

**MWD**

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

October 27, 1992

*To:* Board of Directors (Water Problems Committee--Action)  
*From:* General Manager  
*Subject:* Color Removal Project

Report

It is estimated that a considerable resource of colored water is available for use in the groundwater basins in Southern California if effective treatment systems could be developed. Color in water is primarily due to the presence of natural organic matter that imparts a yellow-brownish appearance which is aesthetically unacceptable. If the colored water could be made potable, it would serve as a new supply or as a supplemental supply during a drought, possibly reduce peak demands on Metropolitan, and provide water low in total dissolved solids for blending purposes. The Dyer Road Well Field Color Removal Project (Project) in the Irvine Ranch Water District (IRWD) service area is designed to research economical methods to remove color and produce a high quality water supply. IRWD would conduct the study in conjunction with the National Water Research Institute, the Municipal Water District of Orange County (MWDOC), and Metropolitan should you approve Metropolitan's participation.

The goal of the Project is to generate sufficient treatment, design, operation, and water quality information to develop a treatment strategy capable of producing a safe and aesthetically acceptable water from the colored groundwaters underlying a portion of the Southern California area. The water proposed for treatment has color levels approaching 200 color units, whereas the federal secondary maximum contaminant level for color is 15 color units. The Project will involve the design and construction of a pilot facility and development of the experiment test protocols. Three alternative color removal treatment trains will be evaluated: (1) ozone and granular activated carbon; (2) conventional treatment augmented with ozone; and (3) membrane separation processes of ultrafiltration/nanofiltration. Figure 1 is a schematic of the proposed pilot treatment trains. These alternative treatment systems will provide the source waters for further evaluations of disinfection, disinfection

by-products, and biological regrowth in the distribution system.

Specifically, the treatment objectives include producing water with the following quality:

- a maximum color value of five color units;
- nondetectable taste and odor compounds;
- biological stability; and
- noncorrosiveness.

These treatment objectives will provide valuable information to the water industry as a whole and specifically to Metropolitan's member agencies.

The Project is scheduled to be conducted in three phases over the next three years at an estimated cost of \$3.4 million. It is proposed that Metropolitan contribute about one-sixth of the cost per stage up to a maximum of \$612,000 for the Project.

This contribution to the Project also provides a practical solution to a dispute between the parties regarding the retroactivity of any increase in the Local Projects Program incentive payment from an energy-based contribution to the current rate of \$154 per acre-foot. Your Board authorized such an increase in March 1990 but resolution of this and other issues has delayed execution of the required amendment.

Operation and maintenance funds are available to pay for this Project for fiscal year 1992-93, and funds for this study would be proposed in next year's annual budget.

Pursuant to the California Environmental Quality Act (CEQA), IRWD, acting as Lead Agency, has prepared a Mitigated Negative Declaration for the proposed project. Your Board and its advisory committees are required to review and consider the information contained in the attached Mitigated Negative Declaration prior to reaching a decision on the proposed action. Metropolitan, as a "Responsible Agency, has responsibility for mitigating or avoiding only the direct or indirect effects of those parts of the overall project which it decides to carry out, finance, or approve" (CEQA Guidelines, Section 15096(g)[1]). In this case, IRWD has

adopted the necessary mitigation measures. No further environmental documentation is required for your Board to act on this project.

Board Committee Assignment

This letter is referred for action to the Water Problems Committee pursuant to its authority to study policies regarding water conservation, reclamation, reuse and underground storage of water and the use thereof under Administrative Code Section 2481(i).

