SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE TO

Tender Offer Statement Under Section 14(d)(1) or Section 13(e)(1)

of the Securities Exchange Act of 1934

CYTYC CORPORATION

(Name of Subject Company (issuer))

CYTYC CORPORATION

(Issuer)

HOLOGIC, INC.

(Affiliate of Issuer)

(Name of Filing Person (identifying status as offeror, issuer or other person))

2.25% Senior Convertible Notes due 2024

(Title of Class of Securities)

CUSIP Numbers 232946AA1 and 232946AB9

(CUSIP Number of Class of Securities)

Glenn P. Muir

Executive Vice President

Finance and Administration

35 Crosby Drive, Bedford, Massachusetts 01730

(781) 999-7300

(Name, address and telephone number of person authorized to receive notices and communications on behalf of filing persons)

With a Copy to:

Philip J. Flink, Esq.

Edwin C. Pease, Esq.

Brown Rudnick Berlack Israels LLP

One Financial Center

Boston, MA 02111

(617) 856-8200

Calculation of Filing Fee

Transaction valuation¹ \$69,548,018 Amount of filing fee ² \$2,135.12

- Calculated solely for purposes of determining the filing fee. Based upon the maximum aggregate purchase price payable for the Cytyc Corporation 2.25% Senior Convertible Notes due 2024 in connection with a designated event repurchase offer pursuant to the applicable indenture, calculated as the sum of (a) \$69,258,000, representing 100% of the principal amount of the notes outstanding, plus (b) \$290,017, representing accrued and unpaid interest on the notes through November 20, 2007, the day prior to the currently anticipated payment date.
- The amount of the filing fee, calculated in accordance with Section 13(e)(3) of the Securities Exchange Act of 1934, as amended, equals \$30.70 per \$1,000,000 of the value of securities proposed to be purchased.
- " Check box if any part of the fee is offset as provided by Rule 0-11(a)(2) and identify the filing with which the offsetting fee was previously paid. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

Amount Previously Paid: Not applicable.

Form or Registration No.: Not applicable.

Filing Party: Not applicable.

Date Filed: Not applicable.

- " Check the box if the filing relates solely to preliminary communications made before the commencement of a tender offer. Check the appropriate boxes below to designate any transactions to which the statement relates:
- " third-party tender offer subject to Rule 14d-1.

- x issuer tender offer subject to Rule 13e-4.
- " going private transaction subject to Rule 13e-3.
- " amendment to Schedule 13D under Rule 13d-2.

Check the following box if the filing is a final amendment reporting the results of the tender offer: "

Pursuant to the terms of and subject to the conditions set forth in the Indenture, dated as of March 22, 2004 (the Indenture), by and between Cytyc Corporation, which has been merged with and into a subsidiary of Hologic, Inc. (Old Cytyc) and U.S. Bank Trust National Association, as Trustee (the Trustee), as amended by that First Supplemental Indenture, dated as of October 22, 2007, by and among Hologic, Inc. (Hologic), Cytyc Corporation, formerly known as Nor easter Corp., a wholly owned subsidiary of Hologic, into which Old Cytyc was merged pursuant to the Merger (Cytyc), and the Trustee, this Tender Offer Statement on Schedule TO (Schedule TO) is filed by Cytyc and Hologic with respect to the right of each holder of 2.25% Senior Convertible Notes due 2024 originally issued by Old Cytyc pursuant to the Indenture (the Notes) to sell to Cytyc, and the obligation of Cytyc to repurchase Notes from each holder who exercises this right, pursuant to the terms and conditions of the Notice of Designated Event and Offer to Purchase dated October 22, 2007 (as may be amended or supplemented from time to time, the Offer to Purchase) attached hereto as Exhibit (a)(1), the Indenture and the Notes (the Offer). A Designated Event (as defined in the Indenture) with respect to Old Cytyc occurred on October 22, 2007 as a result of the merger of Old Cytyc with and into Cytyc (the Merger). As a result of the Merger, the Notes are convertible into a portion of the Merger consideration, which consists of a combination of shares of Hologic common stock and cash.

The Offer will expire at 5:00 p.m., Eastern time, on November 21, 2007, unless extended or earlier terminated pursuant to a requirement of applicable law. This Schedule TO is intended to satisfy the reporting requirements of Rule 13e-4(c)(2) under the Securities Exchange Act of 1934, as amended (the Exchange Act).

All of the information set forth in the Offer to Purchase is incorporated by reference herein in response to Items 1 through 11 in this Schedule TO except for those Items as to which information is specifically provided herein.

ITEM 12. EXHIBITS.

- (a)(1) Notice of Designated Event and Offer to Purchase dated October 22, 2007.
- (a)(5) Press Release dated October 22, 2007.
- (d)(1) Indenture dated as of March 22, 2004, by and between Cytyc Corporation and U.S. Bank Trust National Association, as Trustee (Incorporated by reference to Cytyc Corporation s Registration Statement on Form S-3 filed with the Securities and Exchange Commission on June 7, 2004).
- (d)(2) First Supplemental Indenture dated as of October 22, 2007, by and among Hologic, Inc., Cytyc Corporation and U.S. Bank Trust National Association, as Trustee, relating to Cytyc Corporation s 2.25% Senior Convertible Notes due 2024 (Incorporated by reference to Hologic, Inc. s Current Report on Form 8-K filed with the Securities and Exchange Commission on October 22, 2007).

ITEM 13. INFORMATION REQUIRED BY SCHEDULE 13E-3.

Not applicable.

SIGNATURE

After due inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: October 22, 2007 CYTYC CORPORATION

By: /s/ Glenn P. Muir Name: Glenn P. Muir Title: Treasurer

SIGNATURE

After due inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: October 22, 2007 HOLOGIC, INC.

> By: /s/ Glenn P. Muir Name: Glenn P. Muir

Title: Chief Financial Officer

Executive Vice President, Finance and Treasurer Duly Authorized Officer on behalf of the Registrant

EXHIBIT INDEX

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