As filed with the Securities and Exchange Commission on June 13, 2006

Registration No. 333-

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-8

REGISTRATION STATEMENT

UNDER

THE SECURITIES ACT OF 1933

NUVELO, INC.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of

363855489 (I.R.S. Employer

incorporation or organization)

201 Industrial Road, Suite 310

Identification No.)

San Carlos, CA

94070-6211

(650) 517-8000

(Address of principal executive offices)

2004 Equity Incentive Plan

(Full title of the plans)

Ted W. Love

Chairman of the Board and Chief Executive Officer

201 Industrial Road, Suite 310

San Carlos, CA

94070-6211

(650) 517-8000

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copy to:

Robert L. Jones, Esq.

John M. Geschke, Esq.

Cooley Godward LLP

Five Palo Alto Square

3000 El Camino Real

Palo Alto, CA 94306-2155

(650) 843-5000

CALCULATION OF REGISTRATION FEE

		Proposed		
		Troposeu	Proposed	
			Troposcu	
		Maximum		
			Maximum	
		Offering		
		Price	Aggregate	
	Amount to be		66 6	Amount of
		per	Offering	
Title of Securities to be Registered	Registered (1)	Share (2)	Price(2)	Registration Fee
Common Stock, par value \$0.001 per share	4,700,000 shares	\$ 16.15	\$ 75,905,000	\$ 8,121.84

⁽¹⁾ Pursuant to Rule 416(a), this Registration Statement shall also cover any additional shares of Registrant's Common Stock that become issuable under the plan by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without receipt of consideration that increases the number of outstanding shares of Registrant's Common Stock.

(2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(h) of Regulation C. The price per share and aggregate offering price are based upon the average of the high and low prices of Registrant s Common Stock on June 8, 2006 as reported on the Nasdaq National Market.

REGISTRATION OF ADDITIONAL SECURITIES

In accordance with General Instruction E to Form S-8, the number of shares of common stock to be registered as set forth above represents the number of additional shares that are issuable pursuant to the Registrant s 2004 Equity Incentive Plan, over and above the number of shares previously registered. This Registration Statement shall also cover any additional shares of common stock which become issuable under the Registrant s 2004 Equity Incentive Plan by reason of any stock dividend, stock split, recapitalization, or other similar transaction which results in an increase in the number of outstanding shares of common stock of the Registrant.

Reference is made to the Registrant s Registration Statement on Form S-8 filed May 21, 2004 (SEC File Number 333-115747) with respect to shares of common stock registered under the Registrant s 2004 Equity Incentive Plan. The contents of such Registration Statements are hereby incorporated by reference in their entirety.

EXHIBITS

Exhibit

Number

- 5.1 Opinion of Cooley Godward LLP
- 23.1 Consent of KPMG LLP, Independent Registered Public Accounting Firm
- 23.2 Consent of Cooley Godward LLP is contained in Exhibit 5.1 to this Registration Statement
- 24.1 Power of Attorney is contained on the signature pages.

UNDERTAKINGS

- 1. The undersigned registrant hereby undertakes:
- (a) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
- (i) To include any prospectus required by section 10(a)(3) of the Securities Act of 1933;
- (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the Calculation of Registration Fee table in the effective registration statement.
- (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

Provided, however, that paragraphs (a)(i) and (a)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference herein.

- **(b)** That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (c) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(d) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned

registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

- (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- 2. The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant s annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan s annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- 3. Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Carlos, State of California, on June 13, 2006.

NUVELO, INC.

By: /s/ Ted W. Love Ted W. Love.

Chairman of the Board and

Chief Executive Officer

POWER OF ATTORNEY

Know All Persons By These Presents, that each person whose signature appears below constitutes and appoints Ted W. Love and Gary S. Titus, and each or any one of them, his true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Ted W. Love	Chairman of the Board and Chief Executive Officer (Principal Executive Officer)	June 13, 2006
Ted W. Love		
/s/ Gary S. Titus	Acting Chief Financial Officer, Vice President of Finance and Chief Accounting Officer (<i>Principal</i>	June 13, 2006
Gary S. Titus	Financial Officer and Principal Accounting Officer)	
/s/ Barry L. Zubrow	Director	June 13, 2006
Barry L. Zubrow		
/s/ Mary K. Pendergast	Director	June 13, 2006
Mary K. Pendergast		
/s/ Mark L. Perry	Director	June 13, 2006
Mark L. Perry		
/s/ Kimberly Popovits	Director	June 13, 2006

Kimberly Popovits

/s/ James R. Gavin III Director June 13, 2006

James R. Gavin III

/s/ Burton E. Sobel Director June 13, 2006

Burton E. Sobel

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