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DEC 12 2003

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

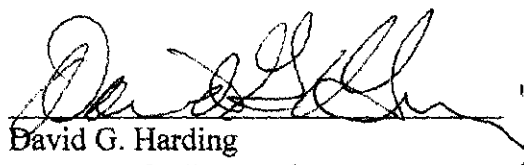
STATE OF ILLINOIS  
Pollution Control Board

BARBARA STUART and RONALD	)		
STUART,	)		
Complainants,	)		
	)		
v.	)	No.	PCB 02-164
	)		Citizen Enforcement
FRANKLIN FISHER and PHYLLIS	)		
FISHER,	)		
Respondents.	)		

To: Dorothy M. Gunn & Bradley P. Halloran Suite 11-500 100 W. Randolph St. Chicago, IL 60601	Barbara & Ronald Stuart 213 E. Corning Road Beecher, IL 60401	Bradley P. Pavur Room 200 14 W. Jefferson St. Joliet, IL 60432
--	---	---

**NOTICE OF FILING**

PLEASE TAKE NOTICE that I have, on December 12, 2003, filed with the Office of the Clerk of the Pollution Control Board the Respondent's Motion to Incorporate Documents into the record of this proceeding, a copy of which is herewith served upon you.

  
David G. Harding  
Attorneys for Respondents  
100 N. LaSalle St., Suite 1107  
Chicago, IL 60602-3803  
(312) 782-3039

**CERTIFICATE OF SERVICE**

I, David G. Harding, certify that on December 12, 2003, I served the attached Motion to Set Hearing by delivery to Dorothy M. Gunn and Bradley P. Halloran at their address as shown above, and by pre-paid first class mail upon all others to whom directed to their addresses as shown above.



THIS FILING IS SUBMITTED ON RECYCLED PAPER

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

STATE OF ILLINOIS  
Pollution Control Board

BARBARA STUART and RONALD	)		
STUART,	)		
Complainants,	)		
	)		
v.	)	No.	PCB 02-164
	)		Citizen Enforcement
FRANKLIN FISHER and PHYLLIS	)		
FISHER,	)		
Respondent.	)		

**MOTION TO INCORPORATE PORTIONS OF IPCB HEARING TRANSCRIPTS**

Respondent, Franklin Fisher, herein moves, pursuant to 35 Ill. Adm. Code §101.306, to incorporate the following materials, authentic by virtue of being verifiable on the IPCB website, relevant in relation to the repelling of birds by use of propane cannons, and credible in that each item has been admitted into the record of each of the cited cases, and relied upon by the board in the formulation of its opinions in each case:

1. November 8, 1999 Hearing Transcript – *Pawlowski v. Johansen*, PCB 99-82  
Testimony of John Yerges –  
Pages 57-59 – Relationship between decibel readings in terms of sound energy and perception of sound;  
Pages 67 and 70-71 – Qualification in the field of acoustical engineering, and;  
Page 94 – Dissipation of sound energy over distance.
2. April 19, 1999 Hearing Transcript – *Sweda v. Outboard Marine Corporation*, PCB 99-38
  - a. Testimony of Dr. William E. Southern –  
Pages 191-195 – Qualification in the field of ornithology;  
Pages 198-199 – Birds as carriers of salmonella and the fungus that causes human histoplasmosis;  
Pages 210-211 and 224 – Standard recommended use of propane cannons for repelling birds;

b. Testimony of Gregory Zack –

Page 332 – Muffling of propane cannons renders them useless in repelling wildlife;

c. Testimony of Daniel Hirsch –

Pages 408-409 – Effect on animals between 2100 and 2700 feet from propane cannons;

Pages 416-420 – Effect on human activities between 2100 and 2700 feet from propane cannons;

d. Testimony of Brian Homans –

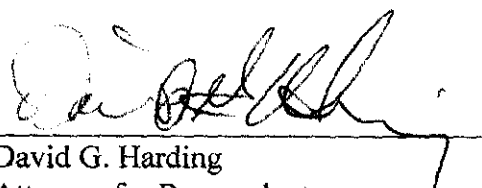
Pages 462-468 – Qualification in field of acoustical engineering;

Pages 491-499 – Propane cannon noise measured at 45 dBA from 1000 feet;

Pages 504-505 – Human conversation is ordinarily 60-65 dBA.

WHEREFORE, Respondent, Franklin Fisher, moves for an order incorporating the attached transcript excerpts into the record of this case for consideration by the Board.

Respectfully submitted,



David G. Harding  
Attorney for Respondents  
100 N. LaSalle St., Suite 1107  
Chicago, IL 60602-3803  
(312) 782-3039

1 ILLINOIS POLLUTION CONTROL BOARD

2

3

IN THE MATTER OF: )

4

MICHAEL R. PAWLOWSKI and )

5

DIANE K. PAWLOWSKI, )

6

Complainants, )

7

-vs- )

PCB 99-82

VOLUME I

8

DAVID JOHANSEN and TROY QUINLEY, )

individually and d/b/a )

9

BENCHWARMERS PUB, INC., )

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Respondents. )

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The following is the transcript of a hearing

15

held in the above-entitled matter, taken

16

stenographically by Jennifer E. Johnson, CSR-RMR,

17

License No. 084-003039, a Notary Public in and for

18

the County of Tazewell and the State of Illinois,

19

before Amy Muran Felton, Hearing Officer, at the

20

Fairbury Fire Department, 320 West Locust Street,

21

Community Room, Fairbury, Illinois, on the 8th day

22

of November, A.D. 1999, commencing at approximately

23

10:00 a.m.

24

1 PRESENT:

2 HEARING TAKEN BEFORE:  
3 ILLINOIS POLLUTION CONTROL BOARD  
4 100 West Randolph Street  
5 James R. Thompson Center, Suite 11-500  
6 Chicago, Illinois 60601  
7 (312) 814-7011  
8 BY: MS. AMY MURAN FELTON

9 APPEARANCES:

10 LOPEZ & HARDING  
11 BY: DAVID G. HARDING, ESQUIRE  
12 Attorney at Law  
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16 On Behalf of the Complainants.

17 THOMAS M. SHIELDS, ESQUIRE  
18 Attorney at Law  
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20 Lexington, Illinois 61753  
21 (312) 365-8667

22 - and -

23 CUSACK, FLEMING, GILFILLAN & O'DAY  
24 BY: DANIEL G. O'DAY, ESQUIRE  
25 Attorney at Law  
26 124 Southwest Adams Street, Suite 520  
27 Peoria, Illinois 61602  
28 (309) 637-5282  
29 On Behalf of the Respondents.

