V-0163-96

ENCLOSURE 1

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

George Allen
Governor

Becky Norton Dunlop
Secretary of Natural Resources

PIEDMONT REGIONAL OFFICE
4949-A Cox Road
Glen Allen, Virginia 23060
(804) 527-5020
Fax (804) 527-5106
http://www.deq.state.va.us

Thomas L. Hopkins
Director

Gerard Seeley, Jr.
Piedmont Regional Director

CONSENT AGREEMENT

WITH

Hercules Incorporated
Aqualon Division
P.O. Box 271
Hopewell, Virginia 23860

Registration No. 50363

SECTION A: Purpose

This Agreement establishes a Reasonably Available Control Technology (RACT) standard for Hercules Incorporated, Aqualon Division, for the control of volatile organic compound (VOC) emissions in the Richmond Ozone Nonattainment Area as required by the 1985 State Implementation Plan (SIP) and Section 120-04-0407 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. This RACT standard shall be the basis for VOC emissions control for this plant.

SECTION B: References

Unless the context indicates otherwise, the following words and terms have the meanings assigned to them below:

"Agreement" means this Consent Agreement.

"Board" or "SAPCB" means the State Air Pollution Control Board, a collegiate body of the Commonwealth of Virginia described in § 10.1-1301 of the Code. Particular powers and duties of the Board are described in Section C of this document.

"Code" means the Code of Virginia.

"DEQ" means the Department of Environmental Quality, an agency of the Commonwealth described in § 10.1-1183 of the Code.

"Director" means the Director of the Department of Environmental Quality. Particular powers and duties of the Director are described in Section C of this document.

"EPA" means the United States Environmental Protection Agency.

"Major Stationary Source" means any stationary source with a theoretical potential to emit of 100 tons or more per year of any criteria pollutant.

"New Source Review Program" means a program for the preconstruction review and permitting of new stationary sources or expansions to existing ones in accordance with regulations promulgated to implement the requirements of §§ 110 (a)(2)(C), 165 (relating to permits in prevention of significant deterioration areas) and 173 (relating to permits in nonattainment areas) of the federal Clean Air Act.

"Non-CTG" means a source type for which the EPA has not issued a Control Technique Guideline (CTG), and thus has not established RACT for that source type.

"Hercules Incorporated, Aqualon Division" or "affected facility" means Hercules Incorporated, Aqualon Division, located at 1111 Hercules Road, Hopewell, Virginia.

"Reasonably Available Control Technology" or "RACT" means the lowest emission limit that a particular source is capable of meeting by the application of control technology that is both reasonably available, as well as technologically and economically feasible.

"Regional Director" means the Director of the Piedmont Regional Office of the Department of Environmental Quality, 4949A Cox Road, located in Glen Allen, Virginia.

"SAPCB Regulations" means the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution.

"SIP" means the State Implementation Plan.

"Theoretical potential to emit" means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. It is

based on emissions at design capacity or maximum production and maximum operating hours (8,760 hours per year) before add-on controls, unless the source is subject to state and federally enforceable permit conditions which limit production rates or hours of operation.

"VOC" means volatile organic compounds as defined by Section 120-01-02 of the SAPCB Regulations.

SECTION C: Authority

1. Chapter 13 of Title 10.1 of the Code creates the Board and vests in it the authority to supervise and control various aspects of air pollution in the Commonwealth. Among the Board's powers is the authority to promulgate regulations "abating, controlling and prohibiting" air pollution, found in § 10.1-1308 of the Code.

2. Pursuant to its authority, the Board has promulgated the SAPCB Regulations, which first took effect March 17, 1972 and have been periodically amended.

3. Pursuant to § 10.1-1307 D of the Code, the Board has the authority to issue orders to diminish or abate the causes of air pollution and to enforce its regulations. Orders of the Board are enforceable pursuant to §§ 10.1-1316 and 10.1-1320 of the Code.

