



Table 1
 GLJ, Sproule, McDaniel
Crude Oil and Natural Gas Liquids
Price Forecast
 Effective January 1, 2024

		United States			Europe		Canada									
		WTI Crude Oil Cushing, Oklahoma		Brent Crude Oil FOB North Sea		MSW, Light Crude Oil (40 API, 0.3%S) at Edmonton	Bow River Crude Oil (21.4 API, 2.8%S) at Hardisty	WCS Crude Oil (20.9 API, 3.5%S) at Hardisty	Heavy Crude Oil Proxy (12 API) at Hardisty	Light Sour Crude Oil (35 API, 1.2%S) at Cromer	Medium Crude Oil (29 API, 2.0%S) at Cromer	Alberta Natural Gas Liquids (Then Current Dollars)				
Year	Inflation %	CADUSD Exchange Rate USD/CAD	Constant 2024\$ USD/bbl	Then Current USD/bbl	Then Current USD/bbl	Then Current CAD/bbl	Then Current CAD/bbl	Then Current CAD/bbl	Then Current CAD/bbl	Then Current CAD/bbl	Then Current CAD/bbl	Then Current CAD/bbl	Spec Ethane CAD/bbl	Edmonton Propane CAD/bbl	Edmonton Butane CAD/bbl	Edmonton C5+ Stream Quality CAD/bbl
2024	0.00	0.752	73.67	73.67	78.00	92.91	77.44	76.74	69.01	93.35	88.90	6.88	29.65	47.69	96.79	
2025	2.00	0.752	73.51	74.98	79.18	95.04	80.48	79.77	71.90	95.50	90.95	10.76	35.13	48.83	98.75	
2026	2.00	0.755	73.18	76.14	80.36	96.07	81.84	81.12	72.78	96.53	91.91	13.16	35.43	49.36	100.71	
2027	2.00	0.755	73.18	77.66	81.79	97.99	83.61	82.88	74.41	98.46	93.75	13.44	36.14	50.35	102.72	
2028	2.00	0.755	73.18	79.22	83.41	99.95	85.78	85.04	76.56	100.43	95.63	13.71	36.87	51.35	104.78	
2029	2.00	0.755	73.18	80.80	85.09	101.95	87.49	86.74	78.10	102.44	97.53	14.00	37.60	52.38	106.87	
2030	2.00	0.755	73.18	82.42	86.79	103.98	89.24	88.48	79.67	104.49	99.48	14.28	38.35	53.43	109.01	
2031	2.00	0.755	73.18	84.06	88.52	106.07	91.02	90.24	81.27	106.58	101.48	14.58	39.12	54.50	111.19	
2032	2.00	0.755	73.18	85.75	90.29	108.18	92.83	92.04	82.90	108.71	103.50	14.87	39.90	55.58	113.41	
2033	2.00	0.755	73.18	87.46	92.10	110.35	94.69	93.89	84.57	110.88	105.57	15.17	40.70	56.70	115.67	
2034	2.00	0.755	73.18	89.21	93.94	112.56	96.58	95.77	86.26	113.10	107.69	15.48	41.52	57.83	117.98	
2035	2.00	0.755	73.18	90.99	95.82	114.81	98.52	97.68	87.98	115.36	109.84	15.79	42.35	58.99	120.34	
2036	2.00	0.755	73.18	92.82	97.74	117.10	100.49	99.63	89.74	117.67	112.03	16.10	43.20	60.17	122.75	
2037	2.00	0.755	73.18	94.67	99.69	119.44	102.50	101.63	91.54	120.02	114.28	16.42	44.06	61.37	125.20	
2038	2.00	0.755	73.18	96.56	101.68	121.83	104.55	103.66	93.37	122.42	116.56	16.75	44.94	62.60	127.71	
2039+	2.00	0.755	73.18	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	

Historical futures contract price is an average of the daily settlement price of the near month contract over the calendar month.



