

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
SCHEDULE 13D
Under the Securities Exchange Act of 1934
(Amendment No. 2)

Tegal Corporation

(Name of Issuer)

Common Stock, No Par Value
(Title of Class of Securities)

879008100

(CUSIP Number)

with a copy to:

Austin W. Marxe Allen B. Levithan, Esq.
153 East 53rd Street Lowenstein Sandler PC
New York, New York 10022 65 Livingston Avenue
Roseland, New Jersey
07068
(973) 597-2424

(Name, Address and Telephone Number of Person
Authorized to Receive Notices and Communications)

December 31, 2003

(Date of Event which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of sections 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box. ?

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See section 240.13d-7 for other parties to whom copies are to be sent.

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

Cusip No. 879008100

1. Names of Reporting Persons. I.R.S. Identification Nos. of above persons (entities only):

Austin W. Marxe and David M. Greenhouse

2. Check the Appropriate Box if a Member of a Group (See Instructions):

(a) Not Applicable

(b)

3. SEC Use Only

4. Source of Funds (See Instructions): 00

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e):

Not Applicable

6. Citizenship or Place of Organization: United States

Number of 7. Sole Voting Power: 0*

Shares Beneficially 8. Shared Voting Power:

7,304,108*

Owned by

Each Reporting 9. Sole Dispositive Power: 0*

Person With 10. Shared Dispositive Power:

7,304,108*

11. Aggregate Amount Beneficially Owned by Each Reporting Person:

7,304,108*

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares

(See Instructions): Not Applicable

13. Percent of Class Represented by Amount in Row (11): 20.8% *

14. Type of Reporting Person (See Instructions): IA, IN

* This is a joint filing by Austin W. Marx (?Marxe?) and David M. Greenhouse (?Greenhouse?). Marx and Greenhouse share sole voting and investment power over 1,234,805 bonds convertible for 3,528,014 shares of common stock and 857,131 warrants owned by Special Situations Private Equity Fund, L.P., 687,633 bonds convertible for 1,964,665 shares of Common Stock and 477,906 Warrants owned by Special Situations Technology Fund II, L.P., 134,007 bonds convertible for 382,877 shares of Common Stock and 93,515 Warrants owned by Special Situations Technology Fund, L.P. See Items 2 and 5 of this Schedule 13D for additional information.

Item 1. Security and Issuer.

This schedule related to the common stock, convertible bonds and warrants of Tegal Corporation. (the ?Issuer?). The Issuer?s principal executive officers are located at 2201 south McDowell blvd., Petaluma, CA 94954.

Item 2. Identity and Background.

The persons filing this report are Austin W. Marx (?Marxe?) and David M. Greenhouse (?Greenhouse?), who are members of MG Advisers L.L.C. (?MG?), the general partner of and investment adviser to Special Situations Private Equity Fund, L.P. (?SSPE?), and members of SST Advisers, L.L.C. (?SSTA?), the general partner of and investment adviser to Special Situations Technology Fund, L.P. (?Technology?) and Special Situations Technology Fund II, L.P. (?Technology II?). (SSPE, Technology and Technology II will hereafter be referred to as, the ?Funds?).

The principal office and business address of the Reporting Persons, is 153 East 53rd Street, 55th Floor, New York NY 10022.

The principal business of each Fund is to invest in equity and equity-related securities and other securities of any kind or nature.

Mr. Marx and Mr. Greenhouse have never been convicted in any criminal proceeding (excluding traffic violations or similar misdemeanors), nor have either of them been a party to any civil proceeding commenced before a judicial or administrative body of competent jurisdiction as a result of which he was or is now subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws. Mr. Marx and Mr. Greenhouse are citizens of the United States.

Item 3. Source and Amount of Funds or Other Consideration.

Each Fund utilized its own available net assets to purchase the securities referred to in this Schedule.

Item 4. Purpose of Transaction.

The securities referred to in this Schedule have been acquired by each of the Funds for investment purposes and not with the purpose or effect of changing or influencing control of the Issuer. Each Fund acquired the securities in the ordinary course of business and is holding the securities for the benefit of its investors.

Item 5. Interest in Securities of the Issuer.

SSPE owns 1,234,805 bonds convertible for 3,528,014 shares of Common stock and 857,131 Warrants, or 13.6% of the outstanding shares, Technology owns 134,007 bonds convertible for 382,877 shares of Common Stock and 93,515 Warrants or 1.7% of the shares outstanding and Technology II owns 687,633 bonds convertible for 1,964,665 shares of common stock and 477,906 warrants or 8.0% of the shares outstanding. Marx and Greenhouse share the power to vote and direct the disposition of all shares owned by each of, the Funds. Messrs. Marx and Greenhouse are deemed to beneficially own a total 2,056,445 bonds convertible for 5,875,556 shares of common stock and 1,428,552 Warrants or 20.8% of the outstanding shares.

The following table reflects the acquisitions and dispositions by each of the Funds during the sixty days preceding the date of the event that requires the filing of this statement:

A. Special Situations Private Equity Fund, L.P.

Date
Quantity
Average Price

(Purchases)

During December 2003 ?
Common received from
conversion of bonds
354,000
\$.35 conversion price

Date
Quantity
Average Price

(Sales)

December 2003-
Number of Bonds
converted
123,900
\$.35 conversion price
December 2003-
Number of common shares
Sold
354,000
\$ 2.81 average price

B. Special Situations Technology Fund, L.P.

Date
Quantity
Average Price

(Purchases)

During December 2003 ?
Common received from
conversion of bonds
40,000
\$.35 conversion price

Date
Quantity
Average Price

(Sales)

December 2003-
Number of Bonds
converted
14,000
\$.35 conversion price
December 2003-
Number of common shares
Sold
40,000
\$ 2.81 average price

C. Special Situations Technology Fund II, L.P.

Date
Quantity
Average Price

(Purchases)

During December 2003 ?
Common received from
conversion of bonds
199,000
\$.35 conversion price

Date
Quantity
Average Price

(Sales)

December 2003-
Number of Bonds
converted
69,650
\$.35 conversion price
December 2003-
Number of common shares
Sold
199,000
\$ 2.81

Item 6. Contracts, Arrangements, Understandings or Relationships With Respect to Securities of the Issuer.

No contracts, arrangements, understandings or similar relationships exist with respect to the securities of the Company between Messrs. Marxe and Greenhouse and any other individual or entity.

Item 7. Material to be Filed as Exhibits.

Joint Filing Agreement.

Signature

After reasonable 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.

January 9, 2004

/s/ Austin W. Marxe
Austin W. Marxe

/s/ David M. Greenhouse
David M. Greenhouse

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

JOINT FILING AGREEMENT

Austin W. Marxe and David M. Greenhouse hereby agree that the Schedule 13D to which this agreement is attached is filed on behalf of each of them.

/s/ Austin W. Marxe
Austin W. Marxe

/s/ David M. Greenhouse
David M. Greenhouse

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