

<i>For Office Use Only</i> Executive Office of Environmental Affairs MEPA Analyst: <i>Anne Canaday</i> Phone: 617-626-1035
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NPC

Notice of Project Change

The information requested on this form must be completed to begin MEPA Review of a NPC in accordance with the provisions of the Massachusetts Environmental Policy Act and its implementing regulations (see 301 CMR 11.10(1)).

Project Name: Taunton River Desalination Project		EOEA #: 10185
Street: 455 Somerset Street, North Dighton, MA 02764		
Municipality: Dighton	Watershed: Taunton	
Universal Transverse Mercator Coordinates: zone 19 (X,Y) 324868 , 4636385	Latitude: 41° 51.6	Longitude: 71° 06.6
Status of project construction: 10 %complete		
Proponent: Inima USA Corporation		
Street: 1115 West Chestnut Street, Suite 204		
Municipality: Brockton	State: MA	Zip Code: 02301
Name of Contact Person From Whom Copies of this NPC May Be Obtained: Corinne Snowdon		
Firm/Agency: Epsilon Associates, Inc.	Street: Three Clock Tower Place, Suite 250	
Municipality: Maynard	State: MA	Zip Code: 01754
Phone: (978) 897-7100	Fax: (978) 897-0099	E-mail: csnowdon@epsilonassociates.co

In 25 words or less, what is the project change? The project change involves . . .
 Modification of the intake system by employing a pier-mounted Filtrex® filtration system in place of intake channel, Johnson screens, wedgewire screens and Gunderboom® aquatic filter barrier.
 See full project change description beginning on page 3.

Date of ENF filing or publication in the Environmental Monitor:

Was an EIR required? Yes No; if yes,
 was a Draft EIR filed? Yes (Date:) No
 was a Final EIR filed? Yes (Date:) No
 was a Single EIR filed? Yes (Date:) No

Have other NPCs been filed? Yes (Date(s):) No

- Dec. 2002 Modifications to intake structure, treatment processes, tank layout, pipeline alignment.
- Oct. 2003 User community (Brockton) analysis: conservation, existing source protection, growth impacts.

May 2001

Mar. 2005 Pipeline alignment changes; intake structure height reduction from 14 NGVD to 7 NGVD.

If this is a NPC solely for lapse of time (see 301 CMR 11.10(2)) proceed directly to "ATTACHMENTS & SIGNATURES" on page 4.

PERMITS / FINANCIAL ASSISTANCE / LAND TRANSFER

List or describe all new or modified state permits, financial assistance, or land transfers not previously reviewed:

Are you requesting a finding that this project change is insignificant? (see 301 CMR 11.10(6))
 Yes No; if yes, attach justification.

Are you requesting that a Scope in a previously issued Certificate be rescinded?
 Yes No; if yes, attach the Certificate

Are you requesting a change to a Scope in a previously issued Certificate? Yes No; if yes, attach Certificate and describe the change you are requesting:

Summary of Project Size & Environmental Impacts	Previously reviewed		Net Change	Currently Proposed
LAND				
Total site acreage	20		NC	20
Acres of land altered	6.1		NC	6.1
Acres of impervious area	3.4		(1,560 s.f.)	3.4
Square feet of bordering vegetated wetlands alteration	(2002 NPC) 1,725	(2006 OOC*) 2,350	(reduction)	≤2,350
Square feet of other wetland alteration	(2002 NPC)	(2006 OOC*)		
Coastal Bank	4,000 s.f.	2,635 s.f.; 90 lf	0	2,635 s.f.; 90 lf
Land Under Water	560 s.f.	900 s.f.	(reduction)	≤900 s.f.
Riverfront Area	9,900 s.f.	11,875 s.f.	0	11,875 s.f.
Inland Bank	50 linear feet	0	0	0
Acres of non-water dependent use of tidelands or waterways	0		0	0
STRUCTURES				
Gross square footage	97,550		NC	97,550
Number of housing units	0		NA	0
Maximum height (in feet)	50		0	50

TRANSPORTATION			
Vehicle trips per day	15	0	15
Parking spaces	8	0	8
WATER/WASTEWATER			
Gallons/day (GPD) of water use	5 mgd	0	5 mgd
GPD water withdrawal	10 mgd	0	10 mgd
GPD wastewater generation/treatment	5 mgd	0	5 mgd
Length of water/sewer mains (in miles)	16.6	0	16.6

* 2006 Order of Conditions issued by the Dighton Conservation Commission. See Appendix A.

