UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I - NEW ENGLAND
OFFICE OF ECOSYSTEM PROTECTION
ONE CONGRESS STREET
BOSTON, MASSACHUSETTS 02114-2023

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

DATE OF PUBLIC NOTICE:

NPDES PERMIT NO.: MA0110329

NAME AND ADDRESS OF APPLICANT:

Trio Algarvio, Inc.
P.O. Box 4028
New Bedford, MA 02741

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Trio Algarvio, Inc.
26 Greene at Wood Pier
New Bedford, MA 02741

RECEIVING WATERS: New Bedford Inner Harbor (Buzzards Bay MA95-42)

CLASSIFICATION: SB

I. Proposed Action, Type of Facility, and Discharge Location.

The above named applicant has requested that the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MADEP) reissue its existing NPDES permit to discharge into the designated receiving waters (Figure 1). The facility is an aquaculture grow-out facility for marine and brackish water species. The target species are Angilla rostrata (American eel) and Paralichthys dentatus (summer flounder). Once-through non contact cooling water and treated recirculation reject water from the fish raceways is discharged from Outfalls 001 and 002, respectively, to New Bedford Inner Harbor.

II. Description of Discharge.

Recent facility effluent monitoring data submitted to EPA by Trio Algarvio were reviewed and used to develop this permit, and are summarized in Fact Sheet Table 1.

III. Limitations and Conditions.

The effluent limitations of the draft permit, the monitoring requirements, and implementation schedule (if required) may be found in the draft NPDES permit.

IV. Facility Preamble.

NPDES Permit History

Trio Algarvio, Inc., discharges non contact cooling water and treated process water from their facility located in New Bedford, Massachusetts under a five year NPDES permit issued on March 20, 1996, which expired on March 20, 2001. The 1996 permit has been administratively continued as the permittee has satisfied the conditions listed in Title 40 of the Code of Federal Regulations ("CFR") Section 122.6 and Title 314 of the Code of Massachusetts Regulation ("CMR") Section 3.08. The 1996 permit was the first NPDES permit issued to the facility.

Watershed Initiative

The facility is in the Buzzards Bay watershed basin. The MADEP began concentrating efforts to reissue NPDES permits within this watershed during the Calender Year 2002. To preserve the watershed approach strategy, and its five year cycle, MADEP requested that this permit expire in Calender Year 2007. This permit, after it becomes effective, will expire at midnight on September 30, 2007, consistent with the Massachusetts Watershed Initiative cycle.

Facility Description

The Trio Algarvio facility is an aquaculture grow-out facility for Anguilla rostrata (American eel) and Paralichthys dentatus (summer flounder). The facility includes 15 raceways for growing fish (twelve 50 foot raceways and three 45 foot raceways). The facility recirculates water from the raceways at a rate of 900 gallons per minute (gpm). Approximately 60 gallons per hour (gph) or 1,440 gallons per day (gpd) of water from the growing tanks is replaced and discharged through outfall 002 following treatment by drum filter, dissolved air floatation and ozone disinfection.

The on-site wells supply all source water to the facility. The 600 foot wells were drilled in 1996 and 1997. The well water is oxygen deprived, and is rich in iron, ammonia, and calcium. Currently there are two influent pumps, one with a capacity of 8 gpm, the other with a capacity of 15 gpm, for a total capacity of 23 gpm (equivalent to 33,120 gpd).

In addition to its use in the fish tanks, water from the wells is also used as non contact cooling water for maintaining temperature in the fish growing tanks at less than 73 degrees Fahrenheit during the summer months. This once through water is discharged through outfall 001. The estimated daily flow from this discharge is approximately 460 gallons per hour (or 11,040 gpd). The passive heat exchanger was not in operation during the site visit on December 9, 2002.

Waste solids (excrement and food) generated by the recirculation treatment facilities and the treatment facility for discharge 002 are stored in a manure tank until removed off site by a licensed waste hauler.

During the initial planning phase, internal waste streams (labeled Outfalls 001 and 002) were expected to combine and discharge through one point. The 1996 permit was written before the facility went on-line, and authorized the use of two discharge points to New Bedford Harbor. There are still currently two discharge pipes from the facility to New Bedford Harbor.

There are no toxic chemicals used in the process. Any emergency use of antibiotics must be approved by the United States Food and Drug Administration (USFDA) and the permitting agencies

Fish Harvesting

In the August 24, 1995 NPDES permit application for the proposed facility, the permittee indicated that the projected total yearly harvest would be: 220,000 lbs of Anguilla rostrata (American eel) and 165,000 lbs of Paralichthys dentatus (summer flounder).

