

Economic Valuation Report to the Interests and Potential Interests of

COMPANY NAME In Certain Properties located in Williston Basin DUNN, ND

Prepared on: 11/06/2018

Prepared by: PetroValues LLC

Valuation Summary

Fully Developed Value



Fully Developed Value (Reserves Value)

**Present value of net cashflows
assuming Full Development of the
reserves**

Longer payout period

Higher risks: undrilled wells not being drilled and/or
production stopping prematurely

Net Value:	\$330,759,056
From Oil Production:	\$282,420,857
From Gas Production:	\$25,992,363
From NGL Production:	\$22,345,836
Net Capital Investment:	\$121,500,000
Gross Capital Investment (WI=1):	\$121,500,000
Period to Full Revenue:	55.6 yrs
Net Capital investment Payout:	12-2018


best estimate using the most current data available. See
[Terms](#) for more information

The Fully Developed Value of the property is \$330,759,056. It is the present value of the net cashflows that will be received over 55.6 years assuming the full development of the reserves. "Present value" means that the "future revenues" are discounted based on interest rates (the value of \$1 in 30 years is not the same as \$1 today). "Full development of the reserves" means that the valuation assumes that every possible well is drilled; it is likely that undrilled wells would not be drilled; it is also possible that the production stops prematurely; any of these situations could substantially reduce the present value of the property.

Risk factors per reserves category of the Fully Developed Value

Reserves category	Fully Developed Value Risk factors (Reserves value)	SEC reserves rules	Comments
PDP	100% PV8 (H) 100% PV8 (V)	Producing, Shut-in. SEC compliant.	Fully developed reserves value. Average risk factors used by main banks in reserves valuation of US Onshore assets. Fully developed reserves value. Average risk factors used by main banks in reserves valuation of US Onshore assets. It assumes that all reserves are developed with future drilling locations. It is possible that undrilled wells would not be drilled by an Operator.
PDNP	100% PV10 (H) 100% PV10 (V)	Drilling, Waiting-on-Completions. SEC compliant.	
PUD	100% PV15 (H) 100% PV15 (V)	Permitted or PetroValues' Upsides within 1 mi of a PDP. SEC compliant.	
PROB	100% PV20 (H) 100% PV20 (V)	Permitted or PetroValues' Upsides within 2 mi of a PDP. SEC compliant.	
POSS	100% PV25 (H) 100% PV25 (V)	Permitted or PetroValues' Upsides within 3 mi of a PDP. SEC compliant.	
EXPL1	100% PV30 (H) 100% PV30 (V)	Contingent or Prospective reserves. Value non-SEC compliant. Not included in Reserves reports.	PetroValues' estimate of "Exploration Value": <ul style="list-style-type: none"> • Drilled or Permitted well is between 3 mi and 10 mi of the nearest PDP (same formation same lateral length category). • Additional risking for an Exploration permit; PetroValues uses 50% of the production (all streams) of the nearest type curve (same formation same lateral length category).
EXPL2	100% PV30 (H) 100% PV30 (V)	Contingent or Prospective reserves. Value non-SEC compliant. Not included in Reserves reports.	PetroValues' estimate of "Exploration Value": <ul style="list-style-type: none"> • Drilled or Permitted well is between 10 mi and 20 mi of the nearest PDP (same formation same lateral length category). • Additional risking for an Exploration permit; PetroValues uses 25% of the production (all streams) of the nearest type curve (same formation same lateral length category).
EXPL3	100% PV30 (H) 100% PV30 (V)	Contingent or Prospective reserves. Value non-SEC compliant. Not included in Reserves reports.	PetroValues' estimate of "Exploration Value": <ul style="list-style-type: none"> • Drilled or Permitted well is beyond 20 mi of the nearest PDP (same formation same lateral length category). • Additional risking for an Exploration permit; PetroValues uses 10% of the production (all streams) of the nearest type curve (same formation same lateral length category).
CONT	100% PV30 (H) 100% PV30 (V)	Contingent reserves. SEC compliant.	PetroValues does not value the upsides generated by PetroValues in areas that have hydrocarbon accumulations but have not been tested by a well in a 3 mi radius.
General remarks		Distances refer to nearest PDP in same formation and with same lateral length category (Vertical or Horizontal)	

Suggested Market Value



Suggested Market Value

Immediate Lump Sum Payment

Immediate payout
No risk

Net Value:	\$144,090,026
From Oil Production:	\$123,032,243
From Gas Production:	\$11,323,168
From NGL Production:	\$9,734,615
Net Capital Investment:	\$0
Payout:	days of sale

best estimate using the most current data available. See [Terms](#) for more information

Typically the value of a leasehold or mineral property sold as an Immediate Lump Sum Payment is less than the Fully Developed Value of the property. The discounts applied from the "Fully Developed Value" to the "Suggested Market Value" vary with the reserves category, where undrilled wells have a larger risk than existing wells. Other factors affect the Market Value of a property: the size of the asset, the field, its location, nearby infrastructure, and the ability of a Leasehold or Mineral owner to market his/her property to the most interested parties. PetroValues' estimate of the "Suggested Market Value" of this property is \$144,090,026.

