00	AMTOD03		FOB	Puerto Rosales	30-60 days	450,000	US \$	Barrels
Medanito FOB Argentina vs Latin America WTI Strip	AMTOC00	AMTOC03		FOB	Puerto Rosales	30-60 days	450,000	US \$	Barrels
Mesa 30	AAITB00	AAITC00	AAIZY00	FOB	Venezuela	30-60 days	350,000	US \$	Barrels
Mesa 30 vs Latin America Brent Futures Strip	AAXCC00	AAXCC03		FOB	Venezuela	30-60 days	350,000	US \$	Barrels
Mesa 30 vs Latin America Dated Brent Strip	AAXB000	AAXB003		FOB	Venezuela	30-60 days	350,000	US \$	Barrels
Mesa 30 vs Latin America WTI Strip	AAITH00	AAITI00		FOB	Venezuela	30-60 days	350,000	US \$	Barrels
Napo	AAMCA00	AAMCC00		FOB	Esmeraldas	30-60 days	720,000	US \$	Barrels
Napo vs Latin America Brent Futures Strip	AAXBX00	AAXBX03		FOB	Esmeraldas	30-60 days	720,000	US \$	Barrels
Napo vs Latin America Dated Brent Strip	AAXBI00	AAXBI03		FOB	Esmeraldas	30-60 days	720,000	US \$	Barrels
Napo vs Latin America WTI Strip	AAMCD00	AAMCE00		FOB	Esmeraldas	30-60 days	720,000	US \$	Barrels
Oriente	PCADE00	PCADE03		FOB	Esmeraldas	30-60 days	360,000	US \$	Barrels
Oriente vs Latin America Brent Futures Strip	AAXBW00	AAXBW03		FOB	Esmeraldas	30-60 days	360,000	US \$	Barrels
Oriente vs Latin America Dated Brent Strip	AAXBH00	AAXBH03		FOB	Esmeraldas	30-60 days	360,000	US \$	Barrels
Oriente vs Latin America WTI Strip	PCAGU00	AAJJP00		FOB	Esmeraldas	30-60 days	360,000	US \$	Barrels
Roncador	AAQTL00	AAQTL03		FOB	Angra dos Reis	30-60 days	750,000	US \$	Barrels
Roncador vs Latin America Brent Futures Strip	AAXBT00	AAXBT03		FOB	Angra dos Reis	30-60 days	750,000	US \$	Barrels
Roncador vs Latin America Dated Brent Strip	AAXAY00	AAXAY03		FOB	Angra dos Reis	30-60 days	750,000	US \$	Barrels
Roncador vs Latin America WTI Strip	AAQTK00	AAQTK03		FOB	Angra dos Reis	30-60 days	750,000	US \$	Barrels

LATIN AMERICA

Assessment	CODE	Mavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	TYPICAL SIZE	CURRENCY	UOM
Santa Barbara	AAITD00	AAITE00		FOB	Venezuela	30-60 days	350,000	US \$	Barrels
Santa Barbara vs Latin America Brent Futures Strip	AAXBU00	AAXBU03		FOB	Venezuela	30-60 days	350,000	US \$	Barrels
Santa Barbara vs Latin America Dated Brent Strip	AAXAZ00	AAXAZ03		FOB	Venezuela	30-60 days	350,000	US \$	Barrels
Santa Barbara vs Latin America WTI Strip	AAITJ00	AAITK00		FOB	Venezuela	30-60 days	350,000	US \$	Barrels
Tupi FOB Brazil	ATUPA00	ATUPA03		FOB	Brazil	30-60 days	2 million	US \$	Barrels
Tupi FOB Brazil vs Latin America Brent Futures Strip	ATUPB00	ATUPB03		FOB	Brazil	30-60 days	2 million	US \$	Barrels
Tupi FOB Brazil vs Latin America Dated Brent Strip	ATUPD00	ATUPD03		FOB	Brazil	30-60 days	2 million	US \$	Barrels
Tupi FOB Brazil vs Latin America WTI Strip	ATUPC00	ATUPC03		FOB	Brazil	30-60 days	2 million	US \$	Barrels
Vasconia	PCAGI00	PCAGI03		FOB	Covenas	30-60 days	500,000	US \$	Barrels
Vasconia vs Latin America Brent Futures Strip	AAXCB00	AAXCB03		FOB	Covenas	30-60 days	500,000	US \$	Barrels
Vasconia vs Latin America Dated Brent Strip	AAXBN00	AAXBN03		FOB	Covenas	30-60 days	500,000	US \$	Barrels
Vasconia vs Latin America WTI Strip	PCAGR00	AAJJO00		FOB	Covenas	30-60 days	500,000	US \$	Barrels
Latin America Dated Brent Strip	AAXBR00	AAXBR03	-	-	-	-	-	US \$	Barrels
Latin America Brent Futures Strip	AAXBQ00	AAXBQ03	-	-	-	-	-	US \$	Barrels
Latin America WTI Futures Strip	AAXBP00	AAXBP03	-	-	-	-	-	US \$	Barrels

