CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NUMBER 90-010

SITE CLEANUP REQUIREMENTS FOR:

OWENS CORNING FIBERGLAS CORPORATION

FOR THE PROPERTY LOCATED AT:

960 CENTRAL EXPRESSWAY
SANTA CLARA
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. SITE DESCRIPTION Owens Corning Fiberglas Corporation (Owens Corning), owns a 42.8 acre site located at 960 Central Expressway in Santa Clara (hereinafter referred to as the Site). The facility manufactures thermal insulation, asphalt roofing rolls, and roofing shingles.

2. REGULATORY STATUS Owens Corning (hereinafter referred to as a discharger) is a discharger because during their ownership and occupancy of the Site from 1949 to the present, releases of petroleum products to the Site's subsurface have occurred. Volatile organic chemicals (VOCs) from an offsite source have migrated beneath the Site. These chemicals have affected the groundwater beneath the site and may have migrated offsite.

3. SITE HISTORY Owens Corning has been operating at the Site since 1949. Gasoline and stoddard solvent were stored onsite in metal underground storage tanks (see site location map) until 1980 and 1988, respectively. Gasoline continues to be stored in a fiberglass underground storage tank. Small quantities of VOCs have been stored inside the buildings in drums at various times during the last forty years.

4. HYDROGEOLOGY The Site is underlaid by alternating beds of clays and sands. The shallow zone appears to consist of a layer of silty clay from the surface down to a depth of about 15 feet below ground surface, and a sand and gravel layer from 15 feet down to depths of about 20 to 30 feet below ground surface, followed by another silty clay layer. Groundwater was originally encountered at depths of 13 to 16 feet below ground surface, and is currently

about 20 feet below ground surface. The direction of the groundwater gradient appears to be northeast across most of the site, and may be northwest on the eastern portion of the property.

5. ADJACENT FACILITIES Monsanto Company manufactured plastics and resins from 1950 to 1983 on the property at 2710 Lafayette Street in Santa Clara, currently owned by the CAMSI IV partnership (see site location map). In 1968, Hunter Technology Corporation leased a building on this property (at 985 Walsh Avenue) from Monsanto Company and manufactured printed circuit boards until 1983. Monsanto Company and Hunter Technology Corporation vacated this property in 1985, and it currently exists as an open field. The property is referred to as the CAMSI IV site and is located south of the Site, in the upgradient groundwater direction. Soil and groundwater sampling results from the CAMSI IV property indicate that volatile organic chemicals (VOCs) and other chemicals appear to have migrated onto the Site from the CAMSI IV property.

   Spieker Partners purchased 21.1 acres from Owens Corning located at Central Expressway and Scott Boulevard in 1989. At the time of the purchase, four monitoring wells installed by Owens Corning and Spieker Partners existed onsite. These wells were installed for a property transfer site assessment, and to monitor for chemicals which may have migrated to groundwater from soil due to previous waste disposal by Owens Corning. No chemicals believed to be associated with Owens Corning's waste disposal were detected, however VOCs believed to be migrating onto the property from an unidentified, upgradient source were detected. Spieker Partners is currently monitoring these wells.

6. SOIL AND GROUNDWATER INVESTIGATIONS Subsurface investigations were conducted at the Site, beginning in 1983, and included the following activities: drilling of 14 soil borings, installation of 10 groundwater monitoring wells, and subsurface sampling and analyses. The results of these investigations indicate that only petroleum products have been released by Owens Corning to the subsurface, but VOCs are also present in the groundwater beneath this Site.

   Floating petroleum product (less than or equal to a thickness of one-eighth inch) was observed repeatedly in well E-2 between 1983 and 1987. Since August 1987, high levels of dissolved total petroleum hydrocarbons (TPH) as gas and benzene have been detected in groundwater samples from well E-2, with analytical results indicating concentrations of benzene up to 6000 parts per billion (ppb). The well has been dewatered since March 1989. The results of analyses on groundwater samples from other wells, from 1987 to the present, indicate that concentrations of 1,2-DCA up to 27 ppb, PCE up to 51 ppb, TCE up to 6.5 ppb, and 1,1,1-TCA up to 29 ppb are, or have been, present onsite. These concentrations are all above the Action Levels for the chemicals specified. Benzene has only been detected in well E-2 and does not appear to have migrated offsite. The offsite

extent of the other VOCs is unknown.

7. INTERIM REMEDIAL ACTIONS Interim remedial actions implemented include removal of the underground gasoline storage tank and replacement with a fiberglass tank in 1980, removal of the stoddard solvent tank in November 1988, and evaluation of groundwater extraction from well E-2 in 1988. Groundwater extraction was determined to be infeasible due to low yield.

