MANAGEMENT'S DISCUSSION AND ANALYSIS

The following is management's discussion and analysis ("MD&A") of Perpetual Energy Inc.'s ("Perpetual", the "Company" or the "Corporation") operating and financial results for the year ended December 31, 2022, as well as information and estimates concerning the Corporation's future outlook based on currently available information. This discussion should be read in conjunction with the Corporation's audited consolidated financial statements and accompanying notes for the years ended December 31, 2022 and 2021. The Corporation's consolidated financial statements are prepared in accordance with Canadian generally accepted accounting principles ("GAAP") which require publicly accountable enterprises to prepare their financial statements using International Financial Reporting Standards ("IFRS"). The date of this MD&A is March 2, 2023.

This MD&A contains certain specified financial measures that are not recognized by GAAP and used by management to evaluate the performance of the Corporation and its business. Since certain specified financial measures may not have a standardized meaning, securities regulations require that specified financial measures are clearly defined, qualified and, where required, reconciled with their nearest GAAP measure. See "Non-GAAP and Other Financial Measures" for further information on the definition, calculation and reconciliation of these measures. This MD&A also contains forward-looking information. See "Forward-Looking Information". Readers are also referred to the other advisory sections in this MD&A for additional information.

NATURE OF BUSINESS: Perpetual is an oil and natural gas exploration, production and marketing company headquartered in Calgary, Alberta. Additional information on Perpetual, including the most recently filed Annual Information Form, can be accessed at www.sedar.com or from the Corporation's website at www.perpetualenergyinc.com.

FOURTH QUARTER AND ANNUAL 2022 OPERATIONAL AND FINANCIAL HIGHLIGHTS

- Fourth quarter average production was 7,138 boe/d, up 12% from the comparative period of 2021 (Q4 2021 – 6,359 boe/d) and up 21% quarter over quarter (Q3 2022 – 5,882 boe/d) and within of the guidance to exceed 7,000 boe/d in the fourth quarter of 2022. Production for full year 2022 averaged 6,486 boe/d (20% heavy crude oil and NGL), an increase of 20% from 5,389 boe/d (24% heavy crude oil and NGL) in 2021. Production growth was driven by successful core area drilling programs. At East Edson, four (2.0 net) wells were drilled and placed on production in the fourth quarter of 2021 and six (3.0 net) Wilrich wells were drilled and placed on production during the second half of 2022. Due to high gathering line pressures, one (0.5 net) Notikewin well drilled, completed, and tied-in in 2022 was placed on production in the first quarter of 2023. At Mannville, two (2.0 net) horizontal multi-lateral heavy oil wells were drilled and placed on production late in the first quarter of 2022 and three (3.0 net) new horizontal, multi-lateral heavy oil wells were on production in the third quarter of 2022.

- Perpetual's exploration and development spending[(2)] in the fourth quarter of 2022 was minimal as both core areas completed a majority of the capital programs in the third quarter of 2022. Spending at East Edson in the fourth quarter was $1.3 million and included the remaining costs to test and place on production the seven (3.5 net) horizontal wells that were drilled during the third quarter of 2022. At Mannville in Eastern Alberta, the $1.3 million of capital recovered during the fourth quarter was related to the recovery of oil based mud ("OBM") load fluid from the three (3.0 net) wells drilled during the third quarter of 2022. Full year 2022 exploration and development capital spending totaled $31.9 million, up from $19.1 million in 2021. In 2022, the Company spent $1.6 million on Crown land purchases at East Edson with its 50% joint interest partner. In addition, close to $1.5 million was spent on asset retirement obligations ("ARO") during the year to abandon wells that had reached their end of life and execute surface lease reclamation activities, including $1.2 million of ARO spending in the fourth quarter. Four reclamation certificates were received in 2022.

- Oil and natural gas revenue for the fourth quarter of 2022 was $28.6 million, 33% higher than revenue in the comparative period of 2021 due to significantly higher reference prices for all products and the 12% increase in production. Fourth quarter revenue increased 25% from the third quarter of 2022 as production increased 21% and realized prices increased 3% on higher gas prices. Realized prices after gains on risk management contracts[(2)] decreased 5% relative to the third quarter. During the period there were $0.1 million of realized gains on risk management contracts, as compared to a realized gain of $2.1 million in third quarter. Revenue net of $4.6 million in realized losses on risk management contracts for full year 2022 was $105.1 million, close to double the $56.0 million of revenue in 2021 (net of $4.8 million of realized losses on risk management contracts) due to the combined effect of higher production and stronger realized commodity prices.

- Adjusted funds flow[(2)] in the fourth quarter of 2022 was $14.2 million ($0.22/share), up $5.6 million (65%) from the prior year period of $8.6 million ($0.13/share). Adjusted funds flow on a unit-of-production basis was $21.63/boe in the fourth quarter of 2022, a 47% increase from the prior year period of $14.67/boe, driven by the increase in commodity prices and higher production volumes. Adjusted funds flow recorded for 2022 was $48.5 million ($0.75 per share), up $31.7 million (189%) from $16.7 million ($0.27/share) in 2021.

- Net cash flows from operating activities in the fourth quarter of 2022 were $11.2 million, up $9.6 million (592%) from the comparative period of 2021 (Q4 2021 – $1.6 million). The increase was due to higher realized prices for all products and the 12% increase in production, partially offset by higher cash costs in all categories except general and administrative ("G&A") costs which were lower on higher recoveries related to overheads and costs recovered under the Management and Operating Services Agreement (the "MSA") with Rubellite. Net cash flows from operating activities for 2022 were $37.8 million (2021 - $12.8 million).

- Net income for the fourth quarter of 2022 was $9.3 million (Q4 2021 – $5.7 million). Net income in the fourth quarter of 2022 increased due to the same reasons that impacted adjusted fund flows and the $2.0 million unrealized gain on risk management contracts. Net income in 2022 was $44.4 million ($0.69/share) as compared to $81.1 million ($1.29/share) in 2021.

- Cash costs[(2)] were $9.1 million or $13.86/boe in the fourth quarter of 2022, up 8% (down 4% on a unit-of-production basis) from the comparative period (Q4 2021 – $8.4 million or $14.41/boe). The increase was due to the impact of higher production, partially offset by lower G&A costs due to higher recoveries. Cash costs were $34.4 million ($14.55/boe) in 2022, up 23% from 2021 ($2021 - $27.9 million; $14.19/boe) as inflationary pressures were somewhat offset by efficiency gains related to higher production levels across a largely fixed operating cost base.

- As at December 31, 2022, net debt[(2)] was $56.3 million, a decrease of 4% from December 31, 2021, as adjusted funds flow exceeded capital expenditures and payments related to the retained East Edson royalty obligations during 2022. As compared to the third quarter of 2022, net debt decreased $9.8 million (15%) as adjusted funds flow exceeded capital expenditures during the fourth quarter. The majority of Perpetual's 2022 capital spending at East Edson and Mannville was executed during the third quarter, with production additions gradually contributing to sales volumes by late September. By December 31, 2022, higher sales volumes combined with limited additional capital spending during the fourth quarter generated free funds flows[(2)] which was applied to reduce bank debt.

- Perpetual had available liquidity (see "Capital Management") at December 31, 2022 of $13.9 million, comprised of the $30.0 million borrowing limit of Perpetual's first lien credit facility ("Credit Facility Borrowing Limit") Credit Facility Borrowing Limit, less current borrowings and letters of credit of $14.9 million and $1.2 million, respectively.

(1) See "Fourth Quarter Financial and Operating - Production" section of this MD&A for details of product components that comprise Perpetual's boe production.
(2) Non-GAAP measure and ratio. Refer to the section entitled "Non-GAAP and Other Financial Measures" contained within this MD&A for an explanation of composition.

2023 OUTLOOK

Perpetual's Board of Directors has approved exploration and development capital spending[1] of $25 - $32 million for full year 2023, including $8 to $10 million to be spent in the first quarter to drill two (1.0 net) wells at East Edson and related pipeline infrastructure. The remainder of the 2023 capital program is expected to be concentrated in the third quarter of 2023 and focused primarily at East Edson. The 2023 capital program is forecast to be fully funded from the Company's credit facility and adjusted funds flow[1].

Drilling commenced on a two well pad (1.0 net) at East Edson in late February, targeting development of the Wilrich formation. During the second half of 2023, Perpetual is planning to participate at its 50% working interest in an East Edson drilling program to drill, complete, equip and tie-in an additional four to six (2.0 to 3.0 net) horizontal wells in the Wilrich formation to fill the West Wolf gas plant in order to maximize natural gas and NGL sales through next winter.

At Mannville in Eastern Alberta, Perpetual continues to monitor performance of the horizontal, multi-lateral wells drilled in 2022 targeting heavy oil in the Sparky formation. Planning activities are underway to drill one follow-up multi-lateral well in the second half of 2023. Perpetual will also continue to focus on waterflood optimization and battery consolidation projects as well as shallow gas recompletions and abandonment and reclamation activities at the Mannville property.

Exploration and development capital spending for Perpetual for full year 2023 is expected to be $25 to $32 million, with $8 to $10 million to be spent in the first quarter. The table below summarizes anticipated capital spending and drilling activities for Perpetual for the first quarter and full year of 2023.

	Q1 2023 (*$ millions*)	**# of wells (*gross/net*)**	**2023 (*$ millions*)**	**# of wells (*gross/net*)**
West Central	$8 - $10	2 / 1.0	$22 - $28	6 - 8 / 3.0 - 4.0
Eastern Alberta[1]	$—	—	$3 - 4	1 / 1.0
Total[2]	**$8 - $10**	**2 / 1.0**	**$25 - $32**	**7 - 9 / 4.0 - 5.0**

(1) Oil-based mud load fluid is recycled for future drilling operations to the extent possible, or sold and credited back to drilling capital.
(2) Excludes abandonment and reclamation spending and acquisitions or land expenditures, if any.

Total Company average production is expected to be stable year over year at 6,400 to 6,600 boe/d (22% oil and NGL) in 2023. Cash costs (see "Non-GAAP and Other Financial Measures") are expected to be similar to 2022 levels to average between $16 and $18 per boe for the calendar year.

2023 Guidance assumptions are as follows:

	2023 Guidance
Exploration and development expenditures[1][2](*$ millions*)	$25 - $32
Cash costs[1] (*$/boe*)	$16 - $18
Royalties (% of revenue)[1]	16 - 18%
Average daily production (*boe/d*)	6,400 - 6,600
Production mix (%)	22% oil and NGL

(1) Non-GAAP measure and ratio. Refer to the section entitled "Non-GAAP and Other Financial Measures" contained within this MD&A for an explanation of composition.
(2) Excludes abandonment and reclamation spending and acquisitions or land expenditures, if any.

Perpetual will continue addressing asset retirement obligations ("ARO"), with total abandonment and reclamation expenditures of approximately $1.5 to 2.0 million planned for 2023. This exceeds the Company's annual area-based closure Alberta Energy Regulatory ("AER") mandatory spending requirement of $1.4 million.

(1) Non-GAAP measure and ratio. Refer to the section entitled "Non-GAAP and Other Financial Measures" contained within this MD&A for an explanation of composition.

