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November 13, 2003

General Counsel for Ocean Services
National Oceanic & Atmospheric Administration
1305 East-West Highway
SSMC-4, Room 6111
Silver Spring, MD 20910

Re: Algonquin Gas Transmission Company and
Islander East Pipeline Company LLC ("Appellants")
Our File No. 10510.6125

Dear Counsel:

We represent Tilcon Inc. and the Branford Steam Railroad Company in this matter

Tilcon Inc. and the Branford Steam Railroad Company ("Tilcon" and "Railroad") are affiliated companies. They are the owners and operators of a trap-rock quarry and a railroad system extending from Tilcon's rock quarry in North Branford southerly to Long Island Sound at Pine Orchard in Branford. The affected portion of this rail system is depicted on the Appellants' Right of Way Survey, four (4) sheets, see **Exhibit 1**. Tilcon, the Railroad, and their predecessors have owned and operated this rail system since at least 1914. Most of its north/south route is approximately fifty feet (50') wide. It is Connecticut's most active railroad, a train moves over it every one-half hour for ten to sixteen hours per day, two hundred fifty (250) days per year. It also carries the most tonnage of any railroad system in Connecticut.

The Branford Steam Railroad system and its right of way were established to provide an economical and safe means of transporting Tilcon's stone to its Pine Orchard Marine Terminal transshipping facility. The crushed stone aggregate is transferred from the rail cars to barges and shipped to customers along the Connecticut coast and surrounding states. This railroad line is also used to ship crushed stone aggregate by rail to other Tilcon facilities and other customers. It is extremely valuable and necessary for Tilcon's business and is expected to continue to provide a transportation system to Long Island Sound for at least the next one hundred years.

The proposed route of a new 24" high-pressure natural gas pipeline uses the Railroad's property and right of way as a shortcut to Long Island Sound. The proposed pipeline enters the Sound from Tilcon's property at Juniper Point. The Applicants' plan is to bisect the navigational channel leading to and from Tilcon's Pine Orchard terminal with this pipeline. See **Exhibit 2**, Sound Crossing Map 03, attached.

Tilcon and the Railroad are concerned that the location of the pipeline next to the active railroad and across the channel will pose significant operational problems for them. The placement of a high-pressure gas line adjacent to the busy Railroad and in the travel way of the barges and boats is a significant safety concern.

The southerly portion of this rail system contains the marshalling yard where numerous rail cars are temporarily stored for shipment by the P&W railroad on the Amtrak Railroad system. See **Exhibit 1**, Sheets 2 of 3 and 3 of 3. Large P&W locomotives and cars are regularly sidetracked in this area as well.

The barge loading facility at the southerly terminus of the railroad is an extremely busy and congested work area. Many barges are loaded and shipped daily. There is ongoing maintenance of this loading facility. Any pipeline facilities in this area would be at risk from rail operations and detrimental to Tilcon's operations. The terminal area is designed to only accommodate the business operations of Tilcon and the Railroad.

Tilcon maintains a marine terminal basin east of the loading facility where the barges are loaded, the Marine Terminal Basin. The Marine Terminal Basin is approximately 900 feet long and ranges between approximately 165 and 365 feet wide and covers approximately five (5) acres.

There is a navigation channel approximately 80 feet wide and approximately 8,900 feet, 1.5 miles, in length extending south from the Marine Terminal Basin to Long Island Sound. This channel is maintained and dredged on a regular basis to allow its use by the tugs and barges serving the Marine Terminal. The southerly limit of this channel is located adjacent to Red "4A" Light Buoy (approximately 1,200 feet northerly of White Top Rock). See **Exhibit 3**, Figure 9, and two (2) aerial photos, attached.

In order to utilize the Terminal Basin and navigation channel, it is necessary to maintenance dredge them, from time to time, to maintain a minimum safe depth of -14.5 feet with 2 foot allowable overdredge in the basin and -16.0 feet with 2 foot allowable overdredge in the channel MLW. Permission for this dredging work was recently obtained from the A.C.O.E. and the Connecticut Department of Environmental Protection, see attached **Exhibit 4**, A.C.O.E. 2/8/01 permission and **Exhibit 5**, CDEP 8/8/2000 certificate of permission. The dredging area is depicted on the attached 5/18/95 survey prepared by Marin Environmental, three (3) sheets, **Exhibit 6**, attached. The dredging is required to be done by clamshell bucket. Attached hereto as **Exhibit 7** is a descriptive brochure provided by the Great Lakes Dredge & Dock Company,

the contractor which performs the dredging work. Dredge No. 54, or a similar machine is used to perform this work.

This dredge machine is a "floating platform" which has three (3) large "legs" or spuds which are driven down into the bottom of the Sound and the platform becomes a stable work area. As an area is dredged, the dredge is moved and again the spuds are driven into the Sound's bottom to stabilize the machine. Attached hereto as **Exhibit 8**, are nine (9) photographs showing this dredge in operation at the Marine Basin and in the navigational channel.

The Applicants are aware of Tilcon's marine activities and the ongoing need to dredge and maintain the basin and navigational channel. By its 2/12/03 letter to the Institute for Sustainable Energy, Islander East has reiterated its commitment not to interfere with Tilcon's operations and its commitment to a safe operation of the proposed pipeline. See **Exhibit 9**, attached.

> "Furthermore, the alignment and design of the Islander East Pipeline has taken into account the Tilcon barge operations. As you are all aware, Islander East is proposing to use the Horizontal Directional Drill ("HDD") construction method for the installation of the pipeline from the Connecticut landfall to a distance approximately 4000 feet offshore. The use of the HDD construction method will avoid impacts to nearshore shellfish beds and result in the installation of the pipeline approximately 85 feet below, and perpendicular to, the Tilcon navigational channel, eliminating safety concerns and any potential disturbances to Tilcon's operations in this area." Id.

The limits of the HDD are between Mile Post 10.1 and Mile Post 10.9 and are shown on **Exhibit 10**, attached hereto.

As is shown in **Exhibit 9** and **Exhibit 10**, unless the pipeline is located in the bedrock below the Sound's bottom, it will be subject to the constant threat of rupture and damage from the ongoing dredge and barge operations.

This rail system and its related train equipment are well maintained. It enjoys an exemplary safety record. Extreme care is used in its operation to protect the rights of its residential neighbors. Visual screening and noise abatement of the train operation is presently provided by the ancient tree and other vegetative growth along the right of way. Islander East recognizes the importance of this facility to Tilcon's business. In its January 14, 2002 report, **Exhibit 11** hereto, at page 1, it states:

> **"The BSRR rail operation is an essential element and integral part of the rock quarrying operation. The quarry operations cannot be sustained without railroad transport of the quarried stone. Consequently, BSRR facilities and equipment are extremely well**

maintained with maximum operational safety in place to ensure continuous operation of the stone hauling operation."

Tilcon is one of the principal trap-rock construction aggregate producing industries in the State of Connecticut. Tilcon's North Branford quarry is one of six company-owned mining locations in Connecticut and one of the largest open-faced quarries in the northeast. The Pine Orchard Marine Terminal's function as an intermodal transshipping facility is an integral component in distributing large volumes of trap-rock aggregate from the North Branford Quarry to receiving ports in Connecticut and within the surrounding states, as it has been since 1914. This rail line also serves as a rail connection to the Northeast Corridor Rail Line.

The processing of crushed stone originates at the North Branford quarry. The stone is sized at the quarry, loaded onto specially designed railway cargo cars, and transported to the Marine Terminal storage and transfer plant, via the Railroad. Rail cargo cars arriving at the Marine Terminal enter the upper level of the storage and washing building where crushed stone is distributed into large, indoor stockpiles. The stone is then processed through loading operations into ocean-going barges.

