

Agenda

Board of Commissioners of Spalding County

Special Called Meeting

May 15, 2017

10:00 AM

Room 108 Spalding County Annex Building

A. Call to Order

Invocation

Pledge to the Flag

B. Agenda Items

1. Discussion of consultants reports with regard to Full Blown Firearms compliance with Special Exception conditions and Home Occupation Regulations.
2. Zoning Attorney requests an Executive Session to discuss pending or threatened litigation.

C. Adjournment



SPALDING COUNTY BOARD OF COMMISSIONERS Consultant Reports

Requesting Agency

Community Development

Requested Action

Discussion of consultants reports with regard to Full Blown Firearms compliance with Special Exception conditions and Home Occupation Regulations.

Requirement for Board Action

Is this Item Goal Related?

No

Summary and Background

Fiscal Impact / Funding Source

STAFF RECOMMENDATION

N/A

ATTACHMENTS:

Description	Upload Date	Type
<input type="checkbox"/> Kramer One Report	5/9/2017	Backup Material
<input type="checkbox"/> Kramer One Brief Summary	5/11/2017	Backup Material
<input type="checkbox"/> Dick Peddicord & Company-Environmental Report	5/9/2017	Backup Material
<input type="checkbox"/> Environmental Report Summary	5/11/2017	Backup Material

**Shooting Range Evaluation
of
Full Blown Firearms
Shooting Range Facility
Williamson, GA**

19 April 2017

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Brief Summary

Shooting Range Evaluation Report dated 19 April 2017

by

Kramer One, Inc.

of

Full Blown Firearms

Shooting Range Facility

Williamson, GA

Galloway & Lyndall, LLP, council for Spalding County, has requested that Kramer One, Inc. supply a brief summary of our findings with regard to Full Blown Firearms and the conditions of the Conditional Use Permit.

Summary

It is our opinion that Full Blown Firearms meets the conditions of the Conditional Use Permit except for the following:

Item 2a. The range does not have a ballistic background that extends for a sufficient distance past the end of the range to ensure that rounds that miss the backstop do not pose a danger to any other person or property.

Item 2b. Backstops being utilized would not be consistent with NRA suggested guidelines and practices.

Item 2c. There is no side berm on the right side (north side) of the rifle range, which in our opinion would not be consistent with NRA suggested guidelines and practices.

General compliance issues:

Shooters are positioned closer than 10 yards to steel targets, which would not be consistent with NRA suggested guidelines and practices.

Shooters are positioned closer than 10 yards to an earth backstop, which would not be consistent with NRA suggested guidelines and practices.

The structure being utilized as a safety baffle on the rifle range would not be consistent with NRA suggested guidelines and practices.

The Range Operator may not be consistently following the SOP requiring RSO supervision of all shooting activity, which would not be consistent with NRA suggested guidelines and practices.

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APPENDIX A

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| Exhibit A1 | Approximate Location and Orientation of Ranges and Property Boundary |
| Exhibit A2 | Approximation of adjoining property currently being utilized as a main backstop (or safety barrier) by Full Blown Firearms |
| Exhibit A3 | Approximate northern limit of the line of fire from the firing line of the rifle range |
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1 Background and Scope of Work

Kramer One, Inc. has been retained by Spalding County, Georgia (hereafter referred to as “the County”), acting by and through its counsel Galloway & Lyndall, LLP, to conduct an independent physical inspection of Full Blown Firearms shooting range facility located at 475 North Rover Road, Spalding County, Williamson, Georgia 30292.

The purpose of the inspection is to determine compliance or non-compliance with suggested guidelines and practices published in the National Rifle Association (NRA) Range Source Book and any applicable guidelines of the National Shooting Sports Foundation (NSSF) related to shooting range safety.

In a letter from the County dated March 4, 2015 to Bradly D. and Lisa A. Ward owners and operators of Full Blown Firearms conditions for approval include, but are not limited to: “Compliance with industry, NSSF *or* (emphasis added) NRA, design standards for outdoor shooting ranges...”

NSSF is a trade association for the firearms industry in the United States. Although they will occasionally publish articles written by firearms and shooting range experts related to shooting range issues, this firm is unaware of any guidelines, practices, or design standards documents published by NSSF related to range safety that would be applicable or useful in this case.

It should be noted that the NRA Range Source Book states: “The NRA Range Source Book is NOT a code book or certification standard, but rather a publication listing general suggestions.”¹ The County is specifically requiring “compliance” with these general suggestions and that Kramer One, Inc. provide an expert opinion as to “compliance” or “non-compliance”. Therefore this evaluation will not include design standards or operational policy from any other organization or established by Kramer One, Inc. that do not appear in the NRA Range Source Book.

Conditions for approval also include “Compliance with EPA’s “Best Management Practices for Lead on Outdoor Shooting Ranges”. Although the NRA Range Source Book does include information on environmental lead issues, this report will be limited to issues regarding safety.

The conditions that this document will address are general compliance with the suggested standards and practices contained within the NRA Range Source Book regarding safety as well as addressing specific conditions of approval. Those specific conditions addressed are enumerated as follow:

¹ NRA Range Source Book, Article 2 Disclaimer 2.01.1

2a. “A ballistic background that extends for a sufficient distance past the end of the range to ensure that rounds that miss the backstop do not pose a danger to any other person or property.”

2b. “A backstop or berm constructed to industry standard.”

2c. “Side berms constructed to industry standards.”

2d. “Sufficient fencing to prevent indiscriminate access from:

- i. The ready line to the firing line; and
- ii. The area between the firing line and the backstop.”

2f. “A safety area where customers can handle their unloaded firearms unsupervised. The range must inform customers that no live ammunition is allowed in this area.

2h. “Shooting Range/Gun Safety Rules of the NRA shall be posted on this site.”

5. “That sufficient fencing be added to prevent indiscriminate access to the firing range.”

We will briefly discuss environmental sound as it applies to issues addressed in the NRA Range Source Book in relation to the condition of approval that requires: “Adequate sound abatement, either natural vegetation or artificial structures, to ensure the surrounding properties and residents are not unreasonably hindered from enjoying the use of those properties.”

On 31 March 2017, Jack Giordano, Shooting Range Safety & Health Specialist with Kramer One, Inc., conducted an onsite inspection of Full Blown Firearms shooting range facility. The opinions expressed in this document are based on observations of physical conditions and operating practices which existed on 31 March 2017. Opinions are also based on review of documents supplied to our firm by Mr. Bradley Ward, which include Standard Operating Procedures, Basic Handgun Course syllabus, Range/Training Facility Safety Procedures, and release of liability document. Information was also obtained from examination of aerial photographs, facility photographs, video clips of shooting activity and property boundary data supplied to our firm by Galloway & Lyndall. We also reviewed topographic data supplied to our firm by Spalding County Office of Community Development.