Risk factors per reserves category of the Suggested Market Value

Reserves category	Suggested Market Value Risk factors	SEC reserves rules	Comments
PDP	50% PV10 (H) 50% PV10 (V)	Producing, Shut-in. SEC compliant.	PDP and PDNP are a safer value for Mineral owners than undrilled locations since the wells already exist.
PDNP	50% PV15 (H) 50% PV15 (V)	Drilling, Waiting-on-Completions. SEC compliant.	The additional risking factor of the "Suggested Market Value" compared to the "Fully developed Value" results from: <ul style="list-style-type: none"> the fact that a Mineral owner has no control over an Operator's management of the production; wells' production might be prematurely interrupted or plugged. the discounted value from the production would be paid out right away as a lump sum, instead of being spread over decades of production without the risks of commodity prices volatility, and possible regulations changes.
PUD	25% PV20 (H) 25% PV20 (V)	Permitted or PetroValues' Upsides within 1 mi of a PDP. SEC compliant.	Undrilled locations have an even lesser value than PDP and PDNP.
PROB	25% PV25 (H) 25% PV25 (V)	Permitted or PetroValues' Upsides within 2 mi of a PDP. SEC compliant.	The additional risking factor of the "Suggested Market Value" compared to the "Fully developed Value" results from: <ul style="list-style-type: none"> a Mineral owner does not have control over undrilled locations; it is often likely that Operators do not fully develop an asset with all the wells necessary to extract all the reserves, even when wells are permitted. the discounted value from the production would be paid out right away as a lump sum, instead of being spread over decades of production without the risks of commodity prices volatility, and possible regulations changes.
POSS	25% PV30 (H) 25% PV30 (V)	Permitted or PetroValues' Upsides within 3 mi of a PDP. SEC compliant.	
EXPL1	100% PV40 (H) 100% PV40 (V)	Contingent or Prospective reserves. Value non-SEC compliant. Not included in Reserves reports.	Exploration permitted or drilled wells have almost no value to a Mineral Owner as it is purely prospective and there is a high likelihood the well would not be drilled or would not have the production expected by Explorationists. PetroValues' estimate of "Exploration Value": <ul style="list-style-type: none"> Drilled or Permitted well is between 3 mi and 10 mi of the nearest PDP (same formation same lateral length category). Additional risking for an Exploration permit; PetroValues uses 50% of the production (all streams) of the nearest type curve (same formation same lateral length category).
EXPL2	100% PV40 (H) 100% PV40 (V)	Contingent or Prospective reserves. Value non-SEC compliant. Not included in Reserves reports.	Exploration permitted or drilled wells have almost no value to a Mineral Owner as it is purely prospective and there is a high likelihood the well would not be drilled or would not have the production expected by Explorationists. PetroValues' estimate of "Exploration Value": <ul style="list-style-type: none"> Drilled or Permitted well is between 10 mi and 20 mi of the nearest PDP (same formation same lateral length category). Additional risking for an Exploration permit; PetroValues uses 25% of the production (all streams) of the nearest type curve (same formation same lateral length category).
EXPL3	100% PV40 (H) 100% PV40 (V)	Contingent or Prospective reserves. Value non-SEC compliant. Not included in Reserves reports.	Exploration permitted or drilled wells have almost no value to a Mineral Owner as it is purely prospective and there is a high likelihood the well would not be drilled or would not have the production expected by Explorationists. PetroValues' estimate of "Exploration Value": <ul style="list-style-type: none"> Drilled or Permitted well is beyond 20 mi of the nearest PDP (same formation same lateral length category). Additional risking for an Exploration permit; PetroValues uses 10% of the production (all streams) of the nearest type curve (same formation same lateral length category).
CONT	100% PV40 (H) 100% PV40 (V)	Contingent reserves. SEC compliant.	PetroValues does not value the upsides generated by PetroValues in areas that have hydrocarbon accumulations but have not been tested by a well in a 3 mi radius.
General remarks		Distances refer to nearest PDP in same formation and with same lateral length category (Vertical or Horizontal)	