FOURTH QUARTER FINANCIAL AND OPERATING RESULTS

Cash Flow used in Investing Activities, Capital Expenditures, Acquisitions and Dispositions

Cash flow used in investing activities for the three and twelve months ended December 31, 2022 was $6.8 million (Q4 2021 - $49.2 million) and $40.9 million (2021 - $43.7 million). In addition to cash flow used in investing activities, Perpetual uses capital expenditures to measure its capital investments compared to the Company's annual budgeted expenditures, which excludes acquisition and disposition activities. "Capital expenditures" is not a standardized measure and, therefore, may not be comparable with the calculation of similar measures by other entities.

For reconciliation of cash flow used in investing activities to capital expenditures, refer to the section entitled "Non-GAAP and Other Financial Measures" contained within this MD&A.

The following table summarizes capital spending for both property, plant and equipment assets and exploration and evaluation assets, excluding non-cash items:

	Three months ended December 31,		Twelve months ended December 31,	
($ thousands)	**2022**	2021	**2022**	2021
Exploration and development	**8**	7,558	**31,772**	19,060
Corporate assets	**107**	—	**137**	2
Capital expenditures	**115**	7,558	**31,909**	19,062

Exploration and development spending by area

	Three months ended December 31,		Twelve months ended December 31,	
($ thousands)	**2022**	2021	**2022**	2021
West Central	**1,283**	7,382	**18,977**	15,522
Eastern Alberta	**(1,275)**	176	**12,795**	3,538
Total	**8**	7,558	**31,772**	19,060

Wells drilled by area

	Three months ended December 31,		Twelve months ended December 31,	
(gross/net)	**2022**	2021	**2022**	2021
West Central	**-/-**	4.0/2.0	**7/3.5**	9/4.5
Eastern Alberta	**-/-**	-/-	**5/5.0**	5/4.0
Total	**-/-**	4.0/2.0	**12/8.5**	14/8.5

Perpetual's exploration and development capital spending in 2022 was $31.8 million, of which $19.0 million was attributable to the East Edson drilling program, which restarted at the end of the second quarter and resulted in seven (3.5 net) wells drilled, completed, equipped, tied-in and six (3.0 net) placed on production. Due to high line pressures, the remaining one (0.5 net) well was placed on production in the first quarter of 2023. At Mannville in Eastern Alberta, the Company spent $12.8 million to drill, complete and place on production five (5.0 net) horizontal, multi-lateral wells, targeting heavy oil in the Sparky formation during 2022. The Company also spent $1.6 million on Crown land purchases at East Edson with its 50% joint interest partner during 2022.

Perpetual's exploration and development spending in the fourth quarter of 2022 was minimal, of which $1.3 million was attributable to the East Edson drilling program. Costs in the fourth quarter were remaining costs to complete, test and place on production the three (1.5 net) horizontal wells that were drilled during the third quarter of 2022. At Mannville in Eastern Alberta, the $1.3 million of capital recovered during the fourth quarter was related to the recovery of OBM load fluid from the three (3.0 net) wells drilled during the third quarter of 2022. Recoveries of OBM are not recorded as sales production as the OBM is recycled for future drilling operations to the extent possible, or sold and credited back to drilling capital. The Company also spent $0.3 million on Crown land purchases at East Edson with its 50% joint interest partner in the fourth quarter of 2022.

Acquisitions and Dispositions

There were no acquisitions or dispositions during 2022.

During the first quarter of 2021, Perpetual participated for its 50% working interest in the acquisition of certain undeveloped lands, wells, pipelines and gross overriding royalties from a third party in the East Edson core area, for net consideration of $0.6 million. Dispositions during the first quarter of 2021 also included the sale of non-operated equipment for net proceeds to Perpetual of $0.2 million.

On September 3, 2021, the Company closed the sale of the Clearwater assets in Eastern Alberta (the "Clearwater Assets") to Rubellite for total consideration of $65.5 million, including $53.6 million in promissory notes, the assumption by Rubellite of $5.8 million in promissory notes due to 197Co, the return to Perpetual of 8.2 million Perpetual common shares valued at $2.8 million, 0.7 million Rubellite common shares ("AIMCo Bonus Shares") valued at $1.4 million, and the issuance of Rubellite Share Purchase Warrants to purchase 4.0 million Rubellite common shares valued at $2.0 million (the "Rubellite Transaction"). The promissory notes related to the Rubellite Transaction were repaid on October 5, 2021.

Expenditures on decommissioning obligations

During the fourth quarter of 2022, Perpetual executed $1.2 million (Q4 2021 – $0.6 million) of abandonment and reclamation projects, of which $0.1 million (Q4 2021 - $0.2 million) was funded by SRP. SRP funding is presented on the consolidated statements of income and comprehensive income as other income. There were 3 reclamation certificates received from the Alberta Energy Regulator ("AER") during the fourth quarter of 2022 and a total of 4 for the year (2021 – 15 reclamation certificates). Total abandonment and reclamation expenditures of $1.5 million were completed in 2022, with $0.3 million funded through the SRP. Abandonment and reclamation spending eventually leads to the cessation of associated property tax and surface lease expenses, reducing future operating costs. Subsequent to year-end, one additional reclamation certificate was received from the AER.

Production

	Three months ended December 31,		Twelve months ended December 31,	
	2022	2021	**2022**	2021
Production				
Conventional natural gas *(Mcf/d)*[(1)]	**33,024**	31,500	**31,033**	24,568
Conventional heavy crude oil *(bbl/d)*[(2)]	**1,126**	714	**898**	963
NGL *(bbl/d)*[(3)]	**508**	395	**416**	331
Total production (*boe/d*)	**7,138**	6,359	**6,486**	5,389

(1) Conventional natural gas production yielded a heat content of 1.17 GJ/Mcf for the three months ended December 31, 2022 (Q4 2021 – 1.17), resulting in higher realized natural gas prices on a $/Mcf basis.
(2) Primarily from Eastern Alberta.
(3) Primarily from West Central which produces liquids-rich conventional natural gas.

	Three months ended December 31,		Twelve months ended December 31,	
	2022	2021	**2022**	2021
Production by core area				
West Central	**5,493**	5,178	**5,149**	4,008
Eastern Alberta	**1,645**	1,181	**1,337**	1,381
Total production *(boe/d)*	**7,138**	6,359	**6,486**	5,389

Fourth quarter production averaged 7,138 boe/d, up 12% from 6,359 boe/d in the comparative period of 2021. In the fourth quarter of 2022, the production mix was comprised of 77% conventional natural gas and 23% conventional heavy crude oil and NGL, as compared to 83% of conventional natural gas and 17% conventional heavy crude oil and NGL in the fourth quarter of 2021. Production levels steadily increased during the fourth quarter of 2022 as six (3.0 net) Edson wells were added late in the third quarter of 2022 and five (5.0 net) Mannville wells were brought on production during the second and third quarters of 2022.

Fourth quarter conventional natural gas production averaged 33.0 MMcf/d, an increase of 5% from 31.5 MMcf/d in the comparative period of 2021 with production additions from six (3.0 net) of the new East Edson liquids-rich gas wells beginning to contribute to production midway through the second half of 2022, partially offset by natural declines.

Conventional heavy crude oil production averaged 1,126 bbl/d which was 58% higher than the fourth quarter of 2021. The increase year-over-year was primarily due to the five (5.0 net) new multi-lateral heavy oil wells drilled at Mannville and brought on production through the second and third quarters of 2022.

Fourth quarter NGL production was 508 bbl/d, 29% higher than the comparative period of 2021. The increase in NGL production is closely tied to higher conventional natural gas production at East Edson, where NGL yields were 17.0 bbl per MMcf in the fourth quarter of 2022 (Q4 2021 – 12.5 bbl per MMcf). Perpetual's average NGL sales composition for the fourth quarter of 2022 consisted of 55% condensate, slightly higher than the prior year period when condensate represented 53% of total NGL production as additional capital was spent during the second half of 2022 on facility optimization to reduce emissions and increase NGL recoveries.

For the twelve months ended December 31, 2022, production increased 20% to 6,486 boe/d compared to 5,389 boe/d in the comparative 2021 period. Production levels steadily increased as new wells were brought on production in both core areas, partially offset by the disposition of the Clearwater Assets in the third quarter of 2021 and natural declines.

Oil and Natural Gas Revenue

	Three months ended December 31,		Twelve months ended December 31,	
(*$ thousands, except as noted*)	**2022**	2021	**2022**	2021
Oil and natural gas revenue				
Natural gas	**17,546**	13,914	**66,781**	33,012
Oil	**7,368**	4,863	**29,538**	20,172
NGL	**3,665**	2,672	**13,368**	7,630
Oil and natural gas revenue	**28,579**	21,449	**109,687**	60,814

	Three months ended December 31,		Twelve months ended December 31,	
	2022	2021	**2022**	2021
Average Benchmark Prices				
NYMEX Daily Index *(US$/MMBtu)*	**5.59**	5.83	**6.47**	3.84
AECO 5A Daily Index *($/GJ)*	**4.94**	4.18	**5.06**	3.26
AECO 5A Daily Index *($/Mcf)*(1)	**5.21**	4.41	**5.34**	3.44
West Texas Intermediate ("WTI") *(US$/bbl)*	**82.64**	77.13	**94.22**	67.90
Exchange rate *(US$/CAD$)*	**1.36**	1.26	**1.30**	1.25
West Texas Intermediate ("WTI") *(CAD$/bbl)*	**112.39**	97.18	**122.49**	84.88
Western Canadian Select ("WCS") *(CAD$/bbl)*	**77.33**	78.65	**98.49**	68.76
WCS differential to WTI *(US$/bbl)*	**(25.70)**	(14.63)	**(18.23)**	(13.04)
Perpetual Average Realized Prices(2)				
Natural gas *($/Mcf)*	**5.78**	4.80	**5.90**	3.15
Oil *($/bbl)*	**71.14**	73.96	**90.15**	57.36
NGL *($/bbl)*	**78.36**	73.44	**88.05**	63.24
Average realized price *($/boe)*	**43.52**	36.66	**46.33**	30.92

(1) Converted from $/GJ using a standard energy conversion rate of 1.06 GJ:1 Mcf.
(2) Non-GAAP ratio. Refer to the section entitled "Non-GAAP and Other Financial Measures" contained within this MD&A for an explanation of composition.

Perpetual's oil and natural gas revenue for the three months ended December 31, 2022 of $28.6 million was a 33% increase from $21.4 million in the comparative period due to the 12% increase in average production combined with the impact of higher reference prices for all products. Oil and natural gas revenue for the twelve months ended December 31, 2022 of $109.7 million was 80% higher than 2021, due to higher reference prices and the 20% increase in average production.

Natural gas revenue of $17.5 million in the fourth quarter of 2022 comprised 61% (Q4 2021 – 65%) of total revenue while natural gas production was 77% (Q4 2021 – 83%) of total production. Natural gas revenue was 26% higher than the comparative period (Q4 2021 – $13.9 million), reflecting the combined impact of higher AECO Daily Index prices and the 5% increase in conventional natural gas production volumes driven by drilling activity at East Edson. For the twelve months ended December 31, 2022, natural gas revenue was 102% higher than the prior year, as a result of the 26% increase in average production and higher AECO gas prices.

