

McDaniel & Associates Consultants Ltd.

Summary of Price Forecasts

October 1, 2023

Year	Crude Oil Price Forecasts							Liquids Price Forecasts					Gas Price Forecasts								US/CAN Exchange Rate
	WTI Crude Oil	Brent Crude Oil	Edmonton Light Crude Oil	Alberta Bow River Hardisty Crude Oil	Western Canadian Select Crude Oil	Alberta Heavy Crude Oil	Sask Cromer Medium Crude Oil	Edmonton Ethane	Edmonton Propane	Edmonton Butanes	Edmonton Cond. & Natural Gasolines	U.S. Henry Hub Gas Price	Alberta AECO Spot Price	Alberta Average Plantgate	Alberta Aggregator Plantgate	Empress	Sask. Prov. Gas Plantgate	British Columbia Average Plantgate	British Columbia Station 2	Inflation %	
	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	%	\$/US\$/CAN
	(1)	(2)	(3)	(4)	(5)	(6)	(7)					(8)	(9)								
History																					
2013	97.95	108.60	93.05	76.55	75.25	65.25	88.25		38.90	69.40	104.65	3.75	3.20	3.00	3.00	3.10	3.10	2.95	3.10	0.95	0.970
2014	93.00	99.00	93.50	80.40	79.10	71.20	87.80		45.05	69.60	102.40	4.35	4.40	4.20	4.20	4.55	4.40	4.05	4.20	1.90	0.905
2015	48.80	52.35	57.75	46.10	44.80	39.55	51.45		6.60	36.50	60.30	2.60	2.80	2.60	2.60	3.00	2.70	2.00	2.10	1.10	0.785
2016	43.30	43.55	53.90	40.45	39.15	33.35	49.10		13.15	34.35	56.15	2.50	2.10	1.90	1.90	2.30	2.20	1.55	1.65	1.45	0.755
2017	50.90	54.25	62.85	52.00	50.70	45.20	59.85		28.90	44.60	66.85	3.00	2.40	2.20	2.20	2.85	2.40	1.80	1.95	1.60	0.770
2018	64.95	71.05	69.65	51.25	49.95	40.00	70.20		27.55	32.80	79.20	3.05	1.55	1.35	1.35	3.00	1.60	1.20	1.40	2.25	0.770
2019	57.00	64.35	69.00	60.00	58.70	54.80	68.00		17.40	23.55	70.30	2.55	1.60	1.40	1.40	2.75	1.75	1.00	1.15	2.00	0.755
2020	39.25	41.75	45.00	36.50	35.40	30.70	43.75		16.40	22.15	49.15	2.05	2.25	2.05	2.05	2.30	2.45	2.05	2.20	0.75	0.745
2021	68.00	70.70	80.35	69.40	68.85	63.15	77.75		43.10	51.15	85.50	3.90	3.55	3.35	3.35	3.90	3.95	3.30	3.45	3.40	0.800
2022	94.80	100.80	120.75	99.25	99.10	90.95	114.30		50.30	61.15	123.00	6.40	5.55	5.35	5.35	6.70	5.85	5.00	5.15	6.75	0.770
2023 (9 mos)	77.30	82.00	100.65	80.55	80.40	72.65	91.35		29.95	44.80	103.25	2.45	3.05	2.85	2.85	3.20	3.30	2.35	2.50	4.05	0.745
Forecast																					
2023 (3 mos)	90.00	94.50	116.67	97.42	96.83	93.33	108.50	10.20	37.33	52.50	119.67	2.75	2.75	2.55	2.55	3.00	3.05	2.05	2.30	0.0	0.750
2024	82.50	86.50	105.33	86.90	86.37	79.00	96.91	12.20	33.71	47.40	108.33	3.25	3.25	3.05	3.05	3.50	3.55	2.55	2.80	0.0	0.750
2025	76.50	80.58	97.24	79.74	79.25	68.07	89.46	14.48	31.12	43.76	100.30	3.83	3.83	3.62	3.62	4.08	4.13	3.11	3.37	2.0	0.750
2026	75.43	79.59	95.72	78.49	78.01	67.00	88.06	14.77	30.63	43.07	98.84	3.90	3.90	3.69	3.69	4.16	4.21	3.17	3.43	2.0	0.750
2027	76.94	81.18	97.63	80.06	79.57	68.34	89.82	15.07	31.24	43.93	100.81	3.98	3.98	3.77	3.77	4.24	4.30	3.24	3.50	2.0	0.750
2028	78.48	82.81	99.58	81.66	81.16	69.71	91.62	15.37	31.87	44.81	102.83	4.06	4.06	3.84	3.84	4.33	4.38	3.30	3.57	2.0	0.750
2029	80.05	84.46	101.58	83.29	82.78	71.10	93.45	15.68	32.50	45.71	104.89	4.14	4.14	3.92	3.92	4.42	4.47	3.37	3.64	2.0	0.750
2030	81.65	86.15	103.61	84.96	84.44	72.52	95.32	15.99	33.15	46.62	106.99	4.22	4.22	4.00	4.00	4.50	4.56	3.43	3.72	2.0	0.750
2031	83.28	87.87	105.68	86.66	86.13	73.98	97.22	16.31	33.82	47.56	109.13	4.31	4.31	4.08	4.08	4.59	4.65	3.50	3.79	2.0	0.750
2032	84.95	89.63	107.79	88.39	87.85	75.45	99.17	16.64	34.49	48.51	111.31	4.39	4.39	4.16	4.16	4.69	4.75	3.57	3.87	2.0	0.750
2033	86.64	91.42	109.95	90.16	89.61	76.96	101.15	16.97	35.18	49.48	113.53	4.48	4.48	4.24	4.24	4.78	4.84	3.65	3.94	2.0	0.750
2034	88.38	93.25	112.15	91.96	91.40	78.50	103.18	17.31	35.89	50.47	115.80	4.57	4.57	4.33	4.33	4.88	4.94	3.72	4.02	2.0	0.750
2035	90.14	95.12	114.39	93.80	93.23	80.07	105.24	17.66	36.60	51.48	118.12	4.66	4.66	4.41	4.41	4.97	5.04	3.79	4.10	2.0	0.750
2036	91.95	97.02	116.68	95.68	95.09	81.67	107.34	18.01	37.34	52.51	120.48	4.76	4.76	4.50	4.50	5.07	5.14	3.87	4.19	2.0	0.750
2037	93.79	98.96	119.01	97.59	96.99	83.31	109.49	18.37	38.08	53.56	122.89	4.85	4.85	4.59	4.59	5.17	5.24	3.95	4.27	2.0	0.750
Thereafter	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	2.0	0.750

