FORM 4

## UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

## STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

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

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

| Name and Address of Reporting Person*     EMPFIELD JAMES R.  |  |            |    |                              |      |              | 2. Issuer Name and Ticker or Trading Symbol Xenon Pharmaceuticals Inc. [XENE] |  |                         |                |  |                    |                                   |  | 5. Relationship of Reporting Person(s) to Is<br>(Check all applicable)  Director 10% C       |  |  |  | /ner  |
|--|--|------------|----|------------------------------|------|--------------|---|--|-------------------------|----------------|--|--------------------|-----------------------------------|--|--|--|--|--|---|
| (Last) (First) (Middle) 200 - 3650 GILMORE WAY   |  |            |    |                              |      |              | 3. Date of Earliest Transaction (Month/Day/Year) 03/04/2022                   |  |                         |                |  |                    |                                   |  |  | er (give title Other of below)  EVP, Drug Discovery  |  | below)   | pecify  |
| (Street) BURNABY A1 V5G 4W8  |  |            |    |                              |      |              | 4. If Amendment, Date of Original Filed (Month/Day/Year)                      |  |                         |                |  |                    |                                   |  |  | Individual or Joint/Group Filing (Check Applicabline)     X Form filed by One Reporting Person |  |  |   |
| (City) (State) (Zip)   |  |            |    |                              |      |              |   |  |                         |                | Form filed by More than One Reporting<br>Person                      |                    |                                   |  |  |  |  |  |   |
|  | Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned |            |    |                              |      |              |   |  |                         |                |  |                    |                                   |  |  |  |  |  |   |
| 1. Title of Security (Instr. 3)  2. Trans Date (Month/I  |  |            |    |                              |      | ur) Ex       | 2A. Deemed<br>Execution Date,<br>if any<br>(Month/Day/Year)                   |  | 3.<br>Transa<br>Code (I | ction<br>nstr. | 4. Securities Acquired (A) of Disposed Of (D) (Instr. 3, 4           |                    |                                   | and 5) Securiti<br>Benefic<br>Owned            |  | es<br>ally<br>Following  | 6. Ownership<br>Form: Direct<br>(D) or Indirect<br>(I) (Instr. 4)        | : Direct<br>r Indirect<br>str. 4)                                  | 7. Nature<br>of Indirect<br>Beneficial<br>Ownership |
|  |  |            |    |                              |      |              |   | Code   | v                       | Amount         | (A) or<br>(D)  | Price              | )                                 | Reported<br>Transaction(s)<br>(Instr. 3 and 4) |  |  |  | (Instr. 4)   |   |
| Common   | Shares   |            |    | 03/04/2022                   |      |              |   |  | M                       |                | 25,000   | A                  | \$8.4                             |  | 35,  | ,000   |  | D  |   |
| Common   | 03/04/2022   |            | 22 |                              | F    |              | 6,685   | D  | \$31                    | .42(1)         | 28,  | ,315               |                                   | D  |  |  |  |  |   |
| Common Shares 03/0   |  |            |    |                              |      |              |   |  | S                       |                | 18,315   | D                  | \$30                              | \$30.79(2)                                     |  | ,000   |  | D  |   |
| Common Shares 03/0   |  |            |    |                              |      | !            |   |  | M                       |                | 2,500  | A                  | \$                                | \$8.4  |  | 500  |  | D  |   |
| Common Shares 03/07/   |  |            |    |                              |      | !            |   |  | F                       |                | 695  | D                  | \$30                              | \$30.23(3)                                     |  | 805  |  | D  |   |
| Common Shares 03/07/2  |  |            |    |                              |      |              |   |  | M                       |                | 40,000   | A                  | \$6                               | \$6.76   |  | 1,805  |  | D  |   |
| Common Shares 03/07/2  |  |            |    |                              |      |              |   |  | F                       |                | 8,952  | D                  | \$30.23(3)                        |  | 42,  | 42,853   |  | D  |   |
| Common Shares 03/07/2  |  |            |    |                              |      | !            |   |  | S                       |                | 1,805  | D                  | \$30.62                           |  | 41,  | 41,048   |  | D  |   |
| Common Shares 03/07/2  |  |            |    |                              |      | !            |   |  | S                       |                | 31,048   | D                  | \$30                              | \$30.54(4)                                     |  | 10,000   |  | D  |   |
| Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities) |  |            |    |                              |      |              |   |  |                         |                |  |                    |                                   |  |  |  |  |  |   |
| 1. Title of<br>Derivative<br>Security<br>(Instr. 3)  | of 2. 3. Transaction Date Execution Date, ty or Exercise (Month/Day/Year) if any |            |    | 4.<br>Transa<br>Code (<br>8) |      | 5. Number of |   | 6. Date Exercisable and<br>Expiration Date<br>(Month/Day/Year) |                         |                | 7. Title an<br>of Securit<br>Underlyin<br>Derivative<br>(Instr. 3 an | ies<br>g<br>Secur  | D                                 | Price of erivative ecurity nstr. 5)            | 9. Number derivative Securities Beneficially Owned Following Reported Transaction (Instr. 4) | ily  | 10.<br>Ownership<br>Form:<br>Direct (D)<br>or Indirect<br>(I) (Instr. 4) | 11. Nature<br>of Indirect<br>Beneficial<br>Ownership<br>(Instr. 4) |   |
|  |  |            |    |                              | Code | · v          | (A)   | (D)  | Date<br>Exercisa        |                | Expiration<br>Date   | Title              | Amou<br>or<br>Numb<br>of<br>Share | per  |  |  |  |  |   |
| Stock<br>Option<br>(Right to<br>Buy)   | \$8.4  | 03/04/2022 |    |                              | М    |              |   | 25,000   | (5)                     |                | 03/12/2027   | Common Shares 25,0 |                                   | 000  | \$0.00 0   |  | D  |  |   |
|  |  |            |    |                              |      | 1            | 1   |  |                         |                |  |                    |                                   |  |  |  |  |  |   |

