



July 22, 2010

Report to Stakeholders
Light Crude Quality Study

Subject: May 2010 Results

Included with this document are the results from the analyses of the May samples of light crudes collected at the Enbridge Edmonton Terminal and the TransMountain Kamloops Station. These results have been sorted according to crude type. Included in these results are analyses of:

- **Light sour crudes** (BC Light, Boundary Lake, Gibson Light Sour, Koch Alberta, Peace Sour, Pembina Light Sour),
- **MSW and light sweet MSW feeders** (Mixed Sweet Blend, Bonnie Glen, Federated, Gibson Light Sweet, Joarcam, Kerrobert Sweet, Peace, Pembina, Rainbow, Redwater, Tundra Sweet), and
- **Sweet synthetic streams** (CNRL Light Sweet Synthetic, Husky Synthetic Blend, Long Lake Light Synthetic, Premium Albian Synthetic, Shell Synthetic Light, Suncor Synthetic "A", Syncrude Synthetic Blend).

Note that not all crudes have been analyzed for all parameters at this time, but that they will be according to the "rotating" analysis schedule.

Headlines

- butanes in Mixed Sweet Blend (MSW) noted at levels above 4.0 vol%
- butanes in Koch Alberta are once again present at levels well above the long-term average for this stream (4.07 vol% versus 2.86 vol% average)

The www.CrudeMonitor.ca website includes access to the results of the Light Crude Quality Study. The Light Crude Study data, including the data for May 2010, are currently on the Internet. Should you have any questions regarding this report, please contact Crude Quality Inc. at (780) 991-9900 or at crudequality@gmail.com.

Light Crude Quality Study Report to the Stakeholders May 2010

Observations

In this section of the Report to the Stakeholders, we have made some general observations regarding the results of the analyses, along with explanations for any deviations in the data.



Light Sour

BC Light (BCL, Kamloops)

No samples of BC Light were included in the May testing schedule.

Boundary Lake (BDY, Kamloops)

There were no samples of Boundary Lake included in May's test schedule.

Gibson Light Sour (MGS, Edmonton)

No samples of Gibson Light Sour were included in this month's test schedule.

Central Alberta (aka Koch Alberta, CAL or KAL, Edmonton)

Increased butanes (4.07 vol% versus 2.86 vol% average) and MCR, along with decreased C5s x C7s and benzene, were present in the May sample of Koch Alberta. Density was marginally elevated. The simulated distillation distribution reflected a decrease in naphtha and an increase in the gas oil component.

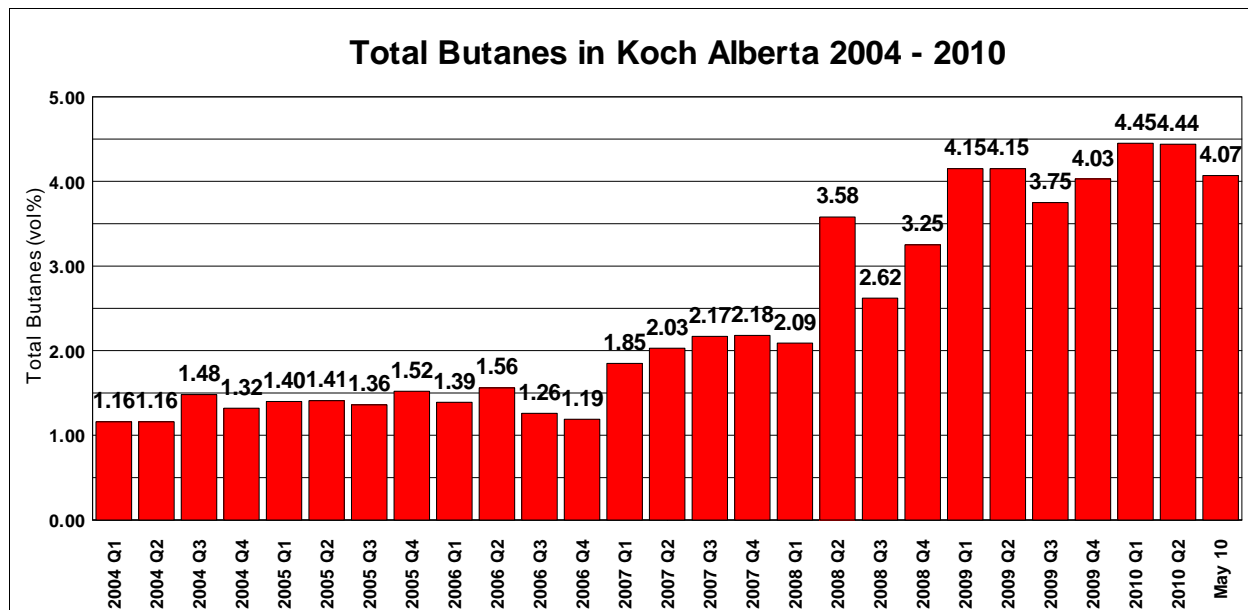


Figure 1: Average Total Butanes in Koch Alberta, 2004 Q1 to 2010 Q2

Butanes in Koch Alberta have been notably elevated for most of 2008 and 2009, and all of 2010 to date. The above figure details the average total butanes observed in Koch Alberta for the period ranging from 2004 to 2Q 2010.

Peace River Sour (SPR, Edmonton)

Slight increases in C4s and sulphur were observed for the May sample of Peace River Sour.

Pembina Light Sour (PLS, Edmonton)

Much like the samples from March and April, increases in density, MCR, and metals were observed for this month's sample of PLS. Simulated distillation results were received.



Mixed Sweet Blend (MSW)

Mixed Sweet Blend (MSW or SW, Edmonton)

Two samples of MSW were tested in May. The first, from May 17th, had increased butanes along with slightly decreased C5s x C6s. Density was marginally elevated. The second, from May 30th, contained higher than average butanes (4.59 vol% versus 3.09 vol% average) along with slightly decreased C7s. This sample's simulated distillation distribution was fairly consistent with historical averages for MSW.

MSW Feeders

Bonnie Glen (BG, Edmonton)

A slight decrease in BTEX and increases in MCR, metals, and density were observed for this month's sample of Bonnie Glen.

Pembina North (aka Federated, FD, Edmonton)

Decreases C5s x C7s were observed for the May sample of Federated. As a result, density was higher than average.

Gibson Light Sweet (MGL, Edmonton)

No samples of MGL were included in this month's testing schedule.

Joarcam (MLN, Edmonton)

Joarcam was not included in this month's testing schedule.

Kerrobot Sweet (KSW, Kerrobot)

The May sample of KSW had fairly typical light ends and bulk properties.

Peace (MPR, Edmonton)

Slight increases in C6s, C10s, and metals were observed in the May sample of Peace.

Pembina (P, Edmonton)

Increased C4s and decreased C7s x C8s and sulphur were noted for the May sample of Pembina.

Rainbow (RA, Edmonton)

Apart from a slight increase in C4s and a slight decrease in sulphur, the results for the May sample of Rainbow were consistent with historical averages.

Redwater (RDW, Edmonton)

No samples of Redwater were received for testing in May.

Tundra Sweet (MST, Cromer)

A slight increase in C4s was observed for the May sample of MST.



Sweet Synthetics

CNRL Light Sweet Synthetic (CNS, Edmonton)

The May sample of CNS was consistent with the typical values observed to-date. No MCR or metals were detected.

Husky Synthetic Blend (HSB, Hardisty)

The May sample of Husky Synthetic Blend contained slightly higher than average C8s. No MCR or metals were detected. Simulated distillation results were received for this sample.

Long Lake Light Synthetic (PSC, Hardisty)

The results for PSC for May were consistent with the historical averages measured to-date. No metals were detected.

Premium Albian Synthetic (PAS, Edmonton)

PAS was not included in the May test schedule.

Shell Synthetic Light (SSX, Edmonton)

Apart from a slight increase in benzene, the results for the May sample of SSX were in line with average values. No metals were detected. The simulated distillation results reflected an increase in the gas oil component along with a similar decrease in distillate.

Suncor Synthetic A (OSA, Edmonton/ Hardisty)

The May sample of OSA had typical light ends and bulk properties. No metals or MCR were detected.

Syncrude Synthetic (SYN or SSB, Edmonton)

Slight increases in C4s, BTEX, and sulphur were observed in the May sample of SYN. No metals were detected. Simulated distillation results were received for this sample.

Should you require additional information on any of the items contained in this report, please contact Crude Quality Inc. directly. Thank you for your continuing support of the Light Crude Quality Study.

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Light Sour											
	BCL	BC Light									
	2006 Q1	2	0.56	40.7	821.2		0.9			2.0	5.3
	2006 Q3	1	0.54	40.5	821.8		1.0			2.1	7.2
	2006 Q4	1	0.55	41.0	819.8		0.7			1.5	5.3
	2007 Q1	2	0.54	42.5	812.5		0.9			1.1	5.0
	2007 Q2	1	0.54	41.6	816.7		1.0			1.4	4.7
	2007 Q3	1	0.57	40.2	823.3		1.2			1.8	6.2
	2008 Q1	1	0.62	40.5	821.9		1.0			2.6	9.1
	2008 Q2	1	0.57	40.9	820.3		1.0			2.0	7.3
	2008 Q3	2	0.62	40.1	823.9		1.1			1.6	7.2
	2008 Q4	3	0.57	40.1	824.1		1.1			1.8	6.1
	2009 Q1	1	0.64	38.9	829.5		1.2			2.8	8.0
	2009 Q3	1	0.61	39.9	824.9		1.2			2.2	6.4
	2009 Q4	2	0.60	40.1	823.8		1.0			1.5	4.7
	Average		0.58	40.6	821.8		1.0			1.8	6.1
	Std Dev		0.03	0.9	4.4		0.2			0.5	1.5
	Avg + StdDev		0.61	41.5	826.1		1.2			2.3	7.7
	Avg - StdDev		0.54	39.6	817.4		0.9			1.3	4.6

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Light Sour											
BDY Boundary Lake											
	2006 Q1	2	0.77	36.8	840.3		2.7			9.1	27.1
	2006 Q2	1	0.75	36.6	841.2		2.6			10.1	29.2
	2006 Q3	2	0.81	36.3	842.4		2.6			9.6	29.9
	2006 Q4	1	0.78	36.1	843.7		2.3			9.2	28.7
	2007 Q1	1	0.81	36.5	841.7		1.8			9.9	31.4
	2007 Q2	2	0.79	36.5	841.8		2.7			8.2	27.5
	2007 Q3	2	0.75	36.9	839.9		2.4			7.8	25.4
	2007 Q4	1	0.79	35.6	845.9		2.4			9.4	29.6
	2008 Q1	2	0.79	36.0	843.9		2.6			8.7	27.4
	2008 Q2	1	0.72	37.5	836.4		2.3			7.2	21.3
	2008 Q3	1	0.80	35.8	844.9		2.4			8.6	29.4
	2008 Q4	1	0.81	35.7	845.7		2.9			8.9	27.7
	2009 Q2	2	0.81	36.4	841.8		2.8			9.4	29.0
	2009 Q3	1	0.81	36.2	842.8		2.8			9.4	29.2
	2009 Q4	2	0.81	37.5	836.3		2.8			9.2	28.4
	Average		0.79	36.5	841.6		2.6			8.9	28.0
	Std Dev		0.03	0.7	3.6		0.3			0.8	2.6
	Avg + StdDev		0.82	37.2	845.2		2.9			9.7	30.6
	Avg - StdDev		0.75	35.8	838.0		2.3			8.1	25.4

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Light Sour											
MGS	Gibson	Light Sour									
	2009 Q1	3	0.67	38.1	833.4		2.9			8.8	19.9
	2009 Q2	2	0.70	40.5	822.0		3.2			13.6	35.0
	2009 Q3	3	1.94	35.4	847.5		5.8			31.3	83.8
	2009 Q4	3	2.38	37.8	835.2		6.3			35.4	98.0
	2010 Q1	1	2.62	32.6	861.5		7.3			41.0	118.6
	2010 Q2	1	2.61	31.9	865.2		7.4			42.9	154.9
	Average		1.66	36.9	839.9		5.1			26.0	73.0
	Std Dev		0.92	3.1	15.7		2.1			15.0	47.7
	Avg + StdDev		2.59	40.0	855.6		7.2			40.9	120.6
	Avg - StdDev		0.74	33.8	824.3		3.0			11.0	25.3

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Light Sour											
CAL Koch Alberta											
	2006 Q1	2	1.16	33.7	855.8		4.1			12.5	23.7
	2006 Q2	1	1.10	34.4	851.9		3.6			13.7	22.7
	2006 Q3	2	1.08	34.6	851.1		3.6			12.8	23.6
	2006 Q4	3	1.05	35.1	848.8		3.6			11.0	19.9
	2007 Q1	3	0.99	36.1	843.5		3.2			10.0	18.9
	2007 Q2	3	1.03	36.6	841.0		3.6			8.2	18.6
	2007 Q3	2	1.06	35.3	847.5		3.8			11.6	22.3
	2007 Q4	3	1.17	35.6	846.2		4.1			12.4	25.4
	2008 Q1	2	1.16	34.5	852.0		4.0			13.3	28.9
	2008 Q2	2	1.03	37.3	837.8		3.6			13.2	26.1
	2008 Q3	3	0.95	38.7	830.6		3.2			8.4	19.7
	2008 Q4	3	0.86	39.2	828.3		3.2			8.5	17.5
	2009 Q1	3	0.85	38.6	831.1		3.2			8.6	15.2
	2009 Q2	3	0.92	38.6	831.3		3.3			10.9	18.9
	2009 Q3	2	0.92	38.7	830.7		3.3			13.7	21.9
	2009 Q4	3	1.00	38.4	832.3		3.4			10.8	21.6
	2010 Q1	3	0.95	36.8	840.0		3.5			12.3	21.4
	2010 Q2	2	1.05	35.5	847.0		3.9			11.3	25.6
	5/1/2010	CAL-394	1.09	34.8	850.3		4			12.3	23.5
	Average		1.01	36.8	840.3		3.5			10.9	21.2
	Std Dev		0.10	1.8	9.2		0.3			2.3	4.1
	Avg + StdDev		1.11	38.6	849.5		3.9			13.2	25.3
	Avg - StdDev		0.91	34.9	831.2		3.2			8.7	17.2

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Light Sour											
SPR Peace River Sour											
	2006 Q1	3	1.90	33.1	858.9		4.4			18.4	50.6
	2007 Q1	1	2.03	33.9	854.8		4.1			20.2	51.7
	2008 Q2	5	1.64	34.3	852.9		3.8			18.3	50.5
	2008 Q3	1	1.50	36.1	843.4		3.5			13.7	41.8
	2008 Q4	2	1.21	36.9	839.8		3.3			10.7	28.2
	2009 Q1	2	1.27	37.6	835.9		3.0			11.0	29.2
	2009 Q2	1	1.26	38.3	832.6		3.0			12.7	30.7
	2009 Q3	2	1.27	38.4	832.3		2.4			10.3	27.6
	2009 Q4	1	1.33	38.0	834.1		2.9			12.1	34.4
	2010 Q1	2	1.56	37.0	839.3		3.2			14.2	41.6
	2010 Q2	1	1.99	34.3	852.6		4.1			17.6	50.4
	5/1/2010	SPR-591	1.99	34.3	852.6		4.1			17.6	50.4
	Average		1.55	35.8	845.4		3.5			15.0	41.3
	Std Dev		0.31	2.1	10.7		0.7			4.2	12.2
	Avg + StdDev		1.86	37.9	856.1		4.2			19.2	53.5
	Avg - StdDev		1.25	33.6	834.7		2.8			10.8	29.1

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Light Sour											
PLS Pembina Light Sour											
	2007 Q4	1	0.77	40.4	822.3		1.4			1.0	3.3
	2008 Q1	3	0.70	40.1	824.0		1.1			1.6	3.7
	2008 Q2	6	0.71	40.6	821.4		1.4			1.8	4.8
	2008 Q3	6	0.73	40.1	824.0		1.5			1.4	5.3
	2008 Q4	3	0.77	40.2	823.3		1.5			1.9	5.3
	2009 Q1	3	0.78	40.0	824.3		1.6			2.1	5.5
	2009 Q2	3	0.77	40.2	823.5		1.7			3.7	7.2
	2009 Q3	3	0.82	39.8	825.4		1.6			3.2	7.2
	2009 Q4	3	0.81	40.5	822.3		1.6			3.4	9.3
	2010 Q1	3	0.85	39.2	828.1		2.0			4.5	12.0
	2010 Q2	2	0.85	38.8	830.4		2.2			4.5	15.1
	5/4/2010	PLS-570	0.92	38.7	830.8		2.2			4.9	13.6
	Average		0.77	40.1	824.1		1.6			2.7	7.0
	Std Dev		0.06	0.6	2.9		0.3			1.4	3.8
	Avg + StdDev		0.83	40.7	827.0		1.9			4.0	10.9
	Avg - StdDev		0.70	39.5	821.2		1.2			1.3	3.2

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Mixed Sweet Blend											
MSW Mixed Sweet Blend											
	2006 Q1	5	0.45	39.2	828.4		1.9			3.8	7.4
	2006 Q2	6	0.46	39.1	828.7		1.8			4.7	8.4
	2006 Q3	6	0.47	39.3	827.8		2.0			5.3	10.2
	2006 Q4	6	0.44	39.3	827.9		1.6			4.2	8.0
	2007 Q1	6	0.43	40.1	824.1		1.6			2.7	6.3
	2007 Q2	6	0.41	39.4	827.1		1.8			2.3	6.5
	2007 Q3	6	0.44	39.4	827.2		2.0			4.3	7.7
	2007 Q4	6	0.46	39.6	826.3		2.0			3.9	6.9
	2008 Q1	6	0.46	40.1	824.0		1.9			4.3	7.9
	2008 Q2	6	0.47	40.1	824.2		1.9			4.8	8.6
	2008 Q3	6	0.47	39.5	826.6		1.8			3.2	7.2
	2008 Q4	6	0.47	39.8	825.8		1.9			3.7	7.3
	2009 Q1	6	0.42	40.0	824.5		1.8			3.7	7.0
	2009 Q2	6	0.44	40.3	822.9		1.8			4.5	8.2
	2009 Q3	6	0.47	40.0	824.3		1.9			4.6	8.8
	2009 Q4	6	0.49	39.8	825.4		2.0			4.4	9.5
	2010 Q1	6	0.45	39.4	827.5		2.0			4.6	9.3
	2010 Q2	4	0.42	38.7	830.6		1.9			4.2	9.9
	5/17/2010	SW-848	0.43	38.8	830.2		1.9			4.1	8.4
	5/30/2010	SW-874	0.46	39.4	827.5		2				
	Average		0.45	39.6	826.2		1.9			4.1	8.0
	Std Dev		0.03	0.6	2.8		0.2			0.9	1.5
	Avg + StdDev		0.48	40.2	829.0		2.1			5.0	9.5
	Avg - StdDev		0.42	39.1	823.4		1.7			3.1	6.5

