State Office of Administrative Hearings

Cathleen Parsley
Chief Administrative Law Judge

October 28, 2009

Les Trobman, General Counsel
Texas Commission on Environmental Quality
P.O. Box 13087
Austin Texas 78711-3087

Re: SOAH Docket No. 582-08-4233; TCEQ Docket No. 2008-0421-IWD; In Re: In the Matter of an Application from Taiwan Shrimp Village Association, Inc. and Arroyo Aquaculture Association, Inc. for Renewal of Permit No. WQ0003596000

Dear Mr. Trobman:

The above-referenced matter will be considered by the Texas Commission on Environmental Quality on a date and time to be determined by the Chief Clerk's Office in Room 201S of Building E, 12118 N. Interstate 35, Austin, Texas.

Enclosed are copies of the Proposal for Decision and Order that have been recommended to the Commission for approval. Any party may file exceptions or briefs by filing the documents with the Chief Clerk of the Texas Commission on Environmental Quality no later than November 17, 2009. Any replies to exceptions or briefs must be filed in the same manner no later than November 30, 2009.

This matter has been designated **TCEQ Docket No. 2008-0421-IWD; SOAH Docket No. 582-08-4233**. All documents to be filed must clearly reference these assigned docket numbers. All exceptions, briefs and replies along with certification of service to the above parties shall be filed with the Chief Clerk of the TCEQ electronically at http://www10.tceq.state.tx.us/epic/efilings/ or by filing an original and seven copies with the Chief Clerk of the TCEQ. Failure to provide copies may be grounds for withholding consideration of the pleadings.

Sincerely,

Thomas H. Walston
Administrative Law Judge

THW:nl
Enclosures
cc: Mailing List

STATE OFFICE OF ADMINISTRATIVE HEARINGS

AUSTIN OFFICE
300 West 15th Street Suite 502
Austin, Texas 78701
Phone: (512) 475-4993
Fax: (512) 475-4994

SERVICE LIST

AGENCY: **Environmental Quality, Texas Commission on (TCEQ)**

STYLE/CASE: **TAIWAN SHRIMP VILLAGE ASSOCIATION INC AND ARROYO AQUACULTURE ASSOC INC**

SOAH DOCKET NUMBER: **582-08-4233**

REFERRING AGENCY CASE: **2008-0421-IWD**

STATE OFFICE OF ADMINISTRATIVE HEARINGS

ADMINISTRATIVE LAW JUDGE
ALJ THOMAS H. WALSTON

REPRESENTATIVE / ADDRESS

PARTIES

DOCKET CLERK
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
OFFICE OF THE CHIEF CLERK
PO BOX 13087
AUSTIN, TX 78711
(512) 239-3300 (PH)
(512) 239-3311 (FAX)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

GARRETT ARTHUR
STAFF ATTORNEY
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
OFFICE OF PUBLIC INTEREST COUNSEL
MC-175 P.O. BOX 13087
AUSTIN, TX 78711-3087
(512) 239-5757 (PH)
(512) 239-6377 (FAX)
garthur@tceq.state.tx.us

OFFICE OF PUBLIC INTEREST COUNSEL

ALICIA M LEE
STAFF ATTORNEY
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
ENVIRONMENTAL LAW DIVISION, MC 163
MC-175 P.O. BOX 13087
AUSTIN, TX 78711-3087
(512) 239-0133 (PH)
(512) 239-0606 (FAX)

EXECUTIVE DIRECTOR

FRED B WERKENTHIN, JR.
BOOTH, AHRENS & WERKENTHIN, P.C.
515 CONGRESS AVENUE, SUITE 1515
AUSTIN, TX 78701-3503
(512) 472-3263 (PH)
(512) 473-2609 (FAX)
fbw@baw.com

TAIWAN SHRIMP VILLAGE ASSOCIATION, INC. AND ARROYO AQUACULTUE ASSOCIATION, INC.

ROBERT O. COLLIER, M.D.
VALLEY PSYCHIATRIC CLINIC
1901 BELL ST., SUITE B
HARLINGEN, TX 78550-8290
(956) 428-1971 (PH)
(956) 428-1948 (FAX)
(956) 245-6486 (CELL)

AFFECTED PERSONS WHOSE HEARING REQUESTS WERE GRANTED BY THE COMMISSION

GENE C. YATES
1118 E. FILMORE AVE.
HARLINGEN, TX 78550-7256
(956) 423-4931 (PH)

GENE C. YATES

KIETH GREGG
FARM PRODUCTION MANAGER
HARLINGEN SHRIMP FARMS
44099 SCHAFER ROAD
LOS FRESNOS, TX 78566
(956) 233-5723 (PH)
(956) 233-9779 (FAX)
kiethgregg@gmail.com

TAIWAN SHRIMP VILLAGE ASSOCIATION, INC. AND ARROYO AQUACULTUE ASSOCIATION, INC.

ROB YOUKER
1985 WEST BUS. 77 HWY.
SAN BENITO, TX 78586
(956) 399-5123 (PH)
(956) 399-5195 (FAX)
robyouker@sportsmanboats.com

ROB YOUKER

W. E. MAY
3510 PEBBLE BEACH DR.
HARLINGEN, TX 78550
(956) 423-6959 (PH)
(956) 423-6554 (FAX)

W. E. MAY

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xc: Docket Clerk, State Office of Administrative Hearings

SOAH DOCKET NO. 582-08-4233
TCEQ DOCKET NO. 2008-0421-IWD

IN THE MATTER OF AN APPLICATION FROM TAIWAN SHRIMP VILLAGE ASSOCATION, INC., AND ARROYO AQUACULTURE ASSOCIATION, INC. FOR RENEWAL OF PERMIT NO. WQ0003596000	§ § § § § § §	BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS

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IN THE MATTER OF AN APPLICATION FROM TAIWAN SHRIMP VILLAGE ASSOCATION, INC., AND ARROYO AQUACULTURE ASSOCIATION, INC. FOR RENEWAL OF PERMIT NO. WQ0003596000	§	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

PROPOSAL FOR DECISION

I. INTRODUCTION

Taiwan Shrimp Village Association, Inc. and Arroyo Aquaculture Association, Inc. (Applicants) have applied to the Texas Commission on Environmental Quality (TCEQ) to renew and amend TPDES Permit No. WQ0003596000. The proposed amendments would change the months during which discharge from its aquaculture facility is prohibited[1] and would revise the requirements concerning water quality sampling to reflect the current intake and discharge patterns.

The Executive Director (ED) approved the Application, with additional proposed requirements, which would authorize Applicants to continue their aquaculture operation with the requested amendments. The Commission issued an Interim Order on July 9, 2008, granting certain hearing requests and referring the matter to the State Office of Administrative Hearings (SOAH) with instructions to hold a contested case hearing on the following issues:

1. Whether the draft permit satisfies applicable regulatory requirements intended to protect human health, water quality, wildlife, existing uses including recreational uses, and the environment.
2. Whether the draft permit adequately requires the regulated activity to preclude odors.

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[1] The months during which discharge is prohibited would change from January through March to March through May.

3. Whether the draft permit appropriately revised the applicable water quality study requirements.
4. Whether the Applicant's compliance history raises issues as to whether it can comply with a material term of the draft permit as amended, or warrants denial or alteration of the permit.
5. Whether the impact of the discharge at the discharge point has been analyzed.
6. Whether the application should be denied on the basis that no discharge should be allowed.
7. Whether the discharge will result in a violation of 30 TAC § 307.4(b).

The ED and the Office of Public Interest Counsel (OPIC) support the application, while Intervenors oppose it. The Administrative Law Judge (ALJ) recommends that the Commission find in favor of the Applicants on each of the referred issues.

II. JURISDICTION, PARTIES, AND PROCEDURAL HISTORY

No party disputes the jurisdiction of the Commission or SOAH. The attached Proposed Order contains the necessary finding and conclusions concerning jurisdiction.

The following Parties participated in the hearing on the merits:

PARTY	REPRESENTATIVES
Taiwan Shrimp Village Association, Inc. and Arroyo Aquaculture Association, Inc. (Applicants)	Fred B. Werkenthin, Jr., attorney
Executive Director (ED) of the TCEQ	Alicia M. Lee, attorney, TCEQ
Robert Collier, M.D., Protestant	Self
Gene Yates, Protestant	Self
W.E. May, Protestant	Self
Public Interest Counsel (OPIC)	Mr. Garrett Arthur, attorney, PIC

Mr. Rob Youker was granted party status, but he did not appear at the hearing. Mr. Jack Gibson was also granted party status, but he withdrew prior to the hearing.

The procedural schedule is summarized as follows:

April 30, 2002	Application filed with TCEQ.
November 20, 2002	Application declared administratively complete.
December 12, 2002	The Notice of Receipt of Application and Intent to Obtain a Water Quality Permit (NORI) was published in the *Valley Morning Star.*
April 29, 2005	ED completed the technical review of the Application and prepared a draft permit.
August 31, 2006	The Notice of Application and Preliminary Decision (NAPD) was published in the *Valley Morning Star*.
November 16, 2006	Public meeting held and the comment period ended.
February 4, 2008	ED filed his response to public comment.
February 11, 2008	ED issued his decision to approve the application.
July 9, 2008	TCEQ considered and granted hearing requests and specified the relevant and material issues for a contested case hearing.
July 17, 2008	TCEQ referred the case to SOAH for a contested case hearing.
August 29, 2008	TCEQ issued a notice of hearing for October 15, 2008.
September 17, 2008	Applicants published the notice of hearing for October 15, 2008.
October 10, 2008	At the request of the ED, Order No. 1 continued the preliminary hearing set for October 15, 2008, due to less than 30 days published notice.
December 11, 2008	Notice of hearing was published for a preliminary hearing on January 21, 2009.
January 21, 2009	SOAH held a preliminary hearing in Harlingen.
July 13, 2009	Hearing on the merits held in Harlingen.
August 14, 2009	Parties filed written closing arguments.
August 28, 2009	Parties filed replies to closing arguments and the record closed.

III. BACKGROUND

A. Applicants' Facility

The Applicants operate an aquaculture facility located on the south side of FM Road 2925, approximately 1.4 miles east of the intersection of FM 2925 and FM 1847, in the city of Arroyo City, Cameron County, Texas. In the past, the facility primarily raised shrimp, but in recent years shrimp production has declined; consequently, some ponds have been idled and some are used to raise fish. Effluent from the facility is discharged via Outfall 001 directly to the Arroyo Colorado Tidal; and via Outfall 002 to a drainage ditch, then to Arroyo Colorado Tidal, in Segment No. 2201 of the Nueces-Rio Grande Coastal Basin. The unclassified receiving waters have high aquatic life use for the unnamed drainage ditch. The designated uses for Segment No. 2201 are high aquatic life use and contact recreation.

Mr. Keith Gregg, who testified for the Applicants, explained that the normal practice at the facility is to fill and stock the shrimp ponds during late March and early April.[2] The shrimp are fed in the ponds through the summer until they reach marketable size, and the Applicants try to harvest all shrimp before the cold weather of November. Normally, the facility holds all water on the facility during the growing season without discharge. When water is drained from ponds for harvest, it is pumped into empty production ponds, where it is allowed to settle and condition naturally until the quality meets the requirements of the permit. The water is then discharged over a period one or two weeks. To prepare for the next growing season, the Applicants try to discharge as early as possible after the appropriate water quality is achieved, so the ponds can dry thoroughly during the winter.[3]

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[2] Mr. Gregg is the Farm Production Manager for Harlingen Shrimp Farms, Ltd., and he holds a B.S. degree in Fisheries Management/Ecology from Texas A&M University. Mr. Gregg's duties include effluent monitoring at the facility; specifically, making sure the proper tests are performed at the proper time and that proper reports are filed. Ex. App.-1, at 1-4.

[3] *Id.* at 5-6.

Before 1995, the Applicants discharged throughout the growing season without holding the water for any treatment period. Mr. Gregg stated that it quickly became apparent, however, that changes had to be made in order to comply with the regulatory discharge limits. The current practice of holding and treating all effluent began soon thereafter.[4]

For most years, holding the pond water during October, November, and December has allowed the water to clear sufficiently for discharge. In some years, however, the water quality did not improve sufficiently by December to allow for a proper discharge. Because the facility was prohibited from discharging during January through March, it faced the dilemma of discharging in December, before the water reached optimal quality, or discharging during January in violation of permit restrictions. Therefore, the Applicants request permission to change the months during which discharge is prohibited from January through March to March through May. Under the proposed revision, the same amount of water would be discharged, but the facility would have more flexibility in timing, and the discharged water should be higher quality. Under the proposed amendment, all concentration limits and other restrictions would remain unchanged.[5]

Mr. Fritz Jaenike, a witness for Applicants, testified that during 2006, the last year when significant numbers of ponds were operated at the facility, discharges from Applicants' facility occurred on only eight days, at an average flow rate of 10.5 MGD, for a total of 84 million gallons, which is less than one percent of the permitted annual flow. Likewise, Mr. Jaenike calculated that the 2006 annual load of total suspended solids (TSS) was 19,000 lbs, which is also less than one percent of the permitted calculated TSS load. He added that during 2007 and 2008, no more than ten ponds were operated at the facility, primarily for the culture of tilapia, and only two shrimp ponds were operated during 2008. Pond culture effluent was pumped from the drainage system and stored in the unused ponds, although in 2008 an unintentional discharge of stormwater did occur during Hurricane Dolly.[6]

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[4] *Id.* at 6.

[5] *Id.* at 7.

[6] Ex. App.5, Jaenike direct at 5.

B. The Application

The Applicants originally applied to remove completely the three-month prohibition of discharge and to revise the Arroyo Colorado Water Quality Study requirement to reduce influent and effluent sampling frequencies in order to reflect current intake and discharge patterns. After receiving public comment, the Applicants amended their request to retain a three-month discharge prohibition, but to change the months of prohibition to March through May. This would enable the facility to take advantage of additional cooler months to allow the ponds to settle prior to discharge. Thus, under the amended application, the three-month period without discharge would be maintained, but during different months.

The intent of Applicants' request to change the discharge months is to reduce algal growth in the ponds, which in the past has resulted in violations of the permitted TSS effluent limitations. Moving the discharge prohibition to March through May will also enable the facility to use the colder temperatures during December, January, and February to eliminate algae without the need for algaecides or additional water treatment chemicals.

The existing TPDES permit requires the Applicants to conduct a water quality study of the Arroyo Colorado. The study is designed to evaluate the effects of the operation on the diversion of water from and the discharge of effluent to the Arroyo Colorado. The Arroyo Water Quality Study was requested by the Texas Parks and Wildlife Department (TPWD) and is separate from the effluent limitations included in the draft permit. The Applicants have requested that the study be modified to reflect the current influent and effluent discharge patterns at the facility. The Applicants request to reduce the influent sampling to once per month during the months of April through October, as these are the months that the Applicants bring in water from the Arroyo but do not discharge. The existing permit requires influent analysis during other months when there is no intake of water. Therefore, the existing requirement is ineffective for measuring the effects of the diversion of water from the Arroyo.

Mr. Gregg explained that when the current water sampling plan for the Arroyo Water Quality Study was established, the farm exchanged water throughout the growing season.

However, now the facility holds the water during the growing season, so the sampling schedule no longer corresponds with the discharge practices of the facility. Therefore, the Applicants request that the schedule be changed to fit the current practice of (1) filling the shrimp ponds in March and April; (2) adding very little new water for the rest of the year; (3) holding the water on the farm until after the harvest; and (4) finally discharging in November or December. Under the current discharge schedule, the Applicants cannot comply with the existing sampling plan.[7]

Mr. Gregg emphasized that the Applicants do not intend to lessen their responsibilities or requirements to monitor the quality of their discharge. He notes that TCEQ, with the consent of the Texas Parks & Wildlife Department, designed a new water quality study plan that follows the current water use strategies. The new plan requires discharge sampling twice per week, regardless of the month when the discharge occurs, which is more stringent than the current plan. Mr. Gregg reiterated that this plan only concerns the water quality study and does not affect other regulatory requirements or the routine water quality sampling of discharge for permit compliance.[8]

The ED has approved the proposed revisions to the Water Quality Study sampling frequencies to reflect the actual influent and discharge practices at the facility. The draft permit prepared by the ED also increased the effluent sampling to twice per week during any period of discharge, and it extends the due date of the reports for the study from December 1 to December 31. These additions to the draft permit do not relax any effluent limitations or monitoring frequencies designed to protect water quality, which requirements are separate from the Arroyo Water Quality Study.

The Applicants have not applied to increase the existing authorized rate or volume of discharge. The amended permit would continue to authorize discharge at a combined daily average flow not to exceed 100 million gallons per day via Outfalls 001 and 002, as set out in the current permit. The proposed effluent limitations in the draft permit are: 4 mg/L 5-day

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[7] Ex. App.-1, Gregg direct at 9.

[8] *Id.* at 9-10.

carbonaceous biochemical oxygen demand ($CBOD_5$), 30 mg/L TSS, 1 mg/L ammonia-nitrogen (NH_3-N), and 6 mg/L dissolved oxygen (DO). These limits are continued from the existing permit for both outfalls and are based on 30-day averages.

IV. DISCUSSION

A. Referred Issues

1. Whether the draft permit satisfies applicable regulatory requirements intended to protect human health, water quality, wildlife, existing uses including recreational uses, and the environment.

The evidence established that the draft permit satisfies applicable regulatory requirements intended to protect human health, water quality, wildlife, existing uses including recreational uses, and the environment. To evaluate the proposed permit, the ED performed a technical review, an antidegradation review, and a dissolved oxygen review. Each of these reviews indicated that the draft permit will be protective.

ED's Technical Review: Mr. David Galindo, an experienced Natural Resource Specialist with the Commission, performed the technical review. He noted that a site assessment was not required because the Application is for an existing facility that is not expanding. In addition, Applicants only seek to change the three months during which discharge is prohibited and the influent and effluent sampling frequencies for the Arroyo Colorado Water Quality Study. No changes were proposed to the parameters for sampling prior to discharge of effluent, and the modified sampling frequency will provide a more accurate assessment of the facility's operation, Mr. Galindo stated.[9]

[9] Ex. ED-2, Galindo direct at 3-6.

Mr. Galindo also prepared the draft permit, which contains effluent limits of 4 mg/L $CBOD_5$, 30 mg/L TSS, 1 mg/L NH_3-N, and 6 mg/L DO. These limits are continued from the existing permit for both outfalls and are based on 30-day averages.[10]

Mr. Galindo further explained that new permit requirements include: reporting extra-label drug usage and Investigational New Animal Drug (INAD) usage; reporting structural failures and spills resulting in an unanticipated discharge of pollutants; and chronic seven-day biomonitoring requirements. The existing permit contains 48-hour acute biomonitoring requirements, which detect lethality caused by effluents, while the added chronic biomonitoring also assesses sub-lethal effects (reproduction and growth) as well as lethality. Mr. Galindo stated that these new requirements are more stringent than the existing requirements.[11]

ED's Antidegradation Review: As part of the technical review, the ED performed a Tier 1 and Tier 2 antidegradation review.[12] A Tier 1 antidegradation review applies to all water bodies, and it ensures that existing water quality uses are not impaired by an increase in pollution loading and that protective criteria associated with those uses are maintained.[13] A Tier 2 review applies to water bodies that have intermediate, high, or exceptional aquatic life use and contact recreation use. This review ensures that the water quality for such uses will not be degraded unless necessary for important economic or social development.[14]

Mr. Peter Schaefer is an experienced Aquatic Scientist for the TCEQ, who, among other things, conducts and evaluates water quality studies and conducts water quality standards reviews on TPDES permit applications. He conducted a water quality standards review and the Tier 2 antidegradation review for the Application. Mr. Schaefer's review of the Application showed that the receiving waters for the effluent discharge have high aquatic life use for the

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[10] *Id.* at 7.

[11] *Id.* at 10. *See*, 30 TAC § 307.4(b).

[12] Degradation means "lowering of water quality by more than a de minimis extent, but not to the extent that an existing use is impaired." 30 TAC § 307.5(b)(2).

[13] Ex. ED 1, Schaefer direct at 4.

[14] *Id.*

unnamed drainage ditch, and high aquatic life use and contact recreation use for Segment No. 2201 of the Nueces-Rio Grande Coastal Basin. Mr. Schaefer noted that the drainage ditch is tidally connected with Segment No. 2201. The antidegradation review preliminarily determined that no significant degradation of high quality waters is expected and that existing uses will be maintained and protected.

Mr. Schaefer also conducted an endangered or threatened species review, and found that no endangered or threatened aquatic or aquatic dependent species occur in this area.[15]

Mr. Schaefer noted that Segment 2201 does have TCEQ 303-d listed water quality impairments for bacteria, depressed DO, and mercury and PCB in fish tissue. However, these impaired sections are located upstream of the outfall locations for Applicants' facility. The closest area affected by bacteria impairment is approximately seven miles upstream; the closest area affected by depressed DO is about eleven miles upstream; and the closest area affected by mercury and PCBs in fish tissue is approximately sixteen miles upstream, according to Mr. Schaefer.[16]

ED's Dissolved Oxygen Review: DO is the amount of elemental oxygen dissolved in water, typically originating from the atmosphere or plant photosynthesis. It is a primary indicator of the general health of a water body and is essential for the survival of aquatic life.[17]

Mr. Charles Marshall is a Modeling and Assessment Specialist for TCEQ. He evaluates DO impacts from wastewater discharge permits and makes recommendations for conventional DO demanding constituents.[18] Mr. Marshall stated that modeling in the TPDES permitting process determines appropriate limits for oxygen-demanding constituents in a proposed

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[15] *Id.* at 2-6.

[16] *Id.* at 6.

[17] Ex. ED-4, Marshall direct at 2.

[18] *Id.* at 1.

wastewater discharge, to help ensure that the discharge will be environmentally protective as permitted.[19]

Using a mathematical model, Mr. Marshall evaluated the predicted effect of proposed and currently permitted wastewater discharges from the Applicants' facility on DO levels in water bodies along the specified discharge routes. The modeling is used to establish appropriate permit limits for oxygen-demanding constituents in a proposed wastewater discharge in order to ensure that the discharge, as permitted, will be environmentally protective. Specifically, Mr. Marshall stated, effluent limits for 5-day biochemical oxygen demand (BOD_5) or $CBOD_5$, NH_3-N, and effluent DO are recommended based on the modeling results. The modeling is based on conservative assumptions, such as full permitted flow at full permitted effluent limits, during hot and dry weather conditions. This process is designed to be protective of the aquatic environment.[20]

Based on the model results for the Application, the effluent set of 4 mg/L $CBOD_5$, 1 mg/L NH_3-N, and 6 mg/L DO, at a permitted flow of 100 MGD, is predicted to maintain the DO levels above the criterion for the drainage ditch (4.0 mg/L) and for the Arroyo Colorado Tidal (4.0 mg/L).[21] As mentioned previously, certain upstream portions of Segment 2201 currently have TCEQ 303-d listed water quality impairments, but the proposed permitted discharge from Applicants' facility is not predicted to negatively affect DO levels in the impaired portion of Segment 2201.[22]

Dr. Collier argues that the Application and Draft Permit fail to meet regulatory requirements and operating under them would endanger human health. He states that outbreaks of tara virus, necrotizing hepatopancreatic bacterium, and hemocytic enteritis (HE) have infected and killed shrimp at the facility, but no warnings have been provided to people who live at Arroyo City or to people who recreate in the waters where the facility drains. Also, he suggests

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[19] *Id.* at 3.

[20] *Id.* at 3-4.

[21] *Id.* at 4.

[22] *Id.* at 4-5.

that these outbreaks endanger indigenous shrimp and fish in the Arroyo Colorado and the Lower Laguna Madre. Although the facility treats infected shrimp with antibiotics added to shrimp food, Dr. Collier argues that this does not sterilize the pond water, which includes infected waste and antibiotics, which is eventually discharged.[23] Dr. Collier also contends that studies performed by Mr. Galindo and Mr. Schaefer are erroneous because they relied on data provided by the Applicants and because the tidal influence of the Arroyo Colorado penetrates farther than they assumed.[24]

Mr. Gregg acknowledged that the facility had an outbreak of necrotizing hepatopancreatitis (NHP) in 2006 that was treated with feed containing the antibiotic oxytetracycline (OTC). The facility followed the label instructions when using OTC feed. Although it has not been officially approved for use with shrimp, OTC is allowed for Investigative New Animal Drug (INAD) usage. Mr. Gregg did not have a concern about the shrimp disease "jumping species" to infect humans who use the water of the Arroyo Colorado. In fact, the shrimp are allowed to be sold for human consumption after the antibiotic treatment is completed and the disease has cleared.