Oil revenue of $7.4 million represented 26% (Q4 2021 –23%) of total revenue while conventional heavy crude oil production was 16% (Q4 2021 – 11%) of total production. Oil revenue was 52% higher than the fourth quarter of 2021, as a result of the 58% increase in heavy crude oil production. Compared to the fourth quarter of 2021, the WCS average price of $77.33/bbl (Q4 2021 - $78.65/bbl) was down slightly as the increase in WTI coupled with the increase in the US$/CAD$ exchange rate was offset by the widening WCS differential on WTI oil prices. Perpetual's realized oil prices further reflects a price offset for quality which averaged $6.19/bbl during the quarter (Q4 2021 - $8.34/bbl). For the twelve months ended December 31, 2022, oil revenue was 46% higher compared to the prior year, as a result of higher reference prices, partially offset by the widening differential between WCS and WTI oil prices and the 7% decline in average production as result of the sale of the Clearwater Assets.

NGL revenue for the fourth quarter of 2022 of $3.7 million represented 13% (Q4 2021 – 12%) of total revenue while NGL production was 7% (Q4 2021 – 6%) of total production. NGL revenue increased 37% from the comparative period, reflecting the 29% increase in NGL production which was driven by both higher gas production and the 23% increase in NGL yield at East Edson as well as the increase in NGL component prices compared to the prior year period, in step with the rise in WTI oil prices. For the twelve months ended December 31, 2022, NGL revenue was 75% higher than the prior year, as a result of the 26% increase in average production and higher reference prices.

Risk Management Contracts

The Company uses financial derivatives, physical delivery contracts and market diversification strategies to manage commodity price risk. Derivative contracts are put in place to manage fluctuations in commodity prices, protecting Perpetual's cash flows from potential volatility. The Company's market diversification strategies balance pricing exposure over multiple markets and are put in place to mitigate market and delivery point risks and dislocations. As a result, Perpetual's realized prices deviate from the index prices. The Company uses "average realized prices after risk management contracts" which is not a standardized measure, and therefore may not be comparable with the calculation of similar measures by other entities. The measure is used by management to calculate the Company's net realized commodity prices, taking into account the monthly settlements of physical and financial crude oil and natural gas forward sales, collars, basis differentials and forward foreign exchange sales.

	Three months ended December 31,		Twelve months ended December 31,	
($ thousands, except as noted)	**2022**	2021	**2022**	2021
Unrealized gain (loss) on foreign exchange contracts	**218**	—	**30**	—
Unrealized gain (loss) on natural gas contracts	**1,412**	1,551	**2,159**	4,033
Unrealized gain (loss) on oil contracts	**337**	(249)	**1,298**	(300)
Unrealized gain (loss) on risk management contracts	**1,967**	1,302	**3,487**	3,733
Realized gain (loss) on natural gas contracts	**374**	1	**(491)**	(4,748)
Realized gain (loss) on oil contracts	**(225)**	(62)	**(4,129)**	(62)
Realized gain (loss) on risk management contracts	**149**	(61)	**(4,620)**	(4,810)
Change in fair value of risk management contracts	**2,116**	1,241	**(1,133)**	(1,077)

The following table calculates average realized prices after risk management contracts, which is not a standardized measure:

	Three months ended December 31,		Twelve months ended December 31,	
	2022	2021	**2022**	2021
Realized gain (loss) on risk management contracts [(1)]				
Realized gain (loss) on natural gas contracts *($/Mcf)*	**0.12**	(0.02)	**(0.04)**	(0.54)
Realized loss on oil contracts *($/bbl)*	**(2.17)**	—	**(12.60)**	—
Realized gain (loss) on risk management contracts (*$/boe*)	**0.21**	(0.10)	**(1.96)**	(2.45)
Average realized prices after risk management contracts[(1)]				
Natural gas *($/Mcf)*	**5.90**	4.80	**5.86**	3.15
Oil *($/bbl)*	**68.97**	73.96	**77.55**	57.36
NGL (*$/bbl*)	**78.36**	73.44	**88.05**	63.24
Average realized price (*$/boe)*	**43.73**	36.56	**44.37**	28.47

(1) Refer to the section entitled "Non-GAAP and Other Financial Measures" contained within this MD&A for an explanation of composition.

Realized gains on risk management contracts totaled $0.1 million for the fourth quarter of 2022, compared to losses of $0.1 million for the comparative period of 2021. Realized losses on risk management contracts totaled $4.6 million for the twelve months of 2022 (2021 - $4.8 million realized loss).

Unrealized gains on risk management contracts were $2.0 million in the fourth quarter of 2022 (Q4 2021 – unrealized gains of $1.3 million) and unrealized gains were $3.5 million for the year ended December 31, 2022 (2021 – unrealized gains of $3.7 million). Unrealized gains and losses represent the change in mark-to-market value of derivative contracts as forward commodity prices and foreign exchange rates change. Unrealized gains and losses on derivatives are excluded from the Company's calculation of cash flow from operating activities as non-cash items. Derivative gains and losses vary depending on the nature and extent of derivative contracts in place, which in turn, vary with the Company's assessment of commodity price risk, committed capital spending and other factors.

Royalties

	Three months ended December 31,		Twelve months ended December 31,	
(*$ thousands, except as noted*)	**2022**	2021	**2022**	2021
Crown royalties				
Natural gas	**1,533**	460	**5,411**	126
Oil	**91**	595	**1,999**	1,116
NGL	**856**	203	**2,104**	860
Total Crown royalties	**2,480**	1,257	**9,514**	2,102
Freehold and overriding royalties				
Natural gas	**1,643**	1,753	**6,888**	4,849
Oil	**1,000**	378	**3,388**	1,607
NGL	**154**	397	**1,000**	1,364
Total freehold and overriding royalties	**2,797**	2,528	**11,276**	7,820
Total royalties	**5,277**	3,786	**20,790**	9,920
$/boe	**8.04**	6.47	**8.78**	5.04
Royalties as a percentage of revenue[(1)]				
Crown	**8.7**	5.9	**8.7**	3.5
Freehold and overriding	**9.8**	11.8	**10.3**	12.9
Total *(% of oil and natural gas revenue)*	**18.5**	17.7	**19.0**	16.4
Natural gas royalties *(% of natural gas revenue)*	**18.1**	15.9	**18.4**	15.1
Oil royalties *(% of oil revenue)*	**14.8**	20.0	**18.2**	13.5
NGL royalties *(% of NGL revenue)*	**27.6**	22.5	**23.2**	29.1

(1) Non-GAAP ratio. Refer to the section entitled "Non-GAAP and Other Financial Measures" contained within this MD&A for an explanation of composition.

Total royalties for the fourth quarter of 2022 were $5.3 million, 39% higher than the fourth quarter of 2021. On a unit-of-production basis, royalties were up 24% to $8.04/boe (Q4 2021 – $6.47/boe). During the fourth quarter of 2022, royalties were significantly higher as a result of increased production and higher reference prices. The combined average royalty rate increased from 2021 as royalty rates escalate with price under the Crown royalty regime in Alberta. Freehold and overriding royalties increased to $2.8 million from $2.5 million in the fourth quarter of 2021, due to the impact of higher AECO Daily Index and NGL prices.

For the twelve months ended December 31, 2022, royalties were $20.8 million (2021 – $9.9 million), 110% higher than 2021. On a unit-of-production basis, royalties were up 74% to $8.78/boe (2021 – $5.04/boe). Royalties increased relative to 2021, as the Alberta Gas Reference price and AECO Daily index prices, which are used to calculate Crown royalties and certain overriding royalties respectively, increased significantly during 2022 along with oil and NGL prices. In addition, there was a $1.2 million one-time Gas Cost Allowance ("GCA") adjustment on royalties in 2022 which increased royalties for the year ended December 31, 2022 by $0.51/boe.

As part of the sale of 50% of the East Edson property on April 1, 2020, Perpetual had agreed to retain its joint venture partner's 50% working interest in the existing gross overriding royalty obligation on the property, equivalent to 2.8 MMcf/d of natural gas and associated NGL production, for the period April 1, 2020 to December 31, 2022. This obligation has been recorded in the consolidated statement of financial position under the heading "Royalty obligations". Prior to November 1, 2021, the retained East Edson royalty obligation was paid in-kind, and settled through non-cash delivery of contractual natural gas and NGL volumes to the royalty holder. As of November 1, 2021, the royalty obligation is settled through payment in cash. This obligation as of December 31, 2022 has been fully paid.

Production and operating expenses

	Three months ended December 31,		Twelve months ended December 31,	
($ thousands, except as noted)	**2022**	2021	**2022**	2021
Production and operating expenses	**3,828**	2,862	**16,107**	12,859
$/boe	**5.83**	4.89	**6.80**	6.54

Total production and operating expenses increased 19% on a unit-of-production basis to $5.83/boe for the fourth quarter of 2022, compared to $4.89/boe for the fourth quarter of 2021. The increase was related to higher heavy crude oil production as a percentage of total volumes as it has higher operating costs than the Company's conventional natural gas and NGL production at East Edson. Also contributing to higher costs in the fourth quarter of 2022 was higher purchased energy costs at the non-operated East Edson gas processing facility.

For the twelve months ended December 31, 2022, production and operating expenses increased 4% on a unit-of-production basis to $6.80/boe, compared to $6.54/boe for 2021. The increase was due to increased heavy crude oil production in the second half of 2022, along with higher costs in all areas such as chemicals, taxes, purchased energy and well servicing costs. This increase was partially offset by increased conventional natural gas and NGL production at East Edson which has a higher percentage of fixed operating costs and lower overall operating costs than the Company’s conventional heavy crude oil production.

On an absolute dollar basis, production and operating costs increased on higher production volumes.

Transportation costs

	Three months ended December 31,		Twelve months ended December 31,	
($ thousands, except as noted)	**2022**	2021	**2022**	2021
Transportation costs	**1,223**	871	**3,872**	2,993
$/boe	**1.86**	1.49	**1.64**	1.52

Transportation costs include clean oil trucking and NGL transportation, as well as costs to transport natural gas from the plant gate to commercial sales points. Transportation costs in the fourth quarter of 2022 were $1.2 million, a 40% increase from the comparative period of 2021, as a result of higher average production volumes. On a unit-of-production basis, transportation costs increased by 25% to $1.86/boe in the fourth quarter of 2022 (Q4 2021 – $1.49/boe) due to increases in oil trucking costs primarily as a result of higher fuel costs and surcharges and the increase in heavy crude oil production as a percentage of total volumes.

For the twelve months ended December 31, 2022, transportation costs were $3.9 million, an increase of 29% over 2021 on higher average production volumes. On a unit-of-production basis, transportation costs increased by 8% to $1.64/boe (2021 – $1.52/boe) due to higher oil trucking costs in the second half of 2022 and increased transportation rates on the Nova Gas Transportation Line ("NGTL') system.

Operating netbacks

“Operating netback” is a non-GAAP measure determined by deducting royalties, production and operating expenses, and transportation costs from oil and natural gas revenue. Operating netback is also calculated on a per boe basis using total production sold in the period. Perpetual considers operating netback to be an important performance measure to evaluate its operational performance as it demonstrates its profitability relative to commodity prices. Operating netback is not a standardized measure and, therefore, may not be comparable with the calculation of similar measures by other entities.

