GasProcessingManagementInc.

GPMi Western Canadian NGL Report

April 2017 (March actual data and April 6, 2017 futures data)

This report provides Western Canadian natural gas, NGL and petrochemical participants with key market information and analyses to determine impacts on their operating incomes.

March 2017 Prices

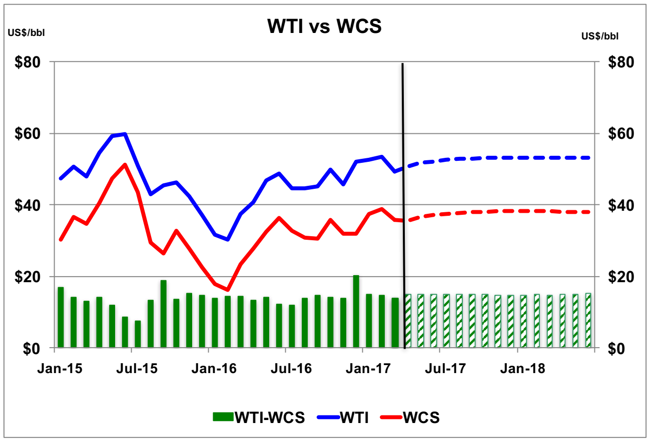
Oil	US$/bbl		**Gas**	US$/MMBtu	C$/GJ		**NGL**	US cpg
WTI	49.33		Henry Hub	2.88			Conway Propane	56.2
WCS	35.68		Chicago	2.84			Edm Propane	28.8
Edmonton Condensate	54.24		AECO	1.96	2.49		Edm Butane	68.9

