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STATE OF ILLINOIS  
Pollution Control Board

BEFORE THE  
ILLINOIS POLLUTION CONTROL BOARD

DANIEL J. BEERS,  
Complainant,

vs.

DAVE CALHOUN (LET IT SHINE CAR  
WASH),  
Respondent.

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PCB No. 2004-204

STIPULATION AND PROPOSAL FOR SETTLEMENT

The Complainant, DANIEL J. BEERS, *pro se*, and the Respondent, LET IT SHINE, LLC (incorrectly named in the Complaint as DAVE CALHOUN (LET IT SHINE CAR WASH)), by his attorney, Peter R. Jennetten, have agreed to the making of this Stipulation and Proposal for Settlement and submit it to the Illinois Pollution Control Board for approval. The parties agree that the Statement of Facts contained herein represents a fair summary of the evidence and testimony which would be introduced by the parties if a hearing were held. The parties further stipulate that the Statement of Facts is made and agreed upon for purposes of settlement only and that neither the fact that a party has entered into this Stipulation nor any of the facts stipulated herein shall be introduced into evidence in any other proceeding regarding the claims asserted in the Complaint except as otherwise provided herein.

JURISDICTION

The Board has jurisdiction of the subject matter herein and of the parties consenting hereto pursuant to the Illinois Environmental Protection Act, 415 ILCS 5/1 *et seq.*

## STATEMENT OF FACTS

### **A. Parties**

1. Let It Shine, LLC owns and operates the Let It Shine Car Wash at 2115 Cherry Lane, Pekin, Illinois.
2. Daniel J. Beers owns and resides at 203 Cottage Grove Ave., Pekin, Illinois.

### **B. Site Description**

1. As initially constructed and at the time of the initial Complaint, the Let It Shine Car Wash was a concrete block, steel and glass structure with three manual wash bays and one automatic wash bay. The automatic wash bay includes blowers to dry vehicles as they exit the wash.
2. Since the Complaint was filed, one of the manual bays was converted to a dog wash. This bay is the closest part of the structure to the Beers residence. The automatic wash bay is the furthest part of the structure from the Beers residence.
3. The Beers residence is located to the east and uphill from the car wash. They are adjoining properties.
4. The car wash is located at the edge of a commercial area within the City of Pekin, Illinois, as depicted in the photographs attached as Exhibit A.
5. The Beers residence is located on a residential street adjacent to the commercial area as depicted in the photographs attached as Exhibit B.

### **C. Allegations of Violation**

1. Daniel J. Beers filed a Formal Complaint (PCB 04-204) alleging excessive noise in violation of §§23 and 24 of the Act and §900.102 of the Code. The claim pursuant to §23 was stricken by Order of the Board dated July 22, 2004.

#### **EVALUATION BY RETAINED EXPERTS**

##### **A. Complainant's Expert, Greg Zak**

1. Greg Zak is a noise consultant retained by the Complainant to evaluate and give opinions regarding the alleged noise violations.

2. Mr. Zak was present at the Beers residence on September 23, 2004 and October 19, 2004. He interviewed Mr. and Mrs. Beers and took some measurements of noise emanating from the car wash, but he "made no attempt to strictly follow the IPCB measurement procedures needed to establish a violation under Section 901 of the Board's noise regulations." Exhibit C (Initial Report of Greg Zak).

3. A copy of Mr. Zak's report outlining his factual findings and opinions is attached as Exhibit C.

4. Mr. Zak opined that there was a nuisance violation of the noise standards. He further opined that a properly constructed fence breaking line of sight between the car wash and the Beers residence could provide an effective noise barrier. Exhibit C at 2.

5. Construction of a fence consistent with Mr. Zak's recommendations would require a fence up to 16 feet high at some portions of the fence, due to the slope of the Beers property. This fence would violate City of Pekin zoning requirements and would require

a variance prior to construction. Respondent obtained an estimate for construction of the fence which was slightly over \$12,000.

6. Mr. Zak also recommended that mufflers be obtained and installed on the blowers for the automatic wash bay.

**B. Respondent's Expert, Paul D. Schomer, Ph.D., P.E.**

1. The Respondent retained Dr. Paul Schomer to evaluate the alleged noise violations and potential remedies.

2. Dr. Schomer visited the site twice in 2006 and took a number of measurements and evaluated the structure of the site. A copy of his report is attached as Exhibit D. His report addressed only the proposed remedy and did not dispute Mr. Zak's conclusion that there was a nuisance violation of the noise standard.

3. Dr. Schomer developed a more cost-effective approach to the construction of a sound barrier. His approach involves the construction of a noise barrier extending from the exit of the automatic wash bay by a distance of four feet. It would extend up to the roof line and then run parallel to the roof up to the peak, as shown in his report. Exhibit D at 8. This barrier will break the line of sight between the blowers causing the noise problem and the Beers residence. This solution "provides enhanced noise mitigation over the complainant-proposed property line barrier wall." Exhibit D at 9.

4. Respondent obtained estimates for the necessary work, including construction of the barrier, purchase of the mufflers, and extension of the concrete pad for the exit from the automatic wash bay. The estimates add up to \$7,661.13. The barrier

proposed by Dr. Schomer will be more effective and less expensive to install and maintain compared to the proposal put forward by Mr. Zak.

5. Construction of the barrier proposed by Dr. Schomer would not require a variance from the City of Pekin.

#### **APPLICABILITY**

1. This Stipulation shall apply to and be binding upon the Complainant and the Respondent, and any officer, director, agent or employee of the Respondent, as well as any successors or assigns of the Complainant or the Respondent.