Table 2
GLJ, Sproule, McDaniel
Natural Gas and Sulphur
Price Forecast
Effective January 1, 2024

Year	NYMEX Henry Hub Near Month Contract		Midwest Price at Chicago	AECO/NIT	Dawn Price at Ontario	Alberta Plant Gate			Saskatchewan Plant Gate			British Columbia			Sulphur @
	Constant 2024 \$	Then Current	Then Current	Then Current	Then Current	Spot Constant 2024 \$	Spot Then Current	ARP	SaskEnergy	Spot	Huntingdon/ Sumas Spot	Westcoast Station 2	Spot Plant Gate	Sulphur FOB Vancouver	Alberta Plant Gate
	USD/MMBtu	USD/MMBtu	USD/MMBtu	CAD/MMBtu	USD/MMBtu	CAD/MMBtu	CAD/MMBtu	CAD/MMBtu	CAD/MMBtu	CAD/MMBtu	USD/MMBtu	CAD/MMBtu	CAD/MMBtu	USD/lt	CAD/lt
2024	2.75	2.75	2.58	2.20	2.68	1.92	1.92	1.92	2.45	1.98	2.83	2.06	1.74	107.15	55.40
2025	3.57	3.64	3.46	3.37	3.57	3.02	3.08	3.08	3.62	3.15	3.72	3.26	2.92	120.80	73.03
2026	3.86	4.02	3.85	4.05	3.95	3.61	3.75	3.75	4.29	3.83	4.10	3.93	3.59	123.21	74.70
2027	3.87	4.10	3.92	4.13	4.03	3.61	3.83	3.83	4.38	3.91	4.19	4.01	3.67	125.68	76.95
2028	3.86	4.18	4.01	4.21	4.11	3.61	3.91	3.91	4.46	3.99	4.27	4.09	3.75	128.19	79.24
2029	3.86	4.27	4.08	4.30	4.19	3.62	4.00	4.00	4.55	4.08	4.36	4.17	3.83	130.75	81.57
2030	3.86	4.35	4.17	4.38	4.27	3.62	4.08	4.08	4.63	4.16	4.44	4.25	3.91	133.37	83.95
2031	3.87	4.44	4.25	4.47	4.37	3.63	4.17	4.17	4.73	4.25	4.54	4.34	3.99	136.04	86.38
2032	3.86	4.53	4.34	4.56	4.45	3.63	4.25	4.25	4.82	4.34	4.63	4.42	4.08	138.76	88.86
2033	3.86	4.62	4.43	4.65	4.54	3.63	4.34	4.34	4.91	4.43	4.72	4.51	4.16	141.53	90.63
2034	3.86	4.71	4.51	4.74	4.63	3.63	4.43	4.43	5.01	4.52	4.82	4.60	4.24	144.36	92.45
2035	3.86	4.80	4.60	4.84	4.72	3.63	4.51	4.51	5.11	4.61	4.91	4.69	4.33	147.25	94.29
2036	3.86	4.90	4.70	4.94	4.82	3.63	4.60	4.60	5.21	4.71	5.01	4.79	4.41	150.19	96.18
2037	3.86	5.00	4.80	5.03	4.92	3.63	4.70	4.70	5.32	4.80	5.11	4.88	4.5	153.20	98.10
2038	3.86	5.10	4.88	5.13	5.02	3.63	4.79	4.79	5.42	4.90	5.22	4.98	4.59	156.26	100.06
2039+	3.86	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	3.63	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr

Unless otherwise stated, the gas price reference point is the receipt point on the applicable provincial gas transmission system known as the plant gate.
The plant gate price represents the price before raw gathering and processing charges are deducted.



Table 3
GLJ, Sproule, McDaniel
International
Price Forecast
Effective January 1, 2024