The facility has never achieved the production levels that were originally anticipated in the 1995 application. In the March 7, 2001 NPDES permit application, the total yearly harvest is anticipated to be: 5,000 lbs of Anguilla rostrata (American eel) and 50,000 lbs of Paralichthys dentatus (summer flounder).

During the site visit in December 2002, all 15 raceways were dedicated to summer flounder.

Water Quality Standards and Designated Uses

The New Bedford Inner Harbor has been classified as Class SB under the Massachusetts Surface Water Quality Standards. Title 314 Code of Massachusetts Regulations ("CMR") 4.05(4)(b) states that Class SB waters have the following designated uses: *These waters are designated as habitat for fish, other aquatic life and wildlife and for primary and secondary contact recreation. In approved areas they shall be suitable for shellfish harvesting with depuration (Restricted Shellfish Areas). These waters shall have consistently good aesthetic value.*

Section 303(d) of the Federal Clean Water Act (CWA) requires states to identify those water-bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls and, as such require the development of total maximum daily loads (TMDL). The 1998, 303(d) report states that the New Bedford Inner Harbor, from the Coggeshall Street Bridge to Hurricane Barrier (Buzzards Bay River Basin MA95-42), is not attaining water quality standards due to Priority Organics, Metals, Nutrients, Organic enrichment / low dissolved oxygen, and Pathogens.

The Trio Algarvio facility does not cause or contribute to any of the identified impairments, nor does the facility withdraw water from the receiving water for any of its processes.

V. Permit Basis and Explanation of Effluent Limitation Derivation.

A. General Requirements

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. This draft NPDES permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and any applicable State regulations. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136.

EPA is required to consider (a) technology-based requirements, (b) water quality-based requirements, and (c) all limitations and requirements in the current/existing permit, when developing permit limits. These requirements are described in the following paragraphs.

B. Technology-Based Requirements

Technology-based requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (see 40 CFR §125 Subpart A). For existing sources, technology-based requirements according to best practicable control technology currently available (BPT) are applied for conventional, non-conventional, and toxic pollutants. Sections 301 (b)(2)(A) and (E) of the CWA require industrial dischargers to meet limitations based on Best Available Technology Economically Achievable (BAT) for toxic pollutants and Best Conventional Pollutant Control Technology (BCT) for conventional pollutants by July 1, 1984.

Proposed regulations establishing BPT, BAT, and BCT requirements for the Concentrated Aquatic Animal Production Point Source Category were listed on September 12, 2002 at 67 FR 57873. Guidelines representing the degree of effluent limitations attainable by the application of the best practicable control technology currently available are listed in Subpart B -- Recirculating Systems, §451.21. The proposed guidelines indicate limitations for TSS and list Best Management Practices for non-conventional and toxic pollutants. These recently proposed guidelines can be viewed on-line at http://www.epa.gov/waterscience/guide/aquaculture/

C. Water Quality-Based Requirements

Under Section 301(b)(1)(C) of the CWA and EPA regulations, NPDES permits must contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve state or federal water quality standards.

Water quality standards consist of three parts: (1) beneficial designated uses for a water-body or a segment of a water-body; (2) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s); and (3) anti-degradation requirements to ensure that once a use is attained it will not be degraded. The Massachusetts Surface Water Quality Standards, found at 314 CMR 4.00, include these elements. The state will limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained or attained. These standards also include requirements for the regulation and control of toxic constituents and require that EPA criteria, established pursuant to Section 304(a) of the CWA, shall be used unless a site specific criteria is established.

The draft permit must limit any pollutant or pollutant parameter (conventional, non-conventional, toxic, and whole effluent toxicity) that is or may be discharged at a level that causes or has the "reasonable potential" to cause or contribute to an excursion above any water quality standard (40 CFR §122.44(d)). An excursion occurs if the projected or actual in-stream concentration exceeds an applicable water quality criterion. In determining "reasonable potential", EPA considers: (1) existing controls on point and non-point sources of pollution; (2) pollutant concentration and variability in the effluent and receiving water as determined from the permit's re-issuance application, monthly discharge monitoring reports (DMRs), and State and Federal Water Quality Reports; (3) sensitivity of the indicator species used in toxicity testing; (4) known water quality impacts of processes on waste waters; and (5) where appropriate, dilution of the effluent in the receiving water.