Additional information was obtained through interviewing Mr. Bradley Ward (Range Operator). Interviewing persons familiar with range operations affords us the opportunity to obtain information not typically available in printed documents and not obtainable through physical inspection.

2 General Discussion on Range Safety and Managing Risk

Managing risk in the shooting range industry is accomplished in the same manner as all other industries. It is a multi-component process requiring continuous monitoring and adjustment. Our industry is not unique when it comes to managing risk. Once a hazard associated with conducting a particular activity is identified we must determine how that hazard can be controlled in order for us to continue the activity while providing a reasonable expectation of safety.

The shooting range industry has adopted a method of managing risk which was carried over from the highway traffic safety industry. This proven method continues to be effective in enabling range operators to satisfy the reasonable expectation of safety for range participants and the public at large which the industry standard of care requires.²

This method is referred to as “The Four E’s of Range Safety” and is outlined in the National Rifle Association’s (NRA) Range Source Book.³ The NRA Range Source Book is recognized by industry professionals as the industry standard for shooting range planning, design and operation.

The Four E’s of Range Safety are **Evaluate – Engineer – Educate – Enforce**.

We cannot, and should not, assess the safety of any shooting range by engineering features alone. In actuality, a modern shooting range with the most advanced engineering features may not be safe if the operator fails to recognize the importance of adherence to the methods of managing risk. Conversely, the most primitive informal shooting range may be deemed safe by virtue of the range operator being very attentive to managing risk utilizing the Four E’s of Range Safety.

Therefore, it is important to recognize that there is no such thing as a “safe range”. Safety is dependent upon many factors, most importantly strict adherence to the principals of the Four E’s of Range Safety.

EVALUATE

The first step in managing risk on any shooting range is to evaluate. The range operator must evaluate the needs of the user and determine what type of range will be necessary to accommodate the planned activity. In many cases existing ranges must be evaluated to determine range limitations. In our industry it is not uncommon to see a single outdoor shooting range utilized for multiple shooting disciplines. This is not advisable and can lead to undesired consequences. We must evaluate planned shooting activities to assure an existing range can accommodate the activity safely. A very important part of the

² NRA Range Source Book 2012, Section I, Introduction, Article 1, 1.02.3

³ NRA Range Source Book 2012, Section I, Chapter 2, Safety Plan, 2.02.1

evaluation process is to consider shooter position in relation to the target and intended bullet impact area. Range operators must assure that every round of ammunition fired on a particular range will go from the firearm through the intended target and directly into the intended bullet impact area. As intuitive as it may seem, it is not uncommon for range operators to ignore this important step in managing risk. The vast majority of bullet escapement incidents our firm has investigated have been the result of range operators failing to properly evaluate their ranges and shooting activities.

ENGINEER

The next step is to engineer the range to accommodate the specific planned shooting activity. In many cases the range operator may be required to re-engineer an existing range as shooting requirements change, or as the use of property surrounding the range changes. It is also important to recognize that it is possible in most cases to re-engineer a particular shooting activity in order to maintain the reasonable expectation of safety. Engineering features a range owner/operator chooses to incorporate into his or her planned or existing facility (*see note below*) will be site specific, fact sensitive, and risk driven.⁴ It is not expected that every range would incorporate every suggested range engineering feature listed in the NRA Range Source Book.

Note: Although the NRA strongly suggests relying upon design professionals such as engineers and architects familiar with shooting range planning, design and construction to develop site plans, range specifications and engineering features, the fact is the vast majority of private and commercial outdoor shooting ranges in our country have been designed and constructed by the range owners and operators themselves.⁵

Once the range owner/operator has determined the type of shooting activity to be conducted decisions on the type of engineering features are determined by a variety of factors. Factors will include but may not be limited to range location, existing topographic features, type of firearms utilized, type of shooting activity, public use versus private use, recreational use versus training, number of shooters per day, passive supervision⁶ versus active supervision⁷, maintenance requirements, cost of construction, etc.

EDUCATE

In order for any range to operate in a manner that will afford a reasonable expectation of safety, range operators have a responsibility to educate everyone involved with the operation of the range as well as the individuals utilizing the range. As stated in the NRA

⁴ NRA Range Source Book 2012, Section I, Introduction, Article 2, 2.01.1

⁵ NRA Range Source Book 2012, Section I, Introduction, Article 2, 2.01.2

⁶ Passive supervision refers to self-supervision relying upon the knowledge, skill and attitude of the shooter.

⁷ Active supervision refers to actual range officer or other range official oversight of all range operations during live fire activities.

Range Source Book, education should be based on the premise that, “Few shooters know how to use a range properly.”⁸ As with all risk management issues in every industry EDUCATION is without question the most important part of maintaining safety.

The range operator must be knowledgeable as to the way the range must be utilized and must recognize the limitations of each range. This information must be conveyed to each person responsible for oversight of live fire range operations. In order to maintain range safety it is also very important to educate the users of the range. The range operator has a responsibility to assure range users have the knowledge, skill, and attitude necessary to utilize their firearm safely and utilize the range safely.

Education of users of the shooting range can be accomplished in a variety of ways. Formal training programs, range orientations, written questionnaires, testing, posted signs, printed range rules, personal interaction with range personnel are all ways range users are educated in our industry. It should be noted that although formal training programs are most effective, it is not typical in our industry for a commercial (non-membership, open to the public, pay to shoot) shooting range operator to require range users to complete a formal training program prior to being able to utilize a shooting range.

ENFORCE

Once range rules have been established, which would include firearm handling rules, live fire rules, operational rules and administrative rules, a method of assuring compliance by all range users must be established. The best method for enforcement of range safety rules is active supervision by means of Range Safety Officers present during all hours of operation. However in our industry it is more common to see the passive supervision method utilized as a means to enforce rules and maintain safety both on indoor and outdoor private and commercial ranges.

Violation of Range Rules should carry strict consequences. Range users should be made familiar with the consequences of violation of established rules.

⁸ NRA Range Source Book 2012, Section I, Chapter 2, Safety Plan, Article 2, 2.04.4

3 Existing Conditions, Conditions of Approval and Comparison to Suggested Guidelines and Practices contained in the NRA Range Source Book

This facility consists of a 100 yard rifle range, a pistol range, and an area occasionally utilized for aerial target shotgun shooting. The facility is referred to as a Range/Training Facility by the Range Operator. In this section only the 100 yard rifle range and the pistol range will be discussed. This is due to the fact that the features and requirements listed in the conditions of approval generally would not apply to an informal aerial target shotgun shooting area. The shotgun shooting area is described below, but will be discussed further in Section 4 of this document.