(1) West Texas Intermediate at Cushing Oklahoma 40 degrees API, 0.5% sulphur

(2) North Sea Brent Blend 37 degrees API, 1.0% sulphur

(3) Edmonton Light Sweet 40 degrees API, 0.3% sulphur

(4) Bow River at Hardisty, Alberta (Heavy stream)

(5) Western Canadian Select at Hardisty, Alberta

(6) Heavy crude oil 12 degrees API at Hardisty, Alberta (after deduction of blending costs to reach pipeline quality)

(7) Midale Cromer crude oil 29 degrees API, 2.0% sulphur

(8) Historical prices based on AECO 7A (near month prices). 5A (daily price) expected to be equal to 7A over long term. 2022 historical prices: 7A \$5.56/MMBTU, 5A \$5.34/MMBTU

(9) This forecast also applies to direct sales contracts and the Alberta gas reference price used in the Crown royalty calculations

McDaniel & Associates Consultants Ltd.

Summary of Price Forecasts (Real Prices - 2023 \$)

October 1, 2023

Year	Crude Oil Price Forecasts							Liquids Price Forecasts					Gas Price Forecasts							US/CAN Exchange Rate \$US/\$CAN	
	WTI Crude Oil	Brent Crude Oil	Edmonton Light Crude Oil	Alberta Bow River Hardisty Crude Oil	Western Canadian Select Crude Oil	Alberta Heavy Crude Oil	Sask Cromer Medium Crude Oil	Edmonton Ethane	Edmonton Propane	Edmonton Butanes	Edmonton Cond. & Natural Gasolines	U.S. Henry Hub Gas Price	Alberta AECO Spot Price	Alberta Average Plantgate	Alberta Aggregator Plantgate	Empress	Sask. Prov. Gas Plantgate	British Columbia Average Plantgate	British Columbia Station 2		Inflation %
	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu		%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)					(8)	(9)								
History																					
2013	97.95	108.60	93.05	76.55	75.25	65.25	88.25		38.90	69.40	104.65	3.75	3.20	3.00	3.00	3.10	3.10	2.95	3.10	0.95	0.970
2014	93.00	99.00	93.50	80.40	79.10	71.20	87.80		45.05	69.60	102.40	4.35	4.40	4.20	4.20	4.55	4.40	4.05	4.20	1.90	0.905
2015	48.80	52.35	57.75	46.10	44.80	39.55	51.45		6.60	36.50	60.30	2.60	2.80	2.60	2.60	3.00	2.70	2.00	2.10	1.10	0.785
2016	43.30	43.55	53.90	40.45	39.15	33.35	49.10		13.15	34.35	56.15	2.50	2.10	1.90	1.90	2.30	2.20	1.55	1.65	1.45	0.755
2017	50.90	54.25	62.85	52.00	50.70	45.20	59.85		28.90	44.60	66.85	3.00	2.40	2.20	2.20	2.85	2.40	1.80	1.95	1.60	0.770
2018	64.95	71.05	69.65	51.25	49.95	40.00	70.20		27.55	32.80	79.20	3.05	1.55	1.35	1.35	3.00	1.60	1.20	1.40	2.25	0.770
2019	57.00	64.35	69.00	60.00	58.70	54.80	68.00		17.40	23.55	70.30	2.55	1.60	1.40	1.40	2.75	1.75	1.00	1.15	2.00	0.755
2020	39.25	41.75	45.00	36.50	35.40	30.70	43.75		16.40	22.15	49.15	2.05	2.25	2.05	2.05	2.30	2.45	2.05	2.20	0.75	0.745
