

OMB APPROVAL	
OMB Number:	3235-0287
Estimated average burden hours per response:	0.5

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

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

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

1. Name and Address of Reporting Person* <u>Slone Deck</u> (Last) (First) (Middle) ONE CITYPLACE DRIVE SUITE 300 (Street) ST. LOUIS MO 63141 (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>ARCH COAL INC [ACI]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director 10% Owner X Officer (give title below) Other (specify below) <u>VP Investor Rel & Public Aff</u>
	3. Date of Earliest Transaction (Month/Day/Year) <u>05/04/2007</u>	
4. If Amendment, Date of Original Filed (Month/Day/Year)		

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	05/04/2007		M		1,350	A	(I)	8,950	D	

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 Securities Underlying Derivative Security (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: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)	
				Code	V	(A)	(D)	Date Exercisable	Expiration Date						Title
Performance Rights	(2)	05/04/2007		M			2,700	(3)	12/31/2008	Common Stock	2,700	(1)	2,700	D	

Explanation of Responses:

- The reporting person received 5,400 performance-contingent phantom shares on July 28, 2005. One-half of the performance contingent phantom shares vest if the average closing price of Arch Coal, Inc.'s common stock for a period of 20 consecutive trading days meets or exceeds \$35.00, subject to the achievement of certain financial performance targets. Upon vesting of 2,700 performance contingent phantom shares on May 4, 2007, the reporting person received 1,350 shares of common stock and \$49,613 in cash.
- Each performance-contingent phantom share represents a right to receive one share of common stock or the cash value thereof, unless otherwise deferred at the reporting person's election, pursuant to the Arch Coal, Inc. Executive Deferred Compensation Plan.
- The reporting person received 5,400 performance-contingent phantom shares on July 28, 2005. One-half of the performance-contingent phantom shares vest if the average closing price of Arch Coal's common stock for a period of 20 consecutive trading days meets or exceeds \$35.00 and the other half of the performance shares vest if the average closing price of Arch Coal's common stock for a period of 20 consecutive trading days meets or exceeds \$40.00, subject, in each case to the achievement of certain financial performance targets. On May 4, 2007, 2,700 performance-contingent phantom shares vested.

Remarks:

/s/Gregory A. Billhartz,
Attorney-in-Fact 05/08/2007

** Signature of Reporting Person Date

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

* 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.

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 Number.