4. The Director is the executive officer of the Board. Under § 10.1-1307.2 A of the Code, the Director is to perform those duties required of him by the Board. Additionally under § 10.1-1307.3 of the Code, the Director has such powers to supervise, administer and enforce the provisions of Chapter 13 of Title 10.1 of the Code, as well as the regulations and orders of the Board, as are conferred upon him by the Board. The powers and duties conferred and imposed upon the Director under §§ 10.1-1307.2 and 10.1-1307.3 of the Code are continued under § 10.1-1185 of the Code.

5. Under § 10.1-1307.2 B of the Code, the Director may be vested with the authority of the Board when it is not in session, subject to such regulations or delegation as may be prescribed by the Board. Appendix F of the SAPCB Regulations contains the Delegation of Authority from the Board to the Director. In Section II A of Appendix F the Director is given the authority, with some exceptions, to act for the Board when it is not in session and to issue consent orders and emergency special orders.

SECTION D: Findings

1. Hercules Incorporated, Aqualon Division operates a synthetic organic chemical manufacturing facility located at 1111 Hercules Road, Hopewell, Virginia.

2. In the 1985 SIP revision and again by letter on May 10, 1989, the DEQ made a commitment to establish emissions standards in accordance with EPA policy, requiring RACT for all non-CTG major stationary sources of VOC emissions in the Richmond Ozone Nonattainment Area which, at the time, included the City of Richmond, and the Counties of Henrico and Chesterfield.

3. Section 120-04-0407 of the SAPCB Regulations, which became effective on July 1, 1991, requires RACT for all non-CTG major stationary sources of VOC emissions in the expanded Richmond Ozone Nonattainment Area, which includes the Cities of Richmond, Hopewell, and Colonial Heights; and the Counties of Henrico, Hanover, Chesterfield, and Charles City.

4. Hercules Incorporated, Aqualon Division was determined to be a non-CTG major stationary source of VOC emissions in the Richmond Ozone Nonattainment Area.

5. On February 23, 1993 the Board notified Hercules Incorporated, Aqualon Division of its requirement to develop a RACT standard for VOC emissions from the affected facility.

6. Hercules Incorporated, Aqualon Division notified DEQ of its intention to proceed with RACT determination for each source of VOC emissions on March 30, 1993.

7. Hercules Incorporated, Aqualon Division performed a RACT analysis, which was submitted to DEQ on November 1, 1993.

8. DEQ provided comments on the RACT analysis to Hercules Incorporated, Aqualon Division on May 17, 1994 and requested further information.

9. Hercules Incorporated, Aqualon Division submitted a revised RACT analysis, which was submitted to DEQ on October 7, 1994.

10. DEQ provided comments on the revised RACT analysis to Hercules Incorporated, Aqualon Division on April 7, 1995 and requested further information.

11. Hercules Incorporated, Aqualon Division submitted a revised RACT analysis, which was submitted on September 22, 1995.

12. DEQ provided comments on the revised RACT analysis to Hercules Incorporated, Aqualon Division on December 18, 1995 and requested further information.

13. Hercules Incorporated, Aqualon Division submitted a revised RACT analysis, which was submitted on January 11, 1996.

14. Based on 1992 throughput data, the following emissions are summarized for 1992 in the RACT analysis:

    a. Uncontrolled VOC emissions from the Klucel process area (including the Acetic Acid Tank Scrubber and the EO/PO Scrubber) are estimated to be 7404 tons per year.

    b. Uncontrolled VOC emissions from the Ethylcellulose process area are estimated to be 4710 tons per year.

    c. Uncontrolled VOC emissions from the Natrosol process area are estimated to be 52,321 tons per year.

    d. Uncontrolled VOC emissions from the Monochloroacetic Acid (MCA) process area (including the Sewer Scrubber and MCA Storage Tanks Scrubber) are estimated to be 720 tons per year.

    e. Uncontrolled VOC emissions from the Carboxymethylcellulose (CMC) process area are estimated to be 181,500 tons per year.

    f. Uncontrolled VOC emissions from the Technical Facility are estimated to be 88 tons per year.

    g. Total uncontrolled VOC emissions from the affected facility are estimated to be 246,743 tons per year.