Recommendation

**WATER PROBLEMS COMMITTEE FOR ACTION.**

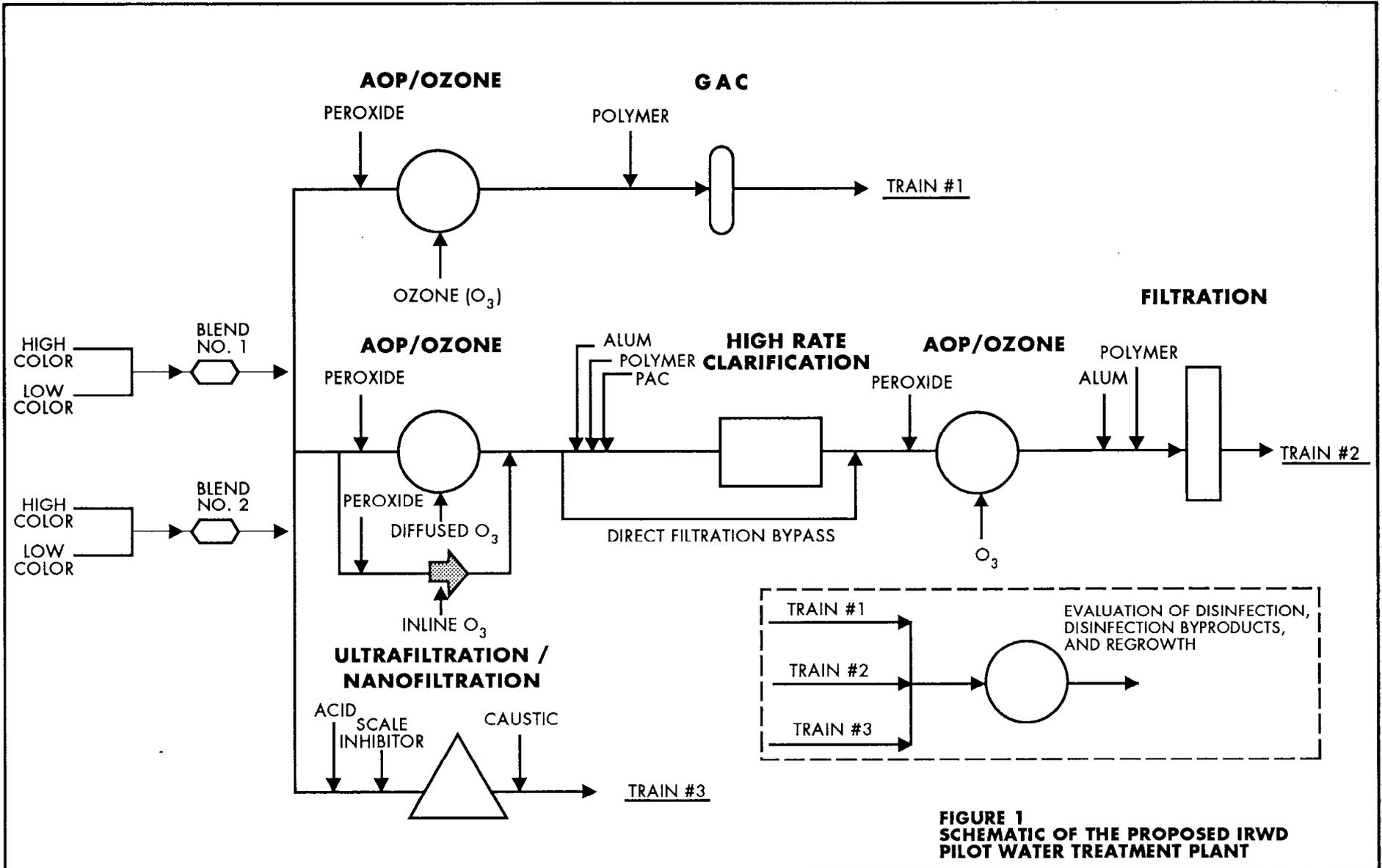
It is recommended that your Board review and consider the environmental effects of the proposed project as shown in the transmitted Negative Declaration prior to reaching a decision on this project.

It is recommended that the General Manager be authorized to enter into an agreement with the Municipal Water District of Orange County and the Irvine Ranch Water District to participate in the Dyer Road Well Field Color Removal Project on terms and conditions as set forth in this letter with Metropolitan's contribution not to exceed \$612,000, such agreement to be in form approved by the General Counsel.

  
Carl Boronkay

JMB:bvf

Attachment



**FIGURE 1  
SCHEMATIC OF THE PROPOSED IRWD  
PILOT WATER TREATMENT PLANT**

Return to:  
Betty J. Wheeler, Secretary  
Irvine Ranch Water District  
P.O. Box 6025  
Irvine, CA 92630-6025

667

ATTACHMENT FOR BOARD  
LETTER 7-4

NOTICE OF DETERMINATION  
(State Guidelines \$15075 and \$15094)

TO: County Clerk  
County of Orange  
Attention: Public Service  
P.O. Box 838  
Santa Ana, CA 92702

Office of Planning and Research  
1400 Tenth Street  
Sacramento, California 95814

By MITT DEPUTY

FROM: Irvine Ranch Water District  
Post Office Box 6025  
Irvine, California 92716-6025

SUBJECT: Filing of Notice of Determination in compliance with  
Section 21108 or 21152 of the Public Resources Code.