Year	Inflation %	CADUSD	GBPUSD	EURUSD	WTI	Light	Brent	Maya	NYMEX Henry Hub	National	Dutch TTF	JKM						
		Exchange Rate USD/CAD	Exchange Rate USD/GBP	Exchange Rate USD/EUR	Crude Oil Cushing, Oklahoma	Louisiana Sweet Crude Oil	Crude Oil FOB North Sea	Crude Oil	Near Month Contract	Point (UK)	Natural Gas	Natural Gas						
					Then Current USD/bbl	Then Current CAD/bbl	Then Current USD/bbl	Then Current CAD/bbl	Then Current USD/bbl	Then Current CAD/bbl	Then Current USD/MMBtu	Then Current CAD/MMBtu	Then Current USD/MMBtu	Then Current CAD/MMBtu	Then Current USD/MMBtu	Then Current USD/MMBtu		
2024	0.00	0.752	1.253	1.087	73.67	98.00	76.49	101.76	78.00	103.77	68.34	90.91	2.75	3.66	11.87	15.79	12.1	12.87
2025	2.00	0.752	1.272	1.108	74.98	99.76	77.80	103.50	79.18	105.33	69.98	93.10	3.64	4.84	13.09	17.42	13.49	13.59
2026	2.00	0.755	1.277	1.117	76.14	100.85	78.95	104.57	80.36	106.44	70.97	94.00	4.02	5.32	12.81	16.96	13.21	13.31
2027	2.00	0.755	1.283	1.125	77.66	102.87	80.35	106.43	81.79	108.33	72.22	95.66	4.10	5.43	12.62	16.71	13.02	13.37
2028	2.00	0.755	1.283	1.132	79.22	104.92	81.95	108.54	83.41	110.48	73.66	97.56	4.18	5.54	12.87	17.05	13.3	14.02
2029	2.00	0.755	1.283	1.132	80.80	107.02	83.59	110.72	85.09	112.70	75.14	99.52	4.27	5.65	13.13	17.39	13.56	14.29
2030	2.00	0.755	1.283	1.132	82.42	109.16	85.27	112.94	86.79	114.96	76.65	101.52	4.35	5.76	13.40	17.74	13.83	14.57
2031	2.00	0.755	1.283	1.132	84.06	111.34	86.97	115.19	88.52	117.25	78.17	103.54	4.44	5.88	13.66	18.09	14.11	14.86
2032	2.00	0.755	1.283	1.132	85.75	113.57	88.71	117.50	90.29	119.59	79.74	105.61	4.53	5.99	13.93	18.45	14.39	15.14
2033	2.00	0.755	1.283	1.132	87.46	115.84	90.48	119.85	92.10	121.98	81.33	107.72	4.62	6.11	14.21	18.82	14.68	14.89
2034	2.00	0.755	1.283	1.132	89.21	118.16	92.29	122.24	93.94	124.42	82.96	109.88	4.71	6.24	14.50	19.20	14.98	15.18
2035	2.00	0.755	1.283	1.132	90.99	120.52	94.14	124.69	95.82	126.91	84.62	112.07	4.80	6.36	14.79	19.59	15.27	15.47
2036	2.00	0.755	1.283	1.132	92.82	122.93	96.02	127.18	97.74	129.45	86.31	114.31	4.90	6.49	15.08	19.98	15.58	15.78
2037	2.00	0.755	1.283	1.132	94.67	125.39	97.94	129.73	99.69	132.04	88.04	116.60	5.00	6.62	15.38	20.37	15.89	16.08
2038	2.00	0.755	1.283	1.132	96.56	127.90	99.90	132.32	101.68	134.68	89.80	118.94	5.10	6.75	15.69	20.78	16.21	16.39
2039+	2.00	0.755	1.283	1.132	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr

Historical futures contract price is an average of the daily settlement price of the near month contract over the calendar month.



Table 4
 GLJ, Sproule, McDaniel
US Liquids and Natural Gas
Price Forecast
 Effective January 1, 2024

Year	US Natural Gas Liquids (Then Current Dollars)					US Natural Gas (Then Current Dollars)				
	Conway			Mont Belvieu		Rockies			Algonquin City-Gates	
	80%-20% E/P Mix USD/bbl	Propane USD/bbl	Butane USD/bbl	Condensate USD/bbl	Ethane USD/bbl	Propane USD/bbl	Butane USD/bbl	Condensate USD/bbl	Natural Gas USD/MMBtu	Natural Gas USD/MMBtu
2024	7.56	30.15	44.08	64.83	9.62	31.88	41.67	63.35	2.45	4.63
2025	10.92	33.46	46.43	69.73	12.74	35.23	44.94	68.23	3.34	5.52
2026	12.06	39.05	47.22	70.81	14.07	40.36	45.69	69.29	3.71	5.90
2027	12.31	39.83	48.16	72.23	14.36	41.17	46.61	70.67	3.79	5.98
2028	12.55	40.63	49.12	73.67	14.64	41.99	47.54	72.09	3.87	6.06
2029	12.80	41.44	50.11	75.14	14.93	42.83	48.49	73.53	3.95	6.15
2030	13.05	42.27	51.11	76.65	15.22	43.69	49.46	75.00	4.03	6.23
2031	13.33	43.11	52.13	78.18	15.55	44.56	50.45	76.50	4.12	6.32
2032	13.58	43.98	53.17	79.74	15.84	45.45	51.45	78.03	4.20	6.41
2033	13.85	44.86	54.23	81.34	16.16	46.36	52.48	79.59	4.29	6.50
2034	14.13	45.76	55.32	82.97	16.48	47.29	53.54	81.18	4.37	6.61
2035	14.41	46.67	56.43	84.62	16.81	48.23	54.60	82.80	4.46	6.73
2036	14.70	47.60	57.56	86.32	17.15	49.20	55.70	84.46	4.56	6.86
2037	14.99	48.56	58.71	88.05	17.49	50.19	56.81	86.15	4.65	6.98
2038	15.30	49.53	59.88	89.80	17.84	51.19	57.95	87.87	4.74	7.11
2039+	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr

Butane prices at Conway and Mont Belvieu represent a blended price of two thirds normal butane and one third iso-butane.