Executive Summary

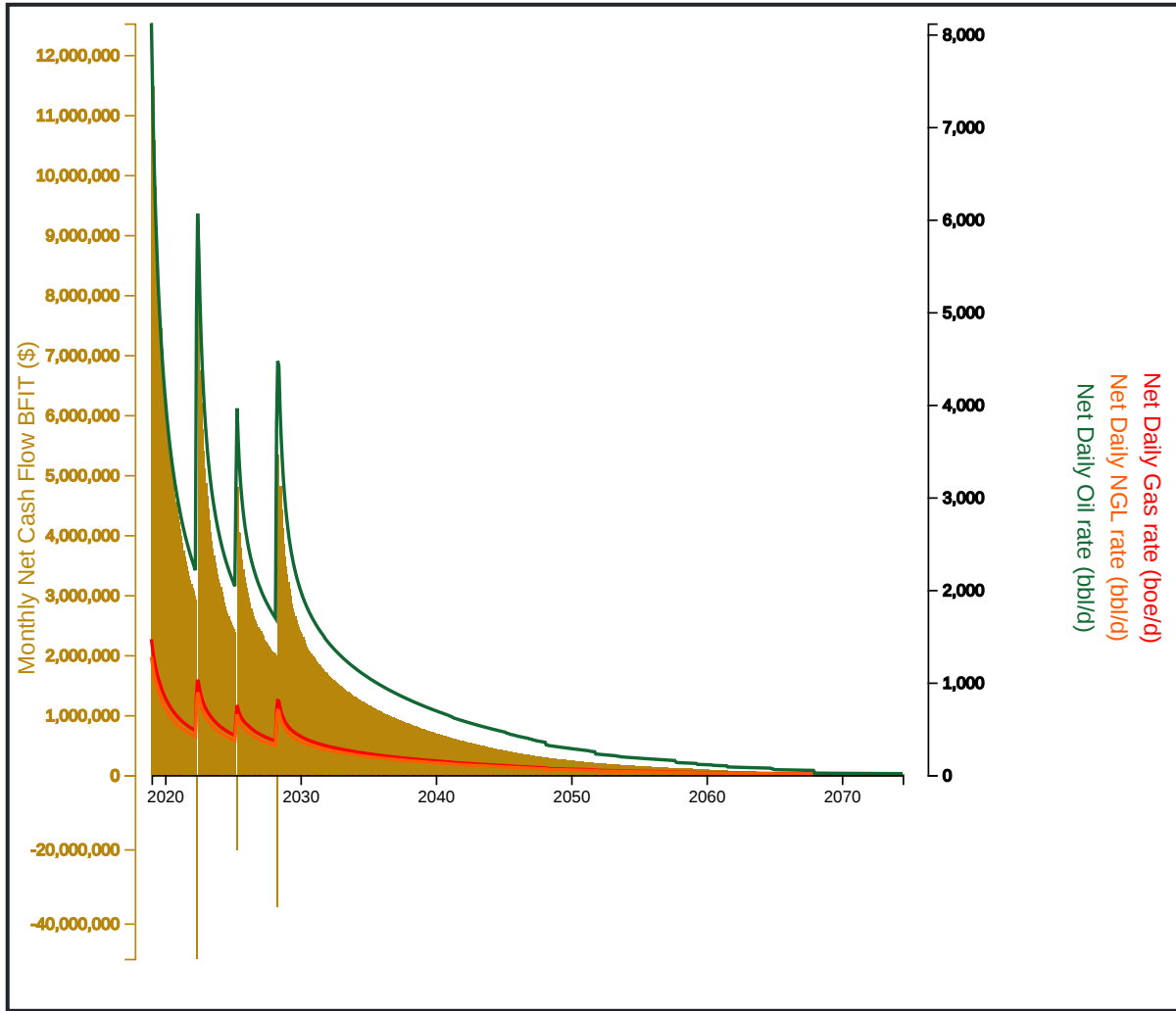
Description	Count	Value (\$)	Valuation	Present Worth at 0% (\$)	Present Worth at 10% (\$)	Total Net Reserves (BOE)	Net Oil Reserves (Bbl)	Net Gas Reserves (Mcf)	Net NGL Reserves (Bbl)
Producing PDP - HZ	22	\$145,321,613	100% PV8	\$234,047,386	\$133,895,648	8,542,581	6,165,292	7,632,922	1,105,135
Producing PDP - Vert	2	\$-78,973	100% PV8	\$-80,467	\$-78,622	3,742	2,837	2,854	429
Drilled PDNP - HZ	14	\$169,814,990	100% PV10	\$263,383,485	\$169,814,990	8,596,538	6,095,499	8,030,256	1,162,663
Drilled PDNP - Vert	0	\$0	100% PV10	\$0	\$0	0	0	0	0
Permitted PUD - HZ	0	\$0	100% PV15	\$0	\$0	0	0	0	0
Permitted PUD - Vert	0	\$0	100% PV15	\$0	\$0	0	0	0	0
Upsides PUD - HZ	9	\$14,516,309	100% PV15	\$97,085,697	\$25,768,539	5,874,954	4,266,612	5,164,015	747,673
Upsides PUD - Vert	0	\$0	100% PV15	\$0	\$0	0	0	0	0
Total Proved	47	\$329,573,939		\$594,436,101	\$329,400,555	23,017,815	16,530,240	20,830,047	3,015,900
Permitted/Upsides PROB - HZ	1	\$665,276	100% PV20	\$7,444,256	\$2,290,120	521,932	398,257	397,092	57,493
Permitted/Upsides PROB - Vert	0	\$0	100% PV20	\$0	\$0	0	0	0	0
Permitted/Upsides POSS - HZ	5	\$519,841	100% PV25	\$38,678,684	\$7,046,323	2,740,971	2,015,078	2,330,673	337,447
Permitted/Upsides POSS - Vert	0	\$0	100% PV25	\$0	\$0	0	0	0	0
Total Valuation	53	\$330,759,056		\$640,559,041	\$338,736,998	26,280,718	18,943,575	23,557,812	3,410,840
\$ Valuation / BOE Reserves	0	\$12.59		\$0	\$0	0	0	0	0

