UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 11-K

ANNUAL REPORT PURSUANT TO SECTION 15(D) OF THE
SECURITIES EXCHANGE ACT OF 1934

[X] ANNUAL REPORT PURSUANT TO SECTION 15(D)
OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2003

OR

[ ] TRANSITION REPORT PURSUANT TO SECTION 15(D)
OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE TRANSITION PERIOD FROM ______ TO ______

COMMISSION FILE NUMBER 1-7615

KIRBY 401(K) PLAN

Kirby Corporation
55 Waugh Drive, Suite 1000
Houston, Texas 77007

KIRBY 401(K) PLAN

INDEX TO FINANCIAL STATEMENTS AND SUPPLEMENTAL SCHEDULE

Schedules, other than those listed above, are omitted because of the absence of the conditions under which they are required.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Plan Administrator
Kirby 401(k) Plan:

We have audited the accompanying statements of net assets available for plan benefits (modified cash basis) of the Kirby 401(k) Plan (the Plan) as of December 31, 2003 and 2002 and the related statements of changes in net assets available for plan benefits (modified cash basis) for the years ended December 31, 2003 and 2002. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As described in note 2, these financial statements and supplemental schedule were prepared on a modified cash basis of accounting, which is a comprehensive basis of accounting other than U.S. generally accepted accounting principles.

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets available for plan benefits of the Plan as of December 31, 2003 and 2002 and the changes in net assets available for plan benefits for the years ended December 31, 2003 and 2002 on the basis of accounting described in note 2.

Our audits were made for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental schedule H, line 4i - schedule of assets (held at end of year) (modified cash basis) as of December 31, 2003 is presented for the purpose of additional analysis and is not a required part of the basic financial statements but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. The supplemental schedule is the responsibility of the Plan's management. The supplemental schedule has been subjected to the auditing procedures applied in the audits of the basic financial statements and, in our opinion, is fairly stated, in all material respects, in relation to the basic financial statements taken as a whole.

Houston, Texas
June 23, 2004

KIRBY 401(K) PLAN
Statements of Net Assets Available for Plan Benefits
(Modified Cash Basis)
December 31, 2003 and 2002

	2003	2002
Assets:		
Investments at fair value	$55,207,973	44,817,740
Cash, non-interest bearing	3,000	--
Accrued income	4,457	190
Due from broker for securities sold	24,073	4,818
Total assets	55,239,503	44,822,748
Liabilities:		
Due to broker for securities purchased	58,377	42,678
Net assets available for plan benefits	$55,181,126	44,780,070

See accompanying notes to financial statements.

KIRBY 401(K) PLAN
Statements of Changes in Net Assets Available for Plan Benefits
(Modified Cash Basis)
Years ended December 31, 2003 and 2002

	2003	2002
Additions to net assets attributed to:		
Contributions from participants	$ 5,015,081	5,084,308
Contributions from employer	1,986,622	1,977,665
Rollover contributions	524,054	441,729
Interest and dividend income	602,198	664,400
Net appreciation in fair value of investments	7,272,448	--
Total additions	15,400,403	8,168,102
Deductions from net assets attributed to:		
Benefits paid to participants	4,999,347	3,828,409
Net depreciation in fair value of investments	--	5,012,954
Total deductions	4,999,347	8,841,363
Net increase (decrease)	10,401,056	(673,261)
Net assets available for plan benefits, beginning of year	44,780,070	45,453,331
Net assets available for plan benefits, end of year	$55,181,126	44,780,070

See accompanying notes to financial statements.

(1) DESCRIPTION OF THE PLAN

(A) GENERAL

The Kirby 401(k) Plan (the Plan) is a defined contribution 401(k) plan for the benefit of employees of Kirby Corporation (the Company) and certain subsidiaries. Each employee is eligible to join the Plan as of the first pay period following completion of one year of service and the attainment of age 18. Employees covered by collective bargaining agreements, the terms of which do not provide for participation in the Plan, are not eligible. The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974, as amended (ERISA). Further information relating to the Plan's provisions is available in the Plan Document.

The Hollywood Marine, Inc. (HMI) 401(k) Plan (HMI Plan) was merged into the Plan, and all HMI balances were transferred to the Plan effective December 31, 1999. Commencing January 1, 2000, former HMI Plan participants are subject to the same plan provisions as the Plan participants. In connection with the plan merger, the Plan was amended on December 31, 1999 to include HMI employees.