The rifle range is utilized from a fixed firing line with fixed target lines located at 25, 50, and 100 yards. There are earth mound backstops located behind each target line. There is an earth side berm on the left side (south) and a wood fence on the right side (north) of this range.

The pistol range is located in a flat open area and utilizes one fixed target line. According to the Range Operator, shooting is conducted from 25, 15, 7, and 3 yards. There is an earth mound backstop behind the fixed target line. The pistol range has earth side berms on both sides and an earth berm in the rear of the range.

Informal aerial target shotgun shooting is occasionally conducted in a clearing approximately 115 feet wide and 100 feet deep. The property boundary is approximately 300 yards (in the direction of fire) from the area utilized as a firing station when shotgun shooting is conducted.

Exhibit A1 in Appendix A depicts the approximate location of the rifle range, pistol range and informal shotgun area on the property as well as the direction of fire.

As stated, the conditions that this document will address are general compliance with the suggested guidelines and practices contained within the NRA Range Source Book regarding safety as well as addressing specific conditions of approval. Each of the conditions of approval will be addressed individually to avoid confusion. General safety issues that may be in conflict with suggested guidelines and practices published in the NRA Range Source Book will also be discussed.

Conditions of Approval

2. “A ballistic background that extends for a sufficient distance past the end of the range to ensure that rounds that miss the backstop do not pose a danger to any other person or property.”

The NRA Range Source Book does not suggest that a “ballistic background” is necessary on any shooting range unless the range lacks a backstop, bullet trap or other device intended to stop bullets and prevent them from leaving the property owned or controlled

by the range operator. The NRA Range Source Book suggests that it is the responsibility of the range operator to assure all bullets fired on a range remain on range property. This is most commonly accomplished through engineering and administrative controls, rather than providing a “ballistic background”.

With regard to projectile containment, the NRA Range Source Book States: *“Techniques for limiting projectiles to range property include: backstops, sideberms, and sidewalls, baffles, target placement, mountains or rolling hills, sloping floor of the range, and utilizing the range for its intended purpose.”*⁹

In the case of Full Blown Firearms, the Range Operator does not own or control sufficient property to provide a ballistic background that extends for a sufficient distance past the end of the range to ensure that rounds that miss the backstop do not pose a danger to any other person or property. However, it should be noted that most ranges in the United States do not have sufficient property to provide such a “ballistic background”.

2b. “A backstop or berm constructed to industry standards”

As stated, the rifle range accommodates rifle shooting from a fixed firing line at distances of 25, 50, and 100 yards. There are what would be considered intermediate backstops located at approximately 25, 50, and 100 yards from the firing line. Photo #1, which was taken from the firing line of the rifle range, shows the location of the three intermediate backstops.¹⁰

The height of the intermediate backstops located at 25 and 50 yards are approximately 7 feet high. The intermediate backstop located at 100 yards is approximately 8 feet high. With regard to backstops the NRA Range Source Book states: *“The recommended height for a backstop is 20 feet high, except where existing terrain features or the amount of land owned or controlled in the down range area may preclude, alter or possibly even eliminate this requirement, especially in hilly or mountainous areas. Terrain and topographical features should always be considered when designing a range. This is especially true with a 50 foot range, often used by youth shooting sports programs, where 10 feet is commonly recognized as the appropriate height.”*¹¹

⁹ NRA Range Source Book, 2012, Section I Chapter 1, General Information, Article 3 Outdoor Ranges, 3.02.1.1.

¹⁰ NRA Range Source Book, Section I, Chapter 1, General Information, Article 3 Outdoor Ranges, 3.04.5.2, Intermediate Backstops

¹¹ NRA Range Source Book, Section I, Chapter 1, General Information, Article 3 Outdoor Ranges, 3.04.5.1(c), Main Backstop (Height)

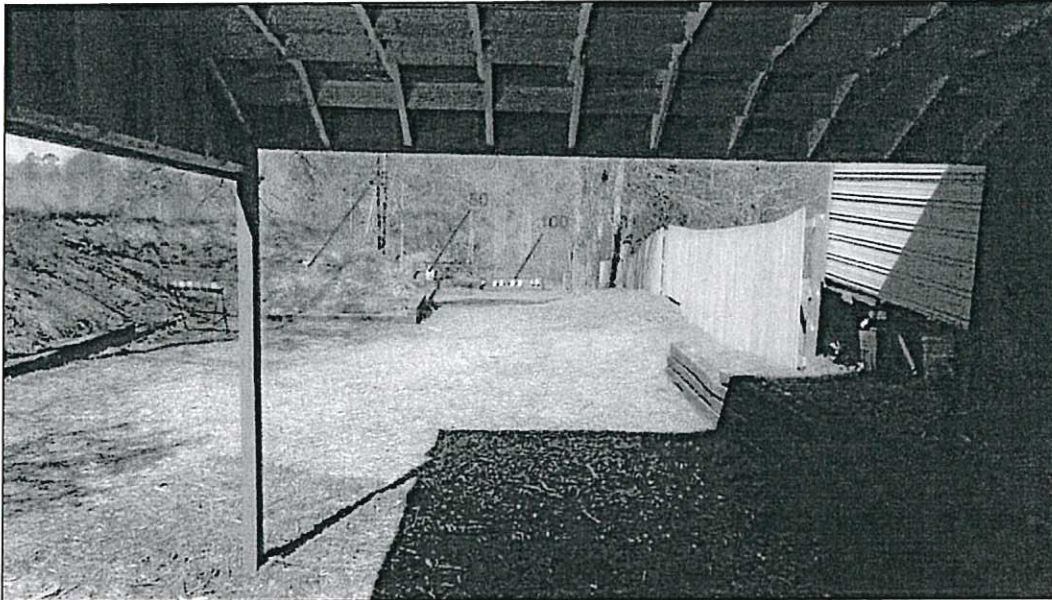


Photo #1 Intermediate backstops on the rifle range.

In our opinion, the Range Operator is relying on an area of high natural terrain located in the direction of fire to serve as the main backstop or safety barrier. Photo #2 depicts this high terrain feature. Review of County Tax Map indicates this area encompasses a portion of two separate plots of land along the Range Operators western property line. Exhibit A2 in Appendix A identifies the approximate location of the area being discussed.