Each barge has the capacity to transport approximately 1,200 tons of stone. The capacity of each barge is equivalent to the capacity of fifteen (15) rail cars. When compared to transport by truck, the capacity of each barge is equivalent to approximately sixty (60) over-road 20-ton trucks. Barge loading operations are typically conducted five days per week, two hundred and fifty days per year. On average, a total of six barges are loaded in one day.

If you determine that a permit is appropriate for this project, and if this pipeline is to be installed across Tilcon's marine basin or navigational channel, it can only be located in the bedrock as represented by Islander East. The safety and welfare of Tilcon and its neighbors permits no other alternative. Any permit should contain a condition that requires the installation of the pipeline 85 feet "below" the Sound's bottom.

The Applicants have represented to the various regulatory agencies that "the safe design, construction and operation of the pipeline is of utmost importance" – see **Exhibit 9**. Furthermore, the Applicants have represented that it will use the Horizontal Directional Drill (HDD) construction method which will bury the pipeline 85 feet below the Sound's bottom for that portion of the pipeline extending from Juniper Point to a point 4000 feet offshore. By so doing, the Applicants will minimize the "safety concerns and any potential disturbances to Tilcon's operations in this area." Id.

Very truly yours.

Stephen J. Anderson

SJA/nlm
Enclosures

Public Comments by Tilcon, Inc. & Branford Steam Railroad Company

All of Exhibits 1, 2, 3, 6 and 10 and parts of Exhibits 5 and 11 involve pipeline location information and is not available at this Internet site due to homeland security-related considerations. This portion of the Islander East consistency appeal administrative record may be reviewed at NOAA's Office of General Counsel for Ocean Services, 1305 East-West Highway, Silver Spring, Maryland.

EXHIBIT 4

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO
ATTENTION OF

FEB 8 2001

Regulatory Branch
CENAE-CO-R

APPLICANT: TILCON CT, INC./PINE ORCHARD MARINE

We have reviewed the information you submitted to the Connecticut Department of Environmental Protection, Office of Long Island Sound Program concerning your proposal to perform work in BRANFORD, Connecticut. It appears that your project may have only minimal individual and cumulative impacts on the waters and wetlands of the United States, and is authorized by the Corps of Engineers under the attached Connecticut Programmatic General Permit (PGP) once you have obtained all necessary local and state approvals (whichever are applicable) as listed on page 2 of the attached PGP. (See page 15 of the PGP for names and addresses of agencies)

Condition 30 of the PGP (page 14) provides for one year for completion of work that has commenced prior to the expiration of this PGP on May 15, 2001. You will need to apply for reauthorization for any work within Corps jurisdiction that is not completed by that date.

If you have any questions, please contact me at (978) 318-8831

Sincerely,

Diane M. Ray

Diane M. Ray
Senior Project Manager
Regulatory Branch

Attachment

TRITON ENVIRONMENTAL, INC.

March 6, 2002

Ms. Diane M. Ray
Department of the Army
New England District, Corps of Engineers
696 Virginia Road
Concord, Massachusetts 01742-2751

RE: Request for Continued Authorization under the CT PGP
Army Corps Permit Number - 1999-03167
Tilcon Connecticut Inc. - Branford, Connecticut
Pine Orchard Marine Terminal Maintenance Dredging Project

Dear Ms. Ray:

We are writing to request continued authorization under the Connecticut Programmatic General Permit (PGP) for Tilcon Connecticut Inc.'s (Tilcon) proposed maintenance dredging project at its Pine Orchard Marine Terminal located in Branford, CT. An Army Corps PGP (No. 1999-03167) was issued to Tilcon on June 12, 2000 for conducting maintenance dredging at the Pine Orchard facility. Tilcon was also granted a Certificate of Permission (COP-2000-076-AD) from the Connecticut Department of Environmental Protection (CT DEP) for this work.

We understand based on your memorandum to Tilcon dated February 8, 2001 that the previous PGP (which authorized Tilcon's project) expired on May 15, 2001. As such, we request continued coverage under the current PGP issued on May 15, 2001 (expiration date May 15, 2006).

Tilcon is planning to commence dredging in accordance with its DEP and Army Corps authorizations beginning in the fall of 2002. The DEP permit authorization expires on August 7, 2003.

Attached for your review is a copy of the Army Corps PGP authorization letter, dated June 12, 2000. Please contact me at (203) 498-8833 following your review to confirm continued authorization under the current PGP. Thank you for your attention to this matter.

Sincerely,

Michael L. Webber
Senior Project Manager

enclosure

cc: Mr. Frank T. Lane, Tilcon

Ref. No. 100874L03

101 Whitney Avenue, New Haven, CT 06510
Phone: (203) 498-8833 Fax: (203) 498-8829

EXHIBIT 5

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF LONG ISLAND SOUND PROGRAMS

August 8, 2000

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Frank Lane
Tilcon Connecticut, Inc.
909 Foxon Road, P.O. Box 67
North Branford CT 06471-0067

Subject: COP-2000-076-AD
Town: Branford

Dear Mr. Lane:

Enclosed please find a copy of the certificate of permission which is being issued pursuant to your application to maintenance dredge the Pine Orchard Terminal. Your attention is directed to the conditions of the enclosed certificate. All work must conform to that which is specifically authorized by this certificate. Any work in tidal wetlands or waterward of the high tide line in tidal, navigable and coastal waters of the State which has not been authorized by a valid permit or certificate of permission is a violation of state law and subject to enforcement action by this Department and the Office of the Attorney General.

Your initiation of authorized activities will be relied upon as your agreement to comply with the terms and conditions of the certificate of permission.

If you have not already done so, you should contact your local Planning and Zoning Office to determine local permit requirements for your project. Also, your activity may be eligible for General Permit authorization from the U.S. Army Corps of Engineers. Most maintenance and reconstruction activities require no further authorization from the Corps. Other activities, generally involving work in tidal wetlands or other special aquatic sites, and in or near a federal Navigation Project or involving filling, must receive written authorization from the Corps prior to beginning work. The State of Connecticut will automatically forward this COP authorization to the Corps for its determination of General Permit eligibility. You do not need to apply directly to the Corps unless they notify you. For more information regarding this new federal process, you may write to the Corps New England Division, Regulatory Branch, 696 Virginia Road, Concord, Massachusetts, 02254 or call (978) 318-8335 or (800) 343-4789.

Sincerely,

Alan B. Davis

Alan Davis
Environmental Analyst

AD/lv
Enclosures
cc:
Anthony DaRos, F. Selectman
Army Corps of Engineers (PGP Only)
National Marine Fisheries Service (PGP Only)
US Fish & Wildlife Service (PGP Only)
EPA - Regulatory (PGP Only)
State Sen. William Aniskovich
State Rep. Peter Panaroni, Jr.
State Rep. Michael Lawlor
State Rep. Patricia Widlitz
State Rep. Robert Ward
Ronald Reis, Harbormaster
Mike Weber, Triton Environmental
File COP-2000-076-AD, Branford
Desk Copy

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
CERTIFICATE OF PERMISSION

Certificate No.	COP-2000-076-AD
Municipality	Branford
Site of Activity	Long Island Sound off property located at Pine Orchard Marine Terminal
Certificate Holder	Tilcon Connecticut, Inc

Pursuant to section 22a-363b of the Connecticut General Statutes (General Statutes) and in accordance with sections 22a-359 to 22a-363f of the General Statutes, and the Connecticut Water Quality Standards dated April, 1997, a certificate of permission (certificate) is hereby granted to maintenance dredge an existing basin for a marine freight terminal as is more specifically described below in the SCOPE OF AUTHORIZATION. The work performed shall conform to the terms and conditions of that which is authorized by your Permit #CERT-69-2697 except as may be specifically modified by this certificate.

FAILURE TO CONFORM TO THE TERMS AND CONDITIONS OF THIS CERTIFICATE MAY SUBJECT THE CERTIFICATE HOLDER AND ANY CONTRACTOR TO ENFORCEMENT ACTIONS, INCLUDING PENALTIES AND INJUNCTIONS, AS PROVIDED BY LAW.