Applicants further respond that Dr. Collier presented no scientific evidence that shrimp diseases threaten humans. They stress that both the TCEQ and TPWD have approved the permit provisions that address Applicants' response to shrimp disease. They also point out that NHP is associated with crustaceans and affects the hepatopancreas, a glandular structure that humans do not have, and HE is a response by shrimp to an environmental toxin, not a contagious disease.[25]

The ED's technical review, antidegradation review, and DO review establish that the draft permit satisfies applicable regulatory requirements intended to protect human health, water quality, wildlife, existing uses including recreational uses, and the environment. These regulatory requirements are contained in the Texas Surface Water Quality Standards (TSWQS) codified at 30 TAC Chapter 307. No evidence was presented that either the technical review, the

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[23] Collier Closing Argument at 1.

[24] Collier Reply to Closing Argument at 3.

[25] Applicants' Reply to Closing Argument at 2.

anitdegradation review, or the DO review were performed incorrectly or not in accordance with TCEQ procedures. Dr. Collier raised concerns about shrimp diseases and antibiotics used to treat them as a potential risk to native aquatic species and human health. Dr. Collier suggested that shrimp diseases could possibly "jump to humans," but the preponderance of the evidence indicated that these diseases do not affect humans or species other than crustaceans. Therefore, a preponderance of the evidence established that the draft permit satisfies applicable regulatory requirements intended to protect human health, water quality, wildlife, existing uses including recreational uses, and the environment.

2. Whether the draft permit adequately requires the regulated activity to preclude odors.

The draft permit requires the Applicants to address odors through best management practices (BMPs).[26] These include removing pond bottom sludge during favorable wind conditions, to carry odors away from nearby residences, businesses, and public buildings. In addition, the draft permit requires removal and disposal of aquatic animal mortalities, and it prohibits the creation of nuisance conditions of flies and odors. Mr. Galindo testified that the BMPs in the draft permit are more stringent than the existing permit, and the Applicants are required to submit an updated BMP plan to the TCEQ within 90 days after the permit is issued.[27] Also, Applicants' compliance history does not contain any NOVs for failing to properly control odor.[28]

The "Other Requirements" section of the permit requires Applicants to prevent nuisance condition odors. To accomplish this, Mr. Gregg stated, Applicants' standard practice is to cover all shrimp pond bottoms with water within 24 hours of harvest. In his opinion, this practice effectively controls odors and flies.[29]

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[26] Ex. ED-2, Galindo direct at 9 and Attachment DG-2 at 17-20 (Draft Permit).

[27] *Id.* at 9.

[28] *Id.* Attachment DG-4 (Compliance History).

[29] Ex. App.-1, Gregg direct at 10.

This issue was not disputed, and the evidence established that the draft permit adequately requires the Applicants to preclude odors.

3. Whether the draft permit appropriately revised the applicable water quality study requirements.

Other Requirement No. 11 of the existing permit requires a water quality study to evaluate the effects of the Applicants' diversion of water from the Arroyo Colorado and its discharge of effluent into the Arroyo Colorado. The Texas Parks and Wildlife Department (TPWD) originally proposed the study. The Applicants request modification of the study to reflect current influent and discharge patterns at the facility, as the current requirement mandates sampling at times when no intake of water occurs.[30] Mr. Galindo pointed out that the proposed changes to the water quality study do not relax any effluent limitations or monitoring frequencies at the permitted outfall, and the new sampling schedule will provide a more representative assessment of the facility's operations.[31]

For the study, TPWD has recommended: (1) that the report be submitted on December 31 of each year, rather than December 1 as provided in the current permit, because discharges could continue through the end of December; and (2) that effluent be sampled twice per week during any period of discharge, which is an increase over the current requirement. Mr. Adami testified that all of TPWD's recommendations are included in the draft permit. In addition, the Applicants are required by 31 TAC § 57.114(f) to notify TPWD fourteen days prior to harvesting any ponds or releasing any waste into or adjacent to water in the state. Mr. Adami testified that if Applicants operate the facility in accordance with the terms of the draft permit, no harm is expected to occur to the state's fish and wildlife resources.[32]

Dr. Collier complains that the self-policing data provided by the facility "is simply a hoax." He also noted that only two managers testified for the applicants; no actual shrimp or fish

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[30] Ex. ED-2, Galindo direct at 5.

[31] *Id.*

[32] Ex. ED-3, Adami direct at 3-5.

farmers testified. In Dr. Collier's opinion, the actual farmers will ignore the discharge restrictions and will discharge polluted water as they wish. While noting that actual shrimp farming has declined at this facility and at the Southern Star shrimp facility in the area, Dr. Collier is concerned that the Applicants will still be allowed to withdraw unlimited water from the Arroyo Colorado and release up to 180 million gallons per day back into the Arroyo. He is concerned the facility will switch to fish species and resume discharges at full permitted levels.[33]

The evidence established that the draft permit appropriately revised the applicable water quality study requirements to reflect actual intake and discharge activities. This evidence was not disputed. Dr. Collier did not address the proposed changes to the sampling plan for the Water Quality Study. Rather, he simply argued that individual farmers at the facility cannot be trusted to provide truthful data. However, Mr. Gregg and Mr. Jaenike explained that individual farmers cannot discharge from the facility or circumvent the requirements. Rather, discharges are planned, supervised events that must be coordinated with the facility managers. The discharge weir is bolted shut when not in use, and it cannot be lifted without the use of a crane or backhoe. Without evidence that the facility operators and managers would falsify data, Dr. Collier's concerns are not supported. Further, it would be impractical and inefficient not to revise the water quality study sampling requirements to reflect the actual practices at the facility. Therefore, the ALJ finds that the draft permit appropriately revised the applicable water quality study requirements to reflect actual intake and discharge activities.

4. Whether the Applicant's compliance history raises issues as to whether it can comply with a material term of the draft permit as amended, or warrants denial or alteration of the permit.

For the five-year period before the Application was filed, the compliance history for both the Applicants and the facility rated "Average."[34] Mr. Gregg testified that the Applicants have worked hard to comply with the requirements of the permit. He noted that the Applicants

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[33] Collier Closing Argument at 2.

[34] Ex. ED-2, Galindo direct at 8-9, Attachment DG-4 (Compliance History).

redesigned the facility to allow all culture water to be held on-site and treated naturally before discharge. They also changed the water management strategy to eliminate water exchange between the ponds and the Arroyo Colorado, and it now operates as a no-discharge facility throughout the culture cycle. That is, all water is held until at least November and is then released to allow the ponds to dry in preparation for the next season. The Applicants have also employed a local engineering firm and have sought help from research institutes to improve the operating procedures of the facility. Although they have not always achieved 100% compliance with the permit conditions, Mr. Gregg was adamant that the Applicants have done a good job and have not polluted the Arroyo Colorado. He stated that the new permit condition that allows holding pond water longer will increase the facility's ability to comply with the permit.[35]

Mr. Galindo testified that the ED's staff determined that the compliance history did not contain any enforcement orders or a significant number of violations that would warrant additional conditions or provisions in the draft permit.[36] Applicants' compliance history contains self-reported violations of the current TSS limits. However, the ED stated that these do not raise issues about Applicants' compliance with the draft permit, as amended, or warrant denial or alteration of the draft permit. The Applicants' request to amend the permit to hold water longer during cold weather months before discharge is designed to address the TSS issue by allowing additional time for solids settling and helping eliminate algae without additional algaecides or chemicals. The ED notes that this should improve compliance with the TSS limits, and even with the self-reported TSS violations, the Applicants still have an average compliance history rating.[37]

Dr. Collier argues that the Applicants' compliance history and behavior warrant denial of the application and cancellation of the existing permit. He finds it bizarre that after many years of operation the Applicants now claim that the permit conditions need to be changed because they cannot comply with the discharge requirements. In Dr. Collier's view, the Applicants are not trying to reduce algae load in the Arroyo Colorado but are gearing up to grow tilapia and

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[35] Ex. App.-1, Gregg direct at 11-12.

[36] Ex. ED-2, Galindo direct at 9.

[37] *Id.*, Attachment DG-4 (Compliance History).

redfish year-round. He also recommends FBI and Interpol background checks of offshore investors in the facility.[38]

The Commission's rule at 30 TAC § 60.2 prescribes a detailed methodology for evaluating compliance history. Using this methodology, the ED determined that the compliance history for both the Applicants and for this facility is "Average." The methodology contained in the rule provides for a consistent, objective evaluation of a party's compliance history. The ALJ understands the concerns of Dr. Collier and the other Protestants who live or recreate on the Arroyo Colorado. However, no evidence was presented that the ED incorrectly evaluated the facility's or the Applicants' compliance history. Therefore, no basis exists to deny the draft permit based on compliance history, as evaluated pursuant to 30 TAC Chapter 60.

5. Whether the impact of the discharge at the discharge point has been analyzed.

The impact of the discharge at the discharge point was adequately and appropriately analyzed in preparing the draft permit.[39] ED-witness Galindo specifically testified that the impact of the discharge at the discharge point has been analyzed.[40] He also gave a detailed explanation of how the laboratory results of the Applicants' effluent were screened against the calculated effluent limitations based on water quality for the protection of aquatic life and human health.[41]

Using conservative assumptions, Mr. Marshall evaluated the predicted effect of proposed and currently permitted wastewater discharges from the Applicants' facility on DO levels at the discharge point and in water bodies along the specified discharge routes.[42]

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[38] Collier Closing Argument at 2.

[39] Ex. ED-2, Galindo direct, at Attachment DG-3 (Fact Sheet and Executive Director's Preliminary Decision).

[40] *Id.* at 10.

[41] *Id.*

[42] Ex. ED-4, Marshall direct at 4.

Dr. Collier contends that the ED did not adequately analyze the impact of the discharge from the facility. Photographs of a 1995 discharge plume were presented at the hearing, and Dr. Collier states that similar plumes have continued to appear when a discharge occurs. He also states that periodic water quality analysis has shown a decline in the water quality of the Arroyo Colorado, which he believes is caused by heavy algae blooms. Dr. Collier also stresses that the tidal penetration of the Arroyo Colorado extends to near the Port of Harlingen, which is much farther than the tidal effect assumed by the ED, and which could carry contamination into the lower portion of the EPA protected segment of the Arroyo Colorado.[43]

Applicants respond that Dr. Collier erroneously assumes that all problems with water quality in the Arroyo Colorado are caused by Applicants' discharge. However, Applicants stress, the permitted TSS load from their facility is only a fraction of the total load from the county drainage ditch into the Arroyo Colorado. They also point out that for several months each year, the drainage ditch contains no water from the Applicants' facility.[44]

The evidence established that the laboratory analysis of effluent from the Applicants' facility was properly screened against the calculated water-quality-based effluent limitations for the protection of aquatic life and human health. This screening was conducted in accordance with the procedures used to implement the Texas Surface Water Quality Standards. No evidence was presented that the screening was not done correctly or was not done in accordance with TCEQ procedures. Therefore, the evidence established that the impact of the discharge at the discharge point has been analyzed.

6. Whether the application should be denied on the basis that no discharge should be allowed.

The evidence established that the draft permit meets all statutory and regulatory requirements and should be issued.[45] Specifically, the evidence showed the following:

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[43] Collier Closing Argument at 3.

[44] Applicants Reply to Closing Arguments at 3-4.

[45] Ex. ED-2, Galindo direct at Attachment DG-3 (Fact Sheet and Executive Director's Preliminary Decision).

- Mr. Galindo, who has extensive experience, performed a technical review and prepared the draft permit in accordance with all applicable statutes and regulations.[46]
- Mr. Schaefer, an experienced aquatic scientist, performed the Tier 1 and Tier 2 antidegradation reviews and preliminarily determined that, if the permit is issued, existing water quality uses would be maintained and protected and no significant degradation of high quality waters is expected.[47]
- Mr. Marshall modeled the proposed discharge and determined that the effluent set in the draft permit is adequate to ensure that the DO level will be maintained above the criterion established by the Standards Team for the unnamed drainage ditch (4.0 mg/L) and for the Arroyo Colorado (4.0 mg/L).[48]
- At the hearing, both Mr. Schaefer and Mr. Marshall testified that the CBOD requirement in the draft permit is one of the most stringent in any permit in the State of Texas.
- Mr. Adami, an experienced TPWD representative, testified that the revisions proposed in Applicants' draft permit are protective of the state's fish and wildlife resources.[49]

The OPIC notes that the proposed amendments to the permit, which will allow holding pond water longer during cold weather months, could actually improve the quality of the discharge.[50]

Dr. Collier objects to Applicant's being allowed to draw water from the Arroyo Colorado without cost and to then dump polluted, infected water back into the Arroyo. He states that other more honorable mariculture farms draw brackish water from under their property and then dispose of it underground by injection. In his opinion, if the Applicants are truly using less water

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[46] *Id.* at 26-45.

[47] Ex. ED-1, Schaefer direct at Attachment PS-2 (Water Quality Standards Memo).

[48] Ex. ED-4, Marshall direct at 4.

[49] Ex. ED-3, Adami direct at 15-25.

[50] OPIC closing argument at 6.

and are making it clean, then they should operate a closed system without drawing from or dumping into the Arroyo Colorado.[51]

The evidence showed that if the facility is operated in accordance with the draft permit, discharges from the facility would not violate any statute or regulation and the environment would be protected. Although other facilities may use alternate methods that do not require discharge to surface waters, those disposal methods are not required by either statute or regulation. Under the record in this case, no evidence was presented that the draft permit should be denied on the basis that no discharge should be allowed.

7. Whether the discharge will result in a violation of 30 TAC § 307.4(b).

Aesthetic standards for surface water are provided in 30 TAC § 307.4(b):

> (1) Concentrations of taste and odor producing substances shall not interfere with the production of potable water by reasonable water treatment methods, impart unpalatable flavor to food fish including shellfish, result in offensive odors arising from the waters, or otherwise interfere with the reasonable use of the water in the state.
>
> (2) Surface water shall be essentially free of floating debris and suspended solids that are conducive to producing adverse responses in aquatic organisms or putrescible sludge deposits of sediment layers which adversely affect benthic biota or any lawful use.
>
> (3) Surface waters shall be essentially free of settlable solids conducive to changes in flow characteristics of stream channels or the untimely filling of surface water in the state. This provision does not prohibit dredge and fill activities which are permitted in accordance with the Federal Clean Water Act.
>
> (4) Surface waters shall be maintained in an aesthetically attractive condition.
>
> (5) Waste discharges shall not cause substantial and persistent changes in ambient turbidity or color.

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[51] Collier Closing Argument at 3.

(6) There shall be no foaming or frothing of a persistent nature.

(7) Surface shall be maintained so that oil, grease, or related residue will not produce a visible film of oil or globules of grease on the surface or coat the banks or bottoms of the watercourse; or cause toxicity to man, aquatic life, or terrestrial life in accordance with subsection (d) of this section.

Mr. Galindo testified that all aesthetic parameters contained in 30 TAC § 307.4(b) should be met if the facility operates in compliance with the terms of the draft permit.[52] Applicants' compliance history does not contain any notices of violation for failing to comply with this rule.[53] Mr. Fritz Jaenike testified for Applicants that the effluent usually does not look worse than the receiving waters in County Drainage Ditch AS-05, and he has observed occasions when the effluent discharge from AAA creates a plume of clear water flowing into the drainage ditch.[54]

Dr. Collier presented a photograph showing a discolored plume entering the Arroyo Colorado from County Drainage Ditch AS-05.[55] However, Mr. Jaenike testified that this picture does not accurately represent the current discharge quality from Applicants' facility. Prior to 1995, the facility relied on significant water exchange as a routine management practice, which does not occur under current operating procedures.[56]

Mr. Jaenike added that the Applicants' facility is not the only source of water for the county drainage ditch; rather, before entering the Arroyo Colorado, the county drainage ditch also receives effluent from the Southern Star Shrimp Farm, as well as runoff from over 9,500 acres of cropland. Thus, he stated, the water flowing from the drainage ditch into the Arroyo is not necessarily coming from the Applicants' facility.[57]

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[52] Ex. ED-2, Galindo direct at 10.

[53] *Id.*, Attachment DG-4 (Compliance History).

[54] Ex. App.-5, Jaenike direct at 6-7.

[55] Ex. Collier-2.

[56] Ex. App.-5, Jaenike direct at 6.

[57] *Id.* at 4-5.

Dr. Collier complains that discharges from the facility are oily gray and create an obvious plume. He states that a "crud line" forms, and floating pieces of earth are encrusted with algae. Dr. Collier contends that "the shrimp farms" discharge during the dark of night so that the plume and wider ban of pollution have mostly cleared by sunrise. He states that damage to the water is cumulative and that he now has repeated blooms of toxic blue-green algae, which can cause HE. Dr. Collier also rejects the Applicants' contention that irrigation runoff contributes to the pollution problems in the drainage ditch or Arroyo Colorado. He notes that the recent drought and high temperatures have resulted in no agriculture irrigation flow into the drainage ditch this year.[58]

In her closing statement, Mrs. Gene Yates stated that her concern is aesthetic factors. She believes it is not appropriate for an industrial aquaculture operation to be located in a resort / residential area. In her opinion, removing frontage ponds, relocating equipment, and adding landscaping would improve the situation. Ms. Yates states that she is also concerned about chemicals, drugs, and other materials discharged into the Arroyo Colorado, despite the assurances from TCEQ and TPWD. She stresses that her children, grandchildren, and many other people recreate in these waters, and she is concerned about "the potential for disaster."[59]

Although Applicants' facility had discharge problems in its early years, as shown by the 1995 photograph introduced into evidence by Dr. Collier, drastic changes have been made to the operating practices at the facility to allow for more settling of solids and to reduce the amount of discharge. Further, one of the proposed amendments – to allow more time during cold weather months for settling of solids and to reduce algae – will further enhance the quality of discharges from the facility. Other than the one photograph from 1995, the Protestants' made only general complaints about the appearance of discharges from the drainage ditch. There was no evidence about the dates of such discharges or whether the discharges were even from Applicants' facility. It was undisputed that another aquaculture facility discharges through the same waters. In addition, Ms. Yates' complaints concern noise, dust, and the buildings and landscaping at the

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[58] Dr. Collier Closing Argument at 4.

[59] Yates Closing Statement at 1-2.

facility. These concerns do not relate to the effect of the discharges from the facility on the aesthetic quality of receiving waters and are beyond the scope of this discharge permit hearing. Therefore, the evidence established that if the facility is operated in accordance with the draft permit, discharges from the facility will not result in a violation of 30 TAC § 307.4(b).

V. CONCLUSION

In conclusion, the evidence established that the Commission should find in favor of the Applicants on each of the referred issues. A proposed Order is attached to this Proposal for Decision setting out findings of fact and conclusions of law addressing these referred issues. In addition, the proposed order includes a conclusion of law and an ordering provision stating that the terms of the permit and the Executive Director's review of the application comply with all applicable federal and state requirements. These items are included as a convenience to the Commission in order to allow it to more easily issue a single decision on the application in accordance with 30 TAC § 50.117(g). The ALJ makes no recommendation regarding issues not referred for hearing.

Signed October 28, 2009.

Thomas H Walston

THOMAS H. WALSTON
ADMINISTRATIVE LAW JUDGE
STATE OFFICE OF ADMINISTRATIVE HEARINGS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AN ORDER Granting the Application of Taiwan Shrimp Village Association, Inc., and Arroyo Aquaculture Association, Inc., for Renewal of TPDES Permit No. 0003596000; TCEQ Docket No. 2008-0421-IWD; SOAH Docket No. 582-08-4233

On _____, 2009, the Texas Commission on Environmental Quality (Commission or TCEQ) considered the application of Taiwan Shrimp Village Association, Inc., and Arroyo Aquaculture Association, Inc., (Applicants), concerning their aquaculture facility located in Arroyo City, Cameron County, Texas. Thomas H. Walston, Administrative Law Judge (ALJ) with the State Office of Administrative Hearings (SOAH), presented a Proposal for Decision (PFD) recommending that the seven issues referred by the Commission for hearing be resolved in Applicants' favor. After considering the ALJ's PFD and the evidence and arguments presented, the Commission makes the following Findings of Fact and Conclusions of Law:

I. FINDINGS OF FACT

A. General Findings and Procedural Issues

1. The Applicants are Taiwan Shrimp Village Association, Inc., and Arroyo Aquaculture Association, Inc., 36385 Marshall Hutts Road, Rio Hondo, Texas 78583.
2. Applicants operate an aquaculture facility located on the south side of FM Road 2925, approximately 1.4 miles east of the intersection of FM 2925 and FM 1847, in the city of

Arroyo City, Cameron County, Texas. In the past, the facility exclusively raised shrimp, but in recent years shrimp production has declined; consequently, some ponds have been idled and some are used to raise fish.

3. Effluent from the facility is discharged via Outfall 001 directly to the Arroyo Colorado Tidal; and via Outfall 002 to a drainage ditch, then to Arroyo Colorado Tidal, in Segment No. 2201 of the Nueces-Rio Grande Coastal Basin.

4. The unclassified receiving waters have high aquatic life use for the unnamed drainage ditch. The designated uses for Segment No. 2201 are high aquatic life use and contact recreation.

5. Applicants hold TPDES Permit No. WQ0003596000.

6. Applicants' existing permit was issued on December 2, 1999.

7. On April 30, 2002, Applicants filed an application for renewal of TPDES Permit No. WQ0003596000 (the Application).

8. On November 20, 2002, the Application was declared administratively complete.

9. On December 12, 2002, a Notice of Receipt of Application and Intent to Obtain a Water Quality Permit (NORI) was published in the *Valley Morning Star.*

10. On April 29, 2005, the Executive Director (ED) of the TCEQ completed the technical review of the Application and prepared a draft permit.

11. On August 31, 2006, the Notice of Application and Preliminary Decision (NAPD) was published in the *Valley Morning Star.*

12. On November 16, 2006, a public meeting was held and the comment period ended.

13. On February 4, 2008, the ED filed his response to public comment.

14. On July 9, 2008, the Commission considered and granted certain hearing requests and specified seven relevant and material issues for a contested case hearing. Those issues were:

- Whether the draft permit satisfies applicable regulatory requirements intended to protect human health, water quality, wildlife, existing uses including recreational uses, and the environment.
- Whether the draft permit adequately requires the regulated activity to preclude odors.
- Whether the draft permit appropriately revised the applicable water quality study requirements.
- Whether the Applicant's compliance history raises issues as to whether it can comply with a material term of the draft permit as amended, or warrants denial or alteration of the permit.
- Whether the impact of the discharge at the discharge point has been analyzed.
- Whether the application should be denied on the basis that no discharge should be allowed.
- Whether the discharge will result in a violation of 30 TAC § 307.4(b).

15. On July 17, 2008, the Commission referred the case to SOAH for a contested case hearing.

16. On August 29, 2008, the Commission issued a notice of hearing for October 15, 2008.

17. On September 17, 2008, Applicants published the notice of hearing for October 15, 2008.

18. On October 10, 2008, at the request of the ED, Order No. 1 continued the preliminary hearing set for October 15, 2008, due to less than 30 days published notice.

19. On December 11, 2008, notice of hearing was published for a preliminary hearing on January 21, 2009.

20. On January 21, 2009, SOAH held a preliminary hearing in Harlingen. At the preliminary hearing, the following were admitted as parties: Applicants; the ED; the Office of Public

Interest Counsel (OPIC); Robert Collier, M.D.; Mrs. Gene Yates; Mr. W.E. May; Mr. Rob Youker; and Mr. Jack Gibson. Mr. Jack Gibson later withdrew his party status.

21. On July 13, 2009, SOAH held a hearing on the merits in Harlingen. All parties except Mr. Youker and Mr. Gibson participated in the hearing.

