

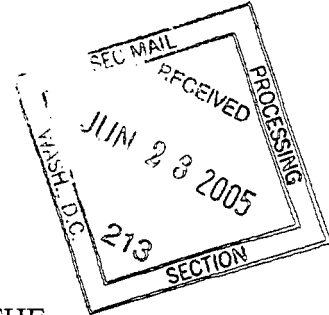
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549



05059026

FORM 11-K

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



(Mark One):

- ANNUAL REPORT PURSUANT TO SECTION 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934.

For the fiscal year ended December 31, 2004

OR

- TRANSITION REPORT PURSUANT TO SECTION 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934.

For the transition period from _____ to _____

Commission file number 1-14601

A. Full title of the plan and the address of the plan, if different from that of the issuer named below:

ARCH CHEMICALS, INC. CONTRIBUTING EMPLOYEE OWNERSHIP PLAN

B. Name of issuer of the securities held pursuant to the plan and the address of its principal executive office:

Arch Chemicals, Inc.
501 Merritt 7
Norwalk, Connecticut 06851

PROCESSED

JUN 29 2005

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FINANCIAL

Exhibit Index = p.17

Total pages = 18

REQUIRED INFORMATION

**ARCH CHEMICALS INC. CONTRIBUTING
EMPLOYEE OWNERSHIP PLAN**

Financial Statements and Supplemental Schedules

December 31, 2004 and 2003

(With the Report of Independent Registered
Public Accounting Firm Thereon)

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KPMG LLP
Stamford Square
3001 Summer Street
Stamford, CT 06905



Report of Independent Registered Public Accounting Firm

The Plan Administrator of the Arch
Chemicals Inc. Contributing
Employee Ownership Plan:

We have audited the accompanying statements of net assets available for plan benefits of the Arch Chemicals Inc. Contributing Employee Ownership Plan as of December 31, 2004 and 2003, and the related statements of changes in net assets available for plan benefits for the years then ended. 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.

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets available for plan benefits of the Arch Chemicals Inc. Contributing Employee Ownership Plan as of December 31, 2004 and 2003, and the changes in net assets available for plan benefits for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Our audits were performed 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) and Schedule H, Line 4j – Schedule of Reportable Transactions are presented for the purpose of additional analysis and are not a required part of the basic financial statements but are 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. These supplemental schedules are the responsibility of the Plan's management. The supplemental schedules have been subjected to the auditing procedures applied in the audits of the basic financial statements and, in our opinion, are fairly stated in all material respects in relation to the basic financial statements taken as a whole.

KPMG LLP

June 17, 2005

**ARCH CHEMICALS INC. CONTRIBUTING
EMPLOYEE OWNERSHIP PLAN**

Statements of Net Assets Available for Plan Benefits

December 31, 2004 and 2003

	2004	2003
Assets:		
Investments, at fair value (note 4)		
Mutual funds	\$ 66,624,354	55,493,896
Common/ collective trust	26,504,082	20,605,473
Common stock	56,650,826	53,969,370
Other	17,337,458	15,749,272
Total investments, at fair value	167,116,720	145,818,011
Participant loans	4,394,722	3,956,974
Total investments	171,511,442	149,774,985
Employer contribution receivable	1,208,380	1,263,673
Participant contribution receivable	—	107,018
Net assets available for plan benefits	\$ 172,719,822	151,145,676

See accompanying notes to financial statements.

**ARCH CHEMICALS INC. CONTRIBUTING
EMPLOYEE OWNERSHIP PLAN**

Statements of Changes in Net Assets Available for Plan Benefits
Years ended December 31, 2004 and 2003

	2004	2003
Additions (reductions) in net assets:		
Investment income:		
Net appreciation in fair value of investments	\$ 13,006,085	28,448,422
Dividends	2,909,594	2,828,838
Interest	108,401	113,169
Interest from participant loans	194,704	212,729
Net investment income	16,218,784	31,603,158
Contributions:		
Participant	7,942,989	7,747,733
Employer	3,662,545	3,886,698
Total contributions	11,605,534	11,634,431
Net transfers in from other plans	8,587,195	—
Total additions	36,411,513	43,237,589
Deductions in net assets:		
Administrative expenses	102,202	91,812
Withdrawals in cash and stock to participants	14,735,165	9,059,215
Other	—	1,814
Total deductions	14,837,367	9,152,841
Net increase	21,574,146	34,084,748
Net assets available at beginning of year	151,145,676	117,060,928
Net assets available at end of year	\$ 172,719,822	151,145,676

See accompanying notes to financial statements.

