

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 88-008

WATER RECLAMATION REQUIREMENTS FOR:

LEW GALBRAITH GOLF COURSE,
PORT OF OAKLAND,
CITY OF OAKLAND, AND
CITY OF SAN LEANDRO
ALAMEDA COUNTY

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

1. The Lew Galbraith Golf Course is located within City of Oakland boundary, at 10085 Doolittle Drive, adjacent to the City of San Leandro Water Pollution Control Plant (SLWPCP). The 18-hole public golf course lies on a 110-acre site formerly operated by the Oakland Scavenger Company as landfill. The Port of Oakland has jurisdiction over this property. The Parks and Recreation Office of the City of Oakland leases this property from the Port of Oakland and has operated the Galbraith Golf Course through an agreement with a private concessionaire (hereinafter called Galbraith Golf Course Operator) since 1965. The Galbraith Golf Course is currently using water supplied by the East Bay Municipal Utility District (EBMUD) for irrigation of the golf course and adjacent soccer field.
2. The City of San Leandro filed a Report of Waste Discharge on April 8, 1987 proposing the disposal of treated wastewater through spray irrigation of the Galbraith Golf Course during dry weather months. Supplemental technical reports were subsequently received on October 20, 1987 and November 13, 1987. Estimated usage of reclaimed water will be approximately 162 acre-feet (53 million gallons) per year. The soccer field and areas around the clubhouse will be irrigated with potable water. The City of San Leandro is a member agency of the East Bay Dischargers Authority whose discharge is currently governed by the Board's Order No. 84-30 (NPDES Permit No. CA0037869).
3. The EBMUD, as sole purveyor in this region of water including reclaimed water, serves as the lead agency and assumes responsibility for design and construction of the reclamation project. Once operational, SLWPCP would be responsible for operation and maintenance of the reclamation facilities located on their property and for providing reclaimed water which complies with the requirements of this Order. The City of San Leandro is hereinafter called the Producer of the reclaimed water. The Galbraith Golf Course Operator will be responsible for proper usage of the reclaimed water according to the requirements of this Order. The Galbraith Golf Course Operator, the City of Oakland, and the Port of Oakland are hereinafter collectively called the User of the reclaimed water. Both the Producer and the User are hereinafter collectively called the Discharger.

4. During the irrigation season, secondary treated and disinfected effluent from the SLWPCP will be diverted from the chlorine contact basin and be further disinfected through additional chlorination facilities prior to discharging to the transmission pipeline. The flow through time in the pipe will be used as the chlorine contact time to assure adequate disinfection of the reclaimed water. The disinfected effluent will then be dechlorinated as required and pumped directly to the existing sprinkler system of the golf course for spray irrigation during nighttime. The irrigation rate will be controlled by preset clocks adjusted per soil moisture sensing devices and visual observations to prevent overwatering of the turf. Potable water will be available for backup water supply. Attachment A is a map showing the location of the water reclamation site and is hereby made a part of this Order.
5. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The water quality goals to be used in regulating water quality factors as set forth in the Basin Plan include maximum feasible reclamation or reuse of municipal, industrial, and agricultural wastewaters.
6. The Basin Plan identifies the beneficial uses of the main groundwater basins in the Region as:
 - a. Municipal supply
 - b. Industrial process water supply
 - c. Industrial service supply
 - d. Agricultural supply
7. Section 13523 of the California Water Code provides that a Regional Board, after consultation with and reception of recommendations from the State Department of Health Services, and if it determines such action to be necessary to protect the public health, safety, or welfare, shall prescribe water reclamation requirements for water which is used or proposed to be used as reclaimed water.
8. These water reclamation requirements are in conformance with the statewide reclamation criteria established by the State Department of Health Services as prescribed in Title 22, Section 60301 through Section 60355, California Administrative Code.
9. The EBMUD Board of Directors, on July 22, 1980, certified a Final Environmental Impact Report (EIR) for the proposed wastewater reclamation project. The EIR finds that the proposed project will not have significant adverse impacts on the environment.
10. The Board has notified the Discharger, and interested agencies and persons of its intent to prescribe water reclamation requirements for the proposed reuse.
11. The Board, in a public meeting, heard and considered all comments pertaining to this reuse.