The following table highlights Perpetual’s operating netbacks for the three and twelve months ended December 31, 2022 and 2021:

	Three months ended December 31,				Twelve months ended December 31,			
($/boe) ($ thousands)		**2022**		2021		**2022**		2021
Production (*boe/d*)		**7,138**		6,359		**6,486**		5,389
Oil and natural gas revenue	**43.52**	**28,579**	36.66	21,449	**46.33**	**109,687**	30.92	60,814
Royalties	**(8.04)**	**(5,277)**	(6.47)	(3,786)	**(8.78)**	**(20,790)**	(5.04)	(9,920)
Production and operating expenses	**(5.83)**	**(3,828)**	(4.89)	(2,862)	**(6.80)**	**(16,107)**	(6.54)	(12,859)
Transportation costs	**(1.86)**	**(1,223)**	(1.49)	(871)	**(1.64)**	**(3,872)**	(1.52)	(2,993)
Operating netback[(1)]	**27.79**	**18,251**	23.81	13,930	**29.11**	**68,918**	17.82	35,042
Realized gain (loss) on risk management contracts	**0.21**	**149**	(0.10)	(61)	**(1.96)**	**(4,620)**	(2.45)	(4,810)
Total operating netback, including risk management contracts	**28.00**	**18,400**	23.71	13,869	**27.15**	**64,298**	15.37	30,232

(1) Non-GAAP measure. Refer to the section entitled “Non-GAAP and Other Financial Measures” for an explanation of composition.

For the fourth quarter of 2022, Perpetual’s operating netback, including risk management contracts, was $18.4 million ($28.00/boe), up 33% from $13.9 million ($23.71/boe) in the comparative period of 2021. The increase was due to higher oil and natural gas revenue driven by increased pricing for all commodities being applied to higher average production volumes and a realized hedging gain. The increase in the fourth quarter of 2022 was partially offset by higher royalties and higher costs in all areas.

For the twelve months ended December 31, 2022 the operating netback, including risk management contracts, was $64.3 million ($27.15/boe) a 113% increase from $30.2 million ($15.37/boe) in 2021. On a unit-of-production basis, the operating netback increased 77% year-over-year. The increase was due to higher oil and natural gas revenue, partially offset by increased costs in all areas and higher royalties driven by higher pricing and the one-time GCA adjustment.

General and administrative ("G&A") expenses

	Three months ended December 31,		Twelve months ended December 31,	
($ thousands, except as noted)	**2022**	2021	**2022**	2021
G&A expense before overhead recoveries	**4,542**	3,847	**14,688**	11,451
MSA recoveries(1)	**(561)**	(303)	**(1,859)**	(438)
Overhead recoveries	**(1,126)**	113	**(2,918)**	(256)
Total G&A expense	**2,855**	3,657	**9,911**	10,757
$/boe	**4.35**	6.25	**4.19**	5.47

(1) Concurrent with the sale of the Clearwater Assets to Rubellite on September 3, 2021, Perpetual entered into a Management and Operating Services Agreement (the "MSA") with Rubellite whereby Perpetual receives payment for certain technical and administrative services provided to Rubellite.

For the three and twelve months ended December 31, 2022, G&A expenses of $2.9 million and $9.9 million decreased 22% and 8%, respectively over the comparative periods. Prior to overhead recoveries, G&A increased over the prior year due to higher employee salaries and benefits, which had been reduced in the prior year in response to the collapse in commodity prices and were gradually re-instated over the second half of 2021. Other increases were related to higher office and administrative costs, partially offset by lower professional fees. Overhead recoveries were higher due to increased capital spending and higher absolute production and operating costs.

For the three and twelve months ended December 31, 2022, the costs billed under the MSA to Rubellite were $0.6 million and $1.9 million, respectively. MSA recoveries in 2022 increased over the comparative period as a result of Rubellite's higher capital activity and increased production. The MSA began in 2021 concurrent with the sale of the Clearwater Assets to Rubellite on September 3, 2021.

During 2021 Perpetual received payments from the Canada Emergency Wage Subsidy ("CEWS") and Canada Emergency Rent Subsidy ("CERS") programs which reduced general and administrative expenses by $0.1 million during the fourth quarter of 2021 and $0.8 million during 2021. There were no payments received in 2022.

Share-based payments

	Three months ended December 31,		Twelve months ended December 31,	
($ thousands, except as noted)	**2022**	2021	**2022**	2021
Share-based payments (non-cash)	**740**	149	**6,184**	360
Share-based payments (cash)	**124**	319	**1,250**	1,684
Total share-based payments	**864**	468	**7,434**	2,044

Share-based payments expense for the three and twelve months ended December 31, 2022 increased to $0.9 million and $7.4 million, respectively, from $0.5 million and $2.0 million in the comparative periods of 2021. The increase in non-cash share-based payments expense is due to an increase in the fair value of grants issued in 2022, which is attributed to the increase in the Company's share price. This was partially offset by a reduction in the cash share-based payments as this plan ended during the fourth quarter of 2022.

During the fourth quarter of 2022, 0.1 million deferred options, 0.1 million deferred shares and 0.1 million restricted rights were granted to Officers, Directors, and employees of the Company. For the twelve months ended December 31, 2022, 1.5 million deferred options, 0.8 million deferred shares, 1.3 million share options, 0.8 million performance share rights, and 3.1 million restricted rights were granted to Officers, Directors and employees of the Company.

Depletion and depreciation

	Three months ended December 31,		Twelve months ended December 31,	
($ thousands, except as noted)	**2022**	2021	**2022**	2021
Depletion and depreciation	**5,633**	4,182	**17,962**	14,020
$/boe	**8.58**	7.15	**7.59**	7.13

The Company calculates depletion using the net book value of the asset, future development costs associated with proved and probable reserves, salvage values on associated production equipment, as well as proved and probable reserves. As at December 31, 2022, depletion was calculated on a $176.1 million depletable balance and $104.6 million in future development costs (2021 – $141.5 million depletable balance and $75.3 million in future development costs). The depletable base excluded an estimated $3.8 million (2021 – $3.4 million) of salvage value.

Depletion and depreciation expense for the fourth quarter of 2022 was $5.6 million or $8.58/boe (Q4 2021 – $4.2 million or $7.15/boe). Depletion and depreciation expense for the twelve months ended December 31, 2022 was $18.0 million or $7.59/boe (2021 – $14.0 million or $7.13/boe). The increases reflect higher average production volumes compared to the comparative periods. On a unit-of-production basis, depletion and depreciation expense increased by 20% compared to the fourth quarter of 2021 and increased by 6% compared to 2021 due to an increase in the depletion rate driven by higher production relative to reserve additions and reversals of impairment booked in 2021 and 2022. Depletion and depreciation expense will fluctuate from one period to the next depending on the amount of capital spent, the amount of reserves added and volumes produced.

Impairment

There were no indicators of impairment for the Company's cash generating units "CGU"s as of December 31, 2022 and therefore an impairment test was not performed.

During the first quarter of 2022, the Company determined that indicators of impairment reversal existed and that the estimated recoverable amounts of the Eastern Alberta CGU exceeded the carrying amounts of $44.8 million. Accordingly, a non-cash impairment reversal of $7.4 million was included in net income. All previous impairment charges that were eligible for reversal had all been reversed as at March 31, 2022 for property, plant and equipment.

During the fourth quarter of 2021, the Company determined that indicators of impairment reversal existed and that the estimated recoverable amounts of the Eastern Alberta CGU exceeded the carrying amounts of $42.2 million. Accordingly, a non-cash impairment reversal of $0.5 million was included in net income.

E&E assets are tested for impairment both at the time of any triggering facts and circumstances as well as upon their reclassification to oil and gas properties in PP&E.

At December 31, 2022, the Company conducted an assessment of indicators of impairment and impairment reversal for the Company's E&E assets and no indicators were identified. The Company transferred undeveloped land to PP&E at a value of $0.2 million, which was equal to the book value in E&E. As a result of the transfer, an impairment test was required on transfer to PP&E and there were no impairments recorded to E&E as at December 31, 2022.

Finance expense

	Three months ended December 31,		Twelve months ended December 31,	
($ thousands)	**2022**	2021	**2022**	2021
Cash finance expense				
Interest on revolving bank debt	**334**	150	**1,031**	953
Interest on term loan	**55**	53	**216**	53
Interest on 2025 Senior Notes(2)	**780**	1,408	**3,184**	1,408
Interest on 2022 Senior Notes(1)	**—**	(608)	**—**	(1,253)
Interest on lease liabilities	**26**	36	**116**	148
Total cash finance expense	**1,195**	1,039	**4,547**	1,309
Non-cash finance expense				
Interest paid in-kind on term loan	**—**	—	**—**	2,743
Interest on 2022 Senior Notes(1)	**—**	—	**—**	1,469
Interest paid in-kind on 2025 Senior Notes(2)	**—**	—	**—**	1,533
Gain on senior note maturity extension	**—**	—	**—**	(1,591)
Gain on senior note extinguishment(3)	**—**	—	**(101)**	(6,820)
Gain on Term Loan substantive modification	**—**	—	**—**	—
Amortization of debt issue costs	**434**	235	**1,864**	962
Accretion on decommissioning obligations	**203**	165	**727**	531
Change in fair value of other liability	**60**	131	**1,678**	1,159
Change in fair value of royalty obligations	**(363)**	(663)	**2,256**	4,101
Total non-cash finance expense	**334**	(132)	**6,424**	4,087
Finance expense recognized in net income (loss)	**1,529**	907	**10,971**	5,396

(1) During 2022, the Company settled semi-annual interest payments in cash, rather than payment-in-kind which was the method used in 2021.
(2) On January 22, 2021, Perpetual's 2022 Senior Notes were exchanged for 2025 Senior Notes, providing Perpetual the option to pay interest in-kind ("PIK"). Perpetual elected to pay the January 23, 2021 semi-annual interest of $1.5 million by a PIK Interest Payment. As a result, the previously accrued 2022 Senior Notes cash interest of $1.3 million was reversed and replaced by $1.3 million of 2025 Senior Note non-cash interest expense. The Company satisfied the semi-annual interest payment due July 23, 2021 by a PIK Interest Payment and accrued $0.8 million of non-cash interest expense for the three months ended March 31, 2021.
(3) During the twelve months ended December 31, 2022 the Company purchased and cancelled $0.9 million of Senior Notes outstanding for gross proceeds of $0.8 million, resulting in a gain on extinguishment of $0.1 million.

Total cash finance expense was $1.2 million in the fourth quarter of 2022, 15% higher than the comparative 2021 period as a result of increased interest rates and higher outstanding bank debt (Q4 2021 – $1.0 million). For the twelve months ended December 31, 2022, cash finance expense was $4.5 million (2021 – $1.3 million) which reflected the payment of interest in cash in 2022 rather than in-kind, partially offset by higher interest on revolving bank debt.