**ARCH CHEMICALS INC. CONTRIBUTING
EMPLOYEE OWNERSHIP PLAN**

Notes to Financial Statements

December 31, 2004 and 2003

(1) Summary of Significant Accounting Policies

(a) Basis of Presentation

The accompanying financial statements have been prepared on the accrual basis and present net assets available for plan benefits and changes in net assets available for plan benefits.

(b) Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and changes therein, and disclosure of contingent assets and liabilities. Actual results could differ from those estimates.

(c) Investment Valuation and Income Recognition

The Plan's investments are stated at fair value except for participant loans which are stated at cost, which approximates fair value. When available, quoted market prices are used to value investments. Commingled holdings, which include the Barclays Global Investors Equity Index Fund, are valued by the issuing investment manager.

Purchases and sales of securities are recorded on a trade-date basis. All income is determined on a full accrual basis. Bond interest accrues daily and dividends are recorded on the ex-dividend date.

(d) Payment of Withdrawals

Withdrawals are recorded when paid.

(2) Description of the Plan

The following description of Arch Chemicals Inc. (Arch, the Plan Sponsor or the Employer) Contributing Employee Ownership Plan (the Plan or CEOP) provides only general information. Participants should refer to the Plan document for a more complete description of the Plan's provisions.

(a) General

The Plan is a defined contribution plan sponsored by Arch with a cash or deferred arrangement and is intended to satisfy the qualification requirements under Sections 401(a) and 401(k) of the Internal Revenue Code of 1986, as amended (the Code). In addition, a portion of the Plan is intended to qualify as an employee stock ownership plan (ESOP) under Section 4975(e)(7) of the Code. The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974, as amended (ERISA). The Plan is administered by the Arch CEOP Administrative Committee.

On February 8, 1999, Olin Corporation (Olin) completed the spin-off of its specialty chemical businesses as Arch. Under the terms of the spin-off, Olin distributed to its holders of common stock as of the close of business on February 1, 1999 one Arch common share for every two shares of Olin common stock.

b

**ARCH CHEMICALS INC. CONTRIBUTING
EMPLOYEE OWNERSHIP PLAN**

Notes to Financial Statements

December 31, 2004 and 2003

Effective as of the spin-off of Arch, the Olin Corporation Contributing Employee Ownership Plan (Olin CEOP) was converted into a multiple employer plan covering employees of Olin and its affiliated companies, and employees of Arch and its affiliated companies (collectively, the Employers). The Olin CEOP was administered as a single plan.

On January 22, 2001, Arch adopted the CEOP, a single employer plan, and effective March 1, 2001, was no longer a participating employer in the Olin CEOP. As of March 1, 2001, all Arch participant balances were transferred to the CEOP.

On April 2, 2004, Arch completed the acquisition of Avecia's pool & spa and protection & hygiene businesses. On July 12, 2004, \$8,587,195 was transferred into the Plan relating to the employees acquired from Avecia.

(b) Participation and Contributions

Employees of the Employer and certain subsidiaries of the Employer are eligible to participate in the Plan on the day coinciding with their date of hire.

For 2004 and 2003, the maximum amount of tax-deferred contributions that could have been made to the CEOP was \$13,000 and \$12,000, respectively. The amount of tax deferred contributions is based on IRS guidelines and is calculated based on eligible pay and the percentage of pay elected to contribute to the Plan. Additionally, participant's can make after-tax contributions. Combined contributions may not exceed 100% of participant's eligible compensation, up to statutory limits. However, contributions for highly compensated employees is limited to 15% of eligible compensation, up to statutory limits.

Participants who are age 50 and older at any time during a Plan year may make "catch-up contributions" in that year. These contributions are additional tax-deferred contributions that eligible participants are permitted to make in excess of annual IRS tax-deferred contribution limit. For 2004 and 2003, the maximum amount of "catch-up contributions" that could have been made to the CEOP was \$3,000 and \$2,000, respectively.

The Employer provides a matching contribution, which is currently 50% of participant's contributions (excluding "catch-up contributions", if any) up to 6% of eligible pay. Arch also provides an annual performance match, which is based on Arch's actual earnings per share (EPS) as a percent of the target EPS as established by the Compensation Committee. The performance matching contribution totaled \$1,208,494 and \$1,237,186 for the years ended December 31, 2004 and 2003, respectively. All Employer matching contributions are invested in the Arch Common Stock Fund.

