

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

OMB APPROVAL	
OMB Number:	3235-0287
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1. Name and Address of Reporting Person* <u>PORTER ARTHUR T</u> (Last) (First) (Middle) <u>C/O ADHEREX TECHNOLOGIES INC.</u> <u>501 EASTOWNE DRIVE, SUITE 140</u> (Street) <u>CHAPEL HILL NC 27514</u> (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>ADHEREX TECHNOLOGIES INC [ADHXF]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner Officer (give title below) Other (specify below)
	3. Date of Earliest Transaction (Month/Day/Year) <u>08/17/2010</u>	
	4. If Amendment, Date of Original Filed (Month/Day/Year) <u>04/30/2007</u>	
		6. Individual or Joint/Group Filing (Check Applicable Line) <input checked="" type="checkbox"/> 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 Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			

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)				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					
Stock Options (right to buy)	\$3.25 ⁽²⁾							03/01/2005	03/01/2011	Common Stock	18,621	18,621	D	
Stock Options (right to buy)	\$2.9 ⁽²⁾							05/01/2004	05/21/2011	Common Stock	4,000	4,000	D	
Stock Options (right to buy)	\$1.95 ⁽²⁾							12/17/2005	12/17/2011	Common Stock	2,000	2,000	D	
Stock Options (right to buy)	\$1.2							05/18/2006	05/18/2011	Common Stock	18,621	18,621	D	
Stock Options (right to buy)	\$1.2							09/21/2006	09/21/2012	Common Stock	30,000	30,000	D	
Stock Options (right to buy)	\$0.88							12/14/2006	12/14/2012	Common Stock	2,500	2,500	D	
Stock Options (right to buy)	\$0.28							02/28/2007	02/28/2014	Common Stock	50,000	50,000	D	
Stock Options (right to buy)	\$0.63							04/30/2007	04/30/2014	Common Stock	170,000	170,000	D	
Stock Options (right to buy)	\$0.28							12/03/2008	12/03/2014	Common Stock	75,000	75,000	D	
Stock Options (right to buy) ⁽¹⁾	\$0.045 ⁽²⁾	08/18/2010	08/18/2010	A		0		08/18/2010	08/18/2017	Common Stock	4,603,668	\$0	4,603,668	D

Explanation of Responses:

- 1. The options will vest 100% on the date reported above and were issued in AHX (TSX listed shares).
- 2. in CDN

/s/ Arthur T Porter, MD

08/18/2010

** 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.