

Magliochetti Michael
 Form 4
 August 10, 2010

FORM 4

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

OMB APPROVAL

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STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person *
 Magliochetti Michael

(Last) (First) (Middle)

C/O SPIRE CORPORATION, ONE PATRIOTS PARK

(Street)

BEDFORD, MA 01730-2396

(City) (State) (Zip)

2. Issuer Name and Ticker or Trading Symbol
 SPIRE CORP [SPIR]

3. Date of Earliest Transaction
 (Month/Day/Year)
 08/06/2010

4. If Amendment, Date Original Filed(Month/Day/Year)

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

Director 10% Owner
 Officer (give title below) Other (specify below)

6. Individual or Joint/Group Filing(Check Applicable Line)

Form filed by One Reporting Person
 Form filed by More than One Reporting Person

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 Beneficial Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|--|--|
| | | | | (A) or (D) | Amount | | |
| | | | | Code | V | | |
| | | | | | Price | | |

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

Persons who 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.

SEC 1474 (9-02)

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

| 1. Title of Derivative Security | 2. Conversion or Exercise | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any | 4. Transaction Code | 5. Number of Derivative Securities | 6. Date Exercisable and Expiration Date (Month/Day/Year) | 7. Title and Amount of Underlying Security (Instr. 3 and 4) |
|---------------------------------|---------------------------|--------------------------------------|-----------------------------------|---------------------|------------------------------------|--|---|
| | | | | | | | |

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| (Instr. 3) | Price of Derivative Security | (Month/Day/Year) | (Instr. 8) | Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5) | Code | V | (A) | (D) | Date Exercisable | Expiration Date | Title | Amount or Num of Share |
|---|------------------------------------|------------------|------------|---|------------|------------|-----------------|-------|---------------------|--------------------|-------|------------------------------------|
| Non-Qualified Stock Option (right to buy) | \$ 4.18 | 08/06/2010 | A | 2,000 | 08/06/2010 | 08/06/2020 | Common Stock | 2,000 | | | | |

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|--|---------------|-----------|---------|-------|
| | Director | 10% Owner | Officer | Other |
| Magliochetti Michael C/O SPIRE CORPORATION ONE PATRIOTS PARK BEDFORD, MA 01730-2396 | X | | | |

Signatures

| | |
|--|---------------------|
| Michael J. Magliochetti | 08/10/2010 |
| <small>**Signature of Reporting Person</small> | <small>Date</small> |

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).

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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