SCOPE OF AUTHORIZATION

A The Certificate Holder is hereby authorized to conduct the following work as described in application COP-2000-076-AD, including one location map (undated), one sheet of plans (figure 2) dated December 3, 1999; two sheets of plans (figures 3 & 4) dated March 15, 2000; and one disposal location map (figure 5 - undated) submitted by the Certificate Holder to the Commissioner and attached hereto:

maintenance dredge approximately 9,500 cubic yards (cy) of sediment over an approximately 73,375 square foot area from an existing dredge footprint identified on figure #2 as Marine Terminal Basin by clamshell bucket to a depth of -14.5 MLW, plus no more than 2 feet of allowable overdredge; and maintenance dredge approximately 3,000 cy of sediment over an approximately 18,850 square foot area from an existing dredge footprint indentified on figure #2 as Navigation Channel by clamshell bucket to a depth of -16.5 MLW, plus no more than 2 feet of allowable overdredge. Dispose of such sediment at the Central Long Island Sound Disposal Area.

UPON INITIATION OF ANY WORK AUTHORIZED HEREIN, THE CERTIFICATE HOLDER ACCEPTS AND AGREES TO COMPLY WITH ALL TERMS AND CONDITIONS OF THIS CERTIFICATE.

SPECIAL TERMS AND CONDITIONS

The Certificate Holder shall establish a minimum of a 10 foot setback from any wetlands or watercourses in and adjacent to the area where work is to be conducted or areas which are to be used for access to the work area. Such setback area(s) shall be flagged so as to be readily identifiable by contractor personnel until the work authorized hereunder is completed.

2. Except as specifically authorized by this certificate, no equipment or material including but not limited to, fill, construction materials, excavated material or debris, shall be deposited, placed or stored in any wetland or watercourse on or off-site, or within any delineated setback area, nor shall any wetland, watercourse or delineated setback area be used as a staging area or accessway other than as provided herein.

3. Unconfined in-water excavation, dredging, filling or removal of debris or other material is prohibited between May 31 and October 1, inclusive, of any year in order to protect shellfish resources in the area unless otherwise authorized in writing by the Commissioner.

4 Sediment dredged pursuant to this authorization shall not be sold nor shall any fee for its use be charged without the express prior written authorization of the Commissioner and payment of a $2.00 per yard royalty to the state of Connecticut Department of Environmental Protection, pursuant to section 22a-361(e) of the General Statutes.

5 The Commissioner in his sole discretion may modify the disposal site authorized herein and direct dredged sediment to an alternate site for use as cap material, provided that no modification will take effect if such modification imposes uncompensated additional costs solely attributable to such modification on the Certificate Holder.

6. Not later than sixty (60) days following receipt of this authorization to conduct dredging, the Certificate Holder shall submit to the Commissioner a proposed schedule for the dredging project.

7. Dragging the bottom with a spoil barge, scow, vessel, beam or similar equipment outside of the area authorized by this certificate to be dredged or excavated is prohibited.

8. Sidecasting or in-water rehandling of dredged or excavated material is prohibited.

9. Spoil scows or barges shall be loaded and navigated in a manner which prevents uncontrollable motion or spillage and washout of dredged or excavated materials.

10. The Certificate Holder shall not dispose of dredged or excavated material as authorized herein unless said disposal is supervised and witnessed by an on-board inspector assigned by the United States Army Corps of Engineers-New England District.

11 Spoil scows or barges used by the Certificate Holder for disposal of dredged or excavated material as authorized hereunder shall travel to and from the Central Long Island Sound Disposal Area utilizing sea lanes delineated by the United States Army Corps of Engineers-New England District.

12. The Certificate Holder shall point-dump dredged or excavated materials at a specified buoy or set of coordinates identified by United States Army Corps of Engineers-New England District within the disposal area authorized by this certificate.

3. The work authorized herein does not include dredging intertidal areas (mudflats). The top of slope shall be setback 10' from extreme low water.

4 Before initiating dredging authorized by this certificate, the Certificate Holder shall remove all man-made debris from the cove to the immediate west of the terminal waterward of mean high water, and from the innertidal flat up to 300 feet east of the terminal. Such removal shall be done manually from a shallow-draft boat, with minimal disturbance to the substrate.

GENERAL TERMS AND CONDITIONS

All work authorized by this certificate shall be completed within three years from date of issuance of this certificate, except that maintenance activities specified in the SCOPE OF AUTHORIZATION may be conducted at any time, in accordance with all applicable conditions.

2 The Certificate Holder may request a one year extension of the work completion date specified above. Such request shall be in writing and shall be submitted to the Commissioner at least 30 days prior to said work completion date. Such request shall describe the work done to date, what work still needs to be completed and the reason for such extension. Such request shall be subject to the Commissioner's sole discretion.

3 Any work authorized hereunder, other than maintenance authorized herein, conducted after said work completion date or any authorized one year extension thereof is a violation of this certificate and may subject the Certificate Holder to enforcement action, including penalties, as provided by law.

4 In conducting the work authorized herein, the Certificate Holder shall not deviate from the attached plans, as may be modified by this certificate. The Certificate Holder shall not make de minimis changes from said plans without prior written approval of the Commissioner.

5. The Certificate Holder shall, consistent with the SCOPE OF AUTHORIZATION, maintain all structures or other work authorized herein in good condition.

6 Prior to the commencement of any work authorized hereunder, the Certificate Holder shall cause a copy of this certificate to be given to any contractor(s) employed to conduct such work. At the certificate site the Certificate Holder shall, whenever work is being performed, make available for inspection a copy of this certificate and the final plans for the work authorized herein.

7 Not later than two weeks prior to the commencement of any work authorized herein, the Certificate Holder shall submit to the Commissioner, on the form attached hereto as Appendix A, the name(s) and address(es) of any contractor(s) employed to conduct such work and the expected date for commencement and completion of such work.

8. The Certificate Holder shall notify the Commissioner in writing of the commencement of any work and completion of all work authorized herein no later than three days prior to the commencement of such work and no later than seven days after the completion of such work.

9. On or before (a) 90 days after completion of the work authorized herein, or (b) upon expiration of the work completion date or any authorized one year extension thereof, whichever is earlier, the Certificate Holder shall submit to the Commissioner "as-dredged" survey of the work area showing contours, bathymetries, and tidal datums of the work area showing all contours, bathymetries, tidal datums and structures.

10. The Certificate Holder shall dispose of aquatic sediments in accordance with the terms and conditions of this certificate. All waste material generated by the performance of the work authorized herein shall be disposed of by the Certificate Holder at an upland site approved for the disposal of such waste material, as applicable.

11 In undertaking the work authorized hereunder, the Certificate Holder shall not cause or allow pollution of wetlands or watercourses, including pollution resulting from sedimentation and erosion. For purposes of this certificate, "pollution" means "pollution" as that term is defined by section 22a-423 of the General Statutes.

12. Upon completion of any work authorized herein, the Certificate Holder shall restore all areas impacted by construction, or used as a staging area or accessway in connection with such work, to their condition prior to the commencement of such work.

13. Any document required to be submitted to the Commissioner under this certificate or any contact required to be made with the Commissioner shall, unless otherwise specified in writing by the Commissioner, be directed to:

    Permit Section
    Office of Long Island Sound Programs
    Department of Environmental Protection
    79 Elm Street
    Hartford, Connecticut 06106-5127
    (860) 424-3034
    Fax # (860) 424-4054

14. The date of submission to the Commissioner of any document required by this certificate shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this certificate, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in this certificate, the word "day" as used in this certificate means calendar day. Any document or action which is required by this certificate to be submitted or performed by a date which falls on a Saturday, Sunday or a Connecticut or federal holiday shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or a Connecticut or federal holiday.