8. SCOPE OF THIS ORDER This order contains tasks for completion of groundwater characterization, evaluation of remedial alternatives, and proposal, implementation, and evaluation of remedial actions. It also contains tasks for proposal and implementation of final cleanup actions. These tasks are necessary to alleviate the threat to the environment posed by the migration of the groundwater plume of pollutants and to provide a substantive technical basis for designing and evaluating the effectiveness of final cleanup alternatives.

9. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives and beneficial uses for South San Francisco Bay and contiguous surface and groundwaters.

10. The existing and potential beneficial uses of the groundwater underlying and adjacent to the facility include:

    a. Industrial process water supply
    b. Industrial service water supply
    c. Municipal and Domestic water supply
    d. Agricultural water supply

11. The discharger has caused or permitted, and threatens to cause or permit waste to be discharged or deposited where it is or probably will be discharged to waters of the State and create or threaten to create a condition of pollution or nuisance.

12. This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the CEQA pursuant to Section 15321 of the Resources Agency Guidelines.

13. The Board has notified the discharger and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

14. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the discharger shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.

2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of pollutants are prohibited.

B. SPECIFICATIONS

1. The storage, handling, treatment or disposal of soil or groundwater containing pollutants shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. The discharger shall conduct site investigation, monitoring activities, and remediation activities as needed to define the current local hydrogeologic conditions, to define the lateral and vertical extent of soil and groundwater pollution, and to remediate the groundwater pollution. Should monitoring results show evidence of pollutant migration, additional characterization of pollutant extent and remediation may be required.

3. The cleanup goal for source-area soils is 1 ppm for total VOCs. Alternate cleanup goals may be proposed based on site specific data. If higher levels of VOCs are proposed, the discharger must demonstrate that cleanup to 1 ppm total VOCs is infeasible, that the alternate levels will not threaten the quality of waters of the State, and that human health and the environment are protected. Final cleanup goals for source-area soils must be acceptable to the Executive Officer. If chemicals will be left in the soil some followup groundwater monitoring will be required.

4. Final cleanup levels and goals for polluted groundwater, onsite and offsite, shall be in accordance with the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining

High Quality of Waters in California". Proposed final cleanup levels shall be based on a feasibility study of remedial alternatives that compare cost, effectiveness, time to achieve cleanup goals, and an assessment of risk to determine affect on beneficial uses, human health and the environment. Cleanup levels shall also have the goal of reducing the mobility, toxicity, and volume of pollutants. Final cleanup levels shall be approved by the Board.

5. If groundwater extraction and treatment is considered as an alternative, the feasibility of water reuse, reinjection, and disposal to the sanitary sewer must be evaluated. Based on the Regional Board Resolution 88-160, the discharger shall optimize, with a goal of 100%, the reclamation or reuse of groundwater extracted as a result of cleanup activities. The discharger shall not be found in violation of this Order if documented factors beyond the discharger's control prevent the discharger from attaining this goal, provided the discharger has made a good faith effort to attain this goal. If reuse or reinjection is part of a proposed alternative, an application for Waste Discharge Requirements may be required. If discharge to waters of the State is part of a proposed alternative, an application for an NPDES permit must be completed and submitted, and must include the evaluation of the feasibility of water reuse, reinjection, and disposal to the sanitary sewer.

C. PROVISIONS

1. The discharger shall comply with the Prohibitions and Specifications above, in accordance with the following time schedule and tasks:

TASKS AND COMPLETION DATES

a. POLLUTION CHARACTERIZATION TASKS:

1) SUBMIT A SUMMARY OF PETROLEUM PRODUCT AND VOC POLLUTION CHARACTERIZATION FOR SOIL AND GROUNDWATER AND A PROPOSAL FOR FURTHER CHARACTERIZATION OF PETROLEUM PRODUCT POLLUTION:

Submit a technical report acceptable to the Executive Officer which summarizes the results of site characterization to date, including definition of the extent of soil pollution, groundwater pollution, and free product, and the results of any work completed to evaluate remedial alternatives (such as aquifer testing). The report shall also include a determination of the need for additional work to complete characterization of the petroleum product pollution. If additional characterization work is necessary, submit

a proposal and time schedule to complete this work. The final decision on the need for additional site characterization rests with the Executive Officer.

