

LOCKHART THOMAS A  
Form 4  
September 16, 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 \*  
LOCKHART THOMAS A

(Last) (First) (Middle)  
ONE CITYPLACE DRIVE  
(Street)  
ST. LOUIS, MO 63141

(City) (State) (Zip)

2. Issuer Name and Ticker or Trading Symbol  
ARCH COAL INC [ACI]

3. Date of Earliest Transaction  
(Month/Day/Year)  
09/15/2010

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

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

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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 (Instr. 3) | 2. Conversion or Exercise Price of | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) | 5. Number of Derivative | 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) |
|--------------------------------------------|------------------------------------|--------------------------------------|----------------------------------------------------|--------------------------------|-------------------------|----------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------|
|--------------------------------------------|------------------------------------|--------------------------------------|----------------------------------------------------|--------------------------------|-------------------------|----------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------|

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| Derivative Security |     |            | Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5) |    | Date Exercisable | Expiration Date | Title        | Amount or Number of Shares |          |
|---------------------|-----|------------|-----------------------------------------------------------------|----|------------------|-----------------|--------------|----------------------------|----------|
|                     |     |            | Code                                                            | V  |                  |                 |              |                            |          |
| Phantom Stock       | (1) | 09/15/2010 | A                                                               | 81 | (2)              | (2)             | Common Stock | 81                         | \$ 24.05 |

## Reporting Owners

| Reporting Owner Name / Address                                  | Relationships |           |         |       |
|-----------------------------------------------------------------|---------------|-----------|---------|-------|
|                                                                 | Director      | 10% Owner | Officer | Other |
| LOCKHART THOMAS A<br>ONE CITYPLACE DRIVE<br>ST. LOUIS, MO 63141 | X             |           |         |       |

## Signatures

/s/ Jon S. Ploetz,  
Attorney-in-Fact

09/16/2010

\*\*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) Each share of phantom stock represents a right to receive the value in cash of one share of Arch Coal, Inc. common stock. The shares of phantom stock are held by the director through the Arch Coal, Inc. Deferred Compensation Plan for Non-Employee Directors (the "Plan"). The shares of phantom stock acquired by the director represent dividends attributable to amounts that the director elected to defer under the Plan into a hypothetical investment in shares of Arch Coal, Inc. common stock.

(2) Shares of phantom stock are payable in cash following termination of the director's service as a director of Arch Coal, Inc. The director may transfer amounts held in the phantom stock account into an alternative investment account at any time.

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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