Total non-cash finance expense for the fourth quarter of 2022 was $0.3 million, higher than the comparative period (Q4 2021 – $0.1 million income). For the twelve months ended December 31, 2022, non-cash finance expense was $6.4 million (2021 – $4.1 million). During 2022, the increase was attributable to the payment of interest on the Senior Notes and Term Loan in cash rather than in-kind. Non-cash finance expense is also driven by the change in the fair value of the royalty obligations which is sensitive to changing AECO natural gas and NGL prices and the recognition of future contingent payments related to the Second Lien Loan Settlement which are recorded as other liability with the change being recognized through finance expense. The increase in the fourth quarter was driven by the change in the fair value of the royalty obligations. Perpetual's extra royalty obligation at East Edson terminated December 31, 2022.

LIQUIDITY AND CAPITAL RESOURCES

Perpetual's strategy targets the maintenance of a strong capital base to retain investor, creditor and market confidence to support the execution of its business plans. The Company manages its capital structure and adjusts its capital spending in light of changes in economic conditions such as depressed commodity prices, available liquidity, and the risk characteristics of its underlying oil and natural gas assets. The Company considers its capital structure to include share capital, senior notes, the Term Loan, revolving bank debt, and adjusted net working capital. To manage its capital structure and available liquidity, the Company may from time to time issue equity or debt securities, sell assets, and adjust its capital spending to manage current and projected debt levels. The Company will continue to regularly assess changes to its capital structure and repayment alternatives, with considerations for both short-term liquidity and long-term financial sustainability.

Perpetual uses net debt, adjusted working capital, enterprise value, free funds flow and trailing twelve-months adjusted funds flow as important indicators of capital resources, management and liquidity. These are not standardized measures, and therefore may not be comparable with the calculation of similar measures by other entities, refer to the section entitled "Non-GAAP and Other Financial Measures" contained within this MD&A.

Capital management

($ thousands, except as noted)	December 31, 2022	December 31, 2021
Revolving bank debt	**14,909**	2,487
Term loan, principal amount	**2,671**	2,671
Senior notes, principal amount	**35,647**	36,852
Other liability, undiscounted amount	**3,342**	1,387
Adjusted working capital deficiency (surplus)(1)	**(220)**	16,143
Net debt(1)	**56,349**	59,270
Shares outstanding at end of period (thousands)(3)	**65,944**	63,567
Market price at end of period ($/share)	**0.71**	0.70
Market value of shares(1)	**46,820**	44,496
Enterprise value(1)	**112,764**	103,767
Net debt as a percentage of enterprise value(2)	**50%**	57%
Trailing twelve-months adjusted funds flow(1)	**48,471**	16,746
Net debt to adjusted funds flow(2)	**116%**	354%

(1) Non-GAAP measure. Refer to the section entitled "Non-GAAP and Other Financial Measures" for an explanation of composition.
(2) Non-GAAP ratio. Refer to the section entitled "Non-GAAP and Other Financial Measures" for an explanation of composition.
(3) Shares outstanding are presented net of shares held in trust.

At December 31, 2022, Perpetual had total net debt of $56.3 million, down $2.9 million (5%) from December 31, 2021 as adjusted funds flow exceeded capital expenditures during 2022. The majority of Perpetual's planned 2022 capital spending at East Edson and Mannville was executed during the third quarter, with production additions gradually contributing to sales volumes by late September. By December 31, 2022, increased free funds flows related to increased sales volumes combined with limited additional capital spending during the fourth quarter which reduced net debt.

Perpetual had available liquidity at December 31, 2022 of $13.9 million, comprised of the $30.0 million Credit Facility Borrowing Limit, less current borrowings and letters of credit of $14.9 million and $1.2 million, respectively.

Revolving bank debt

The Company has a first lien credit facility of $30.0 million (December 31, 2021 - $17 million) with an initial term to May 31, 2023. The initial term may be extended to May 31, 2024 subject to approval by the syndicate. If the facility is not extended all outstanding balances would be repayable on May 31, 2024. The next semi-annual borrowing base redetermination is scheduled to be completed on or before May 31, 2023.

As at December 31, 2022, $14.9 million was drawn (December 31, 2021 – $2.5 million) and $1.2 million of letters of credit had been issued (December 31, 2021 – $1.0 million) under the Company's credit facility. Borrowings under the Credit Facility bear interest at its lenders' prime rate or Banker's Acceptance rates, plus applicable margins and standby fees. The applicable Banker's Acceptance margins range between 3.0% and 5.5%. The effective interest rate on the Credit Facility at December 31, 2022 was 7.9%. For the year ended December 31, 2022 if interest rates changed by 1% with all other variables held constant, the impact on annual cash finance expense and net income would be $0.1 million.

The Credit Facility is secured by general first lien security agreements covering all present and future property of the Company and its subsidiaries.

At December 31, 2022, the Credit Facility was not subject to any financial covenants and the Company was in compliance with all customary non-financial covenants.

Term loan

($ thousands,			December 31, 2022		December 31, 2021	
except as noted)	Maturity date	Interest rate	Principal	Carrying Amount	Principal	Carrying amount
Term loan	December 31, 2024	8.1%	**2,671**	**2,524**	2,671	2,469

During the third quarter of 2021, Perpetual executed an agreement with its Term Loan lender for the settlement of principal and all interest owing on the Term Loan. Perpetual substantively modified the previous Term Loan with Alberta Investment Management Corporation ("AIMCo") in exchange for the payment of approximately $38.5 million in cash, the delivery by Perpetual of the AIMCo Bonus Shares at a value of $1.4 million, the issuance of a new $2.7 million second lien Term Loan (the "New Term Loan"), and up to an aggregate $4.5 million in contingent payments over the three year period ended June 30, 2024 in the event that Perpetual's annual average realized oil and natural gas prices exceed certain thresholds (the "Second Lien Loan Settlement"). All amounts related to the Second Lien Loan Settlement were paid on October 5, 2021. The New Term Loan bears interest at 8.1% annually, which Perpetual may elect to pay-in-kind and will mature on December 31, 2024. Perpetual has the ability to repay the Term Loan at any time without any repayment penalty.

The Company and the Term Loan lender agreed to allow $1.8 million of interest due December 31, 2020 to be paid-in-kind and added to the outstanding principal amount of the loan and all other interest owing on the Term Loan to be settled as part of the Second Lien Loan Settlement. Non-cash paid-in-kind interest of $0.8 million was recorded in the third quarter of 2021, which increased the principal amount of the Term Loan owing upon settlement to $49.6 million. As a result of the Second Lien Loan Settlement, the carrying amount of $49.6 million was in excess of the consideration received of $42.8 million, resulting in a gain of $6.8 million being recognized (note 20).

The New Term Loan has a cross-default provision with the Credit Facility and contains substantially similar provisions and covenants as the Credit Facility. The Term Loan is secured by a general security agreement over all present and future property of the Company and its subsidiaries on a second priority basis, subordinate only to liens securing loans under the Credit Facility.

At December 31, 2022, the Term Loan was not subject to any financial covenants and the Company was in compliance with all customary non-financial covenants.

Senior notes

($ thousands,			December 31, 2022		December 31, 2021	
except as noted)	**Maturity date**	**Interest rate**	**Principal**	**Carrying Amount**	Principal	Carrying amount
Senior notes	January 23, 2025	8.75%	**35,647**	**34,527**	36,583	34,189

On January 22, 2021, Perpetual announced the completion of a Court-approved plan of arrangement whereby the unsecured 2022 Senior Notes were exchanged for new 8.75% secured third lien notes due January 23, 2025. The 2025 Senior Notes have been issued under a trust indenture that contains substantially the same terms as the 2022 Senior Notes, other than the 2025 Senior Notes are secured on a third lien basis and allow for the semi-annual interest payments to be paid at Perpetual's option, in cash, or in additional 2025 Senior Notes (a "PIK Interest Payment"). In 2021, the Company elected to pay the semi-annual interest payments by making PIK Interest Payments, increasing the principal amount to $36.6 million.

The Company satisfied the January 23, 2022 and the July 23, 2022 semi-annual interest payment of $1.6 million by making cash payments. Subsequent to December 31, 2022 the Company satisfied the January 23, 2023 semi-annual interest of $1.6 million by making a cash payment.

At December 31, 2022, the senior notes are recorded at the present value of future cash flows, net of $1.1 million in issue and principal discount costs which are amortized over the remaining term using a weighted average effective interest rate of 13.9%.

During the fourth quarter of 2022 the Company purchased and cancelled a portion of the 2025 Senior Notes balance with a carrying value of $0.9 million (2021 - nil) for gross proceeds of $0.8 million. A gain on extinguishment of $0.1 million (2021 - nil) is included in non-cash finance expense.

The senior notes are direct senior secured, third lien obligations of the Company. The Company may redeem the senior notes without any repayment penalty. The senior notes have a cross-default provision with the Company's Credit Facility. In addition, the senior notes indenture contains restrictions on certain payments including dividends, retirement of subordinated debt, and stock repurchases.

At December 31, 2022, the senior notes were not subject to any financial covenants and the Company was in compliance with all customary non-financial covenants.

Entities controlled by the Company's CEO hold $15.9 million of the 2025 Senior Notes outstanding. An entity that is associated with the Company's CEO holds an additional $10.3 million of the 2025 Senior Notes outstanding.

Equity

At December 31, 2022, there were 65.9 million common shares outstanding, net of 1.3 million shares held in trust to resource employee compensation programs. During the fourth quarter of 2022, 0.1 million shares were purchased by the independent trustee to be held in trust (Q4 2021 – 0.2 million). Basic and diluted weighted average shares outstanding for the three months ended December 31, 2022 were 65.9 million and 75.1 million, respectively (Q4 2021 - 63.6 million basic and 70.0 million diluted). Basic and diluted weighted average shares outstanding for the twelve months ended December 31, 2022 were 64.4 million and 74.8 million, respectively (2021 - 63.0 million basic and 70.0 million diluted).

At March 2, 2023, there were 65.9 million common shares outstanding which is net of 1.3 million shares held in trust for employee compensation programs. In addition, the following potentially issuable common shares were outstanding as at the date of this MD&A:

(millions)	**March 2, 2023**
Share options	**3.6**
Performance share rights	**2.5**
Compensation awards	**8.7**
Total[1]	**14.8**

(1) 7.4 million compensation awards, 2.3 million share options, and 2.5 million performance share rights have an exercise price below the December 31, 2022 closing price of the Company's common shares of $0.71 per share.

Commodity price risk management and sales obligations

Perpetual's commodity price risk management strategy is focused on managing downside risk and increasing certainty in adjusted funds flow by mitigating the effect of commodity price volatility. Physical forward sales contracts and financial derivatives are used to increase certainty in adjusted funds flow (see "Non-GAAP and Other Financial Measures"), manage the balance sheet, lock in economics on capital programs, and to take advantage of perceived anomalies in commodity markets. Perpetual also utilizes foreign exchange derivatives and physical or financial derivatives related to the differential between natural gas prices at the AECO and NYMEX trading hubs and oil basis differentials between WTI and WCS in order to mitigate the effects of fluctuations in foreign exchange rates and basis differentials on the Corporation's revenue. Diversification of markets is a further risk management strategy employed by the Company.