IT IS HEREBY ORDERED, that the Discharger, in order to meet the

provisions contained in Division 7 of the California Water code and regulations adopted thereunder, shall comply with the following:

A. Prohibitions

1. The treatment, storage, distribution, or reuse of reclaimed water shall not create a nuisance as defined in Section 13050(m) of the California Water Code.
2. No reclaimed water shall be allowed to escape from the designated use area via surface flow or airborne spray.
3. Reclaimed water shall not be used as a domestic or animal water supply. There shall be no cross-connection between potable water supply and piping containing reclaimed water. Supplementing reclaimed water with water used for domestic supply shall not be allowed except through an air-gap separation. An air-gap or reduced pressure principle device shall be provided at all domestic water service connections to reclaimed water use areas.
4. The use of reclaimed water shall not cause the degradation of groundwater used for domestic purposes or cause any change in a quality parameter which would make the groundwater less suitable for irrigation use.

B. Reclaimed Water Use Specifications

Producer

1. The Producer shall assure that the reclaimed water is at all times an adequately oxidized, disinfected wastewater that meets the following quality limits prior to being applied to the golf course:

In any grab sample:

- | | |
|------------------------------------|--------------------|
| a. 5-day Biochemical Oxygen Demand | 40.0 mg/l, maximum |
| b. Dissolved Oxygen | 1.0 mg/l, minimum |
| c. Dissolved Sulfides | 0.1 mg/l, maximum |

At any point downstream of the disinfection facilities where adequate contact with disinfectant is assured:

- d. The median number of total coliform organisms shall not exceed 23 MPN/100 ml as determined from the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform organisms shall not exceed 240 MPN/100ml in any two consecutive samples.
2. The Producer shall discontinue the pumping of reclaimed water to the irrigation site during any period in which he has reason to believe that the limits specified in B.1 above are not being met. The pumping of reclaimed water shall not be resumed until all conditions which caused the limits specified in B.1 to be

violated have been corrected.

User

3. There shall be at least a 10-foot horizontal and 1-foot vertical separation (with the domestic water above the reclaimed water pipeline) between all pipelines transporting reclaimed water and those transporting domestic water.
4. The User shall maintain at least a 50-foot buffer zone around the clubhouse and the soccer field, in which reclaimed water shall not be applied. No reclaimed water is to be used on the soccer field.
5. The User shall manage its spray irrigation so as to prevent the breeding of insects and other vectors of health significance, and the creation of odors, slimes, or unsightly deposits.
6. Unless special circumstances warrant daytime application, irrigation of the golf course should occur at night or early morning when the wind velocity is minimal and the golfers are absent. The grounds should have maximum opportunity to dry before used by the public. Daytime syringing of the greens with reclaimed water is permitted as long as golf course personnel are present during syringing.
7. The User shall provide adequate means of notification to inform the public that reclaimed water is being used for irrigation. Conspicuous warning signs of sufficient size with proper wording to be clearly read shall be posted at adequate intervals around the irrigation site. Notice shall be printed on the score cards stating that reclaimed water is being used.
8. Reclaimed water shall not be sprayed directly on streams or flood control channels, passing vehicles, buildings, domestic water facilities or food handling facilities. Drinking water facilities shall be protected from direct or windblown reclaimed water spray.
9. No reclaimed water shall be applied to the irrigation site during rainfall, or when soils are saturated to a point where runoff is likely to occur.
10. There shall be no irrigation or impoundment of reclaimed water within 500 feet of any well used for domestic supply or 100 feet of any irrigation well unless it can be demonstrated that special circumstances justify lesser distances to be acceptable.

C. Provisions


1. The Discharger shall comply with a Self-Monitoring Program as ordered by the Executive Officer.
2. The Discharger shall permit the Board or its authorized representatives in accordance with California Water Code Section

13267(c):

- (a) Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order;
 - (b) Access to and copy at reasonable times any records that must be kept under the conditions of this Order;
 - (c) Inspection at reasonable times of any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this order; and
 - (d) To photograph, sample, and monitor at reasonable times for the purpose of assuring compliance with this Order.
3. The Discharger shall maintain in good working order and operate, as efficiently as possible, any facility or control system installed or as modified to achieve compliance with this Order.
4. All equipment, including pumps, piping, valves, etc. with public access which may at any time contain reclaimed water shall be adequately and clearly identified with warning signs and the Discharger shall make all necessary provisions, in addition, to inform the public that the liquid contained is reclaimed water and is unfit for human consumption.
5. A contingency plan shall be developed outlining the actions to be taken in the event effluent quality fails to meet required standards. The plan must be submitted for review, to the satisfaction of the Executive Officer, prior to the startup of the irrigation operation.
6. In the event of any change in control or ownership of land or water reclamation facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by a letter, a copy of which shall be forwarded to this Board.
7. The Discharger shall file with the Board a report on waste discharge at least 180 days before making any material change in the character, location, or volume of the reuse, except for emergency conditions in which case the Board shall be notified.
8. The Board will review this Order periodically and may revise the requirements when necessary.
9. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:
 - (a) Violation of any term or condition contained in this Order;
 - (b) Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;

