UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): September 12, 2018

XENON PHARMACEUTICALS INC.

(Exact name of Registrant as Specified in Its Charter)

Canada (State or Other Jurisdiction of Incorporation) 001-36687 (Commission File Number) 98-0661854 (IRS Employer Identification No.)

200-3650 Gilmore Way Burnaby, British Columbia, Canada (Address of Principal Executive Offices)

V5G 4W8 (Zip Code)

Registrant's Telephone Number, Including Area Code: (604) 484-3300

Not Applicable

(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instructions A.2. below):

Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

□ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§ 230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

Emerging growth company \boxtimes

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 8.01 Other Events

On September 12, 2018, in connection with Xenon Pharmaceuticals Inc.'s (the "Company") intention to file a preliminary prospectus supplement pursuant to Rule 424(b)(5) under the Securities Act of 1933, as amended, related to a proposed offering of its common shares (the "Offering"), the Company suspended, and during the duration of the Offering, the Company is no longer offering, any securities pursuant to the prospectus supplement filed with the Securities and Exchange Commission on July 12, 2018 relating to the offer and sale of the Company's common shares pursuant to the at-the-market equity offering sales agreement dated July 11, 2018 among the Company, Jefferies LLC and Stifel, Nicolaus & Company, Incorporated.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Xenon Pharmaceuticals Inc.

Date: September 12, 2018

By: /s/ Ian Mortimer

Ian Mortimer President & Chief Financial Officer