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September 14, 2016

Zoning Board of Appeals
133 William Street
New Bedford MA 02740

Re: ZBA Case – 1861 Shawmut Avenue, New Bedford Massachusetts

Dear Chairperson

Enclosed please find the following documents in regard to the above referenced matter:

1. Anthonty DeCosta's Rebuttal to the Building Commissioner's Memorandum of September 8, 2016;

2. A copy of a Noise and Vibration Monitoring Summary by Geosonics Inc.

Please note that the copy of the summary omits Appendix B: "Calibration Data" and Appendix D: "Excel Data" due to their voluminous nature, but either will be made available to you upon request.

If you have questions or require additional information, please contact this office.

Sincerely

Russell G. Whynacht

RGW/yb
cc: Kreg Espinola, Assistant City Solicitor

Zoning Board of Appeals

Re: Anthony R. DeCosta, 1861 Shawmut Ave., New Bedford

REBUTTAL TO THE BUILDING COMMISSIONER'S MEMORANDUM

INTRODUCTION

This memorandum is submitted to rebut assertions and legal arguments made by the Building Commissioner, in his Memorandum of September 8, 2016, to the Zoning Board of Appeals.

A. THE BUILDING COMMISSIONER'S SELECTIVE EMPHASIS ON PORTIONS OF THE CITY CODE MISCONSTRUES THE ORDINANCE AND STATE LAW.

The Building Commissioner's reliance on City Code, Section 9-266 to argue that A-1's use of property is unlawful does not withstand scrutiny.

THE BUILDING COMMISSIONER RELIES ON A MISINTERPRETATION OF SECTION 9-266

A plain reading of the City Code, Section 9-266[1], indicates that this section calls for the Building Commissioner to certify that the "premises or building or part thereof hereafter constructed, altered, or moved, or the yards, courts, or other open spaces of the same which may be or are in any way reduced... conform to the provisions of the chapter." The section clearly references a situation where the physical condition of the land, or of the buildings on that land, has been changed. That section does not make any reference to a simple change in the use of the property. The clear and obvious purpose of Section 9-266 is to prevent the use of a structure, or the open area around that structure, after the structure has been altered, until the building inspector has certified its compliance with the zoning ordinance. There is nothing in the plain language of that section that purports to limit or prohibit a change from one allowed use to

[1] "It shall be unlawful to use or permit the use of any premises or building or part thereof hereafter constructed, altered, or moved, or the yards, courts, or other open spaces of the same which may be or are in any way reduced, until the superintendent of buildings shall have certified thereto on the building permit or in a use permit that the premises or the building or part thereof so constructed, altered or moved, the proposed use thereof, and the open space thereof, conform to the provisions of this chapter." Ordinances, City of New Bedford, c. 9 § 266 (1963).

another allowed use when there has been no construction, alteration, or movement of a building, or reduction in the open space.[2]

Applying that plain reading of the ordinance to this case, there is no evidence that any building on the subject property was constructed, altered or moved, or the open spaces reduced, when A-1 began its use of the property as a contractor's yard[3] in 1963. And there is nothing in Section 9-266 that would have prevented the change in use of the property from an allowed farm to an allowed contractor's yard.

CERTIFICATION UNDER SECTION 9-266 WAS A MINISTERIAL ACT, AND LACK OF CERTIFICATION WOULD NOT RENDER AN ALLOWED USE UNLAWFUL

The building commissioner's argument that the lawfulness of A-1's historic use of the property hinges on whether a "use permit" was issued is flawed. Where a party can show that it satisfies the requirements for a permit, the issuance of that permit is a ministerial act, and not a discretionary matter. See *Framingham Clinic, Inc. v. Zoning Bd. of Appeals of Framingham*, 382 Mass. 283, 297 (1981); *Albahari v. Zoning Bd. of Appeals Brewster*, 76 Mass. App. Ct. 245 (2010). And, the absence or delay in obtaining a permit or license that can readily be obtained does not render a valid use of property unlawful. See *Derby Refining Co. v. City of Chelsea*, 407 Mass. 703, 711(1990).

For the sake of argument, assume that in 1963, Section 9-266 applied to a change from one allowed use to another allowed use, even though there had been no construction, alteration, or movement of a building, or reduction in the open space. There is no evidence that the use by Mr. DeCosta's father of this property as a contractor's yard did not "conform to the provisions of [the zoning ordinance]". If the then building commissioner had been charged in 1963 with reviewing that change of use, on the evidence now before this board, he would have had to certify that the use was in compliance with the ordinance.

THE BUILDING COMMISSIONER'S CLAIM TO DISCRETIONARY AUTHORITY IS CONTRARY TO LAW

But the building commissioner seems to suggest that his authority under Section 9-266 is not essentially ministerial. He apparently claims that under that section of the ordinance he has general discretion to determine the appropriateness of a change in use. And since Section 9-266 applied throughout New Bedford, that discretion would necessarily apply to all uses of all

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[2] This interpretation of the section is supported by the apparent fact that the so–called "use permit", alluded to by the building commissioner, is actually a form of building permit, and not an independent document that refers only to a change from one use to another.

[3] The building commissioner apparently admits that "contractor's yard" was an allowed use in 1963 and continues to be an allowed use of this property to this day.

property in every district in the city. Such a wide ranging, roving discretionary authority is clearly contrary to the zoning statute.

In his memorandum the building commissioner fails to address the decision of the Appeals Court in *SCIT, Inc. v. Planning Board of Braintree*, 19 Mass. App. Ct. 101 (1984). In *SCIT, Inc.*, the Court identified a fundamental component of the zoning law: "certain uses are permitted as of right within each district, without the need for a landowner or developer first to seek permission which depends upon the discretion of local zoning authorities." *SCIT, Inc.*, 19 Mass. App. Ct. 101, 107 (1984). Under the Zoning Act, G.L. c. 40A, a city cannot impose discretionary approval on all uses of property within a zoning district, let alone within the whole city. *Id.* In this instance, A-1's use of its property as a contractor's yard was a permitted use under the City Code of 1963, when the business began. A use that is allowed as of right cannot be subject to special permission from the local zoning authority. See *Prudential Ins. Co. of Amer. v. Board of App. of Westwood*, 23 Mass. App. Ct. 278, 281 (1986) ("the concepts of a use as of right and a use dependent on discretion are mutually exclusive"). The Zoning Act, G. L. c. 40A, does not "contemplate, once a district is established and uses within it authorized as of right, conferral on local zoning boards of a roving and virtually unlimited power to discriminate as to uses between landowners similarly situated. *SCIT, Inc. v. Planning Board of Braintree*, 19 Mass. App. Ct. 101, 108 (1984).

THE USE OF THE PROPERTY FOR STONE CRUSHING

The same analysis applies to A-1's stone crushing operation. When A-1 began its crushing operations in the 1990's, that use was also an allowed use under the terms of the zoning code in effect at that time. A prohibition against crushing did not appear in the zoning code until 2003. The effect of the 2003 ordinance, prohibiting crushing, did not make A-1's use of the property unlawful, it merely rendered that use nonconforming, but protected by the provisions of G.L.c.40A §6. All of the principles that apply to the use of the property as a contractor's yard apply equally to the use of the property for stone crushing.