Latin America

Assessments

Platts Latin American crude assessments are published as outright prices, and as differentials to WTI, Brent futures and Dated Brent strips. These assessments reflect bids, offers and trades 30-60 days forward from the date of publication.

Castilla Blend: This assessment reflects barrels commonly sold FOB Covenas, Colombia, with a typical volume of 1 million barrels.

Escalante: This assessment reflects barrels sold FOB Caleta Cordova, Argentina, with a typical volume of 1 million barrels.

Liza: This assessment reflects barrels sold FOB from the Liza Destiny Floating Production Storage and Offloading vessel offshore Guyana, with a typical cargo size of 1 million barrels.

Loreto: This assessment reflects barrels commonly sold FOB

Puerto Bayovar, Peru, with a typical volume of 400,000 barrels.

Marlim: This assessment reflects barrels commonly sold FOB Sao Sebastiao, Brazil, with a typical volume of 750,000 barrels.

Medanito: This assessment reflects barrels commonly sold FOB Puerto Rosales, Argentina, with a typical volume of 450,000 barrels.

Mesa 30: This assessment reflects barrels commonly sold FOB Venezuela, with a typical volume of 350,000 barrels.

Napo: This assessment reflects barrels commonly sold FOB Esmeraldas, Ecuador, with a typical volume of 720,000 barrels.

Oriente: This assessment reflects barrels commonly sold FOB Esmeraldas, Ecuador, with a typical volume of 360,000 barrels.

Roncador: This assessment reflects barrels sold basis FOB Angra dos Reis, Brazil, with a typical volume of 750,000 barrels.

Santa Barbara: This assessment reflects barrels commonly sold FOB Venezuela, with a typical volume of 350,000 barrels.

Tupi: This assessment reflects barrels commonly sold FOB Porto do Acu, Brazil, with a typical volume of 2 million barrels.

Vasconia: This assessment reflects barrels commonly sold FOB Covenas, Colombia, with a typical volume of 500,000 barrels.

Latin America WTI strip: WTI-related assessments reflect values relative to the prevailing contract month at the time of loading. For example, on June 1, Platts would typically be assessing the value of Latin American crudes loading in the month of July. Therefore, the WTI-related basis for Platts Latin American crude assessments on June 1 reflects the average of prevailing front-month cash WTI values for July 1-31, which would be August cash WTI for July 1-25 and September cash WTI for July 26-31. Platts publishes this Latin America WTI strip on a daily basis.

Latin America Brent Futures strip: Brent futures-related assessments reflect values relative to the prevailing contract

month at the time of loading. As with the example above, on June 1, Platts would typically be assessing the value of Latin American crudes loading in the month of July. Therefore, the Brent futures-related basis for Platts Latin American crude assessments on June 1 reflects the average of prevailing front-month Brent futures for July 1-31, which would be September Brent futures during the month of July, excluding the last business day of July which would be October Brent futures. Platts publishes this Latin America Futures Brent strip on a daily basis.

Latin America Dated Brent strip: This assessment reflects the value of Dated Brent at the US close for the loading period reflected in the Latin American crude market. Dated Brent-related differentials for all Latin American crudes reflect values relative to the value of Dated Brent that prevails at the time of loading. As an example, on June 1, Platts would typically be assessing the value of Latin American crudes loading in the month of July. Therefore, the Dated Brent-related basis for Platts Latin American crude assessments on June 1 reflects the average of prevailing Dated Brent swaps for July 1-31.