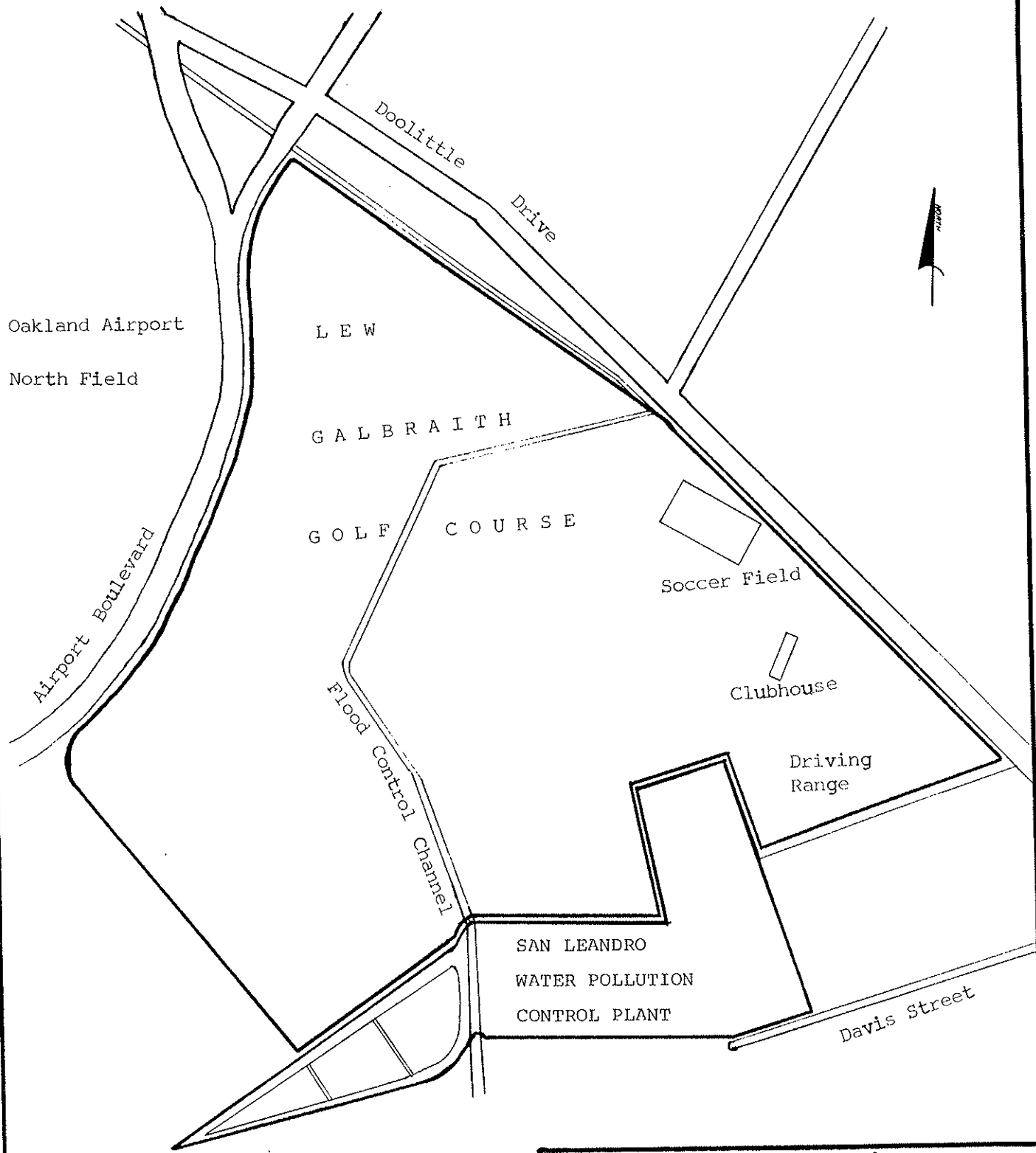
- (c) A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized reuse; and,
 - (d) Endangerment to public health or environment that can only be regulated to acceptable levels by order modification or termination.
10. A golf course user supervisor should be appointed by the Galbraith Golf Course Operator. The user supervisor should be responsible for installation, operation and maintenance of the reclamation system on the golf course, prevention of potential hazards, implementing water reclamation guidelines on the golf course, and coordination with the cross-connection control program of the water purveyor or the local health department.
11. Inspection, supervision, and employee training should be provided by the User to assure proper operation of the reclaimed water system on the golf course. Records of inspection and training should be maintained by the Galbraith Golf Course Operator.