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: MSW Feeder											
BG	Bonnie Glen										
	2006 Q2	1	0.47	40.7	821.3		2.0				
	2006 Q3	1	0.52	40.2	823.5		2.3			5.1	12.2
	2006 Q4	2	0.37	42.3	813.6		1.6			3.2	8.3
	2007 Q1	2	0.42	41.2	818.9		1.9			3.1	7.9
	2007 Q2	2	0.36	41.5	817.6		1.3			3.3	5.8
	2007 Q3	2	0.47	40.3	823.3		1.5			3.8	10.2
	2007 Q4	1	0.34	41.8	816.0		0.7			1.6	4.4
	2008 Q1	2	0.41	40.3	823.1		1.7			2.8	7.3
	2008 Q2	1	0.33	41.7	816.3		0.9			2.1	6.0
	2008 Q4	2	0.55	40.5	821.9		1.9			3.5	10.0
	2009 Q1	2	0.24	43.5	808.3		1.1			1.4	3.1
	2009 Q2	1	0.28	42.3	813.7		0.9			2.3	2.3
	2009 Q3	2	0.41	41.0	820.1		1.5			3.5	7.3
	2009 Q4	1	0.53	39.8	825.4		1.9			5.4	12.8
	2010 Q1	2	0.39	40.7	821.3		1.5			2.7	6.8
	2010 Q2	1	0.50	39.2	828.5		2.0			5.2	13.8
	6/1/2010	BG-407	0.50	39.2	828.5		2			5.2	13.8
	Average		0.41	41.1	819.2		1.5			3.2	7.7
	Std Dev		0.09	1.1	5.3		0.4			1.2	3.2
	Avg + StdDev		0.50	42.2	824.5		1.9			4.4	10.8
	Avg - StdDev		0.32	40.0	813.9		1.1			2.0	4.5

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Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: MSW Feeder											
FD	Federated										
	2006 Q1	5	0.40	40.4	822.8		1.6			2.7	6.9
	2006 Q2	4	0.36	40.1	824.0		1.6			3.6	5.9
	2006 Q3	4	0.39	40.2	823.4		1.7			4.7	7.8
	2006 Q4	3	0.38	40.1	824.1		1.4			3.8	8.2
	2007 Q1	3	0.37	40.7	821.2		1.5			2.9	7.4
	2007 Q2	3	0.39	40.5	822.2		1.6			3.1	7.4
	2007 Q3	3	0.45	40.0	824.3		1.7			3.7	9.1
	2007 Q4	3	0.44	40.3	823.3		1.8			4.0	9.9
	2008 Q1	2	0.37	40.6	821.7		1.6			3.2	8.1
	2008 Q2	3	0.38	41.3	818.6		1.3			3.5	8.9
	2008 Q3	3	0.39	40.7	821.1		1.5			2.0	6.2
	2008 Q4	3	0.41	40.3	822.9		1.5			2.4	5.8
	2009 Q1	3	0.39	40.1	824.3		1.3			2.2	5.0
	2009 Q2	3	0.36	40.8	820.6		1.5			3.7	5.5
	2009 Q3	2	0.44	39.8	825.1		1.9			5.1	8.2
	2009 Q4	3	0.44	39.9	825.2		1.7			4.3	8.2
	2010 Q1	2	0.44	39.9	825.0		1.9			4.5	8.4
	2010 Q2	3	0.46	38.9	829.8		2.0			4.9	11.2
	5/10/2010	FD-997	0.41	38.4	832.2		1.9			4.1	7.4
	Average		0.40	40.3	823.3		1.6			3.5	7.6
	Std Dev		0.04	0.7	3.1		0.2			1.2	2.6
	Avg + StdDev		0.44	40.9	826.4		1.9			4.7	10.3
	Avg - StdDev		0.36	39.6	820.2		1.4			2.4	5.0

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: MSW Feeder											
MGL Gibson Light Sweet											
	2006 Q4	2	0.43	42.0	815.0		2.0			4.2	8.4
	2007 Q1	1	0.51	40.8	820.8		1.9			4.6	9.4
	2007 Q2	2	0.39	40.5	822.1		1.5			2.4	5.0
	2007 Q3	1	0.36	39.7	825.7		1.8			3.7	6.0
	2007 Q4	1	0.53	42.2	814.0		1.9			4.9	9.9
	2008 Q1	2	0.39	41.9	815.8		1.2			3.9	7.3
	2008 Q2	1	0.40	40.9	820.1		1.6			4.0	7.0
	2008 Q3	2	0.42	41.0	819.9		1.8			3.3	7.5
	2008 Q4	1	0.43	41.8	816.0		1.9			3.2	6.3
	2009 Q1	1	0.41	41.6	817.0		1.8			2.8	5.4
	2009 Q2	2	0.40	42.5	812.9		1.6			4.3	7.9
	2009 Q3	1	0.47	39.8	825.2		2.1			4.3	8.0
	2009 Q4	2	0.50	43.2	809.5		1.6			4.9	10.6
	2010 Q1	1	0.43	37.2	837.9		2.1			3.8	5.8
	2010 Q2	1	0.38	31.9	865.2		1.4			4.4	9.5
	Average		0.43	40.8	820.6		1.7			3.9	7.7
	Std Dev		0.06	2.4	12.0		0.3			0.9	2.3
	Avg + StdDev		0.48	43.3	832.5		2.1			4.8	10.0
	Avg - StdDev		0.37	38.4	808.6		1.4			3.0	5.4

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: MSW Feeder											
JCM Joarcam											
	2006 Q2	1	0.42	39.4	827.5		2.3			4.6	8.5
	2006 Q3	2	0.43	40.5	822.3		2.3			5.8	11.9
	2006 Q4	2	0.37	39.4	827.4		1.9			4.7	9.3
	2007 Q1	3	0.42	40.0	824.4		1.8			4.1	8.1
	2007 Q2	2	0.50	39.0	829.0		2.0			3.7	11.3
	2007 Q3	1	0.42	39.4	827.4		2.0			4.0	8.7
	2007 Q4	2	0.45	39.1	828.4		2.0			4.2	9.1
	2008 Q1	2	0.40	39.6	826.0		1.8			3.8	7.8
	2008 Q2	1	0.44	39.9	825.1		1.5			4.4	8.8
	2008 Q3	2	0.32	40.0	824.5		1.6			2.1	5.2
	2008 Q4	1	0.31	39.7	826.0		1.8			2.7	6.0
	2009 Q1	1	0.16	38.0	834.0		1.4				
	2009 Q2	2	0.26	39.3	828.2		1.6			2.4	4.4
	2009 Q3	1	0.41	37.9	834.5		2.3			4.9	10.8
	2009 Q4	1	0.46	38.5	831.6		2.3			4.7	11.7
	2010 Q1	1	0.44	38.3	832.7		2.1			4.4	10.0
	Average		0.39	39.4	827.4		1.9			3.9	8.6
	Std Dev		0.09	0.8	3.6		0.3			1.2	2.7
	Avg + StdDev		0.48	40.2	831.0		2.2			5.1	11.2
	Avg - StdDev		0.30	38.6	823.7		1.6			2.8	5.9

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: MSW Feeder											
KSW Kerrobert Sweet											
	2008 Q1	6	0.34	36.6	840.9		2.4			5.2	8.7
	2008 Q2	6	0.28	35.6	846.1		2.3			4.4	5.7
	2008 Q3	3	0.30	35.6	846.0		2.4			4.0	6.6
	2008 Q4	3	0.24	37.1	838.6		2.2			3.4	3.7
	2009 Q1	3	0.24	37.0	839.0		2.4			3.7	4.0
	2009 Q2	3	0.21	38.3	832.8		2.3			4.0	3.7
	2009 Q3	3	0.33	38.3	832.6		2.4			5.0	7.2
	2009 Q4	3	0.34	37.3	837.8		2.6			5.0	7.6
	2010 Q1	3	0.22	36.0	844.2		2.4			3.7	3.6
	2010 Q2	2	0.25	35.8	845.0		2.4			3.5	4.0
	5/25/2010	KSW-133	0.27	35.6	846.1		2.5			3.8	4.7
	Average		0.28	36.7	840.7		2.4			4.2	5.5
	Std Dev		0.06	1.1	5.3		0.2			0.8	2.3
	Avg + StdDev		0.34	37.7	846.0		2.6			5.1	7.8
	Avg - StdDev		0.22	35.6	835.5		2.2			3.4	3.2

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: MSW Feeder											
MPR Peace											
	2006 Q1	6	0.44	40.5	822.1		1.6			2.9	6.6
	2006 Q2	6	0.46	39.8	825.4		1.6			4.2	7.3
	2006 Q3	3	0.45	39.1	828.8		1.9			5.2	8.9
	2006 Q4	3	0.45	39.8	825.5		1.5			4.2	7.6
	2007 Q1	3	0.43	38.8	830.5		1.7			3.3	5.8
	2008 Q1	1	0.42	39.6	826.2		1.5			3.2	5.3
	2008 Q2	5	0.42	39.4	827.4		1.8			3.8	6.7
	2008 Q3	2	0.42	39.3	827.8		1.9			2.5	4.5
	2008 Q4	4	0.41	39.4	827.5		1.8			3.0	5.7
	2009 Q1	3	0.39	40.9	820.3		1.8			3.2	4.9
	2009 Q2	3	0.40	40.2	823.4		1.9			4.1	5.6
	2009 Q3	2	0.39	39.9	825.1		1.9			4.2	5.5
	2009 Q4	3	0.41	39.9	825.2		1.7			3.5	6.2
	2010 Q1	3	0.43	39.9	824.9		1.9			4.5	7.9
	2010 Q2	2	0.45	39.5	826.7		2.1			5.0	10.2
	5/1/2010	MPR-835	0.46	40.1	824.1		2			5.1	9.9
	Average		0.43	39.8	825.6		1.7			3.8	6.6
	Std Dev		0.04	0.9	4.4		0.3			0.8	1.7
	Avg + StdDev		0.47	40.7	829.9		2.0			4.6	8.3
	Avg - StdDev		0.39	38.9	821.2		1.5			2.9	4.9

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: MSW Feeder											
P	Pembina										
	2006 Q1	5	0.46	38.7	830.9		1.8			3.1	6.8
	2006 Q2	5	0.46	38.2	833.0		1.5			5.3	10.2
	2006 Q3	3	0.41	38.1	833.6		1.8			4.2	8.5
	2006 Q4	2	0.39	38.8	830.5		1.8			3.5	6.6
	2007 Q1	3	0.43	39.8	825.4		1.7			3.2	7.3
	2007 Q2	3	0.44	40.6	821.7		1.7			2.3	6.4
	2007 Q3	3	0.43	39.7	826.0		1.6			2.8	6.5
	2007 Q4	3	0.44	39.8	825.5		1.9			3.6	8.7
	2008 Q1	4	0.43	40.0	824.6		1.9			3.6	8.1
	2008 Q2	3	0.45	40.4	822.6		1.5			2.8	6.1
	2008 Q3	3	0.47	40.5	822.2		1.6			2.4	7.4
	2008 Q4	3	0.44	40.4	822.5		1.7			2.8	6.5
	2009 Q1	3	0.41	40.6	821.6		1.7			2.6	5.4
	2009 Q2	3	0.40	40.9	820.1		1.6			3.5	5.8
	2009 Q3	3	0.39	40.8	820.4		1.7			3.4	6.5
	2009 Q4	3	0.41	41.0	819.8		1.8			3.9	9.2
	2010 Q1	3	0.38	40.7	821.3		1.8			3.0	6.0
	2010 Q2	2	0.37	39.8	825.5		1.8			2.6	5.9
	5/1/2010	P-542	0.38	39.7	825.7		1.8			2.9	6.6
	Average		0.43	39.8	825.2		1.7			3.3	7.1
	Std Dev		0.04	1.0	4.9		0.2			1.0	2.0
	Avg + StdDev		0.46	40.9	830.1		1.9			4.2	9.1
	Avg - StdDev		0.39	38.8	820.3		1.5			2.3	5.2

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: MSW Feeder											
RA	Rainbow										
	2006 Q1	6	0.51	38.8	830.3		2.4			5.2	9.1
	2006 Q2	6	0.53	38.6	831.2		1.9			7.6	12.5
	2006 Q3	3	0.48	38.3	832.4		2.2			5.8	10.0
	2006 Q4	2	0.47	39.0	829.2		1.9			4.7	9.2
	2007 Q1	3	0.47	39.5	826.9		1.9			3.9	7.8
	2007 Q2	3	0.47	37.5	836.7		2.2			3.4	7.8
	2007 Q3	2	0.45	38.7	830.8		2.2			3.9	7.2
	2007 Q4	2	0.54	38.6	831.1		2.3			5.5	11.9
	2008 Q1	3	0.44	39.0	829.4		2.3			6.2	13.5
	2008 Q2	4	0.47	39.0	829.3		2.0			4.8	9.1
	2008 Q3	3	0.39	39.4	827.4		1.9			3.5	7.8
	2008 Q4	3	0.44	39.2	828.4		2.2			4.7	9.8
	2009 Q1	3	0.45	40.1	823.7		2.0			4.3	8.2
	2009 Q2	3	0.42	39.4	827.4		2.2			5.9	10.3
	2009 Q3	3	0.50	39.0	829.2		2.4			6.6	12.5
	2009 Q4	3	0.44	39.5	826.9		2.3			5.6	12.1
	2010 Q1	3	0.43	39.7	825.9		2.3			7.0	14.1
	2010 Q2	2	0.43	39.6	826.1		2.2			5.2	9.9
	5/5/2010	RA-680	0.40	39.5	826.7		2.2			5.2	9.0
		Average	0.47	39.0	829.2		2.1			5.2	10.1
		Std Dev	0.06	0.7	3.7		0.3			1.8	3.9
		Avg + StdDev	0.53	39.8	832.8		2.4			7.0	14.0
		Avg - StdDev	0.41	38.3	825.5		1.9			3.4	6.3

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: MSW Feeder											
RDW Redwater											
	2006 Q3	1	0.43	35.1	848.6		3.2			8.9	3.5
	2006 Q4	1	0.43	36.0	843.8		2.9			7.8	3.7
	2007 Q1	2	0.42	35.5	846.3		3.1			9.3	4.1
	2007 Q2	1	0.44	35.4	847.0		3.2			6.9	3.7
	2007 Q3	2	0.44	35.2	848.1		3.0			8.8	4.0
	2007 Q4	1	0.44	34.9	849.8		3.4			8.8	4.3
	2008 Q1	3	0.41	37.5	836.7		3.0			9.7	4.5
	2008 Q2	1	0.41	38.2	833.4		2.8			8.8	4.2
	2008 Q3	2	0.39	38.5	832.0		2.8			7.8	4.2
	2008 Q4	1	0.38	38.3	832.5		2.9			7.2	3.6
	2009 Q1	2	0.39	38.0	834.5		3.0			7.8	3.7
	2009 Q2	1	0.37	39.0	829.4		2.9			8.2	3.3
	Average		0.41	36.9	839.8		3.0			8.5	4.0
	Std Dev		0.02	1.6	7.8		0.2			1.0	0.4
	Avg + StdDev		0.44	38.4	847.6		3.2			9.4	4.4
	Avg - StdDev		0.39	35.3	832.0		2.8			7.5	3.6

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: MSW Feeder											
	MST	Tundra Sweet									
	2007 Q4	1	0.50	39.7	825.7		1.3			6.6	4.0
	2008 Q1	6	0.48	39.9	825.0		1.8			5.3	2.9
	2008 Q2	5	0.43	40.0	824.4		1.7			5.9	2.8
	2008 Q3	3	0.43	39.9	824.8		1.8			3.8	1.6
	2008 Q4	3	0.45	39.5	826.8		1.7			3.6	1.7
	2009 Q1	4	0.41	39.9	824.8		1.8			4.7	1.8
	2009 Q2	2	0.29	40.6	821.4		1.6			6.1	1.4
	2009 Q3	3	0.34	40.1	824.0		1.7			4.9	1.3
	2009 Q4	3	0.35	40.6	821.5		1.5			4.2	1.4
	2010 Q1	3	0.41	39.8	825.4		2.0			6.2	2.0
	2010 Q2	2	0.39	40.0	824.5		2.0			5.6	2.5
	5/24/2010	MST-219	0.35	39.8	825.2		2			4.7	1.2
		Average	0.41	40.0	824.5		1.8			5.0	2.0
		Std Dev	0.06	0.5	2.6		0.2			1.1	0.8
		Avg + StdDev	0.48	40.5	827.0		2.0			6.1	2.7
		Avg - StdDev	0.35	39.5	821.9		1.5			3.9	1.2

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Sweet Synthetic											
CNS	CNRL Light Sweet Synthetic										
	2009 Q2	4	0.04	34.8	850.1						
	2009 Q3	3	0.04	35.1	848.6						
	2009 Q4	3	0.05	34.7	850.7						
	2010 Q1	3	0.06	35.8	845.3		0.1				
	2010 Q2	2	0.05	34.7	850.8						
	5/30/2010	CNS-901	0.05	34.4	852.2						
	Average		0.05	35.0	849.1		0.1				
	Std Dev		0.01	0.9	4.4		0.0				
	Avg + StdDev		0.06	35.9	853.5		0.1				
	Avg - StdDev		0.04	34.1	844.6		0.1				

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Sweet Synthetic											
HSB	Husky Synthetic Blend										
	2006 Q1	3	0.09	32.3	863.3		0.0				
	2006 Q2	2	0.10	33.8	855.3		0.0			0.6	1.0
	2006 Q3	3	0.10	32.8	860.4		0.0				
	2006 Q4	2	0.10	32.8	860.6		0.0				
	2007 Q1	3	0.10	32.7	860.8		0.0				
	2007 Q2	2	0.12	33.3	857.8		0.1				
	2007 Q3	3	0.10	31.8	865.7		0.0				
	2007 Q4	3	0.10	32.3	863.1		0.1				
	2008 Q1	3	0.11	32.2	863.4		0.1				1.5
	2008 Q2	3	0.10	31.9	865.0		0.1				
	2008 Q3	3	0.10	32.8	860.8						
	2008 Q4	3	0.10	32.1	864.2		0.1				
	2009 Q1	3	0.10	32.0	864.5		0.1				
	2009 Q2	3	0.11	32.5	862.1		0.1				
	2009 Q3	3	0.09	33.3	857.7						
	2009 Q4	3	0.09	33.0	859.3		0.1				
	2010 Q1	3	0.09	32.5	862.1		0.1				
	2010 Q2	2	0.09	33.0	859.9						
	5/25/2010	HSB-670	0.09	32.8	860.7						
	Average		0.10	32.6	861.7		0.1			0.6	1.3
	Std Dev		0.01	0.6	3.3		0.0			0.0	0.2
	Avg + StdDev		0.11	33.2	864.9		0.1			0.6	1.5
	Avg - StdDev		0.09	31.9	858.4		0.0			0.6	1.0

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Sweet Synthetic											
PSC	Long Lake Light Synthetic										
	2009 Q2	1	0.20	36.8	840.2		0.2			1.1	2.1
	2009 Q3	2	0.08	36.4	842.0						
	2009 Q4	3	0.07	34.4	852.3		0.1				
	2010 Q1	3	0.09	37.6	836.5		0.1				1.2
	2010 Q2	2	0.05	35.8	845.3		0.1				2.0
	5/21/2010	PSC-603	0.05	35.5	846.6		0.1				
	Average		0.09	36.1	843.7		0.1			1.1	1.5
	Std Dev		0.06	2.1	10.4		0.0			0.0	0.4
	Avg + StdDev		0.14	38.2	854.2		0.1			1.1	2.0
	Avg - StdDev		0.03	34.0	833.3		0.1			1.1	1.1