As at March 2, 2023, the Company had entered into the following swap commodity contracts:

Commodity	Volumes sold	Term	Reference/ Index	Contract Traded Bought/sold	Market Price
Natural gas	5,000 GJ/d	Jan 1 - Mar 31, 2023	AECO 5A (CAD$/GJ)	Swap - sold	$4.62
Natural gas	5,000 GJ/d	Jan 1 - Mar 31, 2023	AECO 7A (CAD$/GJ)	Collar - sold	$7.00-8.00
Natural gas	10,000 GJ/d	Jan 1 - Mar 31, 2023	AECO 7A (CAD$/GJ)	Collar - sold	$7.00-8.10
Natural gas	5,000 GJ/d	Mar 1 - Mar 31, 2023	AECO 7A (CAD$/GJ)	Collar - bought	$3.95
Crude Oil	100 bbl/d	Jan 1 – Dec 31, 2023	WTI (USD$/bbl)	Swap – sold	$89.15
Natural gas	2,500 GJ/d	Mar 1 - Mar 31, 2023	AECO 7A (CAD$/GJ)	Swap - bought	$3.55
Crude oil	200 bbl/d	Apr 1 - Dec 31, 2023	WTI (USD$/bbl)	Swap – sold	$77.40

As at March 2, 2023, the Company had entered into the following swap WTI-WCS basis differential which settle in CAD$:

Commodity	Volumes sold	Term	Reference/ Index	Contract Traded Bought/sold	Market Price
Crude oil	100 bbl/d	Jan 1 – Dec 31, 2023	WCS (CAD$/bbl)	Differential	($17.30)
Crude oil	450 bbl/d	Apr 1 - Dec 31, 2023	WCS (USD$/bbl)	Differential	($17.43)
Crude oil	100 bbl/d	Jul 1 - Dec 31, 2023	WCS (USD$/bbl)	Differential	($16.20)
Crude oil	250 bbl/d	Jan 1, 2024 - Dec 31, 2024	WCS (USD$/bbl)	Differential	($17.50)

As at March 2, 2023, the Company had entered the following CAD/USD foreign exchange swaps which settle in CAD$:

Contract	Notional amount	Term	Price (US$/CAD$)
Average rate forward (US$/CAD$)	$316,444 US$/month	Jan 1 – Mar 31, 2023	1.3740
Average rate forward (US$/CAD$)	$500,000 US$/month	Jan 1 – Dec 31, 2023	1.3710
Average rate forward (US$/CAD$)	$200,000 US$/month	Jan 1 – Dec 31, 2023	1.3029
Average rate forward (US$/CAD$)	$250,000 US$/month	Jan 1 – Dec 31, 2023	1.3600

Conventional natural gas volumes sold pursuant to the Company's market diversification contract are sold at fixed volume obligations and priced at daily index prices at each of the market price points, less transportation costs from AECO to each market price point as detailed below.

Market/Pricing Point	January 1, 2023 to October 31, 2023 Daily sales volume (MMBtu/d)	November 1, 2023 to October 31, 2024 Daily sales volume (MMBtu/d)
Malin	—	15,000
Dawn	15,000	15,000
Emerson	10,000	10,000
Total sales volume obligation	**25,000**	**40,000**

SEQUOIA LITIGATION UPDATE

On August 3, 2018, the Company received a Statement of Claim that was filed by PricewaterhouseCoopers Inc. LIT ("PwC"), in its capacity as trustee in bankruptcy (the "Trustee") of Sequoia Resources Corp. ("Sequoia"), with the Alberta Court of Queen's Bench (the "Court"), against Perpetual (the "Sequoia Litigation"). The claim relates to a six-year-old transaction when, on October 1, 2016, Perpetual closed the disposition of shallow conventional natural gas assets in Eastern Alberta to an arm's length third party at fair market value after an extensive and lengthy marketing, due diligence, and negotiation process (the "Sequoia Disposition"). This transaction was one of several completed by Sequoia. Sequoia assigned itself into bankruptcy on March 23, 2018. PwC is seeking an order from the Court to either set this transaction aside or declare it void, or damages of approximately $217 million. On August 27, 2018, Perpetual filed a Statement of Defence and Application for Summary Dismissal with the Court in response to the Statement of Claim. All allegations made by PwC have been denied and applications to the Court to dismiss all claims has been made on the basis that there is no merit to any of them.

On January 13, 2020, a written decision related to the Application for Dismissal, dismissed and struck all claims against the Company's CEO and all but one of the claims filed against Perpetual. The Court did not find that the test for summary dismissal relating to whether the asset transaction was an arm's length transfer for purposes of section 96(1) of the Bankruptcy and Insolvency Act (the "BIA") was met, on the balance of probabilities. Accordingly, the BIA claim was not dismissed or struck and only that part of the claim could continue against Perpetual. The Trustee filed a notice of appeal with the Court of Appeal of Alberta, challenging the entire decision, and Perpetual filed a similar notice of appeal contesting the BIA claim portion of the decision (the "First Appeal"). The First Appeal proceedings were heard on December 10, 2020. On January 25, 2021, the Court of Appeal of Alberta issued their judgement with respect to the First Appeal proceedings, dismissing the appeal filed by Perpetual and granting certain aspects of the appeals filed by the Trustee, thereby reinstating certain elements of the Sequoia Litigation for trial. On March 24, 2021, Perpetual applied for leave to appeal the First Appeal decision to the Supreme Court of Canada (the "SCC"). On July 8, 2021, the SCC dismissed Perpetual's application.

On February 25, 2020, Perpetual filed a second application to strike and summarily dismiss the BIA claim on the basis that there was no transfer at undervalue, and Sequoia was not insolvent at the time of the asset transaction nor caused to be insolvent by the asset transaction (the "Second Summary Dismissal Application"). In July 2020, the Orphan Well Association ("OWA"), certain oil and gas companies, and six municipalities applied to intervene in the Second Summary Dismissal Application proceedings. The OWA and certain oil and gas companies were permitted to intervene (the "Intervenors") in the proceedings which took place on October 1 and 2, 2020. The Intervenors were also permitted to intervene in the First Appeal proceedings. On January 14, 2021 the Court issued its decision, finding that the Trustee could not establish a necessary element of the BIA Claim as Sequoia was not insolvent at the time of, nor rendered insolvent by, the Sequoia Disposition. The Court therefore concluded there is "no merit" to the BIA Claim and it summarily dismissed the balance of the Statement of Claim. The Trustee appealed this decision, and the Court of Appeal hearing took place on February 10, 2022, with the panel reserving judgement. On March 25, 2022, the Court of Appeal issued their judgement with respect to this matter and allowed PwC's appeal on the basis that the Court of Queen's Bench erred in law in its handling of the end-of-life obligations and that based on the record, it could not be concluded the error was without consequence, and that the Court of Queen's Bench also erred in agreeing to hear the Second Summary Dismissal Application. On this basis, the BIA Claim has been directed to trial.

The Trustee filed its Amended Statement of Claim with the Court on October 14, 2022. Perpetual filed its Statement of Defence to Amended Statement of Claim on December 12, 2022.

Management expects that the Company is more likely than not to be completely successful in defending against the Sequoia Litigation such that no damages will be awarded against it, and therefore, no amounts have been accrued as a liability in these financial statements.

OFF BALANCE SHEET ARRANGEMENTS

Perpetual has no off balance sheet arrangements.

NON-GAAP AND OTHER FINANCIAL MEASURES:

Throughout this MD&A and in other materials disclosed by the Company, Perpetual employs certain measures to analyze financial performance, financial position and cash flow. These non-GAAP and other financial measures do not have any standardized meaning prescribed under IFRS and therefore may not be comparable to similar measures presented by other entities. The non-GAAP and other financial measures should not be considered to be more meaningful than GAAP measures which are determined in accordance with IFRS, such as net income (loss), cash flow from operating activities, and cash flow from investing activities, as indicators of Perpetual's performance.

Non-GAAP Financial Measures

Capital expenditures or capital spending: Perpetual uses capital expenditures or capital spending related to exploration and development to measure its capital investments compared to the Company's annual capital budgeted expenditures. Perpetual's capital budget excludes acquisition and disposition activities.

The most directly comparable GAAP measure for capital expenditures or capital spending is cash flow used in investing activities. A summary of the reconciliation of cash flow used in investing activities to capital expenditures or capital spending, is set forth below:

	Three months ended December 31,		Twelve months ended December 31,	
($ thousands)	**2022**	2021	**2022**	2021
Net cash flows used in investing activities	**17,239**	(49,217)	**40,941**	(43,725)
Acquisitions	**—**	(700)	**—**	(1,325)
Net proceeds on dispositions, net of cash disposed	**—**	53,407	**—**	49,549
Purchase of marketable securities	**(2)**	—	**(39)**	—
Change in non-cash working capital	**(17,122)**	4,068	**(8,993)**	14,563
Capital expenditures	**115**	7,558	**31,909**	19,062

Adjusted funds flow: Adjusted funds flow is calculated based on cash flows from (used in) operating activities, excluding changes in non-cash working capital and expenditures on decommissioning obligations since Perpetual believes the timing of collection, payment or incurrence of these items is variable. Expenditures on decommissioning obligations may vary from period to period depending on capital programs and the maturity of the Company's operating areas. Expenditures on decommissioning obligations are managed through the capital budgeting process which considers available adjusted funds flow and regulatory requirements. The Company has added back non-cash oil and natural gas revenue in-kind, equal to retained East Edson royalty obligation payments taken in-kind, to present the equivalent amount of cash revenue generated. Management uses adjusted funds flow and adjusted funds flow per boe as key measures to assess the ability of the Company to generate the funds necessary to finance capital expenditures, expenditures on decommissioning obligations, and meet its financial obligations.

Adjusted funds flow is not intended to represent net cash flows from (used in) operating activities calculated in accordance with IFRS.

The following table reconciles net cash flows from (used in) operating activities as reported in the Company's consolidated statements of cash flows, to adjusted funds flow:

	Three months ended December 31,		Twelve months ended December 31,	
($ thousands, except per share and per boe amounts)	**2022**	2021	**2022**	2021
Net cash flows from operating activities	**11,238**	1,624	**37,830**	12,815
Change in non-cash working capital	**1,925**	4,197	**9,442**	(3,406)
Decommissioning obligations settled (cash)	**1,044**	1,382	**1,199**	1,759
Oil and natural gas revenue in-kind	**—**	1,382	**—**	4,995
Payment of restructuring costs	**—**	—	**—**	583
Adjusted funds flow	**14,207**	8,585	**48,471**	16,746
Adjusted funds flow per share	**0.22**	0.13	**0.75**	0.27
Adjusted funds flow per boe	**21.63**	14.67	**20.48**	8.51

Free funds flow: Free funds flow is an important measure that informs efficiency of capital spent and liquidity. Free funds flow is calculated as adjusted funds flow generated during the period less capital expenditures. Adjusted funds flow and capital expenditures are non-GAAP financial measures which have been reconciled to its most directly comparable GAAP measure previously in this document. By removing the impact of current period capital expenditures from adjusted funds flow, Perpetual monitors its free funds flow to inform decisions such as capital allocation and debt repayment.