15. Based on 1992 throughput data, RACT for the Klucel process area in Paragraph D.14.a. above, is determined to be the use of solvent recovery and process scrubbers having an overall VOC control efficiency of at least 96% on a mass basis.

16. Based on 1992 throughput data, RACT for the Ethylcellulose process area in Paragraph D.14.b. above, is determined to be the use of solvent recovery and process scrubbers having an overall VOC control efficiency of at least 90% on a mass basis.

17. Based on 1992 throughput data, RACT for the Natrosol and Carboxymethylcellulose (CMC) process areas in Paragraphs D.14.c. and e. above, is determined to be the use of solvent recovery and process scrubbers having an overall VOC control efficiency of at least 98% on a mass basis.

18. Based on 1992 throughput data, RACT for the Monochloroacetic Acid (MCA) in Paragraph D.14.d. above, is determined to be the use of solvent recovery and process scrubbers which limit VOC emissions to less than 15 tons/yr.

19. Based on 1992 throughput data, RACT for the Technical Facility in Paragraph D.14.f. above, is determined to be the use of solvent recovery and process scrubbers which limit VOC emissions to less than 15 tons/yr.

20. Based on the RACT proposed in Paragraphs D.15. through D.19. above, total VOC emissions from the affected facility in 1992 after RACT has been applied would be estimated to be 5474 tons per year.

SECTION E: Agreement

Accordingly, the Board and Hercules Incorporated, Aqualon Division agree that:

1. VOC emissions from the affected facility shall be controlled and reduced as outlined in this Agreement.

2. Hercules Incorporated, Aqualon Division shall comply with all applicable SAPCB Regulations, including requirements for monitoring, notification, recordkeeping, reporting, maintenance and malfunction.

3. VOC emissions from the Klucel Process area shall be controlled by solvent recovery and process scrubbers having an overall VOC control efficiency of at least 96% on a mass basis, calculated monthly as a six-month rolling average.

4. VOC emissions from the Ethylcellulose (EC) Process area shall be controlled by solvent recovery and process scrubbers having an overall VOC control efficiency of at least 90% on a mass basis, calculated monthly as a six-month rolling average.

5. VOC emissions from the Carboxymethylcellulose (CMC) Process area shall be controlled by solvent recovery and process scrubbers having a

overall VOC control efficiency of at least 98% on a mass basis, calculated monthly as a six-month rolling average.

6. VOC emissions from the Natrosol Process area shall be controlled by solvent recovery and process scrubbers having an overall VOC control efficiency of at least 98% on a mass basis, calculated monthly as a six-month rolling average.

7. VOC emissions from the Monochloroacetic Acid (MCA) Process area shall be controlled by solvent recovery and process scrubbers, and shall not exceed 15 tons per year. Compliance with this emission limit shall be demonstrated by annual reporting of VOC emissions.

8. VOC emissions from the Technical Facility shall be controlled by solvent recovery and process scrubbers, and shall not exceed 15 tons per year. Compliance with this emission limit shall be demonstrated by annual reporting of VOC emissions.

9. For the Klucel process area, VOC flow shall be measured and the totalized flow recorded for each batch.

10. For the CMC and Natrosol areas, VOC still output shall be continuously measured and the totalized flow recorded once per shift.

11. Compliance for the Klucel Process Area shall be demonstrated by the following equation:

$$\sum_{i=1}^{i=6} (V_T - V_A)_i \Big/ \sum_{i=1}^{i=6} (V_T)_i \times 100 \geq 96\%$$

where:

V_T = mass of VOC (in pounds) circulated/used through the process area during a one-month period, as calculated from measured VOC flow

V_A = mass of VOC (in pounds) lost to the air from point, nonpoint and fugitive sources which cannot be accounted for as other losses (including but not limited to reaction consumption, recycle/recovery, product retention, sewer loss and product transfer), as determined by material balance, using the equation:

$$V_A = V_{LOSS} - V_{OTHER}$$

where:

V_{LOSS} = Mass of final inventory from the current month, minus Mass of starting inventory from current month, minus Mass of solvent purchased in the current 1-month period, (as determined from purchase records and cost sheets which show changes in inventory)

V_{OTHER} = Mass of non-air VOC losses which include but are not limited to: reaction consumption, recycle/recovery, product retention, sewer loss and product transfer)

i = month number one through month number six of the 6-month rolling average

Results of the compliance calculation shall be reported to the Virginia Department of Environmental Quality annually, and records will be maintained for a period of at least five years.