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Sweet Synthetic											
PAS	Premium Albian Synthetic										
	2006 Q1	1	0.24	33.6	856.4		0.7			4.0	5.8
	2006 Q2	1	0.06	34.0	854.4		0.7				
	2006 Q3	2	0.34	33.0	859.1		0.2			1.5	3.9
	2006 Q4	1	0.06	33.6	856.4						
	2007 Q1	2	0.13	33.4	857.5		0.0				
	2007 Q2	1	0.05	35.0	848.9		0.0				
	2007 Q3	2	0.05	33.2	858.3		0.1				
	2007 Q4	1	0.04	32.2	863.5						
	2008 Q3	3	0.05	33.6	856.3		0.1				
	2008 Q4	3	0.05	33.3	858.0		0.1				1.1
	2009 Q1	2	0.06	34.2	853.2		0.1				
	2009 Q2	1	0.04	34.6	851.1		0.1				
	2009 Q3	1	0.05	31.3	868.6						
	2009 Q4	1	0.04	32.9	860.0		0.1				
	2010 Q1	2	0.07	34.2	853.1		0.3				1.9
	Average		0.09	33.5	856.9		0.2			2.8	3.2
	Std Dev		0.11	0.8	4.3		0.2			1.3	1.8
	Avg + StdDev		0.20	34.3	861.2		0.4			4.0	5.0
	Avg - StdDev		0.00	32.7	852.5		0.0			1.5	1.3

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Sweet Synthetic											
SSX	Shell Synthetic Light										
	2009 Q1	6	0.11	33.9	854.5		0.2				1.4
	2009 Q2	6	0.09	34.1	853.8		0.1				1.2
	2009 Q3	2	0.07	32.1	864.0		0.1				
	2009 Q4	3	0.07	33.2	858.4		0.1				
	2010 Q1	3	0.12	33.4	857.5		0.1				1.3
	2010 Q2	2	0.09	34.3	852.8		0.1				
	5/31/2010	SSX-715	0.10	33.9	854.9		0.1				
	Average		0.10	33.7	856.0		0.1				1.3
	Std Dev		0.03	1.2	6.2		0.1				0.1
	Avg + StdDev		0.12	34.9	862.1		0.2				1.4
	Avg - StdDev		0.07	32.5	849.8		0.1				1.2

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Sweet Synthetic											
OSA	Suncor Synthetic A										
	2006 Q1	3	0.18	32.8	860.2		0.0				
	2006 Q2	3	0.21	32.7	861.2		0.0			3.4	3.5
	2006 Q3	3	0.17	33.5	856.9		0.0				
	2006 Q4	2	0.19	32.8	860.5		0.1				
	2007 Q1	4	0.19	32.8	860.1		0.0				
	2007 Q2	4	0.19	32.3	863.0		0.1				
	2007 Q3	3	0.20	32.1	863.8		0.0				
	2007 Q4	3	0.20	32.2	863.4		0.0				
	2008 Q1	6	0.19	32.7	861.0						
	2008 Q2	6	0.15	34.3	853.0						
	2008 Q3	6	0.17	34.3	852.7						
	2008 Q4	6	0.19	33.5	856.9						1.0
	2009 Q1	3	0.17	33.2	858.2		0.1				
	2009 Q2	3	0.19	32.4	862.8						
	2009 Q3	3	0.18	33.4	857.2						
	2009 Q4	3	0.22	32.1	864.2						
	2010 Q1	3	0.19	35.4	846.9						
	2010 Q2	2	0.21	32.3	863.5						
	5/28/2010	OSA-876	0.20	32.2	863.8						
	Average		0.19	33.2	858.6		0.0			3.4	2.7
	Std Dev		0.03	1.3	6.9		0.0			0.0	1.7
	Avg + StdDev		0.21	34.5	865.4		0.1			3.4	4.4
	Avg - StdDev		0.16	31.8	851.7		0.0			3.4	1.0

Light Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Sweet Synthetic											
SYN	Syncrude Synthetic										
	2006 Q1	2	0.08	30.9	870.5						
	2006 Q2	2	0.14	31.3	868.6						
	2006 Q3	3	0.11	30.9	870.4						
	2006 Q4	2	0.13	31.0	869.5						
	2007 Q1	3	0.11	31.4	867.7						
	2007 Q2	3	0.16	30.7	871.3						
	2007 Q3	3	0.16	31.1	869.3						
	2007 Q4	3	0.17	30.5	873.0						0.1
	2008 Q1	6	0.18	31.4	868.1						
	2008 Q2	6	0.16	31.4	868.1						
	2008 Q3	6	0.16	33.3	858.1						0.1
	2008 Q4	6	0.17	32.4	862.4						0.1
	2009 Q1	3	0.18	33.2	858.2						0.1
	2009 Q2	3	0.16	31.9	865.3						0.1
	2009 Q3	3	0.18	32.7	860.9						0.1
	2009 Q4	3	0.20	31.7	866.6						0.1
	2010 Q1	3	0.18	31.7	866.0						0.1
	2010 Q2	2	0.20	31.9	865.5						0.1
	5/29/2010	SYN-779	0.21	31.8	865.7						0.1
	Average		0.16	31.7	866.0						0.1
	Std Dev		0.03	1.1	5.8						0.0
	Avg + StdDev		0.19	32.8	871.8						0.1
	Avg - StdDev		0.13	30.7	860.3						0.0

Light Crude Quality Project Light Ends Summary (May 2010)

Crude	Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Light Sour															
BCL	BC Light														
	2006 Q1	2	0.02	0.27	1.92	2.40	5.19	6.59	7.66	6.42	2.77	0.27	0.79	0.21	1.14
	2006 Q3	1		0.21	1.78	2.41	5.64	7.44	8.62	6.82	3.13	0.33	1.04	0.26	1.51
	2006 Q4	1	0.02	0.24	1.97	2.62	5.81	7.47	8.74	6.90	3.06	0.34	1.03	0.26	1.56
	2007 Q1	2	0.02	0.34	2.44	2.70	6.05	7.75	8.78	6.73	3.18	0.35	1.06	0.26	1.52
	2007 Q2	1	0.02	0.27	2.17	2.63	5.97	7.40	8.64	6.29	2.47	0.36	1.06	0.23	1.76
	2007 Q3	1		0.13	1.57	2.24	5.61	7.51	8.50	6.47	2.99	0.33	1.00	0.26	1.45
	2008 Q1	1		0.16	1.50	2.33	5.48	7.10	7.98	6.10	2.93	0.33	0.98	0.24	1.37
	2008 Q2	1		0.16	1.56	2.47	6.11	8.04	9.24	7.24	3.10	0.38	1.14	0.29	1.69
	2008 Q3	2		0.17	1.52	2.29	5.41	7.03	8.00	6.47	3.02	0.28	0.88	0.17	1.22
	2008 Q4	3		0.16	1.45	2.01	4.95	6.50	7.58	5.83	2.73	0.30	0.92	0.23	1.33
	2009 Q1	1		0.07	1.11	2.04	5.46	7.35	8.49	6.27	3.38	0.34	1.03	0.26	1.44
	2009 Q3	1		0.15	1.64	2.33	5.66	7.40	8.36	6.31	2.89	0.34	1.05	0.25	1.52
	2009 Q4	2		0.17	1.64	2.19	5.34	7.11	8.29	6.40	3.10	0.33	1.00	0.25	1.44
	Average		0.02	0.20	1.72	2.33	5.50	7.17	8.25	6.42	2.96	0.32	0.98	0.24	1.42
	Std Dev		0.02	0.07	0.35	0.23	0.41	0.51	0.56	0.44	0.24	0.04	0.11	0.05	0.19
	Avg + StdDev		0.04	0.27	2.07	2.56	5.91	7.68	8.81	6.86	3.20	0.36	1.09	0.28	1.61
	Avg - StdDev		0.00	0.13	1.37	2.10	5.10	6.66	7.69	5.98	2.72	0.28	0.86	0.19	1.23

Light Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Light Sour														
BDY	Boundary Lake													
2006 Q1	2	0.02	0.28	1.51	2.56	4.90	5.84	7.01	6.00	2.70	0.28	0.67	0.25	1.00
2006 Q2	1		0.27	1.56	2.69	4.97	5.78	6.81	5.90	2.59	0.26	0.60	0.23	0.86
2006 Q3	2	0.02	0.31	1.44	2.46	4.69	5.54	6.62	5.55	2.59	0.25	0.64	0.25	0.94
2006 Q4	1		0.25	1.37	2.45	4.69	5.68	6.94	6.07	2.68	0.23	0.60	0.25	1.03
2007 Q1	1	0.02	0.45	1.79	2.72	4.92	5.71	6.82	5.64	2.61	0.25	0.65	0.25	0.98
2007 Q2	2	0.02	0.35	1.55	2.55	4.77	5.62	6.67	5.49	2.54	0.25	0.65	0.25	0.96
2007 Q3	2	0.02	0.24	1.36	2.30	4.64	5.69	6.91	5.79	2.79	0.25	0.68	0.26	1.03
2007 Q4	1	0.02	0.23	1.26	2.25	4.42	5.41	6.61	5.71	2.57	0.23	0.61	0.25	0.95
2008 Q1	2		0.19	1.12	2.22	4.50	5.61	6.81	5.85	2.66	0.24	0.63	0.25	0.96
2008 Q2	1		0.21	1.30	2.31	4.94	6.28	7.79	6.62	3.23	0.26	0.75	0.27	1.18
2008 Q3	1	0.02	0.28	1.26	2.14	4.11	5.03	6.12	5.18	2.43	0.22	0.57	0.22	0.87
2008 Q4	1		0.23	1.20	2.20	4.47	5.40	6.50	5.44	2.48	0.24	0.60	0.23	0.92
2009 Q2	2	0.02	0.36	1.58	2.52	4.75	5.67	6.78	5.51	2.65	0.26	0.66	0.25	0.96
2009 Q3	1	0.02	0.30	1.50	2.55	4.83	5.81	6.93	5.90	2.56	0.25	0.66	0.25	0.99
2009 Q4	2	0.02	0.39	1.62	2.54	4.60	5.44	6.46	5.37	2.51	0.23	0.61	0.24	0.90
Average		0.02	0.29	1.43	2.44	4.68	5.63	6.77	5.71	2.64	0.25	0.64	0.25	0.97
Std Dev		0.02	0.09	0.19	0.18	0.24	0.28	0.36	0.36	0.20	0.01	0.05	0.00	0.08
Avg + StdDev		0.04	0.38	1.63	2.62	4.93	5.92	7.14	6.07	2.84	0.26	0.69	0.25	1.04
Avg - StdDev		0.00	0.21	1.24	2.26	4.44	5.35	6.41	5.35	2.44	0.23	0.59	0.24	0.89

Light Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Light Sour														
MGS Gibson Light Sour														
2009 Q1	3	0.02	0.22	3.11	4.46	6.31	7.32	6.78	5.13	2.60	0.40	1.15	0.24	1.17
2009 Q2	2	0.02	0.29	4.95	6.09	8.95	9.46	7.63	4.50	2.14	0.57	1.65	0.26	1.54
2009 Q3	3	0.02	0.24	5.24	6.66	10.02	9.82	6.66	3.63	1.73	0.63	1.67	0.20	1.34
2009 Q4	3	0.02	0.20	5.20	11.28	11.42	9.56	6.04	3.27	1.65	0.62	1.46	0.16	1.10
2010 Q1	1	0.02	0.22	5.45	11.80	9.07	6.42	4.21	2.33	1.13	0.42	0.83	0.13	0.68
2010 Q2	1	0.02	0.22	4.49	6.44	10.34	10.55	7.24	3.80	1.90	0.67	1.78	0.22	1.40
Average		0.02	0.23	4.65	7.51	9.27	8.92	6.55	3.94	1.94	0.55	1.44	0.21	1.23
Std Dev		0.02	0.10	1.07	3.36	1.93	1.54	1.24	1.03	0.56	0.12	0.37	0.05	0.32
Avg + StdDev		0.04	0.33	5.72	10.87	11.20	10.46	7.79	4.97	2.51	0.67	1.81	0.26	1.55
Avg - StdDev		0.00	0.13	3.59	4.15	7.34	7.38	5.31	2.91	1.38	0.43	1.07	0.15	0.91

Light Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)	
Crude Grade: Light Sour															
CAL Koch Alberta															
2006 Q1	2	0.02	0.29	1.46	4.02	5.90	6.30	6.42	4.93	2.26	0.28	0.75	0.28	1.00	
2006 Q2	1	0.02	0.29	1.56	4.74	6.36	6.66	6.63	4.97	2.18	0.27	0.70	0.26	0.89	
2006 Q3	2	0.02	0.23	1.26	4.79	6.24	6.38	6.36	4.87	2.26	0.29	0.73	0.26	0.95	
2006 Q4	3	0.02	0.22	1.19	4.90	6.71	6.93	6.88	5.18	2.47	0.32	0.81	0.28	1.10	
2007 Q1	3	0.04	0.36	1.85	5.08	7.00	7.11	6.95	5.04	2.37	0.33	0.84	0.28	1.07	
2007 Q2	3	0.02	0.32	2.03	5.51	6.73	6.68	6.60	5.24	2.41	0.32	0.80	0.27	1.04	
2007 Q3	2	0.02	0.29	2.17	5.29	5.95	6.08	6.25	4.65	2.12	0.29	0.75	0.26	0.99	
2007 Q4	3	0.02	0.25	2.18	4.71	5.87	6.10	6.21	4.99	2.39	0.28	0.74	0.26	0.97	
2008 Q1	2	0.02	0.22	2.09	3.82	5.63	6.14	6.25	4.81	2.28	0.29	0.79	0.26	1.00	
2008 Q2	2	0.02	0.33	3.58	6.38	6.75	6.63	6.51	4.96	2.29	0.34	0.90	0.28	1.12	
2008 Q3	3	0.02	0.17	2.62	5.86	7.03	6.87	6.57	5.17	2.60	0.35	0.89	0.21	1.06	
2008 Q4	3	0.02	0.24	3.25	6.20	7.25	6.97	6.56	5.15	2.78	0.38	0.93	0.27	1.10	
2009 Q1	3	0.02	0.35	4.15	4.76	6.44	6.73	6.67	5.27	2.64	0.34	0.91	0.28	1.10	
2009 Q2	3	0.02	0.31	4.15	5.59	7.36	7.53	7.34	5.34	2.68	0.39	1.01	0.30	1.22	
2009 Q3	2	0.02	0.26	3.75	6.11	7.21	6.78	6.57	5.01	2.55	0.34	0.84	0.27	1.05	
2009 Q4	3	0.02	0.28	4.03	5.96	7.06	6.79	6.55	4.97	2.46	0.34	0.86	0.28	1.04	
2010 Q1	3	0.04	0.36	4.45	3.84	5.68	6.28	6.46	5.32	2.86	0.27	0.76	0.29	1.00	
2010 Q2	2	0.04	0.34	4.44	3.36	5.24	6.02	6.38	4.95	2.62	0.25	0.75	0.28	1.00	
5/1/2010	CAL-394	0.02	0.25	4.07	3.12	5.14	6.04	6.43	5.08	2.74	0.25	0.77	0.28	1.04	
Average		0.02	0.28	2.86	5.10	6.52	6.65	6.59	5.07	2.49	0.32	0.83	0.27	1.05	
Std Dev		0.01	0.08	1.18	1.08	0.72	0.46	0.37	0.36	0.28	0.05	0.09	0.03	0.09	
Avg + StdDev		0.03	0.37	4.04	6.17	7.24	7.11	6.96	5.43	2.76	0.36	0.92	0.30	1.14	
Avg - StdDev		0.01	0.20	1.68	4.02	5.81	6.19	6.22	4.72	2.21	0.27	0.74	0.24	0.95	

Light Crude Quality Project Light Ends Summary (May 2010)

Crude	Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Light Sour															
SPR	Peace River Sour														
	2006 Q1	3	0.04	0.35	1.29	2.45	4.83	6.03	6.70	5.57	2.67	0.31	0.81	0.30	1.03
	2007 Q1	1	0.05	0.39	1.57	4.42	6.21	6.49	6.24	4.67	2.28	0.37	0.91	0.26	0.96
	2008 Q2	5	0.02	0.30	1.47	3.36	5.84	6.73	6.74	5.38	2.62	0.38	0.96	0.29	1.10
	2008 Q3	1	0.02	0.25	1.33	4.74	6.29	6.75	6.94	5.73	3.43	0.39	0.99	0.30	1.11
	2008 Q4	2	0.04	0.35	1.64	3.90	6.01	6.60	6.63	5.57	3.02	0.38	0.91	0.27	1.08
	2009 Q1	2	0.04	0.34	1.43	3.94	6.09	6.80	6.90	5.31	2.69	0.37	0.93	0.27	1.06
	2009 Q2	1	0.02	0.30	2.23	4.09	7.38	8.64	8.50	6.94	3.63	0.53	1.36	0.33	1.47
	2009 Q3	2	0.04	0.33	2.20	3.74	6.27	7.11	7.21	5.61	2.95	0.40	1.04	0.30	1.21
	2009 Q4	1	0.05	0.40	2.33	3.17	5.71	6.60	7.18	5.46	2.72	0.35	0.94	0.27	1.16
	2010 Q1	2	0.05	0.43	2.70	3.40	6.09	7.00	7.22	5.61	3.04	0.38	1.01	0.29	1.19
	2010 Q2	1	0.05	0.40	2.30	3.37	6.28	7.28	7.09	5.25	2.90	0.41	1.12	0.29	1.22
	5/1/2010	SPR-591	0.05	0.40	2.30	3.37	6.28	7.28	7.09	5.25	2.90	0.41	1.12	0.29	1.22
	Average		0.03	0.34	1.76	3.52	5.93	6.78	6.94	5.52	2.83	0.38	0.97	0.29	1.12
	Std Dev		0.02	0.05	0.48	0.68	0.70	0.75	0.67	0.50	0.35	0.06	0.17	0.02	0.18
	Avg + StdDev		0.05	0.40	2.24	4.20	6.63	7.53	7.61	6.02	3.18	0.44	1.14	0.31	1.31
	Avg - StdDev		0.02	0.29	1.28	2.84	5.22	6.04	6.26	5.01	2.48	0.31	0.80	0.27	0.94

Light Crude Quality Project Light Ends Summary (May 2010)

