

HEARING RE: ALGONQUIN GAS & ISLANDER EAST  
APRIL 12, 2002 (10:01 AM)

1 DR. LANCE STEWART: Lance Stewart,  
2 Dennison Hill Road, North Stonington. S-t-e-w-a-r-t.

3 CHAIRMAN GELSTON: Raise your right  
4 hand.

5 (Whereupon, Dr. Lance Stewart was duly  
6 sworn in.

7 CHAIRMAN GELSTON: Thank you.

8 COURT REPORTER: Sir, could I have your  
9 first name again?

10 DR. STEWART: Lance.

11 MR. SNOOK: First of all, thank you, Mr.  
12 Chairman, members of the Council, and thank you Mr.  
13 Fitzgerald, and any other counsel for --

14 CHAIRMAN GELSTON: Thank you Mr. Andres  
15 and thank Mr. Small and thank all the rest of them --

16 MR. SNOOK: And I'd like to thank all  
17 the rest, and Mr. Andres --

18 CHAIRMAN GELSTON: And just warn them  
19 they ain't going to go out of --

20 MR. SNOOK: Understood. And it is an  
21 extraordinary --

22 A VOICE: Why don't you bring the  
23 microphone right over to you, that would be a lot  
24 easier that way.

1 MR. SNOOK: Okay. First of all, I'd  
2 like to ask the witness do you have any corrections  
3 that you would like to make, if any, on the record to  
4 your testimony that was pre-filed on April 5th?

5 DR. STEWART: No, everything is  
6 basically correct.

7 MR. SNOOK: And in this regard as  
8 submitted, do you adopt it under oath now, such that it  
9 is true and correct to your best knowledge?

10 DR STEWART: Yes.

11 MR. SNOOK: Okay, thank you. I'd like  
12 to offer this witness for cross-examination?

13 CHAIRMAN GELSTON: Are you going to put  
14 that exhibit into --

15 MR. SNOOK: Oh, yes. And I'd like to  
16 ask for the pre-filed testimony of Dr. Stewart to be  
17 placed into evidence.

18 CHAIRMAN GELSTON: Any objection? (No  
19 audible reply). Hearing no objection, it's so -- as  
20 far as I'm concerned you just had it sworn to, is that  
21 right?

22 MR. SNOOK: Yes, sir.

23 CHAIRMAN GELSTON: It's a full exhibit.  
24 (Whereupon, Party Blumenthal Exhibit No.

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1 2 was received into evidence.)

2 MR. SNOOK: And now I'd like to offer  
3 this witness for cross-examination.

4 CHAIRMAN GELSTON: Mr.

5 MR FITZGERALD: I'm looking -- I'm just  
6 trying to find the part of the program that has the  
7 order of cross-examination for the AG's witness. Here  
8 it is. So according to this, of those that are here,  
9 the Town of Guilford and the Town of Branford would be  
10 in front of me.

11 CHAIRMAN GELSTON: But you're -- the  
12 Applicant is first --

13 MR. FITZGERALD: Is it? Oh, okay.  
14 Alright. I'm just -- good. Good afternoon, sir.

15 DR. STEWART: Good afternoon.

16 MR. FITZGERALD: In your pre-filed  
17 testimony in response to numbered Question 3 you begin  
18 talking about the experience with the Iroquois project  
19 in 1991. And you say that the installation barge  
20 exceeded the installation corridor by dropping its  
21 anchors well outside of --

22 MR. SNOOK: Excuse me, no --

23 MR. FITZGERALD: What --

24 MR. SNOOK: If I may interrupt with an

1 objection. I'm not sure that's --

2 MR. FITZGERALD: Oh, I'm sorry. No,  
3 that's Lawrence Williams. I beg your pardon. Dr.  
4 Stewart okay -- I'm sorry. That was your other  
5 witness. I beg your pardon. Thanks for interrupting.  
6 (Laughter).

7 Well, in fact -- let's see -- starting  
8 with your numbered Question 5, we're back to the  
9 Iroquois project in 1991 again, you say that as part of  
10 your general scientific work in the Sound, you've been  
11 made aware of several adverse impacts caused by the  
12 Iroquois pipeline project of 1991. In what manner have  
13 you been made aware of those impacts, sir?

14 DR. STEWART: Well, I was originally  
15 asked to help investigate the original route to inspect  
16 the oyster beds, the condition they were in before the  
17 construction began, but I -- I could not get involved  
18 with -- (tape stopped) --

19 COURT REPORTER: Continue please.

20 DR. STEWART: -- so I was not directly  
21 involved, although my work with the Undersea Research  
22 Program and the Advisory Service Sea Grant brought me  
23 into contact with many fishermen. And our  
24 understanding of the ecology after the construction was

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1 that they suffered from continued siltation and that  
2 the topography had changed considerably.