22. On August 14, 2009, the parties filed written closing arguments.

23. On August 28, 2009, the parties filed replies to closing arguments and the record closed.

B. Whether the draft permit satisfies applicable regulatory requirements intended to protect human health, water quality, wildlife, existing uses including recreational uses, and the environment.

24. The draft permit satisfies applicable regulatory requirements intended to protect human health, water quality, wildlife, existing uses including recreational uses, and the environment.

25. To evaluate the proposed permit, the ED performed a technical review, an antidegradation review, and a dissolved oxygen review. Each of these reviews indicated that the draft permit will be protective.

26. A site assessment was not required because the Application is for an existing facility that is not expanding.

27. Applicants only seek to change the three months during which discharge is prohibited and the influent and effluent sampling frequencies for the Arroyo Colorado Water Quality Study.

28. No changes were proposed to the parameters for sampling prior to discharge of effluent, and the modified sampling frequency will provide a more accurate assessment of the facility's operation.

29. The draft permit contains effluent limits of 4 mg/L 5-day carbonaceous biochemical oxygen demand ($CBOD_5$), 30 mg/L TSS, 1 mg/L ammonia-nitrogen (NH_3-N), and 6 mg/L dissolved oxygen (DO). These limits are continued from the existing permit for both outfalls and are based on 30-day averages.

30. The draft permit requirements also include: reporting extra-label drug usage and Investigational New Animal Drug (INAD) usage; reporting structure failures and spills resulting in an unanticipated discharge of pollutants; and chronic seven-day biomonitoring requirements.

31. The existing permit contains 48-hour acute biomonitoring requirements, which detect lethality caused by effluents, while the added chronic biomonitoring also assesses sub-lethal effects (reproduction and growth) as well as lethality. These new requirements are more stringent than the existing requirements.

32. The antidegradation review preliminarily determined that no significant degradation of high quality waters is expected and that existing uses will be maintained and protected.

33. An endangered or threatened species review found that no endangered or threatened aquatic or aquatic dependent species occur in this area.

34. Segment 2201 does have TCEQ 303-d listed water quality impairments for bacteria, depressed DO, and mercury and PCB in fish tissue. However, these impaired sections are located upstream of the outfall locations for Applicants' facility. The closest area affected by bacteria impairment is approximately seven miles upstream; the closest area affected by depressed DO is about eleven miles upstream; and the closest area affected by mercury and PCBs in fish tissue is approximately sixteen miles upstream.

35. Dissolved oxygen (DO) is the amount of elemental oxygen dissolved in water, typically originating from the atmosphere or plant photosynthesis. It is a primary indicator of the general health of a water body and is essential for the survival of aquatic life.

36. Effluent limits for 5-day biochemical oxygen demand (BOD_5) or $CBOD_5$, NH_3-N, and effluent DO are recommended based on DO review modeling results.

37. The modeling was based on conservative assumptions, such as full permitted flow at full permitted effluent limits, during hot and dry weather conditions. This process is designed to be protective of the aquatic environment.

38. Based on the model results for the Application, the effluent set of 4 mg/L $CBOD_5$, 1 mg/L NH_3-N, and 6 mg/L DO, at a permitted flow of 100 MGD, is predicted to maintain the DO levels above the criterion for the drainage ditch (4.0 mg/L) and for the Arroyo Colorado Tidal (4.0 mg/L).

39. Discharges from the Applicants' facility pursuant to the draft permit are not predicted to negatively affect DO levels in the upstream impaired portions of Segment 2201.

40. Applicants' facility had an outbreak of necrotizing hepatopancreatitis (NHP) in 2006 that was treated with feed containing the antibiotic oxytetracycline (OTC).

41. NHP is not known to affect humans or species other than crustaceans.

C. Whether the draft permit adequately requires the regulated activity to preclude odors.

42. The draft permit requires the Applicants to address odors through best management practices (BMPs). These include removing pond bottom sludge during favorable wind conditions, to carry odors away from nearby residences, businesses, and public buildings.

43. The draft permit also requires removal and disposal of aquatic animal mortalities, and it prohibits the creation of nuisance conditions of flies and odors.

44. The BMPs in the draft permit are more stringent than the existing permit, and the Applicants are required to submit an updated BMP plan to the TCEQ within 90 days after the permit is issued.

45. Applicants' compliance history does not contain any NOVs for failing to properly control odor.

46. The draft permit adequately requires the Applicants to preclude odors.

D. Whether the draft permit appropriately revised the applicable water quality study requirements.

47. Other Requirement No. 11 of the existing permit requires a water quality study to evaluate the effects of the Applicants' diversion of water from the Arroyo Colorado and its discharge of effluent into the Arroyo Colorado.

48. The draft permit revises the study to reflect current influent and discharge patterns at the facility, as the current requirement mandates sampling at times when no intake of water occurs.

49. The draft permit requires that effluent be sampled twice per week during any period of discharge, which is an increase over the current requirement.

50. The proposed changes to the water quality study do not relax any effluent limitations or monitoring frequencies at the permitted outfall, and the new sampling schedule will provide a more representative assessment of the facility's operations.

51. The draft permit appropriately revised the applicable water quality study requirements to reflect actual intake and discharge activities.

E. Whether the Applicant's compliance history raises issues as to whether it can comply with a material term of the draft permit as amended, or warrants denial or alteration of the permit.

52. For the five-year period before the Application was filed, the compliance history for both the Applicants and the facility rated "Average."

53. Applicants redesigned their facility after 1995 to allow all culture water to be held on-site and treated naturally before discharge. They also changed the water management strategy to eliminate water exchange between the ponds and the Arroyo Colorado, and it now operates as a no-discharge facility throughout the culture cycle.

54. The compliance histories for Applicants and the facility did not contain any enforcement orders or a significant number of violations that would warrant additional conditions or provisions to the draft permit.

55. Applicants' request to amend the permit to hold water longer during cold weather months before discharge is designed to address the TSS issue by allowing additional time for solids settling and helping eliminate algae without additional algaecides or chemicals.

56. This amendment should improve Applicants' compliance with the TSS limits, and even with some prior self-reported TSS violations, the Applicants still have an average compliance history rating.

57. Applicant's compliance history does not raise issues as to whether it can comply with a material term of the draft permit as amended, or warrant denial or alteration of the permit.

F. Whether the impact of the discharge at the discharge point has been analyzed.

58. Laboratory results of the Applicants' effluent were screened against the calculated effluent limitations based on water quality for the protection of aquatic life and human health.

59. The predicted effect of proposed and currently permitted wastewater discharges from the Applicants' facility on DO levels were evaluated at the discharge point and in water bodies along the specified discharge routes.

60. This screening was conducted in accordance with the procedures used to implement the Texas Surface Water Quality Standards.

61. The impact of the discharge at the discharge point has been analyzed.

G. Whether the application should be denied on the basis that no discharge should be allowed.

62. The draft permit meets all statutory and regulatory requirements.

63. The ED performed a technical review and prepared the draft permit in accordance with all applicable statutes and regulations.

64. The ED performed the Tier 1 and Tier 2 antidegradation reviews and preliminarily determined that, if the permit is issued, existing water quality uses would be maintained and protected and no significant degradation of high quality waters is expected.

65. The ED modeled the proposed discharge and determined that the effluent set in the draft permit is adequate to ensure that the DO level will be maintained above the criterion established for the unnamed drainage ditch (4.0 mg/L) and for the Arroyo Colorado (4.0 mg/L).

66. The CBOD requirement in the draft permit is one of the most stringent in any permit in the State of Texas.

67. The revisions proposed in Applicants' draft permit are protective of the state's fish and wildlife resources.

68. Some other mariculture facilities use alternate methods that do not require discharge to surface waters, but those disposal methods are not required by either statutes or regulations.

69. The draft permit should not be denied on the basis that no discharge should be allowed.

H. Whether the discharge will result in a violation of 30 TAC § 307.4(b).

70. Aesthetic standards for surface water are provided in 30 TAC § 307.4(b).

71. All aesthetic parameters contained in 30 TAC § 307.4(b) should be met if the facility operates in compliance with the terms of the draft permit.

72. Applicants' compliance history does not contain any notices of violation for failing to comply with this rule.

73. Applicants' facility had discharge problems in its early years, but drastic changes have been made to the operating practices at the facility to allow for more settling of solids and to reduce the amount of discharge.

74. One of the proposed amendments – to allow more time during cold weather months for settling of solids and to reduce algae – will further enhance the quality of discharges from the facility.

75. If Applicants' facility is operated in accordance with the draft permit, discharges from the facility will not result in a violation of 30 TAC § 307.4(b).

II. CONCLUSIONS OF LAW

1. The Commission has jurisdiction over this matter pursuant to TEX. WATER CODE § 26.027.
2. SOAH has jurisdiction over matters related to the hearing in this matter, including authority to issue a Proposal for Decision with Findings of Fact and Conclusions of Law pursuant to TEX. GOV'T CODE ANN Ch. 2003.
3. Notice of the Applicants' Application was provided pursuant to 30 TEX. ADMIN. CODE § 39.601, *et seq.*, and TEX. GOV'T CODE ANN. §§ 2001.051 and 2001.052.
4. Applicants have the burden of proof by a preponderance of the evidence to show that the proposed discharge will meet all applicable standards.
5. The proceedings described in this Order were conducted in accordance with applicable law and rules of the TCEQ, specifically 30 TEX. ADMIN. CODE § 80.1 *et seq.*, and the State Office of Administrative Hearings, specifically 1 TEX. ADMIN. CODE § 155.1 *et seq.*
6. Applicants met their burden of proof to show that their discharges will meet the surface water quality standards contained in 30 TEX. ADMIN. CODE, Ch. 307.
7. Applicants met their burden of proof to show that their discharges will meet the aesthetic parameters contained in 30 TEX. ADMIN. CODE § 307.4(b).
8. In accordance with 30 TEX. ADMIN. CODE § 50.117, the Commission issues this Order and the attached permit as its single decision on the permit amendment application. Information in the agency record of this matter, which includes evidence admitted at the hearing and part of the evidentiary record, documents the Executive Director's review of the permit amendment application, including that part not subject to a contested case

hearing, and establishes that the terms of the final version of the attached permit are appropriate and satisfy all applicable federal and state requirements.

NOW, THEREFORE, BE IT ORDERED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, IN ACCORDANCE WITH THESE FINDINGS OF FACT AND CONCLUSIONS OF LAW THAT:

1. The Application of Taiwan Shrimp Village Association, Inc., and Arroyo Aquaculture Association, Inc., for renewal and amendment of TPDES Permit No. 0003596000 is granted.

2. All other motions, requests for specific Findings of Fact or Conclusions of Law, and other requests for general and specific relief, if not expressly granted herein, are hereby denied for want of merit.

3. The effective date of this Order is the date the Order is final, as provided by 30 TEX. ADMIN. CODE § 80.273 and by the Texas Administrative Procedure Act, TEX. GOV'T CODE ANN. § 2001.144.

4. The Commission adopts the Executive Director's Response to Public Comment in accordance with 30 TEX. ADMIN. CODE § 50.117. Also, in accordance with Section 50.117, the Commission issues this Order and the attached permit as its single decision on the permit amendment application. Information in the agency record of this matter, which includes evidence admitted at the hearing and part of the evidentiary record, documents the Executive Director's review of the permit amendment application, including that part not subject to a contested case hearing, and establishes that the terms of the attached permit are appropriate and satisfy all applicable federal and state requirements.

5. The Chief Clerk of the Commission shall forward a copy of this Order to all parties.

6. If any provision, sentence, clause, or phrase of this Order is for any reason held to be invalid, the invalidity of any portion shall not affect the validity of the remaining portions of this Order.

Issued:

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Bryan W. Shaw, Ph.D., Chairman
For the Commission

TPDES PERMIT NO. WQ0003596000
[For TCEQ office use only - EPA I.D. No. TX0103811]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P. O. Box 13087
Austin, Texas 78711-3087

This permit supersedes and replaces TPDES Permit No. WQ0003596000, issued on December 2, 1999.

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

Taiwan Shrimp Village Association Inc. and Arroyo Aquaculture Association, Inc.

whose mailing address is

36386 Marshall Hutts Road
Rio Hondo, Texas 78583

is authorized to treat and discharge wastes from an aquaculture facility which produces shrimp (SIC 0273)

located at on the south side of Farm-to-Market Road 2925 and approximately 1.4 miles east of the intersection of Farm-to-Market Road 2925 and Farm-to-Market 1897 in the City of Arroyo City, Cameron County, Texas

via Outfall 001 directly to the Arroyo Colorado Tidal; and via Outfall 002 to a drainage ditch; thence to the Arroyo Colorado Tidal in Segment No. 2201 of the Nueces-Rio Grande Coastal Basin

only according to effluent limitations, monitoring requirements and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight on June 1, 2010.

ISSUED DATE:

For the Commission

A-4

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge process wastewater (aquaculture pond effluent) subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 100 million gallons per day (MGD). The daily maximum flow shall not exceed 180 MGD (*1).

Effluent Characteristics	Discharge Limitations					Minimum Self-Monitoring Requirements	
	Daily Average		Daily Maximum		Single Grab	Report Daily Average and Daily Maximum	
	lbs/day	(mg/l)	lbs/day	(mg/l)	mg/l	Measurement Frequency	Sample Type
Flow (MGD)	(Report)		(Report)		N/A	1/day (*2)	Estimate
Carbonaceous Biochemical Oxygen Demand (5-day)	1334	(4.0)	2002	(6.0)	8.0	2/week (*2)	Composite
Ammonia Nitrogen	333	(1.0)	667	(2.0)	3.0	2/week (*2)	Composite
Total Suspended Solids	N/A	(30)	15012	(45)	N/A	2/week (*2)	Composite
Inorganic Suspended Solids	N/A	(Report)	N/A	(Report)	N/A	1/week (*2)	Composite

(*1) See Other Requirements, Item No. 5.
(*2) When discharge occurs.

2. The effluent shall have a minimum dissolved oxygen concentration of 6.0 mg/l and shall be monitored 2/week, by grab sample.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/day, by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location: At Outfall 001, in the discharge canal which runs along the eastern border of the facility and prior to confluence with the "county ditch" at the northern border of the facility.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 002

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge process wastewater (aquaculture pond effluent) subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 100 million gallons per day (MGD). The daily maximum flow shall not exceed 180 MGD (*1).

Effluent Characteristics	Discharge Limitations					Minimum Self-Monitoring Requirements	
	Daily Average		Daily Maximum		Single Grab	Report Daily Average and Daily Maximum	
	lbs/day	(mg/l)	lbs/day	(mg/l)	mg/l	Measurement Frequency	Sample Type
Flow (MGD)	(Report)		(Report)		N/A	1/day (*2)	Estimate
Carbonaceous Biochemical Oxygen Demand (5-day)	1334	(4.0)	2002	(6.0)	8.0	2/week (*2)	Composite
Ammonia Nitrogen	333	(1.0)	667	(2.0)	3.0	2/week (*2)	Composite
Total Suspended Solids	N/A	(30)	15012	(45)	N/A	2/week (*2)	Composite
Inorganic Suspended Solids	N/A	(Report)	N/A	(Report)	N/A	1/week (*2)	Composite

(*1) See Other Requirements, Item No. 5.
(*2) When discharge occurs.

2. The effluent shall have a minimum dissolved oxygen concentration of 6.0 mg/l and shall be monitored 2/week by grab sample.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/day by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location: At Outfall 002, in the discharge canal which runs northward through the center of the facility and prior to confluence with the "county ditch" at the northern border of the facility.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC §§ 305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code §§ 5.103 and 5.105, and the Texas Health and Safety Code §§ 361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in Section 26.001 of the Texas Water Code and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

   a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder and limited to major domestic wastewater discharge facilities with a 1 million gallons per day or greater permitted flow.

   b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

   c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.

   d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

   e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.

   f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calender month.

2. Concentration Measurements

   a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

      i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

      ii. For all other wastewater treatment plants - When four samples are not available in a calender month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

   b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

   c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calender month.

   d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day.

      The "daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

e. Fecal coliform bacteria concentration - the number of colonies of fecal coliform bacteria per 100 milliliters effluent. The daily average fecal coliform bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calender month, where n equals the number of measurements made; or, computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calender month. For any measurement of fecal coliform bacteria equaling zero, a substituted value of one shall be made for input into either computation method. The 7-day average for fecal coliform bacteria is the geometric mean of the values for all effluent samples collected during a calender week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calender month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD x Concentration, mg/l x 8.34).

g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calender month.

3. Sample Type

a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (b).

b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids which have not been classified as hazardous waste separated from wastewater by unit processes .

6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on an approved self-report form, that is signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act, the Texas Water Code, Chapters 26, 27, and 28, and Texas Health and Safety Code, Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§319.11 - 319.12. Measurements, tests and calculations shall be accurately accomplished in a representative manner.

3. Records of Results

a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR § 264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

c. Records of monitoring activities shall include the following:

i. date, time and place of sample or measurement;
ii. identity of individual who collected the sample or made the measurement.
iii. date and time of analysis;
iv. identity of the individual and laboratory who performed the analysis;
v. the technique or method of analysis; and
vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

a. In accordance with 30 TAC § 305.125(9) any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

i. Unauthorized discharges as defined in Permit Condition 2(g).
ii. Any unanticipated bypass which exceeds any effluent limitation in the permit.

iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

c. In addition to the above, any effluent violation which deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

8. In accordance with the procedures described in 30 TAC §§ 35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. One hundred micrograms per liter (100 µg/L);
ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or
iv. The level established by the TCEQ.

b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. Five hundred micrograms per liter (500 µg/L);
ii. One milligram per liter (1 mg/L) for antimony;
iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
iv. The level established by the TCEQ.

10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).

11. All Publicly Owned Treatment Works (POTWs) must provide adequate notice to the Executive Director of the following:

a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the CWA if it were directly discharging those pollutants;

b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and

c. For the purpose of this paragraph, adequate notice shall include information on:

i. The quality and quantity of effluent introduced into the POTW; and
ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

   a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

   b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

      i. Violation of any terms or conditions of this permit;
      ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
      iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

   c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

   a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

   b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

   c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

   d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation which has a reasonable likelihood of adversely affecting human health or the environment.

   e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

   f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§ 305.62 and 305.66 and Texas Water Code Section 7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

   g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.

   h. In accordance with 30 TAC § 305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility which does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.

   i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal Clean Water Act, §§ 301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§ 402 (a)(3) or 402 (b)(8).

3. Inspections and Entry

   a. Inspection and entry shall be allowed as prescribed in the Texas Water Code Chapters 26, 27, and 28, and Texas Health and Safety Code Chapter 361.

   b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in Texas Water Code Section 7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment and/or Renewal

   a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC § 305.534 (relating to New Sources and New Dischargers); or

      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;

      iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

   b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

   c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

   d. Prior to accepting or generating wastes which are not described in the permit application or which would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.

   e. In accordance with the Texas Water Code § 26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

   f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the Clean Water Act for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee

shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

b. A permit may be transferred only according to the provisions of 30 TAC § 305.64 (relating to Transfer of Permits) and 30 TAC § 50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

This permit does not authorize any activity of hazardous waste storage, processing, or disposal which requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to Chapter 11 of the Texas Water Code.

8. Property Rights

A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy.

a. Each permittee shall notify the executive director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:

i. the permittee;
ii. an entity (as that term is defined in 11 USC, §101(15)) controlling the permittee or listing the permit or permittee as property of the estate; or
iii. an affiliate (as that term is defined in 11 USC, §101(2)) of the permittee.

b. This notification must indicate:

i. the name of the permittee;
ii. the permit number(s);
iii. the bankruptcy court in which the petition for bankruptcy was filed; and
iv. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§ 319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

   a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

   b. The permittee shall submit a closure plan for review and approval to the Land Application Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under Texas Water Code § 7.302(b)(6).

7. Documentation

   For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC § 1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities which generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75 percent of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90 percent of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility which reaches 75 percent of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgement of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 149) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

   b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission, and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85 percent, unless otherwise authorized by this permit.

11. Facilities which generate industrial solid waste as defined in 30 TAC § 335.1 shall comply with these provisions:

a. Any solid waste, as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.8(b)(1), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC § 335.5.

e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:

i. Volume of waste and date(s) generated from treatment process;
ii. Volume of waste disposed of on-site or shipped off-site;
iii. Date(s) of disposal;
iv. Identity of hauler or transporter;
v. Location of disposal site; and
vi. Method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with Chapter 361 of the Texas Health and Safety Code.

OTHER REQUIREMENTS

1. The Executive Director has reviewed this action for consistency with the goals and policies of the Texas Coastal Management Program (CMP) in accordance with the regulations of the Coastal Coordination Council (CCC) and has determined that the action is consistent with the applicable CMP goals and policies.

2. Violations of daily maximum limitations for the following pollutants shall be reported orally to TCEQ Region 15, within 24 hours from the time the permittee becomes aware of the violation followed by a written report within five-days: None.

3. The permittee shall provide readily accessible sampling points for determining both the quality of the water entering the facility and the quality of water being discharged.

4. The term "facility" shall be defined as all ponds, canals, ditches, properties and operations regulated within TPDES Permit No. WQ0003596000.

5. The combined daily average flow of effluent from the facility shall not exceed 100 million gallons per day (MGD). The total volume discharged from the facility during any 24-hour period, or daily maximum flow, shall not exceed 180 million gallons. For the purposes of this permit, the definitions of the terms "daily average flow" and "daily maximum flow" shall differ from the definition of these terms found in DEFINITIONS AND STANDARD PERMIT CONDITIONS (page 3 of the permit) in the following manner:

   Daily Average Flow - Flows from each permitted outfall shall be individually measured and then totaled (summed) for each 24-hour period to determine the daily discharge. All flow measurements utilized to calculate the 24-hour daily average dissolved oxygen concentration shall be utilized to estimate flow. The daily average flow from the facility shall be the arithmetic average of all determinations of the daily discharge within a period of one calendar month. The daily average flow shall be reported as the flow from Outfall 001 for reporting purposes. Records of flow measurements from each permitted outfall (utilized to calculate the daily average flow) shall be maintained onsite for a minimum of three years and be available for review by TCEQ personnel upon request.

   Daily Maximum Flow - This shall be the highest daily discharge (as defined above) in a calendar month. The daily maximum flow shall be reported as the flow from Outfall 001 for reporting purposes.

6. Chronic toxic criteria apply at the edge of the mixing zone. The mixing zone at Outfall 001 is defined as 300 feet downstream and 100 feet upstream from the point of discharge. The mixing zone at Outfall 002 is defined as the volume within a radius of 5.0 feet at the point of discharge.

7. There shall be no discharge of domestic sewage. All sewage shall be routed to a septic tank/drainfield system.

8. Issuance of this permit does not convey any water rights to the permittee.

9. The permittee shall notify the TCEQ Region 15 office and the TCEQ Water Quality Division's Industrial Team (MC-148) of any treatment facilities constructed on sites not within the common areas controlled by the permittee.

AQUACULTURE REQUIREMENTS

1. Aquaculture Definitions:

a. Approved dosage - means the dose of a drug that has been found to be safe and effective under the conditions of a new animal drug application.

b. Aquatic animal containment system - means a culture or rearing unit such as a raceway, pond, tank, net or other structure used to contain, hold or produce aquatic animals. The containment system includes structures designed to hold sediments and other materials that are part of a wastewater treatment system.

c. Concentrated aquatic animal production facility - is defined at 40 CFR 122.24 and Appendix C of 40 CFR Part 122.

d. Drug - means any substance defined as a drug in section 201(g)(1) of the Federal Food, Drug and Cosmetic Act (21 U.S.C. 321).

e. Extralabel drug use - means a drug approved under the Federal Food, Drug and Cosmetic Act that is not used in accordance with the approved label directions, see 21 CFR part 530.

f. Investigational new animal drug (INAD) - means a drug for which there is a valid exemption in effect under section 512(j) of the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. 360b(j), to conduct experiments.

g. New animal drug application is defined in 512(b)(1) of the Federal Food, Drug, and Cosmetic Act (21 U.S.C 360b(b)(1)).

h. Pesticide - means any substance defined as a "pesticide" in section 2(u) of the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136(u)).

i. Recirculating system - means a system that filters and reuses water in which the aquatic animals are produced prior to discharge. Recirculating systems typically use tanks, biological or mechanical filtration, and mechanical support equipment to maintain high quality water to produce aquatic animals.