This area of high terrain rises to an elevation of approximately 36 feet above the elevation of the firing line of the rifle range.¹² To our knowledge, the Range Operator does not own or control this area of high natural terrain. Therefore, it would not be consistent with NRA suggested guidelines and practices to rely upon this terrain feature as a main backstop or safety barrier. If the Range Operator had consent of the adjacent property owners to utilize this terrain as a backstop, and the ability to restrict access to the area in question during hours of range operation, it would be considered consistent with NRA suggested guidelines and practices.

¹² Based on available satellite data and topographical data supplied by the County.



Photo #2 Natural high terrain feature downrange of the rifle range.

During the site inspection, the Range Operator stated he was planning to increase the height of each of the three backstops on the rifle range to 21 feet. If this were accomplished the area of natural high terrain would no longer be considered the main backstop. Once raised, each of the existing intermediate backstops would be considered main backstops and would be consistent with NRA suggested guidelines.

It should be noted that NRA guidelines suggest that the width of a backstop extend a minimum of 5 feet (measured from the top 20 foot height portion) beyond the end targets on both sides. The exception would be if the range incorporated "high side berms, walls, or other barriers".¹³ The NRA Range Source Book does not define "high side berms". Side berms, side walls, or other side barriers intended to protect persons or property to the right and left of a range are suggested to be 8 feet high.¹⁴

The pistol range backstop varies in height from approximately 10 feet high on the left (south side) to approximately 20 feet high on the right (north side). Photo #3 is an overview of the pistol range.

This pistol range is utilized for a variety of pistol shooting activities. The Range Operator stated it is used for basic and advanced civilian training as well as law enforcement training and qualification shooting.

¹³ NRA Range Source Book, Section II, Chapter 2, Outdoor Range Design Criteria, Article 2 Range Facility Components, 2.04 Backstop, 2.04.1.1

¹⁴ NRA Range Source Book, Section II, Chapter 2, Outdoor Range Design Criteria, Article 2 Range Facility Components, 2.05 Side Berms, Walls, 2.05.1.4

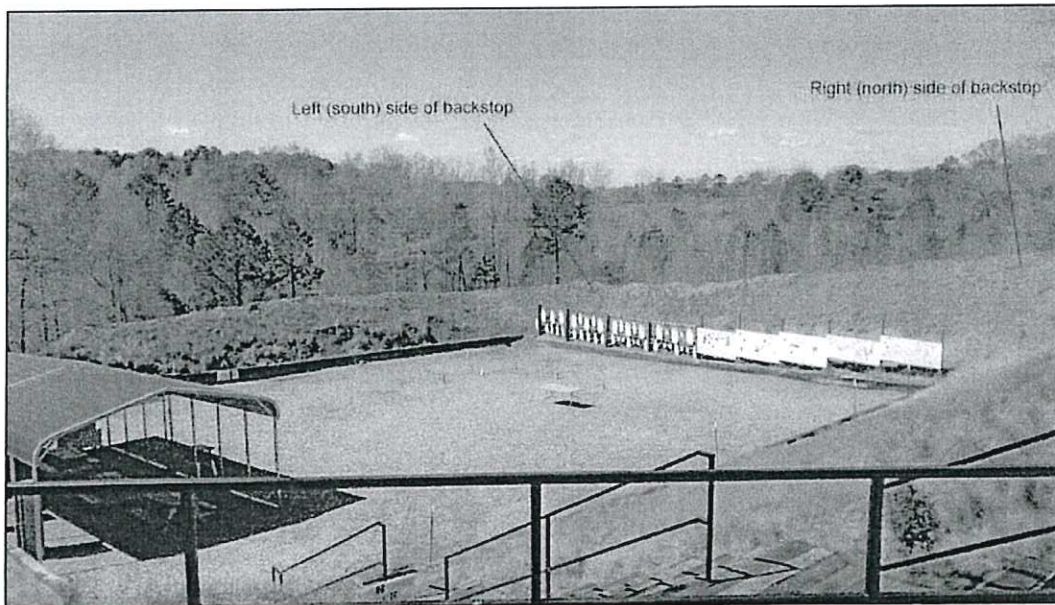


Photo #3 Overview of the pistol range including the backstop.

It is also utilized for general recreational pistol shooting. NRA Range Source Book suggests a backstop height of 20 feet on Bullseye Pistol Ranges, Law Enforcement Ranges, and Action Pistol Ranges. The types of pistol shooting activities being conducted on this range can fall within all three of these categories therefore the suggested height of the backstop would be 20 feet.¹⁵ A large portion of the backstop on this range would not be consistent with suggested guidelines in the NRA Range Source Book. During the site visit, the Range Operator stated he was in the process of increasing the height of the low portion (left) of the pistol range backstop to be consistent with the high portion (right) which appears to be approximately 20 feet high. If this were accomplished the backstop would be consistent with the suggested guideline in the NRA Range Source Book.

2c. "Side berms constructed to industry standards"

With regard to side berms, the NRA Range Source Book states: "*Side berms are necessary near residential areas* (emphasis added) *or in areas not large enough (except hilly or mountainous areas).* Side berms are built similar to a backstop, but may be replaced by walls, side baffles or other artificial barriers to conserve space. Earthen side berms should be 8 feet high, but this also depends upon the width of the range and

¹⁵ NRA Range Source Book, Section I Chapter 1, General Information, Article 3 Outdoor Ranges, 3.04 Range Layout and Considerations, 3.04.5.1(c)
NRA Range Source Book, Section II Chapter 8, Outdoor Bullseye Pistol, 3.02 Dimensions and Materials, 3.02.10.1
NRA Range Source Book, Section II Chapter 18, Outdoor Law Enforcement, Range Dimensions, 3.02.3.3.2
NRA Range Source Book, Section II Chapter 9, Outdoor Action Pistol, 3.01 Technical Specifications, 3.01.3.4.1 and Section IV Drawing C-1

whether the surrounding areas are ever occupied by people. Therefore, while 8 feet-high side berms are recommended for ranges adjacent to other inhabited areas, particular geographic areas may also require the installation of other safety barriers to supplement side berms. Range planners must consider all of the external factors concerning safety and sound as they relate to the surrounding area."¹⁶

The NRA Range Source Book also states: "Side berms, walls or barriers are suggested to be 8 feet high. Side berms may be used on ranges which extent to 1,000 yards but are expensive. Such berms are used to allow shooters and range personnel to shoot on different firing lines on adjacent ranges"¹⁷

The NRA Range Source Book also states: "Side berms may be needed for ranges where adjacent areas are in use."¹⁸

The NRA Range Source Book also states: "The height of side protection (side berms) is determined by the extent the adjacent areas must be protected and by the width of the range, the firing line and targets above the horizontal plane. Recommended height for side berms is 8 feet, but depending upon adjacent land use and topography, higher side berms may be desirable. Side berms may be in the form of earthen embankments, concrete walls or wooden crib/earth embankment combinations..."¹⁹

There is an earth side berm on the left side (south side) of the rifle range which extends from the firing line to the 100 yard intermediate backstop. There is a stone wall on the right side of the firing line of the rifle range which is a portion of the foundation of the adjacent building. There is also a wood fence which runs from the end of the building, down range toward the 100 yard intermediate backstop. There is no earth side berm (or other ballistic barrier) on the right side (north side) of the rifle range. Due to the fact that the firing line is located directly next to a building, the line of fire in a northerly direction (to the right) would be limited. The structure directly to the right of the rifle range firing line is seen in Photo #4.