15. The work specified in the SCOPE OF AUTHORIZATION is authorized solely for the purpose

set forth in this certificate. No change in purpose or use of the authorization work or facilities as set forth in this certificate may occur without the prior written authorization of the Commissioner. The Certificate Holder shall, prior to undertaking or allowing any change in use or purpose from that which is authorized by this certificate, request authorization from the Commissioner for such change. Said request shall be in writing and shall describe the proposed change and the reason for the change.

16. his certificate may be revoked, suspended, or modified in accordance with applicable law

7 This certificate is not transferable without prior written authorization of the Commissioner. A request to transfer a certificate shall be submitted in writing and shall describe the proposed transfer and the reason for such transfer. The Certificate Holder's obligations under this certificate shall not be affected by the passage of title to the certificate site to any other person or municipality until such time as a transfer is authorized by the Commissioner.

18. The Certificate Holder shall allow any representative of the Commissioner to inspect the work authorized hereunder at reasonable times to ensure that it is being or has been accomplished in accordance with the terms and conditions of this certificate.

19. In granting this certificate, the Commissioner has relied on all representations of the Certificate Holder, including information and data provided in support of the Certificate Holder's application. Neither the Certificate Holder's representations nor the issuance of this certificate shall constitute an assurance by the Commissioner as to the structural integrity, the engineering feasibility or the efficacy of such design.

20. In the event that the Certificate Holder becomes aware that he did not or may not comply, or did not or may not comply on time, with any provision of this certificate or of any document required hereunder, the Certificate Holder shall immediately notify the Commissioner and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the Commissioner, the Certificate Holder shall state in writing the reasons for the noncompliance or delay and propose, for the review and written approval of the Commissioner, dates by which compliance will be achieved, and the Certificate Holder shall comply with any dates which may be approved in writing by the Commissioner. Notification by the Certificate Holder shall not excuse noncompliance or delay and the Commissioner's approval of any compliance dates proposed shall not excuse noncompliance or delay unless specifically stated by the Commissioner in writing.

21 In evaluating the application for this certificate the Commissioner has relied on information and data provided by the Certificate Holder and on the Certificate Holder's representations concerning site conditions, design specifications and the proposed work authorized herein, including but not limited to representations concerning the commercial, public or private nature of the work or structures authorized herein, the water-dependency of said work or structures, its availability for access by the general public, and the ownership of regulated structures or filled areas. If such information proves to be false, deceptive, incomplete or inaccurate, this certificate may be modified, suspended or revoked, and any unauthorized activities may be subject to enforcement action.

The Certificate Holder may not conduct work waterward of the high tide line or in tidal wetlands at this certificate site other than the work authorized herein, unless otherwise authorized by the Commissioner pursuant to section 22a-359 et. seq. and/or section 22a-28 et. seq. of the General Statutes.

23. The issuance of this certificate does not relieve the Certificate Holder of his obligations to obtain any other approvals required by applicable federal, state and local law.

Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this certificate shall be signed by a responsible corporate officer of the Certificate Holder, as such term is defined in section 22a-430-3(b)(2) of the Regulations of the Connecticut State Agencies and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense."

25. This certificate is subject to and does not derogate any present or future property rights or powers of the State of Connecticut, and conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the property or activity affected hereby.

Issued on August 7, 2000.

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Charles H. Evans

Charles H. Evans
Director, Office of LIS Programs

Certificate of Permission No. COP-2000-076-AD
Tilcon Connecticut, Inc.

Certified Mail #_____

lv

This document involves pipeline location information and is not available at this Internet site due to homeland security-related considerations. This portion of the Islander East consistency appeal administrative record may be reviewed at NOAA's Office of General Counsel for Ocean Services, 1305 East-West Highway, Silver Spring, Maryland.

OFFICE OF LONG ISLAND SOUND PROGRAMS

APPENDIX A

TO: **Permit Section**
Department of Environmental Protection
Office of Long Island Sound Programs
79 Elm Street
Hartford, CT 06106-5127

Certificate Holder: Tilcon Connecticut, Inc.
909 Foxon Road, P.O. Box 67
North Branford, CT 06471-0067

Certificate No: COP-2000-076-AD, Branford

CONTRACTOR 1: _____

Address: _____

_____

Telephone #: _____

CONTRACTOR 2: _____

Address: _____

_____

Telephone #: _____

CONTRACTOR 3: _____

Address: _____

_____

Telephone #: _____

EXPECTED DATE OF COMMENCEMENT OF WORK:

EXPECTED DATE OF COMPLETION OF WORK: _____

CERTIFICATE HOLDER: _____

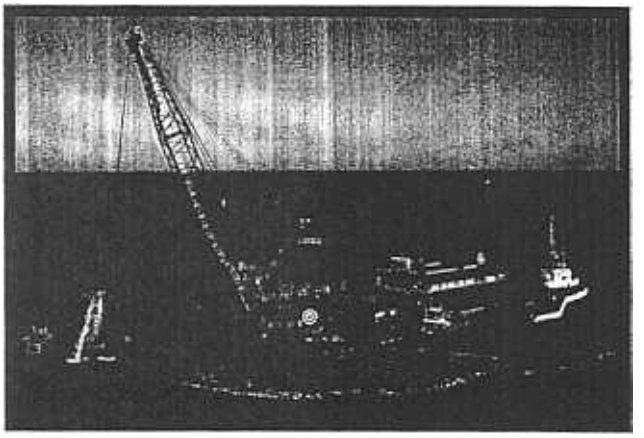
_____
(signature) (date)

EXHIBIT 7

The Great Lakes Dredging Fleet

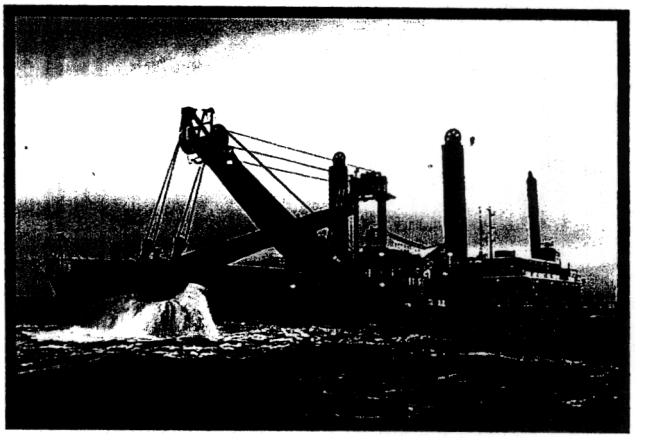
Bucket Dredges

Chicago (Clamshell)



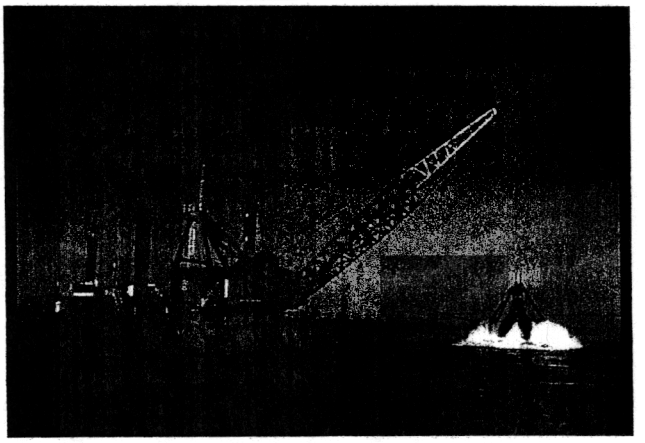
Bucket Capacity *30 to 50 yd³ (23 to 38 m³)*
Total Installed Power *9,430 hp (7,040 kW)*

Chicago (Dipper)