Valuation Summary by Formation

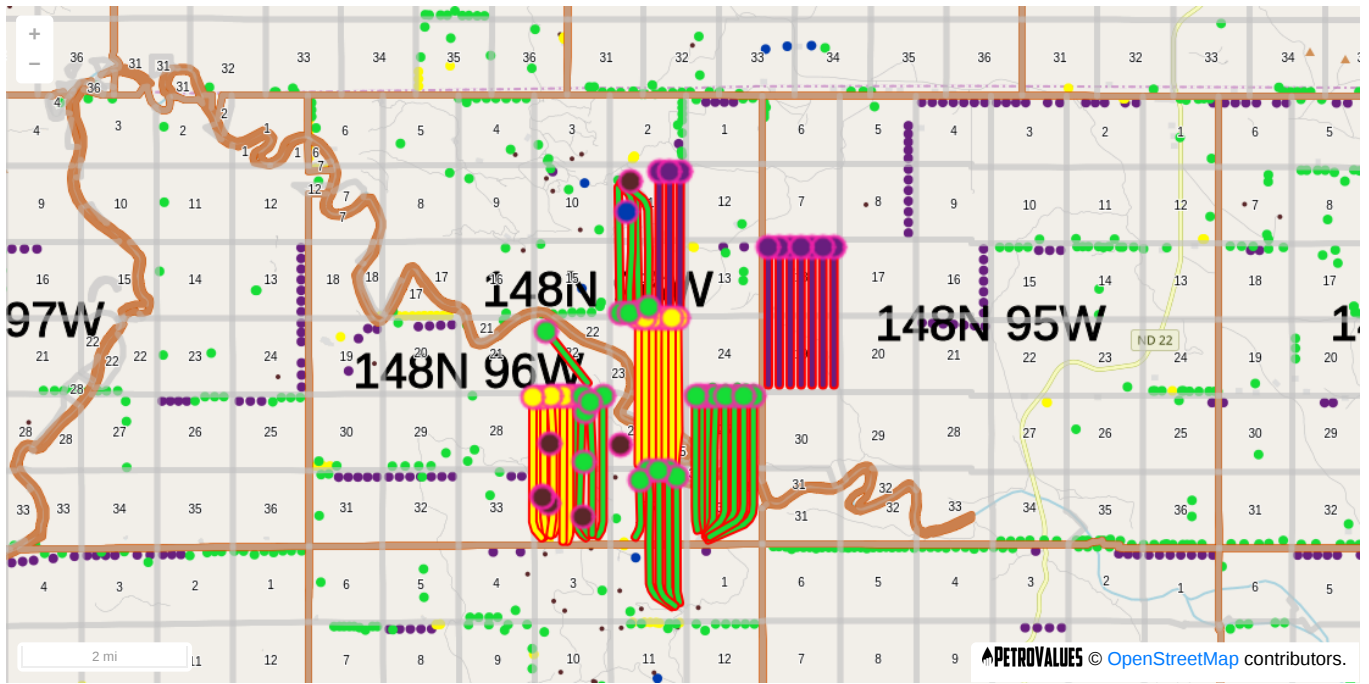
Basin-Formations	Description	Producing (PDP)	Drilling (PDNP)	Permitted	Upsides
WB-Bakken	Net Remaining oil	3,104,944 bbl	2,741,019 bbl		3,224,125 bbl
WB-Bakken	Net Remaining gas	4,075,625 mcf	3,269,806 mcf		3,729,077 mcf
WB-Bakken	Net Remaining ngl	590,091 bbl	473,420 bbl		539,915 bbl
WB-Bakken	Value	\$85,916,019	\$85,414,581		\$5,403,380
WB-Bakken	PV0	\$125,189,321	\$118,440,718		\$62,770,383
WB-Bakken	PV10	\$80,071,201	\$85,414,581		\$15,164,015
WB-Three Forks	Net Remaining oil	3,060,348 bbl	3,354,480 bbl		3,455,822 bbl
WB-Three Forks	Net Remaining gas	3,557,296 mcf	4,760,450 mcf		4,162,703 mcf
WB-Three Forks	Net Remaining ngl	515,044 bbl	689,243 bbl		602,698 bbl
WB-Three Forks	Value	\$59,405,595	\$84,400,409		\$10,298,047
WB-Three Forks	PV0	\$108,858,065	\$144,942,767		\$80,438,254
WB-Three Forks	PV10	\$53,824,447	\$84,400,409		\$19,940,968
WB-Dupero/Nisku	Net Remaining oil	2,837 bbl			
WB-Dupero/Nisku	Net Remaining gas	2,854 mcf			
WB-Dupero/Nisku	Net Remaining ngl	429 bbl			
WB-Dupero/Nisku	Value	\$-78,973			
WB-Dupero/Nisku	PV0	\$-80,467			
WB-Dupero/Nisku	PV10	\$-78,622			

Net Cash Flow Summary and Net Production

Net Cash Flow Summary ⓘ and Net Production ⓘ



Maps



Land Summary

Well Summary(56)