Table 5
 GLJ, Sproule, McDaniel
International Crude Oil
Price Forecast
 Effective January 1, 2024

Year	Inflation %	United States		Europe	Latin America	Mideast Gulf and Mediterranean						Africa	Asia-Pacific		Russia / C.I.S.		
		Cushing, OK WTI	Louisiana LLS*	UK Brent	Mexico Maya	Oman DME	OPEC Basket	Abu Dhabi Murban	Iran Light	Algeria Saharan	Iraq Basrah Medium	Kuwait Export Blend	Nigeria Bonny Light	Indonesia Minas	Malaysia Tapis	Russia ESPO**	Russia Sokol
		39.6 API	35.6 API	38.3 API	21.8 API	34 API	32.7 API	40.2 API	33.6 API	45.3 API	31.1 API	31.4*API	33.4 API	35.3 API	45.2 API	34.8 API	34.8 API
		0.24% S	0.37% S	0.37% S	3.33% S	2.00% S	1.77% S	0.79% S	1.46% S	0.09% S	2.58% S	2.52% S	0.16% S	0.09% S	0.03% S	0.62% S	0.29% S
		USD/bbl	USD/bbl	USD/bbl	USD/bbl	USD/bbl	USD/bbl	USD/bbl	USD/bbl	USD/bbl	USD/bbl	USD/bbl	USD/bbl	USD/bbl	USD/bbl	USD/bbl	USD/bbl
2024	0.00	73.67	76.49	78.00	68.34	76.71	77.15	78.78	76.35	77.30	77.22	76.50	77.71	75.46	80.96	62.25	72.54
2025	2.00	74.98	77.80	79.18	69.98	78.03	77.95	79.18	77.65	78.37	76.80	77.82	79.05	76.74	82.38	62.47	75.22
2026	2.00	76.14	78.95	80.36	70.97	79.19	79.11	80.36	78.80	79.54	77.95	78.98	80.23	77.87	83.63	64.39	80.36
2027	2.00	77.66	80.35	81.79	72.22	80.59	80.52	81.79	80.20	80.95	79.33	80.38	81.65	79.26	85.12	66.89	82.60
2028	2.00	79.22	81.95	83.41	73.66	82.19	82.11	83.41	81.79	82.55	80.91	81.97	83.27	80.83	86.81	68.21	84.24
2029	2.00	80.80	83.59	85.09	75.14	83.84	83.76	85.09	83.43	84.21	82.53	83.62	84.95	82.45	88.55	69.58	85.94
2030	2.00	82.42	85.27	86.79	76.65	85.53	85.44	86.79	85.11	85.90	84.19	85.30	86.65	84.11	90.33	70.98	87.66
2031	2.00	84.06	86.97	88.52	78.17	87.23	87.14	88.52	86.81	87.61	85.87	87.00	88.38	85.78	92.13	72.39	89.41
2032	2.00	85.75	88.71	90.29	79.74	88.98	88.89	90.29	88.54	89.37	87.58	88.73	90.15	87.50	93.97	73.84	91.20
2033	2.00	87.46	90.48	92.10	81.33	90.75	90.67	92.1	90.31	91.15	89.33	90.51	91.95	89.25	95.85	75.32	93.02
2034	2.00	89.21	92.29	93.94	82.96	92.57	92.48	93.94	92.12	92.98	91.12	92.32	93.79	91.03	97.77	76.82	94.88
2035	2.00	90.99	94.14	95.82	84.62	94.42	94.33	95.82	93.96	94.84	92.94	94.17	95.66	92.85	99.72	78.36	96.78
2036	2.00	92.82	96.02	97.74	86.31	96.31	96.22	97.74	95.84	96.73	94.80	96.05	97.58	94.71	101.72	79.93	98.71
2037	2.00	94.67	97.94	99.69	88.04	98.24	98.14	99.69	97.76	98.67	96.70	97.97	99.53	96.60	103.75	81.53	100.69
2038	2.00	96.56	99.90	101.68	89.80	100.20	100.10	101.68	99.71	100.64	98.63	99.93	101.52	98.54	105.83	83.16	102.70
2039+	2.00	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr

* LLS - Light Louisiana Sweet

** ESPO - Eastern Siberian Pacific Ocean Blend

Historical futures contract price is an average of the daily settlement price of the near month contract over the calendar month.

GLJ Forecasts a variety of other benchmarks that may not be presented and can be obtained upon request.