3 MR. FITZGERALD: My question was how  
4 have you been made aware of these impacts. And the --  
5 and I gather your answer is that -- these fishermen  
6 have told you things?

7 DR. STEWART: By their -- by their --  
8 yes, by their dredging activities --

9 MR. FITZGERALD: Okay --

10 DR. STEWART: -- and that their dredges  
11 would be --

12 MR. FITZGERALD: -- so -- so this -- the  
13 basis of your knowledge is anecdotal information from  
14 fishermen rather than any published data or scientific  
15 studies, is that right?

16 DR. STEWART: Actually, I saw a clip of  
17 videotapes that were taken post-operation on the beds  
18 that showed the depressions and -- that and the motive  
19 of our research for quite some time is to do direct --

20 MR. FITZGERALD: Alright, let --

21 DR. STEWART: -- documentation to try to  
22 look at --

23 MR. FITZGERALD: Let me --

24 DR. STEWART: -- so that evidence was

1 kind of telling to me

2 MR. FITZGERALD: So let me go back and  
3 ask you the question again. How have you been made  
4 aware of these impacts?

5 DR. STEWART: By scientific  
6 communication with colleagues of mine and fairly  
7 responsible agency departments and underwater  
8 videotape.

9 MR. FITZGERALD: But what happened to  
10 the fishermen?

11 DR. STEWART: Well, that's anecdotal.  
12 That's --

13 MR. FITZGERALD: Alright, so we're not  
14 going to consider what the fishermen told --

15 DR. STEWART: Well actually, I believe  
16 the fishermen as much as I do bureaucrats at times.

17 MR. FITZGERALD: Well --

18 MR. ASHTON: When was the videotape  
19 taken?

20 DR. STEWART: I think it was the year  
21 right after the --

22 MR. ASHTON: One year after --

23 DR. STEWART: One year after, yes.

24 MS. KATZ: Did you tape the videotape?

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1 DR. STEWART: No No. And I'm not sure  
2 whether it was the Department of Agriculture, the  
3 Agriculture Division, or a subcontractor --

4 CHAIRMAN GELSTON: If you can't swear to  
5 the veracity of that tape and who took it, or what time  
6 it was taken, or anything else, I won't allow what's in  
7 that tape in evidence because it can't be cross-  
8 examined.

9 DR. STEWART: Alright. I could --

10 CHAIRMAN GELSTON: We can get rid of  
11 that one right now.

12 MR. FITZGERALD: Now, you've also spoken  
13 of -- you said something about scientific colleagues?

14 DR. STEWART: Only those in my  
15 university --

16 MR. FITZGERALD: Well -- in what manner  
17 have your scientific colleagues at the University  
18 apprised you of impacts of the Iroquois project?

19 DR. STEWART: Very indirectly, but in  
20 reference to their direct involvement with the project  
21 at the time.

22 MR. FITZGERALD: And who would that be?

23 DR. STEWART: I know Dr. Bohlen was  
24 involved with some sediment work and that was -- that

1 was the extent of it.

2 MR. FITZGERALD: Has Dr. Bohlen made you  
3 aware of impacts of the Iroquois project?

4 DR. STEWART: Some -- some of them, but  
5 he has not, you know, directly discussed it in detail  
6 with me.

7 MR. FITZGERALD: Now, you say in  
8 response to Question 5 that while bathymetry suggests  
9 that certain described conditions exist, no -- well  
10 actually, let me stop right there with your reference  
11 to bathymetry. Do you know whether there has been any  
12 scientific documentation done of the bathymetry of the  
13 Iroquois pipeline corridor?

14 DR. STEWART: The total corridor no.  
15 One of the things that was brought to my attention and  
16 in our preliminary questioning over the past three or  
17 four months with the applicants about -- you know --  
18 and in the EIS, the question whether intercepting  
19 another pipeline were detectable and the answer was  
20 that the bathymetry showed the cleared Iroquois gas  
21 pipeline trenches that was laid 10 years ago --

22 MR. FITZGERALD: I'm going to move to  
23 strike that answer as not responsive. My question was  
24 whether you are whether you know if a study

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1 documenting the bathymetry of the corridor in which the  
2 Iroquois pipeline was built exists?

3 DR. STEWART: Pre or after?

4 MR. FITZGERALD: No, a post --

5 DR. STEWART: Post --

6 MR. FITZGERALD: construction survey  
7 of the pipeline corridor documenting the bathymetry of  
8 the corridor?

9 DR. STEWART: No, I'm not aware of it.  
10 I haven't really studied the Iroquois gas pipeline per  
11 say.

12 MR. FITZGERALD: But you've made  
13 statements about it in your testimony, haven't you?

14 DR. STEWART: It's been part of our  
15 discussion as an example of concerns.

16 MR. FITZGERALD: In your testimony you  
17 say that what does appear to be the case is that the  
18 1991 construction effort has resulted in long-term  
19 damage to shellfish communities. By long-term damage,  
20 I assume you mean something beyond the mortality that  
21 was caused by the construction event itself?