12. Compliance for the EC Process Area shall be demonstrated by the following equation:

$$\sum_{i=1}^{i=6} (V_T - V_A)_i \Big/ \sum_{i=1}^{i=6} (V_T)_i \times 100 \geq 90\%$$

where:

V_T = mass of VOC (in pounds) circulated/used through the process area during a one-month period, as determined from inventory measurements

V_A = mass of VOC (in pounds) lost to the air from point, nonpoint and fugitive sources which cannot be accounted for as other losses (including but not limited to reaction consumption, recycle/recovery, product retention, sewer loss and product transfer), as determined by material balance, using the equation:

$$V_A = V_{LOSS} - V_{OTHER}$$

where:

V_{LOSS} = Mass of final inventory from the current month, minus

Mass of starting inventory from current month, minus
Mass of solvent purchased in the current 1-month period,
(as determined from purchase records and cost sheets
which show changes in inventory)

V_{OTHER} = Mass of non-air VOC losses which include but are not limited to: reaction consumption, recycle/recovery, product retention, sewer loss and product transfer)

i = month number one through month number six of the 6-month rolling average

Results of the compliance calculation shall be reported to the Virginia Department of Environmental Quality annually, and records will be maintained for a period of at least five years.

13. Compliance for the CMC and Natrosol Process Areas shall be demonstrated by the following equation:

$$\sum_{i=1}^{i=6} (V_T - V_A)_i \Big/ \sum_{i=1}^{i=6} (V_T)_i \times 100 \geq 98\%$$

where:

V_T = mass of VOC (in pounds) circulated/used through the process area during a one-month period, as calculated from measured flow and VOC concentration of still output

V_A = mass of VOC (in pounds) lost to the air from point, nonpoint and fugitive sources which cannot be accounted for as other losses (including but not limited to reaction consumption, recycle/recovery, product retention, sewer loss and product transfer), as determined by material balance, using the equation:

$$V_A = V_{LOSS} - V_{OTHER}$$

where:

V_{LOSS} = Mass of final inventory from the current month, minus
Mass of starting inventory from current month, minus
Mass of solvent purchased in the current 1-month period,
(as determined from purchase records and cost sheets
which show changes in inventory)

V_{OTHER} = Mass of non-air VOC losses which include but are not limited to: reaction consumption, recycle/recovery, product retention, sewer loss and product transfer)

i = month number one through month number six of the 6-month rolling average

Results of the compliance calculation shall be reported to the Virginia Department of Environmental Quality annually, and records will be maintained for a period of at least five years.

14. Hercules Incorporated, Aqualon Division shall maintain records of all operating parameters necessary to demonstrate compliance. These records shall be maintained for the solvent recovery and process scrubber systems, and shall include, but are not limited to, all of the following:

a. monthly VOC inventory and throughput records for all process areas at the affected facility, including but not limited to

(1) inventory records, purchase records and cost sheets for each process area which show changes in inventory;

(2) cumulative records of solvent throughput (V_T) as specified in Conditions E9 and E10 of this Agreement;

b. records of monthly VOC losses (other than air emissions) for all process areas, including losses to sewer, product retention, and reaction consumption where applicable, including but not limited to:

(1) waste water sampling and flow measurement data;

(2) derivation loss correlation data;

(3) product residual data;

(4) calculations and all background data used to determine VOC losses in accordance with Conditions E11, E12, and E13 of this Agreement

c. monthly air emission estimates for all process areas at the affected facility; and

d. any other data necessary to complete material balances as required by this Agreement.