2021	68.00	70.70	80.35	69.40	68.85	63.15	77.75		43.10	51.15	85.50	3.90	3.55	3.35	3.35	3.90	3.95	3.30	3.45	3.40	0.800
2022	94.80	100.80	120.75	99.25	99.10	90.95	114.30		50.30	61.15	123.00	6.40	5.55	5.35	5.35	6.70	5.85	5.00	5.15	6.75	0.770
2023 (9 mos)	77.30	82.00	100.65	80.55	80.40	72.65	91.35		29.95	44.80	103.25	2.45	3.05	2.85	2.85	3.20	3.30	2.35	2.50	4.05	0.745
Forecast																					
2023 (3 mos)	90.00	94.50	116.67	97.42	96.83	93.33	108.50	10.20	37.33	52.50	119.67	2.75	2.75	2.55	2.55	3.00	3.05	2.05	2.30	0.0	0.750
2024	82.50	86.50	105.33	86.90	86.37	79.00	96.91	12.20	33.71	47.40	108.33	3.25	3.25	3.05	3.05	3.50	3.55	2.55	2.80	0.0	0.750
2025	75.00	79.00	95.33	78.17	77.70	66.73	87.71	14.20	30.51	42.90	98.33	3.75	3.75	3.55	3.55	4.00	4.05	3.05	3.30	2.0	0.750
2026	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	41.40	95.00	3.75	3.75	3.55	3.55	4.00	4.05	3.05	3.30	2.0	0.750
2027	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	41.40	95.00	3.75	3.75	3.55	3.55	4.00	4.05	3.05	3.30	2.0	0.750
2028	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	41.40	95.00	3.75	3.75	3.55	3.55	4.00	4.05	3.05	3.30	2.0	0.750
2029	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	41.40	95.00	3.75	3.75	3.55	3.55	4.00	4.05	3.05	3.30	2.0	0.750
2030	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	41.40	95.00	3.75	3.75	3.55	3.55	4.00	4.05	3.05	3.30	2.0	0.750
2031	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	41.40	95.00	3.75	3.75	3.55	3.55	4.00	4.05	3.05	3.30	2.0	0.750
2032	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	41.40	95.00	3.75	3.75	3.55	3.55	4.00	4.05	3.05	3.30	2.0	0.750
2033	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	41.40	95.00	3.75	3.75	3.55	3.55	4.00	4.05	3.05	3.30	2.0	0.750
2034	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	41.40	95.00	3.75	3.75	3.55	3.55	4.00	4.05	3.05	3.30	2.0	0.750
2035	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	41.40	95.00	3.75	3.75	3.55	3.55	4.00	4.05	3.05	3.30	2.0	0.750
2036	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	41.40	95.00	3.75	3.75	3.55	3.55	4.00	4.05	3.05	3.30	2.0	0.750
2037	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	41.40	95.00	3.75	3.75	3.55	3.55	4.00	4.05	3.05	3.30	2.0	0.750

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(8) Historical prices based on AECO 7A (near month prices). 5A (daily price) expected to be equal to 7A over long term. 2022 historical prices: 7A \$5.56/MMBTU, 5A \$5.34/MMBTU

(9) This forecast also applies to direct sales contracts and the Alberta gas reference price used in the Crown royalty calculations

McDaniel & Associates Consultants Ltd.