Mexican Crude OSP Calculations

Platts publishes calculated Mexican crude OSP values daily, based on the following FOB-based OSP formulas from Mexico's PMI:

US Gulf Coast, Americas' Atlantic Coast, Caribbean

*Maya: $(0.65 * WTI \text{ MEH}) + (0.35 * ICE \text{ BRENT}) + K$

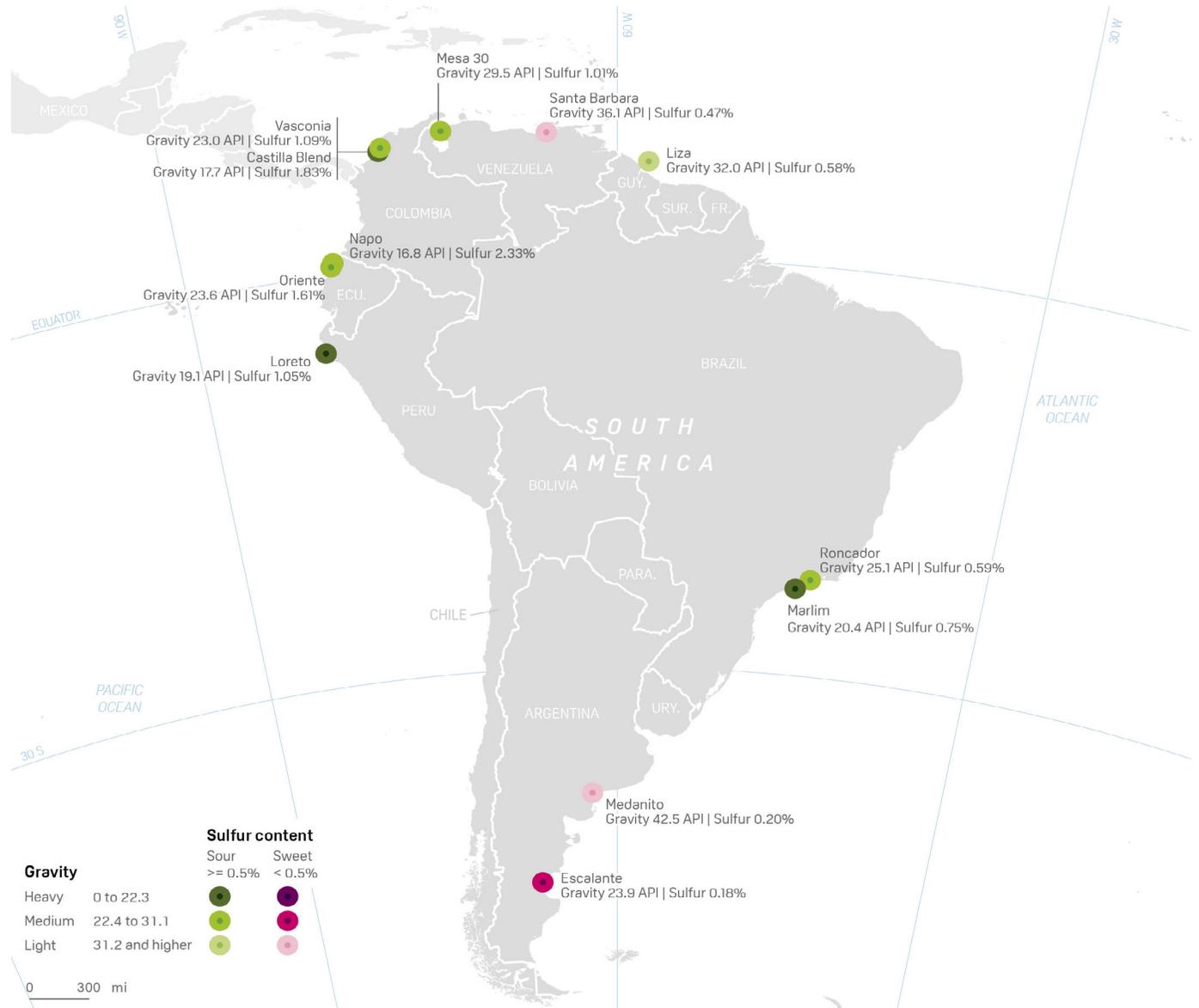
*Isthmus: $(0.65 * WTI \text{ MEH}) + (0.35 * ICE \text{ BRENT}) + K$

