

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 12b-25

NOTIFICATION OF LATE FILING

SEC FILE NUMBER

001-34058

CUSIP NUMBER

654145101

(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: December 31, 2011

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:

*Read Instruction (on back page) Before Preparing Form. Please Print or Type.*

**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

Nile Therapeutics, Inc.

Former Name if Applicable

Address of Principal Executive Office (Street and Number)

4 West 4<sup>th</sup> Ave., Suite 400

City, State and Zip Code

San Mateo, California 94402

PART II - RULES 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 20-F, Form 11-K, Form N-SAR or Form N-CSR, or portion thereof, will be filed on or before the fifteenth calendar day following the prescribed due date; or the subject quarterly report or transition report on Form 10-Q or subject distribution report on Form 10-D, 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. (Attach Extra Sheets if Needed)

The Company is unable to file its Annual Report on Form 10-K for the period ended December 31, 2011 within the prescribed time period without unreasonable effort and expense because the Company was unable to revise its disclosures contained in the report to reflect the Company's recent offering of common stock and warrants, as described in the Company's press release dated March 30, 2012. The Company expects to file the Form 10-K on or before April 14, 2012, the fifteenth calendar day following the prescribed due date.

**PART IV - OTHER INFORMATION**

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

Daron Evans  
(Name)

(650)  
(Area Code)

458-2670  
(Telephone Number)

(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 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.

Nile Therapeutics, 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 March 30, 2012

By /s/ Daron Evans  
Daron Evans, Chief Financial Officer

INSTRUCTION: The form may be signed by an executive officer of the registrant or by any other duly authorized representative. The name and title of the person signing the form shall be typed or printed beneath the signature. If the statement is signed on behalf of the registrant by an authorized representative (other than an executive officer), evidence of the representative's authority to sign on behalf of the registrant shall be filed with the form.

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