22 DR. STEWART: That's correct.

23 MR. FITZGERALD: And what is the data or  
24 other basis that you rely upon for that statement?

1 DR. STEWART: The fact that I know in  
2 general -- I worked with the entire coastal Connecticut  
3 shellfish industry over the last 20 years. And  
4 siltation is one of the most important --

5 MR. FITZGERALD: Sir, no, wait please --

6 DR. STEWART: -- siltation --

7 MR. FITZGERALD: I'm not asking you --  
8 wait, please just a minute -- we'll get on -- we'll get  
9 to --

10 DR. STEWART: Alright --

11 MR FITZGERALD: -- the content of this  
12 information later on perhaps. This question simply  
13 asks you first as a -- the toss before the serve  
14 (laughter

15 MS. KATZ: Oh boy, I'm going to regret  
16 that one I can tell.

17 MR. FITZGERALD: What -- where you got  
18 the information? What information or data are you  
19 relying on? What is the source of the information that  
20 you rely on for this statement?

21 DR. STEWART: The site specific  
22 Iroquois?

23 MR. FITZGERALD: Yes --

24 DR. STEWART: Or coastal Connecticut?

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1 MR. FITZGERALD: No. What I -- the  
2 statement that it appears to be the case that the 1991  
3 construction effort has resulted in long-term damage to  
4 the shellfish communities --

5 DR. STEWART: Again, I'm reminded that  
6 the preface of this paragraph, I'm -- I'm looking at  
7 several years of experience with several different  
8 companies in the oyster business, and that is -- that  
9 is my point, that any increased siltation is real -- an  
10 essential detriment to oyster -- or its recruitment  
11 process.

12 MR. FITZGERALD: So -- so in making this  
13 statement that I just quoted, you are relying on  
14 general -- your general knowledge that sedimentation  
15 can be bad for oyster resources --

16 DR. STEWART: Well essentially --

17 MR. FITZGERALD: -- is that right?

18 DR. STEWART: -- that's not true either  
19 because we, as a couple of the other scientists have  
20 testified at this hearing, have been involved with the  
21 dredge material and management program for the State of  
22 Connecticut over 15 years where we were quite active in  
23 the permitting process that regulated and even changed  
24 the laws in Connecticut to provide windows of

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1 excavation of dredged material exclusively out of the  
2 oyster spawning season, recognizing that any sediment  
3 adjacent to reefs or areas or beds would be  
4 detrimental.

5 MR. FITZGERALD: Well, I'll pass on.  
6 Let's go to Question 6. You refer in Question 6 to --  
7 or in your answer to Question 6 you say more troubling  
8 is the fact that a fairly extensive area of the harbor,  
9 which is not yet leased but is prime shellfish habitat  
10 and has significant potential for cultivation will also  
11 be crossed. First of all -- do we have our map in  
12 here? Well, let me -- let me ask you to describe what  
13 area it is that you're referring to there?

14 DR. STEWART: On the chart -- it would  
15 be helpful if we had a chart, but if -- if I were  
16 looking at any depth shallower than the 25-foot  
17 contour, even 30 feet, it has potential for shellfish  
18 depending on the sediment compaction.

19 MR. FITZGERALD: Okay. And -- and what  
20 is the sediment compaction of the area that you are  
21 referring to in this answer as prime shellfish habitat?

22 DR. STEWART: It's quite variable to my  
23 knowledge in reading some of the preliminary reports on  
24 ecological description.

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1 MR. FITZGERALD: And is -- is your  
2 knowledge of the soil characteristics offshore in  
3 Branford gathered from the reports that have been filed  
4 in support of the Applicant's application?

5 DR. STEWART: Yes.

6 MR. FITZGERALD: Okay. Have you made  
7 any personal inspections of the area off Juniper Point,  
8 sir?

9 DR. STEWART: No.

10 MR. FITZGERALD: Okay. Have you looked  
11 at anything other than what is contained in the  
12 information submitted in this docket?

13 DR. STEWART: Yes. In general, I'm  
14 familiar with the complete range of marine eco-habitat  
15 types --

16 MR. FITZGERALD: No, I'm -- I apologize,  
17 my question wasn't clear. I mean in -- is your  
18 understanding of the characteristics of the bottom of  
19 the unleased area in Branford to which you refer in  
20 your answer to paragraph 6, based on anything other  
21 than the information that's been submitted in this  
22 docket?

23 DR. STEWART: I had -- it was some years  
24 ago but underwater bottom types don't change

1 appreciably much in decades but we had done  
2 considerable diving along the coast of Connecticut. A  
3 couple of stations were visited in the Thimble Islands  
4 areas where we did transects across the bottom and made  
5 visual observations, basically looking for lobster  
6 habitat and oyster habitat.