(B) PLAN ADMINISTRATION

The general administration of the Plan is the responsibility of the Company (the plan administrator). The plan administrator has broad powers regarding the operation and administration of the Plan and receives no compensation for service to the Plan. All administrative expenses, unless paid by the Company at its discretion, are paid by the Plan. During 2003 and 2002, all expenses were paid by the Company. Wells Fargo Bank (Wells) is the trustee of the Plan.

(C) CONTRIBUTIONS

The Plan provides for basic employee pretax contributions to the Plan of up to 3% of covered compensation as defined, and for additional employee pretax contributions to the Plan of up to 14% of covered compensation subject to the provisions of the Internal Revenue Code of 1986, as amended (the Code). Participants age 50 or older during the Plan year may also elect to make a "catch-up" contribution, subject to certain Internal Revenue Service (IRS) limits ($2,000 in 2003 and $1,000 in 2002). The Company contributes matching employer contributions equal to 100% of basic employee pretax contributions. The Company does not match the additional employee pretax or catch-up contributions. Matching employer contributions are used to purchase Company common stock. Employees may transfer the matching employer contributions to other funds upon receipt.

In addition, participants may contribute amounts representing rollovers from other qualified plans.

(D) BENEFITS PAYMENTS AND LOANS

Benefits payments are made to participants upon retirement or termination of employment (or to the beneficiary in the event of death) and are in the form of lump sum distributions or installment payments. A participant may request a loan for up to the lesser of 50% of the participant's vested interest or $50,000, less the participant's highest outstanding loan balance during the preceding 12 months. Loans are typically repaid over a five-year period. Loans outstanding upon a participant's

(Continued)

termination of employment are considered deemed distributions if not repaid and are deducted from the participant's account balance prior to distribution. These amounts are taxed to the participant in the year of the participant's termination. Former participants of the HMI plan are eligible to receive in service withdrawals from their vested HMI account balance after attaining 59 -1/2 years of age.

(E) VESTING

Participants are 100% vested in their participant contributions and rollovers, if any. Participants in the Plan have an immediate and fully vested interest in the portion of the account relating to employer contributions and may, upon resignation from or discharge by the employer, withdraw their entire account balance.

Employer contributions made to the prior HMI Plan are subject to a five-year vesting schedule based on the participant's HMI service date. Forfeitures of nonvested participants are credited to the accounts of former HMI Plan participants employed at year-end based on a formula that considers the total compensation, as defined, of all former HMI Plan participants for that plan year. Forfeitures in the amount of $9,060 and $62,955 as of December 31, 2003 and 2002, respectively, were available for allocation to former HMI Plan participants.

(F) PLAN TERMINATION

Although it has not expressed any intent to do so, the Company has the right under the Plan to terminate the Plan subject to the provisions of ERISA. In the event of termination, the amounts credited to the accounts of participants shall vest immediately and will be distributed to the participants after payment of expenses for distribution and liquidation.

(G) VALUATION OF PARTICIPANT ACCOUNTS

Under the Plan, each participant's account is credited with the participant's contribution, the Company's matching contribution and an allocation of investment income (loss), net of administrative expenses. Investment income (loss) is allocated daily to participants. The benefit to which a participant is entitled is the benefit that can be provided from the participant's vested account.

(2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(A) BASIS OF PRESENTATION

The accompanying financial statements have been prepared on the modified cash basis, which is a comprehensive basis of accounting other than U.S. generally accepted accounting principles, and is an acceptable method of reporting under Department of Labor regulations. The modified cash basis of accounting utilizes the cash basis of accounting while carrying investments at fair value and recording investment income on the accrual basis. Consequently, contributions are recognized when received rather than when earned, and expenses are recognized when paid rather than when the obligation is incurred. As of December 31, 2003, $89,451 of employee contributions and $41,685 of employer contributions for the 2003 Plan year had not been remitted to the trust. As of December 31, 2002, $174,340 of employee contributions and $73,549 of employer contributions for the 2002 Plan year had not been remitted to the trust. As of December 31, 2003, $82,689 of excess deferrals were held by the trust and distributed to participants during 2004. As of December 31, 2002, no excess deferrals were held by the trust. Under U.S. generally accepted accounting principles, these amounts would have been reflected as accounts receivable and payable.