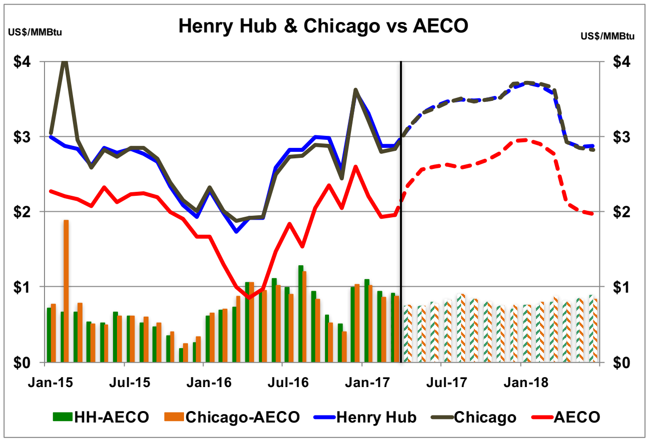
March Exchange Rate: 0.747 $US/$Cdn

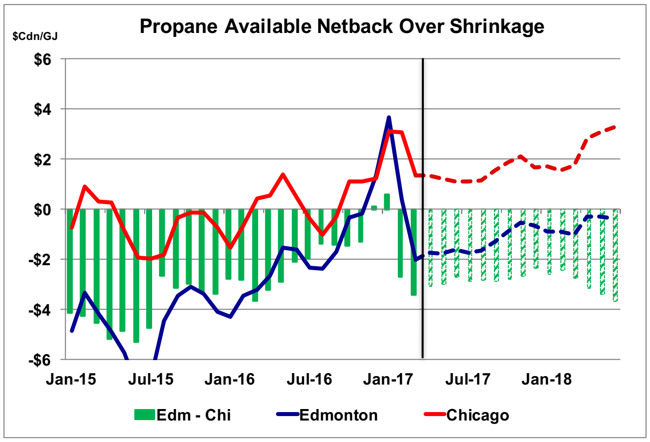
Highlights

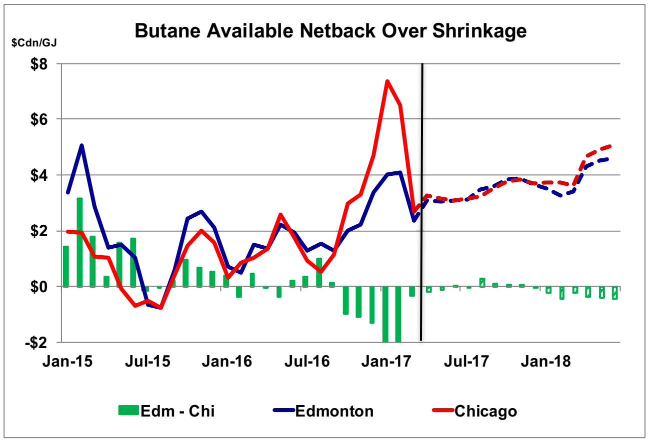
- Natural gas prices remained flat from February but crude and NGL prices weakened in both Canada and the U.S. The Conway-Edmonton propane differential widened to 27 cpg.
- Edmonton propane price took a dramatic drop in March is now well below shrinkage value.
- Total TCPL gas exports averaged around 6.4 bcf/day in March which is in line with the export volumes seen in the 3 months. Export gas flows at A/BC were approximately 2.2 Bcfd and Empress volumes were approximately 4.2 bcf/day.
- TCPL was successful in their second attempt at holding a binding open season for Empress to Dawn long term fixed price service. The term of this service is for 10 years but does have early termination provisions. We view this as a major step forward by the WCSB gas industry to defend its traditional eastern gas markets.
- Both Edmonton and Sarnia propane inventories declined sharply over the last couple of months and are approaching seasonal minimums.
- Total U.S. propane exports continue to be in the range of 1 million bpd in March. This is an extraordinary volume considering that only a few years ago the US had always been a net importer of propane.
- Alliance Pipeline continued to export Canadian gas near capacity in March. The entrained recoverable NGLs were approximately: ethane 80, propane 28, butane 9, pentanes plus 2 kbpd.
- The outlook for propane netbacks to WCSB field plant has weakened substantially. Edmonton propane prices are expected to remain around a 25 cpg discount to Conway which implies they will be well below shrinkage value for the outlook period.
- The NEB has asked for input from interested parties on whether to hold an Inquiry into the tolling methodologies or tariff provisions of the NEB regulated natural gas pipelines in Northeast BC (NGTL, Westcoast & Alliance) and on what the scope of such an Inquiry should include. Filings are required by 21 April. The BC Ministry of Natural Gas development has requested an extension of the deadline to mid-late June to accommodate the transition to the incoming provincial government. This Inquiry could affect the development and costs of gas infrastructure to access both existing markets and new markets such as LNG exports. These are obviously significant issues for the future gas and NGL businesses in Western Canada and GPMi plans to follow this development closely.
- Pembina Pipeline Corp. announced the signing of a non-binding letter-of-intent to develop a 20,000 bpd LPG Export Terminal at Prince Rupert, BC.

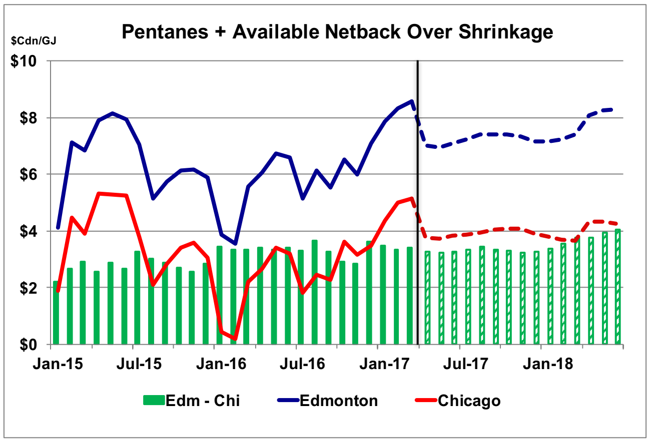
Commodity Prices and Available NGL Netback Margins by Component