2. There shall be no discharge of process wastewater for the period of March 1 through May 31 of each year. Discharges shall be limited to storm water runoff during this period. Effluent reporting requirements contained in the permit are suspended during this period for all parameters except flow. Flow measurement frequency shall be 1/day, when discharging, and the sample type shall be an estimate during this defined period.

There shall be no diversion (intake) of water from the Arroyo Colorado during the month of December of each year.

3. There shall be no culture of eels at this facility. The permittee shall give notice to the TCEQ's Wastewater Permitting Section (MC-148), prior to a change in, or addition to, the species of organism cultivated at this facility. Notification shall include sufficient information regarding this change in process such that the TCEQ may determine if amendment of the permit is required. The permittee shall also obtain authorization, if applicable, from the Texas Parks & Wildlife Department and any other regulatory agency which governs this activity.

4. The permittee shall provide an updated list of pond owners and a separate updated list of association members, due by September 1st of each year, to the TCEQ Water Quality Division's Industrial Team (MC-148).

5. Sampling for the self-reporting requirements on Pages 2 and 2a shall be apportioned among harvest and non-harvest days in the same proportion as the occurrence of harvest and non-harvest days in a particular month. Specifically, during any month in which ponds discharging to any outfall are harvested, self-monitoring conducted at that outfall shall be conducted on harvest days according to the following table:

Number of harvest days during any 30-day period	Number of self-monitoring samples collected on harvest days during any 30-day period
0 to 2	0
3 to 4	1
5 to 7	2
8 to 9	3
10 to 11	4
12 to 14	5
15 to 17	6
18 to 19	7
20 to 22	8
23 to 24	9
25 to 27	10
28 to 29	11

6. The permittee shall continue the water quality study to evaluate the effects of this operation on the diversion and use of water from the Arroyo Colorado. Sampling shall be conducted upon influent and upon the effluent at Outfalls 001 and 002 for nitrate-nitrogen, nitrite-nitrogen, total phosphorus, volatile suspended solids, chlorophyll-a, salinity, carbonaceous biochemical oxygen demand (5-day), ammonia nitrogen, and total suspended solids. The influent shall be sampled once per month during the months of April through October. The effluent shall be sampled twice per week during periods of discharge. A summary report on the results of each year's sampling shall be submitted to the TCEQ Water Quality Division's Industrial Team (MC-148), and to the Texas Parks and Wildlife Department, Resource Protection Division, and to EPA's Region 6 no later than December 31st of each year.

   Alternatively, the permittee has the option to participate in an industry-wide effluent characterization study by coordinating with other shrimp farming industries. The permittee shall submit an equivalent effluent characterization study, with other industry participants, to the TCEQ's Industrial Permits Team for review and approval no later than six (6) months after the harvest season (April 28th of each year).

7. The permittee shall operate so as to avoid nuisance conditions of flies and odors.

8. Drugs:

   a. Approved Drugs:

      Drugs, medications and chemicals approved by the United States Environmental Protection Agency (EPA) or the United States Food and Drug Administration (FDA) for aquaculture use may be used in water which will be discharged without notification. Treatment shall be used only as necessary, and only as directed on the product label. The water shall be diluted, held for a specific time, or neutralized prior to discharge as directed on the product label or as necessary to comply with

Chapter 307 of this title (relating to Texas Surface Water Quality Standards) or as needed to be below the concentration level used for a long-term static treatment, whichever is the lowest concentration.

b. Investigational New Animal Drugs (INAD) or any extralabel drug use:

The permittee shall notify the TCEQ Wastewater Permitting Section (MC 148) of the use of any investigational new animal drug (INAD) or any extralabel drug use where such a use may lead to a discharge of the drug to waters of the state. Reporting is not required for an INAD or extralabel drug use that has been previously approved by FDA for a different species or disease if the INAD or extralabel use is at or below the approved dosage and involves similar conditions of use.

1) The permittee must provide a written report to the TCEQ Wastewater Permitting Section (MC 148) of an INAD's impending use within seven (7) days of agreeing or signing up to participate in an INAD study. The written report must identify the INAD to be used, method of use, the dosage, and the disease or condition the INAD is intended to treat.

2) For INADs and extralabel drug uses, the permittee shall provide an oral report to the TCEQ Wastewater Permitting Section (MC 148) as soon as possible, preferably in advance of use, but no later than seven (7) days after initiating use of that drug. The oral report must identify the drugs used, method of application, and the reason for using that drug.

3) For INADs and extralabel drug uses, the permittee must provide a written report to the TCEQ Wastewater Permitting Section (MC 148) within 30 days after initiating use of that drug. The written report must identify the drug used and include: the reason for treatment, date(s) and time(s) of the addition (including duration), method of application; and the amount added.

9. Reportable Failure:

a. The permittee must provide a written report within seven (7) days of discovery of the failure or reportable damage resulting in a material discharge of pollutants, documenting the cause, the estimated time elapsed until the failure or damage was repaired, an estimate of the material released as a result of the failure or damage, and steps being taken to prevent a reoccurrence. The written report shall be submitted to the TCEQ Wastewater Permitting Section (MC 148).

b. For the purpose of this permit, a reportable damage and/or material discharge of pollutants shall mean:

1) Any damage or failure which results in an unauthorized discharge into or adjacent to water in the state at any location not permitted as an outfall.

2) Any damage or failure which results in the release of any cultured species to waters in the state.

Additionally, the permittee shall comply with all reporting requirements contained within the Noncompliance Notification provisions on Page 5 of the Standard Permit Conditions section of this permit.

c. The permittee shall provide an oral report to the TCEQ Region 15 office within 24 hours of discovery of any reportable failure or damage that results in a material discharge of pollutants, describing the cause of the failure or damage in the containment system and identifying materials that have been released to the environment as a result of this failure.

10. Spill:

a. In the event a spill of drugs, pesticides or feed occurs that results in a discharge to waters of the state, the permittee must provide an oral report of the spill to the TCEQ Region 15 office within 24 hours of its occurrence and a written report within seven (7) days to the TCEQ Wastewater Permitting Section (MC-148). The report shall include the identity and quantity of the material spilled.

11. In the event that the facility appears in imminent danger of overflow, flooding, or similar conditions that could result in the release of exotic species that are regulated by the Texas Parks & Wildlife Department or that would result in the violation of a quarantine condition imposed by TCEQ or the Texas Parks & Wildlife Department, the permittee may discharge effluent in excess of the permitted flow rates, but only to the extent necessary to comply with an Emergency Plan that is approved by the Texas Parks & Wildlife Department. Effluent limitations, discharge flow limitations, and other effluent monitoring requirements of this permit shall be set aside during this activity. The permittee should notify the TCEQ Region 15 office at least 48 hours prior to initiating any action under an Emergency Plan in response to an emergency event, such as landfall of a hurricane. In any case, the permittee shall notify the TCEQ Region 15 office as soon as is practicable following initiation of the Emergency Plan. The permittee shall control discharges relating to initiation of the Emergency Plan in the most environmentally sound manner that is practicable. Within 30 days following initiation of the Emergency Plan, the permittee shall submit a written report to the TCEQ Region 15 office that delineates the cause for initiation of the plan, actions taken to avoid or negate impacts of the discharge to the receiving stream, volumes of wastewater discharged and the dates that discharges occurred, and a general summary of receiving stream conditions at the time of the discharge. It shall remain the burden of the permittee to show cause that the discharges were necessary and that conditions required initiation of the Emergency Plan.

12. In the event of observable mortalities of aquatic exotic species or other manifestation of disease occurring at the facility, the permittee shall immediately cease any discharge, shall immediately report these findings to the Texas Parks & Wildlife Department (TPWD), the TCEQ regional office and to the TCEQ's Water Quality Division, Industrial Permits Team (MC-148), and shall not resume discharging until agreed to in writing by TPWD. If permittee is able to demonstrate to the satisfaction of TPWD that the mortalities are caused by some other factor other than disease, the permittee may resume discharges upon receiving a written acknowledgment from TPWD. If permittee is able to demonstrate to the satisfaction of TPWD that the mortalities are attributable to a known disease, TPWD will notify the permittee as to what control and/or mitigation measures it shall undertake and whether it will be allowed to resume discharges. In this regard, control and/or mitigation measures required for permittee will be the same as those recommended for other farms under similar circumstances. If the cause of mortalities is undetermined, or determined to be an unfamiliar disease, the cessation of discharge shall continue until TPWD is able to obtain the information necessary to determine an appropriate response. In such cases, permittee shall make every reasonable effort to ensure that there is no transport of cultured aquatic species or parts thereof out of the infected pond by any means. If TPWD or another agency with authority to regulate diseases of aquatic exotic species from the standpoint of preventing impacts to wild native species should adopt laws, rules or a written disease control policy which conflicts with these requirements, such laws, rules or written policy shall supersede these requirements.

BEST MANAGEMENT PRACTICES

1. IMPLEMENTATION

The permittee shall revise the existing Best Management Practices (BMP) plan to achieve the objectives and the specific requirements listed below. A copy of the updated plan shall be submitted to the TCEQ Region 15 Office and the TCEQ Wastewater Permitting Section, Industrial Permits Team MC-148, P.O. Box 13087, Austin, Texas 78711-3087 within ninety (90) days of permit issuance. The TCEQ shall have the right to disapprove the updated BMP plan within sixty (60) days of receipt, then the plan shall deemed approved. The updated plan shall be implemented as soon as possible but no later than six (6) months from the date of approval.

2. PURPOSE

Through implementation of the BMP Plan the permittee shall prevent or minimize the generation of and the potential for release of pollutants from the facility to waters of the state through normal operations and ancillary activities.

3. OBJECTIVES

The permittee shall develop and amend the BMP Plan with the following objectives for the control of pollutants.

a. The number and quality of pollutants and the toxicity of effluent generated, discharged or potentially discharged at the facility shall be minimized by the permittee to the extent feasible by managing each influent waste stream in the most appropriate manner.

b. Under the BMP Plan, and any Standard Operating procedures (SOPs) included in the Plan, the permittee shall ensure proper operation and maintenance of the treatment facility.

4. REQUIREMENTS

The BMP Plan shall be consistent with the objectives mentioned above and the general guidance contained in the publication entitled "Best Management Practices Guidance Document" (U.S. EPA 1981) or "Guidance Manual for Developing Best Management Practices (BMPs)" (U.S. EPA October 1993), or any subsequent revisions to the guidance document where applicable.

a. Name and location of the facility.

b. Statement of BMP policy.

c. Specific management practice and standard operating procedures to achieve objective including, but not limited to the following:

1) Modification of equipment, facilities, technology, and procedures.
2) Improvement in management or general operational phases of the facility.
3) Inspections and records.
4) Reporting of BMPs incidents.

d. Solids Control:

1) Employ efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth in order to minimize potential discharges of uneaten feed and waste products to waters of the state. Feed management practices shall include, but are not limited to, monitoring of feeding trays/mechanical feeders to measure and record food consumption rates.

2) In order to minimize the discharge of accumulated solids from settling ponds and basins and production systems, identify and implement procedures for routine cleaning of rearing units and off-line settling basins, and procedures to minimize any discharge of accumulated solids during the inventorying, grading and harvesting aquatic animals in the production system.

3) All discharges shall be controlled such that flow rates minimize any increase in turbidity of the receiving stream due to erosion or suspension of sediments. Sludge and pond bottom sediment must be confined and not pumped into public areas or canals. Dewatering of ponds shall be accomplished by discharge of the uppermost portion of the water column when possible to avoid discharge of disturbed bottom sediments.

4) Remove and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters in the state, except in cases where the permitting authority authorizes such discharge in order to benefit the aquatic environment.

5) Sweeping or intentional flushing of accumulated solids from raceways and fabricated tanks with discharge to waters in the state is prohibited.

e. Materials Storage:

1) Ensure proper storage of drugs, pesticides, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides or feed to waters of the U.S.

2) Implement procedures for properly containing, cleaning, and disposing of any spilled material.

f. Structural Maintenance:

1) Inspect the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.

2) Conduct regular maintenance of the production system and the wastewater treatment system in order to ensure that they are properly functioning.

g. Record Keeping.

1) In order to calculate representative feed conversion ratios, maintain records for aquatic animal rearing units documenting the feed amounts and estimates of the numbers and weight of aquatic animals.

2) Keep records documenting the frequency of cleaning, inspections, maintenance and repairs.

h. Training

1) In order to ensure the proper clean-up and disposal of spilled material adequately train all relevant facility personnel in spill prevention and how to respond in the event of a spill.

2) Train staff on the proper operation and cleaning of production and wastewater treatment systems including training in feeding procedures and proper use of equipment.

i. Additional Requirements:

1) Aerate and circulate pond water. The reuse of pond wastewater should occur to the maximum extent possible. Pond wastewater shall be recirculated or reused wherever appropriate and cost effective

2) Earthen levees and dikes shall be vegetated when possible or stabilized in a manner to control erosion. Vegetation, when utilized, shall be maintained at all times through mowing, watering, or other suitable maintenance practices.

3) Removal of pond bottom sludges (or other solids) from production ponds or wastewater management ponds shall be conducted during favorable wind conditions that carry odors away from nearby receptors such as residences, businesses, and public buildings. At no time shall emissions from any activity create a nuisance.

5. DOCUMENTATION

The permittee shall maintain a copy of the BMP Plan at the facility and shall make the plan available to authorized personnel of the TCEQ upon request.

6. MODIFICATION

The permittee shall amend a copy of the BMP Plan whenever there is a change in the facility or in the operation of the facility which increased the generation of pollutants or their release or potential release to the receiving waters. The permittee shall also amend the plan, as appropriate, when plant operations covered by the BMP Plan change. Any such changes to the BMP Plan shall be consistent with the objective and specific requirements listed above. All revisions to the BMP plan shall be reported in writing to TCEQ, Wastewater Permitting Section, Industrial Permits Team MC-148, P.O. Box 13087, Austin, Texas 78711-3087.

7. MODIFICATION FOR INEFFECTIVENESS

At any time, if the BMP Plan prove to be ineffective in achieving the general objective of preventing and minimizing the generation of pollutant and their release and potential release to the receiving waters and/or meeting the specific requirements above, the permit and/or the BMP Plan shall be subject to modifications to incorporate revised BMP requirements.

2) Keep records documenting the frequency of cleaning, inspections, maintenance and repairs.

h. Training

1) In order to ensure the proper clean-up and disposal of spilled material adequately train all relevant facility personnel in spill prevention and how to respond in the event of a spill.

2) Train staff on the proper operation and cleaning of production and wastewater treatment systems including training in feeding procedures and proper use of equipment.

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At any time, if the BMP Plan prove to be ineffective in achieving the general objective of preventing and minimizing the generation of pollutant and their release and potential release to the receiving waters and/or meeting the specific requirements above, the permit and/or the BMP Plan shall be subject to modifications to incorporate revised BMP requirements.

CHRONIC BIOMONITORING REQUIREMENTS: MARINE

The provisions of this Section apply individually and separately to Outfalls 001 and 002 for whole effluent toxicity testing (biomonitoring).

Scope, Frequency and Methodology

a. The permittee shall test the effluent for toxicity in accordance with the provisions below. Such testing will determine if an appropriately dilute effluent sample adversely affects the survival, reproduction, or growth of the test organisms.

b. The permittee shall conduct all toxicity tests utilizing the test organisms, procedures, and quality assurance requirements specified below and in accordance with "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition" (EPA-821-R-02-014), or the most recent update thereof:

1) Chronic static renewal 7-day survival and growth test using the mysid shrimp *(Mysidopsis bahia)* (Method 1007,0 or the most recent update thereof). A minimum of eight replicates with five organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per harvest when discharge occurs.

2) Chronic static renewal 7-day larval survival and growth test using the inland silverside (*Menidia beryllina*) (Method 1006.0 or the most recent update thereof). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per harvest when discharge occurs.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is herein defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit. All test results, valid or invalid, must be submitted as described below.

c. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These additional effluent concentrations are 10%, 14%, 18%, 24%, and 32% effluent for Outfall 001. These additional effluent concentrations are 32%, 42%, 56%, 75%, and 100% effluent for Outfall 002. The critical dilution for Outfall 001, defined as 24% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions. The critical dilution for Outfall 002, defined as 100% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions.

d. This permit may be amended to require a Whole Effluent Toxicity (WET) limit, Chemical-Specific (CS) limits, a Best Management Practice (BMP), additional toxicity testing, and/or other appropriate actions to address toxicity. The permittee may be required to conduct additional biomonitoring tests and/or a Toxicity Reduction Evaluation (TRE) if biomonitoring data indicate multiple numbers of unconfirmed toxicity events.

2. Required Toxicity Testing Conditions

a. Test Acceptance - The permittee shall repeat any toxicity test, including the control and all effluent dilutions, which fails to meet any of the following criteria:

1) a control mean survival of 80% or greater;

2) a control mean dry weight of surviving mysid shrimp of 0.20 mg or greater;

3) a control mean dry weight for surviving unpreserved inland silverside of 0.50 mg or greater and 0.43 mg or greater for surviving preserved inland silverside.

4) a control Coefficient of Variation percent (CV%) between replicates of 40 or less in the in the growth and survival tests.

5) a critical dilution CV% of 40 or less in the growth and survival endpoints for either growth and survival test. However, if statistically significant lethal or nonlethal effects are exhibited at the critical dilution, a CV% greater than 40 shall not invalidate the test.

6) a Percent Minimum Significant Difference of 37 or less for mysid shrimp growth;

7) a Percent Minimum Significant Difference of 28 or less for inland silverside growth.

b. Statistical Interpretation

1) For the mysid shrimp and the inland silverside larval survival and growth tests, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be in accordance with the methods described in the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition" (EPA-821-R-02-014), or the most recent update thereof.

2) The permittee is responsible for reviewing test concentration-response relationships to ensure that calculated test results are interpreted and reported correctly. The EPA manual, "Method Guidance and Recommendation for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)" (EPA 821-B-00-004) provides guidance on determining the validity of test results.

3) If significant lethality is demonstrated (that is, there is a statistically significant difference in survival at the critical dilution when compared to the control), the conditions of test acceptability are met, and the survival of the test organisms are equal to or greater than 80% in the critical dilution and all dilutions below that, then the permittee shall report a survival No Observed Effect Concentration (NOEC) of not less than the critical dilution for the reporting requirements.

4) The NOEC is defined as the greatest effluent dilution at which no significant effect is demonstrated. The Lowest Observed Effect Concentration (LOEC) is defined as the lowest effluent dilution at which a significant effect is demonstrated. A significant effect is herein defined as a statistically significant difference at the 95% confidence level between the survival, reproduction, or growth of the test organism(s) in a specified effluent dilution compared to the survival, reproduction, or growth of the test organism(s) in the control (0% effluent).

5) The use of NOECs and LOECs assumes either a monotonic (continuous) concentration-response relationship or a threshold model of the concentration-response relationship. For any test result that demonstrates a non-monotonic (non-continuous) response, the NOEC should be determined based on the guidance manual referenced in Item 2 above and a full report will be submitted to the Water Quality Standards Team

6) Pursuant to the responsibility assigned to the permittee in Part 2.b.2), test results that demonstrate a non-monotonic (non-continuous) concentration-response relationship may be submitted, prior to the due date, for technical review. The above-referenced guidance manual will be used when making a determination of test acceptability

7) The Water Quality Standards Team will review test results (i.e., Table 1 and Table 2 forms) for consistency with established TCEQ rules, procedures, and permit requirements.

c. Dilution Water

1) Dilution water used in the toxicity tests shall be the receiving water collected as close as possible to the discharge point, but unaffected by the discharge.

2) Where the receiving water proves unsatisfactory as a result of pre-existing instream toxicity (i.e. fails to fulfill the test acceptance criteria of item 2.a.), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

a) a synthetic lab water control was performed (in addition to the receiving water control) which fulfilled the test acceptance requirements of item 2.a;

b) the test indicating receiving water toxicity was carried out to completion (i.e., 7 days);

c) the permittee submitted all test results indicating receiving water toxicity with the reports and information required in Part 3.

Upon approval, the permittee may substitute other appropriate dilution water with chemical and physical characteristics similar to that of the receiving water.

d. Samples and Composites

1) The permittee shall collect a minimum of three flow-weighted 24-hour composite samples from Outfall 001 and 002 individually and separately. The second and third 24-hour composite samples will be used for the renewal of the dilution concentrations for each toxicity test. A 24-hour composite sample consists of a minimum of 12 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportionally to flow, or a sample continuously collected proportionally to flow over a 24-hour operating day.

2) The permittee shall collect the 24-hour composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the first 24-hour composite sample. The holding time for any subsequent 24-hour composite sample shall not exceed 72 hours. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4) If flow from the outfall being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions, and the sample holding time, are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume sufficient to complete the required toxicity tests with daily renewal of the effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Part 3 of this Section.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of this Section shall be submitted to the attention of the Water Quality Standards Team (MC 150) of the Water Quality Division. All DMRs, including DMRs with biomonitoring data, should be sent to the Enforcement Division (MC 224).

a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the Report Preparation Section of "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition" (EPA-821-R-02-014), or the most recent update thereof, for every valid and invalid toxicity test initiated whether carried to completion or not. All full reports shall be retained for 3 years at the plant site and shall be available for inspection by TCEQ personnel.

b. A full report must be submitted with the first valid biomonitoring test results for each test species and with the first test results any time the permittee subsequently employs a different test laboratory. Full reports need not be submitted for subsequent testing unless specifically requested. The permittee shall routinely report the results of each biomonitoring test on the Table 1 forms provided with this permit. All Table 1 reports must include the information specified in the Table 1 form attached to this permit.

1) Annual biomonitoring test results are due on or before January 20th for biomonitoring conducted during the previous 12 month period.

2) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6 month period.

3) Quarterly biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th, for biomonitoring conducted during the previous calendar quarter.

4) Monthly biomonitoring test results are due on or before the 20th day of the month following sampling.

c. Enter the following codes on the DMR for the appropriate parameters for valid tests only:

1) For the mysid shrimp, Parameter TLP3E, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

2) For the mysid shrimp, Parameter TOP3E, report the NOEC for survival.

3) For the mysid shrimp, Parameter TXP3E, report the LOEC for survival.

4) For the mysid shrimp, Parameter TWP3E, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."

5) For the mysid shrimp, Parameter TPP3E, report the NOEC for growth.

6) For the mysid shrimp, Parameter TYP3E, report the LOEC for growth.

7) For the inland silverside, Parameter TLP6B, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

8) For the inland silverside, Parameter TOP6B, report the NOEC for survival.

9) For the inland silverside, Parameter TXP6B, report the LOEC for survival.

10) For the inland silverside, Parameter TWP6B, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."

11) For the inland silverside, Parameter TPP6B, report the NOEC for growth.

12) For the inland silverside, Parameter TYP6B, report the LOEC for growth

d. Enter the following codes on the DMR for retests only:

1) For retest number 1, Parameter 22415, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

2) For retest number 2, Parameter 22416, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

4. Persistent Toxicity

The requirements of this Part apply only when a test demonstrates a significant effect at the critical dilution. A significant effect is defined as a statistically significant difference, at the 95% confidence level, between a specified endpoint (survival, growth, or reproduction) of the test organism in a specified effluent dilution when compared to the specified endpoint of the test organism in the control. Significant lethality is defined as a statistically significant difference in survival at the critical dilution when compared to the survival of the test organism in the control. Significant sublethality is defined as a statistically significant difference in growth/reproduction at the critical dilution when compared to the growth/reproduction of the test organism in the control.

a. The permittee shall conduct a total of 2 additional tests (retests) for any species that demonstrates a significant effect (lethal or sublethal) at the critical dilution. The two retests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two retests in lieu of routine toxicity testing. All reports shall be submitted within 20 days of test completion. Test completion is defined as the last day of the test. The retests shall also be reported on the DMRs as specified in Part 3.d.

b. If the retests are performed due to a demonstration of significant lethality, and one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5. The provisions of item 4.a. are suspended upon completion of the two retests and submittal of the TRE Action Plan and Schedule defined in Part 5.