(c) Investment Elections

Below is a description of the investment funds held by the Plan:

American Century Premium Money Market Fund – The fund invests in high-quality, cash-equivalent securities including direct obligations of the U.S. government and its agencies and

**ARCH CHEMICALS INC. CONTRIBUTING
EMPLOYEE OWNERSHIP PLAN**

Notes to Financial Statements

December 31, 2004 and 2003

instrumentalities, as well as short-term bank and corporate obligations that are payable in U.S. dollars.

PIMCO Total Return Fund – The fund invests at least 65% of assets in debt securities, including U.S. government securities, corporate bonds, and mortgage-related securities. It may invest up to 20% of assets in securities denominated in foreign currencies.

Gabelli Westwood Equity Fund – The fund normally invests at least 65% of assets in common stocks and convertible securities of seasoned companies with historical earnings growth higher than published indices, and in smaller companies believed to have outstanding potential for capital appreciation. The fund may also invest up to 35% of assets in foreign and domestic debt securities.

Barclays Global Investors Equity Index Fund – The fund seeks to replicate the investment performance of the S&P 500 Index through investing in the same stocks held in the Index. These stocks represent 500 of the largest and most established public companies in the U.S. (based on the market value of their shares), and account for more than 75% of the market capitalization of all publicly traded stocks in the U.S.

Putnam Growth Opportunities Fund – Class A – This fund invests primarily in very large, highly competitive American growth companies that are world leaders in their industries. Targeted companies have strong revenue and earnings growth rates and dominate both domestic and foreign markets.

Morgan Stanley Institutional Fund Trust U.S. Mid Cap Value Portfolio – The fund normally invests at least 80% of assets in equities of mid cap companies that have market capitalization of \$35 billion or less at the time of purchase. The fund may invest up to 5% of assets in foreign securities. The fund may purchase stocks that typically do not pay dividends. The fund may also invest in preferred stock and convertible securities.

Arch Common Stock – This fund is invested in shares of Common Stock of Arch.

Olin Common Stock – This fund is invested in shares of Common Stock of Olin.

American Century Brokerage Fund – The self-directed brokerage account is intended for those who wish to individually tailor their investment portfolio to investments outside those offered by the Plan.

Pre-Mixed Portfolio – Moderate – This is a blended fund that has been created specifically for this Plan and is comprised of certain fund options available under the Plan. It is designed to seek moderate returns with both growth and income-related investments.

Pre-Mixed Portfolio – Conservative – This is a blended fund that has been created specifically for the Plan and is comprised of certain fund options available under the Plan. It is designed to seek modest returns with low volatility by investing in a mix of funds emphasizing income-related investments.

**ARCH CHEMICALS INC. CONTRIBUTING
EMPLOYEE OWNERSHIP PLAN**

Notes to Financial Statements

December 31, 2004 and 2003

Pre-Mixed Portfolio – Aggressive – This fund is a blended fund that has been created specifically for this Plan and is comprised of certain fund options available under the Plan. It is designed to seek higher returns through primarily growth-related investments.

Managers Special Equity Fund – This fund seeks long-term capital appreciation primarily through investment in common stocks of U.S. companies. These companies have small to medium-market capitalization and are in the early stages of their corporate life cycle or are not yet well recognized, or they may be more established firms experiencing accelerated earnings growth.

American Century International Growth Fund (Inst) – This is an international equity fund that seeks capital growth over time by investing in common stocks of foreign companies considered by management to have better-than-average prospects for appreciation. The fund invests primarily in the markets of developed foreign countries, but may also invest in emerging markets.

(d) Olin Common Stock Fund

Only Participants who were Participants in the Olin CEOP at the time of the spin-off of Arch from Olin may have account balances that are invested in the Olin Common Stock Fund. Such Participants may retain existing investments in the Olin Common Stock Fund, but no new investments or transfers may be made in or to this fund. Participants may transfer any portion of their Olin Common Stock Fund balances to any of the other funds offered by the Plan. Any dividends issued on the stock held in the Olin Common Stock Fund are automatically reinvested into the Arch Common Stock Fund.

(e) Arch Common Stock Fund

As of February 8, 1999, the specialty chemical businesses of Olin were spun off into a new publicly traded company, Arch Chemicals, Inc. In order to effect the spin-off, a stock dividend was issued to Olin shareholders, including participants in the Olin CEOP, of one share of Arch common stock for each two shares of Olin common stock then outstanding. These shares were deposited in the unitized Arch Common Stock Fund in the Olin CEOP.