Summary of International Price Forecasts

October 1, 2023

US and Europe Crude Oil and Natural Gas Price Forecasts

Year	Exchange Rates		US Crude Oil		US Natural Gas					Europe Crude Oil		Europe Natural Gas	
	\$US to GBP £	\$US to EUR €	WTI Oil \$US/bbl	LLS Oil \$US/bbl	Henry Hub Gas \$US/MMBtu	CIG Gas \$US/MMBtu	Chicago Gas \$US/MMBtu	Houston Ship Gas \$US/MMBtu	San Juan Gas \$US/MMBtu	UK Brent Crude Oil \$US/bbl	UK Forties Oil \$US/bbl	UK NBP Gas \$US/MMBtu	Dutch TTF Gas \$US/MMBtu
Forecast													
2023 (3 mos)	1.25	1.08	90.00	92.50	2.75	2.25	2.35	2.15	2.65	94.50	94.50	13.50	13.50
2024	1.25	1.08	82.50	85.00	3.25	2.75	2.85	2.65	3.15	86.50	86.50	15.00	15.00
2025	1.25	1.08	76.50	79.05	3.83	3.30	3.40	3.20	3.70	80.58	80.58	15.30	15.30
2026	1.25	1.08	75.43	78.03	3.90	3.40	3.50	3.30	3.80	79.59	79.59	15.61	15.61
2027	1.25	1.08	76.94	79.59	3.98	3.45	3.55	3.35	3.85	81.18	81.18	15.92	15.92
2028	1.25	1.08	78.48	81.18	4.06	3.50	3.65	3.40	3.95	82.81	82.81	16.24	16.24
2029	1.25	1.08	80.05	82.81	4.14	3.60	3.70	3.50	4.05	84.46	84.46	16.56	16.56
2030	1.25	1.08	81.65	84.46	4.22	3.65	3.75	3.55	4.10	86.15	86.15	16.89	16.89
2031	1.25	1.08	83.28	86.15	4.31	3.75	3.85	3.60	4.20	87.87	87.87	17.23	17.23
2032	1.25	1.08	84.95	87.87	4.39	3.80	3.95	3.70	4.30	89.63	89.63	17.57	17.57
2033	1.25	1.08	86.64	89.63	4.48	3.90	4.00	3.75	4.35	91.42	91.42	17.93	17.93
2034	1.25	1.08	88.38	91.42	4.57	3.95	4.10	3.85	4.45	93.25	93.25	18.28	18.28
2035	1.25	1.08	90.14	93.25	4.66	4.05	4.15	3.90	4.55	95.12	95.12	18.65	18.65
2036	1.25	1.08	91.95	95.12	4.76	4.10	4.25	4.00	4.65	97.02	97.02	19.02	19.02
2037	1.25	1.08	93.79	97.02	4.85	4.20	4.35	4.05	4.70	98.96	98.96	19.40	19.40

Other International Crude Oil Price Forecasts

Year	Africa and Middle East							Asia		Latin America		Russia
	Nigeria Bonny Light Oil	Algeria Saharan Blend Oil	Kuwait Oil	Saudi Light Oil	Saudi Heavy Oil	UAE Fateh Oil	Iran Light Oil	Indonesia Minas Oil	Malaysia Tapis Oil	Mexico Maya Oil	Columbia Vasconia Oil	Urals Oil
	\$US/bbl	\$US/bbl	\$US/bbl	\$US/bbl	\$US/bbl	\$US/bbl	\$US/bbl	\$US/bbl	\$US/bbl	\$US/bbl	\$US/bbl	\$US/bbl
Forecast												
2023 (3 mos)	94.50	94.95	93.60	93.60	91.80	93.60	95.40	92.25	98.10	78.30	91.35	65.25
2024	86.63	87.04	85.80	85.80	84.15	85.80	87.45	84.56	89.93	71.78	83.74	59.81
2025	80.33	80.71	79.56	79.56	78.03	79.56	81.09	78.41	83.39	66.56	77.65	55.46
2026	79.20	79.58	78.45	78.45	76.94	78.45	79.95	77.31	82.22	65.62	76.56	54.69
2027	80.78	81.17	80.02	80.02	78.48	80.02	81.55	78.86	83.86	66.94	78.09	55.78
2028	82.40	82.79	81.62	81.62	80.05	81.62	83.18	80.44	85.54	68.27	79.65	56.90
2029	84.05	84.45	83.25	83.25	81.65	83.25	84.85	82.05	87.25	69.64	81.25	58.03
2030	85.73	86.14	84.91	84.91	83.28	84.91	86.55	83.69	88.99	71.03	82.87	59.19
2031	87.44	87.86	86.61	86.61	84.95	86.61	88.28	85.36	90.77	72.45	84.53	60.38
2032	89.19	89.62	88.34	88.34	86.64	88.34	90.04	87.07	92.59	73.90	86.22	61.59
2033	90.98	91.41	90.11	90.11	88.38	90.11	91.84	88.81	94.44	75.38	87.94	62.82
2034	92.80	93.24	91.91	91.91	90.14	91.91	93.68	90.59	96.33	76.89	89.70	64.07
2035	94.65	95.10	93.75	93.75	91.95	93.75	95.55	92.40	98.26	78.43	91.50	65.35
2036	96.54	97.00	95.63	95.63	93.79	95.63	97.46	94.25	100.22	79.99	93.33	66.66
2037	98.48	98.94	97.54	97.54	95.66	97.54	99.41	96.13	102.23	81.59	95.19	68.00