30 ALSO PRESENT:

31 Michael and Diane Pawlowski  
David Johansen  
Troy Quinley

22  
23  
24

MEMBERS OF THE PUBLIC WERE ALSO PRESENT

L.A. REPORTING (312) 419-9292

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22 A. Again, the A scale is weighted.  
23 Q. First, it means that -- the A at the end  
24 is the A scale?

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1 A. Correct. Decibels on the A scale, I'm  
2 sorry.  
3 Q. Okay. So it's decibels?  
4 A. Decibels.  
5 Q. Now, is that tenth of a bel or 10 bels?  
6 A. Right. It's a tenth of a bel.  
7 Q. Tenth of a bel. Okay. And that -- what's  
8 a bel?  
9 A. We don't really need to get into an awful  
10 lot of detail here, but basically the decibel is the  
11 basic measuring unit of sound. It's been  
12 established over many years that it's the standard  
13 measure of a sound level.  
14 Q. Okay. Now, what is the difference between  
15 10 decibels and 20 decibels?  
16 A. Let's start at the bottom of the scale  
17 roughly. Zero decibels at about 1,000 hertz is  
18 typically about the threshold of hearing. Every  
19 time you increase that level by 10 dB, you've

20 actually increased the sound energy by a factor  
21 of 10.

22 Q. 10 times?

23 A. 10 times as much sound energy. So there  
24 is 10 times as much sound energy in a 10 dB level

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1 than there is in a zero dB level. And every time  
2 you increase it by another 10 decibels, you have  
3 increased the sound level by a factor of 10. 10  
4 times as much. Now, to the --

5 Q. So, let me just get this correct. If  
6 we're talking about at the zero level, is  
7 essentially zero detectable noise to the human ear  
8 on the A scale?

9 A. Correct. Roughly the threshold of  
10 hearing.

11 Q. Okay. 10 decibels you run into baseline  
12 of sound, where there's detectable sound, correct?

13 A. Well, you can hear 10 decibels. Most  
14 people with normal hearing can hear at a level of 10  
15 dBa. It would be a very faint sound, but, yes, it's  
16 audible.

17 Q. Okay. Then 20 decibels would be 10 times  
18 the noise energy of 10 decibels?

19 A. The energy. It doesn't sound that way to  
20 the human ear.

21 Q. Well, we'll get to that.

22 A. But, yes, it would be 10 times the energy,  
23 yes.

24 Q. Then 30 decibels is 100 times the energy?

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1 A. Compared to 10 or compared to zero?

2 Q. Compared to 10.

3 A. Compared to 10, 30 is 100 times the  
4 energy, correct.

5 Q. So then 40 would be 1,000 times?

6 A. 1,000 times.

7 Q. 50 would be 10,000 times the energy?

8 A. Correct.

9 Q. And so on up the scale?

10 A. Correct.

11 Q. Now, what do we hear between 10 and 20?

12 What is the difference?

13 A. Every time you change by 10 dBa, 10

14 decibels, to the human ear it sounds about twice as

15 loud. So if you went from 10 decibels to 20  
16 decibels, your subjective perception would be that  
17 it sounds about twice as loud. If you went from 20  
18 to 30, your subjective perception would be that it  
19 sounds about twice as loud again.

20 Q. Twice as loud as from 20. 20 to 30 then  
21 -- 20 sounds twice as loud as 10, and then 30  
22 sounds twice as loud as 20?

23 A. As 20, correct.

24 Q. 40 sounds twice as loud as 30?

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1 A. Correct.

2 Q. Now, can you tell me a little bit about  
3 the difference between low frequency sound and high  
4 frequency sound?

5 A. Low frequency sound, the things that  
6 people would be most familiar with would be like the  
7 roar of a diesel engine, a truck exhaust. It's a  
8 long wavelength, low frequency. Tends to be a  
9 little bit harder to stop with barriers and  
10 materials of that sort.

11 Higher frequencies would be things like

24 much at the lows at all.

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1 Q. Okay. Because of the longer wavelengths?

2 A. The longer wavelength, and it tends to  
3 diffract around it, the reverberant level in the room  
4 reflecting off the other walls and such that you  
5 probably wouldn't get much at low frequencies. You  
6 might get a little at highs.

7 Q. Now, I neglected in the very beginning,  
8 and I do apologize for this, sir, but could you tell  
9 me a little bit about your educational background?

10 A. Oh. I degreed from the University of  
11 Illinois in theoretical applied mechanics. I have a  
12 bachelor's degree in engineering mechanics, master's  
13 degree in theoretical applied mechanics.

14 Then I began my apprenticeship for my  
15 father. He actually started the firm in 1964. I  
16 began my apprenticeship with him in 1967 and have  
17 worked in the field ever since.

18 Q. Okay. And what equipment did you use to  
19 calibrate Mr. Pawlowski's equipment?

20 A. I used a standard Bruel and Kjaer.

21 Q. You're going to have to give spellings on

17 A. Oh, yes. In fact, before and after each  
18 measurement.

19 Q. Okay.

20 HEARING OFFICER FELTON: Off the record.

21 (A discussion was held off the record.)

22 BY MR. HARDING:

23 Q. Have you, since commencing your  
24 apprenticeship with your father, worked in any other

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1 field?

2 A. Yes. Actually, I was -- I worked for ten  
3 years with a firm called Industrial Noise Control.  
4 I was their -- essentially supervised their  
5 engineering. They called me their manager of  
6 technical services.

7 Then also, after that, for United McGills  
8 Acoustical Product Division; I was their national  
9 technical sales manager, served as technical back-up  
10 to sales essentially is what that means.

11 Q. But your career has been in sound?

12 A. It's always been in sound, noise,  
13 vibration, yes.

14 Q. Okay. And have you ever testified before  
15 the Pollution Control Board before?

16 A. Yes.

17 Q. And when was that?

18 A. Oh, if you're going to ask me dates, I  
19 don't recall. But it would have been a couple years  
20 ago, back --

21 Q. How many times?

22 A. I can think of at least two other  
23 instances where I've actually testified in a  
24 hearing, but I've done many, many environmental jobs

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1 involving the Illinois Pollution Control Board  
2 regulations.

3 Q. Okay. And as I understand it, you most  
4 commonly come in from the other end, working with  
5 potential respondents?

6 A. Usually when we're doing an environmental  
7 job, our role is to work for the -- for the, for the  
8 party that's causing the noise and try to help them  
9 figure out how to reduce the noise level to meet the  
10 code. For example, plant or a facility, a building  
11 of some type would be emitting noise across a

12 property line that exceeded the code. I would go  
13 measure it, find out how far above the code they  
14 were, and then advise them as to how to reduce the  
15 noise levels to meet the code. That would be more  
16 typical.

