

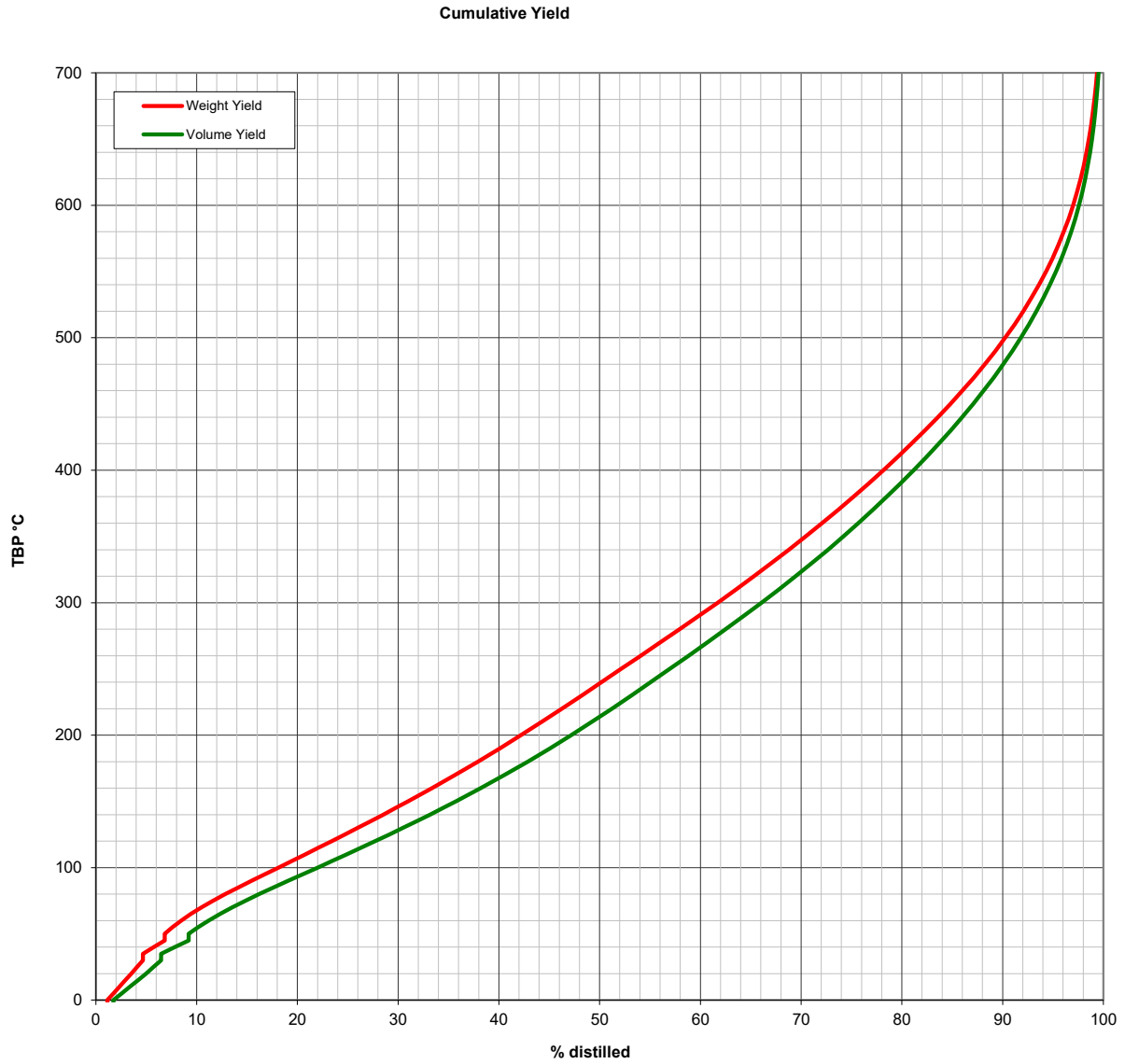
Crude Summary Report

General Information		Molecules (%wt on crude)										Whole Crude Properties			
Reference:	BAKKEN24	methane + ethane	0.00								Density @ 15°C (g/cc)	0.8059			
Name:	Bakken	propane	0.51								API Gravity	44.0			
Origin:	North Dakota	isobutane	0.44								Total Sulfur (% wt)	0.08			
		n-butane	1.97								Pour Point (°C)	-80			
Assay Date:	7/25/2025	isopentane	1.14								Viscosity @ 20°C (cSt)	2.7			
		n-pentane	2.16								Viscosity @ 40°C (cSt)	2.0			
Comments:		cyclopentane	0.18								Nickel (ppm)	0.5			
		C6 paraffins	4.06								Vanadium (ppm)	0.3			
		C6 naphthenes	1.66								Total Nitrogen (ppm)	453			
		benzene	0.21								Total Acid Number (mgKOH/g)	0.07			
		C7 paraffins	3.51								Mercaptan Sulfur (ppm)	1.0			
		C7 naphthenes	2.97								Hydrogen Sulfide (ppm)	0.0			
		toluene	0.49								Reid Vapor Pressure (kPa)	74.4			
Cut Data		Atmospheric Cuts										Vacuum Cuts			
Start (°C)	IBP	IBP	C5	65	100	150	200	250	300	350	370	370	450	500	550
End (°C)	FBP	C4	65	100	150	200	250	300	350	370	FBP	450	500	550	FBP
Yield (% wt)		2.9	6.5	8.7	12.8	11.2	9.9	9.6	8.7	3.2	26.3	11.1	5.4	4.0	5.7
Yield (% vol)		4.2	8.1	9.7	13.7	11.4	9.8	9.1	8.1	2.9	22.9	10.0	4.7	3.5	4.7
Cumulative Yield (% wt)		2.9	9.4	18.1	31.0	42.2	52.1	61.7	70.4	73.7	100.0	84.8	90.3	94.3	100.0
Volume Average B.P. (°C)	242	41.9	83	124	174	225	275	324	360	482	408	474	524	617	
Density @ 15°C (g/cc)	0.8059	0.6414	0.7206	0.7512	0.7868	0.8151	0.8456	0.8620	0.8857	0.9236	0.8983	0.9217	0.9348	0.9709	
API Gravity	44.0	89.1	64.8	56.8	48.3	42.0	35.8	32.6	28.2	21.6	25.9	21.9	19.8	14.2	
UOPK	12.10			11.90	11.82	11.82	11.77	11.88	11.79	11.99	11.91	11.97	12.06	12.05	
Molecular Weight (g/mol)				110	138	171	208	255	288	451		344	442	557	880
Total Sulfur (% wt)	0.08	0.000	0.000	0.001	0.001	0.003	0.010	0.073	0.146	0.258	0.183	0.222	0.275	0.430	
Mercaptan Sulfur (ppm)	1.0		0.32	0.42	0.38	0.25	0.14								
Total Nitrogen (ppm)	453					0	11	154	379	1619	749	1358	1897	3372	
Basic Nitrogen (ppm)	129					3	16	59	115	447	230	385	485	907	