#### **TERMS OF SETTLEMENT**

1. The parties and their experts, Mr. Zak and Dr. Schomer, met at the site on April 17, 2007. The parties discussed the cause of the noise and potential solutions. All parties agreed that construction of the barrier proposed by Dr. Schomer, in conjunction with the mufflers recommended by Mr. Zak, was the most appropriate solution.

2. The Respondent, Let It Shine, LLC, agrees to take the following actions to mitigate the noise projected toward the Beers property:

- a. Respondent will obtain and install blower mufflers from Stenberg Welding & Fabricating, Inc., 223 N. Omland Ave., Fosston, MN, 56542. The parties understand that the mufflers are prototypes. They are believed to be helpful, but performance is not guaranteed or warranted by the manufacturer.
- b. Respondent will install a 4-foot noise barrier wall as described in Dr. Schomer's report. The barrier will be composed of metal and glass.

- c. Respondent will install the noise mitigation measures no later than June 30, 2008.

3. Discussion of §03.302(c) factors:

- a. The character and degree of injury or interference with the health, general welfare and property.

As set forth in Mr. Zak's report, noise from the car wash has interfered with the Beers' peace and enjoyment of their home. There have been no other noise complaints.

- b. The social and economic value of the pollution source.

The car wash provides a useful services to car owners in the Pekin area by providing a convenient location to clean and maintain their vehicles and pets.

- c. The suitability of the location.

The car wash is located in a commercial area of the city. It sits near the corner of a major intersection. On the same corner are a large grocery store and a gas station. A Walgreens drugstore is on the opposite corner from the grocery and other businesses are located nearby. The location is convenient for customers of the car wash. The Beers residence is located on the first residential street adjoining this area.

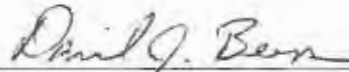
- d. The technical practicability and economic reasonableness of mitigation.

The nature of the blowers makes them inherently noisy, much like a hair dryer. It cannot be eliminated. Addition of the mufflers is expected to diminish the noise slightly. Construction of a barrier will deflect the sound away from the Beers residence. The parties agree that these mitigation measures are both practical and reasonable.

- e. Any subsequent compliance.


As part of this Stipulation, the Respondent has agreed to install mitigation measures which are expected to bring the facility in compliance with the noise standards.

WHEREFORE, the parties respectfully request that the Board accept this agreement and issue an order adopting the foregoing Stipulation and Proposal for Settlement as written.



\_\_\_\_\_  
DANIEL J. BEERS, Complainant  
203 Cottage Grove Ave.  
Pekin, IL 61554  
Telephone: (309) 346-3235

LET IT SHINE, LLC (incorrectly named as  
DAVE CALHOUN (LET IT SHINE CAR WASH)),  
Respondent

By:  \_\_\_\_\_  
Peter R. Jenetten  
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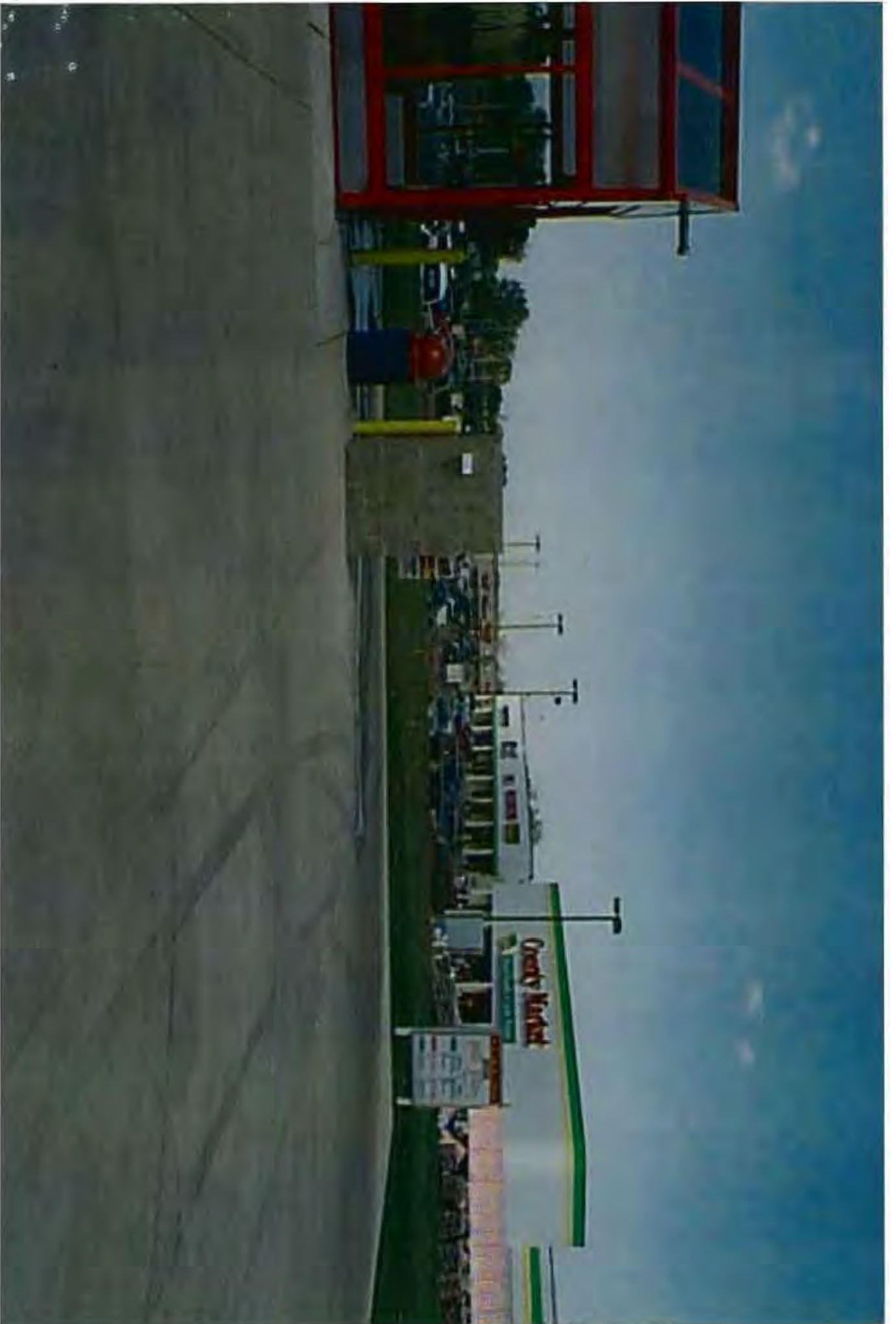






