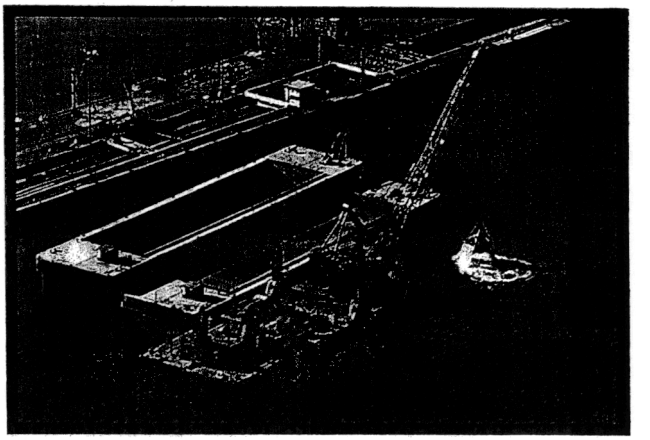
Bucket Capacity *18 to 30 yd³ (14 to 23 m³)*
Total Installed Power *9,4,30 hp (7,040 kW)*

Dredge No. 54



Bucket Capacity *Up to 26 yd³ (20 m³*
Total Installed Power *2,340 hp (1,750 kW)*

Dredge No. 53



Bucket Capacity *Up to 26 yd³ (20 m³)*
Total Installed Power *2,550 hp (1,900 kW)*

EXHIBIT 8

EXHIBIT 9

ISLANDER EAST PIPELINE COMPANY, L.L.C.
454 East Main Street Branford, CT 06405
(203) 488-1800 *phone* • (800) 516-9997 *toll-free* • (203) 488-1490 *fax*

Islander East Pipeline Company

FEB 2003

February 12, 2003

Mr. Joel Reinbold
Executive Director
Institute for Sustainable Energy
83 Windham Street
Willimantic, CT 06226

RE: Islander East Pipeline Project
Correspondence regarding the Tilcon Barge Operations

Dear Mr. Reinbold:

Islander East Pipeline Company, L.L.C. ("Islander East") is aware of recent correspondence distributed to the Joint Task Force and Working Group concerning a Tilcon barge that sunk in Long Island Sound near Branford, Connecticut. The correspondence linked the sinking of the barge to the Islander East Pipeline Project and asserted that energy companies have closed "their eyes and minds to safety".

Islander East believes that this correspondence is factually incorrect and its contents beyond the scope set for the Joint Task Force. However, we are compelled to provide a response to the statement regarding pipeline safety.

The safe design, construction and operation of the Islander East Pipeline Project is of utmost importance to the Islander East project team. During Islander East's Siting Council Evidentiary Hearings, Islander East provided expert witnesses that offered direct testimony supporting the fact that the proposed project meets or exceeds all applicable safety requirements.

Furthermore, the alignment and design of the Islander East Pipeline has taken into account the Tilcon barge operations. As you are all aware, Islander East is proposing to use the Horizontal Directional Drill ("HDD") construction method for the installation of the pipeline from the Connecticut landfall to a distance approximately 4000 feet offshore. The use of the HDD construction method will avoid impacts to nearshore shellfish beds and result in the installation of the pipeline approximately 85 feet below, and perpendicular to, the Tilcon navigational channel, eliminating safety concerns and any potential disturbances to Tilcon's operations in this area.

To clarify any misunderstandings that may have resulted from the aforementioned correspondence, we would appreciate your distribution of this letter to the members of the Joint Task Force and Working Group. If you require additional information regarding the Islander East Pipeline Project, please contact me at (203) 488-1800.

EXHIBIT 11

EXHIBIT 1

ISLANDER EAST PIPELINE PROJECT

RAILROAD COLLOCATION IMPACT/SAFETY ANALYSIS

January 14, 2002

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prepared by

GEORGIA CAROLINA ENGINEERING, INC.
212 RIDLEY HOWARD COURT - DECATUR, GEORGIA 30030

ISLANDER EAST PIPELINE PROJECT
RAILROAD COLLOCATION IMPACT/SAFETY ANALYSIS

A. **BACKGROUND** - The Islander East Pipeline Company ("Islander East") is preparing plans to construct an underground 24 inch natural gas pipeline in the vicinity of Branford, Connecticut. For a distance of approximately four miles, plans call for the proposed pipeline to run parallel to the Branford Steam Railroad ("BSRR"). Except for several minor deviations, the proposed pipeline would be constructed parallel to the existing BSRR main track. As shown on following Exhibit # 1, the proposed collocation segment begins just north of the Twin Lakes Road at grade railroad crossing (near Pipeline Mile 6) and ends at the railroad car unloading facility on the shore of Long Island Sound (near Pipeline Mile 10).

In addition to the approximate 4 mile main line segment of the BSRR where collocation of the Islander East pipeline is proposed, BSRR rail facilities consist of a quarry loadout facility where traprock is loaded into railcars and a barge loading facility. The predominant BSRR operation involves moving loaded rail cars some 10 miles from the quarry load out facility to the barge loading facility where the traprock is loaded into barges for further movement in Long Island Sound. In addition to the rail to barge operation, a lesser amount of traprock is moved from the load out facility to interchange with the Providence & Worcester Railroad where it goes off the BSRR for use as railroad ballast. The BSRR rail operation is an essential element and integral part of the rock quarrying operation. The quarry operations cannot be sustained without railroad transport of the quarried stone. Consequently, BSRR facilities and equipment are extremely well maintained with maximum operational safety in place to ensure continuous operation of the stone hauling operation. Detailed information related to the facilities, equipment, and operations of BSRR is enclosed as Exhibit # 2.

B. **PIPELINE LOCATION** - Where proposed pipeline plans call for the pipeline to be located within BSRR right-of-way, the following location and construction standards will generally apply. The pipeline centerline and track centerline will be separated by at least 25 feet horizontally (See Exhibit # 3 for Roadbed Cross Section) except for locations where the proposed pipeline crosses under the BSRR main track. Where the pipeline centerline is 25 or more feet from the centerline of the BSRR track structure, the proposed pipeline may be installed by open cut trenching or by boring with a minimum of 5 feet of soil cover. In the event that rock is encountered, depth of cover may be reduced. Where the proposed pipeline is located less than 25 feet from the centerline of BSRR track (locations where the proposed pipeline crosses under the track), the carrier pipe will be installed in a casing pipe with a minimum vertical separation of 6 feet measured from the base of the rail to the top of the casing. The casing pipe will be installed by boring or jacking so as to avoid disruption to BSRR operations and to avoid open cut excavation in the roadbed.

With respect to horizontal separation distance between the pipeline and the BSRR main track, the feasibility of constructing the pipeline much closer to the track (10 to 15 feet from the track centerline) was considered. This alternative was analyzed as a means of reducing the width of the corridor that must be cleared to allow construction, maintenance, and operation of the proposed pipeline. This analysis resulted in a determination that reducing the separation to less than 25 feet was not feasible due to the following factors:

- Locating the pipeline within 10 to 15 feet from the track centerline while maintaining 5 feet of cover over the pipe would place the pipe in an area within the soil force envelope (as shown in Exhibit # 3) where live loads from passing trains could affect the pipeline.

Excavating a trench large enough to accommodate 24 inch gas pipe 0 to feet from the track while providing minimum of 5 feet of cover would cause serious stability problems in the roadbed which could cause deterioration of the track structure which would in-turn increase the chances for dera lments and other safety problems

Constructing pipeline within 10 to feet of the track wou require extended periods of no train operations in order to install the pipe Cessation of train operations for pipeline construction (or pipeline maintenance) would create an unterable business condition for BSRR.

Based on the foregoing conclusions the proposed pipeline route retains minimum horizontal separation requirement of 25 feet except where the pipeline crosses under railroad trackage.

Collocating an underground pipel parallel to existing road trackage with operations described in the foregoing paragraphs offers number of advantages. A major advantage is avoidance of disruptions to vehicular traffic and other community activities which would occur if the buried pipeline were nstalled along streets and highways. In addition, locating the pipeline in existing developed railroad corridor minimizes the need to develop previously undisturbed land.