D. State Certification

Under Section 401 of the CWA, EPA is required to obtain certification from the state in which the discharge is located which determines that all water quality standards, in accordance with Section 301(b)(1)(C) of the CWA, will be satisfied. Regulations governing state certification are set forth in 40 CFR §124.53 and §124.55. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d).

1996 Permit

Effluent limitations on BOD, TSS, and pH, were established based upon State Certification requirements pursuant to Section 401(a)(1) of the Clean Water Act (CWA). The specific effluent permit limitations on BOD and TSS were established using Best Professional Judgement (BPJ) as authorized by Section 402 (a) (1) of the CWA in conjunction with water quality considerations.

At the time the 1996 was issued, there were no promulgated effluent limitations guidelines (ELGs) for aquaculture facility effluents. Proposed guidelines were published in the Federal Register on Thursday September 12, 2002 at 40 CFR §451.21. The proposed guidelines for recirculating facilities include the same TSS monthly average and daily maximum limitations for recirculating systems found in the 1996 permit, and proposed in this draft permit. The September 12, 2002 Federal Register can be viewed at: http://www.epa.gov/waterscience/guide/aquaculture/. If final ELGs more stringent than the BPJ limits used in this draft permit are promulgated, this permit may be reopened and modified to include the more stringent limits.

The 1996 permit required that the company conduct a one time Whole Effluent Toxicity (WET) test which included the use of standard salt water test organisms in accordance with EPA Region I protocol. The test was performed, and the results showed that the effluent was not toxic.

The authority for BPJ is contained in Section 402(a)(1) of the CWA, which authorizes the EPA Administrator to issue a permit containing "such conditions as the Administrator determines are necessary to carry out the provisions of the Act". The NPDES regulations in 40 CFR §125.3 state that permits developed on a case-by-cases basis under Section 402(a)(1) of the CWA must consider (1) the appropriate technology for the category class of point sources of which the applicant is a member, based on available information, and (2) any unique factors relating to the applicant.

Flow – Outfall 001 and 002

The 1996 permit established a monthly average flow limit of 0.15 million gallons per day (MGD) for both Outfalls 001 and 002 based on an projected average monthly discharge of 100,000 gpd and a maximum daily discharge of 150,000 gpd.

Calculating NPDES permit conditions for production-based limitations listed in 40 CFR § 122.45(b)(2)(i) reads:

> *"Except in the case of POTWs ... calculation of any permit limitations, standards, or prohibitions which are based on production (or other measure of operation) shall be based not upon the designed production capacity but rather upon a reasonable measure of actual production of the facility. For new sources or new dischargers ..."*

Presently the facility has a maximum influent pumping capacity of 23 gpm (or 33,120 gpd). Due to both a lack of recent monthly flow data from the facility and no plans to significantly increase production during the life of this permit, EPA considers 33,120 gpd to be a reasonable measure of actual production of the facility. The draft permit has changed the monthly average discharge flow limit from 0.15 MGD (or 150,000 gpd) to 34,000 gpd. The permittee shall calculate this limit each month by adding the average monthly discharge flow from Outfalls 001 and 002. The combined flow from both Outfalls shall not exceed a monthly average limit of 34,000 gpd. This combined flow value, which represents the average monthly total flow from the facility, shall be submitted on monthly discharge monitoring reports.

This draft has added a daily maximum reporting requirement. The permittee shall report the highest daily flow discharge value from Outfall 001 for each three month period on the quarterly discharge monitoring report. The permittee shall report the highest daily flow discharge value from Outfall 002 for each month on the monthly discharge monitoring report.

BOD – Outfall 002

The 1996 permit established a BOD_5 monthly average limit of 30 mg/l and a daily maximum limit of 50 mg/l based on BPJ guidelines. These limits have been carried forward in this draft based on BPJ determination made in the 1996 permit.

TSS – Outfall 002

The 1996 permit established a TSS monthly average limit of 30 mg/l and a daily maximum limit of 50 mg/l based on BPJ guidelines. As described earlier, the proposed guidelines in 40 CFR §451.21 published in the Federal Register on Thursday September 12, 2002 reflect the same TSS monthly average and daily maximum limitations for recirculating systems. The TSS limits in this draft remain unchanged. The September 12, 2002 Federal Register can be viewed at: http://www.epa.gov/waterscience/guide/aquaculture/.

pH – Outfalls 001 and 002

The pH limitations of not less than 6.5 standard units nor greater than 8.5 standard units at any time, in the 1996 permit were established based upon State Certification requirements pursuant to Section 401(a)(1) of the Clean Water Act (CWA). The values of pH were established to conform to state minimum criteria for Class SB waters. The pH limits of 6.5 to 8.5 standard units in this draft remain unchanged. The change in pH shall not be more than 0.2 units outside of the normally occurring range.