As of the spin-off, each Plan participant having an account balance containing Olin common stock was credited with an opening account balance in the Arch Common Stock Fund. The amount credited to each participant's initial Arch Common Stock Fund account balance was calculated by (i) dividing the value of such participant's Olin Common Stock Fund account by the total value of all participants' accounts in the Olin Common Stock Fund, and then (ii) multiplying the percentage determined under (i) above by the value of the Arch common stock the Plan trustee received as a stock dividend. The balances in all Arch employees' accounts of the Arch Common Stock Fund were transferred to the Plan on March 1, 2001.

Dividends paid to participants are invested in the Arch Common Stock Fund. All Employer match contributions made on behalf of participants are being invested in the Arch Common Stock Fund. This fund also includes voluntary contributions made by employees. Each participant is entitled to

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**ARCH CHEMICALS INC. CONTRIBUTING
EMPLOYEE OWNERSHIP PLAN**

Notes to Financial Statements

December 31, 2004 and 2003

exercise voting rights attributable to the shares of his or her account and is notified by the Trustee prior to the time such rights are to be exercised.

The number of units in the Arch Common Stock Fund to be credited to a participant's account is determined by dividing the participant's contribution plus the amount of Employer matching contributions attributable to such contribution for the preceding pay cycle by the unit value of a unit as of the close of business on the date on which the contributions were credited. Additional units are credited to a participant's account to reflect payment of dividends on the common shares credited to that account based on the value of a unit as of the day the dividend is credited.

(f) Vesting and Benefit Provision

Participants are fully vested in their contributions to the Plan.

All participants become 100% vested in the Employer contributions upon the completion of two years of service or as a result of death, total disability or attainment of age 65. Nonbargaining and certain bargaining participants can become partially vested in accordance with the schedule set forth below:

<u>Years of Service</u>	<u>Percentage vested</u>
Less than one year	0%
One year but fewer than two	50%
Two or more years	100%

Upon termination of service for any reason, a participant may elect to receive his or her entire vested balance in either a lump-sum amount or in annual installments up to 15 years or his or her life expectancy, if greater.

Distributions from the Plan are generally paid in cash. Distributions from the Olin Common Stock Fund or Arch Common Stock Fund, at the election of the distributee, can be paid in common stock with any fractional interest in a share of common stock paid in cash.

(g) Transfers Between Funds

Participants may elect to transfer balances attributable to employee contributions from any fund to any other fund, except such participants may not transfer balances to the Olin Common Stock Fund. Participants may transfer balances daily, with no limitation on the frequency. A participant may elect to transfer any percentage of the balance in the fund from which the transfer is made.

Participants who are at least 50 years old may elect to transfer balances attributable to Employer match out of the Arch Common Stock Fund once every 12 months.

**ARCH CHEMICALS INC. CONTRIBUTING
EMPLOYEE OWNERSHIP PLAN**

Notes to Financial Statements

December 31, 2004 and 2003

(h) Participant Accounts

The Plan is a defined contribution plan under which a separate individual account is established for each participant. Each participant's account is credited with the participant's contribution and allocations of (a) the Employer's contribution and (b) Plan earnings. Allocations are based on participant earnings or accounts balances, as defined. The benefit to which a participant is entitled is the benefit that can be provided from the Participant's vested balance.

(i) Loan Provision

All employees who are participants in the Plan are eligible to borrow from the Plan. Participants may borrow from the Plan an amount up to one-half of their vested account balance. The minimum loan amount is \$ 500 and the maximum aggregate loan amount is \$ 50,000. Under the Plan, employees may have a maximum of five outstanding loans at any time. The loans are funded from the participants' accounts, reducing the account balance by the loan amount, and have been reflected as participant loans in the financial statements. The term of the loans may be up to five years, or up to 15 years if the purpose of the loan is the purchase of a primary residence. The interest rate on these loans is fixed at the current prime rate at the time the loan is originated. The interest rates on outstanding loans ranged from 4.00% and 9.75% in 2004 and 4.25% to 10.50% in 2003.

(j) Payment of Benefits

Upon termination of employment, death, attainment of age 59 ½, certain hardships, as defined by the Plan, participants may elect to withdraw amounts from the Plan. Participants may also elect to withdraw their tax-deferred contributions and vested contributions, as defined in the Plan document.

(k) Administrative Expenses

Costs and expenses of administering the Plan are generally paid by the Plan.