C. **RAILROAD RELATED SAFETY CONSIDERATIONS** While collocating an underground pipeline parallel to an existing railroad offers the abovementioned advantages, number of safety considerations related to collocating the proposed pipeline parallel to an existing active railroad have been identified The following paragraphs address each of these ssue

1. **Soil Forces** - Concerns are sometimes voiced that passing trains produce vibrations and other forces in soil under and around the railroad track carrying the train traffic. The concern is that such forces might cause fatigue failures in a pipeline due to repeated flexing of the pipe material as a result of soil pressures.

   Based on Islander East's pipeline installation plans, soil force impacts on the carrier pipe produced by BSRR train operations are essentially eliminated. Specifically, by locating all uncased gas pipe 25 or more feet from the centerline of the track structure with a minimum of 5 feet of soil cover provided over the pipe places the carrier pipe outside the soils force envelope associated with passing trains (See Exhibit # 3). Where the carrier pipe is located less that 25 feet (such as locations where the pipe crosses under rail trackage), the carrier pipe will be located inside a casing pipe under at least 6 feet of soil cover. Any train related vibrations and soil forces will impact on the casing pipe, not the carrier pipe.

   An analysis to determine soil forces on the casing pipe was completed. The analysis was made for a location where the casing pipe and carrier pipe would be located directly under the centerline of the BSRR main track. This analysis revealed that, using Cooper E-80 loadings (a conservative approach), a loaded rock train of ballast cars moving at 20 mph (BSRR maximum main line speed) passing over the casing pipe buried 6 feet under the track would produce a soil pressure loading on the casing pipe of slightly more than 2,100 lbs/ft. This loading is insignificant and will not cause buckling, collapse, and/or deterioration of the casing pipe. Calculations supporting this force determination are provided in Exhibit # 4.

   With respect to vibrations which might be sensed by an individual positioned near the track as a train passes, soil forces associated with these vibrations are very

small compared to the larger soil forces associated with pressures transferred from the wheels of loaded rail cars to the soil under the track structure. Even though these small vibrations may be noticeable, they will not damage or cause deterioration to: [a] a parallel, uncased carrier pipe located 25 or more feet and buried under 5 feet or more of cover and completely surrounded by select, compacted, backfill material; or [b] a casing pipe buried under 6 or more feet of cover where the horizontal separation of the pipe and the track is less than 25 feet.

Safety concerns that soil pressures associated with BSRR train operations will produce pipeline failure due to vibrations and repeated loadings from passing trains are unfounded. The proposed construction standards for pipe location, pipe materials, construction methods, and pipe protection are more than adequate to prevent pipeline failure associated with routine railroad operations.

2. **Derailments** - The apparent concern related to derailments is that impacts from derailed locomotives and/or rail cars will strike the ground over the pipeline with such force that gouges and craters in the earth will result and be sufficiently deep to allow the rail equipment to directly contact and rupture the gas pipe. Given the pipeline construction standards to be employed by Islander East and the nature of BSRR operations, concerns regarding rupture of the gas pipeline as a result of direct impacts from derailed rail equipment are unwarranted. In support of this general conclusion, the following information is provided.

   - The BSRR is a low speed (20 mph maximum), one commodity (stone products) operation. The BSRR is not a main line high speed freight railroad operation where derailed equipment might release dangerous commodities or behave like projectiles and produce substantial ground impacts significant distances from the track. In operations like the BSRR, derailed cars often

remain upright in line with the track and do not impact right-of-way outside the immediate track structure. An uncased pipeline located under 5 feet of cover, 25 feet from the track structure would not experience any measurable impact from a derailment of this type.

- Should cars in a BSRR rock train moving 20 mph derail and turn over, they will not behave like projectiles and produce large ground impacts. Such cars may roll over (or even roll down a slope away from the track) and spill trap rock in the course of rolling over. Such rolling of the cars and rock spillage will not produce sufficient impact forces to damage an uncased pipeline buried under 5 feet of soil cover (or an encased pipeline with even more cover) even if the car rolls over and comes to rest on the ground over the pipeline is located. As shown in the calculations provided in Exhibit # 4, rollover derailment related soil loadings on the carrier pipe are calculated to be less than 750 lbs/ft. This loading on the steel carrier pipe is insignificant and will not cause penetration, breaches in joints, buckling, or collapse of the pipe.

Safety concerns that derailments of BSRR trains will produce pipeline failure are unwarranted. Islander East's construction standards in terms of pipe location, pipe materials, and pipe protection are more than adequate to protect against pipeline failure associated derailments of rock laden trains moving over BSRR trackage at speeds not exceeding 20 mph.

3. **Derailment Cleanup** - Cleanup of derailed locomotives and cars is a safety consideration. An accident involving a Southern Pacific Transportation Company ("SP") freight train in California is sometimes raised as an argument against co-locating pipelines conveying flammable products with active railroad tracks. This accident occurred on May 25, 1989. The accident involved an explosion and fire

which occurred during the course of cleaning up a derailment of a SP freight train near San Bernardino, California. The explosion and fire were caused by earthmoving equipment working to remove railroad equipment from the site.

The San Bernardino incident has no relevance to the proposed collocation of the Islander East Pipeline with trackage of BSRR. In support of this assertion, please consider that the SP main line on which the derailment occurred was (and is) a heavily utilized, high speed main line over which freight trains carrying all types of freight move daily. The freight train that derailed was believed to be moving in excess of 80 miles per hour when it left the track in a curve spreading wreckage in a large area over the pipeline. The BSRR is a low speed, single commodity rail operation with train speeds limited to 20 mph. While it would be necessary to quickly clean up and restore BSRR operations, a worst case derailment on the BSRR would not project and demolish locomotives and cars such that cleanup operations would require excavation to the depth and area of the cleanup that was underway on the SP site at the time the explosion and fire occurred. Removing spilled traprock and re-railing, removing or scrapping derailed cars on BSRR right of way would not require significant subsurface excavation thereby essentially eliminating the possibility of cleanup equipment hitting the proposed Islander East Pipeline. Based on Islander East's proposed construction standards in terms of pipe location (25 feet or more away from the track and 5 feet of cover), pipe materials, and pipe protection (casing pipe when within 25 feet of the track) are more than adequate to protect against pipeline failure resulting from accidental contact by derailment cleanup equipment. Finally, should conditions demand it, Islander East proposes to position shutoff valves so that the pipeline segment co-located with BSRR trackage can be isolated and shut down with natural gas removed from the isolated pipeline section located parallel to the BSRR.

4. Right of Way Fires Fi resulting from the ignition of brush grass leaves and ther forest detritus be rail operation elated safety sue The at ty concern is that sparks from passing locomotives and railcars will ignite fir on the round urface in the vici ity of the buried pipel This concern unfounded. irst, BSRR locomotives are well maintained to such a degree that sparks are not emitted with the diesel engine exhaust econd the railcars moving in shuttle train service BSRR are equipped with roller bearing trucks which eliminate the need for oi filled journal boxes and the associated potential fire source produced by hot boxes (hot friction bearings which occur when no is present in the journal box) is understood that there has not been rail caused fire in BSRR right-of-way since ra car trucks were converted to roller bearings many years ago Finally the very unlikely event that fire does occur on the ground in the vicinity of the pipel proposed burial depths feet or more) sufficient to prevent heating of the soil to such degree that gas in the pipeline would ignite

D. **CONCLUSION** In conclusion, study of various safety concerns associated with collocating the proposed Islander ast Pipeline with existing Branford Steam Rai road trackage for distance of about 4 miles beginning just north of the Twin Lakes Road at-grade railroad crossing and ending near the railroad unloading facility the shore of Long Island Sound has been completed Considering the nature of the Branford Steam Railroad operation low speed movement of single commodity traprock), the excellent condition of the railroad physica plant the manner which the railroad trackage maintained and upgraded the excellent condition of locomotives and cars and proposed ocation and construction standards wh ch wil govern construction of the Islander East Pipeline, collocating the pipeline parallel to the lroad does not create risks or safety hazards such that the pipe ine should be constructed along some other route Safety concerns related to ground forces produced by train operations derailments, derai ment cleanup activities and/or right of-way fires unwarranted

The foregoing conclusion was formed after a detailed inspection of BSRR trackage, BSRR locomotives and cars, extensive discussions with both BSRR management personnel responsible for the railroad operation and BSRR train crew personnel responsible for actually running trains, and Islander East Construction management personnel. Inspection work was accomplished both on foot walking track and riding a loaded shuttle train from the quarry load out to the barge loading facility.