17 Q. Okay.

18 A. But I also, obviously, will work for  
19 either side, depending on which one retains us.

20 Q. Okay. You've never done any work for any  
21 of the respondents here?

22 A. Not that I'm aware of, no.

23 MR. HARDING: Okay. I have no further  
24 questions of this witness.

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1 HEARING OFFICER FELTON: Mr. Shields?

2 CROSS-EXAMINATION

3 BY MR. SHIELDS:

4 Q. Mr. Yerges, are you familiar with the  
5 construction of the two buildings in question, the  
6 Benchwarmers building and the Pawlowskis' building?

7 A. Only from what you can see. I haven't,  
8 obviously, been into the walls or anything of that



11 where they blow the whistle, and I don't have any  
12 data to indicate what kind of noise level that would  
13 cause inside. I don't know what the construction is  
14 out the back of his unit or any of those details. I  
15 can't answer the question.

16 MR. SHIELDS: I have nothing further.

17 HEARING OFFICER FELTON: Mr. Harding, do you  
18 have anything on redirect?

19 MR. HARDING: Yes.

20 REDIRECT EXAMINATION

21 BY MR. HARDING:

22 Q. Mr. Yerges, how does sound dissipate over  
23 distance, sound energy?

24 A. If we're talking about outdoors where

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94

1 there aren't --

2 Q. Unobstructed?

3 A. -- unobstructed, essentially it dissipates  
4 according to what's called the inverse-square law,  
5 essentially the same way as light, in that it  
6 decreases at about 6 dB per doubling of distance.  
7 So if you start 100 feet away and move 200 feet

8 away, the sound level decreases 6 dB. If you start  
9 10 -- 10 feet away and move 20 feet away, it  
10 decreases 6 dB. So it's a -- again, what's called  
11 inverse-square law.

12 Q. Okay. Pretty much the square of the  
13 distance?

14 A. Exactly.

15 Q. Okay. Now, the instrument that you used  
16 to measure and come to the 46 dB through the wall  
17 and 48 for the motorcycle, what did you use?

18 A. I used a Bruel and Kjaer 2144 real-time  
19 analyzer.

20 Q. That was compared against the calibrator  
21 before use?

22 A. Oh, yes.

23 Q. Now, how long did you hear the motorcycle  
24 for when you heard it?

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1 A. Well, it appeared to pull away, travel --  
2 let me get my directions right now. It appeared to  
3 pull away from somewhere out in front of the  
4 Benchwarmers facility and went west. And I had  
5 about, oh, perhaps five seconds of loud --

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

LAWRENCE C. SWEDA,            )  
   )  
 Complainant,                )  
   )  
 vs.                                ) No. PCB 99-38  
   ) (Enforcement-Noise,  
 OUTBOARD MARINE CORPORATION   ) Citizens)  
 and the CITY OF WAUKEGAN,        )  
   )  
 Respondents.                )

The following is the transcript of a hearing  
 held in the above-entitled matter, taken  
 stenographically by MICHELE J. LOSURDO, CSR, a notary  
 public within and for the County of DuPage and State  
 of Illinois, before JOHN KNITTLE, Hearing Officer, at  
 18 North County Street, Room 301, Waukegan, Illinois,  
 on the 19th day of April, 1999, A.D., scheduled to  
 commence at 9:30 a.m., commencing at 9:30 a.m.

1 APPEARANCES:

2

3

HEARING TAKEN BEFORE:

4

ILLINOIS POLLUTION CONTROL BOARD,

100 West Randolph Street

5

Suite 11-500

Chicago, Illinois 60601

6

(312) 814-6923

BY: MR. JOHN KNITTLE

7

LAWRENCE C. SWEDA

8

923 N. County Street

Waukegan, Illinois 60085

9

Appeared on behalf of the Complainant;

10

SEYFARTH, SHAW, FAIRWEATHER & GERALDSON

11

55 E. Monroe Street

Chicago, Illinois 60603

12

(312) 346-8000

BY: MR. THOMAS LUPO and

13

MS. SUSANNAH A. SMETANA

14

Appeared on behalf of the Respondent,

Outboard Marine Corporation;

15

DIVER, GRACH, QUADE & MASSINI

16

111 N. County Street

Waukegan, Illinois 60085

17

BY: MS. HEIDI J. AAVANG

18

Appeared on behalf of the Respondent,

City of Waukegan.

19

20 ALSO PRESENT:

Mr. Joseph S. Moran, Outboard Marine Corporation

21

22

23

24

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1 wish to call?

2 MR. LUPO: We do. Dr. William E. Southern.

3 HEARING OFFICER KNITTLE: We're back on the  
4 record. Mr. Lupo, I think this is your witness.

5 MR. LUPO: Yes.

6 HEARING OFFICER KNITTLE: Could you  
7 identify him, please?

8 MR. LUPO: William E. Southern.

9 HEARING OFFICER KNITTLE: Can you swear the  
10 witness, please?

11 (Witness sworn.)

12 WHEREUPON:

13 WILLIAM E. SOUTHERN,  
14 called as a witness herein, having been first duly  
15 sworn, deposeth and saith as follows:

16 DIRECT EXAMINATION

17 BY MR. LUPO:

18 Q. Sir, would you state your full name,  
19 please?

20 A. Dr. William E. Southern.

21 Q. And will you describe your occupation -- or  
22 state your occupation?

23 A. Well, I've have a dual occupation.  
24 Currently I'm with West Ecological Consulting. We

1 are now located in Wisconsin. Prior to that time, I  
2 was president of NCAP Incorporated located in  
3 De Kalb, Illinois and prior to that from 1959 through  
4 1990 I was a professor at Northern Illinois  
5 University.

6 MR. LUPO: Off the record for a moment.

7 (Short interruption.)

8 BY MR. LUPO:

9 Q. Sir, please describe your education.

10 A. I have a bachelor's degree from Central  
11 Michigan University in biology. I have a master's  
12 degree from the University of Michigan in zoology  
13 with an emphasis in ornithology. Ph.D. from Cornell  
14 University with a major in animal behavior  
15 specializing in birds and also minors in wildlife  
16 ecology and wildlife management.

17 Q. What year did you receive your Ph.D.?

18 A. 1967.

19 Q. You've mentioned a field of ornithology.

20 Would you describe that for the Board, please?

21 A. Yes. Ornithology is the study of birds,  
22 their biology, their behavior, ecology, management  
23 live history.

24 Q. And you mentioned a tenure as a professor.



1 About how long were you a professor?

2 A. Thirty-one years.

3 Q. And was that all at Northern Illinois?

4 A. Yes, I was at Northern for 31 years, but  
5 also during that period I taught at the University of  
6 Michigan biological station for three summers. I  
7 taught ornithology there at that time. I also taught  
8 for one year down in Balice at a research station  
9 there, the associated universities the midwest  
10 operates and I've had other short-term positions as  
11 an ornithologist also during the summer months and so  
12 on.