*Olmeca: $(0.65 * WTI \text{ MEH}) + (0.35 * ICE \text{ BRENT}) + K$

US West Coast, Americas' Pacific Coast

*Maya: $(0.65 * WTI \text{ MEH}) + (0.35 * ICE \text{ BRENT}) + K$

*Isthmus: $(0.65 * WTI \text{ MEH}) + (0.35 * ICE \text{ BRENT}) + K$



Source: Platts

Europe and the Middle East

Maya: ICE BRENT + K

Isthmus: ICE BRENT + K

Olmecca: ICE BRENT + K

India

Maya: ICE BRENT + K

Isthmus: ICE BRENT + K

Olmecca: ICE BRENT + K

Asia, excluding India

Maya: (Oman + Dubai)/2 + K

Isthmus: (Oman + Dubai)/2 + K

*Used as a proxy for another Price Reporting Agency's WTI Houston Assessment

Maya: This crude is sold FOB Cayo Arcas, FOB Dos Bocas and FOB Salina Cruz, with a typical API gravity of 21-22 degrees and sulfur content of 3.4%, according to PMI's website.

Isthmus: This crude is sold FOB Dos Bocas, FOB Salina Cruz and FOB Pajaritos, with a typical API gravity of 32-33 degrees and sulfur content of 1.8%, according to PMI's website.

Olmecca: This crude is sold FOB Pajaritos, with a typical API gravity of 38-39 degrees and sulfur content of 0.73%-0.95%, according to PMI's website.

AMERICAS CRUDE QUALITY

	API gravity (degrees)	Sulfur content (%)
US pipeline crude assessments		
Bakken	43.3	0.09
Bonito	30.8	1.68
Eugene Island	31.8	1.26
Heavy Louisiana Sweet	32.6	0.38
Kern River/San Joaquin Valley	13.2	1.13
Light Louisiana Sweet	36.6	0.37
Line 63	28	1.02
Mars	29.4	1.87
Poseidon	29.7	1.84
Southern Green Canyon	28	2.24
Thums	17.6	1.65
Thunder Horse	31.7	1.13
West Texas Intermediate (Cushing)	38 - 42	≤0.42
West Texas Intermediate (Midland)	40 - 44	≤0.20
West Texas Intermediate (MEH)	40 - 44	≤0.20
West Texas Sour	30 - 33	1.28
Western Canadian Select (Cushing/ Nederland)	20.9	3.57
Wyoming Sweet	43.3	0.09
US crude cargo assessments		
Alaska North Slope (Long Beach)	32.1	0.96
Basrah Light (delivered USGC)	31.4	2.74
Eagle Ford Crude	45	≤0.20
Eagle Ford Condensate	52	≤0.10
Canada pipeline crude assessments		
Cold Lake	21.1	3.71
Condensates (Edmonton)	69.9	0.07
Light Sour Blend	37	1.30
Lloyd Blend	20.5	3.43
Midale	32.5	2.07
Mixed Sweet	41	0.34
Syncrude Sweet Premium	32.7	0.17

AMERICAS CRUDE QUALITY

	API gravity (degrees)	Sulfur content (%)
Western Canadian Select (Hardisty)	20.9	3.57
Canada crude cargo assessments		
Hibernia	34.1	0.56
Terra Nova	34.2	0.52
White Rose	31	0.31
Latin America crude assessments		
Castilla Blend	17.7	1.83
Escalante	23.9	0.18
Isthmus	30.9	1.51
Liza	32	0.58
Loreto	19.1	1.05
Marlim	20.4	0.75
Maya	21.7	3.33
Medanito	42.5	0.2
Mesa 30	29.5	1.01
Napo	16.8	2.33
Olmecca	38.9	0.83
Oriente	23.6	1.61
Roncador	25.1	0.59
Santa Barbara	36.1	0.47
Tupi	31	0.35
Vasconia	23	1.09

Note: Crude specifications can vary over time. These are based on latest crude oil tenders and available assays as of July 2021.

REVISION HISTORY

January 2022: Platts updated this guide to reflect the discontinuation of Basrah Light assessments, effective Dec. 1, 2021, amendments to the WTI Midland Pipeline provenance list and the addition of India to the Mexican Crude OSP Calculations.