Temperature – Outfalls 001 and 002

A temperature limit of 85 °F has been added in this draft permit for both Outfalls 001 and 002, based on state certification requirements and Massachusetts Surface Water Quality Standards for Class SB waters.

Oil and Grease – Outfalls 001 and 002

The maximum daily limit for Oil and Grease is based on Massachusetts Water Quality Standards. The Massachusetts Surface Water Quality Standards, 314 Code of Massachusetts Regulations ("CMR") 4.05(3)(b)(7), state: *These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.* A concentration of 15 mg/l is recognized as the level at which many oils produce a visible sheen and/or cause and undesirable taste in fish (EPA Water Quality Criteria, 1972). An Oil and Grease limit of 15 mg/l has been added in this draft permit for both Outfalls 001 and 002.

Ammonia – Outfall 002

The existing permit required that the permittee report Ammonia (NH_3-N) data once per month. A limited number of tested were conducted and the results are summarized in Fact Sheet Table 1. The 1996 permit requirement of monitoring for Ammonia (NH_3-N) has been carried forward in this draft.

Whole Effluent Toxicity Testing – Outfall 002

Under Section 301(b)(1) of the CWA, discharges are subject to effluent limitations based on water quality standards. The State Surface Water Quality Standards [314 CMR 4.05(5)(e)], include the following narrative statements and require that EPA criteria established pursuant to Section 304(a)(l) of the CWA be used as guidance for interpretation of the following narrative criteria:

> "All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife. Where the State determines that a specific pollutant not otherwise listed in 314 CMR 4.00 could reasonably be expected to adversely affect existing or designated uses, the State shall use the recommended limit published by EPA pursuant to 33 U.S.C. 1251 §304(a) as the allowable receiving water concentrations for the affected waters unless a site-specific limit is established. Site specific limits, human health risk levels and permit limits will be established in accordance with 314 CMR 4.05(5)(e)(1)(2)(3)(4)."

National studies conducted by the EPA have demonstrated that domestic sources contribute toxic constituents to POTWs above those which may be contributed from industrial users. These pollutants include metals, chlorinated solvents, aromatic hydrocarbons and other constituents.

The principal advantages of biological techniques are: (1) the effects of complex discharges of many known and unknown constituents can be measured only by biological analysis; (2) bioavailability of pollutants after discharge is measured by toxicity testing including any synergistic effect of pollutants; and (3) pollutants for which there are inadequate analytical methods or criteria can be addressed. Therefore, toxicity testing is being used in connection with pollutant-specific control procedures to control the discharge of toxic pollutants.

The 1996 permit required one acute whole effluent toxicity (WET) test be conducted within 90 days following the initial operation of the facility. This draft permit also requires that one toxicity test be conducted.

In order to evaluate the potential toxicity of the effluent discharge, one acute toxicity test is required, using the Mysid Shrimp, Mysidopsis bahia. The toxicity test shall be performed during the second week of August in 2004. See Permit Attachment A, Marine Acute Toxicity Test Procedure and Protocol, for a description of the testing requirements.

The effluent monitoring requirements have been established to yield data representative of the discharge by the authority under Section 308(a) of the CWA in accordance with 40 CFR §122.41(j), §122.44, and §122.48.

No Discharge

In the future, if no discharge occurs during a monitoring period, for either outfall 001 or 002, then the permittee shall enter the appropriate No Discharge Code for each parameter on the DMR.

C	indicating "No Discharge"
J	indicating "Recycled, water-closed system"
2	indicating "Operations shutdown"

VI. Essential Fish Habitat.

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.(1998)), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat." 16 U.S.C. § 1855(b). The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. 16 U.S.C. § 1802(10). Adversely impact means any impact which reduces the quality and/or quantity of EFH. 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Id.

Essential fish habitat is only designated for fish species for which federal Fisheries Management Plans exist. 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999. A table of the relevant essential fish habitat species information provided by NMFS is included in Fact Sheet Table 2.