13 Q. And you mentioned a consulting career. How  
14 long were you involved in consulting?

15 A. Well, NCAP Incorporated was founded in 1974  
16 by myself and three colleagues. I operated that  
17 business until 1990 when I sold it and then from 1990  
18 up to -- excuse me -- up to 1994 and from 1994 on,  
19 I've been with West Ecological Consulting which I  
20 also started.

21 Q. What was the expertise of NCAP?

22 A. NCAP had a variety of expertise. The four  
23 biologists who started it all had their own  
24 specialities. I was the ornithologist. We had a

1 plant taxonomist, an ichthyologist, general ecologist  
2 and then we have employees that represent other  
3 subdisciplines within those areas.

4 Q. And you mentioned West Consulting?

5 A. Yes.

6 Q. What's the specialty of West Consulting?

7 A. The sole function of West Consulting at  
8 this time is to do bird control programs for industry  
9 and anyone else who asks for our services.

10 Q. And in the course of your career, have you  
11 worked for governmental entities?

12 A. Yes, I have, federal, state and local  
13 governments.

14 Q. And how many states have you consulted?

15 A. As far as bird control is concerned, we've  
16 been doing projects in neighboring states and two  
17 Canadian provinces.

18 Q. Have you authored or coauthored any  
19 articles in your field, ornithology?

20 A. Yes, I've published in excess of 150  
21 scientific papers, book chapters, monographs and  
22 things of that sort plus probably thousands of other  
23 reports, unpublished reports.

24 MR. LUPO: I'd offer Dr. Southern as an

1 expert in ornithology.

2 HEARING OFFICER KNITTLE: Mr. Sweda?

3 MR. SWEDA: I have no problem with that.

4 HEARING OFFICER KNITTLE: Okay. He will be

5 so accepted.

6 BY MR. LUPO:

7 Q. Are you familiar with Outboard Marine  
8 Corporation and the presence of a sea gull colony on  
9 its ground?

10 A. Yes, I am.

11 Q. And how did you become involved with -- or  
12 how did you come to know about this?

13 A. I believe I was first contacted in 1996 by  
14 a single phone call telling me that they had a  
15 problem and nothing else transpired at that time. I  
16 was just alerted to the fact they had a problem and  
17 they might be interested in doing something about it.

18 In 1997 I was then contacted and asked to  
19 prepare a management plan or bird control plan for  
20 the site and I agreed to do so following a site  
21 visit. It allowed me to determine just what the  
22 problem was or the size of the colony and other types  
23 of details.

24 Q. You mentioned a management or site control

1 season and probably you can figure on average there's  
2 going to be something like 2.4 progeny per nest that  
3 will survive well into the juvenile period. You're  
4 having a lot of birds that are causing a great  
5 quantity of fecal material in a relatively small  
6 area.

7       This material carries high levels of  
8 coliform bacteria. Gulls and other birds often carry  
9 salmonella. This is very, very common and so there  
10 is a pathogenic problem that's a potential as far as  
11 human health -- it's a potential risk insofar as  
12 human health is concerned.

13       Q. What are some of the risks to health?

14       A. One of the primary ones and one that I have  
15 personally studied the most and my students have  
16 looked at in the past is a condition in humans  
17 histoplasmosis. This is caused by a fungus that  
18 grows in organically rich soils and soils that  
19 typically are enriched by either bird feces or feces  
20 from other animals, so it could grow in manure piles.  
21 It could grow in compost piles and also in areas  
22 where birds such as gulls drop their droppings there,  
23 their fecal material on a regular basis.

24       And in a gull colony, you may have a

1 sizeable area where the gulls -- the adult gulls and  
2 their chicks deposit this material and the soil  
3 becomes richer year after year and finally it reaches  
4 a point where this fungus can apparently grow there.  
5 And if that fungus then reaches the lungs of humans,  
6 it cause a condition I mentioned as histoplasmosis.

7 Q. And just generally speaking, what is the  
8 condition in humans?

9 A. The usual symptoms at the onset are  
10 pneumonia-like and so the person may think they're  
11 having a cold or something of this sort and it may  
12 become chronic. Sometimes a person may not become  
13 sick enough to be treated for that condition and it  
14 may not be until they have a chest x-ray that a  
15 physician will discover scarring to the lung tissue.

16 And we have accounts in Michigan where we  
17 did an extensive study of this where people actually  
18 had operations of lung cancer only for the surgeon to  
19 find upon entering into the lungs that it is  
20 histoplasmosis and not lung cancer the person had.

21 The organism can also spread into the bone marrow and  
22 some of the other tissues and cause some very serious  
23 problems there and in some cases, it can be lethal.

24 Q. Have you personally investigated gull

1 programs such as the one we described here in  
2 operation in California, Ohio, Texas, Illinois,  
3 Toronto, Alberta, so on.

4 Q. Is the use of the pyrotechnics a commonly  
5 accepted practice throughout your field?

6 A. Yes, and I think generally all  
7 ornithologists look upon it as the acceptable  
8 methods, but there are various methods that people  
9 try because everyone is looking for a simple solution  
10 and I wish we had a simple solution, but everyone is  
11 still trying to find it.

12 So you can see new methods being introduced  
13 all the time and for a while someone may propose  
14 these as the solution, but they don't end up as being  
15 as dependable as pyrotechnics. And even if there is  
16 a method that has some degree of success, it usually  
17 ends up being supported by pyrotechnics and this is  
18 true of the overhead wires as OMC discovered. They  
19 tried to hang overhead wires and they found birds  
20 walking under those wires, so now you use  
21 pyrotechnics to convince those birds that walk under  
22 the wires that that's a no-no and they have to avoid  
23 the wires.

24 And so it's a matter of reinforcement

1 speaking in behavioral terms that you set up a  
2 particular situation and hope the birds avoid it or  
3 honor it and if they don't honor it, then you give  
4 them a reason to honor it. It's like raising kids.  
5 It's the same kind of thing that you do there that  
6 you reinforce behavior upon your children and you  
7 reinforce it here on the gulls.

8 Q. You recommended a certain number of  
9 cannons. Do you recall how many you recommended for  
10 this site?

11 A. Well, we went for overkill because we never  
12 know what's going to happen when we're gone. We can  
13 come and look at a particular site and say, okay, put  
14 up one cannon and try it and if it doesn't work, add  
15 two to three more, but that doesn't always happen, so  
16 it's better to come in and say use four, use five,  
17 use six, whatever and be ready for that so the  
18 program can go ahead.