Project No.: 15031  
Project Name: Dyer Road Well Field Color Removal Study  
Pilot Plant

Project Location (specific):

Near the intersection of Fairview Street and Alton Avenue in the  
City of Santa Ana, County of Orange.

Project Location: (City) Santa Ana (County) Orange  
Description of Nature, Purpose and Beneficiaries of Project:

The project consist of the design, construction and testing of  
pilot plant facilities for the removal of colored groundwater.  
The purpose of the project is to determine the feasibility of  
developing a reliable public water source from the colored water  
located in the deeper aquifers of the groundwater basin.  
Beneficiaries will be the Irvine Ranch Water District and the  
customers of Irvine Ranch Water District.

Name of Agency Undertaking Project: Irvine Ranch Water District  
Contact Person: Carl W. Spangenberg  
Area Code 714 Phone 476-7617 Extension N/A

EXHIBIT "G"  
Rev. 03/90  
Res. 1990-10  
CEQ40008

Post-It™ brand fax transmittal memo 7671		# of pages	27
To	Jeanne H. Bruno	From	Carl Spangenberg
Co.	IWRD	Co.	IWRD
Dept.		Phone #	714-453-5531
Fax #	213-250-6949	Fax #	714-453-0228

66792

POSTED

Return to:  
Betty J. Wheeler, Secretary  
Irvine Ranch Water District  
P.O. Box 6025  
Irvine, CA 92630-6025

APR 22 1992

IRWD LEGAL No. 15031  
By ML DEPUTY

**NOTICE OF DETERMINATION**  
(State Guidelines \$15075 and \$15094)

TO: County Clerk  
County of Orange  
Attention: Public Services Div., Room D-10  
P.O. Box 838  
Santa Ana, CA 92702

**FILED**  
APR 22 1992

Office of Planning and Research  
1400 Tenth Street  
Sacramento, California 95814

GARY L. GRANVILLE, County Clerk  
By ML DEPUTY

FROM: Irvine Ranch Water District  
Post Office Box 6025  
Irvine, California 92716-6025

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Section 21108 or 21152 of the Public Resources Code.

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located in the deeper aquifers of the groundwater basin.  
Beneficiaries will be the Irvine Ranch Water District and the  
customers of Irvine Ranch Water District.

Name of Agency Undertaking Project: Irvine Ranch Water District  
Contact Person: Carl W. Spangenberg  
Area Code 714 Phone 476-7617 Extension N/A

EXHIBIT "G"  
Rev. 03/90  
Res. 1990-10  
CEQ40008

Post-It™ brand fax transmittal memo 7571		# of pages ▶ <u>27</u>
To <u>Jeanne H. Bruno</u>	From <u>Carl Spangenberg</u>	
Co. <u>IWRD</u>	Co. <u>IWRD</u>	
Dept.	Phone # <u>714-453-5531</u>	
Fax # <u>213-250-6949</u>	Fax # <u>714-453-0228</u>	

The Board of Directors of Irvine Ranch Water District, on 4-13-92, has approved the above-described project and has taken the following action:

X 1. Determined that the project      will X will not have a significant effect on the environment.

X 2.      An Environmental Impact Report ("EIR") has been prepared pursuant to the provisions of the California Environmental Quality Act ("CEQA").

X A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.

A copy of the EIR or Negative Declaration and record of project approval may be examined at the following address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

X 3. Mitigation measures X were      were not made a condition of the approval of the project:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If mitigation measures were made a condition of project approval, a monitoring program was adopted pursuant to the provisions of CEQA to ensure compliance with the mitigation measures.