B. THE TESTS FOR EXPANSION OF A NON-CONFORMING USE CITED BY THE BUILDING COMMISSIONER ARE INAPPLICABLE TO THIS CASE.

In attacking the use of the property for stone crushing, the Building Commissioner cites the existence of three "tests for determining whether current use of property fits within the exemption granted to nonconforming uses." In this situation, however, those tests are inapplicable because they do not apply to uses that are permitted as of right, and that have not changed substantially since they were commenced.

Courts apply the three tests to determine whether a nonconforming use has been so expanded and altered that it has, in fact, changed from one nonconforming use into an entirely different nonconforming use. While the city would have discretion to deny a change from one nonconforming use to another nonconforming use, it does not have discretion to force the

discontinuance of a non-conforming use that was permitted as of right when it commenced. This is true even where an expansion of that nonconforming use is the result of a natural increase in business activity. See *Almeida v. Arruda,* 89 Mass. App. Ct. 241, 244-245 (2016).

When A-1 began crushing operations, in the early 1990's, crushing was a permitted use as of right. Crushing became a disallowed use in the industrial "B" zone, only with the implementation of the 2003 city code. As such, use of the property for crushing is a protected non-conforming use, and the crushing operations are not subject to review under the test for change or expansion of nonconforming use.

C. LAWFUL USE IS NOT DETERMINED BY ISSUANCE OF A MASS DEP PERMIT.

A-1 is investigating its duties to obtain Massachusetts DEP permits, however, under state law, the absence or delay in obtaining a permit or license that can readily be obtained does not render a valid use of property unlawful. See *Derby Refining Co. v. City of Chelsea,* 407 Mass. 703 , 711(1990). In any event it is outside the jurisdiction of this Board to be making determinations based, not on the zoning ordinance, but on state environmental laws.

D. THE EPA HAS MADE NO DETERMINATION THAT ANY AIR PERMIT IS REQUIRED.

The Building Commissioner's assertion, that A-1 must be guilty of violating EPA air regulations unless it proves itself not guilty, is contrary to the conventions of American jurisprudence. It is also outside the jurisdiction of this Board to be making determinations based not on the zoning ordinance but on federal environmental laws. Adoption of this position reinforces A-1's assertion that it is being subject to unjust and arbitrary hostility.

E. CONCLUSION

The Building Commissioner continues to attempt to shut down A-1 and put the company out of business to appease the grievances of certain abutters to A-1's property. That open hostility towards Mr. DeCosta and A-1 has been recently demonstrated by the Building Commissioner's blanket refusal to accept applications from A-1 for driveway repaving permits on the grounds that the business has "dust problems". [4]

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[4] By Ordinance of the City of New Bedford, "any driveway existing prior to April 15, 2009, that is made of a material that creates an impervious surface, may be permitted for repair, resurfacing or reconstruction with substantially the same type of material provided that the dimensions of the driveway are not increased and the location of the driveway layout is not altered." Ordinances, City of New Bedford, c. 9-2755. Under this ordinance, the Commissioner is without discretion to withhold a permit for the resurfacing of a driveway that existed prior to 2009, within the existing footprint.

A-1 has already taken steps to control dust, and is seeking to further enhance its site and its procedures through measures that are under review by the Conservation Commission. The issues of dust and noise, on which the Commissioner is focusing, can be properly addressed under appropriate sections of the city code. It is improper for the Commissioner and to seek to shut down the business and completely disregard the possibility of effective mitigation.

But this Board's task in reviewing the cease and desist order is much narrower than having to address those issues. The only grounds stated by the Building Commissioner for ordering A-1 to stop its business is the failure to obtain so-called "use permits".

For the reasons stated above, it is abundantly clear that A-1's use of the property for its present operation is lawful, grandfathered by law, and not subject to a requirement for a "use permit". The Board should reverse the cease and desist order and advise the Building Commissioner to address the real issues of his concern appropriately, rather than trying to abuse his authority under the ordinance to put a fifty year old family owned company out of business.

Anthony DeCosta
By his Attorney,

Thomas P. Crotty, Esq., BBO #106800
5 Dover Street, Suite 102
New Bedford, MA 02740
Telephone: 508-990-9101
Facsimile: 508-990-9108
Email: tomcrotty@tcrottylaw.com

Dated: September 13, 2016

Where "an applicant demonstrates its entitlement to a building permit, `the issuance of a permit is a matter of duty, not discretion.'" *Framingham Clinic, Inc. v. Zoning Bd. of Appeals of Framingham*, 382 Mass. 283, 297 (1981); *Albahari v. Zoning Bd. of Appeals Brewster*, 76 Mass. App. Ct. 245 (Mass. App., 2010). By refusing to accept A-1's applications for permits to repave its client's driveways, the Building Commissioner is illegally infringing on Mr. DeCosta's right to contract and his right to pursue his choice of employment.

GeoSonics

GeoSonics.com

Trackside Business Park
325 B-2 Sandbank Road
Cheshire, CT 06410

Phone: 203.271.2504
Fax: 203.250.9866

NOISE MONITORING SUMMARY

A1 Asphalt Company Inc.
1861 Shawmut Avenue
New Bedford, Massachusetts 02747

Construction Project – A1 Asphalt Sand & Gravel Pit, New Bedford, Massachusetts
Monitoring Period – August 23, 2016, 05:20 to 09:40

August 30, 2016

PURPOSE

The purpose of this evaluation was to assess the noise and vibration levels in the vicinity of the residential properties abutting A1 Asphalt Sand and Gravel Pit in New Bedford, Massachusetts. A1 Asphalt Company, Inc. retained GeoSonics Inc. (GeoSonics) to perform the limited noise and vibration evaluation.

BACKGROUND

The A1 Asphalt Sand and Gravel Pit is located at 1861 Shawmut Avenue in New Bedford, Massachusetts, which is south of a residential area. On August 23 2016, GeoSonics recorded the sound and ground vibration levels at the closest point along the property line of 1861 Shawmut Avenue (emitter) to the residence at 1878 Shawmut Avenue (receptor). Traffic running along Shawmut Avenue at its closest point is within 10 feet of the sound station; inside the quarry a loading area was within 850 feet of the sound station; the QJ 341 Crusher was within 860 feet of the sound station; the Eagle Crusher was within 630 feet of the sound station, and the Nordberg Screener was within 890 feet of the sound station (see Appendix A, Figure 1).

Noise regulations for the State of Massachusetts are controlled and published by the Department of Environmental Protection (MassDEP, 310 CMR 7.10). They define noise as "a type of air pollution that results from sounds that cause a nuisance, are/or could injure public health, or unreasonably interfere with the comfortable enjoyment of life, property, or the conduct of business."

- Garmin® Personal Navigator Global Positioning System (GPS) *e*trex 10 hand-held unit.

Calibration certificates for the GeoSonics Safeguard Seismic Unit and the Larson Davis® 824 Sound Analyzer and the calibrator are included in Appendix C. Specifications/informational brochures of the equipment used on-site are also included in Appendix B.

INTRODUCTION TO SOUND / DEFINITONS

Sound and the way in which humans perceive sound require that parameters and descriptors be defined for a better understanding of this noise evaluation.