19 And I think we suggested they start out  
20 with possibly six and see how that worked and if they  
21 needed more, add more to the situation, but we  
22 envisioned what might happen here is that if they  
23 started discouraging the birds from using the ground  
24 substrate that they move back to the rooftops and so

1 the disturbance process, but I'd say easily by early  
2 June you should be past that threshold.

3 Q. Sir, do you stand by your earlier  
4 recommendation of the pyrotechnics along with the  
5 other efforts that are underway by OMC?

6 A. Yes, I think it's good to reinforce it and  
7 especially if the cannons reinforce the pistol firing  
8 pyrotechnics, I think this is a must because the  
9 cannons are located close to the ground. They're at  
10 a given location and the birds soon realize that this  
11 thing isn't going to chase them and so if they just  
12 stay away from it, they're relatively safe. So this  
13 is where pistol fire techniques or alarm calls or  
14 humans roaming about or something else of this nature  
15 tends to reinforce all of that. And you just have to  
16 have -- you have to go one step farther than the  
17 birds go and so the more you can add on to it, the  
18 better -- more flexible you can be, the better.

19 Q. What would the effect be if OMC ceased its  
20 use of the pyrotechnics today?

21 A. If they ceased using the pyrotechnics  
22 today, I think you would have birds beginning to set  
23 up nesting sites there almost tomorrow and probably  
24 within a week or two, you would have nests and the



1 BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

2

3 LAWRENCE C. SWEDA, )

4 Complainant, )

5 vs ) PCB 99-38  
) (Enforcement Noise, Citizens)

6 OUTBOARD MARINE )  
CORPORATION and the )

7 CITY OF WAUKEGAN, )

8 Respondents. ) VOLUME II

9

10

11 The following is the continued transcript of a  
12 hearing held in the above-entitled matter, taken  
13 stenographically by GEANNA M. IAQUINTA, CSR, a  
14 notary public within and for the County of Cook and  
15 State of Illinois, before JOHN KNITTLE, Hearing  
16 Officer, at 18 North County Street, Room 301,  
17 Waukegan, Illinois, on the 20th day of April, 1999,  
18 A.D., scheduled to commence at 9:00 o'clock a.m.,  
19 commencing at 9:20 a.m.

20

21

22

23

24

1 APPEARANCES:

2

HEARING TAKEN BEFORE:

3

ILLINOIS POLLUTION CONTROL BOARD,

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Suite 11-500

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(312) 814-6923

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BY: MR. JOHN KNITTLE

7

LAWRENCE C. SWEDA,

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Appeared on behalf of the Complainant,

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11 SEYFARTH, SHAW, FAIRWEATHER & GERALDSON,

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16 DIVER, GRACH, QUADE & MASSINI,

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Waukegan, Illinois 60085

(847) 662-8611

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BY: MS. HEIDI J. AAVANG

19

Appeared on behalf of the Respondent,

City of Waukegan.

20

21

22 ALSO PRESENT:

23 Mr. Joseph S. Moran, Outboard

Marine Corporation

24

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1 and the attorney for the farmer had contacted me as  
2 to some methodology to reduce the noise from the  
3 cannons, and I explained that I didn't think that  
4 was appropriate because the cannons were designed  
5 to frighten birds or animals and any muffling of  
6 the device would -- to the point where it would  
7 comply with Illinois regulations would, in my  
8 opinion, render it useless for frightening  
9 wildlife, and that's based on my experience with  
10 wildlife and working in the noise area for the last  
11 27 years that typically the wildlife seems to be  
12 more tolerant of noise than people do.

13 Q. I have some other questioning in this  
14 regard, but I'd like to submit the case that was  
15 involved and the proceeds from that case which were  
16 provided to the respondents orally and during --  
17 writtenly transmitted to the respondents after the  
18 deposition being taken of Mr. Zack?

19 MS. AAVANG: Objection. It's irrelevant.  
20 It deals with a case in 1979 in a rural area. It's  
21 not the same case. I don't see the relevancy, and  
22 I think probably he's already testified to the key  
23 factors in it, and I think it has more of a  
24 possible prejudicial effect than a probative value.

1 A. Oh, sure.

2 Q. Except tobogganing.

3 Do you have a bird feeder?

4 A. I have three bird feeders.

5 Q. And where are they located?

6 A. They're located at the eastern edge of my  
7 deck.

8 Q. Are there many birds?

9 A. Yes. We have many different birds. I've

10 got everything from finches. I've got some

11 woodpeckers. I've got some starlings.

12 Unfortunately, we have some blackbirds. We have

13 the usual sparrows, robins. I've got some red --

14 let's see, redheaded woodpeckers. I've got I think

15 it's called a thistle in our backyard -- not a

16 thistle. It's a -- I forget what it's called, but

17 we have a wide range of birds.

18 We've seen humming birds. We've seen

19 orioles. We've got cardinals. We've got them all.

20 Q. Where are you when you see these birds?

21 A. In my living -- in my family room. I can

22 see them out of my office. I see them on the deck.

23 Q. So when you're outside you can see the

24 birds?

1 A. Yes.

2 Q. Is there any other wildlife in your yard?

3 A. Plenty of squirrels. We have seen a lot  
4 of deer. We've even had deer come up the hill. We  
5 watched a family of three deer. I assume it was a  
6 family if that can be properly applied to deer, but  
7 they had an offspring, a fawn, and they were  
8 running around our yard from time to time.

9 I've seen turtles. I've seen what we  
10 think were coyotes, raccoons, skunks. There's a  
11 lot of wildlife back there.

12 Q. In the past year, have you noticed  
13 anything different about this wildlife in their  
14 behavior?

15 A. No, not really. Last year was the year  
16 that the deer did their family affair thing.

17 Q. Do you have a boat?

18 A. Yes.

19 Q. Where do you keep your boat in the summer?

20 A. In the summertime, I'm in the south harbor  
21 of Waukegan.

22 Q. And where is the south harbor of Waukegan?

23 A. Basically, there is the break wall that  
24 separates the old harbor from what we call the

1 A. In 1998?

2 Q. Uh-huh.

3 A. I believe it was the second or third week  
4 in March when I noticed the noises, and I was  
5 actually at the yacht club. We were sailing in the  
6 harbor on a Sunday afternoon in the wintertime, and  
7 I commented to someone I was with about the noise,  
8 oh, yeah, that's OMC trying to chase the birds  
9 away. I remember at that time my thought was well,  
10 that's -- that will be a good thing.