I, Roger B. James, Executive Officer, do hereby certify 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 20, 1988.



ROGER B. JAMES
Executive Officer

Attachments:
Location Map
Self-Monitoring Program



Oakland Airport
North Field

Airport Boulevard

Doolittle Drive

LEW

GALBRAITH

GOLF COURSE

Flood Control Channel

Soccer Field

Clubhouse

Driving Range

SAN LEANDRO
WATER POLLUTION
CONTROL PLANT

Davis Street



STATE OF CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION		
ATTACHMENT A: SITE MAP LEW GALBRAITH GOLF COURSE WATER RECLAMATION PROJECT ALAMEDA COUNTY		
DRAWN BY:	DATE:	DRWG. NO.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

F I N A L
SELF-MONITORING PROGRAM
FOR

LEW GALBRAITH GOLF COURSE, and

CITY OF SAN LEANDRO

ALAMEDA COUNTY

ORDER NO. 88-008

CONSISTS OF

PART A

PART A

LEW GALBRAITH GOLF COURSE WASTEWATER RECLAMATION PROJECT

I. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16.

The principal purposes of a monitoring program by a waste discharger, also referred to as a self-monitoring program, are:

1. To document compliance with waste discharge requirements (or, water reclamation requirements) and prohibitions established by the Regional Board.
2. To facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge or water reclamation.

II. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the 40 CFR S136 or other methods approved and specified by the Executive Officer of this Regional Board.

Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health Services (DOHS) or a laboratory waived by the Executive Officer from obtaining a certification for these analyses by the DOHS. The director of the laboratory whose name appears on the certification or his/her laboratory supervisor who is directly responsible for analytical work performed shall supervise all analytical work including appropriate quality assurance/quality control procedures in his or her laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

III. DEFINITION OF TERMS

1. A grab sample is defined as an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples shall be collected during normal operation conditions for the parameter of interest, which may or may not be during hydraulic peaks. It is used primarily in determining compliance with daily maximum limits and instantaneous maximum limits. Grab samples represent only the condition that exists at the time the wastewater is collected.
2. A flow sample is defined as the accurate measurement of the

average daily flow volume using a properly calibrated and maintained flow measuring device.

3. Standard Observations

a. Periphery of Spray Irrigation Site

- (1) Evidence of reclaimed water escaping the irrigation site through surface runoff or airborne spray. (Show affected area on a sketch.)
- (2) Odor: presence or absence, characterization, source, and distance of travel.
- (3) Evidence of prolonged ponding of reclaimed water in the irrigation site as a result of excessive spray which has resulted in breeding of insects.
- (4) Adequate posting of warning signs or notices to inform public of the use of reclaimed water for irrigation.
- (5) Maintenance of the required buffer distance from areas to be protected .
- (6) Evidence of direct spraying of reclaimed water on streams, passing vehicles, buildings, domestic water facilities, or food handling facilities.

IV. DESCRIPTION OF SAMPLING STATIONS AND SCHEDULE OF SAMPLING, ANALYSIS AND OBSERVATIONS

1. DESCRIPTION OF SAMPLING STATIONS

a. EFFLUENT (PRODUCER)

<u>Station</u>	<u>Description</u>
E-001	Located at any point in the effluent from the SLWPCP, prior to being pumped to the irrigation site, where all waste tributary to the effluent is present. (Maybe the same point as E-001-D.)
E-001-D	Located at any point in the effluent from disinfection facilities at which point adequate contact with the disinfectant is assured.

b. LAND OBSERVATION (USER)

<u>Station</u>	<u>Description</u>
I-1 thru I-'n'	Located at points spaced

equidistantly around the periphery of the golf course spray irrigation site, and along the banks of the flood control channel. Points shall be separated by not more than 1000 feet. A sketch showing the stations shall be submitted with the first monitoring report and subsequent self-monitoring reports when station location is changed or a violation is noted.