If neither test demonstrates significant lethality and the permittee is testing under the reduced testing frequency provision of Part 1.e., the permittee shall return to a quarterly testing frequency for that species.

c. If the two retests are performed due to a demonstration of significant sublethality, and one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall again perform two retests as stipulated in item 4.a.

d. If the two retests are performed due to a demonstration of significant sublethality, and both retests pass, the permittee shall continue testing at the quarterly frequency until such time that the permittee can invoke the reduced testing frequency provision specified in Part 1.e.

e. Regardless of whether retesting for lethal or sublethal effects, or a combination of the two, no more than one retest per month is required for a species.

5. Toxicity Reduction Evaluation

a. Within 45 days of the last test day of the retest that demonstrates significant lethality, the permittee shall submit a General Outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and/or effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

b. Within 90 days of the last test day of the retest that demonstrates significant lethality, the permittee shall submit a TRE Action Plan and Schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE Action Plan shall lead to the successful elimination of significant lethal effects at the critical dilution for both test species defined in item 1.b. As a minimum, the TRE Action Plan shall include the following:

1) Specific Activities - The TRE Action Plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and/or alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled, "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluent, Phase I" (EPA/600/6-91/005F), or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled, "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE Action Plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/ identification/ confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality.

Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity;

3) Quality Assurance Plan - The TRE Action Plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, as well as mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE Action Plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

c. Within 30 days of submittal of the TRE Action Plan and Schedule, the permittee shall implement the TRE with due diligence.

d. The permittee shall submit quarterly TRE Activities Reports concerning the progress of the TRE. The quarterly reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical-specific analyses for the identified and/or suspected pollutant(s) performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution; and

6) any changes to the initial TRE Plan and Schedule that are believed necessary as a result of the TRE findings.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species; testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

f. If the effluent ceases to effect significant lethality (herein as defined below) the permittee may end the TRE. A "cessation of lethality" is defined as no significant lethality for a period of 12 consecutive months with at least monthly testing. At the end of the 12 months, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b. The permittee may only apply the "cessation of lethality" provision once.

This provision accommodate situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. "Corrective actions" are herein defined as proactive efforts which eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and/or effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and/or an appropriate control measure.

g. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 28 months from the last test day of the retest that confirmed significant lethal effects at the critical dilution. The permittee may petition the Executive Director (in writing) for an extension of the 28-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE. The report shall provide information pertaining to the specific control mechanism(s) selected that will, when implemented, result in reduction of effluent toxicity to no significant lethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.

h. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements, where necessary, to require a compliance schedule for implementation of corrective actions, to specify a WET limit, to specify a BMP, and/or to specify CS limits.

Outfall 001

TABLE 1 (SHEET 1 OF 4)

MYSID SHRIMP SURVIVAL AND GROWTH

		Date	Time		Date	Time
Dates and Times Composites Collected	No. 1 FROM:			TO:		
	No. 2 FROM:			TO:		
	No. 3 FROM:			TO:		

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving water _____ Synthetic Dilution water

MYSID SHRIMP SURVIVAL

Percent Effluent	Percent Survival in Replicate Chambers								Mean Percent Survival			CV%*
	A	B	C	D	E	F	G	H	24 h	48 h	7 day	
0%												
10%												
14%												
18%												
24%												
32%												

* coefficient of variation = standard deviation x 100/mean

DATA TABLE FOR GROWTH OF MYSID SHRIMP

Replicate	Mean dry weight in milligrams in replicate chambers					
	0%	10%	14%	18%	24%	32%
A						
B						
C						
D						
E						

Outfall 001

TABLE 1 (SHEET 2 OF 4)

MYSID SHRIMP SURVIVAL AND GROWTH

DATA TABLE FOR GROWTH OF MYSID SHRIMP (Continued)

Replicate	Mean dry weight in milligrams in replicate chambers					
	0%	10%	14%	18%	24%	32%
F						
G						
H						
Mean Dry Weight (mg)						
CV%*						
PMSD	Acceptable Range 11-37					

* coefficient of variation = standard deviation x 100/mean

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean survival at 7 days significantly less (p=0.05) than the control survival for the % effluent corresponding to lethality?

   CRITICAL DILUTION (24%): _____ YES _____ NO

2. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean dry weight (growth) at 7 days significantly less (p=0.05) than the control's dry weight (growth) for the % effluent corresponding to non-lethal effects?

   CRITICAL DILUTION (24%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

   a.) NOEC survival = _____% effluent

   b.) LOEC survival = _____% effluent

   c.) NOEC growth = _____% effluent

   d.) LOEC growth = _____% effluent

Outfall 001

TABLE 1 (SHEET 3 OF 4)

INLAND SILVERSIDE LARVAL SURVIVAL AND GROWTH TEST

		Date	Time		Date	Time
Dates and Times Composites Collected	No. 1 FROM:			TO:		
	No. 2 FROM:			TO:		
	No. 3 FROM:			TO:		

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving water _____ Synthetic Dilution water

INLAND SILVERSIDE SURVIVAL

Replicate Chambers	Percent Survival in Replicate Chambers					Mean Percent Survival			CV%
	A	B	C	D	E	24h	48h	7 day	
0%									
10%									
18%									
32%									
56%									
100%									

* coefficient of variation = standard deviation x 100/mean

Outfall 001

TABLE 1 (SHEET 4 OF 4)
INLAND SILVERSIDE LARVAL SURVIVAL AND GROWTH TEST

INLAND SILVERSIDE GROWTH

Percent Effluent	Average Dry Weight in milligrams in replicate chambers:					Mean Dry Weight (mg)	CV%*
	A	B	C	D	E		
0%							
10%							
14%							
18%							
24%							
32%							
PMSD	Acceptable Range 11-28						

* coefficient of variation = standard deviation x 100/mean

Weights are for: ___ preserved larvae, or ___ unpreserved larvae

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean survival at 7 days significantly less (p=0.05) than the control survival for the % effluent corresponding to lethality? _____

   CRITICAL DILUTION (24%): _____ YES _____ NO

2. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean dry weight (growth) at 7 days significantly less (p=0.05) than the control's dry weight (growth) for the % effluent corresponding to non-lethal effects?

   CRITICAL DILUTION (24%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

   a.) NOEC survival = _____% effluent

   b.) LOEC survival = _____% effluent

   c.) NOEC growth = _____% effluent

   d.) LOEC growth = _____% effluent

Outfall 002

TABLE 1 (SHEET 1 OF 4)

MYSID SHRIMP SURVIVAL AND GROWTH

		Date	Time		Date	Time
Dates and Times Composites Collected	No. 1 FROM:			TO:		
	No. 2 FROM:			TO:		
	No. 3 FROM:			TO:		

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving water _____ Synthetic Dilution water

MYSID SHRIMP SURVIVAL

Percent Effluent	Percent Survival in Replicate Chambers								Mean Percent Survival			C.V.%*
	A	B	C	D	E	F	G	H	24 h	48 h	7 da	
0%												
32%												
42%												
56%												
75%												
100%												

* coefficient of variation = standard deviation x 100/mean

DATA TABLE FOR GROWTH OF MYSID SHRIMP

Replicate	Mean dry weight in milligrams in replicate chambers					
	0%	32%	42%	56%	75%	100%
A						
B						
C						
D						
E						

Outfall 002

TABLE 1 (SHEET 2 OF 4)

MYSID SHRIMP SURVIVAL AND GROWTH

DATA TABLE FOR GROWTH OF MYSID SHRIMP (Continued)

Replicate	Mean dry weight in milligrams in replicate chambers					
	0%	32%	42%	56%	75%	100%
F						
G						
H						
Mean Dry Weight (mg)						
CV%*						
PMSD	Acceptable Range 11-37					

* coefficient of variation = standard deviation x 100/mean

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean survival at 7 days significantly less (p=0.05) than the control survival for the % effluent corresponding to lethality?

   CRITICAL DILUTION (100%): _____ YES _____ NO

2. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean dry weight (growth) at 7 days significantly less (p=0.05) than the control's dry weight (growth) for the % effluent corresponding to non-lethal effects?

   CRITICAL DILUTION (100%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

   a.) NOEC survival = _____% effluent

   b.) LOEC survival = _____% effluent

   c.) NOEC growth = _____% effluent

   d.) LOEC growth = _____% effluent

Outfall 002

TABLE 1 (SHEET 3 OF 4)

INLAND SILVERSIDE LARVAL SURVIVAL AND GROWTH TEST

		Date	Time		Date	Time
Dates and Times Composites Collected	No. 1 FROM:			TO:		
	No. 2 FROM:			TO:		
	No. 3 FROM:			TO:		

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving water _____ Synthetic Dilution water

INLAND SILVERSIDE SURVIVAL

Percent Effluent	Percent Survival in Replicate Chamber					Mean Percent Survival			CV%
	A	B	C	D	E				
0%									
32%									
42%									
56%									
75%									
100%									

* coefficient of variation = standard deviation x 100/mean

Outfall 002

TABLE 1 (SHEET 4 OF 4)
INLAND SILVERSIDE LARVAL SURVIVAL AND GROWTH TEST

INLAND SILVERSIDE GROWTH

Percent Effluent	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight (mg)	CV%*
	A	B	C	D	E		
0%							
32%							
42%							
56%							
75%							
100%							
PMSD	Acceptable Range 11-28						

* coefficient of variation = standard deviation x 100/mean

Weights are for: ___ preserved larvae, or ___ unpreserved larvae

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean survival at 7 days significantly less (p=0.05) than the control survival for the % effluent corresponding to lethality?

   CRITICAL DILUTION (100%): _____ YES _____ NO

2. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean dry weight (growth) at 7 days significantly less (p=0.05) than the control's dry weight (growth) for the % effluent corresponding to non-lethal effects?

   CRITICAL DILUTION (100%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

   a.) NOEC survival = _____% effluent

   b.) LOEC survival = _____% effluent

   c.) NOEC growth = _____% effluent

   d.) LOEC growth = _____% effluent

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: MARINE

The provisions of this Section apply individually and separately to Outfalls 001 and 002 for whole effluent toxicity testing (biomonitoring). No samples or portions of samples from one outfall may be composited with samples or portions of samples from another outfall.

1. Scope, Frequency and Methodology

a. The permittee shall test the effluent for lethality in accordance with the provisions in this Section. Such testing will determine compliance with the Surface Water Quality Standard, 30 TAC §307.6(e)(2)(B), of greater than 50% survival of the appropriate test organisms in 100% effluent for a 24-hour period.

b. The toxicity tests specified shall be conducted once per six months. The permittee shall conduct the following toxicity tests utilizing the test organisms, procedures, and quality assurance requirements specified in this section of the permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012), or the most recent update thereof:

1) Acute 24-hour static toxicity test using the mysid shrimp (*Mysidopsis bahia*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution.

2) Acute 24-hour static toxicity test using the inland silverside (*Menidia beryllina*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is herein defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit. All test results, valid or invalid, must be submitted as described below.

c. In addition to an appropriate control, a 100% effluent concentration shall be used in the toxicity tests. Except as discussed in item 2.b., the control and/or dilution water shall consist of a standard, synthetic, moderately hard, reconstituted water.

d. This permit may be amended to require a Whole Effluent Toxicity (WET) limit, a Best Management Practice (BMP), a Chemical-Specific (CS) limit, additional toxicity testing, and/or other appropriate actions to address toxicity. The permittee may be required to conduct additional biomonitoring tests and/or a Toxicity Reduction Evaluation (TRE) if biomonitoring data indicate multiple numbers of unconfirmed toxicity events.

2. Required Toxicity Testing Conditions

a. Test Acceptance - The permittee shall repeat any toxicity test, including the control, if the control fails to meet a mean survival equal to or greater than 90%.

b. Dilution Water - In accordance with item 1.c., the control and/or dilution water shall normally consist of a standard, synthetic, reconstituted seawater. If the permittee is utilizing the results of a 48-Hour Acute test or a Chronic test to satisfy the requirements in item 1.e., the permittee may use the receiving water or dilution water that meets the requirements of item 2.a. as the control and dilution water.

c. Samples and Composites

1) The permittee shall collect one flow-weighted 24-hour composite sample from Outfalls 001 and 002 individually and separately. A 24-hour composite sample consists of a minimum of 12 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportional to flow, or a sample continuously collected proportional to flow over a 24-hour operating day.

2) The permittee shall collect the 24-hour composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the 24-hour composite sample. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4) If the Outfall ceases discharging during the collection of the effluent composite sample, the requirements for the minimum number of effluent portions are waived. However, the permittee must have collected a composite sample volume sufficient for completion of the required test. The abbreviated sample collection, duration, and methodology must be documented in the full report required in Part 3 of this Section.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of this Section shall be submitted to the attention of the Water Quality Standards Team (MC 150) of the Water Permits and Resource Management Division. All DMRs, including DMRs with biomonitoring data, should be sent to the Enforcement Division (MC 224).

a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the Report Preparation Section of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012), or the most recent update thereof, for every valid and invalid toxicity test initiated. All full reports shall be retained for three years at the plant site and shall be available for inspection by TCEQ personnel.

b. A full report must be submitted with the first valid biomonitoring test results for each test species and with the first test results any time the permittee subsequently employs a different test laboratory. Full reports need not be submitted for subsequent testing unless specifically requested. The permittee shall routinely report the results of each biomonitoring test on the Table 2 forms provided with this permit. All Table 2 reports must include the information specified in the Table 2 form attached to this permit.

1) Semiannual biomonitoring test results are due on or before January 20th and July 20th for biomonitoring conducted during the previous 6 month period.

2) Quarterly biomonitoring test results are due on or before January 20th, April 20th, July 20th, and October 20th, for biomonitoring conducted during the previous calendar quarter.

c. Enter the following codes on the DMR for the appropriate parameters for valid tests only:

1) For the mysid shrimp, Parameter TIE3E, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."

2) For the inland silverside, Parameter TIE6B, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."

d. Enter the following codes on the DMR for retests only:

1) For retest number 1, Parameter 22415, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."

2) For retest number 2, Parameter 22416, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."

4. Persistent Mortality

The requirements of this Part apply when a toxicity test demonstrates significant lethality, here defined as a mean mortality of 50% or greater to organisms exposed to the 100% effluent concentration after 24-hours.

a. The permittee shall conduct two additional tests (retests) for each species that demonstrates significant lethality. The two retests shall be conducted once per week for two weeks. Five effluent dilution concentrations in addition to an appropriate control shall be used in the retests. These additional effluent concentrations shall be 6%, 13%, 25%, 50% and 100% effluent. The first retest shall be conducted within 15 days of the laboratory determination of significant lethality. All test results shall be submitted within 20 days of test completion of the second retest. Test completion is defined as the 24th hour. The retests shall also be reported on the DMRs as specified in Part 3.d.

b. If one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5 of this Section.

5. Toxicity Reduction Evaluation

a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a General Outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and/or effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE Action Plan and Schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the

critical dilution. The TRE Action Plan shall lead to the successful elimination of significant lethality for both test species defined in item 1.b. As a minimum, the TRE Action Plan shall include the following:

1) Specific Activities - The TRE Action Plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and/or alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled, "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003), or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled, "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE Action Plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/ identification/ confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity;

3) Quality Assurance Plan - The TRE Action Plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, as well as mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE Action Plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

c. Within 30 days of submittal of the TRE Action Plan and Schedule, the permittee shall implement the TRE with due diligence.

d. The permittee shall submit quarterly TRE Activities Reports concerning the progress of the TRE. The quarterly TRE Activities Reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical-specific analyses for the identified and/or suspected pollutant(s) performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to eliminate significant lethality; and

6) any changes to the initial TRE Plan and Schedule that are believed necessary as a result of the TRE findings.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species; testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

f. If the effluent ceases to effect significant lethality (herein as defined below) the permittee may end the TRE. A "cessation of lethality" is defined as no significant lethality for a period of 12 consecutive weeks with at least weekly testing. At the end of the 12 weeks, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b. The permittee may only apply the "cessation of lethality" provision once.

This provision accommodate situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. "Corrective actions" are herein defined as proactive efforts which eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and/or effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and/or an appropriate control measure.

g. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 18 months from the last test day of the retest that demonstrates significant lethality. The permittee may petition the Executive Director (in writing) for an extension of the 18-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE. The report shall specify the control mechanism(s) that will, when implemented, reduce effluent toxicity as specified in item 5.g. The report will also specify a corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.

h. Within 3 years of the last day of the test confirming toxicity, the permittee shall comply with 30 TAC 307.6.(e)(2)(B), which requires greater than 50% survival of the test organism in 100% effluent at the end of 24-hours. The permittee may petition the Executive Director (in writing) for an extension of the 3-year limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE.

The requirement to comply with 30 TAC 307.6.(e)(2)(B) may be exempted upon proof that toxicity is caused by an excess, imbalance, or deficiency of dissolved salts. This exemption excludes instances where individually toxic components (e.g. metals) form a salt compound. Following the exemption, the permit may be amended to include an ion-adjustment protocol, alternate species testing, or single species testing.

i. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements where necessary, to require a compliance schedule for implementation of corrective actions, to specify a WET limit, to specify a BMP, and/or to specify a CS limit.

TABLE 2 (SHEET 1 OF 2)

MYSID SHRIMP SURVIVAL

GENERAL INFORMATION

	Time (am/pm)	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent Effluent (%)					
		0%	6%	13%	25%	50%	100%
24 h	A						
	B						
	C						
	D						
	E						
	MEAN						

1. Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____% effluent

95% confidence limits: _____

Method of LC50 calculation:_____

TABLE 2 (SHEET 2 OF 2)

INLAND SILVERSIDE SURVIVAL

GENERAL INFORMATION

	Time (am/pm)	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

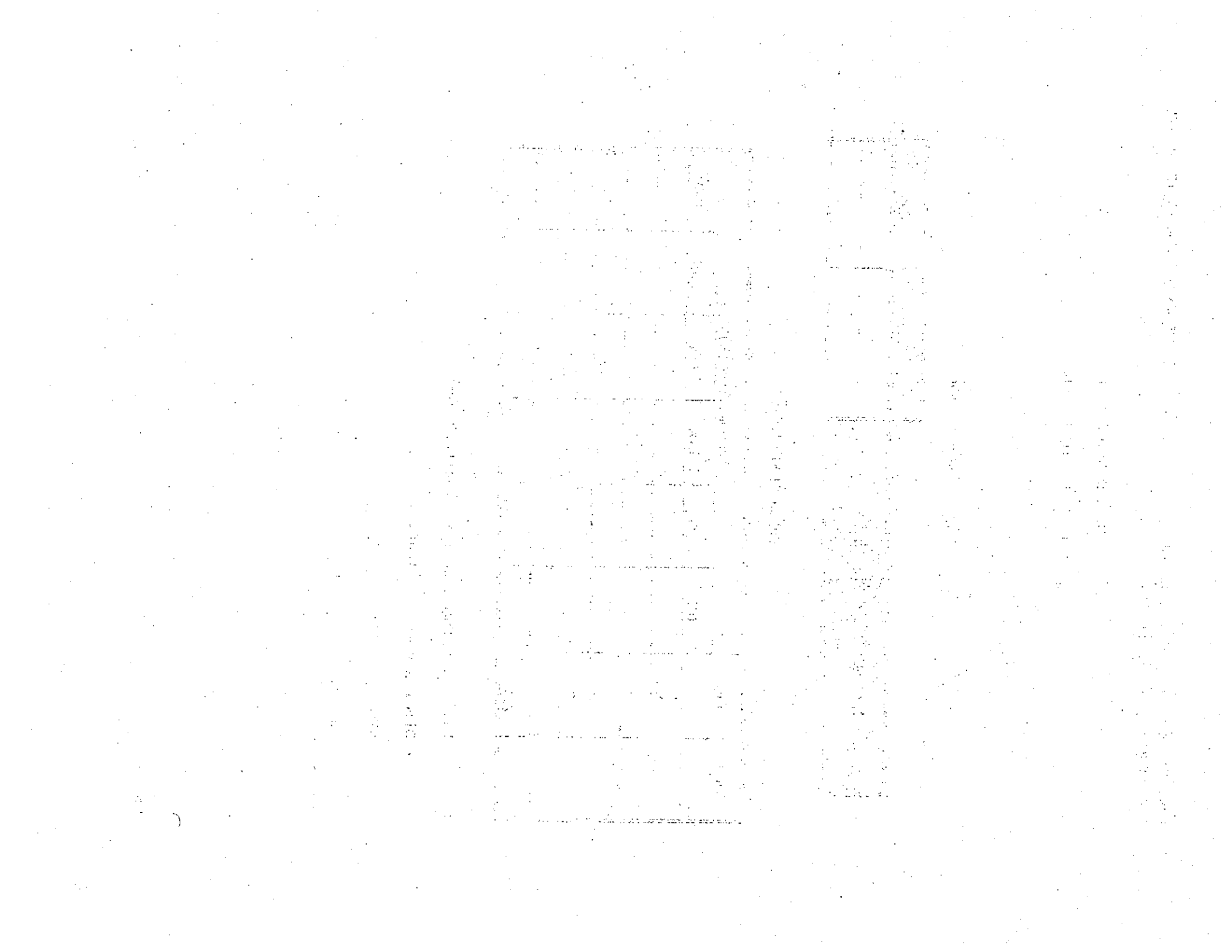
Time	Rep	Percent effluent (%)					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN						

1. Enter percent effluent corresponding to the LC50 below:

24-hour LC50 = _____% effluent

95% confidence limits: _____

Method of LC50 calculation:_____



FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

For proposed Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0003596000 (TX0103811) to discharge to water in the state.

Issuing Office: Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Applicant: Taiwan Shrimp Village Association Inc. and Arroyo Aquaculture Association, Inc.
36386 Marshall Hutts Road
Rio Hondo, Texas 78583

Prepared By: David W. Galindo
Wastewater Permitting Section (MC-148)
Water Quality Division
(512) 239-0951

Date: January 29, 2008

Permit Action: Amendment; TPDES Permit No. WQ0003596000

I. EXECUTIVE DIRECTOR RECOMMENDATION

The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. It is proposed the permit be issued to expire on June 1, 2010 in accordance with 30 TAC Section 305.71, Basin Permitting.

II. APPLICANT ACTIVITY

The applicant currently operates an aquaculture facility which produces shrimp.

III. DISCHARGE LOCATION

As described in the application, the plant site is located on the south side of Farm-to-Market Road 2925 and approximately 1.4 miles east of the intersection of Farm-to-Market Road 2925 and Farm-to-Market 1897 in the City of Arroyo City, Cameron County, Texas. Discharge is via Outfall 001 directly to the Arroyo Colorado Tidal; and via Outfall 002 to a drainage ditch; thence to the Arroyo Colorado Tidal in Segment No. 2201 of the Nueces-Rio Grande Coastal Basin.

IV. RECEIVING STREAM USES

The unclassified receiving waters have high aquatic life use for the unnamed drainage ditch. The designated uses for Segment No. 2201 are high aquatic life use and contact recreation.

V. STREAM STANDARDS

The general criteria and numerical criteria which make up the stream standards are provided in the Texas Administrative Code (TAC), 30 TAC Sections 307.1 - §307.10, effective April 30, 1997.

VI. DISCHARGE DESCRIPTION

The following is a quantitative description of the discharge described in the Monthly Effluent Report data for the period of June 2001 through December 2005. The "Average of Daily Avg." values presented in the following table are the average of all daily average values for the reporting period for each parameter. The "Maximum of Daily Max." values presented in the following table are the individual maximum values for the reporting period for each parameter.