The following table shows the calculation of the removal of capital expenditures from adjusted funds flows:

	Three months ended December 31,		Twelve months ended December 31,	
($ thousands, except per share and per boe amounts)	**2022**	2021	**2022**	2021
Adjusted funds flow	**14,207**	8,585	**48,471**	16,746
Capital Expenditures	**(115)**	(7,558)	**(31,909)**	(19,062)
Free funds flow	**14,092**	1,027	**16,562**	(2,316)

Cash costs: Cash costs are controllable costs comprised of production and operating, transportation, general and administrative, and cash finance expense as detailed below. Cash costs per boe is calculated by dividing cash costs by total production sold in the period. Management believes that cash costs assist management and investors in assessing Perpetual's efficiency and overall cost structure.

	Three months ended December 31,		Twelve months ended December 31,	
(*$ thousands, except per boe amounts*)	**2022**	2021	**2022**	2021
Production and operating	**3,828**	2,862	**16,107**	12,859
Transportation	**1,223**	871	**3,872**	2,993
General and administrative	**2,855**	3,657	**9,911**	10,757
Cash finance expense	**1,195**	1,039	**4,547**	1,309
Cash costs	**9,101**	8,429	**34,437**	27,919
Cash costs per boe	**13.86**	14.41	**14.55**	14.19

Operating netback: Operating netback is calculated by deducting royalties, production and operating expenses, and transportation costs from oil and natural gas revenue. Operating netback is also calculated on a per boe basis using total production sold in the period and presented before and after realized gains or losses from risk management contracts. Perpetual considers that netback is a key industry performance indicator and one that provides investors with information that is also commonly presented by other crude oil and natural gas producers. Perpetual considers operating netback to be an important performance measure to evaluate its operational performance as it demonstrates its profitability relative to current commodity prices. Refer to reconciliations earlier in the MD&A under the "Operating netbacks" section.

Net Debt: Perpetual uses net debt as an alternative measure of outstanding debt. Management considers net debt as an important measure in assessing the liquidity of the Company. Net debt is used by management to assess the Company's overall debt position and borrowing capacity. Net debt is not a standardized measure and therefore may not be comparable to similar measures presented by other entities.

The following table details the composition of net debt:

(*$ thousands*)	**As of December 31, 2022**	As of December 31, 2021
Cash and cash equivalents	**—**	1,090
Accounts and accrued receivable	**15,804**	11,671
Prepaid expenses and deposits	**1,564**	910
Marketable securities	**1,814**	2,409
Accounts payable and accrued liabilities	**(18,962)**	(32,223)
Adjusted working capital surplus (deficiency)[(1)]	**220**	(16,143)
Bank indebtedness	**(14,909)**	(2,487)
Term loan (principal)	**(2,671)**	(2,671)
Other liability (undiscounted amount)	**(3,342)**	(1,387)
Senior notes (principal)	**(35,647)**	(36,582)
Net debt	**(56,349)**	(59,270)

(1) Alternative calculation of current assets less current liabilities adjusted for the removal of the current portion of risk management contracts.

Available Liquidity: Available Liquidity is defined as Perpetual's Credit Facility Borrowing Limit, less current borrowings and letters of credit issued under the Credit Facility. Management uses available liquidity to assess the ability of the Company to finance capital expenditures and expenditures on decommissioning obligations, and to meet its financial obligations.

Enterprise value: Enterprise value is equal to net debt plus the market value of issued equity and is used by management to analyze leverage. Enterprise value is calculated by multiplying the current shares outstanding by the market price at the end of the period and then adjusting it by the net debt. The Company considers enterprise value as an important measure as it normalizes the market value of the Company's shares for its capital structure.

Non-GAAP Financial Ratios

Perpetual calculates certain non-GAAP measures per boe as the measure divided by weighted average daily production. Management believes that per boe ratios are a key industry performance measure of operational efficiency and one that provides investors with information that is also commonly presented by other crude oil and natural gas producers. Perpetual also calculates certain non-GAAP measures per share as the measure divided by outstanding common shares.

Average realized prices after risk management contracts: are calculated as the average realized price by product type less the realized gain or loss on risk management contracts by production type.

Net debt to adjusted funds flow ratio: Net debt to adjusted funds flow ratios are calculated on a trailing twelve-month basis.

Net debt as a percentage of enterprise value: Net debt as a percentage of enterprise value is calculated by dividing net debt by enterprise value.

Adjusted funds flow per share: Adjusted funds flow ratios are calculated on a per share as the measure divided by basic shares outstanding.

Adjusted funds flow per boe: Adjusted funds flow per boe is calculated as adjusted funds flow divided by total production sold in the period.

Supplementary Financial Measures

"Average realized price" is comprised of total commodity sales from production, as determined in accordance with IFRS, divided by the Company's total sales production on a boe basis.

"Realized oil price" is comprised of oil commodity sales from production, as determined in accordance with IFRS, divided by the Company's oil sales production.

"Realized natural gas price" is comprised of natural gas commodity sales from production, as determined in accordance with IFRS, divided by the Company's natural gas sales production.

"Realized NGL price" is comprised of NGL commodity sales from production, as determined in accordance with IFRS, divided by the Company's NGL sales production.

"Realized gain (loss) on natural gas contracts per mcf" is comprised of the realized gain or loss on natural gas contracts, as determined in accordance with IFRS, divided by the Company's total natural gas sales production.

"Realized gain (loss) on oil contracts per boe" is comprised of the realized gain or loss on oil contracts, as determined in accordance with IFRS, divided by the Company's total oil sales production.

"Realized gain (loss) on risk management contracts per boe" is comprised of the realized gain or loss on risk management contracts, as determined in accordance with IFRS, divided by the Company's total sales production.

"Depletion and depreciation expense per boe" is comprised of DD&A expense, as determined in accordance with IFRS, divided by the Company's total sales production.

"G&A expense per boe" is comprised of G&A expense, as determined in accordance with IFRS, divided by the Company's total sales production.

"Operating expense per boe" is comprised of operating expense, as determined in accordance with IFRS, divided by the Company's total sales production.

"Realized gain or loss on risk management contract per boe" is comprised of realized gain on risk management contracts, as determined in accordance with IFRS, divided by the Company's total sales production.

"Transportation expense per boe" is comprised of operating expense, as determined in accordance with IFRS, divided by the Company's total sales production.

"Royalties as a percentage of revenue" is comprised of royalties, as determined in accordance with IFRS, divided by oil and natural gas revenue from sales production as determined in accordance with IFRS.

"Royalties per boe" is comprised of royalties, as determined in accordance with IFRS, divided by the Company's total sales production.

“Market value of shares” is comprised of common shares outstanding multiplied by the market price of shares.

“Adjusted funds flow per share” is comprised of adjusted funds flow divided by the Company’s shares outstanding.

FUTURE ACCOUNTING PRONOUNCEMENTS

The International Accounting Standards Board (“IASB”) and the IFRS Interpretations Committee regularly issue new and revised accounting pronouncements which have future effective dates and therefore are not reflected in Perpetual’s financial statements. Once adopted, these new and amended pronouncements may have an impact on Perpetual’s consolidated financial statements. Perpetual’s analysis of recent accounting pronouncements is included in the notes to the consolidated financial statements at December 31, 2022.

RISK FACTORS

The Corporation is exposed to business risks that are inherent in the oil and gas industry, as well as those governed by the individual nature of Perpetual’s operations. Risks impacting the business which influence controls and management of the Corporation include, but are not limited to, the following:

- geological and engineering risks;
- the uncertainty of discovering commercial quantities of new reserves;
- commodity prices, interest rate and foreign exchange risks;
- political and geopolitical risks;
- competition
- cybersecurity risks;
- inflation and supply chain risks;
- risks relating to pandemics (including COVID-19);
- risks relating to litigation (including the Sequoia litigation); and
- changes to government regulations including royalty regimes and tax legislation.

Perpetual manages these risks by:

- attracting and retaining a team of highly qualified and motivated professionals who have a vested interest in the success of the Corporation;
- prudent operation of oil and natural gas properties;
- employing risk management instruments and policies to manage exposure to volatility of commodity prices, interest rates and foreign exchange rates;
- maintaining a flexible financial position;
- maintaining strict environmental, safety and health practices; and
- active participation with industry organizations to monitor and influence changes in government regulations and policies.

A complete discussion of risk factors is included in the Corporation’s 2022 Annual Information Form (“AIF”) available on the Corporation’s website at www.perpetualenergyinc.com or on SEDAR at www.sedar.com.

DISCLOSURE CONTROLS AND PROCEDURES AND INTERNAL CONTROL OVER FINANCIAL REPORTING

Perpetual's CEO and Chief Financial Officer ("CFO") have designed, or caused to be designed under their supervision, disclosure controls and procedures ("DC&P") and internal controls over financial reporting ("ICOFR") as defined in National Instrument 52-109 Certification of Disclosure in Issuer's Annual and Interim Filings in order to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the financial statements for external purposes in accordance with IFRS.

Disclosure controls and procedures

The DC&P have been designed to provide reasonable assurance that material information relating to Perpetual is made known to the CEO and CFO by others, and that information required to be disclosed by Perpetual in its annual filings, interim filing or other reports is filed or submitted by Perpetual under securities legislation.

Perpetual's CEO and CFO have concluded, based on their evaluation at December 31, 2022, the DC&P are designed and operating effectively to provide reasonable assurance that information required to be disclosed by the Corporation in its annual filings, interim filings or other reports filed or submitted by it under securities legislation is recorded, processed, summarized and reported within the time periods specified in the securities legislation and include controls and procedures designed to ensure that information required to be disclosed by the Corporation in its annual filings, interim filings or other reports filed or submitted under securities legislation is accumulated and communicated to the issuer's management, including its certifying officers, as appropriate to allow timely decisions regarding required disclosure.

Management's annual report on internal controls over financial reporting

Management is responsible for establishing and maintaining adequate ICOFR, which is a process designed by, or under the supervision of, the CEO and CFO, and effected by the board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS.

Under the supervision and with the participation of management, including the CEO and CFO, an evaluation of the effectiveness of the internal controls over financial reporting was conducted as of December 31, 2022 based on criteria described in "Internal Control – Integrated Framework" issued in 2013 by the Committee of Sponsoring Organization of the Treadway Commission. Based on this assessment, management determined that, as of December 31, 2022, the internal controls over financial reporting were designed and operating effectively.

INTERNAL CONTROLS AND PROCEDURES

Evaluation of disclosure controls and procedures

There were no changes in the Corporation's internal control over financial reporting during the period beginning on October 1, 2022 and ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, internal control over financial reporting.

CEO and CFO certifications

Perpetual's CEO and CFO have filed with the Canadian securities regulators regarding the quality of Perpetual's public disclosures relating to its fiscal 2022 filings with the Canadian securities regulators.

CRITICAL ACCOUNTING JUDGEMENTS AND ESTIMATES

Certain accounting policies require that management make appropriate decisions with respect to the formulation of estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses. Management reviews its estimates on a regular basis. The emergence of new information and changed circumstances may result in actual results or changes to estimates that differ materially from current estimates.