¹⁶ NRA Range Source Book, Section II Chapter 8, Outdoor Bullseye Pistol, Article 3 Technical Specifications, 3.02 Dimensions and Materials, 3.02.12.2 Side Berms, 3.02.12.2.1

¹⁷ NRA Range Source Book, Section II Chapter 2, Outdoor Range Design Criteria, 2.05 Side Berms, Walls, 2.05.1.4

¹⁸ NRA Range Source Book, Section II Chapter 7, Outdoor Highpower Rifle, Article 3 Technical Specifications, 3.01.7.2 Side Berms, 3.01.7.2.1

¹⁹ NRA Range Source Book, Section II Chapter 7, Outdoor Highpower Rifle, Article 3 Technical Specifications, 3.01 Technical Considerations, 3.02.4.2 Side Berms, 3-02-4-2-1

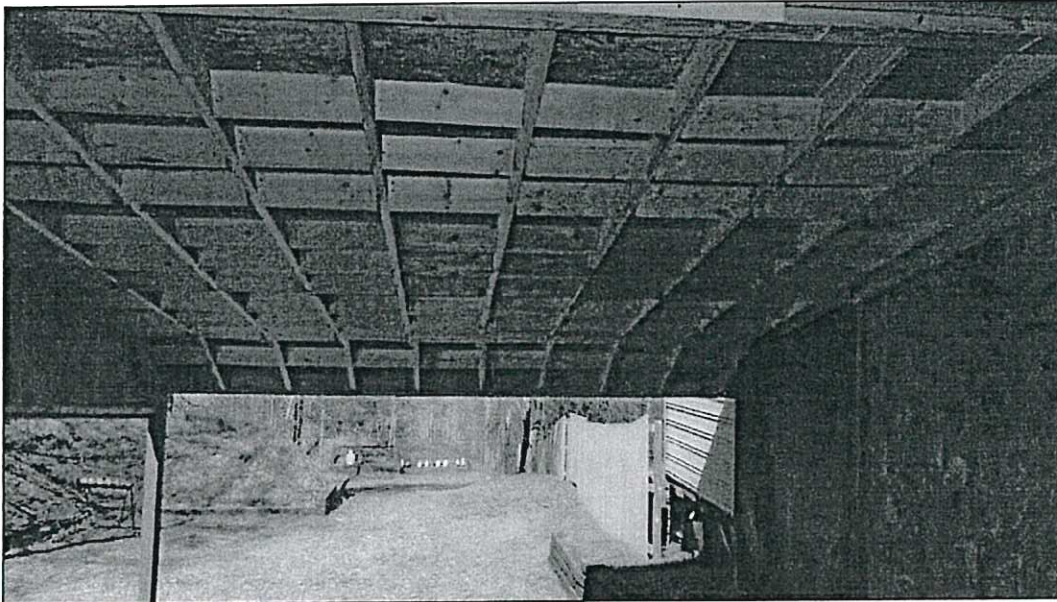


Photo #4 Wall of building to the right of the firing line of the rifle range.

Exhibit A3 in Appendix A is a diagram of an approximation of the limited line of fire to the north. From the firing line of the rifle range it is unlikely an unintentional shot would cross the northern property line. However, the Range Operator has stated that occasionally shooting is conducted by law enforcement agencies from areas other than the firing line on the rifle range close to the intermediate backstops. The rifle range is located approximately 75 yards from the property line to the north. In order to be consistent with NRA suggested guidelines, one would have to consider the surrounding (especially to the north) property use. This shooting range facility is located in a residential area. The property directly to the north and south are residential properties. Although it is ultimately the decision of the range designer whether to include side berms on any range, because of the residential adjacency it is our opinion that having side berms on both the north and south sides of the rifle range would be considered consistent with the suggested guidelines of the NRA Range Source Book.

The pistol range has earth side berms on both the right side (north side) and the left side (south side). The pistol range also has a rear or back berm (east side). According to the Range Operator this berm was constructed to mitigate sound.

The existing earth side berms on the south side (left) on the rifle range and the side berms on the pistol range appear consistent with the suggested guidelines of the NRA Range Source Book.

2d. "Sufficient fencing to prevent indiscriminate access from: i. The ready line to the firing line; and ii. The area between the firing line and the backstop."

The NRA Range Source Book does not suggest, address, or mention fencing to prevent indiscriminate access from the ready line to the firing line or from the firing line to the

backstop. The NRA Range Source Book does address separation of “spectator areas” and “normal range operations”.

With regard to this issue the NRA Range Source Book states: *“Spectator areas or seating should also be arranged so as not to interfere with normal range operations. This is usually accomplished by adding a 10 yard-to-15 yard buffer area behind the ready line area and set off behind a temporary fence (rope or ribbon). The size and shape of this area will vary according to the event or amount of activity.”*²⁰ However in our opinion, this suggestion would only apply to high power rifle ranges while being utilized for competition events. There is no mention of utilizing any type of fencing to prevent indiscriminate access from the ready line to the firing line or from the firing line to the backstop on a Bullseye Pistol Range, Action Pistol Range or Law Enforcement Range.

2e. “Adequate sound abatement, either natural vegetation or artificial structures, to ensure the surrounding properties and residents are not unreasonably hindered from enjoying the use of those properties.”

With regard to sound complaints, the NRA Range Source Book states: *“No set distance eliminates noise complaints entirely. However, studies conducted for the Environmental Protection Agency (EPA) indicate noise complaints are likely when inhabited dwellings exist less than one half (1/2) mile from the facility. Beyond that distance, the chance of generating noise complaints is reduced...”*²¹

Examination of Exhibit A4 in Appendix A, reveals there are a number of residences within the ½ mile radius of the range facility. However, it is important to note that most of the residences within this radius are behind (east) of the range facility.