(B) USE OF ESTIMATES

The preparation of financial statements requires Plan management to make estimates and assumptions that affect the reported amounts of assets, liabilities, and disclosure of contingent assets and liabilities, and changes therein. Actual results could differ from those estimates.

(C) INVESTMENT VALUATION

Investments in mutual funds and Company common stock are stated at fair value based on quoted market prices. Investments in common trust funds are stated at fair market value based upon quoted market prices of the underlying assets. Purchases and sales of investments are recorded on a trade date basis. Net appreciation (depreciation) in fair value of investments includes realized gains and losses on investments sold during the year as well as net appreciation (depreciation) of the investments held at the end of the year. Participant loans are stated at cost, which approximates their fair value. Interest and dividend income is accrued in the period earned.

(D) PAYMENT OF BENEFITS

Payments to participants are recorded as the benefits are paid.

(3) INVESTMENTS

Each participant has the right to direct his or her contributions and the Company's matching contributions, between the investment funds offered by the Plan. Descriptions of the Plan's investment fund options are included in the summary plan description provided to all eligible employees.

Participants may direct their investment contributions to the following investment funds: Wells Fargo Outlook 2010 Fund, Wells Fargo Outlook 2020 Fund, Wells Fargo Outlook 2030 Fund, Wells Fargo Outlook 2040 Fund, Wells Fargo Treasury Plus Institutional Money Market Fund, Dreyfus Intermediate Term Income Fund, Wells Fargo Asset Allocation Fund, MFS Value Fund, Goldman Sachs Capital Growth Fund, Wells Fargo S&P 500 Index Fund, MFS Massachusetts Investors Growth Stock Fund, MFS Mid-Cap Growth Fund, AIM Aggressive Growth Fund, Janus Advisor International Fund and Kirby Common Stock Fund. The Franklin US Government Securities and Templeton Foreign Fund were added during 2003. Effective January 7, 2004, all funds in the Janus Advisor International Fund were transferred to the Templeton Foreign Fund.

The following presents investments that represent 5% or more of the Plan's net assets as of December 31:

2003:

Wells Fargo Treasury Plus Institutional Money Market Fund	$ 9,529,377
Wells Fargo Asset Allocation Fund	5,827,979
Dreyfus Intermediate Term Income Fund	4,325,904
Goldman Sachs Capital Growth Fund	4,809,701
AIM Aggressive Growth Fund	4,052,308
Company common stock	10,917,579
Participant loans	4,933,368

2002:

Wells Fargo Treasury Plus Institutional Money Market Fund	$ 9,880,671
Wells Fargo Asset Allocation Fund	4,474,236
Dreyfus Intermediate Term Income Fund	4,231,800
Goldman Sachs Capital Growth Fund	3,733,132
AIM Aggressive Growth Fund	3,094,464
Company common stock	8,019,381
Participant loans	4,421,960

The Plan's investments (including realized gains and losses on investments bought and sold, as well as unrealized gains and losses on investments held during the year) appreciated (depreciated) in value as follows:

	2003	2002
Common trust funds	$1,450,694	(1,008,323)
Mutual funds	3,368,067	(4,115,830)
Common stock	2,453,687	111,199
	$7,272,448	(5,012,954)

(4) VOTING RIGHTS

Each shareholder is entitled to exercise voting rights attributable to the shares of Company common stock allocated to his or her account and is notified by the trustee prior to the time that such rights are to be exercised. The trustee is not permitted to vote any shares for which instructions have not been given by the participant. During 2003 and 2002, the Plan purchased all shares of Company common stock in the open market.

(5) RISK AND UNCERTAINTIES

The Plan may invest in common trust funds, mutual funds and Company common stock. Investment securities are exposed to various risks, such as interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is probable that changes in the value of investment securities will occur in the near term.

(6) RELATED PARTY TRANSACTIONS

Certain Plan investment options include shares of Company common stock and common trust funds and mutual funds managed by Wells. The Company is the plan sponsor, and Wells is the trustee as defined by the Plan. Therefore, these transactions qualify as party-in-interest transactions. These transactions are covered by an exemption from the "prohibited transaction" provisions of ERISA and the Code.