A. Flow

Outfall	Frequency	Average of Daily Avg (MGD)	Maximum of Daily Max (MGD)
001	No discharge during the period evaluated.		
002	Seasonal	(18.4)	(41.9)

C. Effluent Characteristics

Outfall	Parameter	Average of Daily Average (lbs/day)	mg/l	Maximum of Daily Maximum (lbs/day)	mg/l
001	No discharge during the time period evaluated.				
002	Carbonaceous Biochemical Oxygen Demand (5-day)	(377.8)	3.4	(1101)	5.6
	Ammonia Nitrogen	(23.25)	0.18	(117)	1.6
	Total Suspended Solids	(N/A)	22.4	(4354)	42.0
	Inorganic Suspended Solids	(N/A)	13.4	(N/A)	32.0
	Dissolved Oxygen	(N/A)	N/A	6.1 mg/l minimum	
	pH (standard units)	6.9 s.u, minimum		8.9 s.u, maximum	

Self reported effluent data indicated that the permittee violated the daily average concentration based effluent limitation for carbonaceous biochemical oxygen demand (5-day) during November 2002, December 2004, and December 2005; and total suspended solids during December 2004 and December 2005. An updated Best Management Practices (BMPs) Plan requirement has been proposed in the draft permit which will assist the permittee with achieving compliance with the conditions of the permit.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

VII. PROPOSED EFFLUENT LIMITATIONS

Final effluent limitations are established in the draft permit as follows:

Outfall No.	Parameter	Daily Average lbs/day	(mg/l)	Daily Maximum lbs/day	(mg/l)
001	Flow (*1)	100 MGD		180 MGD	
	Carbonaceous Biochemical Oxygen Demand (5-day)	1334	(4.0)	2002	(6.0)
	Ammonia Nitrogen	333	(1.0)	667	(2.0)
	Total Suspended Solids	N/A	(30)	15012	(45)
	Inorganic Suspended Solids	N/A	(Report)	N/A	(Report)
	Dissolved Oxygen	N/A	(N/A)	6.0 mg/l minimum	
	pH (standard units)	(6.0 minimum)		(9.0 maximum)	
002	Flow (*1)	100 MGD		180 MGD	
	Carbonaceous Biochemical Oxygen Demand (5-day)	1334	(4.0)	2002	(6.0)
	Ammonia Nitrogen	333	(1.0)	667	(2.0)
	Total Suspended Solids	N/A	(30)	15012	(45)
	Inorganic Suspended Solids	N/A	(Report)	N/A	(Report)
	Dissolved Oxygen	N/A	(N/A)	6.0 mg/l minimum	
	pH (standard units)	(6.0 minimum)		(9.0 maximum)	

(*1) The combined flows via Outfalls 001 and 002 shall not exceed a daily average flow of 100 MGD. The combined flows via Outfalls 001 and 002 shall not exceed a daily maximum flow of 180 MGD.

Effluent limitations for Carbonaceous Biochemical Oxygen Demand (5-day) ($CBOD_5$), ammonia nitrogen, total suspended solids, dissolved oxygen, inorganic suspended solids, and pH are continued from the existing TPDES permit at both outfalls.

Additional requirements including Best Management Practices (BMPs) and reporting requirements for extralabel drug and Investigation New Animal Drug (INAD) usage; and structure failures and spills resulting in an unanticipated material discharge of pollutants to waters in the state have been included in the draft permit based upon 40 CFR 451 Concentrated Aquatic Animal Production (CAAP) Point Source, Subpart A. Subpart A is applicable to facilities that annually produce at least 100,000 pounds of aquatic animals and operate via flow through or recirculating systems. However, the requirements of Subpart A are being applied to this pond system facility based upon Best Professional Judgement.

The EPA categorized CAAP point sources based upon production system type. The EPA did not promulgate regulations for closed pond systems which typically utilize minimal water exchange practices. However shrimp production pond discharges result in high discharge volumes and may potentially contain higher solids and nutrient concentrations than typical pond discharges. Therefore the requirements contained within 40 CFR 451, Subpart A, are proposed for this facility.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

VIII. SUMMARY OF CHANGES FROM APPLICATION

The applicant has requested an amendment to the existing permit to remove the prohibition of discharge during the months of January through March and to revise the Arroyo Colorado Water Quality Study requirement to reduce influent and effluent sampling frequencies. However, the following more stringent requirements which were determined to be necessary during the technical review of the application.

1. Biomonitoring requirements have been revised from 48 hour acute to 7 day Chronic for Outfalls 001 and 002 based upon the recommendation of the Water Quality Assessment Team Interoffice Memorandum dated September 15, 2003.

2. A due date of September 1st of each year has been included for an updated pond owner list. See Aquaculture Requirements, Item No. 4.

3. The Best Management Practices (BMP) plan requirements in the existing permit have been revised to be consistent with BMP plan required under 40 CFR 451, Subpart A. The revised BMP plan shall describe how the permittee will address solids controls, materials storage, structural maintenance, record-keeping, and training. Please see Page 18 of the draft permit.

4. Aquaculture Requirements, Item No. 8 has been included in the draft permit to address extralabel drug and INAD usage to be consistent with 40 CFR 451.3. The proposed extralabel drug and INAD usage reporting requirements will provide consistency between permitted facilities which may utilize these drugs and have the potential to discharge these chemicals to water in the state.

5. Aquaculture Requirements, Item No. 12 has been included to address observable mortalities of aquatic exotic species or other manifestation of disease to be consistent with TCEQ practice to permitting aquaculture operations in coordination with the Texas Parks & Wildlife Department (TPWD).

6. Additional requirements were added for reporting of structure failures and spills resulting in an unanticipated material discharge of pollutants to waters in the state. In accordance with 40 CFR 451.3, the TCEQ may specify in the permit what constitutes reportable damage and/or a material discharge of pollutants, based on a consideration of the production system type, sensitivity of the receiving waters, and other relevant factors. Please see Aquaculture Requirements, Item Nos. 9 and 10.

7. The permittee requested the revision of Other Requirement Item No. 11 of the existing TPDES permit which requires the applicant conduct a water quality study to evaluate the effects of the operation on the diversion of water from and the discharge of effluent to the Arroyo Colorado be revised to reflect the current influent and discharge patterns at the facility. The permittee requested to reduce the influent sampling to once per month during the months of April through October and the effluent sampling to once per week. The language has been revised to allow the influent to be sampled once per month during the months of April through October. However the effluent sampling frequency has been revised to twice per week during periods of discharge. Additionally, the deadline for submittal of the summary report has been extended from December 1st to December 31st. Please see Aquaculture Requirements, Item No. 6.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

IX. SUMMARY OF CHANGES FROM EXISTING PERMIT

1. The prohibition to discharge during the months of January through March has been revised to prohibit the discharge during the months of March through May. Please see the Reason for Permit Issuance section, on Page 5 of this Fact Sheet.

2. Revised the facility location description from "near the City of Arroyo City" to " in the City of Arroyo City" as indicated within the application.

3. Revised the wastestream description at Outfall 001 to clarify "aquaculture pond effluent" as the process wastewater authorized for discharge under this permit.

4. The Definitions and Standard Conditions section of the draft permit has been updated based upon current TCEQ procedures.

5. The discharge route has been revised to clarify that Outfall 001 discharges directly to the Arroyo Colorado Tidal and Outfall 002 discharges to an unnamed drainage ditch prior to the Arroyo Colorado Tidal. The mixing zone definitions have been revised accordingly. Please see Other Requirements, Item No. 6.

X. DRAFT PERMIT RATIONALE

The following section sets forth the statutory and regulatory requirements considered in preparing the draft permit. Also set forth are any calculations or other necessary explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guidelines and water quality standards.

A. REASON FOR PERMIT ISSUANCE

The applicant has applied to the Texas Commission on Environmental Quality (TCEQ) for a major amendment to TPDES Permit No. WQ0003596000 to remove the prohibition of discharge from the facility during the months of January through March and to revise the Arroyo Colorado Water Quality Study requirement to reduce influent and effluent sampling frequencies. The current permit authorizes the discharge of process wastewater (aquaculture pond effluent) at a combined daily average flow not to exceed 100,000,000 gallons per day via Outfalls 001 and 002.

The permittee initially requested removal of the prohibition of discharging from the facility during the months of January through March. The permittee's request to remove the prohibition of discharge was proposed as an alternative to chemical treatments for the removal of algae. However, based upon public comment in opposition to the removal of the prohibition of discharge, the permittee has revised their initial request from complete removal of the prohibition of discharge to revision of the prohibition from "January through March" to "March through May". The draft permit noticed during the Notice of Application and Preliminary Decision has been revised. The prohibition of discharge has been re-included in the draft permit as Aquaculture Requirement Item No. 2. However the prohibition now restricts the discharge from occurring during the months of March through May.

The facility is having difficulty meeting the total suspended solids effluent limitations due to algal growth within the ponds. In order to reduce total suspended solids concentrations the facility is proposing to hold wastewater for a longer period of time prior to discharge by using harvested ponds and ditches for additional solids settling. Revising the prohibition of discharge from "January through March" to "March through May" will allow the facility to retain the discharge through the cold weather season to allow the lower temperatures to eliminate the algae. The facility has made several improvements to the treatment system to facilitate solids settling including the widening and deepening of the discharge canals to increase storage capacity. Following harvesting, the effluent will be recycled to the harvesting ponds for treatment prior to discharge. The permittee's current recycling efforts have subsequently reduced the number of days the facility has had to discharge to waters of the state. Additionally the facility has installed ten sets of paddlewheels to provide additional aeration for nutrient removal which decreases algal concentrations within the ponds. Further, the Permittee has developed a Best Management Practices plan to lower nutrients introduced into the pond system due to feeding and stocking densities.

The permittee requested the revision of Other Requirement Item No. 11 of the existing TPDES permit which requires the applicant conduct a water quality study to evaluate the effects of the operation on the diversion of water from and the discharge of effluent to the Arroyo Colorado be revised to reflect the current influent and discharge patterns at the facility. The permittee requested to reduce the influent sampling to once per month during the months of April through October and the effluent sampling to once per week. The language has been revised to allow the influent to be sampled once per month during the months of April through October. However the effluent sampling frequency has been revised to twice per week during periods of discharge. Please see Aquaculture Requirements, Item No. 6.

The Executive Director has reviewed this action for consistency with the goals and policies of the Texas Coastal Management Program (CMP) in accordance with the regulations of the Coastal Coordination Council (CCC) and has determined that the action is consistent with the applicable CMP goals and policies.

B. WATER QUALITY SUMMARY

The discharge route is via Outfall 001 directly to the Arroyo Colorado Tidal; and via Outfall 002 to a drainage ditch; thence to the Arroyo Colorado Tidal in Segment No. 2201 of the Nueces-Rio Grande Coastal Basin. The unclassified receiving waters have high aquatic life use for the unnamed drainage ditch. The designated uses for Segment No. 2201 are high aquatic life use and contact recreation. Effluent limitations and/or conditions established in the draft permit are in compliance with state water quality standards and the applicable water quality management plan. The effluent limits in the draft permit will maintain and protect the existing instream uses. No significant degradation of high quality receiving waters is anticipated. Additional discussion of the water quality aspects of the draft permit will be found in Section X.D. of this fact sheet.

There is no priority watershed of critical concern with respect to endangered and threatened species in Segment No. 2201 in Cameron County. Therefore, no endangered or threatened aquatic or aquatic dependent species (including proposed species) occur in this area. This determination was made by referencing Appendix A of the U.S. Fish and Wildlife Service biological opinion, dated September 14, 1998, on the State of Texas authorization of the Texas Pollutant Discharge Elimination System.

Segment No. 2201 is currently listed on the State's inventory of impaired and threatened waters (the Clean Water Act Section 303(d) list). The listing is specifically for depressed levels of dissolved oxygen. The impairment is in the upper 16 miles of the segment. The discharge from this facility into the Arroyo Colorado is 4 kilometers downstream from the reach impaired by low dissolved oxygen concentrations, therefore the discharge is not expected to contribute to decreased dissolved oxygen concentrations in the segment. A TMDL for this segment is underway.

C. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. GENERAL COMMENTS

Regulations promulgated in Title 40 of the Code of Federal Regulations require technology-based limitations be placed in wastewater discharge permits based on effluent limitations guidelines, where applicable, and/or on best professional judgment (BPJ) in the absence of guidelines.

The proposed draft permit authorizes the discharge of process wastewater (aquaculture pond effluent) at a daily average flow not to exceed 100 million gallons per day via Outfalls 001 and 002.

The discharge of process wastewater (aquaculture pond effluent) via Outfalls 001 and 002 is subject to federal effluent limitation guidelines at 40 CFR 451, Subpart A based upon BPJ. The Environmental Protection Agency (EPA) categorized CAAP point sources based upon production system type. The EPA did not promulgate regulations for closed pond systems which typically utilize minimal water exchange practices. However shrimp production pond discharges result in high discharge volumes and may potentially contain higher solids and nutrient concentrations than typical pond discharges. Therefore the requirements contained within 40 CFR 451, Subpart A, are proposed for this facility. A new source determination was performed and the discharge of aquaculture pond effluent is not a new source as defined at 40 CFR Section 122.2. Therefore new source performance standards (NSPS) are not required for this discharge.

The wastewater system at this facility consists of 85 production ponds averaging approximately five surface acres each. Effluent from production ponds is discharged to a system of effluent canals prior to either discharge through a final outfall or recirculation back to production ponds. A system of weirs within the effluent canals impound approximately 24 million gallons of effluent and provide for settling of solids prior to final discharge. Additionally, ten sets of paddlewheels within the effluent canals provide additional aeration for nutrient removal prior to discharge. Domestic wastewater is not generated on site.

Water is pumped from the Arroyo Colorado in late March and Early April prior to stocking post larvae shrimp. After initial filing of ponds, water from the Arroyo Colorado is pumped to the farm as little as possible to meet the requirements for proper operation and maintenance. Harvesting of shrimp begins in Mid August and continues into early November. The ponds are drained during harvesting and recycled into other ponds for storage until acceptable water quality is achieved prior to discharge.

2. CALCULATIONS

See Appendix A of this fact sheet for calculations and further discussion of technology-based effluent limitations proposed in the draft permit.

Technology-based effluent limitations for total suspended solids and pH at Outfalls 001 and 002 are continued from the existing permit.

The following technology-based effluent limitations are continued in the draft permit:

		Daily Average		Daily Maximum	
Outfall Nos.	Parameter	(lbs/day)	mg/l	(lbs/day)	mg/l
001 and 002	Total Suspended Solids	(N/A)	30	(N/A)	45
	pH (standard units)	(6.0 minimum)		(9.0 maximum)	

Additional requirements including Best Management Practices (BMPs) and reporting requirements for extralabel drug and Investigation New Animal Drug (INAD) usage; and structure failures and spills resulting in an unanticipated material discharge of pollutants to waters in the state have been included in the draft permit based upon 40 CFR 451 Concentrated Aquatic Animal Production (CAAP) Point Source, Subpart A. Subpart A is applicable to facilities that annually produce at least 100,000 pounds of aquatic animals and operate via flow through or recirculating systems. However, the requirements of Subpart A are being applied to this pond system facility based upon Best Professional Judgement.

D. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. GENERAL COMMENTS

The Texas Surface Water Quality Standards found at 30 TAC Chapter 307 state that "surface waters will not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life." The methodology outlined in the "Implementation of the Texas Commission on Environmental Quality Standards via Permitting" is designed to insure compliance with 30 TAC Chapter 307. Specifically, the methodology is designed to insure that no source will be allowed to discharge any wastewater which: (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical state water quality standard; (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

TPDES permits contain technology-based effluent limits reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other toxicity data bases to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

2. AQUATIC LIFE CRITERIA

a. SCREENING

Analytical data reported in the application for Outfalls 001 and 002 was screened against calculated water quality-based effluent limitations for the protection of aquatic life. Water quality-based effluent limitations were calculated from marine aquatic life criteria found in Table 1 of the Texas Surface Water Quality Standards (30 TAC Chapter 307). Acute marine criteria are applied at the edge of the zone of initial dilution (ZID) and chronic marine criteria are applied at the edge of the aquatic life mixing zone (MZ).

Outfall 001:

Discharges from this facility are into the Arroyo Colorado Tidal in Segment No. 2201 of the Nueces-Rio Grande Coastal Basin. At the location of the discharge via Outfall 001, the Arroyo Colorado Tidal is considered to be a narrow tidal river with flow data available upstream. TCEQ practice is to evaluate whether the upstream flow provides any additional dilution beyond what is calculated using EPA's horizontal jet plume model. Dilutions are calculated using both the jet plume model and the mass balance equation. If upstream flow provides dilution beyond what is calculated using the jet plume model (i.e., the LTA is larger using the mass balance equation than using the jet plume equation), the mass balance equation is used. If the effluent dilutions calculated using the mass balance equation are smaller than the default jet plume model dilutions (8% MZ and 30% ZID), the default jet plume model dilutions are used.

The TEXTOX evaluation included at Appendix A of this Fact Sheet for Outfall 001 is conducted based on dilutions calculated using the mass balance equation.

The ZID is defined as 20 feet upstream and 60 feet downstream from the point where the discharge enters the receiving water. The MZ is defined as 100 feet upstream and 300 feet downstream from the point where the discharge enters the receiving water. Based on mass balance equation analysis, the following effluent dilutions are calculated:

Outfall 001 ZID:	56%
Outfall 001 aquatic life MZ:	24%

These dilutions are calculated using the following variables:

2 year highest daily average flow:	34.9 MGD (53.99 cfs)
7Q2 flow:	162.2 cfs

Self reported data indicates that Outfall 001 did not discharge during the time period of June 2001 through October 2004. The 2 year highest daily average flow of 34.9 MGD was obtained from flow data for Outfall 002. Both outfalls drain the same area of production ponds within the facility and the permitted flow limitations apply to the cumulative discharge volume via both outfalls. Therefore it is appropriate to use the 2 year highest daily average flow for Outfall 002 to represent a hypothetical 2 year highest daily average flow at Outfall 001.

Outfall 002:

The ZID for this discharge via Outfall 002 into the unnamed ditch is defined as a radius of 2.5 feet from the point where the discharge enters the receiving water. The aquatic life MZ for the discharge via Outfall 002 into the unnamed ditch is defined as a radius of 5 feet from the point where the discharge enters the receiving water.

Self report data indicates the two-year high daily average flow from Outfall 002 is 34.9 million gallons per day (MGD). TCEQ uses the EPA horizontal jet plume model to estimate dilutions at the ZID and aquatic life MZ for discharges greater than 10 MGD into bays, estuaries, and wide tidal rivers. General assumptions used in the horizontal jet plume model are: a non-buoyant discharge, a submersed pipe, and no cross flow. Based on this analysis the following effluent dilutions are calculated:

Outfall 002 ZID:	100%
Outfall 002 aquatic life MZ:	100%

Wasteload allocations (WLAs) are calculated using the above estimated effluent dilutions, criteria outlined in the Texas Surface Water Quality Standards, and partitioning coefficients for metals (when appropriate and designated in the implementation procedures). The WLA is the end-of-pipe effluent concentration that can be discharged and still meet instream criteria after mixing with the receiving stream. From the WLA, a long term average (LTA) is calculated using a log normal probability distribution, a given coefficient of variation (0.6), a 90th percentile confidence level for Outfall 001, and a 99th percentile confidence level for Outfall 002. The LTA is the long term average effluent concentration calculated to meet the WLA using a selected percentile confidence level. The lower of the two LTAs (acute and chronic) is used to calculate a daily average and daily maximum effluent limitation for the protection of aquatic life using the same statistical considerations with the 99th percentile confidence level and a standard number of monthly effluent samples collected (12).

TCEQ practice for determining significant potential is to compare the reported analytical data against percentages of the calculated daily average water quality-based effluent limitation. Permit limitations are required when analytical data reported in the application exceeds 85% of the calculated daily average water quality-based effluent limitation. Monitoring and reporting is required when analytical data reported in the application exceeds 70% of the calculated daily average water quality-based effluent limitation.

b. PERMIT ACTION

Reported analytical data for the following parameters exceeded 85% of the calculated daily average water quality-based effluent limitation for aquatic life protection:

None.

Reported analytical data for the following parameters exceeded 70% of the calculated daily average water quality-based effluent limitation for aquatic life protection, but was less than 85% of the calculated daily average water quality-based effluent limitation for aquatic life protection:

None.

The following permit limitations and/or monitoring/reporting requirements are proposed in the draft permit for aquatic life protection:

None.

See Appendix B of this fact sheet for calculation of water quality-based effluent limitations for aquatic life protection. For more details on the calculation of water quality-based effluent limitations, see the TCEQ guidance document - "Implementation of the Texas Commission on Environmental Quality Standards Via Permitting" and EPA's "Technical Support Document For Water Quality-based Toxics Control."

3. AQUATIC ORGANISM TOXICITY CRITERIA (7-DAY CHRONIC)

a. SCREENING

The existing permit includes 48 hour acute biomonitoring requirements at Outfalls 001 and 002. From January 2000 to November 2002, the permittee conducted five 48-hour acute toxicity tests using both Menidia beryllina and Mysidopsis bahia with no reported significant toxicity at Outfall 001. The permittee conducted two 48-hour acute toxicity test in December of 2004 and 2005, using both Menidia beryllina and Mysidopsis bahia with no reported significant toxicity at Outfall 002.

Chronic biomonitioning requirements have been proposed based upon the TCEQ Water Quality Assessment Team memorandums dated September 15, 2003 and June 13, 2006.

b. PERMIT ACTION

The provisions of this section apply to Outfalls 001 and 002.

Based on information contained in the permit application, TCEQ has determined that there may be pollutants present in the effluent(s) which may have the potential to cause toxic conditions in the receiving stream.

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit are as follows:

i) Chronic static renewal 7-day survival and growth test using the mysid shrimp (Mysidopsis bahia). The frequency of the testing is once per harvest each year beginning on the first month of harvest.

ii) Chronic static renewal 7-day larval survival and growth test using the inland silverside (Menidia beryllina). The frequency of the testing is once per harvest each year beginning on the first month of harvest.

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Second Edition" (EPA-600-4-91-003). The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge.

This permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body.

c. DILUTION SERIES

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 32%, 42%, 56%, 75%, and 100%. The low-flow effluent concentration (critical dilution) is defined as 24% effluent.

The dilution series outlined above was calculated using a 0.75 factor applied to the critical dilution. The critical dilution is the estimated effluent dilution at the edge of the aquatic life mixing zone which is calculated in section X.D.2.a. of this fact sheet.

4. AQUATIC ORGANISM TOXICITY CRITERIA (24 - HOUR ACUTE)

a. SCREENING

The existing permit includes 24-hour acute marine biomonitoring language for Outfalls 001 and 002. From January 2000 to November 2002, the permittee conducted four 24-hour acute toxicity tests using both Menidia beryllina and Mysidopsis bahia with no reported significant toxicity at Outfall 001. The permittee conducted two 24-hour acute toxicity test in December of 2004 and 2005, using both Menidia beryllina and Mysidopsis bahia with no reported significant toxicity at Outfall 002.

b. PERMIT ACTION

24-hour, 100% acute biomonitoring tests are proposed at Outfalls 001 and 002 at a frequency of once per six months for the life of the permit.

The 24-hour acute biomonitoring procedures stipulated as a condition of this permit are as follows:

I) Acute 24-hour static toxicity test using the mysid shrimp (Mysidopsis bahia). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.

ii) Acute 24-hour static toxicity test using the inland silverside (Menidia beryllina). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.

5. AQUATIC ORGANISM BIOACCUMULATION CRITERIA

a. SCREENING

Analytical data reported in the application for Outfalls 001 and 002 was screened against calculated water quality-based effluent limitations for the protection of human health (using consumption of marine fish tissue criteria found in Table 3 of the Texas Surface Water Quality Standards - 30 TAC Chapter 307). Marine fish tissue bioaccumulation criteria are applied at the human health mixing zone.

Outfall 001:

Discharges from this facility are into the Arroyo Colorado Tidal in Segment No. 2201 of the Nueces-Rio Grande Coastal Basin. At the location of the discharge via Outfall 001, the Arroyo Colorado Tidal is considered to be a narrow tidal river with flow data available upstream. TCEQ practice is to evaluate whether the upstream flow provides any additional dilution beyond what is calculated using

EPA's horizontal jet plume model. Dilutions are calculated using both the jet plume model and the mass balance equation. If upstream flow provides dilution beyond what is calculated using the jet plume model (i.e., the LTA is larger using the mass balance equation than using the jet plume equation), the mass balance equation is used. If the effluent dilutions calculated using the mass balance equation are smaller than the default jet plume model dilutions (4% human health mixing zone), these default jet plume model dilutions are used.

The TEXTOX evaluation included with at Appendix A of this fact Sheet for Outfall 001 is conducted based on dilutions calculated using the mass balance equation.