Does the project change involve any **new or modified**:

1. conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97? Yes No
2. release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction? Yes No
3. impacts on Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities? Yes No
4. impact on any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?
Yes No; if yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? Yes No
5. impact upon an Area of Critical Environmental Concern? Yes No

If you answered 'Yes' to any of these 5 questions, explain below:

PROJECT CHANGE DESCRIPTION (attach additional pages as necessary). The project change description should include:

- (a) a brief description of the project as most recently reviewed
- (b) a description of material changes to the project as previously reviewed,
- (c) the significance of the proposed changes, with specific reference to the factors listed 301 CMR 11.10(6), and
- (d) measures that the project is taking to avoid damage to the environment or to minimize and mitigate unavoidable environmental impacts. If the change will involve modification of any previously issued Section 61 Finding, include a proposed modification of the Section 61 Finding (or it will be required in a Supplemental EIR).

I. Introduction. The subject of this Notice of Project Change (NPC) is a change in technology for the proposed intake structure for the proposed Taunton River Desalination Project (TRDP) located in Dighton MA. The project proponent is Aquaria Water LLC. The TRDP will treat up to 10 MGD of water from the Taunton River, and supply up to 5 MGD of drinking water to Brockton and other municipalities. The presently-permitted intake structure is a concrete canal at the riverbank, fitted out with two screening technologies – Johnson Screens and wedgewire screens. Intake operations will occur up to 4 times per day over a total intake period of approximately 6 hours when raw water will

be withdrawn from the river through the canal at a maximum rate of 21,000 gpm. Brackish water would be pumped from this canal up to the plant for treatment. In addition, to minimize uptake in the canal of fish, including their egg and larval stages, an up to 340 foot long, 3400 s.f. mesh exclusion barrier would be anchored in the river.

It is the purpose of this NPC to substitute an alternative intake technology – known as Filtrex Filtration System (FFS) for the permitted canal, screens and exclusionary mesh barrier. The FFS is a fine-filtration system that eliminates the possibility of entrainment of fish eggs and larvae, and as compared to the presently-approved screens and mesh exclusion barrier, reduces the opportunity for impingement of such organisms. The FFS would be installed along the riverbank beneath a pier, connected by buried piping to the plant pump station, a less obtrusive construction on the riverbank than the concrete intake canal. In eliminating the 340 foot floating boom, anchored mesh exclusion structure and floating AirBurst system, the FFS would reduce navigational and visual impacts on the Taunton River. Eliminating the need to deploy, anchor, maintain, and seasonally remove and redeploy the mesh exclusion structure would sharply reduce capital and operational costs, and would eliminate an ongoing cause of disruption of wetland resources. In being operational year-round, the FFS system would provide year round protection from entrainment and impingement as compared with the seasonal deployment of the mesh system.

An intensive field study and pilot testing program has been conducted to determine design criteria and performance in the Taunton River environment, and further to ascertain issues such as biofouling, head loss, flushing and impingement. The study results were reported in three volumes (Preliminary Report, November 12, 2004; Final Report – First Issue, December 22, 2004, and Supplemental Report, August 9, 2005). Appendix H contains a CD with the reports in digital format. The testing program supports the conclusion that the FFS will function well in the Taunton River environment.

The proponent remains committed to an intensive program of monitoring the project to ensure that potential impacts on fisheries, including entrainment and impingement, are avoided and minimized, and this program will be fully implemented with the FFS.

State, local and federal agency personnel have conducted intensive reviews of the intake system as presently permitted. Following review of this NPC, the proponent plans to continue to work with all permitting agencies who are involved in the protection of fisheries resources, including MA Division of Marine Fishers, MCZM, USEPA, USFWS, Water Resources Commission and Dighton Conservation Commission, to secure the permit modifications needed to permit the construction and operation of the intake structure utilizing the FFS. The proponent has met with important advocacy groups, including Save the Bay and the Taunton River Watershed Association, and they support the use of the FFS, subject to agency reviews.

That being said, the proponent reserves the right to construct and operate the project as presently licensed, should the time to process needed permit modifications exceed the time available in a tight construction schedule.

A coffer dam is presently under construction at the site and will be completed within the protective window (November 15 to March 1) for work in the river. In November, 2007 construction will continue on the intake structure. The project is scheduled to become operational in 2008.