Vibrations of air molecules result in air pressure changes that can be sensed by an individual through their auditory (hearing) system and are commonly known as sound. The human response to any sound is related to both the intensity and the frequency of the air vibrations that an individual perceives. The decibel (dB) is the unit of measure often used to describe the intensity of sound. Frequency is the rate at which a sound source vibrates or makes the air molecules vibrate. Frequency often is described as the "pitch" of a tone. The hertz (Hz) is the unit of measure of frequency.

The human ear is more sensitive to frequencies between 20 Hz and 20,000 Hz. Variations in human perception of different frequencies of sound are taken in to account through the use of weighting networks. The weighting network that most closely duplicates the human ear reaction is the A-weighted network. The A-weighted network "weights" the sound levels with frequency content within the range of the human ear more heavily than those outside this range. The A-weighted scale (unit of measure dBA) is the network most commonly used to provide a general description of noise and its effect on human auditory response. The A-weighted scale is most often used in Community Noise Studies.

Sounds will vary over time. In order to take into account the effect of duration of the varying sound levels, the equivalent continuous sound level, or L_{EQ} is used. This value has the same energy content as a continuous sound over the same sampling period. The L_{EQ} is the sound energy average or equivalent level of all samples during the monitoring period.

The Sound Exposure Level (SEL) is a rating of a discrete event in decibels. An SEL may be an event, such as a train or aircraft that compresses the total sound energy of the event into a one (1) second time period.

The Peak is the largest peak level recorded during the monitoring period.

Day-Night Sound Level (L_{DN}) is a 24-hour continuous L_{EQ} with 10 dBA added to levels occurring between 9:00 pm and 6:00 am to account for greater sensitivity during typical sleeping hours.

Decibels from two sources are not additive. This means that if the background sound at the site with the generators is for example 59.7 dBA and the background was 55.7 dBA, the resulting sound level would not be 115.4 dBA. Two sound sources with levels of 59.7 dBA and 55.7 dBA, respectively would result in a total sound level of 61.1 dBA.

Another descriptor used in sound studies is exceedance level. An exceedance is the decibel level that was exceeded a percentage of time over a defined period. For example, an L_{10} level of 45 dBA means that the sound level was over 45 dBA ten percent (10 %) of the time. Exceedance levels are useful for filtering out short duration sound levels.

SEISMOGRAPH UNITS

Vibration Data Collection

The Safeguard Seismic Units (SSU) 3000 series, portable velocity recording instruments, are microprocessor-controlled ground vibration and air overpressure recorders. The SSU is self-contained, rechargeable, and can be setup to automatically trigger for ground motion and/or air concussion. The seismographs are digital with a sampling rate (approximately 1,000 samples per channel per second) to permit accurate measurements of the entire frequency spectrum of ground motion that are typically encountered in mining, quarries and/or construction activities.

The seismographs are equipped with a geophone or transducer, the vibration sensor. The geophone has three independent channels to measure/record ground movement. The three channels include vertical (V), longitudinal (L), and transverse (T). Each channel has a weight attached to a spring that when moved due to ground motion, generates voltages that are recorded by the unit. The ground motion or peak particle velocity (PPV) is measured in inch or inches per second (ips).

The SSU for this evaluation was set up in continuous vibration mode and therefore were not triggered based on site-specific vibration criteria. The advantage of using the 3000 series seismograph is that the associated frequency with the vibrations is also recorded which can be seen in the waveform.

Air Wave Data Collection

A microphone is also included in the unit to record air pressure levels. The vibration of air molecules causes air pressure changes. These vibrations are sensed by humans through their auditory (hearing) system and are commonly known as sound. The effect of any sound on human response is related to both the intensity and frequency of the air vibrations that an individual perceives. The decibel (dB) is the unit most often used to describe the intensity of airborne sound. The seismograph used in this evaluation measures air overpressure with a unit of dBL or decibel linear, providing the full spectrum of air pressure changes.

COLLECTION STATION AND SITE CONDITIONS

The sound level meter (SLM) station and Standard Seismograph Unit (SSU) for August 23, 2016 were located at the closest point on the property of 1861 Shawmut Avenue to the property of 1878 Shawmut Avenue in New Bedford, Massachusetts. This location was chosen per the proximity to the residential area. Equipment being used on- site and coming on to the site includes:

- Sandvik QJ 341 Crusher
- Nordberg CV 50 Screener
- Komatsu 380 Loader
- Cat 950 Loader
- Komatsu 170 Excavator
- John Deere 250 Excavator
- Triaxle Dump Trucks

The construction site activities for the day of monitoring consisted of material screening, construction truck traffic, loading trucks, and moving material. Other sources of noise include a running motorcycle in a neighboring field, running a chainsaw within the sand and gravel pit, and several planes flying overhead during the monitoring period on August 23, 2016 causing momentary changes/increases in the decibel levels. The field notes included in Appendix G identify when noises from outside sources were observed during this study.

The ambient measurements were collected over one-hour period and the active measurements were collected over a two-hour period during operating hours of the A1 Asphalt Company, Inc. Mr. James Marino of GeoSonics performed the sound study and documented field notes of noise causing activities on August 23, 2016.

During the on-site monitoring activities, the sky was clear throughout the day with wind less than six (6) miles per hour (mph). The temperature ranged from approximately 50 ° to 73 ° Fahrenheit (see Appendix F).

INSTRUMENTATION

The following instrumentation was used during the course of this 3-hour noise evaluation on August 23, 2016:

- Larson Davis® 824 Sound Analyzer, #A1157 and microphone 2560, with an annual factory calibration date of November 30, 2015 (see Appendix B);
- Larson Davis® Precision Acoustic Calibrator Cal200, #4049 (see Appendix B); and
- GeoSonics Safeguard Seismic Unit (SSU). 3000 series, unit number: 5241.

The human ear is more sensitive to frequencies between 20 Hz and 20,000 Hz. Variations in human perception of different frequencies of sound are taken into account through the use of weighting networks. The weighting network that most closely duplicates the human ear reaction is the A-weighted network. The A-weighted network "weights' the sound levels with the frequency content within the range for the human ear more heavily than those outside this range. The A-weighted scale (unit of measure dBA) is the network most commonly used to provide a general description of noise and its effect on the human auditory response. The A-weighted scale is most often used in Community Noise Studies.

In accordance with the International Society of Explosive Engineers recommendations in the 18th Blasters' Handbook (2011) each seismograph is calibrated annually. The certificate of calibration for the shake table and sound level for the seismograph used in this evaluation is included in the Appendix B.

PROCEDURES

In an effort to collect representative sound levels at the A1 Asphalt Company Inc. Sand and Gravel Pit, a time when accurate ambient noise and vibration measurements as well as accurate active noise and vibration measurements could be collected. The Ambient collection period was from 06:30 to 07:30 and the active collection period was from 07:30 to 09:40 on August 23, 2016.

The Larson Davis® 824 sound meter was attached to a tripod with the microphone placed approximately five (5) feet above grade. The microphone was field calibrated prior to start of sampling and after completed sampling. The calibration was performed and the instrument was within acceptable tolerance limits (i.e. +/- 1 dB). The Larson Davis® 824 sound meter was programmed to collect a reading every 1 second during the monitoring period.

The vibrations from the activity were recorded with one (1) SAFEGUARD SEISMIC UNIT (SSU). The unit is a portable, velocity-recording seismograph unit. The unit used was the 3000 series, unit number: 5241, and was set to record data in its histogram mode taking 1,000 samples per sixty-second intervals. The unit was setup next to the sound station due to the proximity to the residential properties.

