O'Rourke James Calvin Form 4 July 28, 2010

FORM 4

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

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF

SECURITIES

OMB

OMB APPROVAL

Number:

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Form 5 obligations may continue. See Instruction

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

1(b).

(Print or Type Responses)

1. Name and Address of Reporting Person * O'Rourke James Calvin

2. Issuer Name and Ticker or Trading Symbol

5. Relationship of Reporting Person(s) to

Issuer

(Last)

C/O THE MOSAIC

DRIVE, SUITE E490

(First)

(Middle)

MOSAIC CO [MOS] 3. Date of Earliest Transaction

(Check all applicable)

COMPANY, 3033 CAMPUS

(Month/Day/Year) 07/27/2010

Director 10% Owner X_ Officer (give title Other (specify below)

below) **EVP** - Operations

(Street)

4. If Amendment, Date Original Filed(Month/Day/Year)

(Instr. 8)

6. Individual or Joint/Group Filing(Check

Applicable Line)

X Form filed by One Reporting Person Form filed by More than One Reporting

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

PLYMOUTH, MN 55441

(City)

1. Title of

Security

(Instr. 3)

(State) (Zip) 2. Transaction Date 2A. Deemed

3. 4. Securities (Month/Day/Year) Execution Date, if TransactionAcquired (A) or Code Disposed of (D) 5. Amount of Securities Beneficially Owned

6. Ownership 7. Nature of Form: Direct Indirect (D) or Indirect Beneficial (I) Ownership (Instr. 4) (Instr. 4)

Reported (A) or

Code V Amount (D) Price

(Instr. 3, 4 and 5)

Transaction(s) (Instr. 3 and 4)

Following

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

(Month/Day/Year)

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Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Conversion

3. Transaction Date 3A. Deemed

5. Number of (Month/Day/Year) Execution Date, if TransactiorDerivative

6. Date Exercisable and **Expiration Date**

7. Title and Amount of **Underlying Securities**

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Security (Instr. 3)	or Exercise Price of Derivative Security		any (Month/Day/Year)	Code (Instr. 8)	Securities Acquired (A or Disposed (D) (Instr. 3, 4, and 5))	(Month/Day/Year)		(Instr. 3 and 4)	
				Code V	(A) (I	D) Date Exercisable	Expiration Date	Title	Amount or Number of Shares	
Restricted Stock Units	\$ 0 (1)					01/08/2012	(2)	Common Stock	13,830	
Stock Option (Right to Buy)	\$ 52.72					(3)	07/27/2019	Common Stock	12,019	
Restricted Stock Units	\$ 0 (1)					07/27/2012	(2)	Common Stock	11,381	
Stock Option (Right to Buy)	\$ 44.93	07/27/2010		A	20,259	<u>(4)</u>	07/27/2020	Common Stock	20,259	
Restricted Stock Units	\$ 0 (1)	07/27/2010		A	11,128	07/27/2013	(2)	Common Stock	11,128	

Reporting Owners

Reporting Owner Name / Address	Relationships					
	Director	10% Owner	Officer	Other		
O'Rourke James Calvin C/O THE MOSAIC COMPANY 3033 CAMPUS DRIVE, SUITE E490 PLYMOUTH, MN 55441			EVP - Operations			
Signatures						
/s/ Richard L. Mack, Attorney-in-Fact for . O'Rourke	James C.		07/28/2010			

Explanation of Responses:

**Signature of Reporting Person

- * 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) One-for-One

Reporting Owners 2

Date

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- (2) Not Applicable
- (3) Grant Date 07/27/2009; option becomes exercisable in three equal installments commencing on the first anniversary of the grant date and on each anniversary thereafter.
- (4) Grant Date 07/27/2010; option becomes exercisable in three equal installments commencing on the first anniversary of the grant date and on each anniversary thereafter.

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.