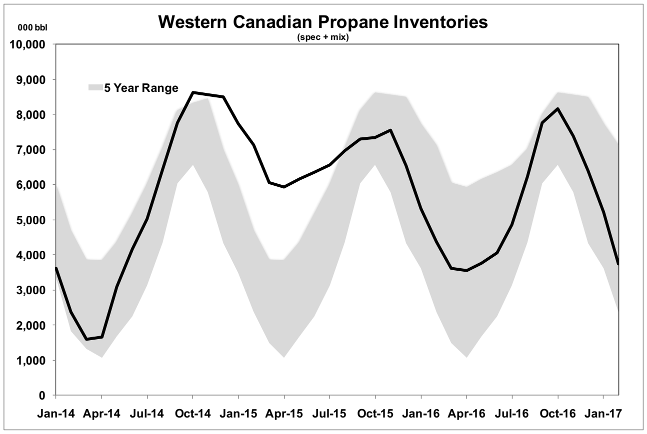






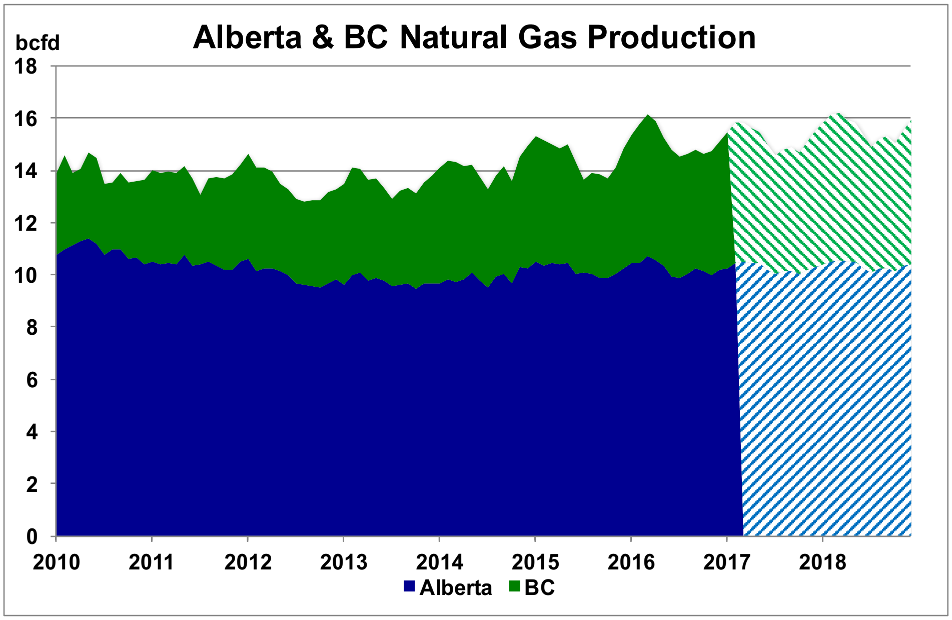


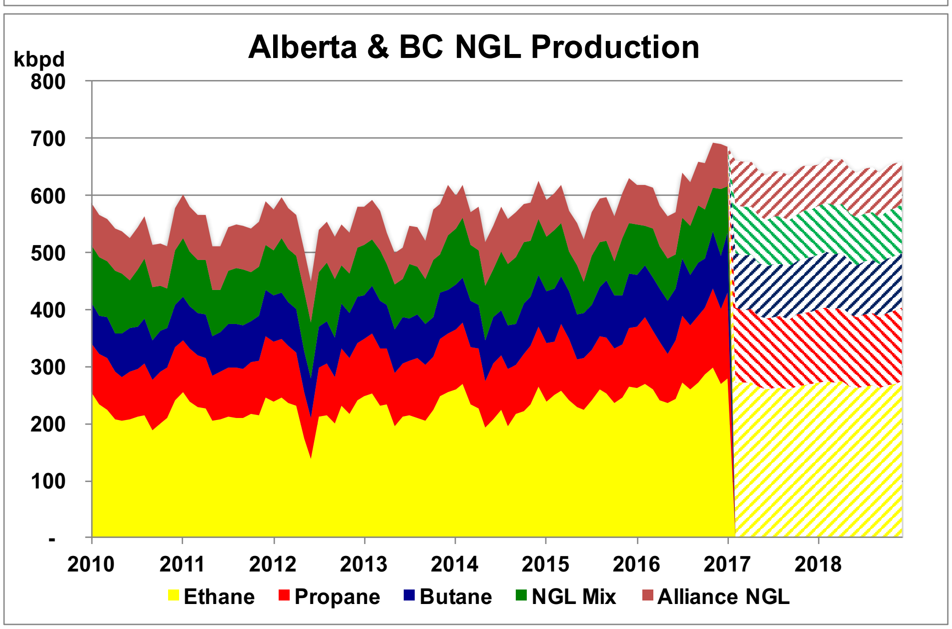




Alberta & BC Natural Gas and NGL Production

- Ethane volume includes imports from Vantage pipeline
- Natural gas and NGL production remain strong to date.
- The improving price outlook will lead to stronger gas and NGL production over the outlook period.