DISCUSSION

The sounds recorded during the limited noise monitoring period included noises coming from New Bedford Regional Airport, traffic in the distance, traffic on Shawmut Avenue, slamming of car doors, single engine planes taking off, single engine planes flying overhead, air brakes, construction trucks, construction equipment and natural sounds including light wind and wildlife.

Equivalent sound levels can be calculated for off-site/residential properties using the formula:

$$SPL_1 - [20 \times \log (d_2 / d_1)] = SPL_2$$

Where:

- SPL_1 = the sound pressure level at the location closer to the sound source;
- SPL_2 = the sound pressure level at the location farther from the sound source;
- d_2 = the distance from the source where SPL_2 was measured; and
- d_1 = the distance from the source where SPL_1 was measured.

Allowable noise levels in accordance with the MassDEP must be within ten decibals (10 dBA) above the ambient noise measurements. These recordings are measured during equipment operating hours.

The Ambient Noise Level was determined to be 48.5 dBA (see Appendix E, Graph 1). According to the MassDEP the acceptable decibel level from a noise source is 58.5 dBA or 10 decibel over background (see Appendix C, MassDEP Noise Regulations).

TYPICAL VIBRATION RESPONSES FROM EVERYDAY ACTIVITIES

Structures are subjected to variety of vibrations and strains from human-produced activities as well as environmental conditions. Human-produced effects on structures produce localized strains equivalent to ground vibrations of up to 0.50 ips. Human activities along with environmental conditions such as temperature and humidity can result in strains that are equivalent to those produced by ground vibrations of up to 1.2 ips. Damage to structures is not common during blasting and/or construction activities. When ground vibrations are less than 0.5 ips to 2.0 ips with greater than 40 Hz, damage to structures is unlikely. Settling of structures can occur at most vibration levels.

SUMMARY

This limited sound study was undertaken at 1861 Shawmut Avenue, at the closest point to the property line adjacent to 1878 Shawmut Avenue in New Bedford, Massachusetts. One hour of ambient noise monitoring was conducted to determine decibal limit for the A1 Asphalt Company, Inc. Two hours of active noise monitoring was conducted between the hours of 07:30 and 09:40 to gather data as the A1 Asphalt Company ran several pieces of equipment and loaded/transported material with three tri-axle dump trucks.

Based on the sound levels measured for the off-site property (receptor), the decibel levels created by the A1 Asphalt Company (emitter) did not exceed acceptable MaDEP levels for Noise while running their equipment during the daytime monitoring period on August 23, 2016.

Ground vibration levels were also recorded at the same location, these values did not peak above 0.015 ips.

LIMITATIONS

GeoSonics Inc. will not be responsible for any claims of damage not physically caused by GeoSonics Inc.

Thank you for the opportunity to work for the A1 Asphalt Company, Inc. Please contact this office at 203.271.2504, if you have any questions regarding the sound summary report.

Sincerely,

James Marino
Field Technician

GeoSonics Inc.
Trackside Business Park
325 B2 Sandbank Road
Cheshire, CT 06410

Attachments:

- Appendix A – Figures
  - Figure 1. Site Location Map – from Google Earth®
  - Figure 2. Site Sketches – 8/23/2016
- Appendix B – Equipment Calibration Certificates / Specifications
- Appendix C – References:
  - MassDEP Noise Regulations
- Appendix D – Disk containing excel spreadsheet of data gathered 8/23/16
- Appendix E – Graphs / Tables
  - Graph 1. Annotated graph of Ambient dBA readings
  - Table 1. Summary Highlights of Noise - Ambient
  - Graph 2. Annotated Graph of Active dBA readings
  - Table 2. Summary Highlights of Noise – Active / Operational
- Appendix F – Weather report for monitoring period on 8/23/2016
- Appendix G – Field Notes 8/23/2016

Appendix A. Figures

GeoSonics

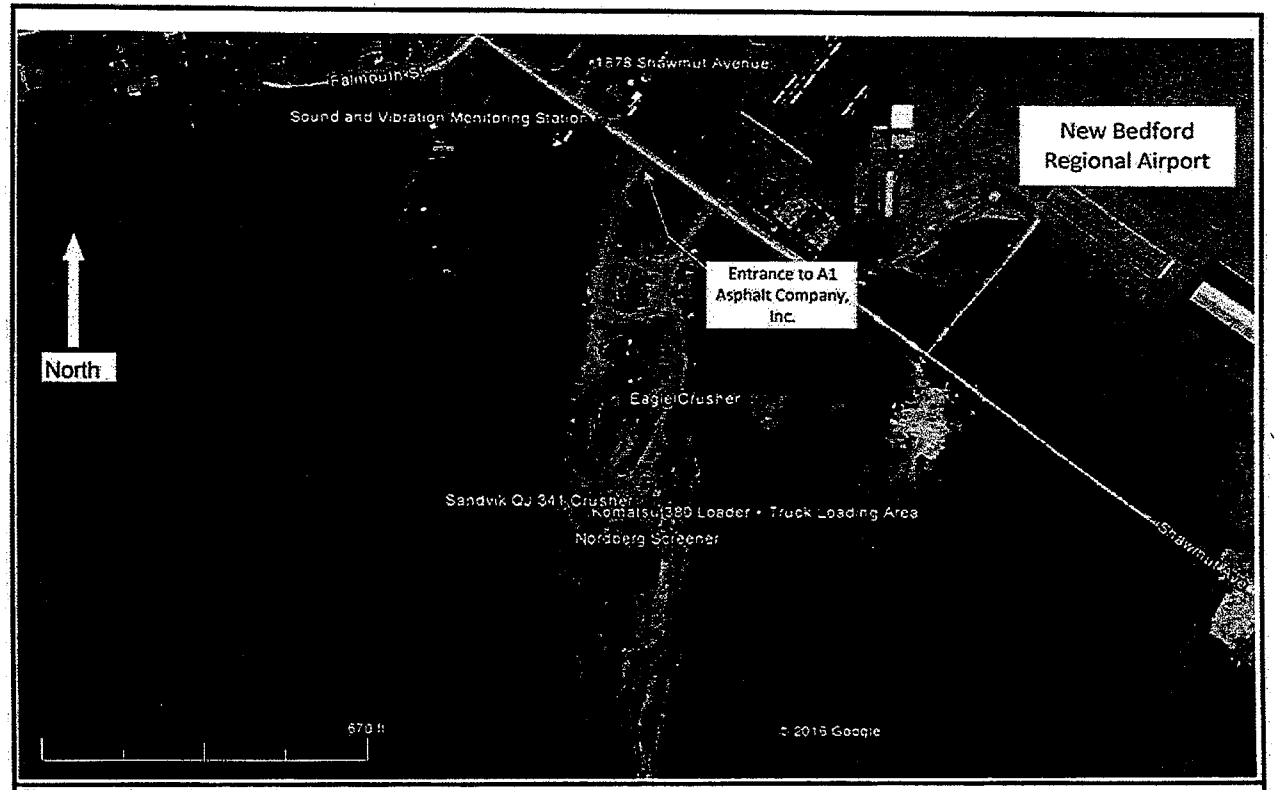


Figure 1. Site Location Map
1861 Shawmut Avenue, New Bedford, MA
From: Google Earth ®

Appendix B. Equipment Calibration

Appendix C. MADEP Regulations

Massachusetts Department of ENVIRONMENTAL PROTECTION

fact sheet

Noise

Background

Noise is a type of air pollution that results from sounds that cause a nuisance, are or could injure public health, or unreasonably interfere with the comfortable enjoyment of life, property, or the conduct of business. Types of sounds that may cause noise include:

- "Loud" continuous sounds from industrial or commercial activity, demolition, or highly amplified music;
- Sounds in narrow frequency ranges such as "squealing" fans or other rotary equipment; and
- Intermittent or "impact" sounds such as those from pile drivers, jackhammers, slamming truck tailgates, public address systems, etc.

