

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 12b-25

NOTIFICATION OF LATE FILING

(Check One): Form 10-K Form 20-F Form 11-K Form 10-Q
 Form 10-D Form N-SAR Form N-CSR

For Period Ended: April 30, 2009

- Transition Report on Form 10-K
 Transition Report on Form 20-F
 Transition Report on Form 11-K
 Transition Report on Form 10-Q
 Transition Report on Form N-SAR

For the Transition Period Ended:

Nothing in this form shall be construed to imply that the Commission has verified any information contained herein.

If the notification relates to a portion of the filing checked above, identify the item(s) to which the notification relates:

PART I—REGISTRANT INFORMATION

Full Name of Registrant: ENZO BIOCHEM, INC.
Former Name if Applicable: N/A
Address of Principal Executive Office: 527 Madison Avenue
City, State and Zip Code: New York, New York 10022

PART II—RULE 12b-25 (b) AND (c)

If the subject report could not be filed without unreasonable effort or expense and the registrant seeks relief pursuant to Rule 12b-25(b) the following should be completed. (Check box if appropriate)

- (a) The reasons described in reasonable detail in Part III of this form could not be eliminated without unreasonable effort or expense;
- (b) The subject annual report, semi-annual report, transition report on Form 10-K, Form 2-F, 11-F, or Form N-SAR, or portion thereof will be filed on or before the
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fifteenth calendar day following the prescribed due date; or the subject quarterly report or transition report on Form 10-Q, or portion thereof will be filed on or before the fifth calendar day following the prescribed due date; and

(c) The accountant's statement or other exhibit required by Rule 12b-25(c) has been attached if applicable.

PART III—NARRATIVE

State below in reasonable detail why Forms 10-K, 20-F, 11-K, 10-Q, 10-D, N-SAR, N-CSR or the transition report or portion thereof, could not be filed within the prescribed time period.

Enzo Biochem, Inc. (the "Company") cannot complete its Form 10-Q for its fiscal quarter ended April 30, 2009 within the prescribed time period as the Company is unable to finalize its unaudited financial statements for its fiscal quarter ended April 30, 2009 by June 9, 2009. The delay cannot be cured without unreasonable effort or expense. In accordance with Rule 12b-25 under the Securities Exchange Act of 1934, the Company anticipates filing its Form 10-Q for its fiscal quarter ended April 30, 2009 no later than five calendar days following the prescribed due date.

PART IV—OTHER INFORMATION

Name and telephone number of person to contact in regard to this notification

Barry Weiner (Name)	(212) (Area Code)	583-0100 (Telephone Number)
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(2) Have all other periodic reports required under Section 13 or 15(d) of the Securities Exchange Act of 1934 or Section 30 of the Investment Company Act of 1940 during the preceding 12 months or for such shorter period that the registrant was required to file such report(s) been filed? If the answer is no, identify report(s). Yes No

(3) Is it anticipated that any significant change in results of operations from the corresponding period for the last fiscal year will be reflected by the earnings statements to be included in the subject report or portion thereof? Yes No

If so, attach an explanation of the anticipated change, both narratively and quantitatively, and, if appropriate, state the reasons why a reasonable estimate of the results cannot be made. N/A

Enzo Biochem, Inc.
(Name of Registrant as Specified in Charter)

has caused this notification to be signed on its behalf by the undersigned thereunto duly authorized.

Date: June 9, 2009
By: /s/ Barry Weiner
Barry Weiner, Chief Financial Officer and Principal Accounting Officer

ATTENTION: Intentional misstatements or omissions of fact constitute
Federal criminal violations (see 18 U.S.C. 1001).