Crude	Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Light Sour															
PLS Pembina Light Sour															
	2007 Q4	1	0.02	0.32	3.29	3.15	6.61	8.96	9.45	7.23	3.17	0.47	1.10	0.29	1.71
	2008 Q1	3	0.02	0.33	3.34	2.97	6.01	8.04	8.43	6.72	2.96	0.41	0.94	0.28	1.44
	2008 Q2	6	0.02	0.32	3.44	3.15	6.43	8.57	9.04	7.27	3.30	0.45	1.08	0.29	1.67
	2008 Q3	6	0.02	0.24	2.70	2.72	5.76	7.83	8.31	6.75	3.43	0.40	1.00	0.28	1.52
	2008 Q4	3	0.02	0.27	3.22	2.75	5.78	7.72	8.13	6.94	3.48	0.40	0.97	0.26	1.52
	2009 Q1	3	0.02	0.31	3.30	2.76	5.84	7.91	8.31	6.60	3.01	0.40	0.96	0.27	1.49
	2009 Q2	3	0.02	0.38	4.08	2.95	6.20	8.34	8.67	6.84	3.24	0.44	1.04	0.29	1.55
	2009 Q3	3	0.02	0.38	3.92	2.86	5.93	7.95	8.31	6.50	2.94	0.42	1.01	0.27	1.52
	2009 Q4	3	0.02	0.38	3.97	3.14	6.27	8.31	8.46	6.64	3.12	0.43	1.02	0.27	1.49
	2010 Q1	3	0.02	0.37	3.89	2.93	5.96	7.95	8.20	6.68	3.27	0.42	1.00	0.28	1.45
	2010 Q2	2	0.02	0.33	3.71	2.81	6.00	8.16	8.45	6.77	3.52	0.45	1.14	0.30	1.56
	5/4/2010	PLS-570	0.02	0.36	3.89	2.90	6.10	8.24	8.56	6.90	3.59	0.44	1.13	0.30	1.58
	Average		0.02	0.32	3.46	2.92	6.05	8.12	8.50	6.82	3.24	0.42	1.02	0.28	1.54
	Std Dev		0.01	0.07	0.62	0.26	0.39	0.48	0.53	0.47	0.36	0.03	0.08	0.01	0.13
	Avg + StdDev		0.03	0.39	4.08	3.17	6.43	8.60	9.02	7.29	3.60	0.45	1.10	0.29	1.66
	Avg - StdDev		0.01	0.25	2.84	2.66	5.66	7.64	7.97	6.35	2.88	0.39	0.94	0.27	1.41

Light Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Mixed Sweet Blend														
MSW Mixed Sweet Blend														
2006 Q1	5	0.04	0.48	2.29	3.65	6.04	7.52	7.51	5.84	2.50	0.29	0.83	0.26	1.06
2006 Q2	6	0.02	0.34	2.01	3.81	5.87	7.27	7.41	6.14	2.77	0.28	0.77	0.24	1.06
2006 Q3	6	0.04	0.42	2.17	4.49	6.04	7.41	7.45	5.68	2.59	0.30	0.86	0.25	1.13
2006 Q4	6	0.05	0.45	2.27	4.00	6.26	7.76	7.82	6.10	2.67	0.31	0.88	0.25	1.26
2007 Q1	6	0.04	0.43	2.95	4.02	6.70	8.05	7.96	6.00	2.82	0.35	0.97	0.26	1.27
2007 Q2	6	0.03	0.37	2.77	3.51	6.03	7.59	7.68	6.13	2.57	0.31	0.88	0.27	1.21
2007 Q3	6	0.04	0.45	3.32	3.80	6.13	7.57	7.51	5.55	2.37	0.32	0.90	0.26	1.17
2007 Q4	6	0.03	0.43	2.93	3.73	6.37	7.86	7.77	5.77	2.50	0.33	0.97	0.27	1.23
2008 Q1	6	0.02	0.39	2.85	3.84	6.18	7.36	7.45	5.88	2.58	0.31	0.87	0.27	1.12
2008 Q2	6	0.02	0.41	3.35	4.32	6.64	7.52	7.39	5.75	2.46	0.34	0.88	0.27	1.11
2008 Q3	6	0.02	0.33	2.61	3.54	5.63	6.94	7.05	5.63	2.50	0.26	0.74	0.19	0.97
2008 Q4	6	0.03	0.43	3.17	3.65	5.81	7.06	7.16	5.47	2.51	0.29	0.83	0.25	1.08
2009 Q1	6	0.02	0.42	3.37	3.35	5.72	7.07	7.24	5.69	2.54	0.29	0.82	0.26	1.07
2009 Q2	6	0.02	0.48	3.95	4.02	6.71	8.12	7.98	5.87	2.74	0.35	0.99	0.27	1.24
2009 Q3	6	0.04	0.46	4.00	3.73	6.11	7.52	7.52	5.57	2.45	0.33	0.97	0.26	1.21
2009 Q4	6	0.02	0.48	3.92	3.90	6.15	7.41	7.41	5.55	2.49	0.33	0.96	0.27	1.16
2010 Q1	6	0.04	0.50	3.78	3.60	6.09	7.34	7.38	5.58	2.56	0.31	0.88	0.27	1.09
2010 Q2	4	0.04	0.49	4.14	3.18	5.59	6.89	7.04	5.35	2.51	0.29	0.85	0.26	1.10
5/17/2010	SW-848	0.05	0.52	4.37	3.16	5.59	6.96	7.15	5.41	2.47	0.27	0.83	0.26	1.11
5/30/2010	SW-874	0.02	0.54	4.59	3.47	5.77	6.91	7.11	5.54	2.57	0.29	0.82	0.27	1.07
Average		0.03	0.43	3.09	3.80	6.13	7.47	7.49	5.76	2.56	0.31	0.88	0.26	1.14
Std Dev		0.02	0.08	0.72	0.45	0.47	0.51	0.46	0.40	0.19	0.04	0.10	0.03	0.12
Avg + StdDev		0.05	0.51	3.81	4.25	6.60	7.98	7.95	6.16	2.76	0.35	0.99	0.28	1.27
Avg - StdDev		0.02	0.34	2.37	3.35	5.65	6.96	7.03	5.36	2.37	0.28	0.78	0.23	1.02

Light Crude Quality Project Light Ends Summary (May 2010)

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Crude Grade:MSW Feeder															
BG	Bonnie Glen														
2006 Q2	1	0.05	0.47	3.06	3.77	6.88	9.05	9.02	6.58	2.78	0.39	1.23	0.30	1.45	
2006 Q3	1	0.05	0.46	3.50	6.46	6.93	8.44	8.25	5.91	2.53	0.37	1.08	0.29	1.32	
2006 Q4	2	0.04	0.51	2.96	4.34	6.62	8.58	8.76	6.62	2.79	0.36	1.12	0.30	1.50	
2007 Q1	2	0.04	0.48	3.47	5.00	7.38	8.56	8.27	5.81	2.50	0.42	1.17	0.29	1.42	
2007 Q2	2	0.04	0.53	3.26	4.21	7.08	8.78	8.65	5.98	2.88	0.39	1.27	0.29	1.67	
2007 Q3	2	0.02	0.52	2.98	4.69	6.70	8.03	7.91	5.63	2.56	0.39	1.14	0.27	1.44	
2007 Q4	1	0.02	0.39	2.58	4.41	7.55	9.38	9.30	6.72	2.94	0.42	1.31	0.31	1.66	
2008 Q1	2	0.02	0.27	2.29	3.26	6.71	8.93	8.87	6.43	2.84	0.40	1.29	0.30	1.59	
2008 Q2	1	0.02	0.48	3.43	4.48	7.15	8.57	8.28	6.40	3.19	0.40	1.17	0.28	1.43	
2008 Q4	2	0.02	0.24	2.54	5.51	6.09	7.60	7.44	5.96	3.04	0.37	1.17	0.25	1.41	
2009 Q1	2	0.02	0.48	2.65	4.22	7.47	9.15	8.87	6.34	2.84	0.43	1.31	0.30	1.56	
2009 Q2	1	0.02	0.48	2.38	4.22	7.75	10.17	10.07	7.67	3.62	0.44	1.51	0.33	1.91	
2009 Q3	2	0.04	0.43	3.10	3.65	5.87	7.98	8.20	6.23	3.06	0.35	1.20	0.28	1.50	
2009 Q4	1	0.05	0.55	3.43	3.10	6.00	7.98	8.25	6.61	3.20	0.33	1.11	0.28	1.42	
2010 Q1	2	0.05	0.50	3.11	3.50	6.79	8.73	8.57	6.32	3.13	0.38	1.27	0.29	1.54	
2010 Q2	1	0.05	0.41	3.42	3.73	6.57	7.98	7.86	5.89	2.95	0.34	1.09	0.26	1.37	
6/1/2010	BG-407	0.05	0.41	3.42	3.73	6.57	7.98	7.86	5.89	2.95	0.34	1.09	0.26	1.37	
	Average	0.03	0.45	2.98	4.28	6.81	8.57	8.48	6.26	2.90	0.39	1.22	0.29	1.51	
	Std Dev	0.01	0.10	0.43	0.90	0.60	0.67	0.66	0.53	0.33	0.03	0.11	0.02	0.14	
	Avg + StdDev	0.05	0.54	3.41	5.18	7.41	9.24	9.15	6.79	3.23	0.42	1.33	0.31	1.66	
	Avg - StdDev	0.02	0.35	2.55	3.37	6.21	7.90	7.82	5.73	2.57	0.35	1.10	0.27	1.37	

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Crude Grade:MSW Feeder															
FD	Federated														
2006 Q1	5	0.04	0.36	2.96	3.12	6.06	7.91	8.09	6.68	2.88	0.30	0.85	0.26	1.18	
2006 Q2	4	0.05	0.43	3.67	3.15	5.79	7.73	7.86	6.43	2.64	0.28	0.78	0.26	1.09	
2006 Q3	4	0.05	0.36	3.42	3.27	5.99	7.79	7.88	6.32	2.69	0.30	0.86	0.27	1.19	
2006 Q4	3	0.05	0.47	4.28	3.59	6.10	8.02	8.12	6.47	2.74	0.31	0.88	0.27	1.29	
2007 Q1	3	0.03	0.43	3.90	3.50	6.28	8.17	8.30	6.37	2.86	0.32	0.97	0.28	1.35	
2007 Q2	3	0.04	0.36	3.72	2.81	5.62	7.81	8.33	6.76	2.92	0.28	0.91	0.27	1.37	
2007 Q3	3	0.04	0.40	3.32	3.70	6.31	7.97	7.93	6.06	2.57	0.35	0.97	0.27	1.26	
2007 Q4	3	0.03	0.40	3.04	3.66	6.20	8.06	8.17	6.59	3.04	0.32	0.99	0.27	1.33	
2008 Q1	2	0.02	0.40	2.90	3.16	6.19	8.18	8.33	6.81	3.22	0.35	1.10	0.28	1.43	
2008 Q2	3		0.24	2.50	3.69	6.49	8.10	8.15	7.82	4.16	0.38	1.06	0.28	1.43	
2008 Q3	3	0.02	0.24	2.85	3.60	6.16	7.93	8.04	6.35	2.72	0.30	0.92	0.22	1.27	
2008 Q4	3	0.03	0.32	3.08	2.90	5.53	7.38	7.65	6.88	3.58	0.31	0.90	0.26	1.30	
2009 Q1	3	0.04	0.36	2.77	2.98	6.09	8.24	8.37	6.71	3.21	0.34	1.10	0.28	1.43	
2009 Q2	3	0.05	0.46	3.81	3.41	6.26	8.45	8.62	6.69	3.03	0.33	1.04	0.29	1.39	
2009 Q3	2	0.04	0.30	3.76	2.88	4.99	6.93	7.39	6.26	2.87	0.21	0.70	0.26	1.10	
2009 Q4	3	0.02	0.31	3.57	3.15	5.38	7.34	7.78	6.88	3.42	0.25	0.79	0.27	1.17	
2010 Q1	2	0.05	0.36	4.17	2.74	4.97	6.67	7.20	6.74	3.46	0.22	0.63	0.27	1.01	
2010 Q2	3	0.02	0.25	3.52	2.36	4.83	6.71	7.34	6.75	3.42	0.22	0.61	0.27	1.02	
5/10/2010	FD-997	0.02	0.18	3.68	2.18	4.79	6.99	7.70	6.60	3.00	0.18	0.61	0.28	1.08	
	Average	0.04	0.36	3.38	3.22	5.88	7.78	7.99	6.64	3.05	0.30	0.89	0.27	1.25	
	Std Dev	0.01	0.11	0.64	0.55	0.65	0.66	0.55	0.55	0.52	0.07	0.19	0.03	0.18	
	Avg + StdDev	0.05	0.47	4.02	3.76	6.53	8.44	8.54	7.19	3.57	0.37	1.08	0.30	1.44	
	Avg - StdDev	0.02	0.25	2.74	2.67	5.23	7.11	7.45	6.08	2.53	0.23	0.71	0.24	1.07	

Light Crude Quality Project Light Ends Summary (May 2010)

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Crude Grade:MSW Feeder															
MGL Gibson Light Sweet															
2006 Q4	2	0.02	0.31	2.41	8.28	10.74	10.97	8.43	5.05	2.20	0.69	1.92	0.26	1.70	
2007 Q1	1	0.02	0.23	2.81	6.71	11.44	11.28	7.53	4.69	2.15	0.70	1.81	0.24	1.44	
2007 Q2	2	0.02	0.19	3.19	4.95	8.71	10.18	8.04	4.72	1.83	0.68	1.95	0.26	1.74	
2007 Q3	1	0.02	0.26	3.22	3.35	8.26	10.16	9.34	5.97	2.70	0.57	1.63	0.27	1.50	
2007 Q4	1	0.02	0.31	3.34	4.80	8.95	10.95	9.35	5.84	2.60	0.57	1.82	0.29	1.60	
2008 Q1	2	0.02	0.40	3.17	3.84	6.45	7.48	7.21	6.09	2.92	0.39	1.11	0.29	1.18	
2008 Q2	1	0.05	0.57	4.79	3.34	5.70	6.92	7.24	6.15	2.83	0.31	0.77	0.26	1.04	
2008 Q3	2	0.02	0.36	3.19	3.59	5.69	6.71	6.95	5.59	2.52	0.30	0.76	0.26	1.00	
2008 Q4	1	0.02	0.55	4.75	3.53	5.19	5.98	6.31	5.50	2.61	0.26	0.65	0.25	0.85	
2009 Q1	1	0.02	0.61	4.95	3.62	5.82	6.96	7.30	6.11	2.85	0.31	0.75	0.28	1.00	
2009 Q2	2	0.02	0.45	4.75	5.27	8.67	9.42	8.12	5.59	2.63	0.51	1.40	0.30	1.40	
2009 Q3	1	0.02	0.23	5.45	6.88	8.97	10.01	9.08	5.65	2.62	0.58	1.82	0.27	1.99	
2009 Q4	2	0.04	0.44	5.21	5.79	10.50	11.97	9.66	5.76	2.70	0.70	2.04	0.31	1.91	
2010 Q1	1	0.02	0.36	5.52	3.69	6.53	7.50	6.31	4.32	2.02	0.35	1.04	0.19	0.98	
2010 Q2	1	0.02	0.15	3.96	1.64	2.73	3.70	3.50	2.76	1.45	0.18	0.57	0.12	0.62	
Average		0.02	0.36	3.93	4.81	7.86	8.90	7.75	5.36	2.45	0.49	1.39	0.26	1.38	
Std Dev		0.00	0.15	1.11	1.92	2.58	2.62	1.65	0.86	0.44	0.22	0.67	0.05	0.50	
Avg + StdDev		0.03	0.51	5.05	6.73	10.44	11.52	9.40	6.22	2.89	0.71	2.05	0.31	1.88	
Avg - StdDev		0.02	0.21	2.82	2.89	5.29	6.28	6.11	4.50	2.01	0.28	0.72	0.22	0.87	

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Crude Grade:MSW Feeder															
JCM Joarcam															
2006 Q2	1	0.02	0.16	2.13	10.06	4.69	4.69	4.40	4.07	2.03	0.10	0.15	0.10	0.30	
2006 Q3	2	0.02	0.16	2.31	12.89	4.43	4.61	4.46	3.88	1.94	0.09	0.16	0.10	0.35	
2006 Q4	2	0.02	0.14	2.46	10.01	4.25	4.70	4.79	4.21	1.99	0.07	0.18	0.11	0.47	
2007 Q1	3	0.02	0.19	2.97	7.67	6.35	5.64	5.22	4.26	2.07	0.23	0.27	0.13	0.43	
2007 Q2	2	0.02	0.17	2.88	6.33	6.09	5.72	5.60	4.74	2.13	0.20	0.34	0.15	0.59	
2007 Q3	1	0.02	0.23	3.98	6.62	3.69	4.37	4.71	4.03	1.87	0.05	0.16	0.12	0.41	
2007 Q4	2	0.02	0.14	3.27	6.27	4.92	5.44	5.48	4.81	2.38	0.12	0.28	0.14	0.50	
2008 Q1	2		0.09	2.68	5.68	5.36	5.38	5.35	5.45	3.09	0.17	0.33	0.15	0.52	
2008 Q2	1		0.15	3.91	6.60	5.50	5.45	5.16	4.21	2.15	0.16	0.32	0.13	0.48	
2008 Q3	2		0.10	3.38	5.48	3.65	4.67	4.97	4.52	2.33	0.08	0.21	0.13	0.41	
2008 Q4	1		0.07	2.95	5.49	3.44	4.07	4.31	5.71	3.71	0.11	0.18	0.11	0.39	
2009 Q1	1		0.13	3.92	1.22	3.13	4.84	5.53	5.69	3.13	0.03	0.13	0.13	0.41	
2009 Q2	2	0.02	0.19	4.49	3.38	3.64	5.23	5.69	5.48	3.24	0.07	0.27	0.14	0.52	
2009 Q3	1		0.02	2.70	3.42	2.97	4.55	5.22	5.47	3.03	0.04	0.16	0.12	0.47	
2009 Q4	1		0.18	5.18	3.99	4.90	5.33	5.06	4.90	2.88	0.12	0.30	0.12	0.44	
2010 Q1	1	0.02	0.21	5.51	3.42	4.61	5.44	5.39	4.21	2.18	0.10	0.30	0.12	0.46	
Average		0.02	0.15	3.28	6.56	4.67	5.09	5.12	4.69	2.45	0.12	0.24	0.13	0.45	
Std Dev		0.02	0.06	0.94	2.93	1.15	0.59	0.48	0.63	0.54	0.07	0.09	0.01	0.08	
Avg + StdDev		0.04	0.20	4.22	9.49	5.82	5.68	5.61	5.32	2.99	0.19	0.33	0.14	0.54	
Avg - StdDev		0.00	0.09	2.35	3.62	3.52	4.50	4.64	4.06	1.92	0.05	0.15	0.11	0.37	

Light Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade:MSW Feeder														
KSW Kerrobert Sweet														
2008 Q1	6	0.02	0.34	2.88	2.48	4.71	6.08	6.59	5.60	2.34	0.05	0.24	0.19	0.67
2008 Q2	6		0.24	3.09	2.09	4.38	5.85	6.36	5.48	2.26	0.04	0.24	0.18	0.74
2008 Q3	3		0.13	2.35	2.36	4.39	5.50	5.89	4.95	2.25	0.07	0.29	0.16	0.71
2008 Q4	3	0.02	0.28	2.89	2.92	4.95	6.01	6.23	5.02	2.26	0.08	0.31	0.17	0.70
2009 Q1	3		0.25	3.23	2.92	4.86	5.80	5.98	5.00	2.15	0.07	0.30	0.16	0.69
2009 Q2	3		0.21	3.09	4.45	6.26	6.81	6.74	5.30	2.47	0.14	0.43	0.17	0.81
2009 Q3	3		0.17	2.87	4.61	6.18	6.47	6.34	5.01	2.15	0.15	0.43	0.17	0.79
2009 Q4	3	0.02	0.24	3.21	4.04	5.75	6.28	6.26	4.99	2.21	0.12	0.38	0.16	0.75
2010 Q1	3	0.02	0.26	3.19	2.26	4.47	5.79	6.10	5.11	2.34	0.03	0.24	0.16	0.67
2010 Q2	2	0.02	0.27	3.09	2.15	4.37	5.75	6.16	5.21	2.46	0.04	0.23	0.16	0.68
5/25/2010	KSW-133		0.25	3.23	2.15	4.35	5.67	6.13	5.22	2.49	0.03	0.24	0.16	0.70
Average		0.02	0.25	2.98	2.93	4.97	6.03	6.30	5.23	2.28	0.07	0.30	0.17	0.72
Std Dev		0.02	0.07	0.34	1.04	0.80	0.45	0.36	0.36	0.14	0.05	0.08	0.02	0.08
Avg + StdDev		0.04	0.31	3.33	3.96	5.77	6.48	6.66	5.59	2.43	0.12	0.38	0.19	0.79
Avg - StdDev		0.00	0.18	2.64	1.89	4.17	5.58	5.94	4.87	2.14	0.03	0.22	0.15	0.64