Policy

A noise source will be considered to be violating the Department's noise regulation (310 CMR 7.10) if the source:

1. Increases the broadband sound level by more than 10 dB(A) above ambient, or
2. Produce a "pure tone" condition – when any octave band center frequency sound pressure level exceeds the two adjacent center frequency sound pressure levels by 3 decibels or more.

These criteria are measured both at the property line and at the nearest inhabited residence. "Ambient" is defined as the background A-weighted sound level that is exceeded 90% of the time, measured during equipment operating hours. "Ambient" may also be established by other means with consent of the Department.

For more information:

For complaints about specific noise sources, call the Board of Health for the municipality in which the noise source is located.

To learn more about responding to noise, odor and dust complaints or to request state assistance or support, please contact the service center in the nearest DEP regional office.

- Central Region, Worcester: (508) 792-7683
- Northeast Region, Wilmington: (978) 661-7677
- Southeast Region, Lakeville: (508) 946-2714
- Western Region, Springfield: (413) 755-2214

This Policy was originally adopted by the MA Department of Public Health in the early 1970's. It was reaffirmed by DEP's Division of Air Quality Control on February 1, 1990, and has remained in effect.

Massachusetts Department of
Environmental Protection
One Winter Street
Boston, MA 02108-4746

Commonwealth of
Massachusetts
Mitt Romney, Governor

Executive Office of
Environmental Affairs
Ellen Roy Herzfelder, Secretary

Department of
Environmental Protection
Edward P. Kunce,
Acting Commissioner

Produced by the
Bureau of Waste Prevention
February 2003.
Printed on recycled paper.

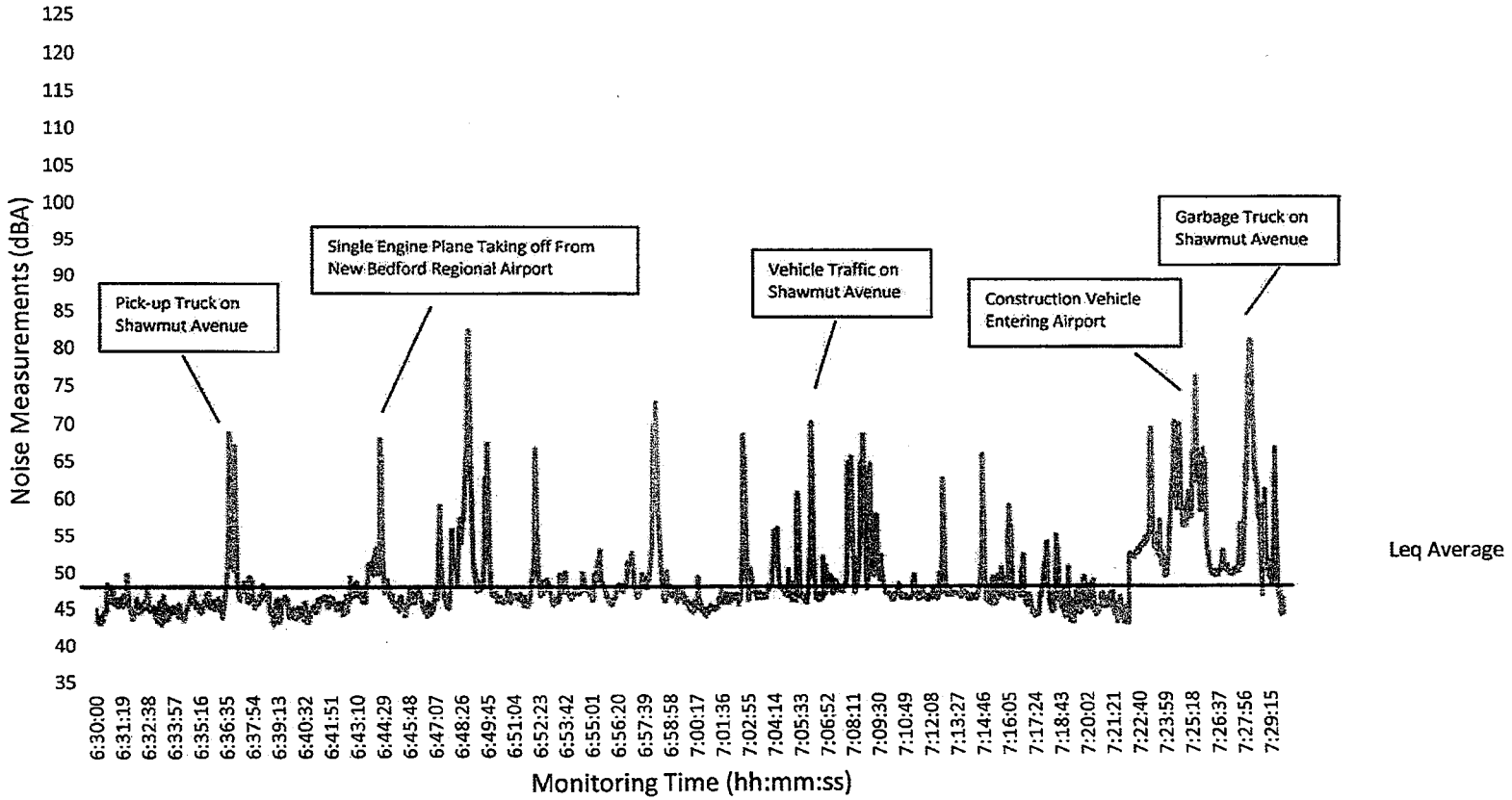
This information is available in alternate format by calling our ADA Coordinator at (617) 574-6872.