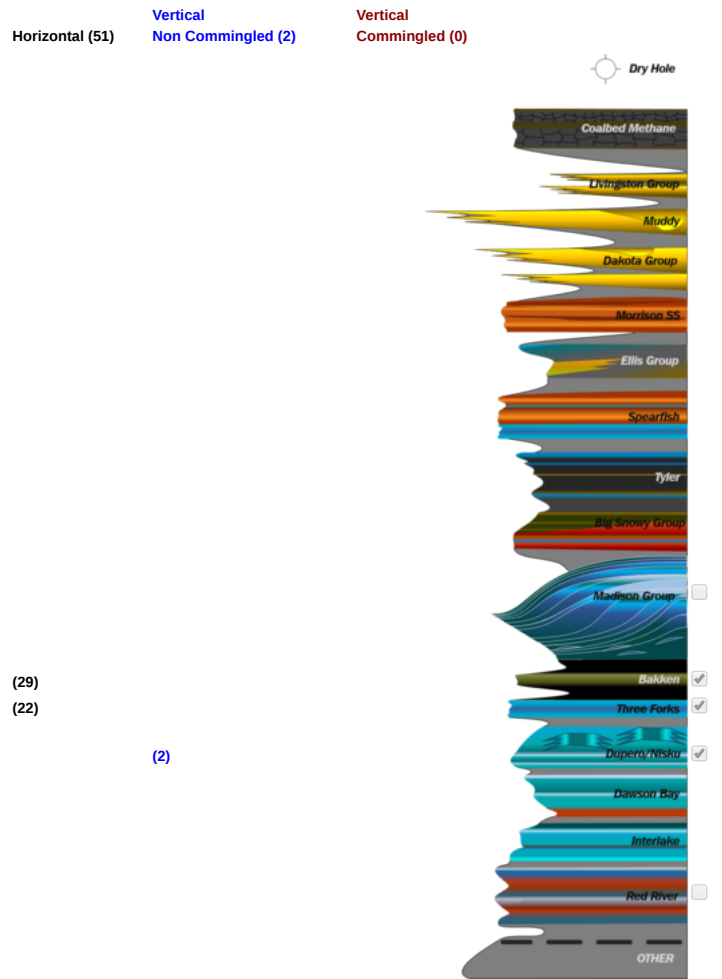
** see WellSummary.xlsx*

Additional Upsides (5)

** see AdditionalUpsideSummary.xlsx*

Geologic Summary

Williston Basin



Economic Inputs

Economic Input Parameters: Aggregate Wells (56)

** see EconomicInputs.xlsx*

Additional Upsides (5)

