Piton Julie A Form 4 October 29, 2010

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

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF

SECURITIES

OMB APPROVAL OMB

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if no longer subject to Section 16. Form 4 or Form 5

obligations

1(b).

Check this box

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 may continue. 30(h) of the Investment Company Act of 1940 See Instruction

(Print or Type Responses)

1. Name and Address of Reporting Person *

Piton Julie A Issuer Symbol AtriCure, Inc. [ATRC] (Check all applicable) (First) (Middle) (Last) 3. Date of Earliest Transaction (Month/Day/Year) Director 10% Owner X_ Officer (give title Other (specify **6217 CENTRE PARK DRIVE** 10/28/2010 below) below)

2. Issuer Name and Ticker or Trading

VP Fin & Admin & CFO (Street) 4. If Amendment, Date Original 6. Individual or Joint/Group Filing(Check Filed(Month/Day/Year)

Applicable Line) _X_ Form filed by One Reporting Person Form filed by More than One Reporting Person

5. Relationship of Reporting Person(s) to

WEST CHESTER, OH 45069

(City) (State) (Zip) Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned 1.Title of 2. Transaction Date 2A. Deemed 3. 4. Securities 5. Amount of 6. Ownership 7. Nature of Security (Month/Day/Year) Execution Date, if TransactionAcquired (A) or Securities Form: Direct Indirect (Instr. 3) Code Disposed of (D) Beneficially (D) or Beneficial (Instr. 3, 4 and 5) Indirect (I) Ownership (Month/Day/Year) (Instr. 8) Owned Following (Instr. 4) (Instr. 4) Reported (A) Transaction(s) or (Instr. 3 and 4) Code V Amount (D) Price 1,497 Common 10/28/2010 F 100,463 D (1) 7.9 Stock

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)

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1. Title of	2.	3. Transaction Date	3A. Deemed	4.	5.	6. Date Exer	cisable and	7. Title	and	8. Price of	9. Nu
Derivative	Conversion	(Month/Day/Year)	Execution Date, if	TransactionNumber		Expiration D	ate	Amour	nt of	Derivative	Deriv
Security	or Exercise		any	Code	of	(Month/Day/	Year)	Underl	ying	Security	Secui
(Instr. 3)	Price of		(Month/Day/Year)	(Instr. 8)	Derivative	e		Securit	ies	(Instr. 5)	Bene
	Derivative				Securities Acquired			(Instr. :	3 and 4)		Owne
	Security										Follo
	·				(A) or						Repo
					Disposed						Trans
					of (D)						(Instr
					(Instr. 3,						
					4, and 5)						
									A		
									Amount		
						Date			or		
						Exercisable		Title Number of			
				Code V	(A) (D)				Shares		

Reporting Owners

Reporting Owner Name / Address Relationships

Director 10% Owner Officer Other

Piton Julie A 6217 CENTRE PARK DRIVE WEST CHESTER, OH 45069

VP Fin & Admin & CFO

Signatures

/s/ Julie A. Piton 10/29/2010

**Signature of Person Date

Reporting Person

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) Ms. Piton has elected to transfer 1,497 shares to the Company to satisfy the tax withholding obligation incurred upon the vesting and release of shares previously acquired pursuant to a Restricted Stock Award.

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.

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