Appendix D. Excel Data

Appendix E. Graphs / Tables

GeoSonics

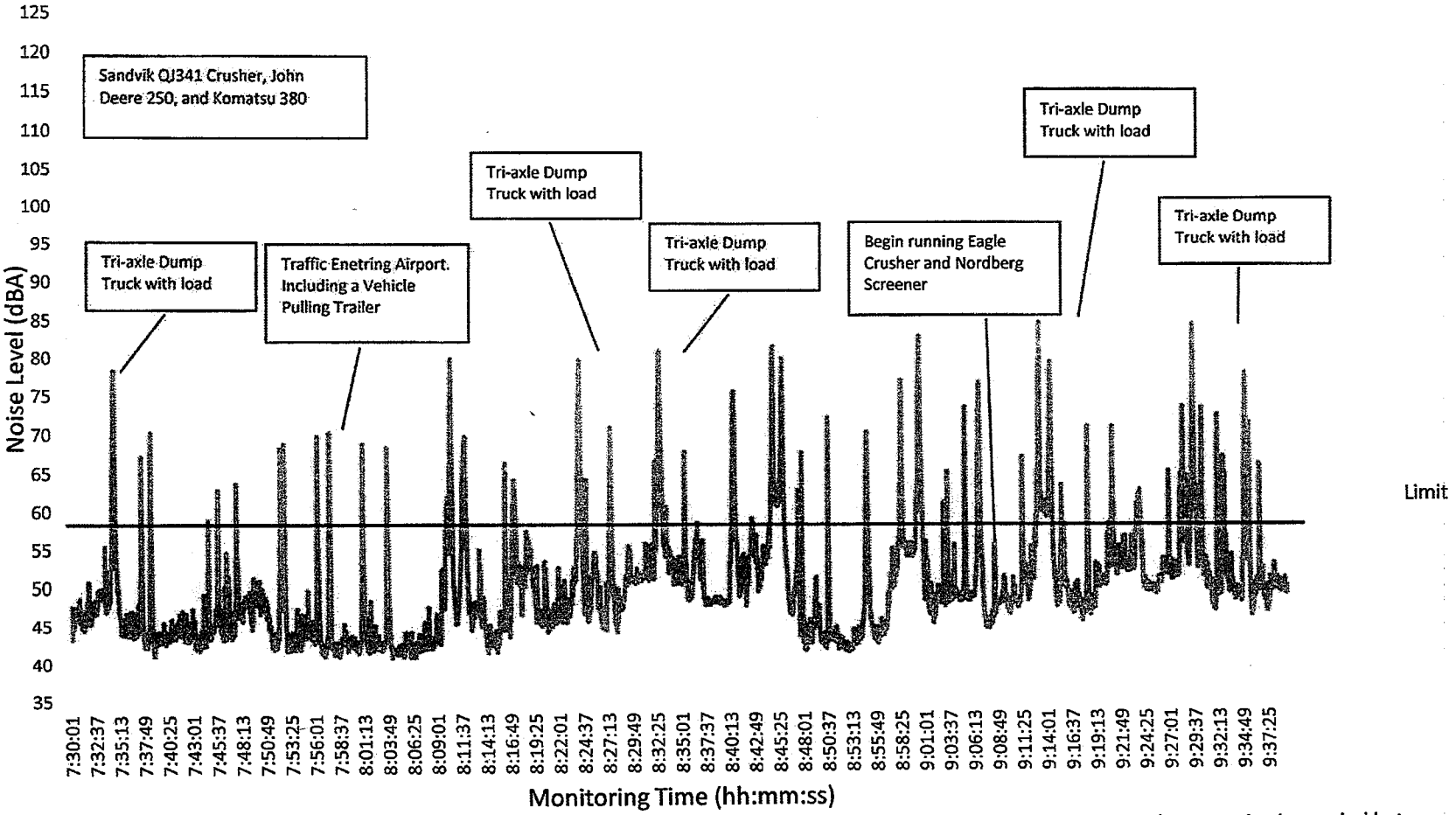
A1 Aspalt Company, Inc.
Ambient Noise Measurements



Graph 1. August 23, 2016 Sound Study at A1 Asphalt Company, Inc. 1861 Shawmut Avenue, New Bedford Massachusetts. One hour monitoring period between 06:30 and 07:30 to determine ambient noise levels. Through this portion of the study the Leq Average for the monitoring period has been determined to be 48.5 dBA.

A1 Asphalt Company, Inc.
Active Noise Measurments

GeoSonics



Graph 2. August 23, 2016 Sound Study at A1 Asphalt Company, Inc. 1861 Shawmut Avenue, New Bedford Massachusetts. Two hour monitoring period between 07:30 and 09:40 to measure active noise levels. The limit was determined to be 58.5 dBA, which is 10 dBA above the measured ambient noise Leq average.

Table 1.

Summary Highlights of Noise During Test

A1 Asphalt Company, Inc. / 1861 Shawmut Avenue / New Bedford, Massachusetts

Ambient Recording Period: August 23, 2016, 06:30 to 07:30

Time	Active Equipment	Noise Reading Taken at Receptor	Comments
6:30	None	47 db	Constant Humming From Airport
6:34	None	44 db	Traffic in Distance
6:37	None	67 db	Traffic Entering Airport
6:44	None	67 db	Car entering Airport
6:49	None	70 db	Traffic on Shawmut Ave
6:52	None	66 db	Traffic on Shawmut Ave
6:53	None	47 db	Slamming Car Door
6:57	None	52 db	Plane Overhead
7:02	None	51 db	Traffic on Shawmut Ave
7:03	None	64 db	Traffic on Shawmut Ave
7:04	None	55 db	Small Plane Taking Off
7:08	None	65 db	Traffic on Shawmut Ave
7:15	None	66 db	Traffic on Shawmut Ave
7:18	None	51 db	Small Plane Taking Off
7:23	None	71 db	Large Truck Entering Airport
7:25	None	70 db	Garbage Truck on Street
7:29	None	66 db	Traffic on Shawmut Ave

Table 2.

Summary Highlights of Noise During Test

A1 Asphalt Company, Inc. / 1861 Shawmut Avenue / New Bedford, Massachusetts

Active Recording Period: August 23, 2016, 07:30 to 09:40

Time	Active Equipment	Noise Reading Taken at Receptor	Comments
7:33	Sandvik Crusher + Loaders (constant during active recording)	55 db	Tri-axle Dump Truck at gate
7:35		78 db	Tri-axle Dump Truck w/ Load
7:45		65 db	Traffic on Shawmut Avenue
7:50		47 db	Back up Alarm
7:52		66 db	Traffic Entering Airport
8:01		70 db	Landscaping Vehicle w/ Trailer
8:10		74 db	Tri-axle Dump Truck Entering
8:15		45 db	Loading Tri-axle Dump Truck
8:30		52 db	Washing Truck at Gate
8:32		81 db	Tri-axle Dump Truck w/ Load
8:33	Bobcat S250	52 db	Sweeping Gate Area
8:36	Bobcat S250	45 db	Screener being Relocated
8:45		74 db	Tri-axle Dump Truck Entering
9:01		80 db	Tri-axle Dump Truck w/ Load
9:05	Begin Running Eagle Crusher	45 db	Eagle not Crushing Stone
9:07	Begin Running Nordberg Screener	45 db	
9:14	All Equipment Running	45 db – 50 db	Eagle Begins Crushing Stone
9:21	All equipment Running	69 db	Tri-axle Dump Truck Entering
9:23	All Equipment Running	55 db – 62 db	Plane Take off/flying overhead
9:31	All Equipment Running	79 db	Tri-axle Dump Truck w/ Load
9:35	All Equipment Running	54 db	Last Load Through Crusher
9:38	Sandvik Crusher + Loader only	49 db – 51 db	Eagle Crusher + Screener Off