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EXHIBIT  
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# NOISE SOLUTIONS BY GREG ZAK, INC.

36 BIRCH DRIVE  
CHATHAM, ILLINOIS 62629  
(217) 483-3507  
(217) 483-5667-FAX  
E-mail: [gregzak@justice.com](mailto:gregzak@justice.com)

November 1, 2004

By: First Class Mail and E-mail

Mr. Dan Beers  
203 Cottage Grove  
Pekin, IL 61554  
Phone: 309-346-3235  
E-mail: [djbeers@grics.net](mailto:djbeers@grics.net)

RE: Beers v. Calhoun  
PCB #2004-204  
Summary of Visit to the Residence of Dan Beers

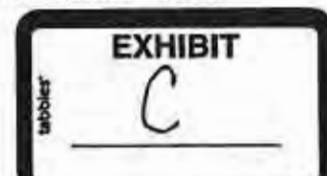
Dear Mr. Beers:

The following summarizes our visit to your residence:

Greg and Pat Zak of Noise Solutions by Greg Zak arrived at 203 Cottage Grove Avenue in Pekin on September 23, 2004 at approximately 1:45 PM. At that time, we introduced ourselves to you and your wife, Joann. You indicated that you had lived at your residence for approximately 15 years, and prior to that time, it had been your family home. The Let It Shine Car Wash located at 2115 Cherry Lane has been in operation for about one year. We then proceeded to the backyard area of your property to discuss and view the car wash facilities that are causing the noise problem.

We set up our noise measurement instrumentation in order to measure the daytime sound levels on the window sill of the second floor hallway area. We took measurements using a precision analyzer and microphone. After calibrating the analyzer, measurements were taken between 2 and 3 PM. We found that the daytime noise levels in the area prevented us from accurately measuring the operations of the car wash. Vehicular noise from motorcycles, trucks and SUVs along with car wash noise was a part of the immediate location we were testing. Due to this situation, we agreed that it would be necessary to return to your home during the evening hours to obtain nighttime measurements. Additionally, a map was drawn and photographs were taken of the car wash, as well as the surrounding area. We left your residence at 3:50 PM.

A return visit to your residence was made on October 19, 2004. We arrived at your home at 10 PM and began ambient (background) measurements at 10:11 PM. These were taken in the same location used previously, with the same precision analyzer and microphone. After establishing the ambient level



measurement of 46.9 dB(A), we measured the noise resulting from the car wash facilities, which was primarily emanating from the blowers. While our measurements were reasonably accurate, we made no attempt to strictly follow the IPCB measurement procedures needed to establish a violation under Section 901 of the Board's noise regulations. We measured a dB(A) level of 60.9 at 10:28 PM. We do, however, feel confident that our measurement is sufficiently accurate to establish a probable Section 900.102 violation.

Our measurements taken on October 19, 2004 are documented in Table 1 below.

Designation	Measurement Time	31.5 Hz.	63 Hz.	125 Hz.	250 Hz.	500 Hz.	1K Hz.	2K Hz.	4K Hz.	8K Hz.	dB(A)
Ambient Nighttime	22:11:12	49.8	56.3	53.6	49.9	41.2	41.3	38.1	29.6	20.8	46.9
Car Wash Blowers Nighttime	22:28:56	51.8	60.3	61.2	53.7	55.5	55.8	55.5	50.1	40.5	60.9
901.102b B to A	Nighttime Limit	63	61	55	47	40	35	30	25	25	

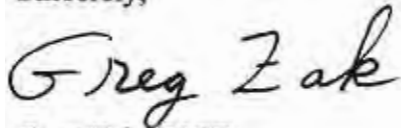
Table 1. Noise Levels on Beers Property (Nighttime)

During our visit, you indicated how the noise from the car wash facilities affected you and your wife's day-to-day activities. You described it as a constant interference in your daily lives, when attempting to spend time in and especially outside of your home. In our opinion, your description of the loss of enjoyment and use of your property, due to the noise from the car wash, is good evidence of a nuisance violation. It was further noted by you that the sudden and sometimes constant (dependent on the time of the day or night) noise from the car wash facilities interferes with your ability to sleep, which is a detriment to both physical and mental health.

We have been involved in many cases related to noise from car wash equipment. Our recommendation, which has successfully worked in the past, would be to retrofit the blowers with silencers and provide a noise barrier between the noise source and the noise receiver. It should be noted that from the standpoint of noise control, a sufficiently high fence can be one of the simplest and most cost effective methods of mitigating noise impact on an abutting residential neighbor. The ability to decrease the sound level is based on the height and proper design of the fence. The fence, if properly constructed, allows the facility to meet the noise limits. Proper construction means a fence that is solid, has a minimum density of 1 lb per square foot, and is 99% airtight from the ground to a height of 10 feet (or higher, where appropriate). The fence should be located in a position such that it blocks line of sight on both its sides and top in relationship to the Beers residence.