The human health mixing zone for Outfall 001 is defined as 100 feet upstream and 300 feet downstream from the point where the discharge enters the receiving water. Based on mass balance equation analysis, the following effluent dilution is calculated:

Outfall 001 human health MZ: 13%

This dilution is calculated using the following variables:

2 year average daily average flow: 23.07 MGD (35.69 cfs)
Harmonic mean flow: 241.97 cfs

Self reported data indicates that Outfall 001 did not discharge during the time period of June 2001 through October 2004. The 2 year average of the daily average flow of 34.9 MGD was obtained from flow data for Outfall 002. Both outfalls drain the same area of production ponds within the facility and the permitted flow limitations apply to the cumulative discharge volume via both outfalls. Therefore it is appropriate to use the 2 year average of the daily average flow for Outfall 002 to represent a hypothetical 2 year average of the daily average flow at Outfall 001.

Outfall 002:

Self report data indicates the average of the daily average flow from Outfall 002 is 23.07 MGD. The following estimated effluent dilution is calculated at the human health mixing zone using the EPA horizontal jet plume model for discharges into bays, estuaries, or wide tidal rivers:

Outfall 002 human health mixing zone: 100%

Water quality-based effluent limitations for the protection of human health with consideration for consumption of marine fish tissue are calculated using the same procedure as outlined for calculation of water quality-based effluent limitations for aquatic life protection in section X.D.2.a. of this fact sheet. A 90th percentile confidence level is used for Outfall 001 and a 99th percentile confidence level for is used for Outfall 002 in the long term average calculation with only one long term average value being calculated.

Significant potential is again determined by comparing reported analytical data against 70% and 85% of the calculated daily average water quality-based effluent limitation.

b. PERMIT ACTION

Reported analytical data for the following parameters exceeded 85% of the calculated daily average water quality-based effluent limitation for human health protection (using consumption of marine fish tissue criteria):

None.

Reported analytical data for the following parameters exceeded 70% of the calculated daily average water quality-based effluent limitation for human health protection (using consumption of marine fish tissue criteria), but was less than 85% of the calculated daily average water quality-based effluent limitation for human health protection (using consumption of marine fish tissue criteria):

None.

The following permit limitations and/or monitoring/reporting requirements are proposed in the draft permit for protection of human health following consumption of marine fish tissue:

None.

See Appendix B of this fact sheet for calculation of water quality-based effluent limitations for human health protection. For more details on the calculation of water quality-based effluent limitations, see the TCEQ guidance document - "Implementation of the Texas Commission on Environmental Quality Standards Via Permitting" and EPA's "Technical Support Document For Water Quality-based Toxics Control."

6. DRINKING WATER SUPPLY PROTECTION

a. SCREENING

Water quality Segment No. 2201 which receives the discharge(s) from this facility is not designated as a public water supply. Screening reported analytical data for Outfalls 001 and 002 against water quality-based effluent limitations calculated for the protection of a drinking water supply is not applicable.

b. PERMIT ACTION

None.

XI. PRETREATMENT REQUIREMENTS

This facility is not defined as a publicly owned treatment works (POTW). Pretreatment requirements are not proposed in the draft permit.

XII. VARIANCE REQUESTS

No variance requests have been received.

XIII. PROCEDURES FOR FINAL DECISION

When an application is declared administratively complete, the Chief Clerk sends a letter to the applicant advising the applicant to publish the Notice of Receipt of Application and Intent to Obtain Permit in the newspaper. In addition, the Chief Clerk instructs the applicant to place a copy of the application in a public place for review and copying in the county where the facility is or will be located. This application will be in a public place throughout the comment period. The Chief Clerk also mails this notice to any interested persons and, if required, to landowners identified in the permit application. This notice informs the public about the application, and provides that an interested person may file comments on the application or request a contested case hearing or a public meeting.

Once a draft permit is completed, it is sent, along with the Executive Director's preliminary decision, as contained in the technical summary or fact sheet, to the Chief Clerk. At that time, Notice of Application and Preliminary Decision will be mailed to the same people and published in the same newspaper as the prior notice. This notice sets a deadline for making public comments. The applicant must place a copy of the Executive Director's preliminary decision and draft permit in the public place with the application. This notice sets a deadline for public comment.

Any interested person may request a public meeting on the application until the deadline for filing public comments. A public meeting is intended for the taking of public comment, and is not a contested case proceeding.

After the public comment deadline, the Executive Director prepares a response to all significant public comments on the application or the draft permit raised during the public comment period. The Chief Clerk then mails the Executive Director's Response to Comments and Final Decision to people who have filed comments, requested a contested case hearing, or requested to be on the mailing list. This notice provides that if a person is not satisfied with the Executive Director's response and decision, they can request a contested case hearing or file a request to reconsider the Executive Director's decision within 30 days after the notice is mailed.

The Executive Director will issue the permit unless a written hearing request or request for reconsideration is filed within 30 days after the Executive Director's Response to Comments and Final Decision is mailed. If a hearing request or request for reconsideration is filed, the Executive Director will not issue the permit and will forward the application and request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting. If a contested case hearing is held, it will be a legal proceeding similar to a civil trial in state district court.

If the Executive Director calls a public meeting or the Commission grants a contested case hearing as described above, the Commission will give notice of the date, time, and place of the meeting or hearing. If a hearing request or request for reconsideration is made, the Commission will consider all public comments in making its decision and shall either adopt the Executive Director's response to public comments or prepare its own response.

For additional information about this application contact David W. Galindo at (512) 239-0951.

XIV. ADMINISTRATIVE RECORD

The following section is a list of the fact sheet citations to applicable statutory or regulatory provisions and appropriate supporting references.

A. PERMIT

TPDES Permit No. WQ0003596000 issued December 2, 1999.

B. APPLICATION

TPDES wastewater permit application received on April 30, 2002.

C. 40 CFR CITATION

40 CFR 451 - Concentrated Aquatic Animal Production, Subpart A, by BPJ.

D. LETTERS/MEMORANDA/RECORDS OF COMMUNICATION

Interoffice Memorandum dated June 13, 2006 from Clayton, Water Quality Assessment Team, to Industrial Permits Team.

Email dated February 8, 2006 from Mr. Keith Gregg, Arroyo Aquaculture Association to Galindo, TCEQ Industrial Permits Team.

Email dated April 5, 2005 from Ms. Radloff, Texas Parks & Wildlife Department to Galindo, TCEQ Industrial Permits Team.

Email dated March 9, 2005 from Mr. Chen, Arroyo Aquaculture Association to Galindo, TCEQ Industrial Permits Team.

Letter dated December 1, 2004 from Mr. Chen, Arroyo Aquaculture Association to Galindo, TCEQ Industrial Permits Team.

Letter dated June 30, 2004 from Mr. Werkenthin; Booth, Ahrens, and Werkenthin, P.C to Galindo, TCEQ Industrial Permits Team.

Letter dated February 24, 2004 from Mr. Werkenthin; Booth, Ahrens, and Werkenthin, P.C to Galindo, TCEQ Industrial Permits Team.

Letter dated November 21, 2003 from Mr. Kou, Arroyo Aquaculture Association to TCEQ Industrial Permits Team.

Letter dated November 19, 2003 from Mr. Werkenthin; Booth, Ahrens, and Werkenthin, P.C to Galindo, TCEQ Industrial Permits Team.

Letter dated November 5, 2003 from Galindo, TCEQ Industrial Permits Team to Mr. Werkenthin; Booth, Ahrens, and Werkenthin, P.C.
Email dated October 15, 2003 from Ms. Radloff, Texas Parks & Wildlife Department to Galindo, TCEQ Industrial Permits Team.

Interoffice Memorandum dated April 15, 2003 from Clayton, Water Quality Assessment Team, to Industrial Permits Team.

Letter dated March 26, 2003 from Mr. Kou, Arroyo Aquaculture Association to Galindo, TCEQ Industrial Permits Team.

Email dated June 6, 2003 from Radloff, Texas Parks & Wildlife Department to Galindo, TCEQ Industrial Permits Team.

Interoffice Memorandum dated December 23, 2002 from Marshall, Water Quality Assessment Team to Industrial Permits Team.

Interoffice Memorandum dated December 17, 2002 from Smith, Water Quality Assessment Team to Industrial Permits Team.

Interoffice Memorandum dated December 11, 2002 from Schaefer, Water Quality Standards Team, to Industrial Permits Team.

Facsimile dated December 6, 2002 from Werkenthin; Booth, Arehns, and Werkenthin P.C. to Schaefer, TCEQ Water Quality Standards Team.

Facsimile dated November 20, 2002 from Dixon, TCEQ Applications Team to Kou, Arroyo Aquaculture Association.

Letter dated November 5, 2002 from Werkenthin; Booth, Ahrens, and Werkenthin, P.C. to Dixon, TCEQ Applications Team.

Facsimile dated October 28, 2002 from Dixon, TCEQ Applications Team to Werkenthin; Booth, Ahrens, and Werkenthin, P.C.

Letter dated October 25, 2002 from Werkenthin; Booth, Ahrens, and Werkenthin, P.C. to Dixon, TCEQ Applications Team.

Letter dated October 4, 2002 from Werkenthin; Booth, Ahrens, and Werkenthin, P.C. to Dixon, TCEQ Applications Team.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Letter dated August 30, 2002 from Dixon, TCEQ Applications Team to Kou, Arroyo Aquaculture Association.

Letter dated August 23, 2002 from Werkenthin; Booth, Ahrens, and Werkenthin, P.C. to Huertas, TCEQ Applications Team.

E. MISCELLANEOUS

Quality Criteria for Water (1986), EPA 440/5-86-001, 5/1/86.

The State of Texas Water Quality Inventory, 13th Edition, Publication No. SFR-50, Texas Commission on Environmental Quality, December 1996.

Texas Surface Water Quality Standards, 30 TAC Sections 307.1 - 307.10 (21 TexReg 9765, 4/30/97).

"Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fourth Edition," EPA/600/4-90/027F.

"Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms; Second Edition" (EPA-600-4-91-003).

"Implementation of the Texas Commission on Environmental Quality Standards via Permitting," Texas Commission on Environmental Quality, August 1995.

"TCEQ Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits," TCEQ Document No. 98-001.000-OWR-WQ, May 1998.

Appendix A - Water Quality Based Limitations

TEXTOX MENU #6, 30 TAC 307 (4/30/97)

THE RECEIVING STREAM IS A BAY OR WIDE TIDAL RIVER.

INPUT

Prepared By:	Galindo
Permittee:	Taiwan Shrimp Village Association Inc. & Arroyo Aquaculture Assoc.
Permit No.:	WQ0003596000
Outfall No.:	001
Receiving Stream:	Arroyo Colorado Tidal
Segment No.:	2201
Segment Name:	Arroyo Colorado Tidal
TSS:	12.0
pH:	7.7
Hardness:	371.0
Chloride:	4990.0
Critical Low Flow [7Q2] (cfs)	162.6
Harmonic Mean Flow (cfs)	242.0
Effluent Flow for Aquatic Life (MGD)	34.9
Percent Effluent for Human Health:	13.0
Percent Effluent for ZID:	56.0
Percent Effluent for Mixing Zone:	24.0
No Oyster Waters (1) Or Oyster Waters (2) Option:	1

CALCULATE TOTAL/DISSOLVED RATIO Ct/Cd = (1+(Kpo*TSS^(a+1))

ESTUARINE METAL	Kpo	a	Ct/Cd	Fraction Dissolved	
Aluminum	N/A	N/A	1.00	1.00	Assumed
Arsenic	N/A	N/A	1.00	1.00	Assumed
Cadmium	N/A	N/A	1.00	1.00	Assumed
Chromium (Total)	N/A	N/A	1.00	1.00	Assumed
Chromium (3+)	N/A	N/A	1.00	1.00	Assumed
Chromium (6+)	N/A	N/A	1.00	1.00	Assumed
Copper	0.07	-0.72	1.14	0.88	
Lead	1.15	-0.85	2.67	0.37	
Mercury	N/A	N/A	1.00	1.00	Assumed
Nickel	N/A	N/A	1.00	1.00	Assumed
Selenium	N/A	N/A	1.00	1.00	Assumed
Silver	0.72	-0.74	2.37	0.42	
Zinc	0.23	-0.52	1.76	0.57	

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM PERMIT LIMITS

CONSTITUENT	ACUTE STANDARD (ug/L)	CHRONIC STANDARD (ug/L)	WLAa	WLAc	LTAa	LTAc	DLY AVG (ug/l)	DLY MAX (ug/l)	MAL (ug/l)
Aldrin	1.3	1E+183	2.32	**********	1.330	**********	1.955	4.137	0.05
Aluminum	*	1E+183	0	**********	0.000	**********	0.0	0.0	30
Arsenic	149	78	266.1	325.0	152.459	250.250	224.1	474.147	10
Cadmium	45.62	10.02	81.5	41.75	46.679	32.148	47.26	99.98	1
Carbaryl	613	1E+183	1095	**********	627.230	0.000	922	1951	5
Chlordane	0.09	0.004	0.161	0.017	0.092	0.013	0.019	0.040	0.15
Chlorpyrifos	0.011	0.0056	0.020	0.023	0.011	0.018	0.017	0.035	0.05
Chromium (3+)	**********	*	0	0	0.000	0.000	0	0	***
Chromium (6+)	1100	50	1964.29	208.33	1125.536	160.417	235.81	498.90	10
Copper	16.27	4.37	33.13	20.76	18.985	15.988	23.50	49.72	10
Copper (oyster)	*********	*	0.00	*	0.000	0.000	0.00	0.00	10
Cyanide	5.6	5.6	10.00	23.33	5.730	17.967	8.42	17.82	20
4,4'-DDT	0.13	0.001	0.232	0.004	0.133	0.003	0.005	0.010	0.1
Demeton	1E+183	0.1	**********	0.417	0.000	0.321	0.472	0.998	0.2
Dicofol	*	*	0	0	0.000	0.000	0	0	20
Dieldrin	0.71	0.0019	1.268	0.008	0.726	0.006	0.009	0.019	0.1
Diuron	*	*	0	0	0.000	0.000	0	0	***
Endosulfan	0.034	0.0087	0.061	0.036	0.035	0.028	0.041	0.087	0.1
Endrin	0.037	0.0023	0.066	0.010	0.038	0.007	0.011	0.023	0.1
Guthion	1E+183	0.01	**********	0.042	0.000	0.032	0.047	0.100	0.1
Heptachlor	0.053	0.0036	0.095	0.015	0.054	0.012	0.017	0.036	0.05
Hexachlorocyclohexane	0.16	*	0.286	0.000	0.164	0.000	0.241	0.509	0.05
Lead	140.00	5.60	667.36	62.29	382.400	47.961	70.50	149.16	5
Malathion	1E+183	0.01	**********	0.042	0.000	0.032	0.047	0.100	0.1
Mercury	2.1	1.1	3.750	4.583	2.149	3.529	3.159	6.683	0.2
Methoxychlor	1E+183	0.03	**********	0.125	0.000	0.096	0.141	0.299	1
Mirex	1E+183	0.001	**********	0.004	0.000	0.003	0.005	0.010	0.2
Nickel	119	13	212	55	121.762	42.350	62	132	10
PCBs (Total)	10	0.03	17.857	0.125	10.232	0.096	0.141	0.299	1
Parathion	*	*	0.000	0.000	0.000	0.000	0.000	0.000	0.1
Phenanthrene	7.7	4.6	13.7	19.2	7.879	14.758	11.6	24.5	10
Pentachlorophenol	15.14	9.56	27.04	39.83	15.491	30.672	22.77	48.18	50
Selenium	564	136	1007.1	566.667	577.093	436.333	641.41	1357.00	10
Silver	2.3	*	9.75	**********	5.586	0.000	8.212	17.374	1
Toxaphene	0.21	0.0002	0.375	0.0008	0.215	0.001	0.0009	0.0020	0.0
Tributyltin	0.24	0.043	0.429	0.179	0.246	0.138	0.203	0.429	5
2,4,5-Trichlorophenol	259	12	462	50	265.012	38.500	57	120	
Zinc	98	89	308	652	176.295	502.0	259	548	

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM PERMIT LIMITS

CONSTITUENT	SALT Fish Only (ug/l)	WLAh	LTAh	DLY AVG (ug/l)	DLY MAX (ug/l)	MAL (ug/l)
Aldrin	0.0218	0.168	0.156	0.229	0.485	0.05
Alpha Hexachlorocyclohexane	0.685	5.115	4.767	6.993	14.795	0.05
Arsenic	*	0	0.0	0.0	0.0	10
Barium	*	0	0	0	0	10
Benzene	208	1600	1488	2187	4626	10
Benzidine	0.0023	0.018	0.016	0.024	0.051	50
Benzo(a)anthracene	*	0	0.000	0.000	0.000	10
Benzo(a)pyrene	*	0	0.000	0.000	0.000	10
Beta Hexachlorocyclohexane	2.33	17.92	16.67	24.50	51.84	0.05
Bis(chloromethyl)ether	1.06	8.15	7.58	11.15	23.58	***
Cadmium	*	0	0.00	0.00	0.00	1
Carbon Tetrachloride	121	931	866	1272	2692	10
Chlordane	0.0213	0.16	0.152	0.224	0.474	0.15
Chlorobenzene	3298	25369	23593	34682	73375	10
Chloroform	8087	62208	57853	85044	179923	10
Chromium	*	0	0	0	0	10
Chrysene	*	0	0.000	0.000	0.000	10
Cresols	31111	239315	222563	327168	692172	10
Cyanide (Free)	*	0	0.0	0.0	0.0	20
4,4'-DDD	0.199	1.531	1.424	2.093	4.427	0.1
4,4'-DDE	0.0363	0.279	0.260	0.382	0.808	0.1
4,4'-DDT	0.0352	0.271	0.252	0.370	0.783	0.1
2,4-D	*	0	0.0	0.0	0.0	10
Dantol	0.481	3.700	3.441	5.058	10.702	***
Dibromochloromethane	10236	78738	73227	107643	227735	10
1,2-Dibromoethane	0.769	5.915	5.501	8.087	17.109	2
Dieldrin	0.0008	0.006	0.006	0.008	0.018	0.1
p-Dichlorobenzene	*	0	0.0	0.0	0.0	10
1,2-Dichloroethane	1196	9200	8556	12577	26609	10
1,1-Dichloroethylene	56.3	448	417	613	1297	10
Dioctol	0.144	1.108	1.030	1.514	3.204	20
Dioxins/Furans	7.00E-07	5.38E-06	5.01E-06	5.38E-06	*********	10
Endrin	*	0	0.000	0.000	0.000	0.1
Fluoride	*	0	0	0	0	500
Gamma Hexachlorocyclohexane	10.7	82.3	76.5	112.5	238.1	0.05
Heptachlor	0.012	0.092	0.086	0.126	0.267	0.05
Heptachlor Epoxide	4.92	37.85	35.20	51.74	109.46	1
Hexachlorobenzene	0.0086	0.066	0.062	0.090	0.191	10
Hexachlorobutadiene	7.48	57.54	53.51	78.66	166.42	10
Hexachloroethane	62.7	482.3	448.5	659.4	1395.0	20
Hexachlorophene	0.0355	0.273	0.254	0.373	0.790	10
Lead	3.85	79.06	73.62	108.08	228.66	5
Mercury	0.025	0.192	0.179	0.263	0.556	0.2
Methoxychlor	*	0	0.000	0.000	0.000	2
Methyl Ethyl Ketone	591111	4547008	4228717	6216214	*********	50
Mirex	0.0126	0.097	0.090	0.133	0.280	0.2
Nitrate-Nitrogen	*	0	0	0	0	1000
Nitrobenzene	481	3700	3441.0	5058.3	10701.5	10
N-Nitrosodiethylamine	5.12	39.4	36.6	53.8	113.9	20
N-Nitroso-di-n-Butylamine	8.98	69.077	64.242	94.435	199.791	20
PCB's	0.0009	0.007	0.006	0.009	0.020	1
Pentachlorobenzene	0.739	5.685	5.287	7.771	16.442	20
Pentachlorophenol	90.5	696	647	952	2013	50
Pyridine	8889	68377	63591	93478	197767	20
Selenium	*	0	0.0	0.0	0.0	10
1,2,4,5-Tetrachlorobenzene	1.01	7.769	7.225	10.621	22.471	20
Tetrachloroethylene	1221	9392	8735	12840	27165	10
Toxaphene	0.0297	0.228	0.212	0.312	0.661	5
2,4,5-TP (Silvex)	*	0	0.0	0.0	0.0	2
2,4,5-Trichlorophenol	2681	20623	19179	28194	59648	50
Trichloroethylene	*	0	0	0	0	10
1,1,1-Trichloroethane	*	0	0	0	0	10
TTHMs	*	0	0	0	0	10
Vinyl Chloride	63	485	451	663	1402	10

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

CALCULATE 70% AND 85% OF DAILY AVERAGE PERMIT LIMITS

AQUATIC LIFE	70%	85%
Aldrin	1.37	1.66
Aluminum	0	0
Arsenic	157	190
Cadmium	33.08	40.17
Carbaryl	645.42	783.72
Chlordane	0.013	0.016
Chlorpyrifos	0.012	0.014
Chromium (3+)	0	0
Chromium (6+)	165.07	200.44
Copper	16.45	19.98
Cyanide	5.90	7.16
4,4'-DDT	0.003	0.004
Demeton	0.330	0.401
Dicofol	0.000	0.000
Dieldrin	0.006	0.008
Diuron	0.000	0.000
Endosulfan	0.029	0.035
Endrin	0.008	0.009
Guthion	0.033	0.040
Heptachlor	0.012	0.014
Hexachlorocyclohexane	0.17	0.20
Lead	49.35	59.93
Malathion	0.033	0.040
Mercury	2.21	2.68
Methoxychlor	0.10	0.12
Mirex	0.003	0.004
Nickel	44	53
PCBs (Total)	0.099	0.120
Parathion	0.000	0.000
Phenanthrene	8.11	9.84
Pentachlorophenol	15.94	19.36
Selenium	448.99	545.20
Silver	5.75	6.98
Toxaphene	0.001	0.001
Tributyltin	0.142	0.172
2,4,5-Trichlorophenol	39.62	48.11
Zinc	181	220

HUMAN HEALTH

Aldrin	0.160	0.195
Alpha Hexachlorocyclohexane	4.90	5.94
Arsenic	0.00	0.00
Barium	0	0
Benzene	1531.15	1859.26
Benzidine	0.017	0.021
Benzo(a)anthracene	0.000	0.000
Benzo(a)pyrene	0.000	0.000
Beta Hexachlorocyclohexane	17.15	20.83
Bis(chloromethyl)ether	7.80	9.48
Cadmium	0.00	0.00
Carbon Tetrachloride	890.72	1081.59
Chlordane	0.157	0.190
Chlorobenzene	24278	29480
Chloroform	59531	72288
Chromium	0.00	0.00
Chrysene	0.000	0.000
Cresols	229018	278093
Cyanide (Free)	0.00	0.00
4,4'-DDD	1.46	1.78
4,4'-DDE	0.27	0.32
4,4'-DDT	0.26	0.31
2,4-D	0.00	0.00
Danitol	3.54	4.30
Dibromochloromethane	75360	91497
1,2-Dibromoethane	5.66	6.87
Dieldrin	0.006	0.007
p-Dichlorobenzene	0.00	0.00
1,2-Dichloroethane	8804.12	10690.72
1,1-Dichloroethylene	429.16	521.13
Dicofol	1.06	1.29
Dioxins/Furans	3.77E-06	4.58E-06
Endrin	0.00	0.00
Flouride	0	0
Gamma Hexachlorocyclohexane	78.77	95.64
Heptachlor	0.088	0.107
Heptachlor Epoxide	36.22	43.98
Hexachlorobenzene	0.06	0.08
Hexachlorobutadiene	55.06	66.86
Hexachloroethane	461.55	560.46
Hexachlorophene	0.26	0.32
Lead	75.66	91.87
Mercury	0.184	0.223
Methoxychlor	0.00	0.00
Methyl Ethyl Ketone	4351350	5283782
Mirex	0.09	0.11
Nitrate-Nitrogen	0	0
Nitrobenzene	3540.79	4299.53
N-Nitrsodiethylamine	37.69	45.77
N-Nitroso-di-n-Butylamine	66.10	80.27
PCB's	0.007	0.008
Pentachlorobenzene	5.44	6.61
Pentachlorophenol	666.20	808.96
Pyridine	65435	79456
Selenium	0.00	0.00
1,2,4,5-Tetrachlorobenzene	7.43	9.03
Tetrachloroethylene	8988.16	10914.19
Toxaphene	0.22	0.27
2,4,5-TP (Silvex)	0.00	0.00
2,4,5-Trichlorophenol	19736	23965
Trichloroethylene	0.00	0.00
1,1,1-Trichloroethane	0.00	0.00
TTHMs	0.00	0.00
Vinyl Chloride	463.76	563.14

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

TEXTOX MENU # 5 30 TAC 307 (4/30/97)

THE RECEIVING STREAM IS A BAY OR WIDE TIDAL RIVER.

