GASTAR EXPLORATION LTD Form SC 13D/A September 02, 2010

> UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549

OMB APPROVAL

OMB

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SCHEDULE 13D

Under the Securities Exchange Act of 1934

(Amendment No. 7)*

Gastar Exploration Ltd.

(Name of Issuer)

Common Shares, no par value

(Title of Class of Securities)

367299104

(CUSIP Number)

Warren T. Lazarow, Esq. O'Melveny & Myers LLP 2765 Sand Hill Road Menlo Park, CA 94025 (650) 473-2600 Paul S. Scrivano, Esq. O'Melveny & Myers LLP Times Square Tower 7 Times Square New York, NY 10036 (212) 326-2000

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

September 1, 2010

(Date of Event Which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of sections 240.13d-1(e), 240.13d-1(f) or 140.13d-1(g), check the following box. [X]

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See section 240.13d-7 for other parties to whom copies are to be sent.

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.

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| | | 1. | Names of Reporting Persons | | | |
|--|--|--|--|---------------|--|--|
| | Palo Alto Investors, Inc. | | | | | |
| 2. (a) (b) | | Check the Appropriate Box if a Member of a Group (See Instru | | | | |
| | (| 3. | SEC Use Only | | | |
| | 4. | Source of F | unds (See Instructions) | AF | | |
| 5. Check | 5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) | | | | | |
| | 6. | Citizenship or P | lace of Organization | California | | |
| Number of Shares Beneficially Owned by Each Reporting Person With | 7. 8. 9. 10. Power | Sole Voting Power Shared Voting Power Sole Dispositive Power Shared Dispositive | 0 2,891,794 0 2,891,794 | | | |
| 11. Aggregate Amount Beneficially Owned by Each Reporting Person 2,891,794 | | | | | | |
| 12 | | Check if the Aggregate | Amount in Row (11) Excludes Certai Instructions) | n Shares (See | | |
| 13. | | Percent of Class Represented by Amount in Row (11) | | 5.7% | | |
| 14. | | Type of Reporting Person (See Instructions) | | CO, HC | | |
| Page 2 of 7 | | | | | | |

| | | 1. | Names of Reporting Persons | | | |
|--|--|--|---|----------------|--|--|
| | Palo Alto Investors, LLC | | | | | |
| 2 (a) (b) | | Check the Appropriat | te Box if a Member of a Group (See I | | | |
| | 2 | 3. | SEC Use Only | | | |
| | 4. | Source of Fu | unds (See Instructions) | AF | | |
| 5. Check i | 5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) | | | | | |
| | 6. | Citizenship or Pl | lace of Organization | California | | |
| Number of Shares Beneficially Owned by Each Reporting Person With | 7. 8. 9. 10. Power | Sole Voting Power Shared Voting Power Sole Dispositive Power Shared Dispositive | 0 2,891,794 0 2,891,794 | | | |
| 11. Aggr | egate Am | ount Beneficially Owned b | y Each Reporting Person | 2,891,794 | | |
| 12. | | | Amount in Row (11) Excludes Certai Instructions) | in Shares (See | | |
| 13. | | Percent of Class Represented by Amount in Row (11) | | 5.7% | | |
| 14. | | Type of Reporting Person (See Instructions) | | IA, OO | | |
| Dans 2 of 7 | | | | | | |

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| | 1. | Names of Reporting Persons | | | | |
|--|--|---|------|--|--|--|
| | William Leland Edwards | | | | | |
| 2. (a) (b) | Check the Approp | nstructions) | | | | |
| | 3. | SEC Use Only | | | | |
| | 4. Source of | of Funds (See Instructions) | AF | | | |
| 5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) | | | | | | |
| 6. Citizenship or Place of Organization | | | Α. | | | |
| Shares 8 Beneficially 9 Owned by | 7. Sole Voting Power 8. Shared Voting Power 9. Sole Dispositive Pow 10. Shared Dispositive Power | | | | | |
| 11. Aggregate Amount Beneficially Owned by Each Reporting Person 2,9 | | | | | | |
| 12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) | | | | | | |
| 13. | Percent of Class R | epresented by Amount in Row (11) | 5.8% | | | |
| 14. | Type of Repor | Type of Reporting Person (See Instructions) | | | | |
| Page 4 of 7 | | | | | | |

| | | 1. | Names of Reporting Persons | | |
|---|--------------------------------|--|--|------------|--|
| | Anthony Joonkyoo Yun, MD | | | | |
| 2. (a) (b) | | Check the Appropriat | e Box if a Member of a Group (See Ins | tructions) | |
| | 3 | 3. | SEC Use Only | | |
| | 4. | Source of Fu | unds (See Instructions) | AF | |
| 5. Check i | f Disclosi | ure of Legal Proceedings Is | s Required Pursuant to Items 2(d) or 2(e | | |
| | 6. | Citizenship or | Place of Organization | U.S.A. | |
| Number of Shares Beneficially Owned by Each Reporting Person With | 7. 8. 9. 10. Power | Sole Voting Power Shared Voting Power Sole Dispositive Power Shared Dispositive | 0 2,891,794 0 2,891,794 | | |
| 11. Aggre | egate Am | ount Beneficially Owned b | y Each Reporting Person | 2,891,794 | |
| 12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (Instructions) | | | Shares (See | | |
| 13. | | Percent of Class Repre | esented by Amount in Row (11) | 5.7% | |
| 14. | | Type of Reporting Person (See Instructions) | | IN, HC | |

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This Amendment No. 7 (this "Amendment No. 7") amends and supplements the Schedule 13D originally filed with the Securities and Exchange Commission on November 9, 2009, as amended by Amendment No. 1 on December 11, 2009, Amendment No. 2 on December 14, 2009, Amendment No. 3 on January 14, 2010, Amendment No. 4 on January 19, 2010, Amendment No. 5 on May 17, 2010 and Amendment No. 6 on August 31, 2010 (the "Amended Statement") (the Amended Statement, together with this Amendment No. 7, are collectively referred to herein as the "Statement"), by William Leland Edwards, Palo Alto Investors, LLC, Palo Alto Investors, Inc., and Anthony Joonkyoo Yun, MD (collectively, the "Filers"). Except as set forth in this Amendment No. 7, all information set forth in the Amended Statement remains unchanged and capitalized terms used but not defined in this Amendment No. 7 shall have the meanings ascribed to such terms in the Amended Statement.

Item 5. Interest in Securities of the Issuer

(c) Listed below are all the transactions in the Stock by the Filers during the last 60 days. The sales were effected in open market transactions. There were no other transactions in the Stock by the Filers during such period.

| Filer | Date | Transaction | Purchased or Sold | Average Price Per Share | ; |
|----------|-----------|-------------|-------------------|-------------------------|------|
| PAI, LLC | 8/31/2010 | Sale | 172,800 | \$ | 2.97 |
| PAI, LLC | 9/01/2010 | Sale | 500,000 | \$ | 2.97 |

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SIGNATURES

After reasonable inquiry and to the best of my knowledge, I certify that the information set forth in this statement is true, complete and correct.

Dated: September 2, 2010

PALO ALTO INVESTORS, INC. PALO ALTO INVESTORS, LLC

By: /s/ Mark By: /s/ Mark

Shamia Shamia

Mark Shamia, Chief Operating Officer

Mark Shamia, Chief Operating Officer

/s/ Anthony Joonkyoo /s/ William Leland

Yun Edwards

Anthony Joonkyoo Yun, MD William Leland Edwards

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