It is concluded, in our opinion and experience, with a reasonable degree of scientific certainty that the noise emissions from the Let It Shine Car Wash, exceed the allowable limits of Sections 900.102 of Title 35, Sub-Title H, Chapter I of the Illinois Administrative Code.

Sincerely,

A handwritten signature in black ink that reads "Greg Zak". The letters are cursive and fluid, with a large initial "G" and "Z".

Greg Zak, INCE

# SCHOMER AND ASSOCIATES, INC.

Consultants in Acoustics and Noise Control

Paul D. Schomer, Ph.D., P.E.  
Member, Board Certified  
Institute of Noise Control Engineering

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## Mitigation of Noise from the Let It Shine Car Wash to the Beers Residence

12 February 2007

### INTRODUCTION

Mr. Beers of 203 Cottage Grove, Pekin, IL has filed a complaint with the Illinois Pollution Control Board regarding noise from the Let It Shine car wash located at 2115 Cherry Lane in Pekin, next door to his residence. Mr. Greg Zak has visited this site and made the following recommendations:

"Our recommendation, which has successfully worked in the past, would be to retrofit the blowers with silencers and provide a noise barrier between the noise source and the noise receiver. It should be noted that from the standpoint of noise control, a sufficiently high fence can be one of the simplest and most cost effective methods of mitigating noise impact on an abutting residential neighbor. The ability to decrease the sound level is based on the height and proper design of the fence. The fence, if properly constructed, allows the facility to meet the noise limits. Proper construction means a fence that is solid, has a minimum density of 1 lb per square foot, and is 99% airtight from the ground to a height of 10 feet (or higher, where appropriate). The fence should be located in a position such that it blocks line of sight on both its sides and top in relationship to the Beers residence."

Paul Schomer Ph.D., P.E, of Schomer and Associates, Inc. was retained to review the Zak study for efficacy and develop possibly more prudent recommendations. Dr. Schomer visited this site twice in 2006.

The car wash noise sources are directly behind the Beers residence to the west. Figure 1 is a picture of the Beers residence from the back yard. The garage forms a large noise barrier to sound from the car wash that would otherwise reach the Beers residence if measured at the specified height of 4 ft. Nevertheless, the upstairs bedrooms have a clear line of sight view to the car wash exit and the west blower inside the car wash (Figure 2). So a barrier, to be of value, must block line of sight to the top of the upstairs windows. This requires a tall fence, far taller than is permitted by Pekin City Code or is likely to be permitted. Therefore, this paper explores alternatives to mitigation that meet City Code and provide for greater noise mitigation than does the Zak solution. Figure 3 is an aerial view of the site. The approximate complainant-recommended barrier wall position is shown as a heavy blue line.

MEMBER FIRM, NATIONAL COUNCIL OF ACOUSTICAL CONSULTANTS

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Figure 1. The west side of the Beers residence. Note that the garage blocks all noise from the west from reaching the first floor of the Beers residence.

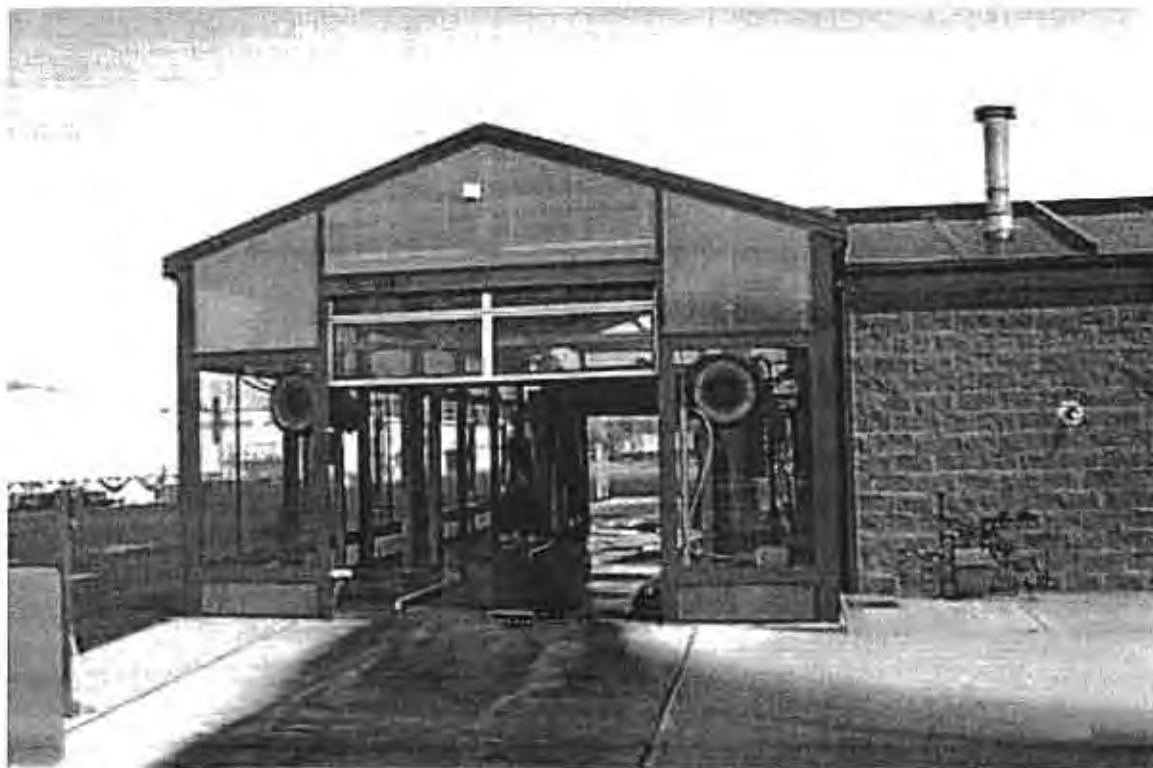


Figure 2. The exit from the automatic car wash at Let It Shine. The car drying blowers to either side of the exit are quite evident, and the west (left in picture) blower has line of sight to the Beers residence. There is also a higher up center blower that is not very evident in this picture.