These records shall be available on site for inspection by the DEQ and shall be retained for a period of five (5) years, commencing with the date of this Agreement. After the initial five (5) year period, these records shall be retained on-site for the most recent five (5) years.

15. In order to minimize the duration and frequency of excess emissions due to malfunctions of process or air pollution control equipment, Hercules Incorporated, Aqualon Division shall:

a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance, including dates and duration of any control equipment malfunction. These records shall be maintained on site for a period of five years and shall be made available to the DEQ upon request.

b. Maintain an inventory of spare parts that are needed to minimize durations of air pollution control equipment breakdowns.

16. Hercules Incorporated, Aqualon Division shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

a. to enter upon Hercules Incorporated, Aqualon Division's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this agreement;

b. to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this agreement or the SAPCB regulations;

c. to inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this agreement or the SAPCB regulations; and

d. to sample or test at reasonable times.

For purposes of this section, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.

17. Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate prompt response by Hercules Incorporated, Aqualon Division to requests for information to include: process and production data, and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact. The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§2.1-340 through 2.1-348 of the Code of Virginia; §§10.1-1314 and 10.1-1314.1 of the Code of Virginia; and Section 120-02-30 of the SAPCB Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

18. At any time in the future, should Hercules Incorporated, Aqualon Division plan any modifications (within the context of the new source review program) of the affected facility covered by this Agreement, Hercules Incorporated, Aqualon Division shall have the right to apply to the Board for a new source review permit and the Board may consent to such modifications provided such modifications will meet all of the new source review permit program regulatory requirements in existence at that time.

19. The Board may modify, rewrite, amend, or terminate this Agreement with the consent of Hercules Incorporated, Aqualon Division, for good cause shown by Hercules Incorporated, Aqualon Division, or on its own motion provided approval of the changes is accomplished in accordance with SAPCB regulations, the Administrative Process Act (§ 9-6.14:1 et. seq.) and 40 CFR Part 51 (Requirements for Preparation, Adoption, and Submittal of Implementation Plans).

20. So long as this Agreement remains in effect, Hercules Incorporated, Aqualon Division waives the right to any hearing pursuant to §§ 9-6.14:11 and 9-6.14:12 of the Code and to judicial review of any issue of fact or law contained herein. Nothing herein, however, shall be construed as a waiver of the right to a hearing or to judicial review of any action taken by the Board to enforce this Agreement.

21. Failure by Hercules Incorporated, Aqualon Division to comply with any of the terms of this Agreement shall constitute a violation of an Order of the Board. Nothing herein shall waive the initiation of appropriate enforcement actions or the issuance of additional orders as appropriate by the Board as a result of such violations. Nothing herein shall affect appropriate enforcement actions by any other federal, state, or local regulatory authority.

22. Hercules Incorporated, Aqualon Division declares it has received fair and due process under the Administrative Process Act (§ 9-6.14:1 et. seq.).

23. This Agreement shall become effective upon signature by both parties and shall continue in effect indefinitely or until otherwise terminated by the Board.

AIR POLLUTION CONTROL BOARD of the
behalf of Hercules Incorporated, Aqualon Division, each by its duly authorized
representatives, or self, on the dates indicated below.

DEPARTMENT OF ENVIRONMENTAL QUALITY
OF THE COMMONWEALTH OF VIRGINIA

7/12/96 BY: John III. Daniel Jr.
(date)
Thomas L. Hopkins
Director

HERCULES INCORPORATED, AQUALON DIVISION

18 June 1996 BY:
(date)
Dr. Marshall Steinberg
Vice President, Health and Environment

STATE OF DELAWARE
CITY OF WILMINGTON

The foregoing instrument was acknowledged before me this 18 day of June, 1996, by Charlene Elaine Piser of Hercules Incorporated, Aqualon Division, a Delaware Corporation, on behalf of the Corporation.

My commission expires CHARLENE ELAINE PISER
NOTARY PUBLIC-DELAWARE
My commission expires April 10, 1997

Charlene Elaine Piser
Notary Public