November 2021: Platts updated this guide to reflect the new assessment of Tupi FOB Brazil, effective Oct. 11, 2021 and amendments to the Alaska North Slope assessment, effective Nov. 1, 2021.

August 2021: Platts updated this guide to reflect the amendment to the WTI Midland pipeline provenance standard, effective July 15, 2021. Updates also were made to reflect the discontinuation of the Magdalena crude assessment, effective July 1, 2021. Typos were corrected and updates and corrections were made to typical crude qualities based on current crude assay information.

April 2021: Platts completed an annual review of this guide in April 2021, reviewing all content, correcting typos and making minor edits to language. Platts also updated this guide to reflect the discontinuation of Flint Hills Eagle Ford crude postings and the amendment to the Eagle Ford Posting Average, effective Oct. 1, 2020. Platts also updated this guide to reflect the launch of the assessment of Guyana's Liza crude, effective Feb. 16, 2021 and the launch of Argentina's Medanito crude, effective April 19, 2021.

August 2020: Platts updated this guide to reflect implementation of Platts WTI Midland specifications globally from August 5, 2020. The update also amended the Bakken Williston assessment delivery point options.

July 2020: Platts updated its guide to include details of the Platts AGS assessment. The update also added the EPIC, Gray Oak and Permian Express crude pipelines to the list of pipelines reflected in WTI cargo assessments and updated its WTI, Eagle

Ford, and Eagle Ford Condensate FOB USGC assessment typical cargo size from 600,000 barrels to 700,0000 barrels.

May 2020: Platts completed an annual review of the Americas Crude Oil methodology and specifications guide. Platts reviewed all content, corrected typos and made minor edits to language. Platts updated Mexican Crude OSP Calculations to reflex recent changes to formulas and also added information regarding pipeline provenance specifications for the WTI FOB USGC cargo assessment.

May 2019: Platts completed an annual review of the Americas Crude Oil specifications guide. Platts reviewed all content, corrected typos and made minor edits to language.

April 2019: Platts completed an annual update to sections 1 to 6 of Platts Methodology and Specifications Guides in April 2019, and moved these sections into a standalone Methodology Guide. The Global Crude Oil Specifications Guide was separated from the overall Methodology Guide, and split into three regional guides for Asia Pacific and Middle East, Europe and Africa and Americas.

January 2019: Platts updated the North Sea and Urals & Mediterranean sections to include annual freight rates effective January 2, 2019. Platts also updated assessment names in the Urals & Mediterranean section to reflect changes to assessment names effective January 2, 2019. Platts removed assessments for Iran Light and Iran Heavy FOB Sidi Kerir, which were discontinued effective January 2, 2019 and added assessments for Iran Light and Iran Heavy FOB Kharg Island (Med) which were introduced also effective January 2, 2019. The ESPO assessment in the Urals & Mediterranean section was updated to reflect that effective January 2, 2019, ESPO will now be reflecting cargoes loading two months ahead in line with methodology changes to the Asia assessment and announced in Singapore. All changes conducted during this review were designed to get the guide in shape for publication early 2019 in order to reflect methodology changes due to take effect at the start of the upcoming year.

Additionally, the accompanying EMEA Crude assessment table was updated to reflect all changes. In the Asia-Pacific and Persian Gulf sections: Platts removed references to Enfield crude after the assessment was discontinued in November, 2018. Updated loading period reflected in Platts ESPO M1 and ESPO M2 assessments effective January 2019. Added references to Murban M2 and M3 assessments, launched on January 2, 2019. Removed reference to Vietnam's Su Tu Den crude differential to OSP which was discontinued in 2017.