X 4. A Statement of Overriding Considerations      was X was not adopted for this project

The information on this form is required to be submitted by state agencies to the Office of Planning and Research by Public Resources Code Section 21108(a). Public Resources Code Section 21152(a) requires local agencies to submit this information within five (5) working days after the approval or determination becomes final to the county clerk. The filing of the notice starts a 30-day statute of limitations on court challenges to the approval of the project under Public Resources Code Section 21167. Failure to file the notice results in the extension of the statute of limitations to 180 days. The information filed by



**"FINAL" NEGATIVE DECLARATION**  
(State Guidelines §15074)

Irvine Ranch Water District  
Post Office Box 6025  
Irvine, CA 92716-6025

Project No.: 15031  
Project Name: Dyer Road Well Field Color Removal  
Study Pilot Plant

Near the intersection of Fairview Street and Alton Avenue in the City of Santa Ana, County of Orange.

Project Location: (City) Santa Ana (County) Orange  
Description of Nature, Purpose and Beneficiaries of Project:

The project consist of the design, construction and testing of pilot plant facilities for the removal of colored groundwater. The purpose of the project is to determine the feasibility of developing a reliable public water source from the colored water located in the deeper aquifers of the groundwater basin. Beneficiaries will be the Irvine Ranch Water District and the customers of Irvine Ranch Water District.

Name of Agency Undertaking Project: Irvine Ranch Water District  
Contact Person: Carl W. Spangenberg  
Area Code 714 Phone 476-7617 Extension N/A

4-13-92 The Board of Directors of Irvine Ranch Water District, on 4-13-92, took the following action concerning the above project:

1. X    A. Determined that the project will not have a significant effect on the environment,  
  
- or -  
X B. Determined that any effects on the environment can be mitigated so that no significant effect can occur and adopted a monitoring program to ensure compliance with the mitigation measures or changes to the project which have been made a condition of project approval in order to mitigate or avoid significant effects on the environment.
2. Adopted this Negative Declaration in accordance with the provisions of CEQA and Section 15074 of the State Guidelines For The Implementation Of The California Environmental Quality Act.

A copy of the Initial Study documenting the reasons for the above finding is attached.

Mitigation measures adopted to reduce the impacts of the project and the monitoring program adopted to ensure compliance with the mitigation measures (including the person appointed to be responsible for the monitoring program) are as follows:

Mitigation measures are defined in the discussion of significant environmental effects as identified from the Environmental Checklist and Initial Study.

X See Attachment "A"

  
Secretary/Assistant Secretary

4-13-92  
Date

ATTACHMENT "A"

Environmental Mitigation Measures  
and Monitoring Program

[Describe mitigation measures, and include  
in each measure a description of how it  
will be monitored]

See discussion of Environmental Impacts attached to  
Environmental Checklist. Monitoring will be accomplished by  
District Representative.

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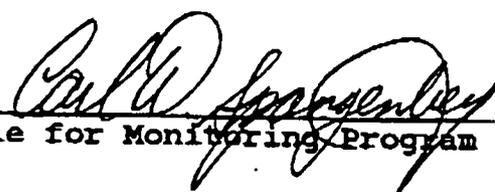
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As part of the adoption of this Negative Declaration, the Board of Directors of the Irvine Ranch Water District, in accordance with the provisions of the California Environmental Quality Act, has adopted the above-described mitigation measures and monitoring program.

The monitoring program shall include appointment of a person(s) to monitor the project, so as to ensure compliance with the mitigation measures necessary for this project, as set forth herein. The person(s) so appointed shall ensure that the mitigation measures and monitoring program adopted as part of this Negative Declaration are complied with satisfactorily.

IRVINE RANCH WATER DISTRICT

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Carl W. Spangenberg   
Person(s) responsible for Monitoring Program

INITIAL STUDY  
FOR  
Dyer Road Well Field Color  
Removal Study Pilot Plant

INTRODUCTION

This initial study has been undertaken to determine if the proposed project may have a significant effect on the environment. It has been determined that the project is discretionary in nature and is not otherwise exempt from the requirements of the California Environmental Quality Act. It is further concluded that the Irvine Ranch Water District is the appropriate lead agency for this project.

This initial study has been prepared pursuant to the State Guidelines for implementing the California Environmental Quality Act.

DESCRIPTION

This project consists of the design, construction and testing of pilot plant facilities for the removal of colored groundwater. The purpose of this project is to determine the feasibility of developing a reliable public water source from the colored water located in the deeper aquifers of the groundwater basin.

ENVIRONMENTAL SETTING

The current Dyer Road Well Field consists of 8 wells and approximately 8 miles of pipeline. The Color Removal Study Pilot Plant will be constructed next to Well 7 within the property owned by Irvine Ranch Water District. The location is near the intersection of Fairview Street and Alton Avenue in the City of Santa Ana, County of Orange.