2. SCHEDULE OF SAMPLING, ANALYSIS, AND OBSERVATIONS

- a. This self-monitoring program is applicable during the periods when reclaimed water is used for golf course irrigation.
- b. The Producer and/or User of the reclaimed water are required to perform observations, sampling, and analyses according to the schedule given in Table I. (Attachment A)

V. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Violation of Requirements:

In the event the Discharger is unable to comply with the conditions of the water reclamation requirements and prohibitions due to:

- (a) maintenance work, power failure, or breakdown of waste treatment equipment, or
- (b) accidents caused by human error or negligence, or
- (c) other causes such as acts of nature,

the Discharger shall notify the Regional Board office by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within two weeks of the telephone notification. The written report shall include pertinent information explaining reasons for the non-compliance and shall indicate what steps were taken to prevent the problems from recurring.

2. Self-Monitoring Reports

Written reports shall be filed regularly for each calendar month by the fifteenth day of the following month. The reports shall be comprised of the following:

a. Letter of Transmittal:

A letter transmitting self-monitoring reports should accompany

each report. Such a letter shall include a discussion of requirement violations found during the past month and actions taken or planned for correcting violations, such as operation modifications and/or facilities expansion. If the Discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true and correct.

b. Results of Analyses and Observations

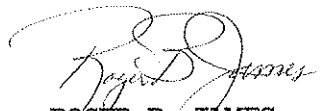
Tabulations of the results from each required analysis and/or observations specified in Table I by date, time, type of sample, and station.

c. List of Approved Analyses

- (1) Listing of analyses for which the Discharger is approved by the State Department of Health.
- (2) List of analyses performed for the Discharger by another approved laboratory (and copies of reports signed by the laboratory director of that laboratory shall also be submitted as part of the report).

I, Roger B. James, Executive Officer, do hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with the Water Reclamation Requirements established in Regional Board Order No. 88-008.
2. Is effective on the date shown below.
3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.


ROGER B. JAMES
Executive Officer

Effective Date: January 20, 1988

Attachments:

- A. Table I
- B. User's Self-Monitoring Report Form

ATTACHMENT A

TABLE I

SCHEDULE FOR SAMPLINGS, MEASUREMENTS, AND ANALYSES
(LEW GALBRAITH GOLF COURSE WATER RECLAMATION PROJECT)

SAMPLING STATIONS	E-001		E-001	I-1
	Flow	G	-D	I-'n'
Type of Samples			G	O
Flow Rate, (MGD)	D			
5-day Biochemical Oxygen Demand		2W		
pH, (unit)		2W		
Dissolved Oxygen, (mg/l)		2W		
Dissolved Sulfides, (mg/l), (1)		2W		
Settleable Matter, (ml/l-hr)		2W		
Total Coliform, (MPN/100 ml)			D	
Applicable Standard Observations				(2) W

LEGEND FOR TABLE

G= Grab sample,
O= Observation,
Flow= Flow measuring,

D= Daily,
W= Once each week,
2W= Every two weeks,

Notes:

- (1). Analyze for this item only when Dissolved Oxygen is below 2.0 mg/l.
- (2). The User shall perform the designated observations and file the User's Report (in Attachment B) as part of the monthly Self-Monitoring Report during the irrigation period. The observation must be made during the periods when irrigation of reclaimed wastewater is in progress.

ATTACHMENT B: User's Self-Monitoring Report

1. Name of User: LEW GALBRAITH GOLF COURSE
2. Reporting Period (Month/Year): _____
3. Circle dates that Reclaimed water being used: 1 2 3 4 5 6 7 8 9 10 11
12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
4. Total gallons used for the month: _____
5. Required weekly observations: (Fill in the date of the inspection and write "yes" or "no" for each observation.)

Date and Time					
Escape of Reclaimed Water from Irrigation Site in the form of Surface Flow or Airborne Spray					
Reclaimed Water Used on Unauthorized Areas					
Odor from Reclaimed Water					
Breeding of Insects as a result of Ponding of Reclaimed Water in the Irrigation Site					
Improper Warning Notices					
Public Contact with Reclaimed Water					
Direct Spray of Vehicles, Buildings, etc.					
Reclaimed Water Entering the Flood Control Channel in the form of Runoff or Direct Spray					

If any of the observations were yes, a written report containing the following information shall be submitted:

- (1) State time when noted violation(s) was observed and show its location on a map.
- (2) Explain cause and extent of violation (volume, duration, etc.).
- (3) Describe corrective action taken and the dates compliance was achieved and irrigation was resumed.

6. I certify that the information in this report, to the best of my knowledge, is true and correct.

Signature of User Supervisor Date