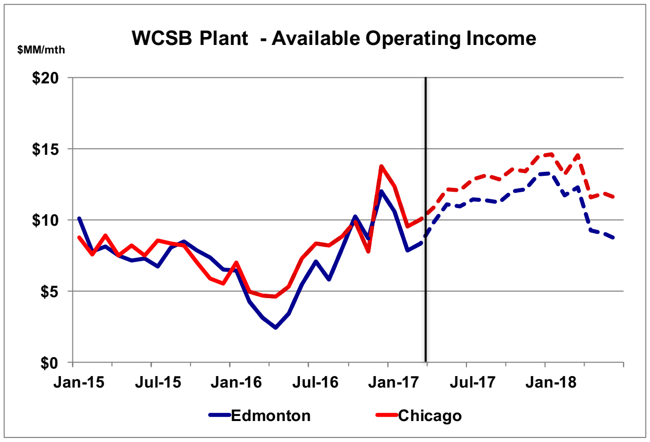
NGL Rich Gas Economics

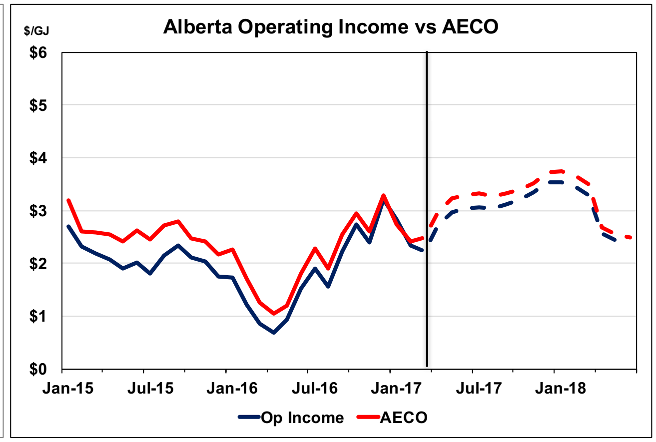
The following charts provides GPMi's estimate of the "Available Operating Income" from a "typical" 100 mmcfd Western Canadian deepcut field plant from either:

a) extracting NGL for sale into the Edmonton market and selling the residue gas at AECO; **OR**

b) not extracting NGLs and delivering the rich gas to Alliance

(Methodology in Appendix).