The Plan has participant loans outstanding, which are secured solely by a portion of the participant's vested account balance, in accordance with the Plan Document.

(7) FEDERAL INCOME TAXES

Management considers the Plan to be in compliance with Section 401(a) of the Code and, accordingly, to be entitled to an exemption from federal income taxes under the provisions of Section 501(a). A letter dated August 30, 2001 has been received by Wells stating that the form of the prototype plan is acceptable under the Code Section 401 for use by employers for the benefit of their employees. The letter, in effect, states that an employer who adopts the Plan will be considered to be qualified under the Code Section 401(a) provided all terms of the Plan are met and the Plan does not discriminate in favor of key or highly compensated employees. Therefore, the plan administrator believes the Plan was qualified and the related trust was tax exempt as of December 31, 2003 and 2002.

KIRBY 401(K) PLAN
Schedule H, Line 4i - Schedule of Assets (Held at End of Year)
(Modified Cash Basis)
December 31, 2003

IDENTITY OF ISSUE, BORROWER, LESSOR, OR SIMILAR PARTY	DESCRIPTION OF ASSET	CURRENT VALUE
Common trust funds:		
*Wells Fargo Bank	Wells Fargo Treasury Plus Institutional Money Market Fund	$ 9,529,377
*Wells Fargo Bank	Wells Fargo Short-Term Investment Money Market Fund	182,741
*Wells Fargo Bank	Wells Fargo Asset Allocation Fund	5,827,979
*Wells Fargo Bank	Wells Fargo S&P 500 Index Fund	2,156,738
Total common trust funds		17,696,835
Mutual funds:		
*Wells Fargo Bank	Wells Fargo Outlook 2010 Fund	403,257
*Wells Fargo Bank	Wells Fargo Outlook 2020 Fund	737,521
*Wells Fargo Bank	Wells Fargo Outlook 2030 Fund	231,792
*Wells Fargo Bank	Wells Fargo Outlook 2040 Fund	287,507
Dreyfus	Dreyfus Intermediate Term Income Fund	4,325,904
The Goldman Sachs Group	Goldman Sachs Capital Growth Fund	4,809,701
MFS Investment Management	MFS Value Fund	1,042,526
MFS Investment Management	MFS Massachusetts Investors Growth Stock Fund	2,604,126
MFS Investment Management	MFS Mid-Cap Growth Fund	1,133,615
AIM Investments	AIM Aggressive Growth Fund	4,052,308
Franklin Templeton	Franklin US Government Securities	116,530
Franklin Templeton	Templeton Foreign Fund	28,337
Janus	Janus Advisor International Fund	1,887,067
Total mutual funds		21,660,191
Common stock:		
*Kirby Corporation	Common stock	10,917,579
*Participant loans	Interest rates ranging from 5.25% to 10.5%	4,933,368
Total assets (held at end of year)		$55,207,973

*Parties in interest to the Plan.

See accompanying report of independent registered public accounting firm.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the plan administrator, which administers the Plan, has duly caused this annual report to be signed on its behalf by the undersigned hereunto duly authorized.

DATE: June 23, 2004

KIRBY 401(k) PLAN

KIRBY CORPORATION
PLAN ADMINISTRATOR

BY: /s/ Jack M. Sims

Jack M. Sims
Vice President
Human Resources
of Kirby Corporation

INDEX TO EXHIBIT

EXHIBIT NUMBER	DESCRIPTION
23.1	Consent of Independent Registered Public Accounting Firm

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Plan Administrator
Kirby 401(k) Plan:

We consent to the incorporation by reference in the Registration Statement on Form S-8 of Kirby Corporation (filed under Securities and Exchange Commission File No. 33-57625) of our report dated June 23, 2004, with respect to the statements of net assets available for plan benefits (modified cash basis) of the Kirby 401(k) Plan as of December 31, 2003 and 2002, and the related statements of changes in net assets available for plan benefits (modified cash basis) for the years ended December 31, 2003 and 2002 and the supplemental schedule H, line 4i - schedule of assets (held at end of year) (modified cash basis) as of December 31, 2003, which report appears in the December 31, 2003 Annual Report on Form 11-K of the Kirby 401(k) Plan.

Houston, Texas
June 23, 2004