Respectfully Submitted,

GEORGIA CAROLINA ENGINEERING, INC.

Henry B. Wyche, Jr, P.E.
President

IEP088.hbw 011402

This document involves pipeline location information and is not available at this Internet site due to homeland security-related considerations. This portion of the Islander East consistency appeal administrative record may be reviewed at NOAA's Office of General Counsel for Ocean Services, 1305 East-West Highway, Silver Spring, Maryland.

BRANFORD STEAM RAILROAD FACT SHEET

A. **TRACKAGE** - Branford Steam Railroad ("BSRR") trackage is extremely well maintained and is constructed for heavy duty slow speed movement of trains loaded with stone. Specific characteristics are:

1. **Rail** - Rail in track is jointed and ranges from 100 lb. to 115 lb. in size. Predominant sizes are 100, 112, and 115 lb sections. New 115 lb. rail in nominal 80 ft. lengths is being installed. As this new rail is installed, ½ of existing bolted rail joints are eliminated.

2. **Crossties** - Ties are installed on an annual program basis. Current tie conditions are excellent.

3. **Ballast** - BSRR main line trackage is heavily ballasted with well tamped trap rock ballast. The typical ballast section is well maintained and its depth exceeds that normally found in industrial trackage.

4. **Drainage/Roadbed** - Drainage along the BSRR is excellent with no in-track problems observed. The roadbed section is well maintained and kept clear of vegetation as needed for train operations.

5. **Track Maintenance** - Maintenance, upgrading, and construction work is accomplished by both in-house personnel and outside contractors. BSRR has a 50 ton capacity rubber tired crane available for rail maintenance operations; however, other track maintenance equipment is rented on an as-needed basis.

6. **Upgrading** - BSRR has been successful in obtaining state financial aid for capital improvement and maintenance activities including items such as grade crossing protection, bridge replacement, and track upgrading.

7. **Alignment and Grade** - Over the proposed pipeline collocation segment, BSRR runs in an essentially straight alignment descending toward the barge load out facility. Grades are generally advantageous in that loaded railcars move down grade and empties move up returning to the quarry load out. BSRR main line curvature and gradients create no operating difficulties.

8. **Right of Way** - BSRR right-of-way generally varies between 50 and 100 feet in width and is mostly held in fee simple. There are 5 road/rail grade crossings within the proposed co-location segment. BSRR passes over U. S. Highway 1, under Interstate 95, and under the AMTRAK Northeast Corridor main line. Various municipal utility lines (drainage, sewer, water,

EXHIBIT #

etc.) are located in and cross under BSRR. trackage.

B. **EQUIPMENT** - BSRR On-line locomotives and rail cars are described as follows:

1. **Locomotives** - There are three BSRR locomotives involved in the stone hauling operation. The primary locomotive used for rock train movements from the quarry to the barge loader or interchange track is an EMD SW1000 switch engine (4 axle - approx. 250,000 lbs. operating weight). The other two locomotives are a 44 ton GE center cab and a GE 85 ton center cab. All of these locomotives are 4 axle, none are equipped for MU operation, and none has dynamic braking. Providence & Worcester Railroad Co. locomotives operate on the BSRR interchange track but do not run on the BSRR main line to the load out facility.

2. **Cars** - BSRR railcars handling stone from the load out to the barge facility are 70 ton capacity with air operated bottom dump doors. All captive BSRR railcars are equipped with roller bearing trucks. In addition, larger ballast cars suitable for interchange service are handled from time to time. BSRR is capable of handling 286,000 lb. gross weight, 4 axle cars.

C. **OPERATIONS** - BSRR operations are totally integrated and are co-dependent with a quarrying operation. Specific operating characteristics are as follows:

1. **Commodities** - BSRR is a single commodity railroad hauling rock products from a quarrying operation. No hazardous materials or general railroad freight is transported.

2. **Trains** - Trains of 10 or 11 of the 70 ton ballast cars shuttle between the quarry load out and the barge loading facility. Typically, 12 to 15 round trips are made each day. The locomotive is positioned at the head end of the train as it operates in both loaded and empty directions.

3. **Interchange** - Providence & Worcester Railroad operates on some 3,000 feet of interchange track between the BSRR yard and AMTRAK connection in the Pine Orchard area. This operation involves setting out empty and picking up loaded interchange capable ballast cars for movement off-line.

4. **Track Speed** - Maximum BSRR main line train speed is limited to 20 mph. Speed is restricted to a lower limit at some locations (curves, yard tracks, etc.).

EXHIBI

5. **Derailments** - BSRR occasionally experiences minor derailments. Re-railing operations are typically handled in-house using either locomotives to pull on cars or the highway capable 50 ton capacity crane which resides on the property. Higher capacity cranes are rented as needed. Derailments are immediately cleaned up as necessary to open the railroad and sustain quarry operations.

D. REGULATORY FACTORS

1. **Coverage** - BSRR. is not federally regulated by the Federal Railroad Administration (FRA). The Connecticut DOT exercises some regulatory oversight including annual inspection of rail facilities and equipment.

2. **Track Classification** - BSRR trackage is maintained at level equal to or better than FRA Class 2 (NOTE: FRA Class 2 permits freight train operations up to 25 mph).