ENVIRONMENTAL EFFECTS/MITIGATION

All potential environmental impacts from the proposed project have been addressed in the discussion of significant environmental effects. Mitigation measures were included to reduce potential impacts to insignificance.

MISCELLANEOUS

The Environmental Checklist follows.

EXHIBIT "C-1A"  
Rev. 03/90  
Res. 1990-10  
CEQ40015

ENVIRONMENTAL CHECKLIST FORM  
FOR INITIAL STUDY

A. BACKGROUND

1. Name, Address and Phone Number of Proponent:

Irvine Ranch Water District  
Post Office Box 6025  
Irvine, CA 92716-6025  
(714) 476-7500

2. Name of Staff Member Responsible for Project:  
Carl W. Spangenberg

3. Date of Checklist Submitted:

4. Name of Project: Dyer Road Well Field Color Removal  
Study Pilot Plant

B. ENVIRONMENTAL IMPACTS

(Explanation of all "yes" and "maybe" answers are required  
on attached sheets.)

Yes Maybe No

1. Earth: Will the proposal result in:

- a. Unstable earth conditions or changes in geologic sub-structures? \_\_\_\_\_ X
- b. Disruptions, displacements, compaction or overcoming of the soil? X \_\_\_\_\_
- c. Change in topography or ground surface relief features? \_\_\_\_\_ X
- d. The destruction, covering or modification of any unique geologic or physical features? \_\_\_\_\_ X
- e. Any increase in wind, water, or soils erosion, either on or off the site? \_\_\_\_\_ X

Yes Maybe No

- f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake? \_\_\_\_\_ X \_\_\_\_\_
- g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mud slides, ground failure, or similar hazards? \_\_\_\_\_ X \_\_\_\_\_
2. Air: Will the proposal result in:
- a. Substantial air emissions or deterioration of ambient air quality? \_\_\_\_\_ X \_\_\_\_\_
- b. The creation of objectionable odors? \_\_\_\_\_ \_\_\_\_\_ X
- c. Alteration of air movement, moisture, or any change in climate, either locally or regionally? \_\_\_\_\_ \_\_\_\_\_ X
3. Water: Will the proposal result in:
- a. Changes in currents, or the course or direction of water movements, in either marine or fresh waters? \_\_\_\_\_ \_\_\_\_\_ X
- b. Changes in absorption rates, drainage patterns or the rate and amount of surface water runoff? \_\_\_\_\_ \_\_\_\_\_ X
- c. Alteration to the course of flow of flood waters? \_\_\_\_\_ \_\_\_\_\_ X
- d. Change in the amount of surface water in any water body? \_\_\_\_\_ \_\_\_\_\_ X
- e. Discharge into surface waters, or any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity? X \_\_\_\_\_ \_\_\_\_\_

EXHIBIT "C-1"  
Rev. 03/90  
Res. 1990-10  
CEQ40013

- |  | <u>Yes</u> | <u>Maybe</u> | <u>No</u>   |
|--|------------|--------------|-------------|
| f. Alteration of the direction of rate of flow of ground waters?   | _____      | _____X_____  | _____       |
| g. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?                | _____      | _____X_____  | _____       |
| h. Substantial reduction in the amount of water otherwise available for public water supplies?   | _____      | _____        | _____X_____ |
| i. Exposure of people or property to water related hazards such as flooding or tidal waves?  | _____      | _____        | _____X_____ |
| <b>4. <u>Plant Life:</u> Will the proposal result in:</b>  |            |              |             |
| a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, microflora and aquatic plants)?                        | _____      | _____        | _____X_____ |
| b. Reduction of the numbers of any unique, rare or endangered species of plants?   | _____      | _____        | _____X_____ |
| c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?  | _____      | _____        | _____X_____ |
| d. Reduction in acreage of any agricultural crop?  | _____      | _____        | _____X_____ |
| <b>5. <u>Animal Life:</u> Will the proposal result in:</b>   |            |              |             |
| a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, or insects)? | _____      | _____        | _____X_____ |
| b. Reduction of the numbers of any unique, rare, or endangered species of animals?   | _____      | _____        | _____X_____ |