11 Q. What does the noise sound like? Can you  
12 describe it?

13 A. It sounds like probably a small arm's  
14 discharge. Sometimes it sounds like a small  
15 firecracker in the distance.

16 Q. Did the noise -- this noise interrupt  
17 anything you were doing?

18 A. No.

19 Q. When you were outside and heard this  
20 noise, were you able to speak at a normal  
21 conversational tone?

22 A. Yes.

23 Q. And when is it that you have occasion to  
24 speak to others outside in your yard?



1 A. Basically, when I'm working in my  
2 backyard, when I am entertaining and enjoying time  
3 with my family and my neighbors in the backyard.

4 Q. And last spring and summer, did you do all  
5 those activities in your backyard?

6 A. Yes.

7 Q. And did you speak in normal voices?

8 A. Yes.

9 Q. Okay. Do you ever talk on the phone  
10 outside?

11 A. Yes.

12 Q. Did this noise ever interfere with, the  
13 noise from the cannons, interfere with your ability  
14 to talk on the phone?

15 A. I never even noticed it.

16 Q. Did the noise prevent you from doing  
17 anything outside?

18 A. No.

19 Q. Do you ever work outside?

20 A. Yes.

21 Q. Does the noise prevent you from that?

22 A. Generally, when I'm working, I make a lot  
23 of noise, power tools and all, but it's never  
24 affected me. Now, the sea gulls have given me

1 headaches.

2 Q. Were you able to hear the noise of the  
3 cannons inside your house ever?

4 A. Yes.

5 Q. When you're talking inside the house, did  
6 anything interfere with that?

7 A. No.

8 Q. When you are watching television in your  
9 house, did anything interfere with that?

10 A. No.

11 Q. When you're listening to the radio, did  
12 anything interfere with that?

13 A. Normally, if I'm in the house, the only  
14 time I can hear these sounds are when nothing else  
15 is making noise. So if I'm listening to the radio,  
16 if I'm watching TV, if I'm having a conversation  
17 with someone, the sound of the discharges at OMC  
18 basically are lost.

19 Q. Has the cannon noise ever made you jump?

20 A. No.

21 Q. What other noises do you hear from your  
22 house aside from the cannon noise which you've  
23 mentioned?

24 A. Well, besides the sea gulls, I hear --

1 which probably is the most prominent sound I hear,  
2 I hear a lot of sound from the railroad. I hear a  
3 lot of highway noise from the Amstutz. The  
4 railroad is probably the loudest. When these guys  
5 are shifting their -- when they're taking up the  
6 slack from the trains or whether they're doing some  
7 switching, that's very loud. The first Tuesday of  
8 every month they sound the civil defense siren, and  
9 when that goes off, you cannot even talk.

10 Q. How would you compare all those noises to  
11 the noise from the cannons?

12 A. Those are considerably louder and they're  
13 more disruptive.

14 Q. Do you know Mr. Sweda, the complainant in  
15 this matter?

16 A. The only way I know Mr. Sweda is he called  
17 me up last November on the phone one day.

18 Q. Prior to that, had you ever spoken to him?

19 A. I did not know him.

20 Q. And why did he call you?

21 A. Well, at the time, he called me up and  
22 asked me if the sound of the cannons bothered me.

23 Q. Did you get involved in any conversation?

24 What did you tell him?

1 A. Well, I asked him -- I said no. Why? And  
2 if I recall, he said well, he thought it was --

3 Q. Just testify what you said.

4 A. Well, okay. I told him no, that it did  
5 not bother me, and I thought it was a good thing  
6 because it was intended to reduce the noise from  
7 the sea gulls.

8 MS. SMETANA: I have no further questions  
9 of this witness.

10 HEARING OFFICER KNITTLE: Is Ms. Aavang  
11 coming back?

12 MS. AAVANG: I have no questions. Thank  
13 you.

14 HEARING OFFICER KNITTLE: Okay. Mr. Sweda,  
15 do you have a cross-examination.

16 MR. SWEDA: Yes. I have a couple  
17 questions

18 CROSS - EXAMINATION

19 by Mr. Sweda

20 Q. Are you employed by either the city in any  
21 way? You're an independent businessman, I assume.

22 Are you employed -- do you have any --

23 MS. SMETANA: Wait. Can you answer yes or  
24 no? I'm sorry.

1 OMC's last witness?

2 MS. SMETANA: Yes. I'd like to wait for

3 Ms. Aavang.

4 HEARING OFFICER KNITTLE: Ms. Aavang, are

5 you going to be a while?

6 MS. AAVANG: No. Just go right ahead and

7 start.

8 MS. SMETANA: For its next witness, OMC

9 calls Brian Homans.

10 (Witness sworn.)

11 WHEREUPON:

12 BRIAN HOMANS,

13 called as a witness herein, having been first

14 duly sworn, deposeth and saith as follows:

15 DIRECT EXAMINATION

16 by Ms. Smetana

17 Q. Mr. Homans, please state your name for the

18 record.

19 A. My name is Brian L. Homans.

20 Q. And what is your occupation?

21 A. I'm an acoustical engineer.

22 Q. What is an acoustical engineer?

23 A. I work for a firm. We specialize in the

24 measurement and analysis of noise. I'm involved in

1 design of noise abatement measures for clients. My  
2 particular specialty area is environmental  
3 acoustics dealing with noise outside. The  
4 specialty of our firm is dealing with building  
5 acoustics; that is, the effect of buildings on  
6 noise.

7 Q. And how long -- what is the name of the  
8 firm you're with?

9 A. Shiner & Associates, Incorporated.

10 Q. And how long have you been with Shiner &  
11 Associates?

12 A. Since 1982.

13 Q. And what did you do prior to working for  
14 Shiner & Associates?

15 A. Prior to that, I was with IIT Research  
16 Institute from 1980 until 1982.

17 Q. What type of research?

18 A. Dealing in acoustics or noise control.

19 Q. And prior to being at IIT, where did you  
20 work?

21 A. I was with the City of Chicago from 1978  
22 until 1980.

23 Q. And what did you do for the City of  
24 Chicago?

1 A. I was an environmental engineer working  
2 exclusively in the field of noise answering  
3 complaints and dealing with complainants and trying  
4 to resolve the problems that they had with  
5 industrial sources and things like that.

6 Q. In that position, did you take field  
7 measurements as well, sound measurements?

8 A. Yes.

9 Q. And prior to being with the City of  
10 Chicago, what did you do?

11 A. I was with the U.S. Army Construction  
12 Engineering Research Laboratory in Champaign.

13 Q. What is that?

14 A. That's a Corps of Engineers research  
15 laboratory in Champaign, and I was with the  
16 acoustic section there.

17 Q. And what did you do for them?

18 A. From the period of 1973 until 1978, we  
19 dealt with measurements and analysis of noise  
20 sources as it affected army bases and the civilian  
21 population outside of army bases.