October 2018: Platts completed an annual review of the global Crude Oil methodology and specifications guide. Platts reviewed all content, corrected typos and made minor edits to language. Platts also added new sections I to VI. In the Persian Gulf section Platts added reference to an assessment of Murban's spread versus front-month Dubai that was launched in July, 2018. In the Asia Pacific section Platts corrected the explanation of how the Dated Brent Strip is calculated. Platts also added description of several Asia-Pacific crude oil grades that Platts currently assesses in the region. In the Americas, Platts updated the guide to reflect the addition of LOOP Sour differential assessments; new US crude assessments at the Asia close; the change in the Canadian cargo laycans assessed and the underlying Canada Dated Brent strip; the clarification of its USGC Basrah Light assessment methodology; the change in the ANS differential basis; the addition of two new USGC Bakken assessments, and the renaming and redefinition of its existing North Dakota assessment; the renaming and broader scope of its WTI crude and Eagle Ford crude and condensate cargo assessments on the US Gulf Coast; the discontinuation of its FOB Houston Eagle Ford crude and condensate assessments; and the change in specification reflected in its Eagle Ford condensate assessments. In addition the text on WTI CMA methodology was edited for further clarity and the assessment was added to the table. The Canada Dated Brent strip and Latin America strips were also added to the assessment tables. In the Americas section, the text and tables were also reorganized. In Europe, Platts updated the symbol tables, re-ordering the groupings and changing headings. Doba crude had its conversion factor

changed; netback calculations were adjusted; and a US CIF delivered crude section was added.

July 2018: Platts updated its guide to reflect 2018 Worldscale rates, the addition of several maps, the revision and clarification of text and the revision of cargo sizes in West Africa. Platts updated the Asia and Persian Gulf sections to reflect the addition of crude assessments at Singapore close for the following: Indonesia's Banyu Urip crude, Iraq's Basrah Light and Basrah Heavy crudes, US crude assessments and CFR North Asia crude assessments. The guide was also updated to reflect the discontinuation of Su Tu Den crude differential to OSP effective December 1, 2017. Platts edited and updated the text for Asia Pacific sections as well as quality chart for Asia-Pacific crudes as per latest available assays. Platts updated the guide to reflect the addition of Troll to BFOE and the inclusion of previously-loaded oil in the delivered Urals and Mediterranean MOC markets. Additionally, Platts edited and updated the text and tables for the EMEA crude sections.

September 2017: Platts updated its guide to reflect additional methodology on its Dated Brent CIF Rotterdam assessment. Platts also completed an annual review of the Crude Oil methodology and specifications guide. Platts reviewed all content and made minor edits to language. Guidance on outright, differential and spread price was clarified in reference to increments. In the Americas, Platts clarified calculation and loading details of Mexican crude prices and added in the OSP formula for Maya crude heading to the US West Coast. In addition, Platts has removed most Americas crude quality specifications from the text and compiled them into an Americas crude quality table, updated with details from latest assays. In the assessment tables, Platts added in a column for typical volume sizes, and deleted extraneous columns. Platts also clarified the rollover dates for ANS cargoes and the Latin America Brent Futures Strip calculations, and removed redundant language for the Eagle Ford Marker. In the EMEA region, Platts updated the guide to include the Asgard and Alvheim condensate grades in the North Sea. Also, text on

the delivery and loading dates on Dated Brent was clarified, alongside text on the Forward Dated Brent strips. Platts edited and updated the text for Persian Gulf and Asia Pacific sections, and in table corrected the loading period for ESPO and Sakhalin Blend and loading point for Senipah crude. Maps relevant to key crude oil assessments were also added.

April 2017: Platts updated the Crude Oil Methodology Guide to reflect the addition of the LOOP Sour crude assessments traded in cavern at the Louisiana Offshore Oil Port terminal on the US Gulf Coast.

January 2017: Platts completed an annual update to the Crude Oil Methodology Guide, published in January 2017. This update moved the location of certain passages in Sections I to VI for enhanced clarity, and removed redundant references to STS and barge practices. Platts also updated Worldscale rates to reflect changes from 2016 to 2017. Platts updated the Crude Oil Methodology Guide to clarify around nomination procedure for Middle Eastern sour crude cargo deliveries, and remove reference to the use of the Aframax Abu Dhabi-III as an alternative delivery point in the assessment process for loading of Upper Zakum cargoes. Platts updated the Crude Oil Methodology Guide to include the Kimanis crude assessment and Murban Quality Premium. Removed references to discontinued Canadian crude postings, updated the new MOC timestamps and general review and update of Americas methodology. Platts also updated the European section throughout, including procedures around pre-loaded oil for Urals Mediterranean, changes to Cash BFOE contract months and the discontinuation of Azeri FOB Supsa. Platts made a variety of edits to its North Sea methodology section for further clarity around descriptions for BFOE, convergence practices, a note that Platts now published assessments for the value of three forward months of BFOE (instead of as four, previously). Platts also added information relating to its updated intraday BFOE assessments.