EXHIBIT "C-1"  
 Rev. 03/90  
 Res. 1990-10  
 CEQ40013

- |  | Yes         | Maybe       | No          |
|--|-------------|-------------|-------------|
| c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?  | _____       | _____       | _____X_____ |
| d. Deterioration in existing fish or wildlife habitat?   | _____       | _____       | _____X_____ |
| 6. <u>Noise</u> : Will the proposal result in:   |             |             |             |
| a. Increase in existing noise levels?  | _____X_____ | _____       | _____       |
| b. Exposure of people to severe noise levels?  | _____       | _____       | _____X_____ |
| 7. <u>Light and Glare</u> : Will the proposal produce new light or glare?  | _____       | _____       | _____X_____ |
| 8. <u>Land Use</u> : Will the proposal result in a substantial alteration of the present or planned land use of an area?   | _____       | _____       | _____X_____ |
| 9. <u>Natural Resources</u> : Will the proposal result in:   |             |             |             |
| a. Increase in the rate of use of any natural resource?  | _____       | _____X_____ | _____       |
| b. Substantial depletion of any non renewable natural resource?  | _____       | _____       | _____X_____ |
| 10. <u>Risk of Upset</u> : Will the proposal involve:  |             |             |             |
| a. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions? | _____       | _____       | _____X_____ |
| b. Possible interference with an emergency response plan or emergency evacuation plan?   | _____       | _____       | _____X_____ |
| 11. <u>Population</u> : Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?  | _____       | _____       | _____X_____ |



Yes Maybe No

15. Energy: Will the proposal result in:
- a. Use of substantial amounts of fuel or energy?  Yes  Maybe  No
  - b. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?  Yes  Maybe  No
16. Utilities: Will the proposal result in a need for new systems, or substantial alterations to the following utilities?
- a. Power or natural gas?  Yes  Maybe  No
  - b. Communications Systems?  Yes  Maybe  No
  - c. Water?  Yes  Maybe  No
  - d. Sewer or septic tanks?  Yes  Maybe  No
  - e. Storm water drainage?  Yes  Maybe  No
  - f. Solid waste and disposal?  Yes  Maybe  No
17. Human Health: Will the proposal result in:
- a. Creation of any health hazard or potential health hazard (excluding mental health)?  Yes  Maybe  No
  - b. Exposure of people to potential health hazards?  Yes  Maybe  No
18. Aesthetics: Will the proposal result in the obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?  Yes  Maybe  No
19. Recreation: Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?  Yes  Maybe  No

EXHIBIT "C-1"  
Rev. 03/90  
Res. 1990-10  
CEQ40013

20. Cultural Resources:

- a. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archaeological site? \_\_\_\_\_ X
- b. Will the proposal result in adverse physical or aesthetic effects to a pre-historic or historic building, structure, or object? \_\_\_\_\_ X
- c. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values? \_\_\_\_\_ X
- d. Will the proposal restrict existing religious or sacred uses within the potential impact area? \_\_\_\_\_ X

21. Mandatory Findings of Significance:

- a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of major periods of California history or pre-history? \_\_\_\_\_ X
- b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief definitive period of time while long-term impacts will endure well into the future.) \_\_\_\_\_ X

EXHIBIT "C-1"  
Rev. 03/90  
Res. 1990-10  
CEQ40013



## DISCUSSION OF ENVIRONMENTAL IMPACTS

### 1. Earth

- b. Will the proposal result in disruptions, displacements, compaction or overcoming of the soil?

Yes. Implementation of the proposed project will result in a portion of the site being covered with structural improvements and/or other impervious materials. This physical change will impact soil permeability locally, in a small area surrounding new facilities. It may result in an increase or re-direction of rain water from the site.

Mitigation Measure: Soil displaced by excavation will be removed from the site. Design of the proposed project will consider control of runoff waters at the site. As a result of these mitigation measures, there is no significant impact.

- g. Will the proposal result in the exposure of people or property to geologic hazards, such as earthquakes, landslides, mudslides, ground failure or similar hazards?

Maybe. Southern California has been identified as a seismically active area. As a result, all developmental activities within the region have the potential to expose people and property to potential seismic hazards.

Mitigation Measure: Exposure to seismic hazards are unavoidable in Southern California. The building foundation will incorporate earthquake-resistant designs as required by existing building codes.