Figure 3. An aerial view of the site. The approximate complainant-proposed barrier wall position is shown as a heavy blue line.

**ANALYSIS**

Figure 4 is used to estimate the height above ground level at the car wash exit that a fence must be if it is to block line of sight from the left blower to the tops of the Beers' upstairs windows. Assuming the fence is located near to the mutual property line, the result is a fence that must be at least 17 ft above the surface of the car wash.

The attenuation of the barrier will not be a constant. The least attenuation occurs for sound emitted from the top edge of the west blower to the tops of the Beers' windows, the most attenuation occurs for sound emitted from the bottom edge of the west blower to the bottoms of the Beers' windows. Table 1 lists these calculated attenuations using the methods of ISO 9613 Part 2 for BEST, WORST, and INTERMEDIATE attenuation by the proposed property line wall.

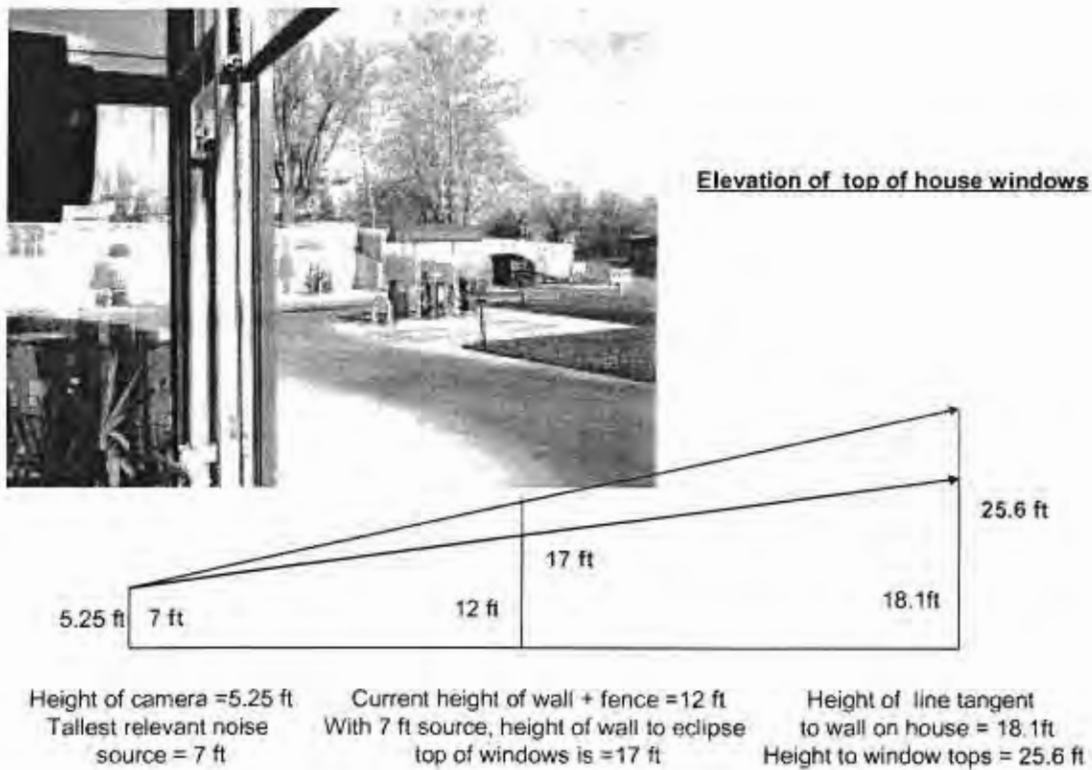


Figure 4. Calculation of wall and window heights above the car wash ground surface.

Table 1. Computed attenuations for the Zak wall for the indicated source and receiver heights (feet) above the ground surface of the car wash. The noise barrier top is rounded up from 16.75 ft and assumed to be 17 ft above the ground surface of the car wash. The calculations use the method in ISO 9613 Part 2.

	ZAK Wall GROUND = 0, 1, 1		
	WORST	MIDDLE	BEST
SOURCE HEIGHT	7	6.5	6
RECEIVER HEIGHT	25.6	23.1	20.6
31 Hz	4.8	4.8	4.8
63 Hz	4.8	4.8	4.8
125 Hz	4.8	4.8	4.5
250 Hz	4.8	4.8	5.0
500 Hz	4.8	4.9	5.3
1 kHz	4.8	4.9	5.7
2 kHz	4.8	5.1	6.5
4 kHz	4.8	5.4	7.7
8 kHz	4.8	5.9	9.5

The calculations show, as expected, that breaking line of sight yields about 5 dB of attenuation. Because the barrier is relatively far from both the car wash and the residence, there is little difference between the BEST and WORST case calculations. The alternative we propose is a short barrier wall attached to the car wash structure. A 4-ft long wall is just barely feasible in terms of vehicles making the turn when exiting the car wash, but it does break line of sight between the blower and the Beers residence. Moreover, because it is close to the source, the "MIDDLE" and BEST attenuations are significantly larger than those yielded by a property line wall (Table 2). Figures 3 and 5 show details of this proposed wall. Figure 6 is used to evaluate the height of this proposed wall and it shows that the height of the building at this point, about 12 ft, is probably insufficient to obtain maximum noise barrier performance, so a slanting roof top extension has been added (Figure 7).