Perpetual's financial and operational results incorporate certain estimates including:

- estimated commodity sales from production at a specific reporting date for which actual revenues have not yet been received, including associated estimated credit losses;
- estimated royalty obligations, transportation, and operating expenses at a specific reporting date for which costs have been incurred but have not yet been settled;
- estimated capital expenditures on projects that are in progress;
- estimated depletion charges and deferred tax assets that are based on estimates of reserves that Perpetual expects to recover in the future;
- estimated future recoverable value of PP&E and E&E and any associated impairment charges or reversals;
- estimated fair values of financial instruments that are subject to fluctuation depending upon the underlying forward curves for commodity prices, foreign exchange rates and interest rates, as well as volatility curves, and the risk of non-performance;
- estimated value of ARO that is dependent upon estimates of future costs and timing of expenditures;
- estimated compensation expense under Perpetual's share-based compensation plans including the PSUs awarded under the PSU Plans that are dependent on the final number of PSU awards that eventually vest based on a performance multiplier; and
- estimated fair values of assets acquired and liabilities assumed in a business combination.

A change in a critical accounting estimate can have a significant effect on net loss, including their impact on the depletion rate, provisions, impairments, and income taxes. A change in a critical accounting estimate can have a significant effect on the value of property, plant, and equipment, provisions, derivative financial instruments and accounts payable. A complete discussion of critical accounting estimates is included in the notes to the consolidated financial statements at December 31, 2022.

FORWARD-LOOKING INFORMATION AND STATEMENTS

Certain information in this MD&A including management's assessment of future plans and operations, and including the information contained under the heading "2023 Outlook" may constitute forward-looking information or statements (together "forward-looking information") under applicable securities laws. The forward-looking information includes, without limitation, statements with respect to: forecast production and exploration and development capital expenditures for 2023 and the expectation that such expenditures will be funded from adjusted funds flow; drilling activities for 2023 including the number of gross and net wells to be drilled; cash costs estimates; projected abandonment and reclamation expenditures and the funding thereof; expectations as to drilling activity plans in various areas and the benefits to be derived from such drilling including the production growth and expectations respecting Perpetual's future exploration, development and drilling activities; and Perpetual's business plan.

Forward-looking information is based on current expectations, estimates and projections that involve a number of known and unknown risks, which could cause actual results to vary and in some instances to differ materially from those anticipated by Perpetual and described in the forward-looking information contained in this MD&A. In particular and without limitation of the foregoing, material factors or assumptions on which the forward-looking information in this MD&A is based include: forecast commodity prices and other pricing assumptions; forecast production volumes based on business and market conditions; foreign exchange and interest rates; near-term pricing and continued volatility of the market including inflationary pressures; accounting estimates and judgments; future use and development of technology and associated expected future results; the ability to obtain regulatory approvals; the successful and timely implementation of capital projects; ability to generate sufficient cash flow to meet current and future obligations; the ability of Perpetual to obtain and retain qualified staff and equipment in a timely and cost-efficient manner, as applicable; the retention of key properties; forecast inflation, supply chain access and other assumptions inherent in Perpetual's current guidance and estimates; the continuance of existing tax, royalty, and regulatory regimes; the accuracy of the estimates of reserves volumes; ability to access and implement technology necessary to efficiently and effectively operate assets; and the ongoing and future impact of the coronavirus and the war in Ukraine and related sanctions on commodity prices and the global economy, among others.

Undue reliance should not be placed on forward-looking information, which is not a guarantee of performance and is subject to a number of risks or uncertainties, including without limitation those described herein and under "Risk Factors" in Perpetual's Annual Information Form and MD&A for the year ended December 31, 2022 and in other reports on file with Canadian securities regulatory authorities which may be accessed through the SEDAR website (www.sedar.com) and at Perpetual's website (www.perpetualenergyinc.com). Readers are cautioned that the foregoing list of risk factors is not exhaustive. Forward-looking information is based on the estimates and opinions of Perpetual's management at the time the information is released, and Perpetual disclaims any intent or obligation to update publicly any such forward-looking information, whether as a result of new information, future events or otherwise, other than as expressly required by applicable securities law.

GLOSSARY

The following is a list of abbreviations that may be used in this MD&A:

Measurement:

bbl	barrel
bbl/d	barrels per day
Mbbl	thousand barrels
MMbbl	million barrels
boe(1)	barrels of oil equivalent
boe/d(1)	barrels of oil equivalent per day
Mboe(1)	thousands of barrels of oil equivalent
MMboe(1)	millions of barrels of oil equivalent
Mcf	thousand cubic feet
Mcf/d	thousand cubic feet per day
MMcf	million cubic feet
MMcf/d	million cubic feet per day
MMBtu	million British thermal units
GJ	gigajoule

Volume Conversions:

Barrel of oil equivalent ("boe") may be misleading, particularly if used in isolation. In accordance with National Instrument 51-101 ("NI 51-101"), a conversion ratio for conventional natural gas of 6 Mcf:1 bbl has been used, which is based on an energy equivalency conversion method primarily applicable at the burner tip and does not represent a value equivalency at the wellhead. In addition, utilizing a conversion on a 6 Mcf:1 bbl basis may be misleading as an indicator of value as the value ratio between conventional natural gas and heavy crude oil, based on the current prices of natural gas and crude oil, differ significantly from the energy equivalency of 6 Mcf:1 bbl. A conversion ratio of 1 bbl of heavy crude oil to 1 bbl of NGL has also been used throughout this MD&A. " See "Fourth Quarter Financial and Operating Results" section in this MD&A for details of constituent product components that comprise Perpetual's boe production.

Financial and Business Environment:

AECO	Alberta Energy Company
DD&A	Depletion, depreciation and amortization
E&E	Exploration and evaluation
GAAP	Generally accepted accounting principles
G&A	General and administrative
IAS	International Accounting Standard
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
NGLs	Natural gas liquids
NYMEX	New York Mercantile Exchange,
PP&E	Property, plant and equipment
WTI	West Texas Intermediate

ANNUAL FINANCIAL AND OPERATING HIGHLIGHTS

($ thousands, except as noted)	**2022**	2021	2020
Financial			
Oil and natural gas revenue	**109,687**	60,814	29,486
Net income	**44,397**	81,121	(61,597)
Per share – basic	**0.69**	1.29	(1.01)
Per share – diluted	**0.59**	1.16	(1.01)
Cash flow from operating activities	**37,830**	12,815	(9,533)
Adjusted funds flow(1)	**48,471**	16,746	(7,787)
Per share – basic(2)	**0.75**	0.27	(0.13)
Revolving bank debt	**14,909**	2,487	17,495
Senior notes, principal amount	**35,647**	36,582	33,580
Term loan, principal amount	**2,671**	2,671	46,823
Other Liability	**3,342**	1,387	—
Net working capital deficiency	**(220)**	16,143	7,099
Total Net Debt	**56,349**	59,270	104,997
Capital expenditures(1)	**31,909**	19,062	5,939
Net payments (proceeds) on acquisitions and dispositions(1)	**—**	49,549	27,754
Common shares (thousands)			
Weighted average – basic	**64,448**	62,969	61,013
Weighted average – diluted	**74,798**	69,989	61,013
Operating			
Daily average production			
Natural gas *(MMcf/d)*	**31.0**	24.6	21.5
Oil *(bbl/d)*	**898**	963	1,082
NGL *(bbl/d)*	**416**	331	346
Total (boe/d)	**6,486**	5,389	5,012
Perpetual Average Realized Prices(2)			
Natural gas *($/Mcf)*	**5.90**	3.15	0.85
Oil *($/bbl)*	**90.15**	57.36	49.37
NGL *($/bbl)*	**88.05**	63.24	31.40
Wells drilled			
Conventional natural gas - gross (net)	**7 (3.5)**	9 (4.5)	5 (2.5)
Heavy crude oil - gross (net)	**5 (5.0)**	5 (4.0)	4 (4.0)
Total - gross (net)	**12 (8.5)**	14 (8.5)	9 (6.5)

(1) Non-GAAP measure. Refer to the section entitled "Non-GAAP and Other Financial Measures" contained within this MDA for an explanation of composition.
(2) Non-GAAP ratio. Refer to the section entitled "Non-GAAP and Other Financial Measures" contained within this MD&A for an explanation of composition.

SUMMARY OF QUARTERLY RESULTS

($ thousands, except as noted)	**Q4 2022**	Q3 2022	Q2 2022	Q1 2022
Financial				
Oil and natural gas revenue	**28,579**	22,856	33,299	24,953
Net income	**9,264**	8,234	4,470	7,162
Per share – basic	**0.14**	0.13	0.07	0.11
Per share – diluted	**0.12**	0.11	0.06	0.10
Cash flow from operating activities	**8,749**	8,749	11,571	6,272
Adjusted funds flow[1]	**14,207**	9,642	10,505	14,117
Per share – basic[2]	**0.22**	0.15	0.16	0.22
Capital expenditures[1]	**115**	22,596	4,361	4,837
Net payments (proceeds) on acquisitions and dispositions[1]	**—**	—	—	—
Common shares (thousands)				
Weighted average – basic	**65,883**	65,016	63,641	63,216
Weighted average – diluted	**75,090**	74,607	74,721	74,348
Operating				
Daily average production				
Natural gas (MMcf/d)	**33.0**	26.9	29.9	34.3
Oil (bbl/d)	**1,126**	1,002	775	682
NGL (bbl/d)	**508**	390	364	400
Total (boe/d)	**7,138**	5,882	6,123	6,804
Perpetual Average Realized Prices[2]				
Natural gas ($/mcf)	**5.78**	4.74	7.92	5.16
Oil ($/bbl)	**71.14**	87.24	117.20	95.55
NGL ($/bbl)	**78.36**	85.48	104.71	87.86

($ thousands, except as noted)	Q4 2021	Q3 2021	Q2 2021	Q1 2021
Financial				
Oil and natural gas revenue	21,449	14,603	13,226	11,536
Net income	5,669	51,151	27,017	(2,706)
Per share – basic	0.09	0.80	0.43	(0.04)
Per share – diluted	0.08	0.72	0.38	(0.04)
Cash flow from operating activities	1,624	6,655	2,854	1,682
Adjusted funds flow[1]	8,585	3,315	2,302	2,544
Per share – basic[2]	0.13	0.05	0.04	0.04
Capital expenditures[1]	7,558	9,947	1,554	3
Net payments (proceeds) on acquisitions and dispositions[1]	53,407	(4,060)	46	469
Common shares (thousands)				
Weighted average – basic	63,853	63,801	62,574	61,603
Weighted average – diluted	70,873	71,266	70,461	61,603
Operating				
Daily average production				
Natural gas (MMcf/d)	31.5	21.6	22.2	22.9
Oil (bbl/d)	714	972	1,074	1,097
NGL (bbl/d)	395	300	331	294
Total (boe/d)	6,359	4,876	5,099	5,211
Perpetual Average Realized Prices[2]				
Natural gas ($/Mcf)	4.80	2.59	2.25	2.25
Oil ($/bbl)	73.93	65.19	55.75	40.85
NGL ($/bbl)	73.44	65.37	55.48	56.03

(1) Non-GAAP measure. Refer to the section entitled "Non-GAAP and Other Financial Measures" contained within this MDA for an explanation of composition.
(2) Non-GAAP ratio. Refer to the section entitled "Non-GAAP and Other Financial Measures" contained within this MD&A for an explanation of composition.