

	FORT HILLS REDUCED CARBON LIFE CYCLE DILBIT				TBP DISTILLATION									
	Crude				Country	Canada								
Density at 15°C, kg/m3	926.2	Assay Date	31-Mar-17		°C	wt%	vol%	°C	wt%	vol%				
°API	21.2				080	13.7	19.5	480	44.1	50.2				
Bbl/mt	6.801				090	15.0	21.1	500	48.3	54.2				
Acidity, mg KOH/g	2.24				100	15.9	22.3	520	53.2	58.7				
Sulphur, wt%	3.930				120	16.6	23.2	540	58.3	63.4				
Hydrogen Sulphide, mg/kg	0				140	16.8	23.4	560	63.2	68.0				
Mercaptan Sulphur, mg/kg	52				160	16.9	23.6	580	67.8	72.2				
Viscosity, cSt at 10 °C	410				180	17.1	23.8							
50 °C	44				200	17.4	24.0							
Pour Point, °C	-36				220	17.6	24.3							
Total Nitrogen, wt%	0.363				240	18.0	24.7							
Wax, wt%	-				260	18.5	25.3							
Wax Appearance Temperature, °C	-				280	19.7	26.5							
RVP at 37.8 °C, kPa	54	Ethane	0.00	0.00	300	21.8	28.6							
Water, vol%	0.02	Propane	0.01	0.02	320	24.0	30.8							
NaCl, mg/kg	38.4	Iso-Butane	0.05	0.08	340	26.6	33.4							
Nickel, mg/kg	51.3	n-Butane	0.41	0.65	360	29.8	36.6							
Vanadium, mg/kg	126.0				380	32.9	39.6							
Iron, mg/kg	17.8				400	35.2	41.8							
Mercury, µg/kg	< 1				420	36.9	43.4							
Arsenic, mg/kg	<1				440	38.6	45.0							
Calcium, mg/kg	18.0				460	40.9	47.1							

PROPERTIES OF TBP CUTS																	
LIGHT NAPHTHA	Cuts	Yield	Yield	Den 15°C	S	RSH	RON	MON				Napht.	Aro.	RVP			
	°C	wt%	vol %	kg/m3	wt%	mg/kg	clear	clear				vol%	vol%	kPa			
	15-65	11.2	16.2	641	0.00	40	74.0	73.4				3.2	0.2	-			
	15-80	13.2	18.8	651	0.00	58	71.3	70.8				6.2	0.7	-			
HEAVY NAPHTHA	Cuts	Yield	Yield	Den 15°C	S	RSH						Napht.	Aro.				
	°C	wt%	vol %	kg/m3	wt%	mg/kg						vol%	vol%				
	80-150	3.2	3.9	738	0.01	102						27.9	8.3				
	80-175	3.4	4.2	741	0.02	101						27.2	8.6				
	100-150	0.9	1.2	755	0.03	87						25.3	10.7				
KEROSENE	Cuts	Yield	Yield	Den 15°C	S	RSH	Smoke	Acidity	Cetane	Freez. Pt		Aro.	Visc cSt				Flash
	°C	wt%	vol %	kg/m3	wt%	mg/kg	Pt mm	mgKOH/g	Index	°C		vol%	50°C				Point
	150-230	0.9	1.1	822	0.34	104	35	0.12	33.4	-69		18.9	1.0				59.2
	175-230	0.7	0.8	830	0.41	107	35	0.15	33.3	-68		20.8	1.1				70.5
	150-250	1.3	1.5	833	0.48	106	34	0.16	34.2	-68		20.1	1.2				63.9
GASOIL	Cuts	Yield	Yield	Den 15°C	S		Anilin		Cetane	Cloud Pt	CFPP	Pour Pt	Visc cSt	Visc cSt	UOPK		Flash
	°C	wt%	vol %	kg/m3	wt%		Point °C		Index	C	C	C	50°C	100°C			Point
	175-400	18.1	18.1	925	2.43		47		33.1	-56	-58	-61	8.0	2.3	11.1		115.8
	230-400	17.4	17.3	929	2.52		47		33.1	-60	-60	-60	9.0	2.5	11.1		120.0
	230-375	14.4	14.4	923	2.35		48		33.3	-66	-66	-66	7.1	2.1	11.1		117.8
VACUUM DISTILLATE	Cuts	Yield	Yield	Den 15°C	S	Conrad.	Anilin	Ni	Va	Total N	Bas N	Pour Pt	Visc cSt	Visc cSt	UOPK	Asp C7	
	°C	wt%	vol %	kg/m3	wt%	wt%	Point °C	mg/kg	mg/kg	wt%	mg/kg	C	100°C	150°C		wt %	
	375-550	28.6	26.8	982	3.86	0.5	54	1	3	0.25	691	6	22.9	5.3	11.3	0.0	
	375-565	32.2	30.2	985	3.95	0.7	55	2	5	0.27	748	8	27.1	6.0	11.3	0.1	
	375-580	35.6	33.3	987	4.03	1.0	55	3	8	0.29	802	10	32.0	6.7	11.3	0.1	
	400-580	32.7	30.5	989	4.09	1.0	56	4	9	0.31	840	13	39.2	7.7	11.3	0.1	
RESIDUE	Cuts	Yield	Yield	Den 15°C	S	Conrad.	Acidity	Ni	Va	Total N		Pour Pt	Visc cSt	Visc cSt	Pene	Asp C7	
	°C	wt%	vol %	kg/m3	wt%	wt%	mgKOH/g	mg/kg	mg/kg	wt%		C	100°C	150°C	mm/10	wt%	
	> 375	67.8	61.1	1024	5.30	13.2	4.6	76	185	0.53		24	359	34	-	4.5	
	> 550	39.2	34.3	1057	6.35	22.6	5.5	130	318	0.74		75	10,400	319	25	7.7	
	> 565	35.6	30.9	1063	6.52	24.6	5.5	142	348	0.76		80	19,100	476	18	8.5	
	> 580	32.2	27.8	1069	6.70	26.9	5.6	156	381	0.79		85	36,500	730	14	9.3	

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TOTAL DTS / AM

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