The Range Operator has constructed a wood overhead roof structure on the rifle range forward of the firing line and firing line cover (see Photo #4). This structure appears to have been constructed to serve two purposes. It obscures the shooters view of the area above the 100 yard intermediate backstop, and it serves as a sound baffle. The NRA Range Source Book defines a baffle as follows: *“Barriers designed to contain, deflect, or fragment bullets, may be used to limit the height or direction the muzzle end of a firearm can traverse. May be designed to reduce, redirect, or suppress sound waves. Baffles are placed either overhead, alongside or at ground level and can be used to restrict barrel movement or interrupt errant or off-the-target shots.”*²²

With regard to sound abatement, the NRA Range Source Book states: *“What are some practical examples of noise control on outdoor ranges? The most common type of sound abatement used on shooting ranges is barriers. Since a firing line cover provides shelter for the shooters, it is a common starting point in noise control. Across the country, cover*

²⁰ NRA Range Source Book, Section II Chapter 7, Outdoor Highpower Rifle, Article 3 Technical Specifications, 3.01.4.4 Open Space, 3.01.4.4.3

²¹ NRA Range Source Book, Section I Chapter 1, General Information, Article 3 Outdoor Ranges, 3.02 Site Selection, 3.02.2 Sound Transmission, 3.02.2.1

²² NRA Range Source Book, Section I, Article 4 Terminology, 4.02 Definitions, Baffles

designs vary greatly. They range in height from 7 to 10 feet. Some have flat roofs, some slanted, and others gabled. Many are made with 4x4 posts, while others use metal poles or I-beams. Roofing materials range from corrugated metal to a full wooden-shingle construction. Corrugated metal roofs have a limited number of attachment points and are very resonant. This means that the material is likely to ring when excited, either by a stone hitting it or a pressure pulse from discharging firearms (e.g. a giant drum). A more damped firing line cover made from typical roof material (e.g. wood and shingles) is desirable.”²³

This structure is made of typical roofing materials and would be considered consistent with NRA guidelines for sound abatement application. The baffle structure, overhead firing line cover and wall behind the firing line of the rifle range would all be considered consistent with suggested guidelines in the NRA Range Source Book regarding sound abatement.

During the site visit the Range Operator stated he constructed an earth berm behind the ready area of the pistol range (see Photo #5) to abate sound to the east. With regard to utilizing berms as sound abatement, the NRA Range Source Book states: *To eliminate the direct source-to-receiver path of noise, construct a barrier, berm or wall...*²⁴ It is our opinion that the construction of this berm as a sound abatement device is consistent with suggested guidelines in the NRA Range Source Book.



Photo #5 Sound abatement berm behind the ready area on the pistol range.

²³ NRA Range Source Book, Section I Chapter 6 Sound Abatement, Article 3 Concepts and Methodology, 3.04 Selection of Sound Abatement Applications, 3.04.2

²⁴ NRA Range Source Book, NRA Range Source Book, Section I Chapter 6 Sound Abatement, Article 3 Concepts and Methodology, 3.04 Selection of Sound Abatement Applications, 3.04.3

2f. “A safety area where customers can handle their unloaded firearms unsupervised. The range must inform customers that no live ammunition is allowed in this area.”

The NRA Range Source Book does not suggest, address, or mention safety areas where shooters can handle unloaded firearms unsupervised. However, the Range Operator has designated two “Safety Areas”, one on the pistol range and one near the entrance to the facility, where customers can unload their firearms and handle their unloaded firearms unsupervised (see Photo’s #6 and #7).

It is important to note that this requirement, which has been imposed by the County, is in direct conflict with typical shooting range safety practices. These “Safety Areas” would be considered unloading stations and although common, are not addressed in the NRA Range Source Book. They provide a safe location to unload loaded firearms that were carried for personal defense loaded to the facility. They may also be used to reload firearms, which will be carried for personal defense prior to leaving the facility. In both cases, live ammunition will be present. Typically the only area firearms should be handled unsupervised when on a shooting range (loaded or unloaded) is on the firing line. The only other situation where handling unloaded firearms unsupervised on a shooting range would be an acceptable practice would be at a gun cleaning station. Live ammunition should be prohibited at a gun cleaning station. However, commercial shooting ranges typically do not have gun cleaning stations.



Photo #6 Safety area located near the entrance to the facility.



Photo #7 Safety area located in the rear of the pistol range.

2h. "Shooting Range/Gun Safety Rules of the NRA shall be posted on site."

There are Gun Safety Rules posted on the rifle range and the pistol range. The rules posted are consistent with suggested guidelines in the NRA Range Source Book.

5. "That sufficient fencing be added to prevent indiscriminate access to the firing range."

The NRA Range Source Book does not suggest that the use of fencing is the only way to prevent indiscriminate access to a shooting range area. With regard to range control and devices utilized to restrict access to a shooting range, the NRA Range Source Book states: *"Safety devices control the physical use of a range and are usually restrictive in nature. They include warning lights on traphouses, and red flags (see highpower rule 6.9) or barriers to warn that someone is down range. Safety flags and signs posted at strategic points around the perimeter of the range will alert would-be trespassers, and warn intruders that going beyond a given boundary constitutes trespass and may be hazardous..."*²⁵

Currently the entire property boundary of the range facility is not fenced. However, there are signs posted at strategic points around the property boundary to warn that firearms are in use and not to enter (see Photos #8 and #9). The signs vary from NRA Official Range Signs (as seen in Photo #8) to "Posted No Trespassing" signs (as seen in Photo #9).

²⁵ NRA Range Source Book, Section I Chapter 1 General Information, Article 3 Outdoor Ranges, 3.05 Range Control, 3.05.3 Control Devices, 3.05.3.1

Although the property boundary is not fenced, it should be noted that indiscriminate access to the direct fire zone of the pistol range would, in our opinion, not be possible due to the high berms and gates surrounding this range. The rifle range also has a berm on the left side (south) and is partially fenced on the right side (north). These features, together with the posted signs would further limit the possibility of indiscriminate access to the direct fire zone of the rifle range. The direct fire zone is defined as: *"The area on a shooting range established according to the relationship of the shooting position and the target position. Typically set up on a one-to-one basis (one target to each firing point)."*²⁶

The various methods of range control to prevent indiscriminate access to the range areas being utilized at this facility are consistent with suggested guidelines in the NRA Range Source Book.



Photo #8 Gate and sign limiting access to the direct fire zone of the rifle range.

²⁶ NRA Range Source Book, Section I Introduction, Article 4 Terminology, 4.02 Definitions, Direct Fire Zone.



Photo #9 Posted No Trespassing sign on a tree located on the north side of the rifle range downrange of the 100 yard intermediate backstop.