May 2016: Platts updated the Crude Oil Methodology Guide to

include new assessments for WTI 2nd month and at the London close including: WTI MEH M2, WTI Midland M2, Light Houston Sweet M2, WTI MEH M1 (London), and WTI MEH M2 (London).

April 2016: Platts updated the Crude Oil Methodology Guide to reflect typical volumes for Latin American crude oil cargoes to: Escalante (1 million barrels), Roncador (750,000 barrels), Loreto (400,000 barrels), Oriente (360,000 barrels), Napo (720,000 barrels), Marlim (750,000 barrels), Castilla Blend (1 million barrels), and Vasconia (500,000 barrels). Prior to April 2016, Platts reflected typical volume sizes of 350,000 barrels with the exception of Santa Barbara (350,000 barrels), Mesa 30 (350,000 barrels), Castilla Blend (500,000 barrels) and Magdalena (300,000 barrels). Additionally, Platts has updated the assessment period for Alaska North Slope (ANS) crude delivered into the US West Coast. Under the updated ANS methodology, Platts will roll its assessments forward to reflect deliveries in the second calendar month forward from the first publishing day on or after the 10th of each month. Platts also updated the Crude Oil Methodology Guide to reflect updated specifications of Basrah Light delivered into the US Gulf Coast. The updated specifications reflect a typical API gravity 29.5 and a maximum sulfur content of 3%. Prior to March 2016, Platts Basrah Light reflected an API gravity of 31-35.5 and sulfur content of 2%. Platts also corrected minor typographical errors.

February 2016: Platts updated the Crude Oil Methodology Guide to reflect the addition of US crude export cargo assessments for Eagle Ford crude and condensate from Houston and Corpus Christi, Texas terminals as well as WTI Houston. Platts also added a new crude oil pipeline assessment for Western Canadian Select (WCS) ex-Nederland. Platts also removed references to Canadian crude oil postings that were discontinued effective July 31, 2015.

January 2016: Platts updated the Crude Oil Methodology Guide to reflect the inclusion of Al Shaheen and Murban in its Dubai and Oman crude oil benchmarks. Platts removed references to Stybarrow crude, which is no longer assessed. Platts started to

assess Dubai and Oman derivatives independently of physical assessments with effect from December 1, 2015.

November 2015: Platts updated the Crude Oil Methodology Guide to reflect Brazilian Roncador crude oil with a typical gravity of 19.8 API, sulfur content of 0.935%. Platts assessments for Roncador have reflected crude of this general quality since 2013, when Roncador exports began to reflect a heavier, more sulfurous specification than had previously been typical for the crude. Prior to 2013, Roncador exports and Platts Roncador assessments had reflected crude with a lighter gravity of approximately 28.3 API, and a lower sulfur of generally 0.58%. Platts removed references to Kumkol crude, which is no longer assessed.

August 2015: Platts completed an annual update to the Crude Oil Methodology Guide in July 2015. In this update, Platts reviewed all content. Platts updated guidance around how to report information and expectations for contactability. Platts also consolidated guidance regarding review of reported trades and incorporated information regarding how Platts accounts for market structure in its crude oil assessments. In the specifications section of the guide, Platts reflected the renaming of Flotta Gold assessment, in line with the change in name by the terminal operator, Talisman Sinopec Energy UK Ltd (TSEUK). Platts added the planned discontinuation dates of its existing Kumkol and Zarzaitine assessments. Platts incorporated netback calculations for Urals and Mediterranean assessments. Platts added its Baltic Urals crude short option methodology. Language has been clarified in the US pipeline crude assessments, US shale crude oils and Americas dated Brent and US crude assessments at London close. Latin America crude has added clarification around the monthly cash WTI assessments along with language to the Mexican crude contract pricing formulas. Language around Latin America assessments FOB has also been clarified. Platts updated this guide to include guidance regarding the inclusion of STS as a delivery option for Upper Zakum.