Light Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)	
Crude Grade:MSW Feeder															
MPR Peace															
2006 Q1	6	0.05	0.45	1.75	3.59	6.25	7.47	7.58	5.98	2.71	0.36	0.91	0.25	1.19	
2006 Q2	6	0.04	0.44	1.95	3.60	6.08	7.29	7.49	6.36	3.03	0.33	0.80	0.25	1.06	
2006 Q3	3	0.05	0.47	2.04	3.88	6.02	7.27	7.51	5.96	2.72	0.31	0.77	0.25	1.06	
2006 Q4	3	0.05	0.53	2.19	3.89	5.94	7.43	7.89	6.22	2.85	0.31	0.80	0.26	1.20	
2007 Q1	3	0.04	0.49	2.28	4.04	6.69	7.97	8.03	6.36	2.96	0.36	0.89	0.26	1.19	
2008 Q1	1	0.02	0.33	1.87	3.14	6.14	8.03	8.41	6.80	3.09	0.35	0.93	0.28	1.24	
2008 Q2	5	0.02	0.37	2.02	3.23	6.16	7.83	8.09	6.70	3.11	0.35	0.90	0.28	1.22	
2008 Q3	2	0.02	0.27	1.67	2.97	5.55	7.05	7.68	6.21	3.19	0.26	0.65	0.17	1.15	
2008 Q4	4	0.03	0.37	1.99	3.16	5.86	7.37	7.43	6.17	3.08	0.33	0.85	0.25	1.13	
2009 Q1	3	0.03	0.45	2.20	3.61	6.53	7.84	7.71	6.14	2.88	0.37	0.91	0.25	1.15	
2009 Q2	3	0.05	0.51	2.59	3.72	6.76	8.32	8.21	6.20	2.96	0.37	0.95	0.26	1.20	
2009 Q3	2	0.05	0.42	2.43	3.01	5.88	7.50	7.59	6.14	2.92	0.34	0.85	0.25	1.12	
2009 Q4	3	0.05	0.45	2.60	3.38	6.25	7.80	7.94	6.49	3.24	0.35	0.93	0.26	1.20	
2010 Q1	3	0.05	0.50	2.52	3.21	6.05	7.73	7.82	6.41	3.15	0.33	0.87	0.26	1.12	
2010 Q2	2	0.05	0.48	2.35	3.45	6.28	7.73	7.65	6.25	3.16	0.32	0.84	0.25	1.09	
5/1/2010	MPR-835	0.05	0.44	2.32	3.70	6.66	8.04	7.90	6.49	3.39	0.35	0.91	0.26	1.16	
Average		0.04	0.44	2.13	3.49	6.17	7.61	7.76	6.28	2.98	0.34	0.86	0.25	1.15	
Std Dev		0.02	0.07	0.32	0.40	0.43	0.47	0.44	0.42	0.36	0.04	0.10	0.03	0.11	
Avg + StdDev		0.06	0.52	2.45	3.90	6.60	8.08	8.20	6.69	3.34	0.37	0.96	0.28	1.26	
Avg - StdDev		0.02	0.37	1.81	3.09	5.75	7.14	7.32	5.86	2.62	0.30	0.76	0.22	1.05	

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Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)	
Crude Grade:MSW Feeder															
P	Pembina														
2006 Q1	5	0.04	0.42	1.60	3.16	6.26	8.30	8.43	6.52	2.92	0.32	1.04	0.26	1.41	
2006 Q2	5	0.02	0.38	1.65	3.28	6.13	7.78	7.78	6.02	2.69	0.29	0.89	0.24	1.24	
2006 Q3	3	0.03	0.39	1.52	2.99	5.76	7.61	7.78	5.79	2.67	0.29	0.96	0.25	1.28	
2006 Q4	2	0.05	0.45	1.76	3.37	6.37	8.18	8.26	5.92	2.50	0.32	1.05	0.26	1.44	
2007 Q1	3	0.03	0.43	2.92	3.65	6.91	8.58	8.32	6.00	2.73	0.36	1.10	0.26	1.41	
2007 Q2	3	0.03	0.39	3.55	3.65	6.94	8.62	8.35	5.77	2.48	0.37	1.11	0.25	1.51	
2007 Q3	3	0.02	0.38	3.72	3.02	5.90	7.61	7.58	5.63	2.52	0.32	0.94	0.24	1.24	
2007 Q4	3	0.03	0.43	3.12	3.65	6.63	8.20	7.91	5.83	2.63	0.36	1.09	0.26	1.40	
2008 Q1	4	0.02	0.34	3.30	3.11	5.97	7.63	7.69	6.34	3.06	0.31	0.96	0.25	1.26	
2008 Q2	3	0.02	0.33	3.32	3.26	6.48	8.35	8.40	6.64	3.04	0.35	1.04	0.27	1.44	
2008 Q3	3	0.02	0.26	2.79	3.20	5.99	7.67	7.52	5.79	2.64	0.30	0.92	0.19	1.16	
2008 Q4	3	0.02	0.33	3.35	3.22	5.98	7.53	7.41	6.12	3.24	0.32	0.96	0.25	1.27	
2009 Q1	3	0.02	0.33	3.25	3.16	6.16	7.84	7.72	5.99	2.86	0.32	0.95	0.25	1.24	
2009 Q2	3	0.02	0.42	3.60	4.07	7.45	9.06	8.42	6.04	2.94	0.40	1.18	0.26	1.41	
2009 Q3	3	0.02	0.34	3.43	3.45	6.59	8.25	7.95	5.95	2.89	0.33	1.09	0.25	1.39	
2009 Q4	3	0.03	0.41	3.93	3.74	6.73	8.28	7.96	6.13	3.07	0.35	1.09	0.25	1.35	
2010 Q1	3	0.05	0.50	4.19	3.78	6.81	8.19	7.92	5.92	3.00	0.35	1.04	0.25	1.29	
2010 Q2	2	0.04	0.43	4.04	3.03	5.87	7.33	7.25	5.78	3.04	0.28	0.89	0.24	1.16	
5/1/2010	P-542	0.05	0.47	4.25	3.09	5.97	7.43	7.34	5.86	3.14	0.30	0.97	0.25	1.24	
	Average	0.03	0.39	2.97	3.37	6.37	8.06	7.94	6.04	2.83	0.33	1.01	0.25	1.33	
	Std Dev	0.01	0.07	0.97	0.37	0.54	0.58	0.53	0.48	0.37	0.04	0.12	0.03	0.14	
	Avg + StdDev	0.04	0.46	3.93	3.73	6.91	8.64	8.47	6.52	3.21	0.37	1.13	0.28	1.47	
	Avg - StdDev	0.02	0.31	2.00	3.00	5.84	7.47	7.41	5.56	2.46	0.29	0.90	0.22	1.18	

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Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)	
Crude Grade:MSW Feeder															
RA	Rainbow														
2006 Q1	6	0.02	0.58	2.67	3.52	5.28	6.24	7.05	6.26	2.70	0.23	0.54	0.28	0.86	
2006 Q2	6	0.03	0.66	2.85	3.78	5.29	6.12	6.77	5.96	2.59	0.24	0.55	0.28	0.81	
2006 Q3	3	0.04	0.68	2.88	3.15	5.05	6.04	6.77	5.71	2.49	0.23	0.58	0.28	0.86	
2006 Q4	2	0.04	0.71	3.04	3.48	5.37	6.16	6.92	6.11	2.69	0.25	0.60	0.29	0.95	
2007 Q1	3	0.03	0.72	3.34	3.80	5.71	6.38	7.20	5.99	2.71	0.25	0.63	0.31	0.93	
2007 Q2	3	0.02	0.63	2.79	3.24	5.11	6.10	6.87	6.13	2.54	0.25	0.64	0.32	0.96	
2007 Q3	2	0.02	0.65	2.79	3.25	5.11	6.10	6.88	5.81	2.48	0.26	0.60	0.30	0.88	
2007 Q4	2	0.02	0.71	3.05	3.67	5.33	6.09	6.71	5.57	2.35	0.26	0.61	0.29	0.89	
2008 Q1	3	0.02	0.48	2.72	3.25	4.88	5.63	6.47	6.15	3.03	0.22	0.56	0.28	0.84	
2008 Q2	4	0.02	0.57	3.14	3.68	5.51	6.27	6.92	6.06	2.67	0.28	0.67	0.30	0.94	
2008 Q3	3	0.02	0.40	2.10	3.06	4.99	6.05	6.88	6.17	3.29	0.25	0.62	0.29	0.93	
2008 Q4	3	0.02	0.53	2.80	3.27	4.95	5.74	6.42	5.95	2.90	0.24	0.58	0.28	0.84	
2009 Q1	3	0.02	0.61	4.17	3.57	5.15	5.75	6.46	5.70	2.61	0.25	0.59	0.29	0.83	
2009 Q2	3	0.02	0.55	3.97	3.49	5.56	6.58	7.32	6.20	2.74	0.28	0.66	0.30	0.94	
2009 Q3	3	0.02	0.55	3.98	3.64	5.11	5.78	6.46	5.78	2.60	0.24	0.60	0.29	0.85	
2009 Q4	3	0.02	0.58	4.12	3.66	5.16	5.82	6.50	5.64	2.59	0.25	0.63	0.29	0.88	
2010 Q1	3	0.03	0.65	4.11	3.73	5.31	6.07	6.74	5.84	2.73	0.25	0.60	0.28	0.88	
2010 Q2	2	0.02	0.64	4.04	3.69	5.45	6.31	6.92	5.89	2.78	0.26	0.63	0.28	0.91	
5/5/2010	RA-680	0.02	0.64	3.91	3.64	5.31	6.24	6.97	6.14	2.99	0.25	0.60	0.28	0.91	
	Average	0.02	0.60	3.20	3.51	5.24	6.08	6.80	5.97	2.70	0.25	0.60	0.29	0.88	
	Std Dev	0.01	0.10	0.67	0.34	0.32	0.36	0.42	0.42	0.31	0.02	0.05	0.02	0.07	
	Avg + StdDev	0.04	0.71	3.87	3.85	5.56	6.43	7.22	6.39	3.01	0.27	0.65	0.31	0.95	
	Avg - StdDev	0.01	0.50	2.53	3.18	4.93	5.72	6.38	5.55	2.39	0.23	0.55	0.27	0.82	

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Crude Grade:MSW Feeder														
RDW Redwater														
2006 Q3	1	0.07	0.50	1.59	2.47	4.45	6.04	6.80	5.93	2.64	0.11	0.32	0.27	0.66
2006 Q4	1	0.09	0.65	2.52	2.86	4.80	5.99	6.79	5.73	2.34	0.13	0.36	0.27	0.75
2007 Q1	2	0.09	0.66	2.49	2.67	4.58	5.92	6.49	5.42	2.19	0.11	0.33	0.26	0.64
2007 Q2	1	0.07	0.60	2.39	2.55	4.53	6.10	6.93	6.02	2.48	0.12	0.36	0.28	0.69
2007 Q3	2	0.05	0.44	2.09	2.22	4.03	5.52	6.36	5.78	2.58	0.11	0.33	0.27	0.64
2007 Q4	1	0.07	0.50	2.38	2.43	4.11	5.30	5.85	5.17	2.05	0.08	0.23	0.24	0.48
2008 Q1	3	0.03	0.41	2.31	4.31	5.83	5.53	6.24	6.15	3.04	0.10	0.27	0.27	0.64
2008 Q2	1	0.05	0.49	2.64	5.97	6.16	6.35	6.19	4.96	2.06	0.17	0.37	0.25	0.58
2008 Q3	2	0.02	0.26	1.82	5.07	5.90	6.05	5.89	5.00	2.27	0.18	0.42	0.23	0.58
2008 Q4	1	0.05	0.49	2.37	5.07	5.36	5.51	5.50	5.09	2.53	0.15	0.32	0.21	0.53
2009 Q1	2	0.05	0.40	2.12	4.48	5.32	5.85	6.04	5.30	2.46	0.14	0.33	0.23	0.55
2009 Q2	1	0.05	0.49	2.61	7.04	6.64	6.50	6.32	6.05	3.32	0.20	0.42	0.24	0.64
Average		0.05	0.47	2.25	3.90	5.18	5.84	6.26	5.58	2.53	0.13	0.33	0.25	0.61
Std Dev		0.02	0.13	0.34	1.57	0.99	0.43	0.48	0.57	0.43	0.04	0.06	0.02	0.07
Avg + StdDev		0.08	0.60	2.59	5.48	6.16	6.27	6.74	6.14	2.96	0.17	0.39	0.28	0.69
Avg - StdDev		0.03	0.34	1.91	2.33	4.19	5.40	5.78	5.01	2.10	0.09	0.28	0.23	0.54

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Crude	Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade:MSW Feeder															
MST Tundra Sweet															
	2007 Q4	1	0.02	0.52	2.48	2.51	4.65	6.47	8.56	7.47	3.06	0.08	0.25	0.40	0.53
	2008 Q1	6	0.02	0.52	2.71	2.58	4.87	6.80	8.70	7.49	3.46	0.07	0.24	0.40	0.52
	2008 Q2	5	0.03	0.59	3.15	2.64	4.93	6.89	8.80	7.69	3.49	0.06	0.21	0.40	0.54
	2008 Q3	3	0.02	0.38	2.61	2.12	4.15	6.06	8.03	6.95	3.37	0.04	0.12	0.35	0.39
	2008 Q4	3	0.04	0.43	2.66	2.34	4.48	6.22	7.87	6.70	3.15	0.05	0.17	0.34	0.43
	2009 Q1	4	0.03	0.58	3.24	2.45	4.49	6.34	8.26	6.76	3.00	0.05	0.12	0.35	0.42
	2009 Q2	2	0.02	0.48	2.86	2.50	4.67	6.94	9.16	7.96	3.59	0.04	0.10	0.39	0.40
	2009 Q3	3	0.04	0.53	3.27	2.44	4.47	6.45	8.59	7.06	3.10	0.03	0.09	0.34	0.46
	2009 Q4	3	0.03	0.58	3.32	2.71	4.80	6.68	8.61	7.58	3.64	0.04	0.12	0.36	0.42
	2010 Q1	3	0.03	0.48	3.39	2.48	4.59	6.57	8.69	7.09	3.26	0.04	0.12	0.36	0.47
	2010 Q2	2	0.05	0.69	3.84	2.55	4.67	6.59	8.71	7.21	3.51	0.05	0.18	0.38	0.51
	5/24/2010	MST-219	0.05	0.68	3.95	2.49	4.64	6.75	9.04	7.10	3.18	0.04	0.13	0.37	0.48
	Average		0.03	0.53	3.04	2.50	4.65	6.57	8.54	7.27	3.34	0.05	0.16	0.37	0.47
	Std Dev		0.02	0.15	0.54	0.22	0.28	0.37	0.54	0.57	0.35	0.01	0.06	0.03	0.08
	Avg + StdDev		0.05	0.68	3.58	2.72	4.93	6.95	9.08	7.83	3.69	0.06	0.22	0.40	0.54
	Avg - StdDev		0.01	0.38	2.50	2.28	4.36	6.20	8.00	6.70	3.00	0.04	0.10	0.34	0.39

Light Crude Quality Project Light Ends Summary (May 2010)

Crude	Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Sweet Synthetic															
CNS	CNRL	Light Sweet Synthetic													
	2009 Q2	4		0.02	1.37	2.67	3.29	3.00	4.24	4.20	2.35	0.04	0.18	0.14	0.47
	2009 Q3	3			1.27	2.70	3.44	3.30	4.91	4.68	2.41	0.04	0.20	0.17	0.57
	2009 Q4	3		0.02	1.07	2.37	2.95	2.57	3.80	3.98	2.29	0.03	0.16	0.13	0.44
	2010 Q1	3		0.03	1.43	3.59	4.30	4.00	5.48	4.90	2.62	0.08	0.29	0.18	0.64
	2010 Q2	2		0.02	1.11	2.58	3.45	3.41	5.07	4.70	2.58	0.04	0.20	0.16	0.54
	5/30/2010	CNS-901			1.14	2.61	3.37	3.21	4.81	4.44	2.50	0.03	0.19	0.15	0.52
	Average			0.02	1.27	2.79	3.48	3.23	4.65	4.46	2.43	0.04	0.21	0.16	0.53
	Std Dev			0.03	0.33	0.84	0.83	0.75	0.98	0.68	0.27	0.03	0.07	0.02	0.11
	Avg + StdDev			0.05	1.60	3.63	4.31	3.98	5.62	5.14	2.70	0.07	0.27	0.18	0.63
	Avg - StdDev			0.00	0.93	1.95	2.64	2.48	3.67	3.78	2.16	0.02	0.14	0.13	0.42