4 Aerial Target Shotgun Shooting Area, Existing Conditions, and Comparison to Suggested Guidelines and Practices contained in the NRA Range Source Book

The Range Operator occasionally uses an open area on the north side of the property for aerial target shotgun shooting. (See Exhibit A1 in Appendix A) This area would not be considered a formal shotgun range. There are no permanent shooting stations, trap or skeet houses, or target machines. According to the Range Operator this area is only used for aerial target shotgun shooting approximately eight times per year. This area is not available for public use and is only utilized during special events.

Typically shotgun ranges are designed and constructed in a specific manner to accommodate specific types of competitive shotgun shooting activities. In these cases there are specific shooting stations, target areas, direct fire zones, and shotfall zones. Shotfall zones are defined as the area in which expended shot will fall after being shot at a target. The shotfall zone includes the area where shot is expected to fall and also includes a safety area beyond the maximum range of the ammunition being used which compensates for air density and wind. In general, the suggested shotfall zone is 300 yards in distance. However the horizontal angle will vary depending on the angles of fire. The 300 yard shotfall zone is based on the use of 7 ½ size shot (or smaller), which is the maximum size shot typically utilized for aerial target shotgun shooting.

With regard to shotfall zones the NRA Range Source Book states: *On shotgun ranges, shotfall zones are determined by the largest size shot fired on the facility. Additional yardage must be included to compensate for displacement of shot by adverse wind conditions, and elevations above sea level. For skeet, a nominal angle of 180 degrees from station eight is used. For trap 90 to 100 degrees are allowed for the wider target flights. Shot sizes for trap and skeet facilities are usually restricted to No. 7 ½ or smaller, except on a patterning range. Shotfall zones extend 300 yards for most shotgun ranges, but can be reduced to the maximum distance that shot travels by testing at the site. Should this method be utilized, then the range owner or operator is responsible to see that the range rules specifying specific shot sizes are adhered to. It is the range owner's responsibility to verify the test results. At some point the data may be challenged in court. At sea level No. 7 ½ shot does not travel 300 yards, but at higher elevations the density of the air is less and shot will travel greater distances.*²⁷

As with rifle or pistol ranges, it is the responsibility of the range operator to assure all projectiles fired on the range, remain on range property. The purpose of establishing a shotfall zone is to assure shot remains on range property.

Exhibit A5 depicts the expected shotfall zone for the area in question. It should be noted that the angle depicted is random. The actual angle would be dependent upon target trajectory and shooter location and orientation. The 300 yard shotfall zone extends

²⁷ NRA Range Source Book, Section I Chapter 1 General Information, Article 3 Outdoor Ranges, 3.02 Site Selection, 3.02.1.3

slightly (approximately 25 yards) over the western property line. However, an approximation of the actual distance No. 7 ½ shot size will travel is also depicted and falls within the property boundary. This distance was determined by data contained in the NRA Range Source Book, Section I Chapter I General Information, Chart C, Journeés' Formula. According to the chart No. 7 ½ shot will travel 238 yards at sea level and 270 yards at 5000 feet above sea level. This shotgun shooting area is approximately 900 feet above sea level. The expected shot boundary depicted in Exhibit A5 is located approximately 275 yards from the shooting station.

The Range Operator utilizes shotgun swing stops to limit shooting angle. (see Photo #10) As long as these devices are properly positioned when utilized, the Range Operator should be able to contain shot to range property.



Photo #10 Shotgun swing stops in storage.

With regard to restricting shotfall zone by utilizing shotgun swing stops, the NRA Range Source Book states: *"...Depending upon each field layout, the angles encompassing the shotfall zone may be restricted further by use of shotgun swing stops, especially where space is limited."*²⁸

It is our opinion that as long as the Range Operator restricts the ammunition used to No. 7 ½ shot or smaller when conducting aerial target shotgun shooting in the area in question, and shotgun swing stops are utilized to restrict the shotfall zone to range property, the use of this area for informal aerial target shotgun shooting would be consistent with suggested guidelines in the NRA Range Source Book.

²⁸ Section II Chapter 11 Competition Shotgun, Article 3 Technical Specifications, 3.03 Sporting Clays, 3.03.2.1

5 General Safety Issues in Conflict with Suggested Guidelines and Practices contained in the NRA Range Source Book

During the site visit a general safety issue was noted. This is a shooter/range occupant safety issue and has no bearing on the safety of the surrounding community.

It was noted that there are two types of target frame structures on the pistol range, one structure which holds steel hanging targets (left side) and one structure which is designed to attach paper targets (right side). Both structures are located directly in front of the backstop. These target structures can be seen in Photo #3. The Range Operator stated that shooting on the left side of the range (at steel targets) is permitted no closer than 7 yards (21 feet) and shooting on the right side of the range (at paper targets) is permitted at 3 yards (9 feet). As stated prior in this document, this range is utilized for multiple shooting disciplines including law enforcement training and qualification.

The NRA Range Source Book suggests that shooters and range officers be positioned no closer than 10 yards (30 feet) from metallic targets. This is to prevent injury from bullet bounce back or backsplatter. Bullet bounce back is defined as an intact bullet or large fragment thereof bouncing back toward the shooter after striking a hard target. At close distances these bullets or bullet fragments can cause serious injury. Bullet backsplatter is a similar condition with smaller bullet fragments deflecting back toward the shooter which can also cause serious injury.

With regard to metallic targets the NRA Range Source Book states: “...*Metallic targets must be made according to the specifications in Chapter 10, Outdoor Silhouette, and firing distances must not be less than 10 yards*”.²⁹

The NRA Range Source Book also suggests when shooters are positioned close to targets as in law enforcement type training, that targets be positioned no closer than 10 yards from the backstop. Conducting shooting activities closer than 10 yards to an earth backstop can also result in serious injury from bullet bounce back. In this case shooting is being conducted within approximately 4 yards of the backstop while shooting on the right side of the pistol range.

With regard to positioning shooters closer than 10 yards to a backstop, the NRA Range Source Book states: “*Conduct no live fire activities closer than 10 yards from a backstop, unless the backstop is designed to prevent backsplatter or is modified with backsplatter shields, such as curtains.*”³⁰

²⁹ NRA Range Source Book, Section II Chapter 18 Outdoor Law Enforcement, Article 3 Technical Specifications, 3.02 Range Dimensions, 3.02.1

³⁰ NRA Range Source Book, Section II Chapter 1 General Outdoor Range Information, Article 2 Safety and Personal Health, 2.01 General Outdoor Safety, 2.01.3d

6 Administrative/Additional Engineering Controls and Comparison to Suggested Guidelines and Practices contained in the NRA Range Source Book

As stated in Section 2 of this document how a facility is utilized has a significant impact on the safety of that facility. As part of this evaluation shooting range rules and standard operating procedures were reviewed. The standard operating procedure and rules and regulations of Full Blown Firearms appear consistent with suggested guidelines and practices in the NRA Range Source Book.