II. The Intake Structure as presently permitted. Figure 1 illustrates the footprint of the intake structure as presently permitted. The intake canal is a 30-foot wide, 100- foot long concrete structure

constructed in the riverbank, from 52 feet landward from MHW extending 48 feet out into the water. Height extends to +7 MSL. The Johnson Screens and wedgewire screens will be installed in the intake canal. Intake water would flow by gravity from the intake canal back to a pumphouse, from which they will be pumped up to the treatment plant. Permitted brine discharges from the treatment plant will be piped down to the intake canal where they will be discharged. The pocket part contains a large plan showing the overall configuration of the intake structure and the treatment plant.

Figure 1 also shows the mesh exclusionary netting as deployed in the river. It is anticipated to be a system designed and manufactured by Gunderboom, Inc. The Gunderboom® mesh exclusionary net is perforated (500-micron, or 0.5 mm, perforations) to allow water to pass through, but to exclude eggs and larvae of aquatic organisms in the river system. Based on documentation supplied to the applicant by Gunderboom, Inc., the exclusionary netting is projected to be 340 feet long (“possibly shorter,”), extending to as much as 15’ deep in the river. It will be anchored to the shore as shown. It will be deployed in the river from March 1 to November 15. The exclusionary mesh system’s bottom “skirt” is 12’ wide, and weighted by four chains in chain pockets along the extent of the skirt. The array is further staked to the bottom by 22 manta ray anchors at 7.5 foot intervals. The bottom skirt may require re-setting by divers each spring when the Gunderboom is redeployed. It is hoped that any necessary repairs may be conducted on the Gunderboom over the winter (a significant portion of the Lovett Station Gunderboom required replacement over the winter due to tearing). A portion of the bottom skirt will extend across the intertidal zone, where bottom seal is also required. Effects on wetland vegetation are uncertain, but the presence of such vegetation would impede an adequate seal, perhaps warranting cutting or management of wetland vegetation.

The Gunderboom is supported at the water surface by a 2-3’ diameter floating yellow boom. The mesh barrier is periodically cleaned of debris by bursts of air piped to the system from valves supported on floats at intervals along the barrier.

III. The Filtrex Filtration System. While the intake canal, Johnson Screens, wedgewire screens and mesh exclusionary netting are now fully permitted, the proponent wishes to utilize an alternative intake technology and system, that will perform the required intake functions and, at the same time, dramatically reduce the environmental impacts as compared to those of the previous design, and the capital and O&M costs of the TRDP. Utilization of this technology is functionally equivalent to the existing design but results in reduced environmental impacts in terms of footprint, impingement and entrainment, impact on the river bank and wetlands and the navigable portion of the river. The selected technology, the FFS, is a fine-filtration technique manufactured by the Filtrex Corporation.

The FFS is a proprietary industrial filter, built up of thin wafer-like polypropylene discs, stacked in “candles.” Grooves on the surfaces of the stacked discs create 40-micron (0.040 mm) passages through which water flows from the exterior of the candle to the interior. The candles are mounted in groups on a steel or plastic surface, which is fabricated into box-like modules. Each module has 96 candles mounted on it. The modules are each 2’ x 2’ square and 3’in height. For the TRDP, thirty modules will be mounted beneath a pier. Figure 2 is a plan view of the FFS. Figure 3 is an isometric view of the FFS system and pier. Figure 3a illustrates models of the two systems – the intake canal, screens and Gunderboom as permitted, and the Filtrex as proposed.

A total of 30 Filtrex modules will be installed, to accommodate an intake flowrate of 21,000 gpm without exceeding desired water velocities. Each module is provided with a 12” diameter polyethylene outlet pipe and cylinder operated butterfly valve that will connect to one of six 24”

diameter manifolds, approximately 16' long. The manifolds are connected to a main header, approximately 36' long and 36-48" diameter, through which raw water will flow by gravity from the modules to the pump sump of the Raw Water Intake Pumphouse. With the exception of the manifold headers located outboard of the river bank, all headers are direct buried leading up to the pumphouse. The original marshland will be restored after installation of the buried pipe. The pumphouse dimensions and location are unchanged from previous filings. From the pumphouse the filtered raw water is pumped up to the main storage tanks located at approximately elevation 45.

The Filtrex modules are installed such that top of the upward facing candles will be approximately 2' below Mean Low Water level. Closest to the river bank, the lower candles will be from 1' to 2' feet above the river bottom. Moving away from shore, the bottom clearance increases with the natural contour of the river bottom to approximately 6' clearance.