Light Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Sweet Synthetic														
HSB Husky Synthetic Blend														
2006 Q1	3		0.12	2.70	1.36	1.73	1.73	2.38	2.33	1.21	0.03	0.10	0.08	0.25
2006 Q2	2		0.12	2.97	1.45	1.93	1.94	2.69	2.66	1.48	0.03	0.13	0.09	0.32
2006 Q3	3		0.12	3.09	1.73	2.03	2.01	2.62	2.36	1.29	0.04	0.16	0.09	0.33
2006 Q4	2		0.10	3.51	1.49	1.79	1.79	2.45	2.19	1.25	0.03	0.13	0.09	0.32
2007 Q1	3		0.09	3.24	1.46	1.82	1.84	2.53	2.45	1.41	0.03	0.15	0.10	0.34
2007 Q2	2		0.07	3.00	1.46	1.92	2.04	2.91	2.88	1.36	0.03	0.17	0.11	0.42
2007 Q3	3		0.06	2.89	1.16	1.47	1.54	2.17	2.02	1.11	0.02	0.11	0.08	0.26
2007 Q4	3		0.04	3.35	1.39	1.83	1.87	2.49	2.23	1.17	0.03	0.13	0.09	0.29
2008 Q1	3		0.05	2.97	1.37	1.78	1.79	2.38	2.16	1.18	0.03	0.13	0.08	0.28
2008 Q2	3		0.06	3.16	1.29	1.66	1.68	2.24	2.08	1.06	0.03	0.12	0.08	0.27
2008 Q3	3		0.07	2.46	1.46	1.91	1.91	2.55	2.27	1.20	0.03	0.12	0.07	0.26
2008 Q4	3		0.14	2.76	1.63	1.91	1.84	2.29	1.95	1.07	0.04	0.15	0.08	0.27
2009 Q1	3		0.14	3.08	1.25	1.75	1.77	2.28	1.99	1.05	0.03	0.14	0.08	0.28
2009 Q2	3		0.18	2.90	2.05	2.51	2.40	3.02	2.58	1.34	0.07	0.21	0.11	0.37
2009 Q3	3		0.17	2.88	1.86	2.29	2.21	2.87	2.62	1.40	0.05	0.19	0.10	0.36
2009 Q4	3		0.22	2.97	1.73	2.15	2.13	2.89	2.68	1.51	0.04	0.17	0.11	0.37
2010 Q1	3		0.21	2.65	1.56	2.00	2.04	2.79	2.48	1.36	0.04	0.16	0.11	0.34
2010 Q2	2		0.23	3.17	1.59	2.20	2.20	3.01	2.62	1.42	0.04	0.17	0.11	0.38
5/25/2010	HSB-670		0.25	3.19	1.61	2.17	2.15	2.97	2.57	1.38	0.04	0.17	0.11	0.38
Average			0.12	2.97	1.52	1.92	1.92	2.57	2.35	1.26	0.04	0.15	0.09	0.31
Std Dev			0.06	0.34	0.29	0.33	0.29	0.35	0.33	0.18	0.01	0.04	0.02	0.06
Avg + StdDev			0.18	3.31	1.81	2.25	2.21	2.93	2.67	1.44	0.05	0.19	0.11	0.37
Avg - StdDev			0.06	2.63	1.23	1.59	1.63	2.22	2.02	1.09	0.02	0.10	0.07	0.25

Light Crude Quality Project Light Ends Summary (May 2010)

Crude	Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Sweet Synthetic															
PSC Long Lake Light Synthetic															
	2009 Q2	1		0.07	1.83	2.28	3.52	4.74	6.84	6.16	2.74	0.07	0.21	0.15	0.47
	2009 Q3	2		0.03	1.28	2.61	4.30	4.51	5.31	4.26	1.97	0.12	0.34	0.15	0.54
	2009 Q4	3		0.03	0.79	1.74	3.12	3.60	4.49	3.79	1.67	0.11	0.30	0.14	0.44
	2010 Q1	3		0.07	1.96	2.73	4.33	4.88	6.33	5.23	2.29	0.13	0.33	0.18	0.57
	2010 Q2	2		0.02	0.84	1.96	3.37	4.13	5.29	4.34	1.95	0.11	0.34	0.16	0.55
	5/21/2010	PSC-603			0.84	1.97	3.23	3.98	5.09	4.15	1.88	0.10	0.33	0.15	0.55
	Average			0.04	1.30	2.26	3.74	4.31	5.50	4.58	2.04	0.11	0.31	0.16	0.52
	Std Dev			0.03	0.54	0.44	0.58	0.66	1.06	0.97	0.40	0.02	0.05	0.03	0.06
	Avg + StdDev			0.08	1.84	2.70	4.32	4.98	6.56	5.56	2.44	0.14	0.36	0.18	0.58
	Avg - StdDev			0.01	0.76	1.81	3.17	3.65	4.44	3.61	1.64	0.09	0.26	0.13	0.46

Light Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Sweet Synthetic														
PAS Premium Albion Synthetic														
2006 Q1	1			0.28	0.59	1.67	2.65	4.66	5.57	2.78	0.05	0.29	0.19	0.81
2006 Q2	1		0.02	0.45	1.03	2.29	3.19	4.94	5.14	2.66	0.07	0.36	0.21	0.81
2006 Q3	2			0.36	0.49	1.39	2.19	3.82	4.52	2.81	0.05	0.31	0.17	0.75
2006 Q4	1			0.08	0.26	1.30	2.29	4.27	5.22	2.87	0.04	0.29	0.20	0.79
2007 Q1	2			0.28	0.34	1.23	2.17	3.98	4.67	2.83	0.04	0.32	0.19	0.77
2007 Q2	1		0.07	0.68	1.11	2.20	2.99	4.98	6.38	2.69	0.05	0.34	0.24	0.86
2007 Q3	2			0.36	0.36	1.06	1.99	3.71	4.19	2.34	0.04	0.28	0.19	0.71
2007 Q4	1			0.01	0.14	0.91	1.96	3.70	4.24	2.46	0.03	0.31	0.17	0.76
2008 Q3	3			0.31	0.29	0.75	1.67	3.45	4.20	2.68	0.03	0.25	0.18	0.67
2008 Q4	3			0.40	0.42	0.86	1.67	3.31	3.97	2.36	0.04	0.26	0.16	0.67
2009 Q1	2		0.02	0.32	0.34	0.89	1.82	3.74	4.63	2.74	0.03	0.24	0.18	0.69
2009 Q2	1			0.34	0.42	1.26	2.41	4.54	4.99	3.04	0.05	0.36	0.22	0.92
2009 Q3	1			0.16	0.70	1.39	2.03	3.39	3.74	2.01	0.05	0.32	0.16	0.73
2009 Q4	1			0.26	0.26	1.10	1.99	3.68	4.04	2.24	0.04	0.27	0.18	0.65
2010 Q1	2		0.04	0.56	0.68	1.60	2.48	4.22	4.61	2.72	0.06	0.36	0.21	0.88
Average			0.04	0.34	0.46	1.22	2.12	3.89	4.54	2.61	0.04	0.30	0.19	0.75
Std Dev			0.03	0.16	0.26	0.44	0.46	0.60	0.68	0.32	0.02	0.05	0.02	0.10
Avg + StdDev			0.06	0.50	0.72	1.66	2.58	4.50	5.22	2.93	0.06	0.35	0.21	0.85
Avg - StdDev			0.01	0.18	0.20	0.78	1.65	3.29	3.87	2.30	0.02	0.24	0.16	0.64

Light Crude Quality Project Light Ends Summary (May 2010)

Crude	Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Sweet Synthetic															
SSX	Shell Synthetic Light														
	2009 Q1	6		0.10	0.58	1.09	4.58	5.42	6.36	2.78	0.88	0.18	0.58	0.23	0.73
	2009 Q2	6		0.06	0.43	0.90	4.45	5.79	6.59	2.91	0.87	0.19	0.70	0.26	0.91
	2009 Q3	2		0.02	0.20	0.57	3.87	4.81	5.72	2.52	0.68	0.21	0.60	0.23	0.80
	2009 Q4	3		0.07	0.57	1.15	3.32	4.52	5.48	2.94	0.90	0.12	0.47	0.19	0.67
	2010 Q1	3		0.12	1.01	2.08	4.16	3.96	4.06	2.14	0.87	0.15	0.47	0.16	0.60
	2010 Q2	2		0.11	0.55	1.39	5.03	5.53	5.87	2.93	0.92	0.26	0.70	0.23	0.85
	5/31/2010	SSX-715		0.12	0.61	1.50	5.10	5.62	5.89	3.12	1.03	0.25	0.72	0.24	0.88
	Average			0.08	0.56	1.16	4.29	5.15	5.89	2.74	0.86	0.18	0.59	0.22	0.77
	Std Dev			0.04	0.30	0.58	0.70	0.84	1.07	0.46	0.14	0.05	0.11	0.04	0.15
	Avg + StdDev			0.12	0.86	1.74	4.99	6.00	6.95	3.20	1.00	0.22	0.71	0.26	0.92
	Avg - StdDev			0.04	0.26	0.58	3.59	4.31	4.82	2.28	0.72	0.13	0.48	0.18	0.62

Light Crude Quality Project Light Ends Summary (May 2010)

Crude	Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Sweet Synthetic															
OSA Suncor Synthetic A															
	2006 Q1	3		0.02	1.64	2.59	3.53	3.42	4.52	3.99	2.05	0.04	0.20	0.13	0.51
	2006 Q2	3		0.02	1.98	2.96	3.73	3.33	4.10	3.43	1.80	0.05	0.20	0.12	0.44
	2006 Q3	3		0.02	1.98	3.19	4.17	3.86	4.95	4.13	2.27	0.05	0.25	0.16	0.59
	2006 Q4	2		0.02	1.81	3.24	4.12	3.72	4.81	3.74	2.04	0.06	0.27	0.16	0.59
	2007 Q1	4		0.02	2.23	3.16	4.00	3.55	4.49	3.67	1.93	0.05	0.24	0.15	0.53
	2007 Q2	4		0.02	1.42	2.65	3.43	3.20	4.05	3.56	1.99	0.04	0.22	0.13	0.50
	2007 Q3	3		0.03	1.76	2.81	3.54	2.96	3.90	3.38	1.72	0.04	0.19	0.13	0.45
	2007 Q4	3		0.02	1.67	2.69	3.79	3.54	4.54	3.85	1.96	0.08	0.29	0.15	0.54
	2008 Q1	6		0.02	1.56	2.65	3.57	3.47	4.71	4.10	2.07	0.05	0.24	0.15	0.52
	2008 Q2	6		0.03	2.36	3.17	4.24	3.78	4.92	4.21	2.15	0.08	0.29	0.17	0.60
	2008 Q3	6		0.02	1.49	3.05	4.22	3.75	4.88	3.95	2.13	0.05	0.24	0.15	0.53
	2008 Q4	6		0.02	1.67	3.20	4.25	3.77	4.76	3.82	2.06	0.05	0.25	0.15	0.54
	2009 Q1	3		0.02	1.26	2.45	3.33	3.31	4.58	4.04	2.18	0.04	0.22	0.15	0.52
	2009 Q2	3		0.02	1.77	2.63	3.49	3.35	4.36	3.68	2.00	0.05	0.23	0.14	0.51
	2009 Q3	3		0.02	2.14	3.27	4.35	3.79	4.68	3.81	1.97	0.06	0.26	0.15	0.53
	2009 Q4	3		0.02	1.36	2.69	3.75	3.25	4.15	3.60	2.00	0.05	0.22	0.13	0.48
	2010 Q1	3		0.02	1.90	4.17	5.62	4.53	5.14	4.22	2.35	0.08	0.29	0.16	0.59
	2010 Q2	2		0.02	1.50	3.09	4.21	3.55	4.38	3.52	1.96	0.06	0.24	0.14	0.53
	5/28/2010	OSA-876		0.02	1.51	3.13	4.43	3.56	4.44	3.58	1.97	0.05	0.24	0.14	0.55
	Average			0.02	1.76	2.98	3.97	3.58	4.59	3.85	2.05	0.05	0.24	0.15	0.53
	Std Dev			0.00	0.42	0.55	0.72	0.56	0.65	0.50	0.25	0.03	0.05	0.02	0.07
	Avg + StdDev			0.03	2.18	3.53	4.69	4.14	5.24	4.35	2.30	0.08	0.29	0.17	0.60
	Avg - StdDev			0.02	1.34	2.43	3.24	3.02	3.95	3.36	1.79	0.03	0.19	0.13	0.46

Light Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Sweet Synthetic														
SYN Syncrude Synthetic														
2006 Q1	2		0.06	1.22	1.90	3.07	2.78	3.27	3.16	1.79	0.16	0.36	0.15	0.51
2006 Q2	2		0.06	1.56	2.05	3.21	2.87	3.26	3.02	1.61	0.16	0.36	0.14	0.46
2006 Q3	3		0.02	1.89	2.35	3.66	3.22	3.64	2.84	1.48	0.18	0.41	0.15	0.55
2006 Q4	2			1.88	2.24	3.40	3.05	3.56	2.96	1.51	0.16	0.36	0.15	0.54
2007 Q1	3		0.03	2.03	2.54	3.84	3.31	3.58	2.82	1.51	0.19	0.44	0.15	0.56
2007 Q2	3		0.05	1.74	2.31	3.52	3.20	3.74	2.93	1.41	0.17	0.42	0.15	0.60
2007 Q3	3		0.06	1.98	2.21	3.24	2.87	3.38	2.74	1.41	0.15	0.33	0.14	0.47
2007 Q4	3		0.02	1.61	2.07	3.23	2.91	3.37	2.72	1.34	0.16	0.39	0.14	0.53
2008 Q1	6		0.03	1.62	2.21	3.52	3.15	3.53	2.98	1.60	0.18	0.41	0.15	0.53
2008 Q2	6		0.03	1.63	2.25	3.43	3.12	3.77	3.19	1.59	0.14	0.36	0.15	0.55
2008 Q3	6		0.04	1.71	2.27	3.59	3.41	4.23	3.36	1.76	0.13	0.32	0.13	0.57
2008 Q4	6		0.04	2.13	2.40	3.66	3.37	3.89	3.03	1.49	0.17	0.40	0.15	0.53
2009 Q1	3		0.03	2.05	2.48	3.90	3.63	4.25	3.35	1.59	0.18	0.43	0.17	0.56
2009 Q2	3		0.11	1.99	2.81	4.20	3.74	4.32	3.29	1.71	0.22	0.52	0.19	0.69
2009 Q3	3		0.12	2.14	2.86	4.27	3.82	4.32	3.46	1.69	0.22	0.52	0.18	0.65
2009 Q4	3		0.11	1.95	2.40	3.65	3.29	3.84	3.08	1.55	0.18	0.43	0.16	0.57
2010 Q1	3		0.15	1.79	2.58	3.91	3.45	3.88	2.98	1.48	0.21	0.49	0.17	0.62
2010 Q2	2		0.12	2.14	2.42	3.76	3.48	4.00	3.06	1.57	0.21	0.51	0.18	0.66
5/29/2010	SYN-779		0.14	2.21	2.45	3.88	3.65	4.20	3.13	1.62	0.22	0.55	0.19	0.71
Average			0.06	1.83	2.35	3.62	3.27	3.80	3.07	1.57	0.17	0.41	0.15	0.56
Std Dev			0.04	0.33	0.37	0.45	0.38	0.48	0.37	0.22	0.04	0.08	0.03	0.07
Avg + StdDev			0.10	2.17	2.72	4.07	3.65	4.28	3.44	1.79	0.21	0.49	0.18	0.64
Avg - StdDev			0.02	1.50	1.99	3.17	2.90	3.32	2.70	1.35	0.13	0.33	0.13	0.49

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Light Sour															
BC Light															
	2005 Q1	2	33	687	95	110	148	169	192	237	282	327	411	442	6.8
	2005 Q3	1	36	693	99	108	144	165	186	234	278	324	407	438	6.2
	2005 Q4	1	35	701	102	111	141	163	183	229	273	320	406	439	6.8
	2006 Q1	2	35	696	91	107	146	167	188	235	280	328	416	450	8.0
	2007 Q1	2	31	683	58	77	127	153	176	226	273	323	410	445	7.9
	2007 Q3	1	34	707	69	99	140	162	185	235	285	332	421	455	11.4
	2008 Q3	2	35	688	73	100	144	167	192	241	291	339	429	465	9.8
	2008 Q4	2	34	709	75	101	142	165	189	237	284	331	415	447	7.9
	2009 Q3	1	35	717	75	99	140	162	182	232	279	328	413	445	6.8
	Average		34	696	81	100	141	164	186	234	281	328	415	448	8.0
	Std Dev		3	12	16	14	9	8	8	8	10	10	14	16	2.4
	Avg + StdDev		37	708	97	115	149	171	195	242	291	339	428	464	10.4
	Avg - StdDev		31	684	65	86	132	156	178	226	271	318	401	432	5.7

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Light Sour															
Boundary Lake															
	2005 Q1	2	34	710	97	118	169	195	222	270	319	372	460	494	11.9
	2005 Q2	1	34	700	84	110	159	181	208	258	310	368	467	509	15.0
	2005 Q3	1	35	713	87	113	159	184	211	258	307	359	450	487	11.6
	2005 Q4	2	34	699	103	117	161	185	212	259	308	360	453	490	12.1
	2006 Q1	2	34	709	88	108	157	181	210	258	307	360	453	490	12.0
	2007 Q1	1	34	702	66	102	159	187	216	265	317	371	467	504	13.8
	2007 Q2	1	36	706	76	107	162	190	218	270	322	380	476	515	15.1
	2007 Q3	2	33	698	71	102	157	182	211	261	312	367	463	501	13.6
	2008 Q1	1	36	705	87	115	167	196	221	271	322	379	475	514	15.0
	2008 Q2	1	34	695	86	114	163	189	216	266	317	373	471	511	14.9
	2009 Q2	1	34	697	71	100	150	175	202	253	303	355	446	480	10.7
	2009 Q4	1	35	708	82	114	167	195	222	271	322	378	474	513	14.7
	Average		34	704	85	110	161	186	214	263	313	367	461	499	13.1
	Std Dev		1	6	11	6	6	7	6	7	7	9	11	12	1.7
	Avg + StdDev		35	710	96	116	168	193	220	270	320	376	472	511	14.8
	Avg - StdDev		33	697	74	104	155	180	207	256	306	359	450	486	11.5

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Light Sour															
Gibson Light Sour															
	2009 Q1	1	29	702	36	73	123	148	174	231	301	359	454	499	13.7
	2009 Q3	1	34	716	44	69	108	135	173	288	379	460	612	663	28.9
	2009 Q4	2	34	713	37	48	87	111	142	252	336	440	604	665	29.0
	2010 Q1	1	34	720	39	67	127	182	257	350	415	487	641	692	31.5
	Average		33	713	39	61	106	137	178	275	353	437	583	637	26.4
	Std Dev		2	6	3	11	18	28	46	68	70	65	78	77	7.5
	Avg + StdDev		35	719	41	72	134	165	224	342	424	502	661	714	33.9
	Avg - StdDev		31	706	36	50	88	110	131	207	283	372	505	560	18.9

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Light Sour															
Koch Alberta															
	2005 Q1	1	28	707	97	117	171	197	228	281	332	391	491	536	17.2
	2005 Q2	2	35	711	90	117	167	189	216	272	326	385	484	526	16.2
	2005 Q3	3	42	706	96	119	166	189	215	267	319	374	465	503	13.2
	2005 Q4	2	35	710	99	114	166	195	224	280	333	394	493	538	17.2
	2006 Q1	2	35	712	72	97	157	184	215	271	325	383	477	516	14.9
	2007 Q1	1	34	716	45	83	135	166	196	257	316	376	475	515	14.9
	2007 Q2	2	34	713	55	87	127	155	184	245	306	368	470	512	14.5
	2007 Q3	1	35	700	41	75	134	166	200	266	329	395	506	558	19.0
	2007 Q4	1	33	719	65	101	159	191	225	288	349	416	533	593	21.9
	2008 Q1	1	32	715	68	100	152	176	202	263	318	379	476	516	15.0
	2008 Q2	1	35	716	61	94	156	182	216	278	340	408	518	574	20.6
	2008 Q4	2	30	717	43	77	120	146	172	229	293	356	463	506	14.6
	2009 Q1	1	34	717	48	81	127	154	182	245	303	365	467	509	14.5
	2009 Q2	1	33	708	35	67	120	147	170	224	283	341	439	476	10.9
	2009 Q3	1	34	720	42	71	110	135	162	217	280	341	443	481	11.4
	2009 Q4	1	35	702	42	88	132	159	187	252	315	380	486	531	17.0
	2010 Q1	1	34	715	61	102	152	176	200	262	320	384	487	531	16.9
	2010 Q2	1	35	709	69	99	154	179	207	268	325	388	487	528	16.3
	5/1/2010	CAL-394	35	709	69	99	154	179	207	268	325	388	487	528	16.3
	Average		35	711	67	97	147	173	202	260	317	378	479	522	15.6
	Std Dev		5	6	22	17	20	19	21	20	18	19	21	27	2.7
	Avg + StdDev		39	718	90	114	166	193	222	280	335	397	501	549	18.3
	Avg - StdDev		30	705	45	80	127	154	181	240	299	360	458	495	13.0