## **Explanation of Responses:**

\$8.4

\$6.76

03/07/2022

03/07/2022

1. Represents the closing price of the Company's common shares on March 3, 2022 which was converted to a Canadian dollar amount for purposes of net settlement calculations.

2,500

40,000

2. The "Amount" and "Price" reported in this Column 4 reflect the aggregate number and weighted-average price, respectively, of shares sold. These shares were sold in multiple transactions at prices ranging from \$30.21 to \$31.0296, inclusive. The reporting person undertakes to provide to the issuer, any security holder of the issuer, or the SEC staff, upon request, full information regarding the number of shares sold at each separate price within the range set forth herein.

(5)

(6)

- 3. Represents the closing price of the Company's common shares on March 4, 2022 which was converted to a Canadian dollar amount for purposes of net settlement calculations.
- 4. The "Amount" and "Price" reported in this Column 4 reflect the aggregate number and weighted-average price, respectively, of shares sold. These shares were sold in multiple transactions at prices ranging from \$30.5161 to \$30.6208, inclusive. The reporting person undertakes to provide to the issuer, any security holder of the issuer, or the SEC staff, upon request, full information regarding the number of shares sold at each separate price within the range set forth herein.
- 5. Vesting 25% on January 1, 2018, and 75% vesting thereafter over the course of the next 3 years, in equal amounts, on the last day of each month.

M

6. Vesting 25% on February 9, 2017 and 75% vesting thereafter over the course of the next 3 years, in equal amounts, on the last day of each month.

## Remarks:

Option (Right to

(Right to Buy)

Buy) Stock Option

> /s/ Cassandra Robinson, Attorney-in-fact

Common Shares

Shares

2,500

40,000

\$0.00

\$0.00

03/12/2027

02/07/2026

03/08/2022

0

0

D

D

\*\* Signature of Reporting Person

- $^{\star}$  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.