We also evaluated the potential for reflections off the long wall of the building across the street of the car wash and residence. While the potential for reflections exists, there is insufficient space to install any potentially mitigating noise wall. Also, such a barrier wall would be a safety hazard.

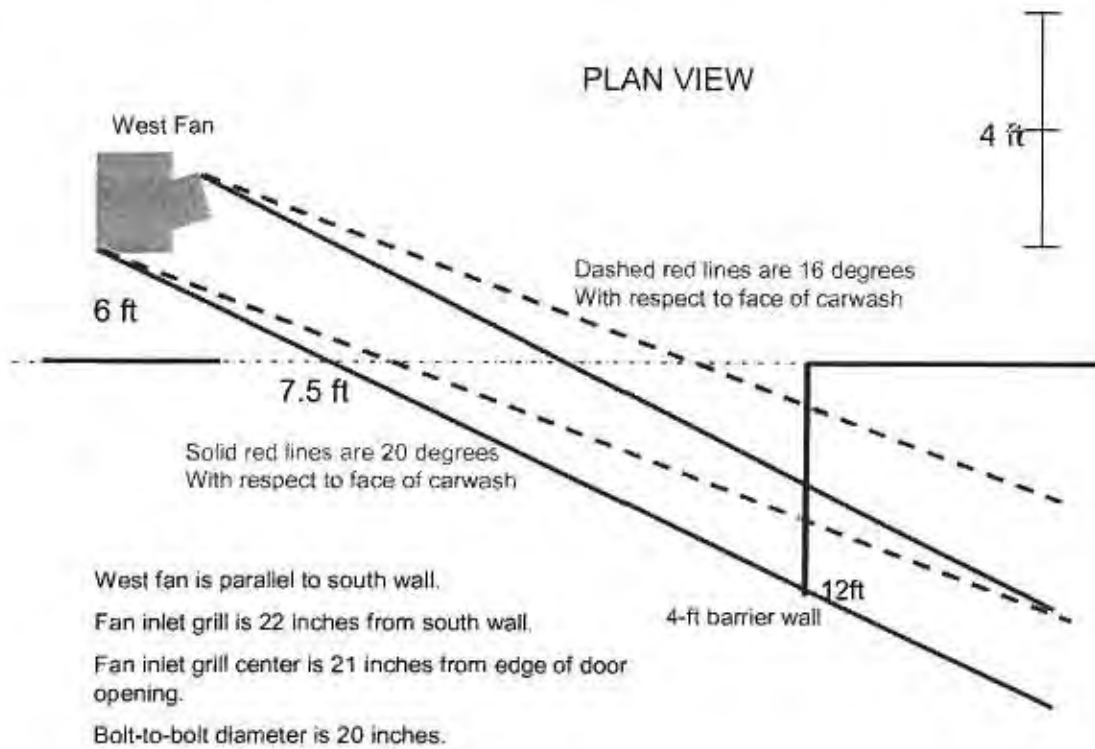


Figure 5. Close-up of the proposed barrier wall geometry.

Table 2. Computed attenuations by the 4-ft extension wall for the indicated receiver heights (feet) above the ground surface of the car wash. For this vertical barrier, the effective barrier "height" above the source in feet is indicated. The calculations use the method in ISO 9613 Part 2.

	4-ft barrier wall GROUND=0, 0, 0		
	WORST	MIDDLE	BEST
EFFECTIVE BARRIER HEIGHT	0.2	1.8	3.3
31 Hz	4.8	4.9	5.1
63 Hz	4.8	4.9	5.3
125 Hz	4.8	5.1	5.8
250 Hz	4.8	5.4	6.7
500 Hz	4.8	5.9	8.0
1 kHz	4.8	6.8	9.9
2 kHz	4.8	8.2	12.2
4 kHz	4.8	10.1	14.8
8 kHz	4.8	12.4	17.6

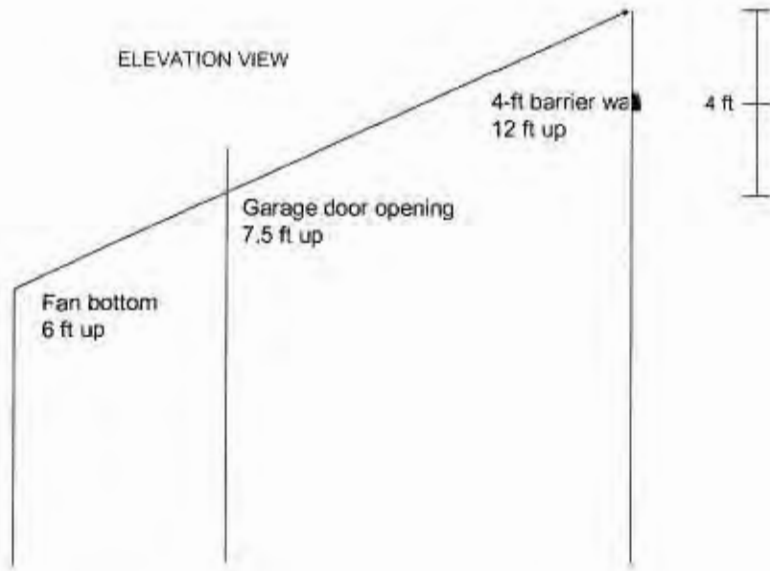


Figure 6. This figure evaluates the height of the 4-ft wall and shows that the car wash door opening contains line of sight (the door perimeter does not block it). Therefore, the roof edge extension shown in Figure 7 is added to the 4-ft-long barrier wall.