** see AdditionalUpsideSummary.xlsx*

Dates of Economics

Effective Date: 12/02/2018

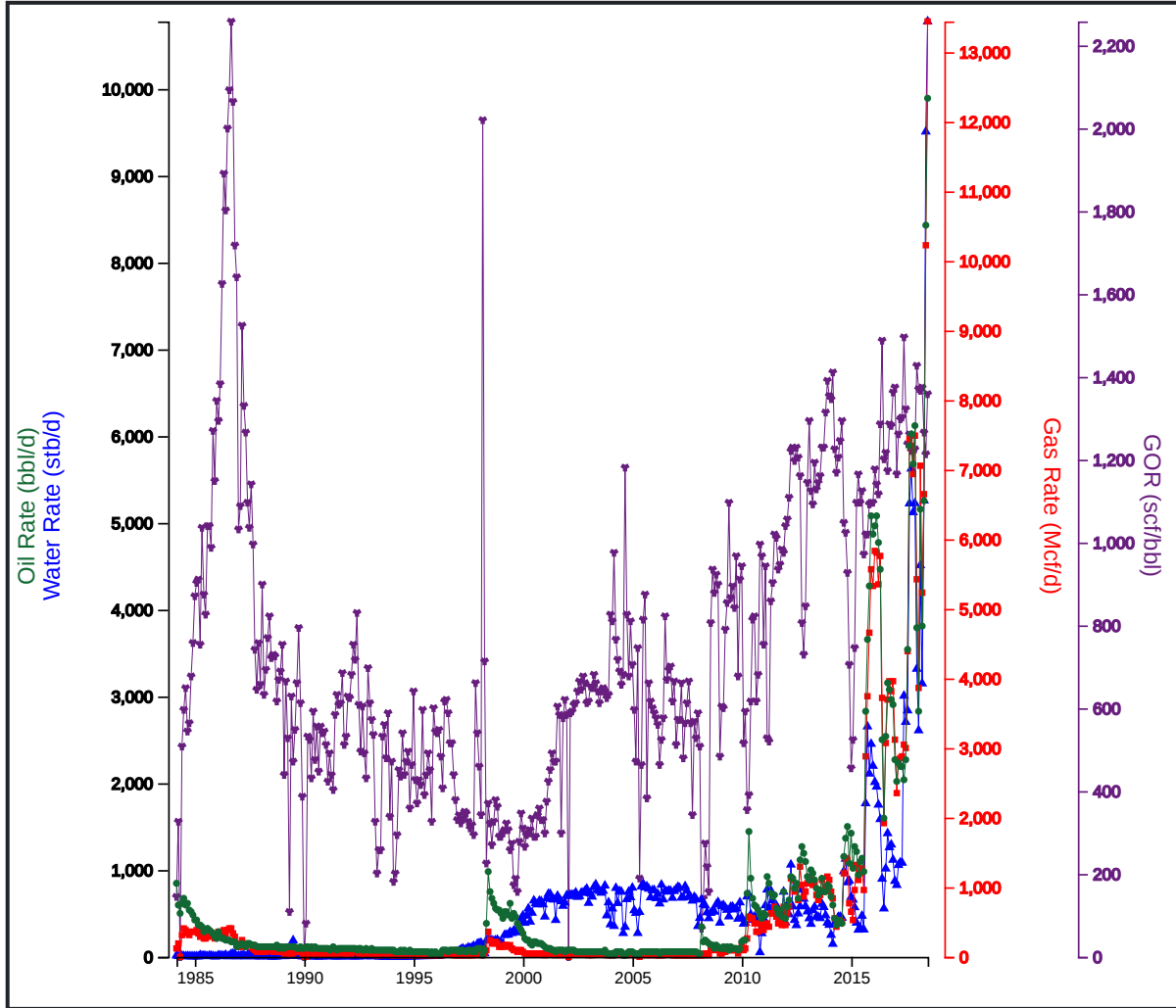
Discount Date: 12/02/2018

Commodity Prices

Date	Average of Oil Price (\$)	Average of Gas Price (\$)
	NYMEX WTI CL (11-02-2018)	NYMEX Henry Hub NG (11-02-2018)
12-2018	\$63.69	\$3.237
2019	\$64.15	\$2.826
2020	\$62.51	\$2.670
2021	\$59.96	\$2.605
2022	\$57.62	\$2.616
2023	\$55.80	\$2.671
2024	\$54.23	\$2.756
2025	\$53.30	\$2.858
2026	\$53.28	\$2.964
2027	\$53.78	\$3.051
2028	\$53.78	\$3.140
2029	\$53.78	\$3.241
2030	\$53.78	\$3.336
Average	\$56.38	\$2.897

Total Production

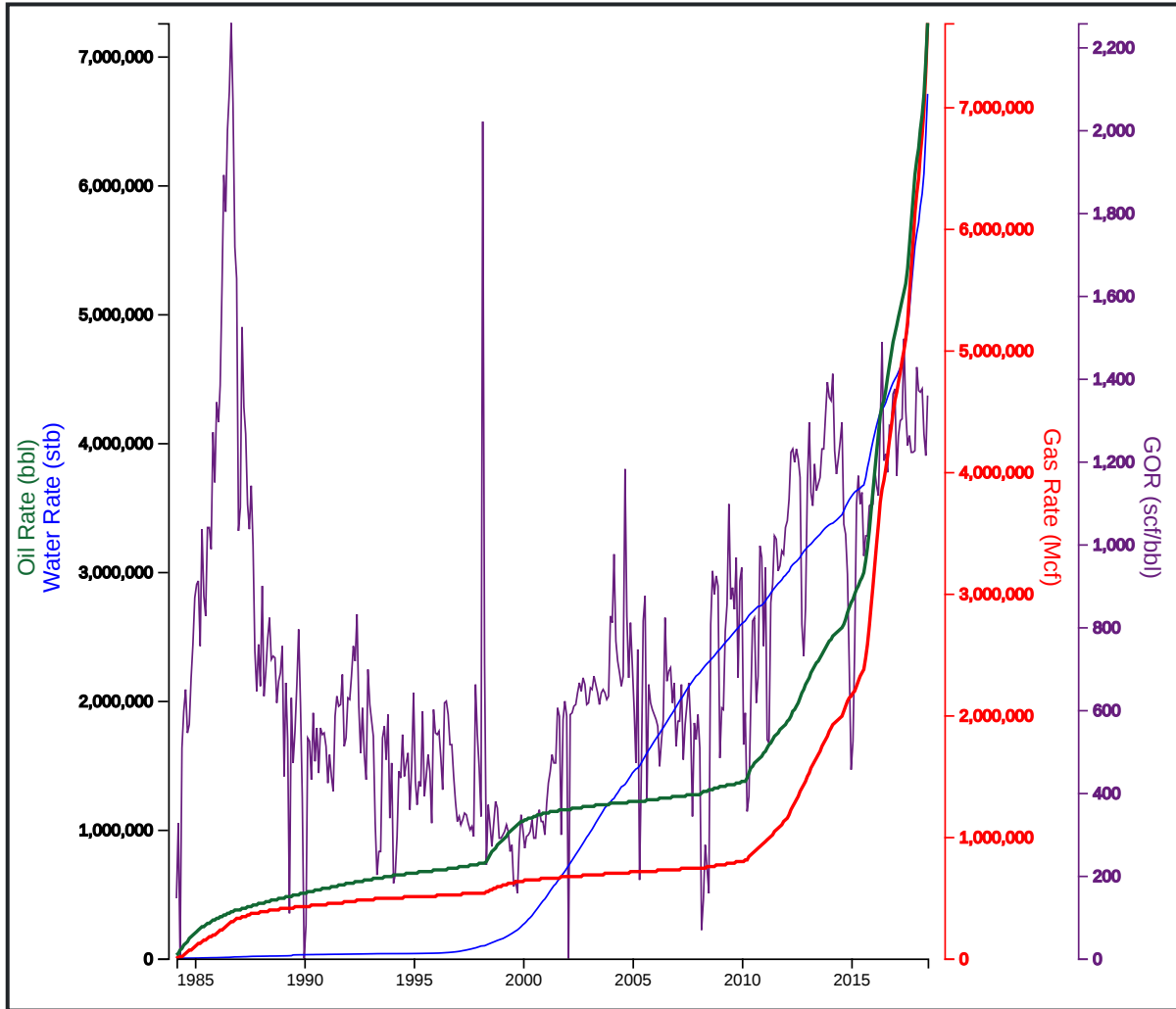
First Production Date	29/02/1984
Last Production Date	30/06/2018
Oil	7,257,547 bbl
Gas	7,689,903 Mcf
Water	6,707,869 bbl