Total Acid Number (mgKOH/g)	0.07	0.00	0.00	0.00	0.00	0.01	0.03	0.10	0.15	0.18	0.19	0.21	0.20	0.14	
Viscosity @ 20°C (cSt)	2.74					1.34									
Viscosity @ 40°C (cSt)	1.97					1.03	1.61	2.93	6.34	12.5					
Viscosity @ 50°C (cSt)	1.71						1.39	2.42	4.92	9.10	130	24.5	118	397	
Viscosity @ 60°C (cSt)											76.8	16.9	70.2	210	
Viscosity @ 100°C (cSt)											16.6	5.67	15.4	33.4	292
Viscosity @ 130°C (cSt)															76.0
Viscosity @ 150°C (cSt)															38.4
RON (Clear)		73.9	45.3	53.8	35.7										
MON (Clear)		71.5	57.3	53.7	33.9										
Paraffins (% wt)	39.8	96.7	61.6	39.7	48.0										
Naphthenes (%wt)	36.7	3.3	36.1	49.5	37.3										
Aromatics (% wt)	23.5	0.0	2.3	10.7	14.7										
Pour Point (°C)	-80						-55	-36	-13	-1	8	12	25	33	27
Cloud Point (°C)							-54	-34	-11						
Freeze Point (°C)							-62	-47	-28						
Smoke Point (mm)							27	23	18						
Cetane Index (D4737A)							39	47	51	59	59				
Naphthalenes (% vol)							0.0	1.7	6.2	8.6					
Aniline Point (°C)				49.6	51.9	57.5	66.6	77.1	81.7			86.9	92.8	96.3	
Hydrogen (% wt)	14.0	16.5	15.3	14.4	14.3	13.8	13.6	13.4	13.0			12.7	12.7	12.5	
Total Wax (% wt)	5.7										6.4	9.8	4.5	2.7	4.0
C7 Asphaltenes (% wt)	0.0										0.1	0.0	0.0	0.5	
Micro Carbon Residue (% wt)	0.7										2.5	0.1	1.0	10.8	
Vanadium (ppm)	0.3										1.3	0.0	0.0	6.0	
Nickel (ppm)	0.5										2.0	0.0	0.0	9.3	
Iron (ppm)	1.6										6.2	0.0	0.0	28.7	
Sodium (ppm)	0.8														
Mercury (ppb)	4.5														
Arsenic (ppb)	7														

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Reference: **BAKKEN24**
 Crude: **Bakken**

Yield Distribution



Cumulative Volume % Distilled at 10 Degree C (TBP) Intervals

	0	10	20	30	40	50	60	70	80	90
0				6.5	7.8	9.2	11.2	13.5	16.2	19.1
100	22.0	24.9	27.7	30.5	33.2	35.7	38.2	40.6	42.9	45.1
200	47.2	49.2	51.2	53.2	55.1	57.0	58.8	60.7	62.5	64.3
300	66.1	67.8	69.5	71.1	72.7	74.2	75.7	77.1	78.5	79.9
400	81.2	82.4	83.7	84.8	86.0	87.1	88.1	89.1	90.1	91.0
500	91.8	92.6	93.4	94.1	94.7	95.3	95.8	96.3	96.8	97.2