

Slone Deck  
Form 4  
February 27, 2012

**FORM 4**

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

OMB APPROVAL

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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 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 \*  
Slone Deck

(Last) (First) (Middle)  
ONE CITYPLACE DRIVE, SUITE 300  
(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)  
02/23/2012

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)  
VP/Govt Investor & Public Aff

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 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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(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 Securities (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 Number of Shares |
|------------------------|------------------------------|------------------|------------|--|------|---|-----|-----|------------------|-----------------|--------------|----------------------------|
| Employee Stock Options | \$ 13.93                     | 02/23/2012       | A          | 42,400   |      |   |     |     | (1)              | 02/23/2022      | Common Stock | 42,400                     |
| Restricted Stock Units | \$ 13.93                     | 02/23/2012       | A          | 16,800   |      |   |     |     | (2)              | (3)             | Common Stock | 16,800                     |

## Reporting Owners

| Reporting Owner Name / Address  | Relationships |           |                               |       |
|---|---------------|-----------|-------------------------------|-------|
|   | Director      | 10% Owner | Officer                       | Other |
| Slone Deck<br>ONE CITYPLACE DRIVE<br>SUITE 300<br>ST. LOUIS, MO 63141 |               |           | VP/Govt Investor & Public Aff |       |

## Signatures

/s/ Jon S. Ploetz, Attorney-in-Fact 02/27/2012

\*\*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) The options vest ratably over 3 years as follows: 14,134 shares vest on February 23, 2013; 14,133 shares vest on February 23, 2014; and 14,133 shares vest on February 23, 2015.
- (2) The reporting person received 16,800 restricted stock units on February 23, 2012. The restricted stock units vest on February 23, 2015.
- (3) The restricted stock units do not expire.

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