Based on the permit requirements and limitations identified in the draft permit and fact sheet that are designed to be protective of aquatic species, EPA has concluded that formal consultation with NMFS is not required because this authorized discharge is meeting Gold Book Criteria and State Water Quality Standards and is not likely to adversely affect federally managed species, their forage, or their habitat. If adverse effects do occur as a result of this permit action, or if new information becomes available that changes the basis for this conclusion, then NMFS will be notified and consultation promptly initiated.

VII. Anti-backsliding.

A permit may not be renewed, reissued, or modified with less stringent limitations or conditions than those contained in the previous permit unless in compliance with the anti-backsliding requirements of the CWA. The anti-backsliding provisions found in 40 CFR 122.44(l) prohibit the relaxation of permit limits, standards, and conditions. Therefore, the technology-based effluent limits in a reissued permit must be at least as stringent as those in the previous permit. Relaxation is only allowed when cause for permit modification is met (see 40 CFR 122.62). Effluent limits based on BPJ, water quality, and state certification requirements must also meet the anti-backsliding provisions found under Section 402(0) and 303(d)(4) of the CWA, as described in 40 CFR 122.44(l). Effluent limits based on water quality and state certification requirements must also meet the anti-backsliding provisions found under Section 402(o) and 303(d)(4) of the CWA, as described in 40 CFR 122.44(l). All parameters are as stringent as the previous permit.

VIII. Antidegradation.

The Massachusetts Anti-degradation Policy is found at 314 CMR 4.04. All existing uses of the New Bedford Inner Harbor must be protected. This draft permit is being reissued with allowable discharge limits as or more stringent than the current permit. There is not change in the outfall location. The Commonwealth of Massachusetts has indicated that there will be no lowering of water quality and no loss of existing water uses as a result of the re-issuance of this permit, and that no additional anti-degradation review is warranted.

The remaining general and special conditions of the permit are based on the NPDES regulations, 40 CFR Parts 122 through 125, and consist primarily of management requirements common to all permits.

IX. COASTAL ZONE MANAGEMENT (CZM) CONSISTENCY REVIEW

> 40CFR §122.49 (d) states: *The Coastal Zone Management Act, 16 U.S.C. 1451 et seq. section 307(c) of the Act and implementing regulations (15 CFR part 930) prohibit EPA from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies that the proposed activity complies with the State Coastal Zone Management program, and the State or its designated agency concurs with the certification (or the Secretary of Commerce overrides the State's nonconcurrence).*

The discharge is located within the defined CZM boundaries. As of the 1990 re-authorization of the Coastal Zone Management Act, CZM also has authority over projects/facilities outside of the coastal zone delineation that "may affect land or water resources or uses of the coastal zone" (e.g., projects/facilities whose waste travels down current to the coastal zone). This language has been interpreted to include all projects within coastal watersheds. The permittee will submit a letter to the Massachusetts Coastal Zone Management Program stating their intention to abide by the CZM water quality and habitat policies. The CZM shall review the draft permit and it will only be issued after CZM certification.

X. State Certification Requirements.

EPA may not issue a permit in the Commonwealth of Massachusetts unless the Massachusetts Department of Environmental Protection (MADEP) certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards. The staff of the MA DEP has reviewed the draft permit. EPA has requested permit certification by the state pursuant to 40 CFR 124.53 and expects that the draft permit will be certified.

XI. Comment Period, Hearing Requests, and Procedures for Final Decisions.

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to **Jonathan Britt, the U.S. EPA, One Congress Street, Suite 1100, Mail Code CPE, Boston, Massachusetts 02114-2023 and Paul Hogan, Department of Environmental Protection, Division of Watershed Management, 627 Main Street, 2nd Floor, Worcester, MA 01608.** Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator of EPA and the Director of DEP/DWM will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

XII. EPA Contact.

Additional information concerning the draft permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays from:

Jonathan Britt
US Environmental Protection Agency
One Congress Street
Suite 1100 (CPE)
Boston, Massachusetts 02114-2023
Telephone: 617-918-1563
fax: 617-918-1505
e-mail: britt.jonathan@epa.gov

September 08, 2003
Date

Linda M. Murphy, Director*
Office of Ecosystem Protection
U.S. Environmental Protection Agency

* Comments should be addressed to both Jonathan Britt and Paul Hogan, not Linda M. Murphy.