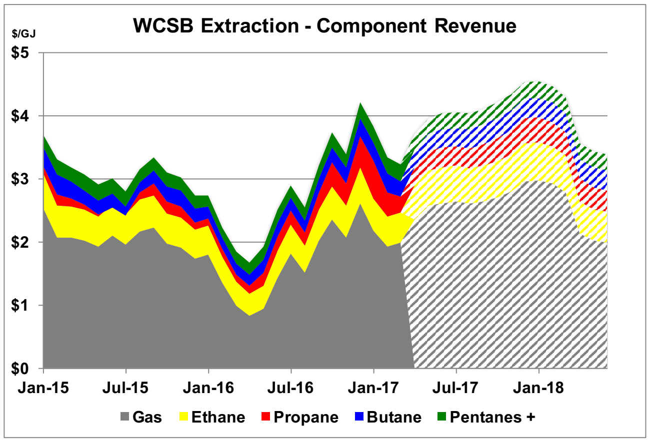


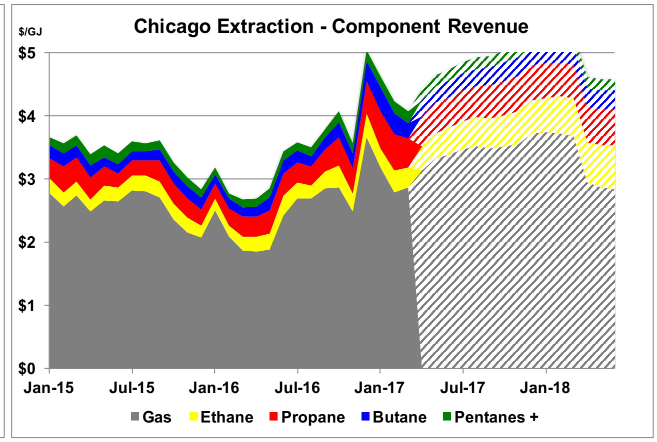


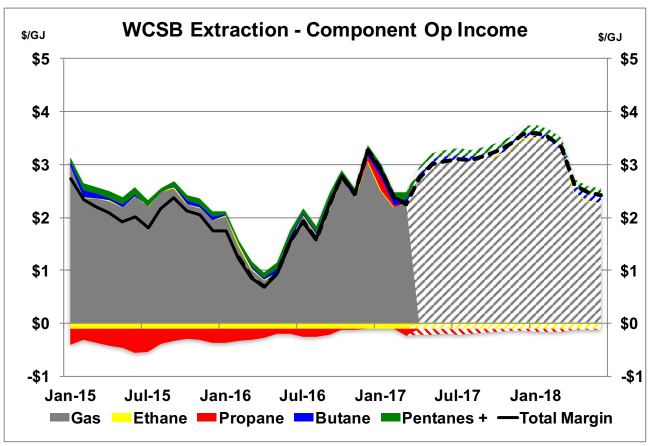
- The "available operating income" for rich gas produced in the WCSB and delivered to Alliance is more profitable than the case where the gas is processed and the NGLs extracted and delivered to Fort Saskatchewan.
- We estimate that the average "available operating income" for NGL rich gas is currently in the C$2.22/GJ range for extraction in Western Canada. This is a >30% ($C 1.00/GJ) drop from the peak in December 2016. If the whole gas stream had been sold at the plant gate the Available Operating Income would have been C$2.27/GJ (AECO less FT-R). Producers are now no longer seeing an economic benefit from the extraction of NGLs from the gas stream after the variable costs of extraction, transportation and fractionation have been included. The cause being the poors plant netbacks being received for propane. Field plants should now be operating for minimum propane recovery.

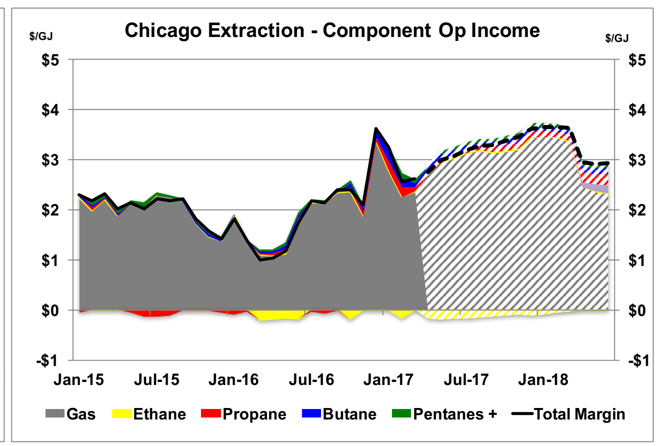
Additional Analysis

The following charts provide estimates of total revenue and total operating income by component