Figure 7. Proposed noise barrier structure. The extension is 4-ft long.

## CONCLUSIONS AND RECOMMENDATIONS

Within a reasonable degree of engineering and scientific certainty, the proposed mitigating structure (Figures 3, 5 and 7) provides enhanced noise mitigation over the complainant-proposed property line barrier wall. Moreover, this structure meets code and will not be opposed by the City of Pekin.

Therefore, it is recommended that this structure be substituted for the complainant-proposed property line noise barrier wall.



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Paul Schomer, Ph.D., P.E.

Member, Board Certified, Institute of Noise Control Engineering



# SCHOMER AND ASSOCIATES, INC.

Consultants in Acoustics and Noise Control

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## PAUL D. SCHOMER Acoustical Engineer

BS, Electrical Engineering, University of Illinois, 1965.

MS, Electrical Engineering-Acoustics, University of California, 1966.

Ph.D., Electrical Engineering-Acoustics, University of Illinois, 1971.

### EXPERIENCE

Dr. Schomer has extensive experience, publications, and patents in the areas of environmental noise and its assessment, human and community response to noise, instrumentation and methodology for the measurement and monitoring of noise, architectural acoustics, and acoustical measurements of building parameters. He is a consultant to industry and government, an adjunct Professor of Electrical and Computer Engineering (Acoustics) and member of the graduate faculty of the University of Illinois, and a research leader in acoustics. His recognition by his peers as an international leader in the area of environmental noise is demonstrated by his chapters in reference books, his over 35 refereed publications, his leadership in Standards organizations and professional societies, and his awards and honors. Dr. Schomer is also standards Director for the Acoustical Society of America.

As an international leader in the area of environmental noise, Dr. Schomer is chairperson of the United States delegation to International Organization for Standardization (ISO) Acoustics and Noise committees, chairperson of the American National Standards Committee dealing with noise, chairperson of the ISO working groups which deal with environmental noise and with impulsive noise measurement, chairperson of the American National Standards Institute working group which deals with environmental noise, and he is the United States representative to the International Organization for Standardization in the areas of aircraft noise and impulsive sources. He is the Standards Director for the Acoustical Society of America, a member of the Society of Automotive Engineers Aircraft Noise Committee, a principle contributor to current efforts in the area of standardizing airport noise monitoring, and Executive Director, past vice-president for membership, and twice a past member of the board of the Institute of Noise Control Engineering.

Dr. Schomer has 35 years of experience dealing with noise measurement and the effects of noise on people and communities. This experience includes blast and mining noise, gunfire noise, airport, aircraft, helicopter, construction and traffic noise, and general industrial and urban noise. The citation for his selection as a Fellow of the Acoustical Society of America references his studies on community response to noise, and most of his work with the National Academy of Science has been concerned with noise assessment.

MEMBER FIRM, NATIONAL COUNCIL OF ACOUSTICAL CONSULTANTS

MEMBERSHIPS AND AWARDS

Fellow - Acoustical Society of America.

Member, Board Certified, Institute of Noise Control Engineering

Selected as Corps of Engineers Engineer of the Year and One of the Top 10 Federal Engineers of the Year (1990)—National Society of Professional Engineers

Several times a member of the board and/or officer; Institute of Noise Control Engineering.

Former Executive Director, Institute of Noise Control Engineering of the USA, Inc.

Standards Director, Acoustical Society of America

Chairman, Acoustical Society of America Committee on Standards

Head of U.S. Delegation, International Organization for Standardization, Technical Committee 43 (acoustics) and Subcommittee 1 (noise).

Convener (chairman), International Organization for Standardization, Working Group 45 dealing with environmental noise assessment.

Chairman, S.A.E. Construction Site Sound Level Subcommittee, S.A.E. ConAg Committee.

Member, S.A.E. Aircraft Noise Committee and the noise monitoring subcommittee.

Reviewer for *Applied Mechanics Review*, *Journal of the Acoustical Society of America*, and *Noise Control Engineering Journal*.

Fellowship, University of Illinois (1968-1971).

Registered Professional Engineer (DC).

Member, Institute of Noise Control Engineering, Acoustical Society of America, Institute of Electrical and Electronic Engineers, German Acoustical Society (DEGA), European Acoustical Association

**BOOKS**

**Handbook of Acoustical Measurements and Noise Control, Chapter 50. Community Noise Measurements**, 2nd edition, John Wiley and Sons, Inc., New York, 1991.

**Reference Data for Radio Engineers, Chapter 40. Electroacoustics**, 7th edition, ITT Press, a subsidiary of MacMillan, Inc., Indianapolis, 1985.

**Reference Data for Radio Engineers, Chapter 40. Electroacoustics**, 8th edition, Sams Publishing, Prentice-Hall Computer Publishing, Indianapolis, 1993.

**MAJOR JOURNAL PUBLICATIONS**

"Overview of the theoretical development and experimental validation of blast sound absorbers," *Noise Control Engineering Journal*, **51**(3), (May/June 2005).

"Basic results from full-scale tests at Ft. Drum," *Noise Control Engineering Journal*, **51**(3), (May/June 2005).

"Some Important Factors in Community Response to Sonic Booms," NOISECON 2004, *Institute of Noise Control Engineering*, Baltimore, MD, USA, 12-14 July 2004.

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"A statistical description of ground-to-ground sound propagation," *Noise Control Engineering Journal*, **51**(2), 69-80, (March/April 2003).