May 2015: Platts removed a number of European, Russian and West African crude oil specifications from the guide and

replaced them with a table format. Previously, the crude oil specifications had appeared next to the crude oil's description. Now, the specifications appear separately in one table and are designed as a reference. Platts updated the description of its Dated Brent and North Sea crude assessment methodology to reflect North Sea cargoes loading a full month-ahead. This change to Platts Dated Brent and North Sea crude methodology also incorporated changes to Platts Cash BFOE; under Platts new methodology, full cargo date nominations are declared one month in advance. This change also impacted Platts Asian and American Dated Brent assessments, which also reflect loadings 10 days to a month-ahead. Platts further clarified the convergence and settlement expectations for BFOE partials published for assessment under its methodology. Platts updated the description of its West African assessment range to reflect the value of all West African crude assessments loading 25-55 days forward. Platts noted the addition of the Deodorized Field Condensate assessment and the Sakhalin Blend assessment. DFC will run alongside the existing Ras Gas assessment and will carry the historical data for Ras Gas when the Ras Gas assessment is discontinued on January 2, 2016. The Sakhalin Blend assessment will run alongside the existing Vityaz Blend assessment and will carry the historical data for Vityaz when the Vityaz assessment is discontinued on January 2, 2016. Platts removed references to discontinued assessments for Lower Zakum and Umm Shaif following the launch of the Das Blend assessment and the removal of the codes associated with those assessments. Platts added information about its new WTI MEH assessment reflecting Midland grade WTI crude oil trading at the Magellan East Houston terminal. Platts also amended the guide to reflect the renaming of its Canadian Syncrude Sweet assessment to Syncrude Sweet Premium. This methodology guide was also updated to include further description of Platts' processes and practices in survey assessment environments. Platts made other minor edits throughout.

December 2014: Platts updated this guide making some minor edits. Platts also updated the methodology to reflect the use of full cargoes to assess Tapis and Minas crude oil markets from

December 2014. As part of the change, Platts discontinued the use of the partials mechanism to assess Minas and Tapis. Platts updated the tables for Asia-Pacific crude to amend the cargo size of Minas to 100,000 barrels and Tapis to 300,000 barrels. Platts also updated the description of Angolan Dated Brent Strip codes AALGM00 and AALGN00 to their new description, the ?@15-45 Day Dated Strip?A. In North Sea crude, Platts added assessment codes for M4 cash BFOE at the London and Asia closes, M4 BFOE EFPs, and spreads with WTI.

July 2014: Platts completed an annual update to the Crude Oil Methodology Guide in July 2014. In this update, Platts reviewed all content. Platts consolidated guidelines around publishing information during the MOC assessment process into the MOC Data Publishing Principles section, and incorporated clarification guidance about how to express interest in bids and offers that were published in January 2014 and May 2014. Platts also incorporated clarifications around book-outs, circle-outs, and editorial review of reported trades. The guide was updated to add details regarding new assessments for Das Blend crude; correct the implementation date for valuing Asian crudes versus the ADB Strip to September 2013; remove a reference to Oman quality specifications; add details regarding Minas and Tapis partials; update Platts QP calculations formula; remove references to Palanca/Soyo, Kole, and Rabi Light, which are no longer assessed; update descriptions of Urals CIF Rotterdam and CIF Augusta; incorporate additional Azeri Light descriptions; revise Urals CFD descriptions; clarify language describing the US and Canadian pipeline rolls; update latest available API and sulfur specifications for SGC and Poseidon; create separate sections for US and Canada cargo assessments for more clarity; include descriptions of its new Bakken basin assessment; remove certain background commentary around US shale markets that was not strictly relevant to methodology itself; remove references to Canadian crude postings that are no longer published; add explanations of Latin strips; add definitions for Isthmus to USWC and Olmeca to Europe; and incorporate descriptions of Platts' 3:15 futures assessments. Platts also made minor typographical edits throughout the text for clarity.

November 2013: Platts updated this guide, making minor edits through the text. Platts also updated its methodology for Middle Eastern crude oil, noting a change where full cargos converge on the 20th partial between a buyer and seller, forming cargos of 500,000 barrels each. Platts added information regarding its new Light Houston Sweet (LHS) assessment, which had previously

been published in a separate document. Platts also added details regarding assessments for Akpo, Bonga, Pazflor, Plutonio and Djeno crude oils.

August 2013: Platts revamped all Oil Methodology and Specifications Guides, including its Crude Oil guide, in August

2013. This revamp was completed to enhance the clarity and usefulness of all guides, and to introduce greater consistency of layout and structure across all published methodology guides. Methodologies for market coverage were not changed through this revamp, unless specifically noted in the methodology guide itself.