22 Q. What is your formal education?

23 A. I have a BS in physics from Ohio  
24 University.

1 Q. And when did you receive that degree?

2 A. 1973.

3 Q. What do you currently do to keep up on the  
4 advances in your field?

5 A. I do quite a bit of reading and talking  
6 with colleagues.

7 Q. Reading of what?

8 A. Magazines and journals.

9 Q. Related to?

10 A. Acoustics and noise control.

11 Q. Are you involved in any professional  
12 societies?

13 A. Yes. I'm a member of the Chicago Regional  
14 Chapter of the Acoustical Society of America at  
15 this point.

16 Q. And have you held any leadership positions  
17 in the past in this society?

18 A. Yes. I was president of the local chapter  
19 of the Acoustical Society, and I've also been  
20 president of the Midwest Acoustics Conference in  
21 the mid '80s.

22 Q. And what did these societies  
23 and conferences involve?

24 A. Midwest Acoustics Conference puts on a



1 one-day seminar every year or two to inform  
2 professionals about various aspects of acoustics.

3 Q. And do you attend these conferences and  
4 seminars?

5 A. Yes. The group has been dormant for about  
6 five years or so.

7 Q. The other professional society that you  
8 are active in?

9 A. The Acoustical Society of America. Yes.  
10 I attend local meetings. Usually, there's --  
11 always there's a guest speaker to talk about  
12 various aspects of acoustics and also, you know, an  
13 opportunity to interact with my peers.

14 Q. And can you describe generally the parties  
15 who retain your services?

16 A. We are retained by developers, building  
17 owners, contractors, private citizens, private  
18 residents, architects, mechanical engineers.

19 Q. Have you ever been retained by the  
20 government?

21 A. Certainly, yes.

22 Q. What government bodies have retained your  
23 services?

24 A. Certainly, the State of Illinois

1 Department of Transportation dealing with roadway  
2 noise. I've various jobs for the federal  
3 government in the past, not a whole lot, and with  
4 the tollway commission.

5 Q. What do you consider to be your areas of  
6 specialization?

7 A. My personal area, as I stated before, is  
8 environmental acoustics; that is, dealing with the  
9 noise and its effects outdoors, and for this I deal  
10 with developers in terms of measurement and  
11 prediction of noise levels as it relates to outdoor  
12 noise sources. This could range from trains,  
13 highways, sirens, and the design and mitigation of  
14 systems to reduce noise from these sources.

15 Q. And what expertise do you have in taking  
16 sound measurements?

17 A. I have completed seminars put on by  
18 manufacturers groups on measurement of sound and  
19 vibration.

20 Q. And what about your actual experience in  
21 the field?

22 A. That's on-the-job training, hundreds of  
23 sound level measurements.

24 Q. In a year, how many sound measurements

1 would you say you take?

2 A. In the course of a year, probably on the

3 order of 100 sound level readings.

4 Q. What is the basis of all -- of this

5 expertise?

6 A. In terms of my practical training and

7 educational experience.

8 Q. And how many years of experience do you

9 have?

10 A. Since 1973 until the present working

11 exclusively in noise.

12 Q. So approximately 25 years?

13 A. Yes.

14 Q. Does your experience include field testing

15 of impulsive sound?

16 A. Yes, it does.

17 MS. SMETANA: At this point, I'd like to

18 offer Mr. Homans as an expert.

19 HEARING OFFICER KNITTLE: Mr. Sweda?

20 MR. SWEDA: No qualms.

21 MS. AAVANG: No objection.

22 HEARING OFFICER KNITTLE: So admitted.

23 MS. SMETANA: Can you just -- just so the

24 record reflects.

1 A. Because when I excluded the extraneous  
2 events, I did not have 60 seconds worth of data, 60  
3 minutes worth of data that did not include the  
4 extraneous sources.

5 Q. After March 4th, did you take any  
6 additional measurements?

7 A. Yes, I did. Because these measurements  
8 were taken, well, during rush hour, I requested to  
9 go back and to conduct another test on another day.

10 Q. Was there another reason why you went back  
11 on another day?

12 A. Yes. I was --

13 Q. In terms of the data you needed.

14 A. Well, certainly. I wanted to get more  
15 data so that I would have 60 minutes worth of good  
16 data without the extraneous events.

17 Q. And is removing extraneous events, is that  
18 the requirement of the standard?

19 A. It's permitted, yes, it is, as is a  
20 correction for ambience, the ambient noise in the  
21 area.

22 Q. So when did you return to take additional  
23 measurements?

24 A. That was on March 15th of this year in the

1 morning. I started measurements a little before

2 9:00 a.m.

3 Q. And did you select the same location that

4 you were at on March 4th?

5 A. Yes, just a few feet north.

6 Q. And why were you a few feet north?

7 A. Well, I had problems on the 4th with the

8 noise from the clanking lanyards on the flagpole,

9 and so I moved a few feet north, 15 or 20 feet

10 north. So I was in front of 226 Gillett.

11 Q. When you say problems with the flag, what

12 do you mean?

13 A. Well, the wind on the 4th occasionally

14 would cause the metal lanyards on the flagpole to

15 clank and this created a noise, and I had to

16 exclude those noises from the analysis.

17 MS. SMETANA: I'm going to show the

18 witness what has been marked Exhibit 1.

19 BY MS. SMETANA:

20 Q. If you can identify by putting a circle

21 where you were on the second day and putting the

22 date there as well.

23 A. These points are almost coincident.

24 (Witness complied.)

1 Q. And, again, where was the location you  
2 were at on March 15th in relation to Mr. Sweda's  
3 property?

4 A. That was due south of his property on the  
5 north side of Gillett.

6 Q. And how close to his property was it?

7 A. His home is about mid-block between  
8 Gillett and Ridgeland.

9 Q. Was the sound you would hear where you  
10 were located on March 15th representative of the  
11 sound that would be heard at 923 County Street --  
12 North County Street?

13 A. Yes, or, in fact, it would have been a  
14 little louder since it was closer to the noise  
15 source.

16 Q. Did you follow the same methodology on  
17 March 15th that you did on March 4th in terms of  
18 setting up the site?