INPUT

Prepared By:	Galindo
Permittee:	Taiwan Shrimp Village Association Inc. & Arroyo Aquaculture Assoc.
Permit No.:	WQ0003596000
Outfall No.:	002
Receiving Stream:	drainage ditch
Segment No.:	2201
Segment Name:	Arroyo Colorado Tidal
TSS:	12.0
pH:	7.7
Hardness:	371.0
Chloride:	4990.0
Critical Low Flow [7Q2] (cfs)	162.6
Harmonic Mean Flow (cfs)	242.0
Effluent Flow for Aquatic Life (MGD)	34.9
Percent Effluent for Human Health:	100.0
Percent Effluent for ZID:	100.0
Percent Effluent for Mixing Zone:	100.0
No Oyster Waters (1) Or Oyster Waters (2) Option:	1

CALCULATE TOTAL/DISSOLVED RATIO Ct/Cd = (1+(Kpo*TSS^(a+1))

ESTUARINE METAL	Kpo	a	Ct/Cd	Fraction Dissolved	
Aluminum	N/A	N/A	1.00	1.00	Assumed
Arsenic	N/A	N/A	1.00	1.00	Assumed
Cadmium	N/A	N/A	1.00	1.00	Assumed
Chromium (Total)	N/A	N/A	1.00	1.00	Assumed
Chromium (3+)	N/A	N/A	1.00	1.00	Assumed
Chromium (6+)	N/A	N/A	1.00	1.00	Assumed
Copper	0.07	-0.72	1.14	0.88	
Lead	1.15	-0.85	2.67	0.37	
Mercury	N/A	N/A	1.00	1.00	Assumed
Nickel	N/A	N/A	1.00	1.00	Assumed
Selenium	N/A	N/A	1.00	1.00	Assumed
Silver	0.72	-0.74	2.37	0.42	
Zinc	0.23	-0.52	1.76	0.57	

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM PERMIT LIMITS

CONSTITUENT	ACUTE STANDARD (ug/L)	CHRONIC STANDARD (ug/L)	WLAa	WLAc	LTAa	LTAc	DLY AVG (ug/l)	DLY MAX (ug/l)	MAL (ug/l)
Aldrin	1.3	1E+183	1.30	**********	0.416	**********	0.612	1.294	0.05
Aluminum	*	1E+183	0	**********	0.0	**********	0.0	0.0	30
Arsenic	149	78	149.0	78.0	47.7	47.6	69.9	147.974	10
Cadmium	45.62	10.02	45.6	10.02	14.60	6.1	8.98	19.01	1
Carbaryl	613	1E+183	613	**********	196	**********	288	610	5
Chlordane	0.09	0.004	0.090	0.004	0.029	0.00	0.004	0.008	0.15
Chlorpyrifos	0.011	0.0056	0.011	0.006	0.004	0.00	0.005	0.011	0.05
Chromium (3+)	**********	*	0	0	0	0	0	0	***
Chromium (6+)	1100	50	1100.00	50.00	352.00	30.5	44.84	94.86	10
Copper	16.27	4.37	16.55	4.98	5.94	3.04	4.47	9.45	10
Copper (oyster)	*********	*	0.00	*	0.00	*	0.00	0.00	10
Cyanide	5.6	5.6	5.60	5.60	1.79	3.42	2.63	5.57	20
4,4'-DDT	0.13	0.001	0.130	0.001	0.042	0.001	0.001	0.002	0.1
Demeton	1E+183	0.1	**********	0.100	**********	0.061	0.090	0.190	0.2
Dicofol	*	*	0	0	0	0	0	0	20
Dieldrin	0.71	0.0019	0.710	0.002	0.227	0.001	0.002	0.004	0.1
Diuron	*	*	0	0	0	0	0	0	***
Endosulfan	0.034	0.0087	0.034	0.009	0.011	0.005	0.008	0.017	0.1
Endrin	0.037	0.0023	0.037	0.002	0.012	0.001	0.002	0.004	0.1
Guthion	1E+183	0.01	**********	0.010	**********	0.006	0.009	0.019	0.1
Heptachlor	0.053	0.0036	0.053	0.004	0.017	0.002	0.003	0.007	0.05
Hexachlorocyclohexane	0.16	*	0.160	0.000	0.051	0.000	0.075	0.159	0.05
Lead	140.00	5.60	373.72	14.95	119.59	9.12	13.40	28.36	5
Malathion	1E+183	0.01	**********	0.010	**********	0.006	0.009	0.019	0.1
Mercury	2.1	1.1	2.100	1.100	0.672	0.671	0.986	2.087	0.2
Methoxychlor	1E+183	0.03	**********	0.030	**********	0.018	0.027	0.057	2
Mirex	1E+183	0.001	**********	0.001	**********	0.001	0.001	0.002	0.2
Nickel	119	13	119	13	38	8	12	26	10
PCBs (Total)	10	0.08	10.000	0.030	3.200	0.018	0.027	0.057	1
Parathion	*	*	0.000	0.000	0.000	0.000	0.000	0.000	0.1
Phenanthrene	7.7	4.6	7.7	4.6	2.5	2.8	3.6	7.7	10
Pentachlorophenol	15.14	9.56	15.14	9.56	4.84	5.83	7.12	15.07	50
Selenium	564	136	564.0	136.000	180.48	82.96	121.95	258.01	10
Silver	2.3	*	5.46	**********	1.747	**********	2.568	5.434	2
Toxaphene	0.21	0.0002	0.210	0.0002	0.067	0.0001	0.0002	0.0004	5
Tributyltin	0.24	0.043	0.240	0.043	0.077	0.026	0.039	0.082	0.0
2,4,5-Trichlorophenol	259	12	259	12	83	7	11	23	50
Zinc	98	89	172	156	55	95	81	171	5

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY M 'UM PERMIT LIMITS

03596000

CONSTITUENT	SALT Fish Only (ug/l)	WLAh	LTAh	DLY AVG (ug/l)	DLY MAX (ug/l)	MAL (ug/l)	
Aldrin	0.0218	0.022	0.020	0.030	0.063	0.05	
Alpha Hexachlorocyclohexane	0.665	0.665	0.618	0.909	1.923	0.05	
Arsenic	*	0	0.0	0.0	0.0	10	
Barium	*	0	0	0	0	10	
Benzene	208	208	193	284	602	10	
Benzidine	0.0023	0.002	0.002	0.003	0.007	50	
Benzo(a)anthracene	*	0	0.000	0.000	0.000	10	
Benzo(a)pyrene	*	0	0.000	0.000	0.000	10	
Beta Hexachlorocyclohexane	2.33	2.33	2.17	3.19	6.74	0.05	
Bis(chloromethyl)ether	1.06	1.06	0.99	1.45	3.07	***	
Cadmium	*	0	0.00	0.00	0.00	1	
Carbon Tetrachloride	121	121	113	165	350	10	
Chlordane	0.0213	0.02	0.020	0.029	0.062	0.15	
Chlorobenzene	3298	3298	3067	4509	9539	10	
Chloroform	8087	8087	7521	11056	23390	10	
Chromium	*	0	0	0	0	10	
Chrysene	*	0	0.000	0.000	0.000	10	
Cresols	31111	31111	28933	42532	89982	10	
Cyanide (Free)	*	0	0.0	0.0	0.0	20	
4,4'-DDD	0.199	0.199	0.185	0.272	0.576	0.1	
4,4'-DDE	0.0363	0.036	0.034	0.050	0.105	0.1	
4,4'-DDT	0.0352	0.035	0.033	0.048	0.102	0.1	
2,4-D	*	0	0.0	0.0	0.0	10	
Danitol	0.481	0.481	0.447	0.658	1.391	***	
Dibromochloromethane	10236	10236	9519	13994	29606	10	
1,2-Dibromoethane	0.769	0.769	0.715	1.051	2.224	2	
Dieldrin	0.0008	0.001	0.001	0.001	0.002	0.1	
p-Dichlorobenzene	*	0	0.0	0.0	0.0	10	
1,2-Dichloroethane	1196	1196	1112	1635	3459	10	
1,1-Dichloroethylene	58.3	58	54	80	169	10	
Dicofol	0.144	0.144	0.134	0.197	0.416	20	
Dioxins/Furans	7.00E-07	7.00E-07	6.51E-07	7.00E-07	********	10	ppq
Endrin	*	0	0.000	0.000	0.000	0.1	
Fluoride	*	0	0	0	0	500	
Gamma Hexachlorocyclohexane	10.7	10.7	10.0	14.6	30.9	0.05	
Heptachlor	0.012	0.012	0.011	0.016	0.035	0.05	
Heptachlor Epoxide	4.92	4.92	4.58	6.73	14.23	1	
Hexachlorobenzene	0.0086	0.009	0.008	0.012	0.025	10	
Hexachlorobutadiene	7.48	7.48	6.96	10.23	21.63	10	
Hexachloroethane	62.7	62.7	58.3	85.7	181.3	20	
Hexachlorophene	0.0355	0.036	0.033	0.049	0.103	10	
Lead	3.85	10.28	9.56	14.05	29.73	5	
Mercury	0.025	0.025	0.023	0.034	0.072	0.2	
Methoxychlor	*	0	0.000	0.000	0.000	2	
Methyl Ethyl Ketone	591111	591111	549733	808108	1709670	50	
Mirex	0.0126	0.013	0.012	0.017	0.036	0.2	
Nitrate-Nitrogen	*	0	0	0	0	1000	
Nitrobenzene	481	481	447.3	657.6	1391.2	10	
N-Nitrosodiethylamine	5.12	5.1	4.8	7.0	14.8	20	
N-Nitroso-di-n-Butylamine	8.98	8.980	8.351	12.277	25.973	20	
PCB's	0.0009	0.001	0.001	0.001	0.003	1	
Pentachlorobenzene	0.739	0.739	0.687	1.010	2.137	20	
Pentachlorophenol	90.5	91	84	124	262	50	
Pyridine	8889	8889	8267	12152	25710	20	
Selenium	*	0	0.0	0.0	0.0	10	
1,2,4,5-Tetrachlorobenzene	1.01	1.010	0.939	1.381	2.921	20	
Tetrachloroethylene	1221	1221	1136	1669	3531	10	
Toxaphene	0.0297	0.030	0.028	0.041	0.086	5	
2,4,5-TP (Silvex)	*	0	0.0	0.0	0.0	2	
2,4,5-Trichlorophenol	2681	2681	2493	3665	7754	50	
Trichloroethylene	*	0	0	0	0	10	
1,1,1-Trichloroethane	*	0	0	0	0	10	
TTHMs	*	0	0	0	0	10	
Vinyl Chloride	63	63	59	86	182	10	

CALCULATE 70% AND 85% OF DAILY AVERAGE PERMIT LIMITS

AQUATIC LIFE	70%	85%
Aldrin	0.43	0.52
Aluminum	0	0
Arsenic	49	59
Cadmium	6.29	7.64
Carbaryl	201.85	245.10
Chlordane	0.003	0.003
Chlorpyrifos	0.004	0.004
Chromium (3+)	0	0
Chromium (6+)	31.38	38.11
Copper	3.13	3.80
Cyanide	1.84	2.24
4,4'-DDT	0.001	0.001
Demeton	0.063	0.076
Dicofol	0.000	0.000
Dieldrin	0.001	0.001
Diuron	0.000	0.000
Endosulfan	0.005	0.007
Endrin	0.001	0.002
Guthion	0.006	0.008
Heptachlor	0.002	0.003
Hexachlorocyclohexane	0.05	0.06
Lead	9.38	11.39
Malathion	0.006	0.008
Mercury	0.69	0.84
Methoxychlor	0.02	0.02
Mirex	0.001	0.001
Nickel	8	10
PCBs (Total)	0.019	0.023
Parathion	0.000	0.000
Phenanthrene	2.54	3.08
Pentachlorophenol	4.99	6.05
Selenium	85.37	103.66
Silver	1.80	2.18
Toxaphene	0.000	0.000
Tributyltin	0.027	0.033
2,4,5-Trichlorophenol	7.53	9.15
Zinc	57	69

HUMAN HEALTH

Aldrin	0.021	0.025
Alpha Hexachlorocyclohexane	0.64	0.77
Arsenic	0.00	0.00
Barium	0	0
Benzene	199.05	241.70
Benzidine	0.002	0.003
Benzo(a)anthracene	0.000	0.000
Benzo(a)pyrene	0.000	0.000
Beta Hexachlorocyclohexane	2.23	2.71
Bis(chloromethyl)ether	1.01	1.23
Cadmium	0.00	0.00
Carbon Tetrachloride	115.79	140.61
Chlordane	0.020	0.025
Chlorobenzene	3156	3832
Chloroform	7739	9397
Chromium	0.00	0.00
Chrysene	0.000	0.000
Cresols	29772	36152
Cyanide (Free)	0.00	0.00
4,4'-DDD	0.19	0.23
4,4'-DDE	0.03	0.04
4,4'-DDT	0.03	0.04
2,4-D	0.00	0.00
Danitol	0.46	0.56
Dibromochloromethane	9796	11895
1,2-Dibromoethane	0.74	0.89
Dieldrin	0.001	0.001
p-Dichlorobenzene	0.00	0.00
1,2-Dichloroethane	1144.54	1389.79
1,1-Dichloroethylene	55.79	67.75
Dicofol	0.14	0.17
Dioxins/Furans	4.90E-07	5.95E-07
Endrin	0.00	0.00
Flouride	0	0
Gamma Hexachlorocyclohexane	10.24	12.43
Heptachlor	0.011	0.014
Heptachlor Epoxide	4.71	5.72
Hexachlorobenzene	0.01	0.01
Hexachlorobutadiene	7.16	8.69
Hexachloroethane	60.00	72.86
Hexachlorophene	0.03	0.04
Lead	9.84	11.94
Mercury	0.024	0.029
Methoxychlor	0.00	0.00
Methyl Ethyl Ketone	565675	686892
Mirex	0.01	0.01
Nitrate-Nitrogen	0	0
Nitrobenzene	460.30	558.94
N-Nitrsodiethylamine	4.90	5.95
N-Nitroso-di-n-Butylamine	8.59	10.44
PCB's	0.001	0.001
Pentachlorobenzene	0.71	0.86
Pentachlorophenol	86.61	105.16
Pyridine	8507	10329
Selenium	0.00	0.00
1,2,4,5-Tetrachlorobenzene	0.97	1.17
Tetrachloroethylene	1168.46	1418.84
Toxaphene	0.03	0.03
2,4,5-TP (Silvex)	0.00	0.00
2,4,5-Trichlorophenol	2566	3115
Trichloroethylene	0.00	0.00
1,1,1-Trichloroethane	0.00	0.00
TTHMs	0.00	0.00
Vinyl Chloride	60.29	73.21

Compliance History

Customer/Respondent/Owner-Operator:	CN600800221	Taiwan Shrimp Village Assoc & Arroyo Aquaculture	Classification: AVERAGE	Rating: 0.84
Regulated Entity:	RN101526606	ARROYO AQUACULTURE WASTEWATER TREATMENT FACILITY	Classification: AVERAGE	Site Rating: 0.37
ID Number(s):	WASTEWATER	PERMIT		WQ0003596000
	WASTEWATER	PERMIT		TPDES0103811
Location:	36386 MARSHALL HUTTS RD, RIO HONDO, TX, 78583		Rating Date: September 01 07	Repeat Violator: NO
TCEQ Region:	REGION 15 - HARLINGEN			
Date Compliance History Prepared:	June 04, 2008			
Agency Decision Requiring Compliance History:	Permit - Issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit.			
Compliance Period:	April 30, 1997 to June 04, 2008			

TCEQ Staff Member to Contact for Additional Information Regarding this Compliance History

Name: David Galindo Phone: 512-239-0951

Site Compliance History Components

1. Has the site been in existence and/or operation for the full five year compliance period? No
2. Has there been a (known) change in ownership of the site during the compliance period? No
3. If Yes, who is the current owner? N/A
4. If Yes, who was/were the prior owner(s)? N/A
5. When did the change(s) in ownership occur? N/A

Components (Multimedia) for the Site :

A. Final Enforcement Orders, court judgements, and consent decrees of the state of Texas and the federal government.

N/A

B. Any criminal convictions of the state of Texas and the federal government.

N/A

C. Chronic excessive emissions events.

N/A

D. The approval dates of investigations. (CCEDS Inv. Track. No.)

1	02/04/2000	(322418)
2	02/04/2000	(322419)
3	02/04/2000	(322422)
4	02/04/2000	(322424)
5	02/04/2000	(322426)
6	02/04/2000	(322428)
7	02/04/2000	(322430)
8	02/04/2000	(322431)
9	02/04/2000	(222613)
10	02/04/2000	(222617)
11	02/04/2000	(222621)
12	02/04/2000	(222625)
13	06/22/2000	(222584)
14	06/22/2000	(222590)
15	06/22/2000	(222591)
16	06/22/2000	(222594)
17	06/22/2000	(222597)
18	07/06/2000	(222601)
19	08/18/2000	(222604)
20	09/26/2000	(222607)
21	10/16/2000	(222610)
22	11/20/2000	(222614)
23	12/26/2000	(222618)

24	01/30/2001	(222622)
25	02/23/2001	(222585)
26	04/09/2001	(371194)
27	04/11/2001	(222588)
28	04/11/2001	(222592)
29	05/14/2001	(222595)
30	05/17/2001	(247534)
31	06/07/2001	(222598)
32	07/16/2001	(222602)
33	08/20/2001	(222605)
34	08/22/2001	(39881)
35	09/10/2001	(222608)
36	09/12/2001	(146950)
37	10/19/2001	(222611)
38	12/06/2001	(222615)
39	12/15/2001	(222619)
40	01/11/2002	(222623)
41	02/13/2002	(222586)
42	04/26/2002	(222593)
43	05/02/2002	(222596)
44	07/03/2002	(222599)
45	08/09/2002	(222606)
46	08/13/2002	(222603)
47	09/09/2002	(222609)
48	10/04/2002	(222612)
49	11/07/2002	(222616)
50	12/05/2002	(222620)
51	02/28/2003	(26225)
52	03/02/2003	(222587)
53	03/03/2003	(222624)
54	03/10/2003	(222589)
55	04/21/2003	(31865)
56	06/04/2003	(222600)
57	08/11/2003	(322429)
58	08/20/2003	(144056)
59	10/03/2003	(322432)
60	11/07/2003	(322433)
61	12/10/2003	(322434)
62	01/07/2004	(322435)
63	03/05/2004	(322420)
64	04/06/2004	(322421)
65	05/04/2004	(322423)
66	06/07/2004	(322425)
67	07/02/2004	(264967)
68	07/06/2004	(322427)
69	08/09/2004	(364152)
70	09/03/2004	(364153)
71	10/08/2004	(388598)
72	11/03/2004	(364154)
73	12/03/2004	(388599)
74	01/20/2005	(388600)
75	02/10/2005	(388596)
76	03/02/2005	(388597)
77	04/08/2005	(426143)
78	12/07/2005	(479259)
79	01/10/2006	(479260)
80	02/27/2006	(455868)
81	03/01/2006	(479258)
82	06/02/2006	(505066)
83	07/07/2006	(527364)
84	08/04/2006	(527365)
85	09/05/2006	(527366)
86	10/05/2006	(551126)
87	11/06/2006	(551127)
88	04/23/2007	(587719)
89	04/23/2007	(587720)
90	04/23/2007	(587721)
91	04/23/2007	(587724)

92 04/23/2007 (587725)
93 05/15/2007 (587722)
94 06/13/2007 (587723)
95 07/11/2007 (605173)
96 08/13/2007 (605174)
97 10/05/2007 (628499)
98 02/07/2008 (676427)
99 02/07/2008 (676431)
100 03/04/2008 (636206)
101 03/13/2008 (676428)
102 03/13/2008 (676429)
103 03/13/2008 (676430)
104 03/13/2008 (676432)
105 04/07/2008 (640451)

E. Written notices of violations (NOV). (CCEDS Inv. Track. No.)

Date: 11/30/2000 (222618)
Self Report? YES Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
TWC Chapter 26 26.121(a)
Description: Failure to meet the limit for one or more permit parameter
Date: 12/31/2000 (222622)
Self Report? YES Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
TWC Chapter 26 26.121(a)
Description: Failure to meet the limit for one or more permit parameter
Date: 04/09/2001 (371194)
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
Description: NON-RPT VIOS FOR MONIT PER OR PIPE
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
Description: NON-RPT VIOS FOR MONIT PER OR PIPE
Date: 05/17/2001 (247534)
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
Description: NON-RPT VIOS FOR MONIT PER OR PIPE
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
Description: NON-RPT VIOS FOR MONIT PER OR PIPE
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
Description: NON-RPT VIOS FOR MONIT PER OR PIPE
Date: 11/30/2002 (222620)
Self Report? YES Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
TWC Chapter 26 26.121(a)
Description: Failure to meet the limit for one or more permit parameter
Date: 12/31/2004 (388600)
Self Report? YES Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
TWC Chapter 26 26.121(a)
Description: Failure to meet the limit for one or more permit parameter
Date: 12/31/2005 (479260)
Self Report? YES Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
TWC Chapter 26 26.121(a)
Description: Failure to meet the limit for one or more permit parameter
Date: 02/24/2006 (455866)
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
Prov: PERMIT TPDES Permit No. WQ0003596-000
on: Failure to maintain TSS below permitted amount for December 2004 and December 2005.

Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
Rqmt Prov: PERMIT TPDES Permit No. WQ0003596000
Description: Failure to maintain CBOD below permitted amount for December 2004 and December 2005.
Date: 11/30/2006 (587724)

Self Report? YES Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
TWC Chapter 26 26.121(a)
Description: Failure to meet the limit for one or more permit parameter
Date: 03/04/2008 (636206)

Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
Description: Failure to provide a flow measuring devices to determine level of discharge into receiving stream.

Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
Rqmt Prov: PERMIT TPDES Permit No. 03596
Description: Failure to ensure that the facility and all of its systems of collection, treatment and disposal are properly operated and maintained. Specifically, outfall 001 was inaccessible at the time of the investigation, therefore monitoring and sampling could not be conducted.

F. Environmental audits.

N/A

G. Type of environmental management systems (EMSs).

N/A

H. Voluntary on-site compliance assessment dates.

N/A

I. Participation in a voluntary pollution reduction program.

N/A

J. Early compliance.

N/A

Sites Outside of Texas

N/A

Texas Commission on Environmental Quality
INTEROFFICE MEMORANDUM

TO: LaDonna Castañuela, Chief Clerk DATE: January 29, 2008

THRU: Kelly Holligan, Team Leader KH 1/29/08
Industrial Team, Wastewater Permitting Section (MC-148)

FROM: David W. Galindo, Permit Writer
Industrial Team, Wastewater Permitting Section (MC-148)

SUBJECT: CHANGES TO BE MADE TO DRAFT PERMIT
Taiwan Shrimp Village Association Inc. and Arroyo Aquaculture Association, Inc. –
DWG 1/29/08 WQ0003596000

Attached is a copy of the draft permit and Fact Sheet for the above-referenced facility. The changes are made to correct Other Requirements Item No. 2 in response to public comments and agreed to by the applicant. These changes do not require the permit application to be renoticed.

Please contact me at Ext. 0951 if you have any specific questions.

End of Notice Period has past
and changes have been incorporated into
draft permit by:

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2008 JAN 30 PM 1:46
CHIEF CLERKS OFFICE

Attachment