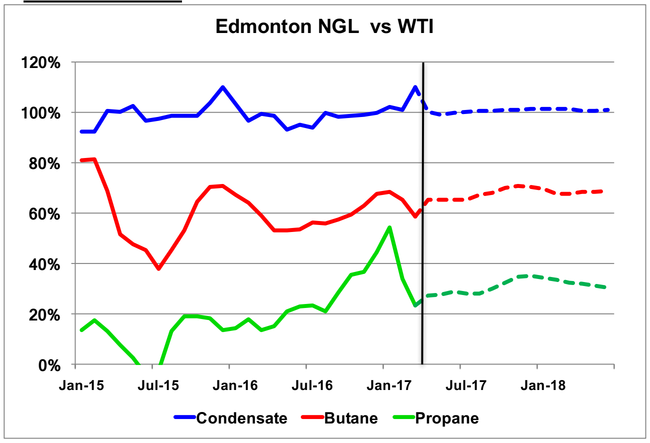


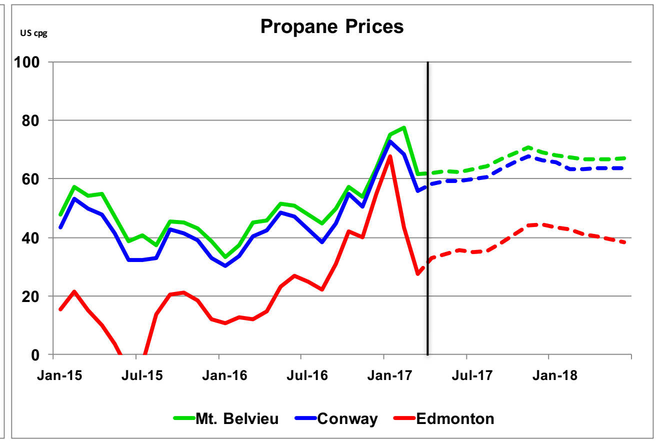


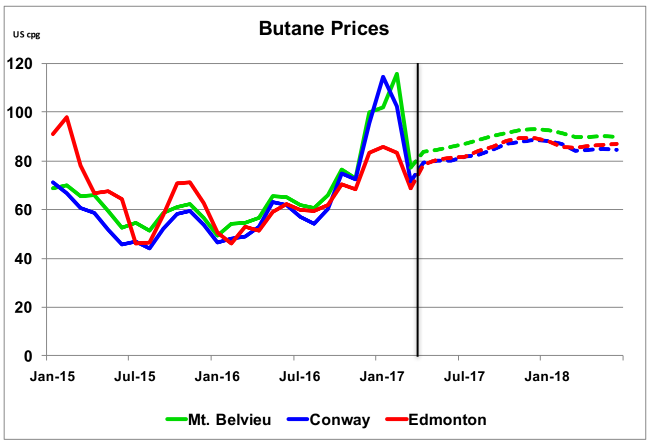


NGL revenue is a large component of the total revenue stream. The operating income contributed by the NGL components are, however, relatively small if one assumes that all deepcut plant variable operating, transportation and fractionation costs are allocated to the NGL components. Current ethane and propane margins are now negative implying that producers should be operating for minimum propane recovery in the near term Delivering NGL rich gas to Alliance is now theoretically providing better margins than processing NGL rich gas in Western Canada. The "available" Alliance Op Income to a NGL rich gas producer is now in the order of $0.46/GJ greater than processing and extracting NGLs in western Canada. This is largely being driven by the large differential in gas prices between Chicago and AECO and the difference in propane netbacks.

Price Charts







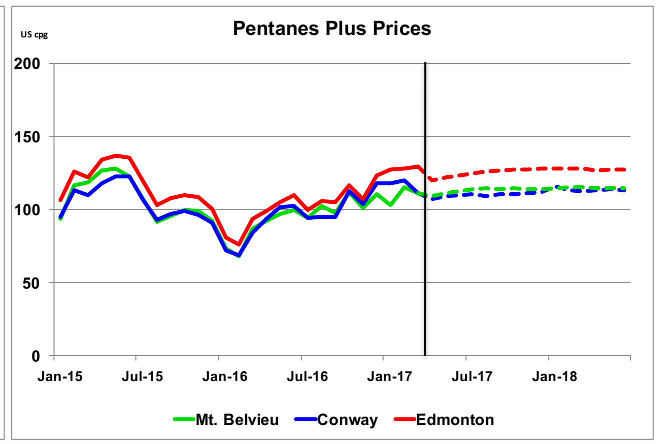


Chart data is provided monthly in excel spreadsheet format to subscribers

Gas Processing Management Inc. (GPMi)

Please contact us if you have any questions or if you have any suggestions on how this report can be improved:

Dave Tulk	tulk@gasprocessing.com	403-813-0254
Gerry Goobie	gerry@gasprocessing.com	403-680-9110

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Additional information is available on our website: **www.gasprocessing.com**

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