Appendix F. Weather Report

Hourly Weather History & Observations

Time (EDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Conditions
4:53 AM	51.1 °F	48.0 °F	89%	30.20 in	10.0 mi	SSW	3.5 mph	-	N/A	Clear
5:53 AM	51.1 °F	48.0 °F	89%	30.23 in	10.0 mi	Calm	Calm	-	N/A	Clear
6:53 AM	54.0 °F	50.0 °F	86%	30.25 in	10.0 mi	Calm	Calm	-	N/A	Clear
7:53 AM	64.9 °F	51.1 °F	61%	30.26 in	10.0 mi	Variable	3.5 mph	-	N/A	Clear
8:53 AM	70.0 °F	51.1 °F	51%	30.27 in	10.0 mi	WNW	4.6 mph	-	N/A	Clear
9:53 AM	73.0 °F	51.1 °F	46%	30.28 in	10.0 mi	Variable	4.6 mph	-	N/A	Clear
10:53 AM	75.0 °F	48.9 °F	40%	30.28 in	10.0 mi	Calm	Calm	-	N/A	Clear
11:53 AM	78.1 °F	46.0 °F	32%	30.27 in	10.0 mi	West	5.8 mph	-	N/A	Clear
12:53 PM	79.0 °F	46.9 °F	32%	30.27 in	10.0 mi	WSW	6.9 mph	-	N/A	Clear
1:53 PM	80.1 °F	46.9 °F	31%	30.25 in	10.0 mi	North	-	-	N/A	Clear
2:53 PM	80.1 °F	46.9 °F	31%	30.24 in	10.0 mi	West	8.1 mph	16.1 mph	N/A	Clear

Appendix G. Field Notes, 8/23/16

Field Notes

GeoSonics

Date: 08-23-2016 Page 1 of 6

Client: A1 Asphalt Technician: James Marino

Client Contact: Tony (508) 889-2070 Weather/Temp./Wind: Clear / 51° / SW 4mph

Site Location: New Bedford, MA Time Requested On-Site: 5:00

Construction Activities Being Monitored: Noise Study

Time	Activities – Notes & Comments
05:00	ON Site at 1861 Shawmut Ave Weather @ set up = 51° Clear
	Wind = SW 4mph
	Crusher - Eagle
	Screener Crusher - MCO 512 RG (Green)
	Screener Service 03 344 (Red)
	Screener
	980 Loader - KOMATSU
	John Deer + 350 Excavator
5:19	Cal Checked Stable @ 114.1 db
5:20	Begin Ambient Sound Recording N 41° 40.731' W 70° 58.074
5:30	Begin Ambient Vib. Monitoring N 41° 40.724' W 70° 58.068
	- Constant humming noise coming from Airport 43-45 db
	- Traffic in Distance - 46 db
5:40	Crickets Constant - 41 db
5:53	Loud Bird 47 db
5:59	Car on Main Rd. - 44 db
6:04	Traffic on Main Road - 44 db
6:07	Bird - 46 db
6:15	Police Cruiser on Street - 48 db
6:16	Police Cruiser opposite way - 47 db

Recording Location	SSU	Cal Date	Buried	Spiked	Bagged
1861 Shawmut Ave					
- Larson Davis 824 SLM		Jun, 2015	—	—	—
- SSU 5241		04/19/16		✓	✓

Hours:	Total Miles	Field	Other	Travel	Total Hours
	225	5.25	X	4.5	9.75

Field Notes

GeoSonics

Date: 08-23-16 Page 2 of 6

Client: A1 Asphalt Technician: James Marino

Client Contact: Tony Weather/Temp./Wind: Clear/52°/ SW 4mph

Site Location: New Bedford, MA Time Requested On-Site: _____

Construction Activities Being Monitored: Noise Study

Time	Activities – Notes & Comments
6:18	Motorcycle on Main road - 46 db
6:24	Truck on Main road - 47 db
6:36	Pick up Truck blue chevy - entered quarry - 69 db
6:37	Pick up truck white Nissan - entered airport - 67 db
6:44	White Car on road - entered airport - 67 db
6:49	Tri Axle Dump truck (Grey) - 70 db
6:49	Pick up Truck - 67 db
6:52	White car - 66 db
6:53	House door slammed - 47 db
6:55	Traffic main road - 51 db
6:57	Single engine plane - 52 db
6:58	Ford Pick up - 69 db
6:59	Tri Axle Dump Truck (Blue) 71 db
7:02	Traffic - 61 db
7:03	Traffic - 64 db
7:04	Plane take off - 55 db
7:05	Traffic - 70 db
7:07	Traffic - 64
7:08	Traffic - 65
7:08	A1 Asphalt Truck (Red) - 65 db

Recording Location	SSU	Cal Date	Buried	Spiked	Bagged

Hours:	Total Miles	Field	Other	Travel	Total Hours

Field Notes

GeoSonics

Date: 08-23-2016 Page 3 of 6

Client: A1 Asphalt Company Technician: James Merino

Client Contact: Tony Weather/Temp./Wind: Clear/60°/NW 4mph

Site Location: New Bedford, MA Time Requested On-Site: _____

Construction Activities Being Monitored: Noise Study

Time	Activities – Notes & Comments Wind: NW 4mph
7:10	Plane - 51 dB
7:13	Traffic - 61 dB
7:15	Traffic - 66 dB
7:16	Back up Alarm
7:19	Plane Take off - 51 dB
7:19	Neighbor leaving in car - 49 dB
7:20	End Ambient Recording. Begin Active Recording. [Screener + loader Constant]
7:23	Construction Truck entering Airport - 71 dB. [John Deere 250 Excavator constant]
7:24	Garbage Truck / Music - 63 dB - 70 dB
7:25	Garbage Truck Pulling away 67 dB
7:27	Grey Truck Idling near gate (Hosed off) - 51 dB
7:28	Grey Truck Pulling Away w/ Load - 81 dB
7:29	Car entering airport - 66 dB
7:33	Blue Truck Idling at gate - 51 dB (being hosed off)
7:34	Blue Truck Pulling Away w/ load - 78 dB
7:43	Traffic - 61 dB
7:45	Traffic - 65 dB
7:47	Neighbor leaving - 64 dB
7:50	Back up Alarm - 47 dB
7:52	Traffic entering Airport - 66 dB

Recording Location	SSU	Cal Date	Buried	Spiked	Bagged

Hours:	Total Miles	Field	Other	Travel	Total Hours

Field Notes

GeoSonics

Date: 08/23/16 Page 4 of 6

Client: A1 Asphalt Technician: James Marino

Client Contact: Dony Weather/Temp./Wind: Clear / 65° / NW 3mph

Site Location: New Bedford, MA Time Requested On-Site: _____

Construction Activities Being Monitored: Noise Study

Time	Activities – Notes & Comments Wind: NW 3mph
7:57	Traffic - 64
8:01	Traffic - landscaping vehicle pulling trailer - 68 db [Elfs landscaping]
8:03	" - 70 db
8:10	Grey Truck - entering 78 db
8:12	Plane Take off - 67 db (Jet)
8:15	Traffic - 66 db
8:17	Plane - 63 db (Single engine)
8:20	Geese - 51 db
8:24	Tri axle dump truck (Red) - 74 db
8:24	Traffic - entering airport - 64 db
8:27	Tri axle dump truck (blue) - 71 db
8:30	Grey Truck idling at gate (hosed off) - 52 db
8:32	Car - 67 db
8:32	Grey Truck pulling away with load 81 db
8:33	Bobcat S250 Running -> Sweeping Gate Area - 52 db
8:35	Traffic - 64 db
8:36	~~Eagle Screener~~ being relocated within quarry - 45 db [Bobcat off]
8:37	Blue Truck Idling at Gate - 52 db being hosed off
8:40	Blue truck pulling away with load 77 db
8:40	Bobcat S250 Running -> Sweeping Gate Area 52 db