Fact Sheet Table 1

Trio Algarvio, Inc. (MA0110329)

Effluent Data

Parameter	Test Date						
	June 2001 [1]	September 2001	December 2001	February 2002	March 2002	August 2002	October 2002
BOD	Not tested	< 2 mg/l [2]	< 2 mg/l	9 mg/l	13 mg/l	7 mg/l	5 mg/l
TSS	< 10 mg/l	< 10 mg/l	18 mg/l	< 10 mg/l	20 mg/l	< 10 mg/l	< 10 mg/l
pH	8.04	8.1	8.2	8.0	8.1	7.9	8.0
Ammonia as Nitrogen	0.86 mg/l	2.8 mg/l	0.7 mg/l	0.8 mg/l	2.4 mg/l	2.4 mg/l	0.6 mg/l
LC50	> 100 %	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
TRC	< 0.05 mg/l	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
Total Solids	22620 mg/l	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
Total Organic Carbon	9.5 mg/l	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
Aluminum, Total	< 0.0197 mg/l	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
Zinc, Total	0.1793 mg/l	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
Lead, Total	< 0.0026 mg/l	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
Cadmium, Total	< 0.0009 mg/l	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
Nickel, Total	< 0.0030 mg/l	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
Copper, Total	0.0023 mg/l	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
Chromium, Total	< 0.0019 mg/l	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested

1. Data taken from water chemistry within Whole Effluent Toxicity report

2 Assuming a typographical error. The laboratory reported that the result for BOD was below the reporting limit (“ BRL “) of 200 mg/l for

analyte.

Fact Sheet Table 2 Trio Algarvio, Inc. (MA0110329) Essential Fish Habitat Species Data

Boundary	North	East	South	West
Coordinate	41° 40.0’ N	70° 50.0’ W	41° 30.0’ N	71° 00.0’ W

Square Description (i.e. habitat, landmarks, coastline markers): Waters within Buzzards Bay within the Atlantic Ocean within the square affecting the following: south of Dartmouth, MA., New Bedford, MA., and Fairhaven, MA., from Sconticut Neck and the western part of West Island to Slocum Neck and Barney’s Joy Point in Dartmouth, MA. Also affected are: Wilkes Ledge Mishaum Pt., Round Hill Pt., Smith Neck, Dumpling Rocks, Negro Ledge, Great Ledge, Phinney Rock, Pawn Rock, White Rock, Hussey Rock, Apponagansett Bay, Ricketson Pt. in South Dartmouth, MA., Apponagansett, MA., Clarks Cove, Clarks Pt., in Fairhaven, MA., Butler Flats, Mosher Ledge, Wilbur Pt. on Sconticut Neck, Bents Ledge, Middle Ledge, and West Ledge. These waters are also within western Nasketucket Bay, east of Sconticut Neck and north of West I., and within New Bedford Harbor.

Species	Eggs	Larvae	Juveniles	Adults
Atlantic cod (*Gadus morhua*)	X	X	X	X
haddock (*Melanogrammus aeglefinus*)	X	X		
red hake (*Urophycis chuss*)		X	X	X
redfish (*Sebastes fasciatus*)	n/a			
winter flounder (*Pleuronectes americanus*)	X	X	X	X
windowpane flounder (*Scopthalmus aquosus*)	X	X	X	X
American plaice (*Hippoglossoides platessoides*)			X	X
Atlantic sea herring (*Clupea harengus*)			X	X
bluefish (*Pomatomus saltatrix*)			X	X
long finned squid (*Loligo pealei*)	n/a	n/a	X	X
short finned squid (*Illex illecebrosus*)	n/a	n/a	X	X
Atlantic butterfish (*Peprilus triacanthus*)	X	X	X	X
Atlantic mackerel (*Scomber scombrus*)	X	X	X	X
summer flounder (*Paralicthys dentatus*)	X	X	X	X
scup (*Stenotomus chrysops*)	X	X	X	X
black sea bass (*Centropristus striata*)	n/a	X	X	X
surf clam (*Spisula solidissima*)	n/a	n/a	X	X
ocean quahog (*Artica islandica*)	n/a	n/a		
spiny dogfish (*Squalus acanthias*)	n/a	n/a		
king mackerel (*Scomberomorus cavalla*)	X	X	X	X
Spanish mackerel (*Scomberomorus maculatus*)	X	X	X	X
cobia (*Rachycentron canadum*)	X	X	X	X
sandbar shark (*Charcharinus plumbeus*)				X
bluefin tuna (*Thunnus thynnus*)			X	