(l) Trust Fund Management

JP Morgan Chase Bank Investor Services is the Trustee of the Plan. Under the terms of the Trust Agreement between the Trustee and Arch, the Trustee is responsible for the safekeeping of Plan assets in the trust funds and the maintenance of records relating to receipts and disbursements from the trust funds. The Trustee invests funds in compliance with the terms of the Plan and makes payments from the trust funds as directed by participants and Arch.

(m) Recordkeeper

JP Morgan Retirement Plan Services (formerly, JP Morgan/American Century Retirement Plan Services) is the Recordkeeper for the Plan. There are revenue sharing agreements between certain funds and JP Morgan Chase Bank.

(n) Plan Termination

Although it has not expressed any intent to do so, the Employer has the right under the Plan to discontinue its contributions at any time and to terminate the Plan subject to the provisions of

**ARCH CHEMICALS INC. CONTRIBUTING
EMPLOYEE OWNERSHIP PLAN**

Notes to Financial Statements

December 31, 2004 and 2003

ERISA. In the event of Plan termination, participants will become 100% vested in their Employer contributions.

(3) Forfeitures of Employer Contributions

Any forfeitures of non-vested Employer contributions, equivalent to the market value of forfeited shares plus dividends not reinvested, will be applied to reduce subsequent Employer contributions. Forfeitures used to reduce employer contributions were \$53,318 and \$0 for the Plan years ended December 31, 2004 and 2003, respectively. The ending balance of forfeitures at December 31, 2004 and 2003 amounted to \$0 and \$11,874, respectively.

(4) Investments

The Plan's investments which exceeded 5% of net assets available for Plan benefits as of December 31, 2004 and 2003 are as follows:

Description of investment	2004	2003
Arch Chemicals Common Stock*	44,366,871	40,185,548
Barclays Global Investors Fund	26,504,082	20,605,473
PIMCO Total Return Fund	20,297,217	17,567,047
American Century Premium Money Market Fund	15,083,991	14,503,225
Olin Corporation Common Stock*	12,283,955	13,783,822
Managers Special Equity Fund	11,697,632	9,413,206
Morgan Stanley Institutional Mid Cap Value	9,077,267	—
American Century International Growth Fund	8,841,591	—
Putnam Growth Opportunities Fund	8,634,119	8,470,149

* Includes non-participant-directed

The following table presents the net appreciation in fair value of investments (including investments bought, sold and held during the year) for the plan years ended December 31, 2004 and 2003, respectively:

Net appreciation	2004	2003
Mutual Funds	\$ 4,612,836	8,699,103
Common/Collective Trust	2,599,350	4,471,765
Common Stock	5,615,780	14,913,646
Other	178,119	363,908
Total net appreciation	\$ <u>13,006,085</u>	<u>28,448,422</u>

**ARCH CHEMICALS INC. CONTRIBUTING
EMPLOYEE OWNERSHIP PLAN**

Notes to Financial Statements

December 31, 2004 and 2003

(5) Non-participant-directed Investments:

Information about the net assets and the significant components of the changes in net assets for investment options, which include non-participant-directed investments are as follows:

	<u>December 31, 2004</u>	<u>December 31, 2003</u>
Arch Common Stock Fund Net Assets at beginning of year	\$ 40,185,548	26,704,633
Changes in net assets to the Arch Common Stock Fund:		
Employer contributions	3,662,545	3,886,698
Employee contributions – directed investments	678,872	708,029
Dividends	1,663,557	1,776,628
Net appreciation	4,669,170	11,575,809
Loan repayments (principal and interest)	407,148	380,477
Benefits paid to participants	(3,066,924)	(2,015,438)
Administrative expense	(2,069)	(1,898)
Loans issued	(358,919)	(305,344)
Other receipts (disbursements)	46,055	(119,489)
Transfers to participants – directed investments	(3,518,112)	(2,404,557)
Net increase	<u>4,181,323</u>	<u>13,480,915</u>
Arch Common Stock Fund Net Assets at end of year	<u>\$ 44,366,871</u>	<u>40,185,548</u>

(6) Federal Income Taxes

The Internal Revenue Service has determined and informed the Plan Sponsor by a letter dated September 5, 2003, that the Plan is qualified under Section 401(a) of the Code, as amended, and the related trust is exempt from Federal income taxes under Section 501(a) of the Code.