Graph Type:

- Rate
- Cumulative

First Production Date	29/02/1984
Last Production Date	30/06/2018
Oil	7,257,547 bbl
Gas	7,689,903 Mcf
Water	6,707,869 bbl



Graph Type:

- Rate
 Cumulative

Total Forecast

Total EURs and Net Remaining Reserves

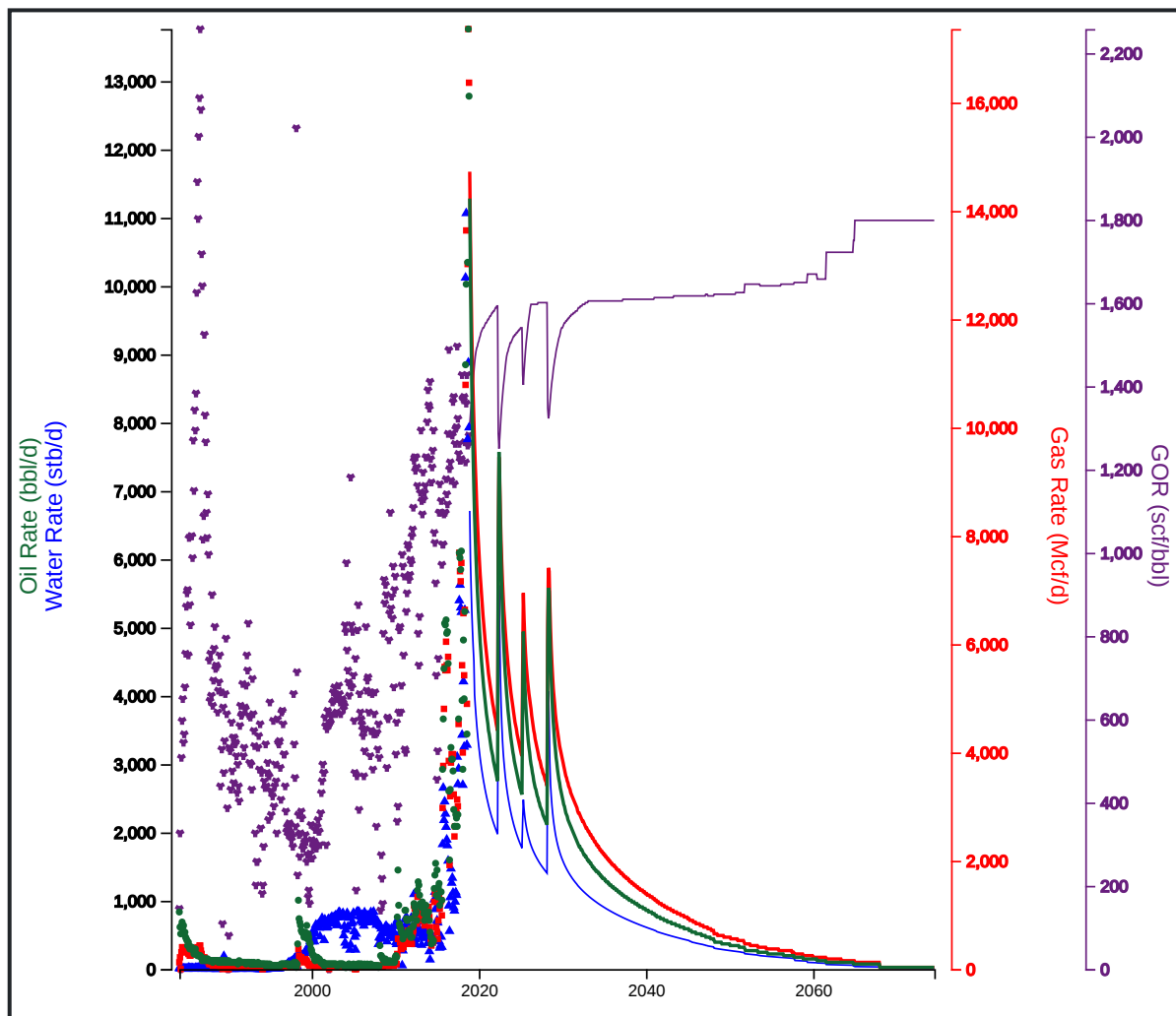
Gross EURs ⓘ

Total Gross EUR (dry) ⓘ	43,827,129 boe
Gross Oil EUR	32,258,903 bbl
Gross Gas EUR (dry) ⓘ	6,188,597 boe (37,131,579 Mcf)
Gross NGL EUR	5,379,629 bbl
Gross Water EUR	23,215,082 bbl