COMPLETION DATE: October 31, 1990

2) COMPLETE CHARACTERIZATION OF PETROLEUM PRODUCT POLLUTION:

If the Executive Officer finds additional characterization of petroleum product pollution necessary, submit a technical report acceptable to the Executive Officer documenting completion of and presenting the results of the additional characterization tasks identified in the technical report submitted for Task C.1.a.1) above. This report must also include a determination of the need for interim remedial actions for petroleum product pollution. If interim remedial actions are necessary, an evaluation of remedial alternatives (such as aquifer testing, risk assessment, etc.) must be performed. The final decision on the need for interim remedial actions rests with the Executive Officer.

COMPLETION DATE: June 30, 1991

b. INTERIM REMEDIAL ACTION TASKS:

1) PROPOSE INTERIM REMEDIAL ACTIONS FOR PETROLEUM PRODUCT POLLUTION IN SOIL AND GROUNDWATER:

If the Executive Officer finds that interim remedial actions for petroleum product pollution are necessary, submit a technical report acceptable to the Executive Officer which presents the results of the evaluation of remedial alternatives performed to select interim remedial actions, and includes a plan and time schedule for implementation of the recommended interim remedial actions.

COMPLETION DATE: February 28, 1992

2) COMPLETE IMPLEMENTATION OF INTERIM REMEDIAL ACTIONS FOR PETROLEUM PRODUCT POLLUTION:

Submit a technical report acceptable to the Executive Officer which describes the implementation of any interim remedial actions as proposed in Task C.1.b.1) above.

COMPLETION DATE: October 31, 1992

3) EVALUATE THE EFFECTIVENESS OF THE INTERIM REMEDIAL ACTIONS FOR PETROLEUM PRODUCT POLLUTION:

If interim remedial actions were implemented for petroleum product pollution, submit a technical report acceptable to the Executive Officer which evaluates the effectiveness of the interim remedial actions. Such an evaluation shall include, but need not be limited to, an estimation of the flow capture zone of any extraction well, establishment of the cones of depression by field measurements, and presentation of chemical monitoring data.

COMPLETION DATE: June 30, 1993

c. FINAL CLEANUP TASKS:

1) PROPOSE FINAL CLEANUP OBJECTIVES AND ACTIONS:

Submit a technical report acceptable to the Executive Officer that proposes final cleanup objectives and actions for petroleum product pollution. This report shall contain the results of the remedial investigation; an evaluation of the installed interim remedial measures; a feasibility study evaluating alternative final remedial measures; the recommended measures necessary to achieve final cleanup objectives; and the tasks and time schedule necessary to implement the recommended final remedial measures. If site characterization and/or interim remedial actions taken indicate that final cleanup of VOCs is necessary, the Board will amend or revise this order accordingly.

COMPLETION DATE: December 31, 1993

2) COMPLETE IMPLEMENTATION OF FINAL CLEANUP ACTIONS:

Submit a technical report acceptable to the Executive Officer documenting the implementation of final cleanup actions as proposed and accepted by the Executive Officer in accordance with Task C.1.c.1) above.

COMPLETION DATE: 60 days after implementation of the actions as proposed and accepted by the Executive Officer in accordance with Task C.1.c.1) above.

3) FIVE YEAR STATUS REPORT:

Submit a technical report acceptable to the Executive Officer containing

the following: 1) results of any additional investigative work completed; 2) an evaluation of the effectiveness of installed final cleanup measures; 3) additional recommended measures to achieve final cleanup objectives and goals, if necessary; 4) a comparison of previous expected costs with the costs incurred and projected costs necessary to achieve cleanup objectives and goals; 5) the tasks and time schedule necessary to implement any additional final cleanup measures; and 6) recommended measures for reducing Board oversight. This report shall also describe the reuse of extracted groundwater, evaluate and document the removal and/or cleanup of polluted groundwater, and evaluate and document the removal and/or cleanup of polluted soil. If safe drinking water levels have not been achieved through continued groundwater extraction and/or soil remediation, this report shall also contain an evaluation addressing whether it is technically feasible to achieve drinking-water quality onsite, and if so, a proposal for procedures to do so.

COMPLETION DATE: November 30, 1994

2. The submittal of technical reports evaluating interim and final remedial measures will include a projection of the cost, effectiveness, benefits, and impact on public health, welfare, and environment of each alternative measure. The remedial investigation and feasibility study shall consider the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300); Section 25356.1 (c) of the California Health and Safety Code; CERCLA guidance documents with reference to Remedial Investigation, Feasibility Studies, and Removal Actions; and the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California".

3. If the discharger is delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the discharger shall promptly notify the Executive Officer and the Board may consider revision to this Order.