### 2. Air Quality

- a. Will the proposal result in substantial air emissions or deterioration of ambient air quality?

Maybe. Construction activities associated with the proposed project will result in the temporary generation and discharge of air pollutants, and incrementally contribute to regional air quality impacts. Equipment used during construction will increase air emissions. The quantity of air emissions from construction activities and the pilot facility will be small in comparison to the total emissions of Orange County. Dust may be created during construction and testing. All emissions will be temporary and of short duration. Long term impacts associated with the project may consist of emissions generated from stationary (i.e., off-site generation of electricity) sources.

Mitigation Measure: Equipment used during construction will produce gaseous and particulate emissions; the air emissions will be minimized through appropriate maintenance of machinery, and use of engine pollution control devices. Air emissions from the pilot plant facility will be minimized using appropriate air pollution control devices. Permitting will be obtained from the South Coast Air Quality Management District and California Air Resources Board if required for the pilot plant. Dust control measures will be used during construction and testing. The work area will be watered as required, and excess excavated material will be promptly removed from the site.

3. e. Will the proposal result in discharge into surface waters, or in any alteration of surface water quality, including, but not limited to, temperature, dissolved oxygen, or turbidity?

Yes. The water discharged during the pilot study will occur during start up and operation of the facility (100 to 200 gpm for 1 1/2 years, 24 hours a day). It is anticipated that this discharge can be accommodated by the Greenville-Banning Channel without any significant change in the water quality.

Mitigation Measure: The quality of the discharges will conform with the criteria specified in the District's National Pollutant Discharge Elimination System (NPDES) permit prior to reaching a flood control channel. Appropriate permits from the Santa Ana Regional Water Quality Control Board and the County of Orange will be obtained before any water is discharged. Plans for adequate control of any nuisance runoff waters at the construction site will be made prior to construction. These plans will be part of the contract documents.

- f. Will the proposal result in the alteration of the direction or rate of flow of ground waters?

Maybe. Implementation of the proposed project may alter the direction and rate of groundwater flow.

Mitigation Measure: The production of groundwater will be monitored by the Orange County Water District to insure that water withdrawal will not impact adjacent wells or well fields, or the groundwater basin.

- g. Will the proposal result in the change in the quality of groundwaters, either through direct additions or withdrawals or through interception of an aquifer by cuts or excavations?

Maybe. The proposed project will remove groundwater for pilot testing. This withdrawal of groundwater is not expected to substantially reduce the groundwater level of the aquifers penetrated by the well. See Response 3(f) above.

Mitigation Measure: Same as those for 3(f) above.

6. Noise

- a. Will the proposal result in an increase in existing noise levels?

Yes. The increase in existing noise levels will occur during construction. No permanent impact will result.

Mitigation Measure: The contractor will be required to comply with the City of Santa Ana's noise ordinance or any variance thereto. Stationary noise sources, such as engines, to maintain sound levels below 60 dB at nearby receptors.

9. Natural Resources

- a. Will the proposal result in an increase in the rate of use of any natural resource?

Maybe. Implementation of the proposed project will involve the commitment and expenditure of electricity, as well as water, sand and gravel, metals and other natural resources which, when once utilized, represents either an irretrievable loss or depletion of these materials. The amount of natural resources used as part of the proposed project are not substantial when compared to regional uses.

Mitigation Measure: No mitigation is proposed for the use of natural resources.

13. Transportation/Circulation

- a. Will the proposal result in the generation of substantial additional vehicular movement?

Maybe. Implementation of the proposed project may result in short term generation of additional vehicular traffic, associated with the pilot plant construction and operation (movement of construction equipment, employee commuting), is not anticipated to be significant.

Mitigation Measure: Since this impact is temporary and of relatively short duration, and it will cease upon completion of pilot plant construction and construction, no mitigation is planned for the potential increase in vehicular traffic.

- d. Will the proposal result in alterations to present patterns of circulation or movement of people and/or goods?

Maybe. Traffic detours and some congestion may result from construction activities.

Mitigation Measure: The disruption of traffic and the potential traffic hazards will be reduced by proper use of signs and barricades.

- f. Will the proposal result in an increase in traffic hazards to motor vehicles, bicycles, or pedestrians?

Maybe. See Response 13(d) above.

Mitigation Measure: same as that for 13(d) above.

ENVIRON7