7 MR. FITZGERALD: If I walk over there --

8 MR. ASHTON: Don't forget your  
9 microphone.

10 MR. FITZGERALD: First of all, I want to  
11 correct a statement I made earlier about referencing a  
12 map for the record. The -- this large map was wrongly  
13 identified by me earlier using a mile post marker  
14 number. In fact, this is essentially the map which  
15 appears in our application in Appendix H to Appendix 4  
16 as Drawing 01E5019.1.

17 And looking at this chart, sir, do you  
18 recognize it as a showing of Juniper Point and the area  
19 offshore of it and the proposed pipeline route?

20 DR. STEWART: Yes.

21 MR. FITZGERALD: And inshore there are  
22 some orange -- there's kind of a grid made of orange  
23 lines. Do you recognize those lines as designating the  
24 town leased shellfish beds?

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1 DR. STEWART: Um-hmm -- yes.

2 MR. FITZGERALD: Alright. Now are you  
3 able to show us where on that map, which you identify  
4 as prime -- prime shellfish habitat that is not leased  
5 is located?

6 DR. STEWART: As I said, anything  
7 shallower than 30 feet that had a hard bottom right  
8 here. And directly in the course of the pipeline you  
9 have hard mud which could support a bed of either hard  
10 clam or oyster spat or culch laid down.

11 The fact that these are not all leased  
12 as you would see to the west of Norwalk and New Haven  
13 is the fact that the aquaculture industry is growing  
14 and they haven't had time to develop new industries to  
15 come in and utilize the statutes of Connecticut right  
16 to lease ground. So although the -- although the chart  
17 does not designate seabed bottom type very distinctly,  
18 anything with a hard bottom is potential growing ground  
19 and production --

20 MR. FITZGERALD: And what makes it  
21 prime?

22 DR. STEWART: Just the records for the  
23 State of Connecticut for the last five years would  
24 verify we lead the nation in shellfish production. So

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1 that these potential sites are prime --

2 MR. FITZGERALD: Well, when you identify  
3 something as being prime shellfish ground, is that  
4 because you consider all of Long Island Sound prime  
5 shellfish ground?

6 DR. STEWART: Not all of it. It depends  
7 on the experience of the fishermen to find the most  
8 productive areas. But, in essence, we have a greater  
9 proportion because of the hydrographics of the Sound  
10 and the sediment types that allow mollusk and shellfish  
11 production to be exceptional compared to any state in  
12 New England.

13 MR. FITZGERALD: So when you are making  
14 the statement in answer to paragraph 5 --

15 DR. STEWART: Right --

16 MR. FITZGERALD: -- in which you  
17 paragraph 6 rather, in which you characterize habitat  
18 as prime shellfish habitat, that's not because there's  
19 anything about it that makes it more special than the  
20 rest of Long Island Sound that shallower than 20 feet,  
21 is that right?

22 DR. STEWART: No, that's incorrect  
23 because this particular area, East Haven and Branford,  
24 carry the spawning oyster larvae on shore and allows

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1 for a tremendous potential for setting beds to be  
2 established. One of the best beds in the nation is off  
3 Mill Creek in New Haven, not too far distant from here.  
4 Aquaculturalists are starting to use this ground. And  
5 it's not only the shellfish beds themselves, it's the  
6 shell hash that is evidenced in this area that performs  
7 a niche space shelter for many larval and marine fish.

8 MR. FITZGERALD: Now you just made  
9 another statement about shell hash in this area. What  
10 is the source of your statement that there is shell  
11 hash on the bottom in the corridor that the pipeline is  
12 intended to cross?

13 DR. STEWART: There was a study that Dr.  
14 Pellegrino had done that indicated several stations  
15 that indicated shell hash cover --

16 MR. FITZGERALD: Okay, so --

17 DR. STEWART: and in my personal  
18 experience a few years back.

19 MR. FITZGERALD: How many years back is  
20 that?

21 DR. STEWART: Oh, it would probably be  
22 10 years. And I'm not sure whether it was directly in  
23 the corridor --

24 MR. FITZGERALD: Okay --

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1 DR. STEWART: -- but the width of this  
2 corridor encompasses such a breadth that I'm certain it  
3 would have a substantial --

4 MR. ASHTON: Can I ask what hash  
5 shellfish --

6 DR. STEWART: It's the dead shells of  
7 accumulated mollusk that often form on surfaces --

8 MR. ASHTON: Dead -- dead fish --

9 DR. STEWART: Yeah.

10 MR. ASHTON: Like culch?

11 DR. STEWART: Excuse me?

12 MR. ASHTON: Culch?

13 DR. STEWART: Like culch. It could be  
14 put artificially there. But as an aside, if you'll  
15 allow me, it's one of the most important marine  
16 habitats. We've identified eel grass as an important  
17 marine habitat to be protected by all the states.  
18 Shell hash now is becoming a -- I would say studied to  
19 show its importance in the essential fish habitat role  
20 of many marine species, so it's not really apparent the  
21 set value, but it is from a biological sense.

