

<b>OMB APPROVAL</b>	
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Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person* <u>Gerlich Michael A</u>  (Last) (First) (Middle) 1331 LAMAR, SUITE 650  (Street) HOUSTON TX 77010  (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>Gastar Exploration Inc. [ GST ]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable)  Director 10% Owner  <input checked="" type="checkbox"/> Officer (give title below) Other (specify below)  <u>Senior VP &amp; CFO</u>
	3. Date of Earliest Transaction (Month/Day/Year) <u>01/30/2018</u>	
4. If Amendment, Date of Original Filed (Month/Day/Year)		

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock	01/30/2018		F		68,952 <sup>(1)</sup>	D	\$1.12	2,437,091 <sup>(2)</sup>	D	
Common Stock	01/30/2018		A		177,734 <sup>(3)</sup>	A	\$0.00	2,614,825 <sup>(2)</sup>	D	

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)**

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
2015 Performance Based Units	\$0.00	01/30/2018		J			135,417 <sup>(4)</sup>	(5)	01/30/2018	Common Stock	135,417	\$0.00	0	D	
2016 Performance Based Units	\$0.00							(5)	01/30/2019	Common Stock	191,176		191,176	D	
2017 Performance Based Units	\$0.00							(5)	01/30/2020	Common Stock	171,310		171,310	D	
2018 Performance Based Units	\$0.00	01/30/2018		A		177,734		(6)	01/30/2021	Common Stock	177,734 <sup>(7)</sup>	\$0.00	177,734	D	

**Explanation of Responses:**

- Shares forfeited to meet tax obligation of restricted share vesting.
- Includes 1,377,934 shares acquired on various dates pursuant to previously reported restricted share grants that will vest subject to previously disclosed vesting schedules.
- The reported shares were acquired pursuant to a restricted share grant and will vest in three equal annual installments beginning on January 30, 2019.
- These PBUs vested and forfeited as a result of the 2015 PBU award settling at 0% of the target award based on Gastar's share price depreciation over the performance period.
- These PBUs vest in their entirety at the end of a three-year performance period as previously reported.
- These PBUs vest in their entirety at the end of the three-year performance period with settlement in common stock between 0% and 200% (\*\*subject to limitations discussed in Footnote 7 below) of the target award based on Gastar's share price appreciation over a three-year performance period relative to a peer index. Share price appreciation is measured generally as the change in market value of common stock during the performance period. The PBUs have no voting rights but provide for dividend equivalents to be paid upon vesting.
- The number of PBUs reported (177,734) represents the target award. As such, the number of shares that may be issued upon vesting ranges from 0 shares to 355,468 shares. \*\*As discussed in Footnote 6 above, at the end of the performance period, the participant may earn up to 200% of the target award, subject to a maximum award limitation of one million (1,000,000) shares that may be issued to any individual in a calendar year under the Gastar Exploration Inc. Long-Term Incentive Plan.

**Remarks:**

/s/ Michael A. Gerlich 02/01/2018

\*\* Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

\* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

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