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Light Sour															
Peace River Sour															
	2005 Q2	3	35	710	96	119	172	201	232	289	346	410	523	578	20.9
	2005 Q3	3	35	715	93	117	171	194	222	278	333	396	501	548	18.3
	2005 Q4	3	34	711	95	112	164	193	221	278	334	399	511	563	19.6
	2006 Q1	2	35	713	99	118	169	198	226	280	334	395	499	544	17.9
	2007 Q1	1	35	702	63	100	159	195	226	288	349	417	542	604	22.8
	2008 Q2	1	35	716	74	101	157	185	218	279	340	408	525	583	21.3
	2008 Q3	1	37	708	69	100	155	176	201	264	326	394	515	574	20.6
	2008 Q4	2	30	718	59	91	140	164	187	243	300	359	462	504	14.2
	2009 Q3	1	34	715	57	81	125	149	171	221	276	332	431	469	10.2
	Average		34	712	84	108	161	188	216	272	329	392	502	552	18.6
	Std Dev		2	5	17	13	15	16	19	20	20	23	28	35	3.2
	Avg + StdDev		37	718	101	121	177	204	234	292	349	415	531	587	21.8
	Avg - StdDev		32	707	67	96	146	172	197	253	309	370	474	518	15.3

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Light Sour															
Pembina Light Sour															
	2007 Q4	1	30	708	38	85	124	141	164	214	262	314	405	439	7.2
	2008 Q1	1	33	716	68	90	130	150	170	219	270	322	418	454	8.8
	2008 Q2	3	35	689	72	98	142	163	184	234	286	340	437	475	11.3
	2008 Q3	2	36	712	74	99	137	159	175	219	271	326	426	467	9.9
	2009 Q1	1	34	708	50	97	129	150	167	212	262	315	409	444	8.1
	2009 Q2	1	33	684	55	97	131	151	173	222	274	329	427	465	10.3
	2009 Q3	1	33	692	60	88	132	152	172	217	267	318	412	447	7.9
	2009 Q4	1	34	708	57	84	126	148	166	213	264	317	413	449	8.2
	2010 Q1	1	35	696	62	98	137	161	183	235	288	343	441	480	11.6
	2010 Q2	1	35	695	67	86	130	152	173	218	272	331	434	474	11.3
	5/4/2010	PLS-570	35	695	67	86	130	152	173	218	272	331	434	474	11.3
	Average		34	700	63	94	134	155	175	222	274	328	425	462	9.8
	Std Dev		2	11	11	6	6	7	7	9	10	11	13	15	1.6
	Avg + StdDev		36	711	74	100	141	162	182	232	284	339	438	477	11.4
	Avg - StdDev		32	689	52	88	128	148	167	213	263	317	412	447	8.1

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Mixed Sweet Blend															
Mixed Sweet Blend															
	2005 Q1	3	34	705	88	104	152	176	203	257	308	364	456	493	12.3
	2005 Q2	3	34	706	89	104	143	167	195	251	304	359	455	494	12.4
	2005 Q3	3	35	704	74	100	144	169	194	249	301	357	452	492	12.4
	2005 Q4	3	34	703	99	106	145	169	197	253	306	362	460	499	13.2
	2006 Q1	2	34	701	81	99	138	162	187	240	292	344	435	469	10.4
	2007 Q1	3	32	712	52	76	125	151	175	229	283	336	429	465	9.4
	2007 Q2	3	34	709	53	83	132	157	182	239	294	348	440	475	11.1
	2007 Q3	3	33	708	46	85	128	152	178	237	294	351	447	485	12.7
	2007 Q4	3	32	703	50	96	138	161	186	244	301	359	457	496	13.1
	2008 Q1	1	31	697	59	89	135	158	179	225	269	318	416	451	8.8
	2008 Q2	3	34	704	65	97	147	174	204	263	319	379	479	521	15.7
	2008 Q4	2	29	705	59	92	132	156	180	236	290	345	438	474	10.3
	2009 Q1	1	29	705	45	89	141	167	195	237	278	323	420	456	9.8
	2009 Q2	1	33	719	50	96	131	156	180	237	293	348	445	483	11.9
	2009 Q3	1	34	712	54	91	130	153	177	233	288	344	436	472	10.5
	2009 Q4	1	34	700	51	80	128	154	180	236	292	349	444	483	11.5
	2010 Q1	1	34	697	68	102	139	164	193	250	304	361	456	495	12.7
	2010 Q2	1	35	700	59	85	133	159	186	243	298	354	442	477	10.4
	5/30/2010	SW-874	35	700	59	85	133	159	186	243	298	354	442	477	10.4
	Average		33	705	66	94	138	163	189	244	298	353	448	486	12.0
	Std Dev		2	9	18	12	10	10	11	12	12	15	18	21	2.5
	Avg + StdDev		35	714	84	106	147	172	200	256	310	368	466	507	14.4
	Avg - StdDev		31	697	48	82	128	153	177	232	285	338	430	465	9.5

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: MSW Feeder															
Bonnie Glen															
	2007 Q1	1	27	708	47	53	100	128	155	210	263	316	409	444	7.2
	2007 Q2	1	34	708	37	67	107	128	150	202	260	317	415	450	11.1
	2007 Q3	1	34	695	47	86	128	151	171	221	276	332	427	463	12.0
	2007 Q4	1	30	685	35	73	113	134	156	208	263	317	414	449	8.6
	2008 Q4	2	34	701	55	86	126	146	166	214	270	328	426	463	10.0
	2009 Q1	1	34	701	54	95	118	136	158	199	254	309	406	442	8.1
	2009 Q3	1	33	701	61	92	129	151	168	215	266	321	418	454	9.0
	2010 Q1	1	35	712	62	95	131	151	173	219	273	329	425	462	9.6
	Average		33	701	50	81	120	141	162	211	266	322	418	454	9.5
	Std Dev		3	8	10	14	11	9	8	8	7	7	8	8	1.4
	Avg + StdDev		35	709	60	95	129	151	170	219	273	329	426	463	11.0
	Avg - StdDev		30	694	40	68	109	132	155	204	259	314	411	446	8.1

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: MSW Feeder															
Federated															
	2005 Q1	2	34	687	84	101	133	153	172	221	275	330	431	470	10.8
	2005 Q2	3	34	691	81	98	136	156	174	221	273	326	422	457	8.9
	2005 Q3	4	34	695	83	102	145	166	188	238	288	338	428	461	8.6
	2005 Q4	4	34	710	87	102	136	158	180	233	286	341	439	479	11.5
	2006 Q1	2	34	703	91	101	132	155	175	227	280	335	432	471	10.4
	2007 Q1	2	30	698	52	73	120	147	170	221	272	323	413	445	7.0
	2007 Q2	1	34	689	38	72	115	138	161	210	263	316	410	443	10.2
	2007 Q3	1	34	691	50	87	128	151	173	225	278	331	426	460	11.9
	2008 Q1	1	34	695	66	97	133	155	174	219	274	331	430	469	10.9
	2008 Q3	1	35	719	60	86	118	141	165	221	277	334	430	468	10.2
	2008 Q4	1	35	686	76	99	139	157	169	198	251	307	404	439	8.0
	2009 Q1	1	29	704	54	90	131	151	170	208	260	314	405	438	7.0
	2009 Q2	1	33	678	48	93	123	140	163	215	268	323	421	459	9.9
	2009 Q3	1	34	714	68	98	149	168	190	241	294	348	442	479	11.6
	2009 Q4	1	34	713	55	85	129	151	172	220	272	329	423	460	9.5
	2010 Q1	1	34	689	74	102	144	166	189	239	292	344	437	473	10.6
	2010 Q2	1	35	691	69	88	138	162	185	235	287	338	428	462	8.8
	5/10/2010	FD-997	35	691	69	88	138	162	185	235	287	338	428	462	8.8
	Average		34	698	73	95	134	155	176	226	278	332	427	463	9.7
	Std Dev		2	12	17	11	9	9	9	11	11	11	13	15	2.0
	Avg + StdDev		36	710	89	106	143	164	185	237	289	343	439	478	11.7
	Avg - StdDev		32	685	56	84	125	147	167	214	267	321	414	447	7.7

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: MSW Feeder															
Gibson Light Sweet															
	2007 Q1	1	35	688	44	68	105	127	154	222	293	355	458	499	13.1
	2007 Q2	2	33	697	48	71	115	135	161	217	280	335	425	459	8.9
	2008 Q1	1	34	701	54	82	124	152	178	234	287	339	444	487	12.8
	2008 Q2	1	35	710	67	93	139	163	183	235	291	349	458	503	15.0
	2008 Q3	1	35	699	54	86	128	151	173	225	280	337	436	474	11.1
	2009 Q1	1	29	710	45	87	134	158	180	235	289	345	442	480	11.8
	2009 Q3	1	34	714	42	69	107	126	147	199	275	345	416	444	6.8
	2010 Q1	1	34	711	55	94	134	169	206	273	331	379	455	491	11.4
	Average		33	703	51	80	122	146	171	229	290	347	440	477	11.1
	Std Dev		2	9	9	10	14	19	23	28	22	17	15	19	2.5
	Avg + StdDev		35	712	59	90	142	165	194	257	312	363	455	496	13.6
	Avg - StdDev		32	695	42	70	109	127	149	201	268	330	424	458	8.6

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: MSW Feeder															
Joarcam															
	2007 Q1	1	34	702	38	64	129	165	198	261	316	373	467	504	13.0
	2007 Q2	1	34	713	40	78	136	169	202	265	319	376	470	506	13.3
	2007 Q3	1	32	712	34	70	143	177	212	268	318	374	463	498	12.2
	2007 Q4	1	30	719	34	77	135	167	199	259	315	371	467	505	13.6
	2008 Q1	1	34	716	56	98	153	178	207	266	321	381	480	520	15.5
	2008 Q2	1	35	704	65	97	169	201	233	290	345	405	507	554	18.7
	2008 Q3	1	35	712	44	94	152	179	210	269	324	383	482	522	15.7
	2009 Q2	1	34	718	39	102	156	176	199	258	313	369	462	499	13.0
	Average		34	712	44	85	147	177	208	267	321	379	475	514	14.4
	Std Dev		2	6	10	13	12	11	11	9	9	11	14	17	2.0
	Avg + StdDev		35	718	54	99	157	187	219	276	331	390	489	531	16.4
	Avg - StdDev		32	706	33	72	134	166	197	257	312	368	461	496	12.4

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: MSW Feeder															
Kerrobert Sweet															
	2008 Q1	2	34	702	72	101	157	184	213	265	315	371	464	503	13.5
	2008 Q2	1	35	717	81	114	177	209	236	289	341	399	494	535	16.9
	2008 Q3	1	37	716	87	116	178	211	240	294	346	405	502	547	18.1
	2008 Q4	2	29	707	64	96	146	174	202	257	308	363	454	490	11.7
	2009 Q1	1	34	699	71	100	152	181	213	267	317	375	466	503	13.0
	2009 Q2	1	34	719	49	100	140	167	197	253	304	358	447	481	10.3
	2009 Q3	1	34	701	57	86	138	167	198	256	310	367	459	497	12.5
	2009 Q4	1	35	700	61	103	154	184	217	273	328	387	484	524	15.8
	2010 Q1	1	34	709	69	100	159	188	218	270	320	376	464	500	12.4
	2010 Q2	1	35	717	69	97	153	180	211	264	315	369	458	493	11.8
	Average		34	708	68	101	155	183	213	267	319	375	468	505	13.4
	Std Dev		3	8	10	8	12	14	13	12	13	14	17	20	2.4
	Avg + StdDev		36	716	78	109	168	197	226	280	332	389	484	525	15.8
	Avg - StdDev		31	700	58	93	143	170	200	255	306	361	451	486	11.1

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: MSW Feeder															
Peace															
	2005 Q1	2	34	697	87	104	144	167	191	243	294	347	441	479	11.5
	2005 Q2	1	34	698	99	106	140	161	182	235	286	335	428	464	9.5
	2005 Q3	3	35	700	83	102	144	165	187	238	292	346	444	484	12.1
	2005 Q4	3	34	696	96	105	142	163	185	236	288	339	433	471	10.3
	2006 Q1	3	35	687	80	100	143	166	190	243	297	352	450	489	12.4
	2007 Q1	1	32	706	42	78	126	151	174	226	280	334	430	466	10.2
	2008 Q1	1	35	700	72	100	143	167	195	248	301	355	450	488	12.3
	2008 Q3	2	36	720	74	100	140	164	185	238	292	347	443	481	11.7
	2008 Q4	3	31	692	67	94	133	154	174	221	276	332	428	465	9.9
	2009 Q1	1	34	704	59	98	129	151	173	226	279	333	429	465	9.9
	2009 Q2	1	35	697	50	102	133	157	182	242	300	360	463	505	14.5
	2009 Q4	1	35	711	68	97	137	159	179	230	285	340	436	473	10.9
	2010 Q1	1	35	714	62	97	135	158	179	230	286	341	438	475	11.0
	Average		34	700	76	99	139	161	183	235	289	343	439	477	11.3
	Std Dev		2	13	16	7	7	7	9	10	10	11	13	16	1.9
	Avg + StdDev		36	712	92	106	146	168	192	246	299	354	453	493	13.2
	Avg - StdDev		32	687	60	93	132	154	175	225	279	332	426	462	9.3

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: MSW Feeder															
Pembina															
	2005 Q1	2	34	718	91	106	153	177	204	260	313	372	464	501	13.0
	2005 Q2	1	35	719	84	107	158	181	211	268	322	383	483	526	16.2
	2005 Q4	1	35	702	85	104	149	167	192	247	302	360	457	496	12.7
	2006 Q1	3	35	700	86	102	140	162	186	242	299	360	463	504	14.0
	2007 Q1	1	34	698	40	77	126	150	173	228	287	346	445	484	12.0
	2007 Q2	1	35	691	61	88	129	151	174	232	290	351	454	496	13.2
	2007 Q3	1	32	706	67	86	135	159	184	238	292	345	434	467	8.5
	2007 Q4	1	33	696	44	114	153	176	203	266	325	389	492	535	17.5
	2008 Q1	1	34	703	69	99	141	164	188	245	302	362	464	505	14.3
	2008 Q2	1	33	714	68	100	141	163	181	236	295	356	460	502	14.3
	2008 Q3	1	35	708	63	93	128	151	175	235	293	353	454	495	13.0
	2008 Q4	1	35	696	64	89	125	147	166	216	273	332	433	471	10.5
	2009 Q1	1	34	710	56	98	130	151	174	226	283	341	437	474	10.7
	2009 Q2	1	35	693	42	99	127	149	174	239	300	363	469	511	15.2
	2009 Q3	1	32	714	58	90	130	152	175	228	287	345	445	484	11.9
	2009 Q4	1	34	712	68	98	137	159	177	225	285	345	448	489	12.8
	2010 Q1	1	35	711	58	88	132	155	177	231	287	345	445	483	11.7
	Average		34	706	68	97	138	161	185	240	297	357	457	497	13.1
	Std Dev		1	9	17	9	10	10	13	14	13	14	15	16	2.0
	Avg + StdDev		35	715	85	107	149	171	197	254	310	371	472	513	15.1
	Avg - StdDev		33	696	51	88	128	150	172	226	284	343	442	480	11.1

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: MSW Feeder															
Rainbow															
	2005 Q1	2	34	702	88	106	153	176	202	253	303	355	445	479	10.3
	2005 Q2	1	34	702	86	113	161	183	211	261	313	370	469	512	15.2
	2005 Q4	2	35	693	84	108	160	186	214	267	322	385	491	542	17.6
	2006 Q1	3	34	712	88	104	152	175	199	251	303	358	454	492	12.5
	2007 Q1	1	32	690	41	81	131	155	176	228	284	341	439	476	11.4
	2007 Q2	2	33	701	66	95	154	178	205	257	308	362	453	489	11.8
	2007 Q4	1	33	709	52	121	168	193	220	275	332	390	490	531	17.1
	2008 Q1	1	31	713	69	101	157	174	194	245	298	352	445	480	11.0
	2008 Q2	3	35	711	74	103	157	179	206	258	310	366	461	499	13.4
	2009 Q1	1	34	720	48	101	149	173	197	252	304	361	454	491	12.6
	2009 Q2	1	35	719	41	103	148	175	204	261	316	376	478	521	16.3
	2009 Q3	1	32	702	54	93	148	171	196	248	302	358	455	492	12.9
	2009 Q4	1	34	708	69	105	158	184	212	262	314	368	462	499	13.3
	2010 Q1	1	35	705	46	87	139	164	188	240	294	349	444	480	11.4
	Average		34	706	70	102	153	177	203	255	308	364	460	499	13.3
	Std Dev		1	10	17	9	8	8	10	10	11	14	19	24	2.8
	Avg + StdDev		35	716	87	111	161	185	212	265	319	378	479	523	16.1
	Avg - StdDev		33	696	52	93	145	169	193	244	297	350	441	474	10.4

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: MSW Feeder															
Redwater															
	2005 Q1	3	34	709	95	116	172	202	231	286	337	395	484	520	15.0
	2005 Q2	1	35	699	76	114	174	203	233	287	339	397	485	520	15.0
	2005 Q3	2	35	706	93	117	174	200	230	285	335	394	483	518	14.8
	2007 Q1	1	32	714	61	99	159	190	218	273	328	386	476	511	14.1
	2007 Q2	1	36	701	86	112	171	200	232	288	343	402	495	534	16.6
	2007 Q3	1	32	708	72	106	162	191	217	269	319	373	456	488	10.2
	2007 Q4	1	33	701	103	128	187	218	252	309	365	426	519	561	19.4
	2008 Q3	2	34	698	55	87	140	166	194	256	314	376	474	512	14.5
	2008 Q4	1	35	705	58	91	140	166	193	253	311	372	469	506	13.7
	2009 Q2	1	34	707	43	91	139	164	188	248	308	373	475	515	15.4
	Average		34	705	77	107	162	191	220	276	330	389	481	518	14.9
	Std Dev		1	6	20	13	16	17	19	17	15	15	14	16	1.9
	Avg + StdDev		35	711	97	120	180	208	239	293	346	404	495	534	16.8
	Avg - StdDev		33	699	57	94	146	173	200	259	315	375	467	502	12.9