22 MR. FITZGERALD: Sir, with respect to  
23 your statements concerning the growth of the shellfish  
24 industry in this direction, are you aware of whether or

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1 not there are any areas in the project -- in the  
2 vicinity of the project that you used to be designated  
3 shellfish leases but which have been de-listed because  
4 since they were not productive, no one was interested  
5 in leasing them?

6 DR. STEWART: I'm not aware of them --

7 MR. FITZGERALD: Okay --

8 DR. STEWART: -- but that may be.

9 MR. FITZGERALD: In response to Question  
10 6, at the bottom of the page you say installation of  
11 this pipeline has the potential to release significant  
12 amounts of sediment contaminated with identified  
13 pollutants and reintroduce them into the water column  
14 anephloid (phonetic) layer, all to the detriment of the  
15 shellfish and fin fish communities. Do you have any  
16 information, any let me -- let me change the  
17 question do you have any data concerning the  
18 presence of pollutants in the soils in the intended  
19 corridor for the pipeline?

20 DR. STEWART: Just those referenced in  
21 your DEPIS --

22 MR. FITZGERALD: Alright, just what's in  
23 the DEIS. I have no further questions.

24 DR. STEWART: Which were considerably

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1 about background.

2 CHAIRMAN GELSTON: Nothing further?

3 MR. FITZGERALD: Nothing further.

4 CHAIRMAN GELSTON: Rebecca Mars, you  
5 have questions? Rebecca Mars, you have questions of  
6 Mr. Snook's witness? (No audible reply).

7 Branford Land Trust has questions for  
8 this witness? Mr. Horne?

9 MR. HORNE: Thank you, Mr. Chairman.  
10 Bill Horne for the Branford Land Trust. Dr. Stewart,  
11 in --

12 COURT REPORTER: Mr. Horne, can you put  
13 that black microphone between the two of you.

14 MR. HORNE: Sure. Thank you.

15 COURT REPORTER: Thank you.

16 MR. HORNE: In your pre-filed -- in your  
17 response to No. 6 of your pre-filed testimony you note  
18 that anephloid layer of sediment is critical to the  
19 health of the Sound. In several filings that Islander  
20 has made with this Commission and also with FERC,  
21 they've indicated that their barges are going to have  
22 anchors and cables that will cover a width of 400 feet,  
23 nearly a mile, and will be moving progressively back  
24 and forth. Could you comment on the likely effect of

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1 the anchors and cables with or without the cable buoys  
2 that they are proposing on the health of the seafloor  
3 in this mile-wide corridor centered around the  
4 pipeline?

5 DR. STEWART: Yes. This -- this really  
6 is what motivated me becoming involved with the  
7 discussions of this case. It -- it presents not a spot  
8 impact that many environmental --

9 MR. O'NEILL: Why don't you move the  
10 microphone over to the doctor, so he --

11 DR. STEWART: Okay, thanks. This whole  
12 -- this continuum of trenching and anchor scar marks  
13 that are considerable in their own right, being 175  
14 feet by 8 feet deep, provide trenches and essentially  
15 an entrapment for this floating mix of very  
16 concentrated plankton, larval fish, nutrients, and many  
17 of the microscopic organisms that create the food  
18 chain. It's really the richness that creates the  
19 ocean. As this passes back and forth on the tide, it's  
20 subject to entrapment in the trenches as opposed to a  
21 dredged material pile which tends to be attractive for  
22 fish, for -- (indiscernible) -- type of things -- so a  
23 trenching and any pitting, in all my years of diving  
24 which has been 35, we find to be the most harmful or

1 the least likely to be colonized by important species,  
2 especially your commercially important species, your  
3 mega-benthic ones like the crabs, the lobsters, the  
4 shrimp. And there are five or six different species of  
5 crabs.

6 It's one of the things that has  
7 impressed me least about this report is it deals with  
8 in-fauna, very micro-scale. None of your important  
9 economically important species are studied here for  
10 their index of abundance or their behavioral  
11 modifications that might occur. So it's not only the  
12 anephloid layer that can be trapped -- and if you look  
13 at these lines of interception of north to south, all  
14 of your movement migration patterns and your flow of  
15 tidal cycle involves an east to west course, six hours  
16 at a half of knot is a tremendous volume of material  
17 that can get entrained.

18 The depressions tend to become anoxic  
19 because they're below the horizon, the EH horizon, this  
20 is a depositional basin with high pollutants. One of  
21 the things that we studied early on some of the  
22 offshore environments off the edge of the continental  
23 shelf. When you have fine silts washed down to the  
24 deeper water environments, you'd think they'd be

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1       pristine 150 miles offshore, they're 40 times more  
2       concentrated than they are on the edge of the shelf.  
3       This is, essentially, almost an analogue of what we  
4       have in the deep ocean shelf environment of pollution.  
5       All of our finds from -- (indiscernible) have  
6       deposited in some of the deep basins. So any trenching  
7       exposed to some that horizon brings sediments and  
8       distribution.