"On Normalizing DNL to Provide Better Correlation with Response," *Sound & Vibration*, pp 14-23, December 2002.

"Further Results Using Loudness-Level Weighting to Assess Noise Annoyance," NTERNOISE 2002, Paper No. N489, *Institute of Noise Control Engineering International*, Dearborn, MI, USA, 19-21 August 2002.

"Alternative Methods to A-Weighting for Environmental Noise Assessment," NTERNOISE 2002, Paper No. N475, *Institute of Noise Control Engineering International*, Dearborn, MI, USA, 19-21 August 2002.

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Logarithmic Statistical Distribution Analyzer, Patent No. 3995500.

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## TYPICAL PROJECT EXPERIENCE

### AIRPORT NOISE ASSESSMENT AND PART 150 STUDIES

Conducting the acoustical analysis and measurements contained within airport Part 150 studies including (1) the generation of present and future, predicted noise contours, (2) the execution of noise monitoring, the comparison of monitoring results with noise contours, and the analysis of monitoring results by aircraft type, operation, and runway, and (3) the development and analysis of noise mitigation strategies.

### HELIPORT DESIGN AND ASSESSMENT

Assessment of the heliport noise. Establishing the need for mitigation. Assessing mitigation alternatives.

### ENTERTAINMENT NOISE

Evaluated measurements for a large, outdoor music venue. Evaluated band and DJ noise from a club as it affected the neighborhood. Suggested mitigation methods. Evaluated measurement and monitoring plans for an outdoor music performance arena.

### EXPERT WITNESS REGARDING NOISE PREDICTION AND ITS EFFECTS ON PEOPLE

For the defense: Class action suit of homeowners against ARCO Oil.

For the plaintiff: Class action suit of homeowners against Peabody Coal Company.

Performed analysis of the physical noise and its predicted levels in the community. Performed assessment of the received noise and its effect on individuals and the community.

For the defense: Analyzed the audibility of gun shot sound.

For the defense/plaintiff: Predicted, measured and analyzed noise from parked outdoor refrigerator trucks in a special situation.

For the plaintiff: Predicted and analyzed the effect of strip-mining explosions on a distant factory structure.

Analyzed the audibility of off-road truck noise in a quarry delivery plant. Analyzed the audibility of a backup alarm in the presence of lawnmower noise. Analyzed the audibility of siren noise.

Analyzed the audibility of truck noise in the presence of other neighborhood noise.

For the community: Class action suits against airport noise.

### GUN CLUBS/POLICE FIRING RANGES

Performed noise assessment and mitigation at several civilian and police small arms firing ranges including siting, layout, operations, and noise mitigating structures and fixtures.

### INDUSTRIAL NOISE CONTROL--OUTDOORS

Performed noise assessment and mitigation at a variety of outdoor industrial operations such as an asphalt plant, a kitty-litter plant (similar drum to asphalt plant for drying clay), an ammunition disposal plant (again a heated drum), and grain elevators.

### MOTOR RACEWAY NOISE

Performed assessment, evaluated existing and planned mitigation and developed alternatives. Evaluated management and operational plans and developed alternative strategies.

PRODUCT DEVELOPMENT

Design, testing and evaluation of outdoor warning sirens.

VEHICLE/HIGHWAY NOISE

Assessment of highway noise. Monitoring highway noise. Establishing the need for mitigation. Assessing mitigation alternatives.

ILLINOIS NOISE REGULATIONS

Examination of the adequacy of existing noise regulations contained in Subtitle H, 35 Illinois Administrative Code. Analysis of the existing rules and whether they appropriately encompass the various types of discontinuous noise and specifically, impulse noise. Recommendations for changes to sections of the Code dealing with definitions and regulatory levels.

REVISIONS TO ILLINOIS PROPERTY-LINE NOISE MEASUREMENT PROCEDURES

Examination of existing measurement procedures as related to American National Standards. Recommendation of measurement procedures for determination of octave-band 1-hour equivalent levels corrected for background ambient. (No American National or International Standards exist for this type of measurement, but these are the type required by the Illinois Pollution Control Board.)

HUMAN AND COMMUNITY RESPONSE TO NOISE

Conducting and supervising international research experiments designed to explain, qualify and quantify human and community response to noise of varying character, spectra and temporal patterns. This research concentrates on comparing and contrasting special noises such as small arms, rotary-wing aircraft, or large explosions to more common noise such as road vehicles or artificially generated noise. A key to this work is conducting these experiments in real houses with real sources of sound.

TEMPORAL SAMPLING STRATEGIES FOR MONITORING AIRPORT NOISE

Analysis of daily monitoring results from many of the nation's airports. Modeling of the results by auto-regressive moving average (ARMA) models, and analysis of the results by "Monte Carlo" methods. Recommendation of airport noise sampling strategies for obtaining the required degrees of precision.



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April 10, 2008

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**VIA FEDEX**  
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ORIGINAL

Re: Beers v. Calhoun  
 PCB No. 2004-204  
 Our File No. 101 050 066

Dear Mr. Therriault:

Per our telephone conversation, enclosed is the original Stipulation and Proposal for Settlement in the above matter. Due to the difficulties encountered in filing this document electronically, you kindly offered to make the appropriate number of copies. Could you please send us a file-stamped copy of this document, or, alternatively, let me know when it is available online?

Thank you for your assistance in this matter.

Very truly yours,

QUINN, JOHNSTON, HENDERSON & PRETORIUS

By:

*Karen J. Johnson*

Karen J. Johnson  
 Assistant to Peter R. Jennetten

\* Also Licensed to Practice in Iowa  
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