Net Remaining Reserves ⓘ

Total Net Remaining Reserves (dry) ⓘ	26,280,718 boe
Net Oil Remaining Reserves	18,943,576 bbl
Net Gas Remaining Reserves (dry) ⓘ	3,926,302 boe (23,557,811 Mcf)
Net NGL Remaining Reserves	3,410,840 bbl
Net Water Remaining Reserves	12,559,528 bbl

Gross Forecast



Graph Type:

- Rate
- Cumulative

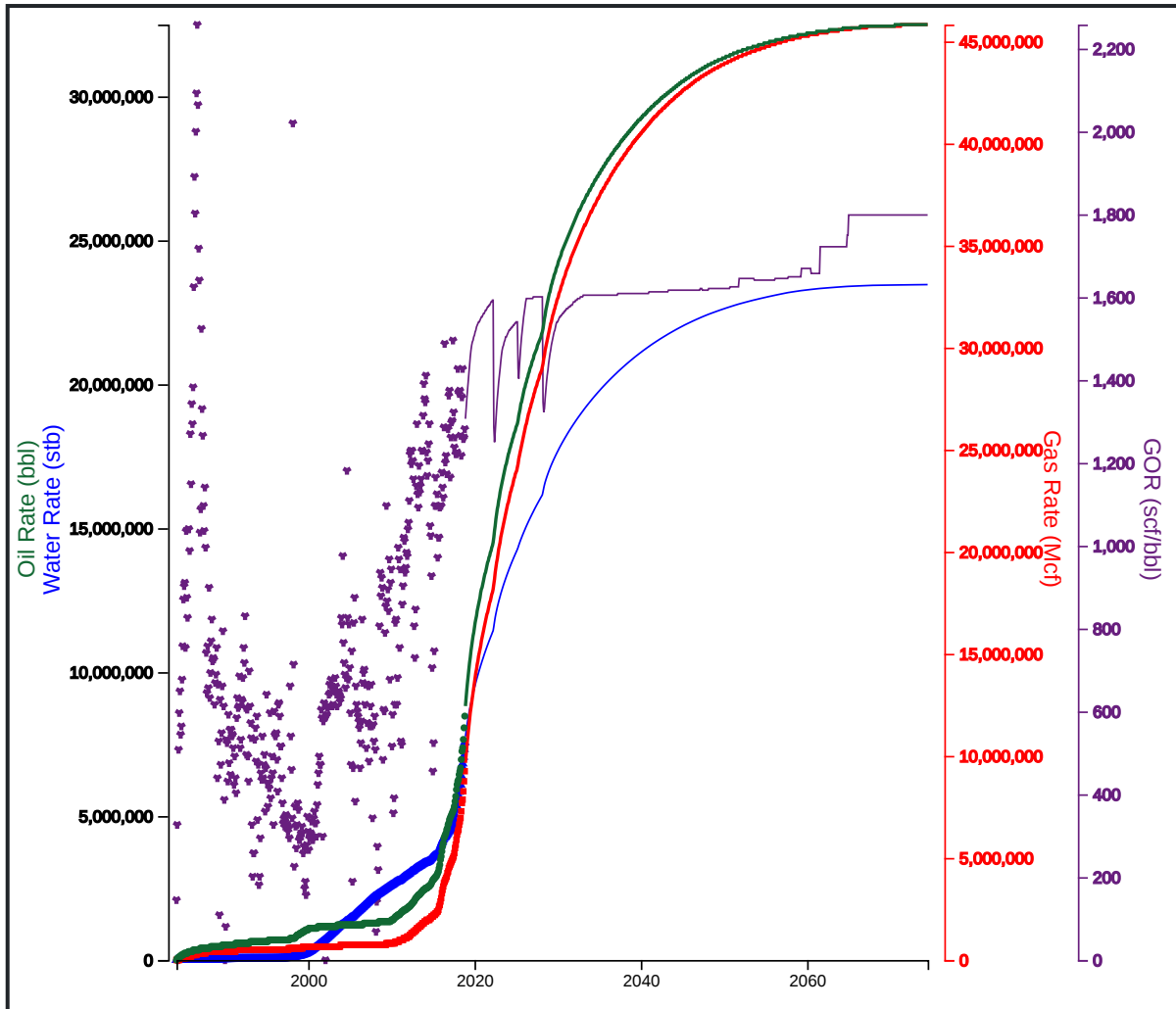
Gross EURs ⓘ

Total Gross EUR (dry) ⓘ	43,827,129 boe
Gross Oil EUR	32,258,903 bbl
Gross Gas EUR (dry) ⓘ	6,188,597 boe (37,131,579 Mcf)
Gross NGL EUR	5,379,629 bbl
Gross Water EUR	23,215,082 bbl

Net Remaining Reserves ⓘ

Total Net Remaining Reserves (dry) ⓘ	26,280,718 boe
Net Oil Remaining Reserves	18,943,576 bbl
Net Gas Remaining Reserves (dry) ⓘ	3,926,302 boe (23,557,811 Mcf)
Net NGL Remaining Reserves	3,410,840 bbl
Net Water Remaining Reserves	12,559,528 bbl

Gross Forecast



Graph Type:

- Rate
- Cumulative

Economic Results by Well (48)

* see *EconomicResultsByWell.xlsx*

--- end of report ---