9                       And in fact this -- you know, again a  
10       hypothetical suggestion to you is part of the problem,  
11       we have no real good follow-up data on any of the  
12       previous pipelines that have been permitted or what is  
13       intended here. There doesn't seem to be good  
14       monitoring protocol in place before this permit is  
15       allowed. So these are the things that I'm really  
16       concerned about the science is vague, it's non-  
17       existence. So --

18                      MR. O'NEILL: Dr. Stewart, can I ask you  
19       a question --

20                      DR. STEWART: Sure.

21                      MR. O'NEILL: Could you give us some  
22       idea of what you would consider to be the effect of  
23       this pipeline corridor on the patterns of lobster  
24       movement?

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1 DR. STEWART: Again, this was another  
2 motivating factor because I've been so heavily involved  
3 with the lobster mortality issue over the last three  
4 years. Our concern with any residual accumulation of  
5 pollutants, heavy metals, any organic chlorides that  
6 may be there affecting the population and health and  
7 reproductivity, there are strong signs in the west, and  
8 this is not too far from the borderline of western Long  
9 Island Sound, that lobsters are at their limit --

10 MR. ASHTON: Lobsters are what?

11 DR. STEWART: At their limit of  
12 survival. They've died by the millions. We lost a  
13 four-million dollar lobster industry only 20 miles down  
14 the coast from here. We're looking at its rebounding  
15 characteristics, how fast the animals may repopulate  
16 from the east coming in from stronger populations out  
17 around the Sound and offshore.

18 This could, again we have no data, but  
19 present somewhat of a barrier. Lobsters are very good,  
20 I'll admit right off the bat, about getting over  
21 things, but again it could be a chemical unique linear  
22 structure in the Sound for some time. So we're  
23 concerned about documenting exactly what does happen  
24 from the micro-scale organisms that are entrapped and

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1 entrained and exposed to different chemical, physical  
2 environments to what normal cycles of bottom migration  
3 are of fishes that come in seasonally like your winter  
4 Flounder, your summer Flounder, ones that are strongly  
5 benthic, ones that actually can sense -- and if they  
6 run into a net lead-line on a mound net will follow it  
7 two miles to the heart. So they may be not really  
8 migrating in the normal sense if this -- if this  
9 effects that way. But certainly the small lobsters I  
10 would not expect them to go through --

11 MR. FITZGERALD: I think the question  
12 was -- well maybe you can get back to answering the  
13 question --

14 DR. STEWART: Yeah -- I'm trying to give  
15 the scope of what animals you would expect to be  
16 concerned about. And a lot of those are the ones we're  
17 dealing with in fisheries management coast-wide, from  
18 the Atlantic States Marine Fisheries Commission. And  
19 one of the problems is the Magnuson Act (phonetic) has  
20 said you have to look at essential fish habitat and  
21 look at the impacts. Again a deficiency in the draft  
22 EIS, I don't see it treated at all responsibly here --

23 MS. KATZ: Dr. Stewart, how would you  
24 like to see the pipeline corridor restored in order not

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1 to have these post-construction impacts?

2 DR. STEWART: Oh, well with the  
3 engineering that I see available, I'm not certain that  
4 that's possible right now.

5 First of all, I'd like to see some  
6 information on the suspected harm that this might --  
7 that this pipeline could be causing. At least I'd like  
8 to see some post-installation monitoring much more  
9 thoroughly, and a species description that's much more  
10 accurate than what's in the draft EIS --

11 MR ASHTON: I don't think you're  
12 answering the question --

13 MS. KATZ: Yeah --

14 MR. ASHTON: -- I think you're getting  
15 farther afield. And I really urge you to listen  
16 carefully to the question because it would help us  
17 immeasurably. The question that Miss Katz's posed was  
18 what would you like to see in the way of restoration  
19 following installation of a pipeline?

20 DR. STEWART: Well, that the --

21 MR. ASHTON: I'm hearing that you have  
22 objected to a possible depression if you will --

23 DR. STEWART: It would be much -- I  
24 think much more acceptable if you could get the

1 sediment compaction to be similar to the surrounding  
2 substrate so that there is some way -- as they do in  
3 any highway paving, and it may be very difficult in a  
4 hydraulic sense -- but to have backfilling of the same  
5 compression that the surrounding sediments --

6 MS. KATZ: You mean some type of tamping  
7 down of --

8 DR. STEWART: Well -- or some way of  
9 furrowing it in --

10 MR. ASHTON: You don't know though  
11 whether or not there has been any compression back to a  
12 natural state in any of these pipelines?

