

McDaniel & Associates Consultants Ltd.

Summary of Price Forecasts

July 1, 2022

Year	Crude Oil Price Forecasts							Liquids Price Forecasts					Gas Price Forecasts								
	WTI Crude Oil \$/bbl	Brent Crude Oil \$/bbl	Edmonton Light Crude Oil \$/bbl	Alberta Bow River Hardisty Crude Oil \$/bbl	Western Canadian Select Crude Oil \$/bbl	Alberta Heavy Crude Oil \$/bbl	Sask Cromer Medium Crude Oil \$/bbl	Edmonton Ethane \$/bbl	Edmonton Propane \$/bbl	Edmonton Butanes \$/bbl	Edmonton Cond. & Natural Gasolines \$/bbl	U.S. Henry Hub Gas Price \$/MMBtu	Alberta AECO Spot Price \$/MMBtu	Alberta Average Plantgate \$/MMBtu	Alberta Aggregator Plantgate \$/MMBtu	Empress \$/MMBtu	Sask. Prov. Gas Plantgate \$/MMBtu	British Columbia Average Plantgate \$/MMBtu	British Columbia Station 2 \$/MMBtu	Inflation %	US/CAN Exchange Rate \$US/\$CAN
	(1)	(2)	(3)	(4)	(5)	(6)	(7)					(8)	(9)								
History																					
2012	94.20	111.65	86.10	74.35	73.10	63.65	82.10		28.60	69.55	100.80	2.75	2.45	2.25	2.25	2.30	2.30	2.25	2.40	1.55	1.000
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 (6 mos)	101.05	105.55	126.30	111.20	111.00	104.65	120.45		56.00	69.05	129.60	5.95	5.45	5.25	5.25	6.20	6.00	5.25	5.40	6.35	0.785
Forecast																					
2022 (6 mos)	101.50	104.50	127.56	113.53	108.43	105.24	121.19	23.20	51.03	63.78	123.56	6.25	6.00	5.80	5.80	6.80	6.40	5.75	5.95	0.0	0.780
2023	89.25	92.31	109.29	93.45	92.90	84.70	103.83	18.77	43.72	54.65	109.29	5.10	4.90	4.69	4.69	5.30	5.15	4.64	4.85	2.0	0.780
2024	81.15	84.27	97.63	83.47	82.99	75.66	92.75	15.81	39.05	48.81	100.23	4.47	4.16	3.95	3.95	4.58	4.42	3.90	4.11	2.0	0.780
2025	74.28	77.47	88.70	75.84	75.39	68.74	84.26	15.07	35.48	44.35	91.35	4.46	3.98	3.77	3.77	4.40	4.24	3.71	3.93	2.0	0.780
2026	75.77	79.02	90.47	77.35	76.90	70.12	85.95	15.37	36.19	45.24	93.18	4.55	4.06	3.84	3.84	4.49	4.33	3.79	4.00	2.0	0.780
2027	77.29	80.60	92.28	78.90	78.44	71.52	87.67	15.68	36.91	46.14	95.04	4.64	4.14	3.92	3.92	4.58	4.42	3.86	4.09	2.0	0.780
2028	78.83	82.21	94.13	80.48	80.01	72.95	89.42	15.99	37.65	47.06	96.94	4.73	4.22	4.00	4.00	4.67	4.50	3.94	4.17	2.0	0.780
2029	80.41	83.85	96.01	82.09	81.61	74.41	91.21	16.31	38.40	48.00	98.88	4.82	4.31	4.08	4.08	4.77	4.59	4.02	4.25	2.0	0.780
2030	82.02	85.53	97.93	83.73	83.24	75.90	93.03	16.64	39.17	48.96	100.86	4.92	4.39	4.16	4.16	4.86	4.69	4.10	4.34	2.0	0.780
2031	83.66	87.24	99.89	85.40	84.91	77.41	94.89	16.97	39.96	49.94	102.88	5.02	4.48	4.24	4.24	4.96	4.78	4.18	4.42	2.0	0.780
2032	85.33	88.99	101.89	87.11	86.60	78.96	96.79	17.31	40.75	50.94	104.93	5.12	4.57	4.33	4.33	5.06	4.88	4.27	4.51	2.0	0.780
2033	87.04	90.77	103.92	88.86	88.34	80.54	98.73	17.66	41.57	51.96	107.03	5.22	4.66	4.41	4.41	5.16	4.97	4.35	4.60	2.0	0.780
2034	88.78	92.58	106.00	90.63	90.10	82.15	100.70	18.01	42.40	53.00	109.17	5.33	4.76	4.50	4.50	5.26	5.07	4.44	4.69	2.0	0.780
2035	90.55	94.43	108.12	92.44	91.90	83.79	102.72	18.37	43.25	54.06	111.36	5.43	4.85	4.59	4.59	5.37	5.17	4.53	4.79	2.0	0.780
2036	92.36	96.32	110.29	94.29	93.74	85.47	104.77	18.74	44.11	55.14	113.58	5.54	4.95	4.68	4.68	5.48	5.28	4.62	4.88	2.0	0.780
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	0.780

(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. 2021 historical prices: 7A \$3.55/MMBTU, 5A \$3.60/MMBTU

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

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Summary of Price Forecasts (Real Prices - 2022 \$)

July 1, 2022

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																					
2012	94.20	111.65	86.10	74.35	73.10	63.65	82.10		28.60	69.55	100.80	2.75	2.45	2.25	2.25	2.30	2.30	2.25	2.40	1.55	1.000
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
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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
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2023	87.50	90.50	107.15	91.61	91.08	83.04	101.79	18.40	42.86	53.58	107.15	5.00	4.80	4.60	4.60	5.20	5.05	4.55	4.75	2.0	0.780
2024	78.00	81.00	93.84	80.23	79.76	72.72	89.15	15.20	37.54	46.92	96.34	4.30	4.00	3.80	3.80	4.40	4.25	3.75	3.95	2.0	0.780
2025	70.00	73.00	83.58	71.46	71.04	64.78	79.40	14.20	33.43	41.79	86.08	4.20	3.75	3.55	3.55	4.15	4.00	3.50	3.70	2.0	0.780
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(9) This forecast also applies to direct sales contracts and the Alberta gas reference price used in the Crown royalty calculations