(7) Related Party Transactions

Certain Plan investments are shares of mutual funds managed by JP Morgan Chase Bank Investor Services, the Plan trustee. In addition, the Plan invests in common stock of Arch. These transactions qualify as party-in-interest transactions that are exempt from the prohibited transaction rules.

Schedule I

ARCH CHEMICALS INC. CONTRIBUTING
EMPLOYEE OWNERSHIP PLAN

Schedule H, Line 4i – Schedule of Assets (Held at End of Year)

December 31, 2004

Identity of issuer, borrower, lessor, or similar party	Description of investment including maturity date, rate of interest, par, or maturity value	Current value
* American Century	Premium Money Market Fund	\$ 15,083,991
PIMCO	Total Return Fund	20,297,217
Gabelli	Westwood Equity Fund	8,076,528
Barclays	Global Investors Fund	26,504,082
Putnam	Growth Opportunities Fund	8,634,119
Morgan Stanley	Institutional Fund Trust Mid Cap Value Portfolio	9,077,267
Managers Funds	Special Equity Fund	11,697,632
* American Century	International Growth Fund	8,841,591
* American Century	Brokerage Account	2,253,467
Olin Corporation	Olin Corporation Common Stock, Par value \$1.00	12,283,955
* Arch Chemicals, Inc.	Arch Chemicals, Inc. Common Stock, Par value \$1.00	44,366,871
* Various	Participant Loan Fund (interest ranging from 4.00% - 9.75%, 1,533 outstanding loans and maturity dates ranging through 2009)	4,394,722
	Total investments	\$ <u><u>171,511,442</u></u>

*Party-in-interest to the Plan

See accompanying report of independent registered public accounting firm.

Schedule II

ARCH CHEMICALS INC. CONTRIBUTING
EMPLOYEE OWNERSHIP PLAN

Schedule H, Line 4j – Schedule of Reportable Transactions
Year ended December 31, 2004

<u>Identity of party involved</u>	<u>Description of asset</u>	<u>Purchase price</u>	<u>Selling price</u>	<u>Cost of asset</u>	<u>Current value of asset on transaction date</u>	<u>Net gain or (loss)</u>
* Arch Chemicals, Inc.	* Arch Chemicals, Inc Common stock par value \$1.00	\$ 4,460,251	—	4,460,251	4,460,251	—
* Arch Chemicals, Inc.	* Arch Chemicals, Inc Common stock par value \$1.00	\$ —	6,599,683	6,128,260	6,599,638	471,378

* Party-in-interest to the Plan

See accompanying report of independent registered public accounting firm.

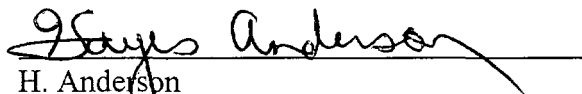
SIGNATURES

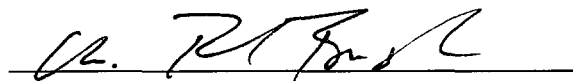
The Plan. Pursuant to the requirements of the Securities Exchange Act of 1934, the trustees (or other persons who administer the employee benefit plan) have duly caused this annual report to be signed on its behalf by the undersigned hereunto duly authorized.

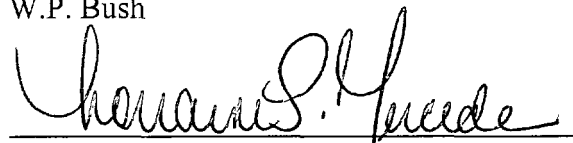
Date: June 27, 2005

ARCH CHEMICALS, INC. CONTRIBUTING
EMPLOYEE OWNERSHIP PLAN

By: Members of the Arch CEOP
Administrative Committee


H. Anderson


W.P. Bush


L.S. Mercede



R.A. Barnes

EXHIBIT INDEX

<u>Exhibit No.</u>	<u>Description</u>
23	Consent of Independent Registered Public Accounting Firm

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Arch Chemicals, Inc.:

We consent to the incorporation by reference in the Registration Statement (No. 333-54098) on Form S-8 of the Arch Chemicals, Inc. Contributing Employee Ownership Plan of our report dated June 17, 2005, relating to the statements of net assets available for plan benefits as of December 31, 2004 and 2003, and the related statements of changes in net assets available for plan benefits for the years then ended and related schedules, which report appears in the December 31, 2004 annual report on Form 11-K relating to the Arch Chemicals, Inc. Contributing Employee Ownership Plan.

KPMG LLP

Stamford, Connecticut
June 24, 2005