13 DR. STEWART: No. It's been sort of our  
14 observational history that when you do dig a  
15 depression --

16 MR. ASHTON: Depression and compression

17

18 DR. STEWART: Yes, right --

19 MR. ASHTON: a depression is where  
20 there is a dent, if you will --

21 DR. STEWART: Right --

22 MR. ASHTON: -- on the surface --

23 A VOICE: Right, a trench --

24 MR. ASHTON: -- but compression relates

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1 to density of the material --

2 DR. STEWART: After it's impacted --

3 MR. ASHTON: -- and they're two separate  
4 issues --

5 DR. STEWART: Right. And the same that  
6 I think we see lingering with Iroquois is that once you  
7 have a depression unless you bring it back in and  
8 compact it, it tends to keep scarring itself out, so  
9 you continue to have silt holding basins until the  
10 energy of the seabed flow discharges it, so you have --  
11 several things, it's in a state of equilibrium where  
12 it's taken decades to get to a stabilized solid state,  
13 so -- yes, sir --

14 MR. HEFFERNAN: I gather what you're  
15 saying then it could be -- let's say the line is  
16 installed and this depression or compression, or  
17 whatever it is --

18 COURT REPORTER: Excuse me, sir, could  
19 you speak into a microphone. Thank you.

20 MR. HEFFERNAN: It can be restored is  
21 what you're saying -- I gather that's what you're  
22 saying --

23 DR. STEWART: No, the question was what  
24 I would like to see. Whether it can be done, and in an

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1 engineering sense remains to be seen, and I think  
2 that's the suggestion here, is that -- we would be  
3 highly suspicious and we look at the caution with  
4 making a trench bisect all of Long Island Sound not  
5 knowing what the effects are, having several questions  
6 about large species, anephloid layer species, and  
7 environmental viability in that area, balancing it with  
8 whether we can restore it to --

9 CHAIRMAN GELSTON: Wait, wait just a  
10 minute. I'm getting more disgusted and more disgusted  
11 every minute with this conversation. We have a  
12 Department of Agriculture at Milford Point --

13 A VOICE: Um-hmm.

14 CHAIRMAN GELSTON: we've got a  
15 department evidently over in U-Conn. All I hear for  
16 the last six months or more than six months is how  
17 valuable Long Island Sound is. Why is -- and I  
18 shouldn't use a swear word -- why haven't U-Conn and  
19 the Department of Agriculture done something about this  
20 without squabbling all the time about what should be  
21 done and what shouldn't be done? Why the hell ain't it  
22 been done?

23 DR. STEWART: I think they have not been  
24 given the authority to do it.

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1                   CHAIRMAN    GELSTON:           And    whose  
2   responsibility   is   that?        The   U-Conn   College   of  
3   Agriculture   hasn't   got   enough   --

4                   DR.   STEWART:   Well   --

5                   CHAIRMAN    GELSTON:    --   or   whatever   you  
6   call   it   over   there   --   hasn't   got   enough   moxie   with   the  
7   Department   of   Agriculture   to   get   something   done   about  
8   this?

9                   DR.   STEWART:   Essentially,   that's   why  
10   we're   here,   part   and   parcel,   responding   to   --

11                   CHAIRMAN    GELSTON:   Yeah,   but   why   are   you  
12   here,   this   is   not   the   forum   to   have   it   --

13                   DR.   STEWART:   Well   --   again,   let   me   --  
14   if   I   can   answer   your   question   and   it   again   hits   the  
15   nail   right   on   the   head   --   this   is   one   of   the   major   most  
16   impactful   environmental   effects   on   Long   Island   Sound,  
17   the   New   York   side   as   well   as   Connecticut,   that   I've  
18   ever   seen.   I've   been   involved   with   dredge   material  
19   management   --

20                   CHAIRMAN    GELSTON:   Come   on,   sir   --

21                   DR.   STEWART:   --   for   15   years,   so   --   so  
22   the   law   of   the   land   provided   the   funding   through   EPA,  
23   the   National   Marine   Fishery   Service   and   NOAH   and   the  
24   Navy,   who   were   the   recipients   of   dredging,   and   the

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1 State Economic Department of Development to conduct  
2 studies. And that was done I think in a very  
3 responsible manner. We see, you know collectively all  
4 those agencies that you said, problems with the blanket  
5 permitting of several of these pipelines without  
6 understanding the effects, without studying them. So  
7 we're -- we do have people that are colleagues of mine  
8 who are very anxious to get into some of the questions,  
9 but if you aren't allowed to go there with the ships  
10 and time and to put your people and divers in the  
11 water, then you don't have the answers. It's not our  
12 reluctance, believe me, sir --

13 MR. ASHTON: Are you saying you're  
14 prohibited from studying these --

15 DR. STEWART: Well, it takes funding --

16 MR. ASHTON: Well, that's something I  
17 can --

18 DR. STEWART: -- I don't want to get  
19 into that, but --

20 MR. ASHTON: But you have some funding  
21 to do some studies, do you not? I mean --

22 DR. STEWART: Well, they're all directed  
23 at a certain --

24 MR. ASHTON: you have a ship and

1 divers, don't you?