19 A. Yes, I did.

20 Q. And were the cannons located in the same  
21 spot as they were for your prior test?

22 A. Yes. I did observe the cannons on that  
23 date from a distance. I was not at close range.

24 Q. What was the weather on March 15th?

- 1 A. On March 15th, it was warmer.
- 2 Q. And what was the wind on that day?
- 3 A. There was practically no wind. There were  
4 occasional puffs of air out of the west.
- 5 Q. How did you know that the wind was calm?
- 6 A. I both stood outside for a while and also  
7 measured the wind with my volumeter. I also  
8 observed the smoke coming from smokestacks as I  
9 drove from OMC up to the site on Gillett. The  
10 smoke was going straight up.
- 11 Q. Were these conditions appropriate for  
12 taking sound measurements?
- 13 A. Yes. They were optimal according to S  
14 1.13. As far as I know, there was no temperature  
15 inversion at that hour.
- 16 Q. And was there any -- what other, if any,  
17 difference between March 4th and March 15th?
- 18 A. It was in the morning instead of the  
19 afternoon. So certainly traffic from Sheridan Road  
20 was much diminished at this hour.
- 21 Q. And did you -- for how long were you  
22 present on March 15th?
- 23 A. For approximately an hour and a half. I  
24 believe I stated before before 9:00 o'clock, and I

1 misspoke. I started around 10:00 o'clock and was  
2 there until about 11:30 or so.

3 Q. And did you take any notes during your  
4 testing?

5 A. Yes, I did.

6 Q. And what did these notes report?

7 A. Those were the same type of notes that I  
8 took on March 4th. These were the events that I  
9 heard summarized every 30 seconds.

10 Q. And when you say the same types of events,  
11 how would you describe those events?

12 A. Those events would be the noise from the  
13 cannon blasts, noise from extraneous events in the  
14 area such as airplanes.

15 Q. And why was documenting these extraneous  
16 events significant?

17 A. It's important to me to be able to  
18 correlate the results with a graph that I see.  
19 It's also permitted under the Illinois standards to  
20 exclude extraneous events.

21 Q. After taking your measurements on March  
22 15th, did you analyze the data that you collected?

23 A. Yes, I did in similar fashion that I did  
24 on --



1 Q. Where is that raw data documented?

2 A. That's in Appendix B of my report.

3 Q. Is that referred to as Appendix B --

4 A. It says Table B. I'm sorry.

5 MS. SMETANA: I'm going to show the  
6 witness, again, Exhibit 8, page nine.

7 BY MS. SMETANA:

8 Q. Is this the beginning of Table B which you  
9 were just referring to?

10 A. Yes, it is.

11 Q. Can you read the title of, what, Table B?

12 A. Table B is entitled raw data from March  
13 15th, 1999.

14 Q. Did you, again, determine the awaited  
15 sound level on March 15th?

16 A. Yes, I did. The awaited sound level for  
17 each 30 second block appears in the extreme  
18 right-hand column, and for the entire measurement  
19 period, which consisted of 181, 30 second blocks, I  
20 recorded a sound level 49.4, and just for  
21 reference, the first 60 minutes or the first 120  
22 blocks of awaited sound level was 49.3.

23 Q. And where on Table B is that information  
24 provided?

1 A. That's in the extreme lower right-hand  
2 corner of the last page.

3 Q. Can you circle that on -- on what page of  
4 the report is that?

5 A. It's on page 12. I've circled both  
6 numbers in blue ink.

7 Q. Thank you.

8 And how do these numbers compare to  
9 the impulsive sound standard?

10 A. They were lower than the impulsive noise  
11 standard.

12 Q. And did you analyze extraneous sound for  
13 March 15th?

14 A. Yes, I did. At this point, because I  
15 would have 60 minutes of good data left or  
16 nonextraneous data, I was able to delete those in  
17 the spreadsheet during which extraneous events  
18 occurred.

19 Q. And is this the methodology you described  
20 before under the Illinois standard?

21 A. Yes.

22 Q. Do you recall what the number was without  
23 extraneous events, if you recall the number?

24 A. Yes, I do. It was 45 DBA.

1 Q. I'm going to -- did you document that  
2 number in your report which has been marked as  
3 Exhibit 9?

4 A. Yes, I did. I believe it's on table  
5 three.

6 MS. SMETANA: I'm going to, again, show  
7 the witness Exhibit No. 9, and I'll refer him to  
8 page four.

9 BY MS. SMETANA:

10 Q. Is that table three on page four which you  
11 were just referring to?

12 A. Yes, it is.

13 Q. And can you, with this yellow highlighter,  
14 mark the number you just referred to without the  
15 extraneous events?

16 A. I can. This is 45 DBA for all noise  
17 sources, and in parentheses I said includes cannons  
18 without extraneous events.

19 Q. Why is this number significant?

20 A. This represents the sound level due to  
21 cannons in the area without the sounds of aircraft  
22 and other extraneous events.

23 Q. What would you use this number to show?

24 A. This would be compared directly with the

1 Illinois Pollution Control Board's standards,  
2 impulsive standards, part 104.

3 Q. What is the impulsive standards that  
4 you're comparing it to?

5 A. The numerical limit is 56.

6 Q. How would you characterize this 45 in  
7 relation to the standard?

8 A. It's much lower. There's a rule of thumb  
9 with acoustics. Every ten DBA that you reduce a  
10 noise source is equivalent to a perceived decrease  
11 of loudness of about one half.

12 MS. SMETANA: I'm going to show the  
13 witness what has been marked Exhibit 10.

14 (OMC Exhibit No. 10 marked  
15 for identification,  
16 4-20-99.)

17 BY MS. SMETANA:

18 Q. What does that Exhibit 10 reflect?

19 A. That's table three from my report.

20 Q. Is that -- can you just -- is that the  
21 same table that appears on page four of your  
22 report?

23 A. Yes, it is.

24 Q. And on Exhibit 10, can you, again,

1 like distant low caliber rifle fire. It also  
2 sounded a little bit like cars passing over a bad  
3 expansion joint on Sheridan Road. From time to  
4 time, a car would hit the expansion joint just  
5 right and produce an impulsive noise that was  
6 similar, although not identical to the reports from  
7 the cannons.

8 Q. Could you hear the sound well from where  
9 you were standing?

10 A. On the 15th -- on March 15th, I could hear  
11 it fairly well, but you've got remember with the  
12 operation of the cannons that they're pointing in  
13 random directions, at least the three OMC cannons  
14 are, and so sometimes the noise from the cannons is  
15 louder or quieter than at other times.

16 Q. You mentioned before extraneous sounds.  
17 What was included in extraneous sounds, examples?

18 A. Again, aircraft, train noise I heard and  
19 documented. I had a noisy crow, I believe, on the  
20 15th that was right overhead.

21 Q. From where you were standing for your  
22 sound measurements, how did the noise of airplanes  
23 compare to the noises you heard from the cannons?

24 A. The noise of airplanes was greater than