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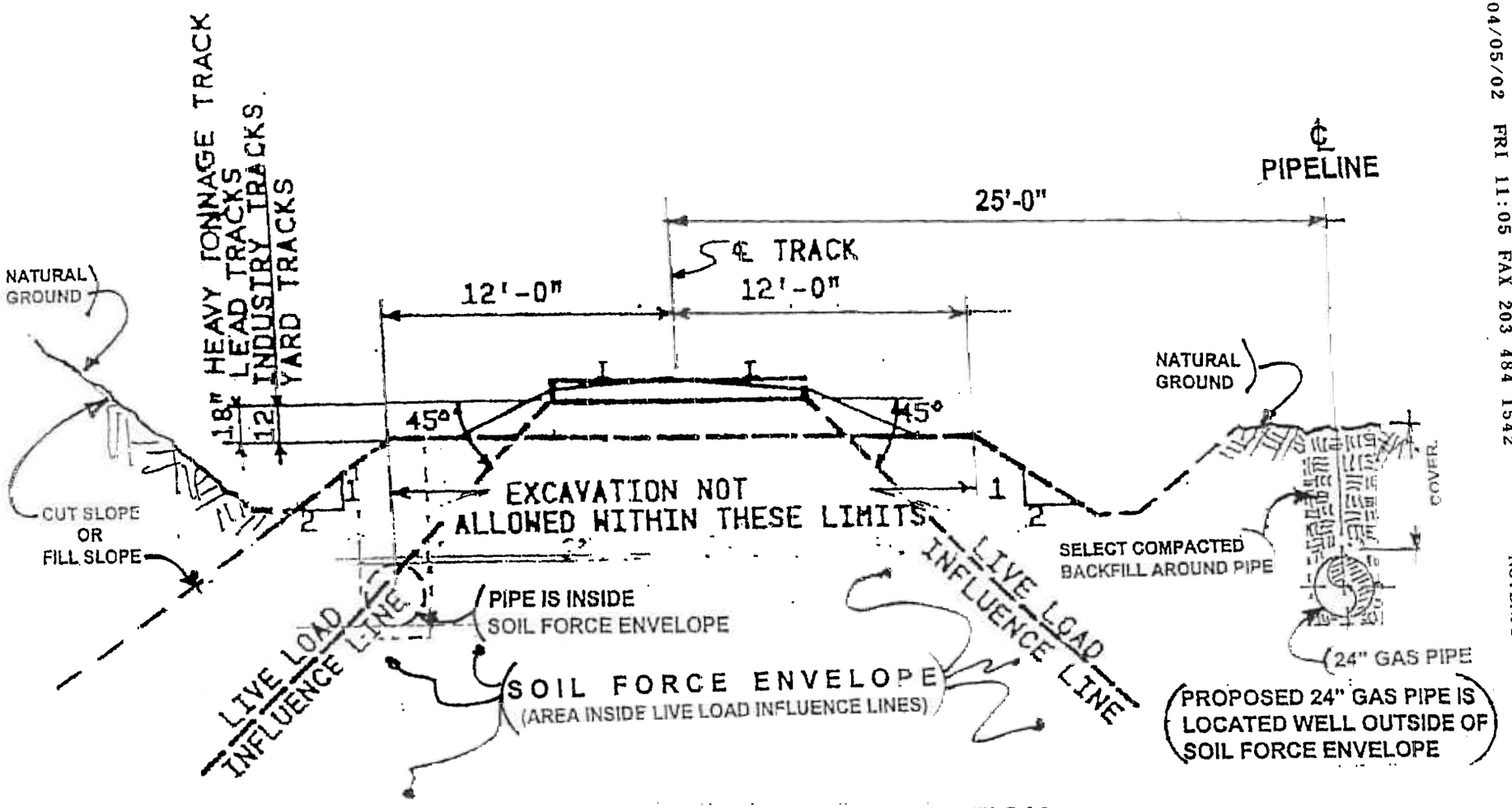
EXHIBIT



ROADBED CROSS SECTION
SHOWING
PROPOSED ISLANDER EAST PIPELINE

N.T.S.

GEORGIA CAROLINA ENGINEERING, INC.
212 RIDLEY HOWARD COURT - DECATUR, GEORGIA

NOVEMBER 10, 2001

ISLANDER EAST PIPELINE
RAILROAD LOADING ON PIPE

A. GENERAL ASSUMPTIONS

1. Pipeline

- Carrier Pipe = 24" steel which meets AREMA pipe material standards
- Casing Pipe = 30" steel
- Where pipe is located 25 or more feet away horizontally from the centerline of the railroad track, the carrier pipe will be buried un-cased with a minimum of 5' of cover over the pipe.
- Where pipe is closer than 25 feet horizontally from the centerline of the railroad track (such as locations where the pipe crosses under the railroad track), the carrier pipe will be installed in a casing pipe with a minimum of 6' of cover provided over the casing pipe.

2. Railroad

- Main line BSRR track structure consists of 100 to 115 lb. RE jointed rail with 7"x 9" x 8'-6" crossties spaced 22" on center. 12" inches of ballast is provided under ties.
- Maximum gross weight for a loaded 4 axle hopper car (approx 50' length, 10' height, 10' width, 36" diameter wheels) is 286,000 lbs.
- Utilize Cooper E-80 loadings (80,000 lb axle load and 40,000 wheel load) for all calculations (NOTE: this is conservative since the maximum axle load for a 4 axle 286,000 gross weight car is 71,500 lbs)
- Maximum train speed is 20 mph.

B. REGULAR TRAIN OPERATIONS LOADING ON PIPE DIRECTLY UNDER TRACK - This scenario analyzes the regular train operations live and impact (vibrations) loads on a casing pipe located directly under the railroad track.

- Soil pressure @ bottom of crosstie = $P_a = 0.4[(2 \times W_L)+(I_f \times A_L)]+[L_a]$ where 0.4 is AREMA factor for distributing axle loads to each tie; W_L is wheel load; I_f is Impact factor; A_L is axle load; and L_a is loaded area.

  $I_f = (33 \times T_s)+(W_d \times 100)$ where T_s = Train speed in mph and W_d = wheel diameter in inches. $I_f = (33 \times 20)+(36 \times 100) = 0.183$

  $L_a = 2/3$ (W x L) where W = tie width in inches and L = tie length in inches and 2/3 is a distribution factor to distribute load to ends of tie. $L_a = 2/3$ (9" x 102") = 612 in^2

  $P_a = 0.4[(2 \times 40{,}000 \text{ lbs})+(0.183 \times 80{,}000 \text{ lbs})]+[612 \text{ in}^2] = 61.9 \text{ lbs/in}^2$

- Soil pressure @ bottom of ballast (top of roadbed) = $P_c = [16.8(P_a)]+h^{1.25}$ where h= depth in inches of ballast between bottom of tie and top of roadbed

  $P_c = [16.8 (61.9 \text{ lbs/in}^2)]+[12 \text{ in}]^{1.25} = 46.6 \text{ lbs/in}^2 = 6{,}704 \text{ lbs/ft}^2$

EXHIBIT # 4

- Using the methodology described in WPCF Manual # 9, the weight in lbs/ft on the 30" diameter casing pipe buried with 6' of cover directly under the railroad track = W_{sd} = (C_s) x (P_c) x (I_f) x (D_c) where C_s = 0.072 taken from Table XXVI in WPCF Manual # 9 (NOTE: C_s takes the 6' cover depth into account), I_f = 1.75 is a railroad impact factor taken from WPCF Manual # 9, and D_c is the diameter of the casing pipe = 30 inches or 2.5 feet.

W_{sd} = (0.072) x (6,704 lbs/ft^2) x (1.75) x (2.5ft) = 2,111.7 lbs/ft

Loading on casing pipe attributable to train operations is not significant.

C. **LOADING ON UNCASED CARRIER PIPE IF DERAILED CAR ROLLS OVER AND COMES TO REST DIRECTLY OVER PIPE LOCATED 25 FEET FROM TRACK** - This scenario analyzes the load imposed on an uncased carrier pipe under 5 feet of cover and located 25 feet away from the track centerline. Analysis is based on the assumption that the loaded 286,000 lb. gross weight car rolls off the track, turns on its side but retains all lading, and comes to rest directly over the buried carrier pipe with the weight concentrated in a 5' x 10' area. (NOTE: the foregoing assumption induces a conservative bias into the load calculations. In reality, a roll over derailment would result in essentially all of the lading being expelled from the car prior to the car coming to rest over the pipe thereby reducing the weight coming to rest on the ground over the pipe.)

- Soil pressure @ surface of ground over uncased carrier pipe = P_c = (W_c) ÷ (C_L x C_w) Where W_c = weight of the car = 286,000 lbs., C_L = length of impacted area = 5 ft., and C_w = width or height of car = 10 ft.

P_c = (W_c) ÷ (C_L x C_w) = (286,000 lbs) ÷ (5 ft x 10 ft) = 5,720 lbs/ft^2

Using the methodology described in WPCF Manual # 9, the weight in lbs/ft on the 24" diameter carrier pipe buried with 5' of cover 25' from the the railroad track = W_{sd} = (C_s) x (P_c) x (I_f) x (D_c) where C_s = 0.037 taken from Table XXVI in WPCF Manual # 9 (NOTE: C_s takes the 5' cover depth into account), I_f = 1.75 is a railroad impact factor taken from WPCF Manual # 9, and D_c is the diameter of the carrier pipe = 24 inches or 2.0 feet.

W_{sd} = (0.037) x (5,720 lbs/ft^2) x (1.75) x (2.0ft) = 740.7 lbs/ft

Loading on casing pipe attributable to a derailed car coming to rest over the uncased pipe is not significant.

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EXHIBIT # 4