2 DR. STEWART: Unless there's outside  
3 funding, the State of Connecticut does not foot the  
4 bill for running that ship or paying those divers  
5 unless they're contracted.

6 COURT REPORTER: Mr. Chairman?

7 CHAIRMAN GELSTON: Yes.

8 COURT REPORTER: Can we go off the  
9 record for a second so I can fix something.

10 CHAIRMAN GELSTON: Sure.

11 (Off the record)

12 CHAIRMAN GELSTON: (Indiscernible) -- a  
13 transcript that's all we're looking for, and if you  
14 probably took out the last 15 minutes of it, I'd be  
15 better off. (Laughter).

16 MR. ASHTON: Dr. Stewart, I guess my  
17 concern is --

18 CHAIRMAN GELSTON: Wait a minute, before  
19 we go --

20 MR. ASHTON: I'm sorry --

21 COURT REPORTER: We're on the record --

22 CHAIRMAN GELSTON: Take it off the  
23 record for a minute. Before we go back on the record -

24

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1 (Off the record)

2 COURT REPORTER: Thank you.

3 MR. ASHTON: I guess, Dr. Stewart, what  
4 my concern is here is that we need to carefully  
5 segregate the pipeline issue from the geo-political  
6 economic issues of studying Long Island Sound. There  
7 may well be a genuine problem there, but at the same  
8 time I think that we can't solve all the world's  
9 problems. We have a problem -- an issue before the  
10 house that we have to address. And so I want to be a  
11 little bit careful that we don't try and embrace the  
12 whole world in our answers. I guess I'll stop at that  
13 point for a second. Miss Katz I think has some --

14 MS. KATZ: Yeah, I have a follow-up  
15 question. Dr. Stewart, in your pre-filed testimony you  
16 indicated your support for a moratorium. If you were  
17 to have, let's say hypothetically, a nine-month  
18 moratorium -- (laughter) -- and let's say the Governor  
19 gave you some money to study, exactly in the case of a  
20 gas pipeline crossing Long Island Sound, what would you  
21 want to study during that moratorium period, and what  
22 would be feasible to study during that moratorium  
23 period?

24 DR. STEWART: Well, thank you for the --

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1 and I did support the moratorium -- but the comments I  
2 would say is that in the preliminary environmental  
3 impact study there was very little discrete attention  
4 to habitat type in the deeper water section of Long  
5 Island Sound where lobsters are predominant. Lobsters  
6 have some of the micro-scale distribution where they  
7 have soft cohesive clay mud banks, they excavate like  
8 condominiums, and the lobstermen know where some of  
9 these better fishing areas are. This pipeline goes  
10 from Point A to B without any attention to some of  
11 those small excursions. It might be possible, and it  
12 may not be from an engineering practical sense, but the  
13 fact that there was a very preliminary survey visually  
14 documenting the transect route to show which is fairly  
15 well described now essential fish habitat from NOAH,  
16 the National Marine Fishery Service, the Magnusson Act,  
17 they show micro-structure, they give water parameters,  
18 these things are not identified in any detail here, No.  
19 1.

20 No. 2 would be a much more attentive  
21 mapping of the distribution of deep sediment basins  
22 that harbor pollutant concentration horizons and how  
23 severe those are. We're just speculating now we might  
24 disturb some sediment, it may go a mile down, it may go

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1 two miles down. That would be -- I think with a  
2 minimum amount of effort of even every half-mile, and  
3 once you do find or identify a hot spot, do some radial  
4 sampling, alright, and see if you can avoid it.

5 The third point is -- I think to my  
6 knowledge bentonite exposure to the organisms of Long  
7 Island Sound is a first. It's very toxic. I have a  
8 paper that says it's very toxic with barium sulfates to  
9 larval lobsters in 50 parts per million. It kills  
10 mollusk and tunicates. We have estimates of over --  
11 what -- 470 some thousand barrels which in parts per  
12 million would be a considerable bentonite solution. So  
13 there should be some attention to that, especially in  
14 the oyster reef areas.

15 And also some of the logic of the out-  
16 hole point being in 12 feet of water or 15 feet of  
17 water, that's exceptional. And then to dig a trench  
18 knowing that sediment is very detrimental to oysters, a  
19 trench a hundred you know, I mean some of the  
20 engineering aspects if I were to consider them in light  
21 of all the protective work we try to do for dredge  
22 material disposal of permitting and oversight, and we  
23 thought we did a pretty good job of that, this is in  
24 contrast much more lenient and without I think the