The manifolds and modules will be supported beneath a 22' X 36' dock structure. Each module will be valved to the header by a butterfly valve; valve stems will be connected to the dock structure, where cylinders for automatic actuation will be installed. The dock will be fenced off for security purposes, but except for the valve heads and stems, will have the appearance of a conventional dock structure.

IV. Significance of the Proposed Changes. The applicant respectfully submits that the impacts of the proposed changes are insignificant, under MEPA regulation 301 CMR 11.10(6). That regulation sets forth the factors that may lead to a significant increase in environmental consequences, as follows:

(a) Expansion of the Project. The use of the FFS will reduce, not expand, the extent of the project, and will maintain or reduce impacts on Wetland Resource areas from those permitted in a comprehensive Order of Conditions by the Dighton Conservation Commission. For further detail, please see Appendix A, Special Conditions, and Appendix B, Comparison of Impacts.

(b) Generation of further impacts. This NPC focuses on the question of impacts on fisheries. The use of the FFS will reduce any potential entrainment impacts on aquatic organisms, and will have equal or reduced impingement impacts on aquatic organisms. Please see discussion by Michael Scherer, PhD of Normandeau Associates, Inc. in Appendix C.

A detailed Monitoring Plan was developed to assess the impacts of the currently-permitted intake canal, screens and mesh exclusionary netting. The proponent commits to implementation of that Monitoring Plan, as adjusted to reflect the altered intake design. Please see Appendix D.

(c) Change in expected commencement date. The change is not expected to affect the Project commencement or completion date, or work schedule, and in any event no such changes would materially affect the impacts of the Project.

(d) Change of the project site. The project site is unchanged. The extent of in-river structures is reduced.

(e) **New Application for a permit.** The project change does not require any new permit applications. Modifications of existing permits (DEP, Army Corps of Engineers, Water Resource Commission, Dighton Conservation Commission) will be requested as applicable.

(f) **Delay of net benefits to environmental quality and resources or public health.** The project change is not expected to affect the Project schedule.

(g) **Lapse of time.** The Proponent has diligently pursued design and permitting for the project. The final required permit – a NPDES permit – was signed by DEP in November, 2006.

V. Measures to avoid damage to the environment, or to minimize and mitigate unavoidable environmental impacts. The subject of this NPC – the replacement of the intake canal, Johnson Screens, wedgewire screens and 500-micron mesh exclusionary netting – with the Filtrex Filtration System as described above constitutes a further measure to avoid, minimize and mitigate potential impacts on the environment. Appendix E is a proposed revised Section 61 Finding for the intake structure. Other Section 61 Findings issued in connection with state permits remain unchanged.

ATTACHMENTS & SIGNATURES

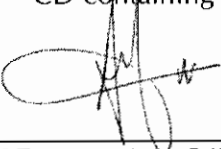
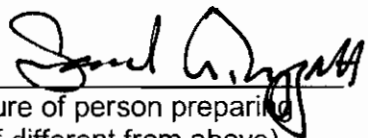
Attachments:

1. Secretary's most recent Certificate on this project **Please see Appendix F**
2. Plan showing most recent previously-reviewed proposed build condition **Please see Fig. 1 and pocket part.**
3. Plan showing currently proposed build condition **Please see Figs 2, 3 and 3a.**
4. Original U.S.G.S. map or good quality color copy (8-1/2 x 11 inches or larger) indicating the project location and boundaries **Please see Fig. 4.**
5. List of all agencies and persons to whom the proponent circulated the NPC, in accordance with 301 CMR 11.10(7) **Please see Appendix G**

Appendices:

- Appendix A Special Conditions, Dighton Conservation Commission, June 29, 2006
- Appendix B Comparison of Impacts
- Appendix C Memorandum of Michael Scherer, PhD, Normandeau Associates, Inc.
- Appendix D Proposed Revised Monitoring Plan
- Appendix E Proposed Revised Section 61 Findings.
- Appendix F Prior MEPA Certificates
- Appendix G Circulation List
- Appendix H CD containing Pilot Testing and Field Study Reports

Signatures:

12/15/06		12/15/06	
Date	Signature of Responsible Officer or Proponent	Date	Signature of person preparing NPC (if different from above)

<u>Alfredo Andres</u>	<u>Samuel G. Mygatt</u>
Name (print or type)	Name (print or type)

<u>Inima USA Corporation</u>	<u>Epsilon Associates, Inc.</u>
Firm/Agency	Firm/Agency

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