Recording Location	SSU	Cal Date	Buried	Spiked	Bagged

Hours:	Total Miles	Field	Other	Travel	Total Hours

Field Notes

GeoSonics

Date: 08-23-2016 Page 5 of 6

Client: A1 Asphalt Company Technician: James Murino

Client Contact: Tony Weather/Temp./Wind: Clear / 67° / SW 5mph

Site Location: New Bedford, MA Time Requested On-Site: _____

Construction Activities Being Monitored: Sound Study

Time	Activities – Notes & Comments
8:42	Red truck idling at gate being hosed off - 53 db
8:43	Grey truck entering - 74 db brakes squeak - 79 db
8:46	Red truck leaving w/ load - 79 db
8:50	Bobcat off
8:52	Blue Truck Entering 70 db
8:58	Red Trucks Entering 71 db
9:01	Grey Truck pulling away w/ load - 80 db
9:05	Eagle Crusher running (not crushing) N 41° 40.040' W 070 58.077
9:11	Stone loaded into eagle crusher
9:14	Begin Crushing. All equipment running except MCD 512 RB Trommel Screener 52 db
9:21	Blue truck entering - 69 db
9:23	Plane take off - 55 db
9:24	Plane over head - 62 db
9:31	Grey truck pulling out w/ load 79
9:38	last load went in Crusher. Crusher still running
9:35	Blue truck pulling out w/ load
9:40	End wide scan
9:40	End Sound Scan
9:42	Cal Test -> Stable @ 114.2 db

Recording Location	SSU	Cal Date	Buried	Spiked	Bagged

Hours:	Total Miles	Field	Other	Travel	Total Hours

Field Notes

GeoSonics

Date: 08/23/16 Page 6 of 6

Client: Al Asphalt Technician: James Marino

Client Contact: Tony Weather/Temp./Wind: Clear / 67° / NW 5mph

Site Location: New Bedford, MA Time Requested On-Site: -

Construction Activities Being Monitored: Noise Study

Time	Activities – Notes & Comments
9:55	Receive check from Tony
10:05	Contact A.M. prior to departure
10:15	Depart from Job site

Recording Location	SSU	Cal Date	Buried	Spiked	Bagged

Hours:	Total Miles	Field	Other	Travel	Total Hours

GeoSonics

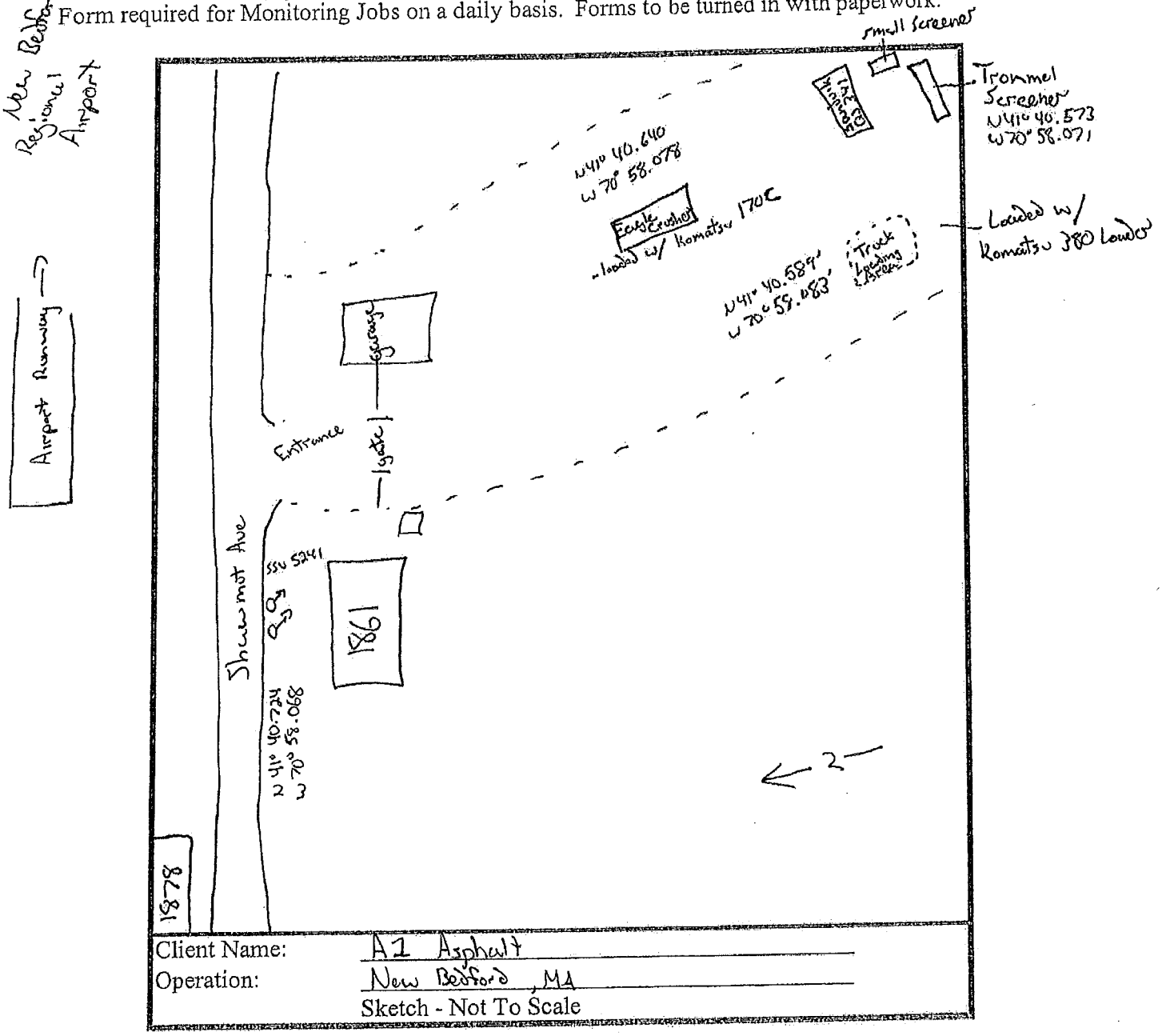
GeoSonics.com

SITE SKETCH FORM

Field Tech: JM

Date: 05-23-16

Form required for Monitoring Jobs on a daily basis. Forms to be turned in with paperwork.



Client Name: A1 Asphalt

Operation: New Bedford, MA

Sketch - Not To Scale

Site Sketch Form should illustrate (1) blast area, (2) North Arrow, (3) Seismograph Setups, (4) Roads/Significant Features, (5) Closest Structure of Concern, (6) Date, and (7) Field Tech Initials.

Cat 950 Loader

Eagle Crusher

N 41 40.640

W 70 58.078

Komatsu 270 Excavator

John Deere 250 Excavator

Komatsu 380 Loader

Loading Trucks

N 41° 40.589'

W 70° 58.083'

Sandvik QJ 341 Crusher

N 41 40.577

W 70 58.067

MCJ 512 RC Trommel Screener

N 41 40.573

W 70 58.071

Nordberg Screener

N 41° 40.575'

W 70 58.064'