4. The discharger shall submit to the Regional Board acceptable reports on compliance with the requirements of this Order, and acceptable activity monitoring reports that contain descriptions and results of work performed. These reports are to be submitted according to a program prescribed by the Regional Board and outlined below.

   a. ON A QUARTERLY BASIS, technical reports on status of compliance with this Order shall be submitted to the Board, commencing on February

15, 1990. Each report shall cover the previous quarter and shall include, but are not limited to, the following:

1) Summary of work completed since submittal of the previous report, and work projected to be completed by the time of the next report.

2) Identification of any obstacles which may threaten compliance with the schedule of this Order and what actions are being taken to overcome these obstacles.

3) Written notification which clarifies the reasons for non-compliance with any requirement of this Order, and which proposes specific measures and a schedule to achieve compliance. This written notification shall identify work not completed that was projected for completion, and shall identify the impact of non-compliance on achieving compliance with the remaining requirements of this Order.

b. ON A BIANNUAL BASIS (TWICE EACH YEAR), technical reports on soil and groundwater monitoring shall be submitted to the Board, commencing on July 15, 1990, and covering the previous six months. The biannual reports may include the quarterly report due concurrently, beginning with the July 15, 1990 quarterly report included in the July 15, 1990 biannual report. The biannual reports shall include, but need not be limited to, the following information:

1) Results of biannual water quality sampling analyses for wells E-1 through E-5 using analytical method 8010, and for wells E-2 and E-4 using analytical methods 5030/8015 for TPH as gas and 8020, and groundwater pollution plume maps based on these results.

2) Biannually updated water table and piezometric surface maps, based on the most recent water level measurements for onsite wells E-1 through E-5, and for offsite wells E-6, MW-1, MW-3, and MW-4 on the Spieker Partners site, wells 17, 18, and 19 on the CAMSI IV site, and wells M-1 and M-4 on the Sobrato site. The first set of data shall be reported in the biannual report due July 15, 1990.

3) A cumulative tabulation of volume of extracted groundwater, biannual chemical analysis results for all groundwater extraction wells, and pounds of chemicals removed.

4) A cumulative tabulation of all well construction details, and biannual water level measurements.

5) Results of soil vapor sampling analyses, soil pollution plume maps based on these results, a cumulative tabulation of chemical analysis results for all soil vapor extraction wells, and a cumulative tabulation of pounds of chemicals removed.

6) Reference diagrams including geologic cross-sections describing the hydrogeological setting of the Site, and appropriately scaled and detailed base maps showing the location of all monitoring wells and extraction wells, and identifying adjacent facilities and structures.

c. ON AN ANNUAL BASIS, technical reports on the progress of compliance with all requirements of this Order shall be submitted to the Board, commencing on January 15, 1991, and covering the previous year. Annual reports may include quarterly and biannual reports due concurrently. The progress reports shall include, but need not be limited to, progress on the site investigation and remedial actions, and status of the operation of interim and final remedial actions and/or systems.

5. All hydrogeological plans, specifications, reports, and documents shall be signed by or stamped with the seal of a registered geologist or professional engineer, or a certified engineering geologist .

6. All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain Quality Assurance/Quality Control records for Board review. All site safety, sampling and analysis, and quality assurance procedures must employ procedures acceptable to the Board and in accordance with State and Federal Laws.

7. The discharger shall maintain in good working order, and operate, as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.

8. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order, shall be provided to the following agencies:

   a. Santa Clara Valley Water District (Tom Iwamura)
   b. Santa Clara County Health Department (Lee Esquibel)
   c. City of Santa Clara (Dave Parker)
   d. State Department of Health Services/TSCD (Howard Hatayama)

9. The discharger shall permit the Board or its authorized representative,

in accordance with Section 13267(c) of the California Water Code:

a. Entry upon premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

b. Access to copy any records required to be kept under the terms and conditions of this Order.

c. Inspection of any monitoring equipment or methodology implemented in response to this Order.

d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

10. The discharger shall file a report on any changes in Site occupancy and ownership associated with the facility described in this Order.

11. If any hazardous substance is discharged in or on any waters of the state, or discharged and deposited where it is, or probably will be discharged in or on any waters of the state, the discharger shall report such discharge to this Regional Board, at (415) 464-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-business hours. A written report shall be filed with the Regional Board within five (5) working days and shall contain information relative to: the nature of waste or pollutant, quantity involved, duration of incident, cause of spill, Spill Prevention, Control, and Countermeasure Plan (SPCC) in effect, if any, estimated size of affected area, nature of effect, corrective measures that have been taken or planned, and a schedule of these activities, and persons/agencies notified.

12. The Board will review this Order periodically and may revise the requirements when necessary.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on January 17, 1990.

Steven R. Ritchie
Executive Officer