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: MSW Feeder															
Tundra Sweet															
	2008 Q1	2	33	693	70	99	141	162	184	228	274	322	408	443	8.1
	2008 Q2	1	36	680	75	100	143	164	182	224	268	315	398	431	6.6
	2008 Q3	1	37	712	72	101	148	167	187	232	280	330	423	462	11.0
	2008 Q4	2	29	685	65	92	134	157	176	219	265	313	398	432	6.9
	2009 Q1	2	34	697	55	96	131	154	175	220	266	314	399	432	7.0
	2009 Q3	1	34	695	72	100	140	159	179	221	266	312	392	424	5.2
	2009 Q4	1	35	670	82	104	143	163	181	223	270	318	404	438	7.8
	2010 Q1	1	34	705	68	98	139	159	179	222	268	315	399	432	7.0
	2010 Q2	1	35	684	64	86	129	151	168	207	255	305	394	428	6.8
	Average		34	691	68	97	138	159	179	222	268	316	402	436	7.4
	Std Dev		3	15	8	5	6	5	5	7	7	7	10	12	1.7
	Avg + StdDev		36	706	75	102	143	164	184	229	275	323	412	448	9.1
	Avg - StdDev		31	677	60	92	132	155	174	215	262	309	392	424	5.7

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Sweet Synthetic															
CNRL Light Sweet Synthetic															
	2009 Q2	1	35	530	91	131	188	209	226	253	277	300	339	354	
	2009 Q3	1	36	559	101	138	192	212	228	257	281	305	345	361	
	2009 Q4	1	37	550	103	136	189	208	225	255	280	305	345	362	
	2010 Q1	1	36	537	96	129	182	203	220	249	274	298	337	353	
	Average		36	544	98	134	188	208	225	254	278	302	341	357	
	Std Dev		1	11	5	4	4	3	3	3	3	3	4	4	
	Avg + StdDev		37	555	102	137	191	211	228	256	280	305	345	361	
	Avg - StdDev		35	533	93	130	184	205	222	251	275	299	338	353	

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Sweet Synthetic															
Husky Synthetic Blend															
	2005 Q1	3	34	612	122	176	235	255	272	303	330	360	408	424	
	2005 Q2	3	33	609	110	167	226	246	263	294	320	349	397	414	
	2005 Q3	2	34	593	121	172	228	248	265	296	323	352	399	416	
	2005 Q4	3	34	607	117	173	235	255	272	303	330	358	405	421	
	2006 Q1	2	35	638	129	183	238	257	273	304	331	359	406	423	
	2007 Q1	1	32	581	123	180	236	255	271	302	330	359	405	421	
	2007 Q2	1	37	576	135	185	241	258	274	303	330	357	402	419	
	2007 Q3	1	34	556	139	195	248	265	280	307	333	359	402	417	
	2007 Q4	1	38	634	139	199	257	276	292	324	353	381	429	446	
	2008 Q1	1	35	561	112	176	238	256	272	301	327	354	399	415	
	2008 Q3	1	34	554	102	169	230	250	266	295	320	347	391	407	
	2008 Q4	1	35	563	113	179	244	264	281	309	334	361	404	420	
	2009 Q1	1	29	567	114	180	244	262	279	308	333	360	404	420	
	2009 Q2	1	29	569	99	156	231	254	272	303	331	359	405	421	
	2009 Q3	1	26	558	107	173	233	252	268	299	325	352	396	413	
	2009 Q4	1	35	569	121	177	240	260	277	307	334	362	407	423	
	2010 Q1	1	36	569	123	179	239	258	275	305	332	359	403	419	
	2010 Q2	1	35	560	113	171	237	258	276	306	332	359	402	418	
	5/25/2010	HSB-670	35	560	113	171	237	258	276	306	332	359	402	418	
	Average		34	591	119	176	236	256	272	303	329	357	403	420	
	Std Dev		2	33	11	9	8	7	7	7	7	7	7	8	
	Avg + StdDev		36	624	130	185	243	263	279	309	336	365	411	427	
	Avg - StdDev		31	558	108	167	229	249	265	296	322	350	396	412	

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Sweet Synthetic															
Long Lake Light Synthetic															
	2009 Q3	1	36	569	95	124	189	212	233	269	301	332	384	404	
	2009 Q4	2	42	563	112	152	212	234	255	289	319	351	403	421	
	2010 Q1	1	35	583	85	113	161	182	201	236	270	304	362	386	
	Average		39	570	101	135	193	216	236	271	302	334	388	408	
	Std Dev		4	9	12	17	21	22	22	22	20	19	17	15	
	Avg + StdDev		43	578	113	153	215	237	258	292	323	353	405	423	
	Avg - StdDev		35	561	89	118	172	194	214	249	282	315	371	393	

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Sweet Synthetic															
Premium Albion Synthetic															
	2005 Q2	2	43	614	97	134	178	194	208	232	256	280	316	331	
	2005 Q3	1	48	675	121	159	205	221	238	268	295	320	366	385	
	2006 Q1	1	65	663	128	155	194	208	221	247	271	296	335	351	
	2007 Q1	1	73	518	138	168	206	220	233	257	280	302	336	350	
	2007 Q3	1	80	508	140	171	209	225	237	261	283	305	339	352	
	2007 Q4	1	78	529	145	178	216	231	244	269	293	314	350	364	
	2008 Q3	2	67	511	138	168	205	219	231	255	277	298	332	345	
	2008 Q4	2	49	533	142	173	209	222	235	258	279	299	331	343	
	2009 Q1	1	55	546	131	162	199	214	226	250	272	294	328	341	
	2009 Q3	1	58	543	140	177	221	238	255	284	310	335	374	390	
	2010 Q1	1	55	516	130	162	201	216	228	253	274	297	331	344	
	Average		59	558	131	163	203	217	231	256	278	301	337	351	
	Std Dev		14	58	15	14	12	12	12	13	14	14	16	17	
	Avg + StdDev		73	616	146	177	214	229	243	269	292	315	353	369	
	Avg - StdDev		45	500	115	149	191	205	218	242	265	287	320	334	

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Sweet Synthetic															
Shell Synthetic Light															
	2009 Q1	1	38	602	91	118	233	271	295	326	352	373	412	428	
	2009 Q2	1	48	576	100	133	237	268	289	319	344	367	402	416	
	2009 Q4	1	48	581	107	143	263	292	311	339	360	378	408	421	
	2010 Q1	1	36	588	101	156	257	282	301	330	354	376	412	426	
	2010 Q2	1	39	592	83	116	242	287	312	345	369	391	427	443	
	5/31/2010	SSX-715	39	592	83	116	242	287	312	345	369	391	427	443	
	Average		42	588	96	133	246	280	302	332	356	377	412	427	
	Std Dev		5	9	8	15	11	9	9	9	8	8	8	9	
	Avg + StdDev		47	597	105	148	256	289	311	341	364	385	421	436	
	Avg - StdDev		37	579	88	118	235	271	293	323	348	369	404	418	

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Sweet Synthetic															
Suncor Synthetic A															
	2005 Q1	4	36	573	97	144	201	229	253	290	318	344	386	401	
	2005 Q2	3	35	585	94	135	197	224	247	282	309	333	375	391	
	2005 Q3	2	35	607	100	141	210	238	260	294	321	346	386	402	
	2005 Q4	3	34	588	100	137	197	225	249	288	318	344	383	398	
	2006 Q1	2	35	609	114	152	212	235	256	289	318	345	386	403	
	2007 Q1	2	31	549	73	130	196	223	247	284	311	336	374	389	
	2007 Q3	1	34	551	100	149	219	242	261	293	319	345	384	399	
	2007 Q4	1	34	552	76	116	181	216	248	287	317	344	385	401	
	2008 Q1	2	35	553	93	130	200	228	253	293	323	350	391	407	
	2008 Q3	1	34	551	66	112	178	202	224	265	298	327	371	387	
	2008 Q4	1	36	541	85	110	174	202	230	274	308	337	379	394	
	2009 Q1	1	35	562	99	135	199	222	243	278	308	335	377	393	
	2009 Q2	1	33	561	101	148	210	232	251	285	313	341	383	399	
	2009 Q3	1	34	568	72	120	190	217	243	281	311	339	380	397	
	2009 Q4	1	35	555	67	116	188	215	239	277	307	334	375	390	
	2010 Q1	1	35	554	68	106	166	193	217	264	300	330	377	394	
	2010 Q2	1	36	548	87	140	208	234	256	291	320	348	389	405	
	Average		35	571	91	134	198	224	248	285	314	341	382	398	
	Std Dev		2	25	16	14	13	13	12	10	8	8	7	7	
	Avg + StdDev		36	596	107	148	210	237	260	295	322	348	389	405	
	Avg - StdDev		33	547	76	120	184	212	236	276	306	333	375	390	

Light Crude Quality Simulated Distillation Summary (May /10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Sweet Synthetic															
Syncrude Synthetic															
	2005 Q1	4	37	585	106	153	212	235	256	289	318	347	396	415	
	2005 Q2	3	34	609	97	153	210	233	253	287	316	346	394	412	
	2005 Q3	3	35	607	106	152	215	238	257	292	321	351	401	418	
	2005 Q4	4	34	612	102	141	206	229	250	284	315	344	395	415	
	2006 Q1	2	36	625	116	158	218	241	261	295	324	354	405	423	
	2007 Q1	2	34	586	103	156	220	242	261	295	324	354	402	420	
	2007 Q2	1	35	609	109	159	233	259	281	316	346	375	423	440	
	2007 Q3	1	37	605	122	177	245	268	288	323	355	386	435	452	
	2008 Q1	2	35	573	100	144	209	234	257	296	329	361	411	427	
	2008 Q2	1	37	541	103	131	200	227	253	291	322	350	392	409	
	2008 Q3	1	37	705	99	135	201	225	247	288	326	364	420	438	
	2009 Q1	1	29	581	86	127	196	218	238	274	306	339	395	415	
	2009 Q2	1	29	596	92	134	205	227	248	283	313	344	396	416	
	2009 Q3	1	26	597	75	118	188	212	232	270	306	341	396	416	
	2009 Q4	1	35	602	79	129	200	223	244	281	316	350	404	423	
	2010 Q1	1	37	609	102	159	223	245	264	296	325	356	408	426	
	2010 Q2	1	35	604	88	136	207	231	252	289	322	357	411	429	
	5/29/2010	SYN-779	35	604	88	136	207	231	252	289	322	357	411	429	
	Average		35	602	101	147	211	235	255	290	321	352	402	420	
	Std Dev		3	30	11	13	12	12	11	11	11	11	11	11	
	Avg + StdDev		37	631	112	160	223	246	267	301	332	363	413	431	
	Avg - StdDev		32	572	90	134	200	223	244	279	310	341	391	410	

Light Crude Quality Testing Project -- Typical Crude Properties

Crude	Sulphur (wt%)	API Gravity	Nickel (mg/L)	Vanadium (mg/L)	MCR (mass%)	TotalC4's (vol%)	TotalC5's (vol%)	Distillation Profile (%off at oC)					FBP
								10%	20%	25%	50%	75%	
BC Light													
Average	0.57	40.5	1.63	5.06	0.99	1.74	2.42	104	146	167	282	413	688
Upper	0.64	42.0	2.96	9.16	1.37	2.44	2.86	129	165	184	303	440	723
Lower	0.50	39.0	0.31	0.96	0.60	1.05	1.97	79	126	150	260	386	653
Bonnie Glen													
Average	0.39	42.2	2.83	6.64	1.46	3.29	3.91	81	119	141	265	430	703
Upper	0.53	45.1	4.95	12.43	2.33	4.63	5.37	113	142	162	300	498	734
Lower	0.25	39.3	0.71	0.85	0.59	1.95	2.44	49	97	120	230	362	673
Boundary Lake													
Average	0.76	36.2	8.94	27.74	2.67	1.45	2.45	113	163	188	314	461	702
Upper	0.84	37.6	11.07	32.42	3.21	1.90	2.85	126	174	202	331	484	715
Lower	0.68	34.8	6.81	23.07	2.13	1.01	2.04	99	151	174	298	438	688
CNRL Light Sweet Synthetic													
Average	0.05	35.0			0.10	1.27	2.79	134	188	208	278	341	544
Upper	0.07	36.8			0.10	1.93	4.47	141	195	214	283	349	567
Lower	0.03	33.3			0.10	0.60	1.11	126	180	202	272	334	522
Federated													
Average	0.39	40.0	3.30	6.79	1.65	2.84	3.21	95	135	156	276	426	698
Upper	0.48	41.6	5.51	11.64	2.16	4.25	4.34	122	157	176	308	472	734
Lower	0.30	38.4	1.09	1.93	1.14	1.43	2.08	69	113	135	245	381	661
Gibson Light Sour													
Average	1.66	36.9	25.96	72.96	5.10	4.65	7.51	61	106	137	353	583	713
Upper	3.51	43.1	55.88	168.27	9.36	6.79	14.23	83	142	193	494	739	725
Lower		30.6	0.00	0.00	0.84	2.52	0.79	39	70	82	213	427	700
Gibson Light Sweet													
Average	0.43	40.8	3.89	7.65	1.72	3.93	4.81	80	122	146	290	440	703
Upper	0.54	45.7	5.68	12.25	2.39	6.16	8.65	100	150	185	334	471	720
Lower	0.32	36.0	2.10	3.05	1.05	1.71	0.96	60	95	108	246	409	686
Husky Synthetic Blend													
Average	0.10	32.6	0.37	0.93	0.06	2.94	1.57	177	236	255	329	403	589
Upper	0.14	34.0	0.93	1.81	0.17	3.63	2.17	195	250	269	342	416	653
Lower	0.07	31.3	0.00	0.04	0.00	2.24	0.97	160	222	242	316	390	526

Light Crude Quality Testing Project -- Typical Crude Properties

Crude		Sulphur (wt%)	API Gravity	Nickel (mg/L)	Vanadium (mg/L)	MCR (mass%)	TotalC4's (vol%)	TotalC5's (vol%)	Distillation Profile (%off at oC)						
									10%	20%	25%	50%	75%	FBP	
Joarcam		Average	0.41	39.2	3.91	8.51	2.11	2.23	7.19	86	142	173	320	474	711
	Upper	0.59	43.0	6.02	13.11	3.00	4.79	12.95	126	184	214	349	507	725	
	Lower	0.23	35.4	1.81	3.90	1.22	0.00	1.42	46	100	132	291	441	697	
Kerrobot Sweet		Average	0.28	36.7	4.23	5.53	2.37	2.98	2.93	101	155	183	319	468	708
	Upper	0.40	38.8	5.88	10.08	2.74	3.67	5.00	117	179	211	345	501	723	
	Lower	0.16	34.5	2.58	0.97	2.01	2.30	0.85	85	130	156	293	434	693	
Koch Alberta		Average	1.06	34.9	10.42	18.80	3.56	1.88	3.51	103	154	178	318	476	713
	Upper	1.24	38.8	14.59	28.06	4.28	4.05	6.43	137	191	217	357	529	733	
	Lower	0.88	30.9	6.25	9.55	2.84	0.00	0.59	69	117	140	279	424	693	
Long Lake Light Synthetic		Average	0.09	36.1	1.10	1.52	0.11	1.30	2.26	135	193	216	302	388	570
	Upper	0.20	40.3	1.10	2.39	0.18	2.39	3.14	170	235	259	343	421	587	
	Lower		31.9	1.10	0.65	0.04	0.22	1.37	101	151	173	262	354	552	
Mixed Sweet Blend		Average	0.45	39.2	4.09	7.82	1.97	2.71	3.74	95	140	164	298	449	704
	Upper	0.51	40.6	6.02	10.91	2.42	4.07	4.73	121	161	184	324	493	729	
	Lower	0.39	37.8	2.17	4.73	1.52	1.36	2.75	68	118	144	273	405	679	
Peace		Average	0.43	39.8	3.54	6.52	1.72	1.90	3.43	99	139	161	287	440	698
	Upper	0.50	41.8	5.39	10.38	2.16	2.51	4.36	125	160	183	324	500	733	
	Lower	0.36	37.8	1.70	2.66	1.29	1.29	2.50	72	118	138	250	379	662	
Peace River Sour		Average	1.68	34.8	16.01	44.73	3.73	1.62	3.30	108	161	188	329	502	712
	Upper	2.33	39.4	24.64	69.76	5.13	2.53	4.64	134	190	220	369	559	723	
	Lower	1.04	30.2	7.39	19.70	2.34	0.71	1.96	83	132	156	290	446	701	
Pembina		Average	0.41	38.9	3.39	7.06	1.92	2.12	3.40	97	140	162	299	457	704
	Upper	0.49	41.0	5.05	10.45	2.45	3.88	4.30	121	161	185	331	499	732	
	Lower	0.34	36.8	1.73	3.68	1.39	0.35	2.50	73	118	139	267	414	676	

Light Crude Quality Testing Project -- Typical Crude Properties

Crude	Sulphur (wt%)	API Gravity	Nickel (mg/L)	Vanadium (mg/L)	MCR (mass%)	TotalC4's (vol%)	TotalC5's (vol%)	Distillation Profile (%off at oC)					FBP
								10%	20%	25%	50%	75%	
Pembina Light Sour													
Average	0.77	40.1	2.66	7.03	1.56	3.46	2.92	94	134	155	274	425	700
Upper	0.89	41.3	5.39	14.68	2.19	4.71	3.43	106	146	168	294	451	722
Lower	0.64	38.9	0.00	0.00	0.92	2.22	2.41	82	121	141	253	398	678
Premium Albian Synthetic													
Average	0.10	33.5	2.22	3.96	0.20	0.35	0.52	163	203	217	278	337	558
Upper	0.33	35.5	5.00	8.84	0.62	0.68	1.13	190	226	241	306	369	674
Lower		31.6	0.00	0.00	0.00	0.03	0.00	136	179	194	251	304	442
Rainbow													
Average	0.47	38.8	4.93	8.90	2.29	3.00	3.48	100	150	173	303	458	706
Upper	0.60	40.4	7.94	15.80	2.79	4.03	4.29	130	173	195	337	517	731
Lower	0.33	37.2	1.92	2.00	1.78	1.97	2.66	71	127	150	270	399	681
Redwater													
Average	0.45	35.1	10.23	5.15	3.34	1.74	2.93	106	166	195	338	500	712
Upper	0.52	37.9	18.97	10.12	3.96	2.49	5.08	134	192	226	379	595	735
Lower	0.38	32.2	1.48	0.17	2.72	1.00	0.78	77	141	165	298	406	690
Shell Synthetic Light													
Average	0.10	33.7		1.30	0.14	0.56	1.16	133	246	280	356	412	588
Upper	0.15	36.1		1.46	0.25	1.16	2.32	164	269	299	372	429	606
Lower	0.04	31.3		1.14	0.02	0.00	0.00	102	223	261	339	395	570
Suncor Synthetic A													
Average	0.19	33.1	0.57	1.49	0.02	1.80	2.99	133	196	224	315	381	572
Upper	0.25	35.5	2.52	4.14	0.13	2.64	3.99	157	221	248	330	396	633
Lower	0.14	30.8	0.00	0.00	0.00	0.96	2.00	109	172	200	299	367	510
Syncrude Synthetic													
Average	0.14	31.5	0.36	0.79	0.06	1.90	2.43	148	212	235	321	402	602
Upper	0.21	33.6	1.07	1.50	0.16	2.50	3.08	172	232	256	340	422	656
Lower	0.06	29.5	0.00	0.07	0.00	1.30	1.77	124	191	214	302	381	548
Tundra Sweet													
Average	0.41	40.0	5.01	1.96	1.77	3.04	2.50	97	138	159	268	402	691
Upper	0.54	41.1	7.23	3.51	2.21	4.13	2.94	107	149	169	281	421	720
Lower	0.29	38.9	2.80	0.42	1.33	1.96	2.06	87	126	150	255	382	662