FORM 4

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

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

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

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

OMB APPROVAL	
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(Print or Type Responses)

1. Name and Address of Reporting Person *	2. Issuer Name **and** Ticker or Trading Symbol	5. Relationship of Reporting Person(s) to Issuer (Check all applicable)
GRAE SETH	LIGHTBRIDGE Corp [LTBR]	_X__ Director _____ 10% Owner _X__ Officer (give title below) _____ Other (specify below) President and CEO
(Last) (First) (Middle) 1600 TYSON'S BOULEVARD, SUITE 550	3. Date of Earliest Transaction (Month/Day/Year) 07/16/2010	
(Street) MCLEAN, VA 22102	4. If Amendment, Date Original Filed(Month/Day/Year)	6. Individual or Joint/Group Filing(Check Applicable Line) _X_ Form filed by One Reporting Person ___ Form filed by More than One Reporting Person
(City) (State) (Zip)		

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	07/16/2010		M		128,139	A	$ 4.68	654,610	D	
Common Stock (1)	07/16/2010		F		70,719	D	$ 8.48	583,891	D	
Common Stock	07/16/2010		J(2)		28,710	D	$ 8.48	555,181	D	

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

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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 Underlying Securities (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 of Derivative Security: 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				
Stock Option (Right to Buy) (3)	$ 4.68	07/16/2010		M			128,139	10/06/2006	08/17/2010	Common Stock	128,139	$ 0	555,845	D	

Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
GRAE SETH 1600 TYSON'S BOULEVARD SUITE 550 MCLEAN, VA 22102	X		President and CEO	

Signatures

/s/ Seth Grae		07/19/2010
**Signature of Reporting Person		Date

Explanation of Responses:

***** 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).

(1) Surrender of shares of the Issuer's common stock in connection with the cashless exercise of a stock option.

(2) The Issuer redeemed 28,710 shares from Mr. Grae on July 16, 2010. The proceeds of this redemption were paid directly to federal and/or state taxing authorities for tax withholding of Mr. Grae's tax liability relating to the cashless exercise of an option to purchase 128,139 shares of the Issuer's common stock.

(3) Exercise of stock option.

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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