However, a range control issue was observed during this evaluation, which should be noted due to its importance and impact on safety in general and the safety of the surrounding community.

In Full Blown Firearms Standard Operating Procedures document (SOP), page 4, in the section entitled Range Safety Officers, paragraph 2 states: *"Range Safety Officers (RSO) are required as part of open shooting at the outdoor Range/Training Facility. A designated RSO will be in charge of the firing line(s) and Range/Training Facility at all times"*. During the site evaluation Mr. Ward was asked if RSO's were present during all shooting activities. His response was, "they're supposed to be". This response leads us to believe there may be times when shooting is occurring without the supervision of an RSO, which would be a direct violation of the SOP.

We also observed evidence of uncontrolled shooting on the rifle range, which could have resulted in direct fire bullet escapement to the west of the range property boundary. A direct fire bullet may leave the range when a rifle or pistol bullet is fired at an angle such that it passes over or to the side of the backstop. These types of incidents represent the greatest potential for property damage or injury because the projectile retains the greatest possible energy.

It is evident that trees forward of the rifle range firing line have been shot. Evidence of this condition can be seen in Photo #11. These bullet impacts are approximately 10 to 15 feet above ground level. Bullets impacting trees in this area would have required significant muzzle elevation. Firing at trees with the muzzle elevated to this angle would result in bullets passing over all the intermediate backstops and possibly leaving range property. It is our opinion that this should not have occurred if there was a RSO on duty during all firing activities. It should be noted that there are only three firing points on the rifle range.

We can assume these bullet impacts occurred prior to the Range Operator constructing the baffle, which extends forward of the rifle range firing line. This baffle can be seen in Photo #4. The baffle, which appears newly constructed, is effective in limiting the view of shooters on the firing line of the rifle range to target areas only, as well as serving as a sound absorbing device, but the baffle would not meet the NRA's definition of a safety baffle.

The use of safety baffling can effectively prevent direct fire projectiles from leaving a shooting facility property. Safety baffling is constructed of overhead or side barriers designed to prevent projectiles from traveling into an undesired area or direction.



Photo #11 Bullet impacts in a tree forward of the rifle range firing line.

With regard to safety baffles, the NRA Range Source Book states: *“Overhead, ground and side baffles are barriers used to keep errant bullets confined to a restricted area of the range property. These devices are often made necessary due to encroachment or the building of residential areas, commercial parks and other land development inside or very near the range. Adding these barriers is often expensive, but properly installed they can reduce acreage requirements. Baffling ranges over 300 meters in length is not practical.”*³¹

The NRA Range Source Book definition of a safety baffle is: *“Vertical or sloping barriers designed to prevent a projectile from traveling into an undesired area or direction. Most often used to prevent bullets from leaving a confined area (the range proper). May also be constructed to limit movement of the muzzle of the firearm.”*³²

Due to the design and construction materials utilized, this structure, which is a typical wood frame roof structure, would not be sufficient to stop bullets being fired from the firing line of the rifle range from leaving range property. There are no ammunition restrictions on the rifle range. All rifle ammunition up to and including .50 BMG is permitted. Therefore utilizing this device as a safety baffle would not be consistent with suggested guidelines in the NRA Range Source Book.

³¹ NRA Range Source Book, Section II Chapter 7 Outdoor Highpower Rifle, Article 3 Technical Specifications, 3.01 Technical Considerations, 3.01.7.3.1

³² NRA Range Source Book, Section I Introduction, Article 4 Terminology, 4.02 Definitions, Safety Baffles

An unusual statement in the Full Blown Firearms SOP document leads us to believe this baffle structure is being utilized as a safety baffle.

Page 11 item #5 states: *“Pistol Range/Training Facility: bullets may not leave the impact area. Baffles will not be installed on the pistol Range/Training Facility. (Emphasis added) Anyone caught firing over the berm will be escorted off the Range/Training Facility by the RSO after calling a Cease Fire. No warnings will be given.*

It is very unusual to see a statement proclaiming that “baffles will not be installed” in a range rule or SOP. The possibility exists that the Range Operator might have identified that individuals were firing over the backstop on the rifle range, which prompted the construction of the baffle as a safety baffle, with a warning in the SOP that there will be no such device constructed on the pistol range.

It should be noted that during the site evaluation Mr. Ward referred to the pistol range as a “pistol bay”. This term is usually used to describe a range specifically designed and constructed to accommodate “Action Pistol” shooting events. Action Pistol shooting events require firing at various angles up to 180 degrees.

With regard to Action Pistol, the NRA Range Source Book states: *“Because of wide variations in angles of fire, projectile containment must be laid out in a half circle (180 degrees)...”*³³

This pistol range is not designed to accommodate Action Pistol shooting events. Conducting shooting activities at angles other than perpendicular to the main backstop (west) would not be consistent with suggested guidelines and practices in the NRA Range Source Book. When asked, Mr. Ward did state that all shooting was being conducted perpendicular to the main backstop (west).

³³ NRA Range Source Book, Section II Chapter 8 Outdoor Action Pistol, Article 3 Technical Considerations, 3.01.4 Projectile Containment, 3.01.4.1

7 Conclusion

Our scope of work required us to evaluate the Full Blown Firearms shooting range facility to determine “compliance” or “non-compliance” of the shooting ranges with the NRA Range Source Book and any applicable standards or guidelines of the National Shooting Sports Foundation.

We determined that it would be most useful to utilize the NRA Range Source Book exclusively in this case.

There were several instances documented in this evaluation where we believe certain aspects of existing range design and operation is not consistent with suggested guidelines and practices in the NRA Range Source Book. The most significant being the issue of main backstop height on the pistol range and use of property apparently not owned or controlled by the Range Operator for a main backstop or safety barrier on the rifle range.

We have also pointed out that the Range Operator may not be consistently following the SOP requiring RSO supervision of all shooting activity. This lack of supervision may have resulted in shooters firing at trees outside the direct fire zone on the rifle range, which may have resulted in direct fire bullet escapement.

Questions or comments regarding information contained in this document may be addressed to Kramer One, Inc., 6839 East Avalon Drive, Scottsdale, AZ 85251, by telephone at 480-941-9179.

Jack J. Giordano
Shooting Range Safety & Health Specialist
Kramer One, Inc.

APPENDIX A

Exhibit A1

Approximate Location and Orientation of Ranges
and Property Boundary

300 Yards Shotfall Distance

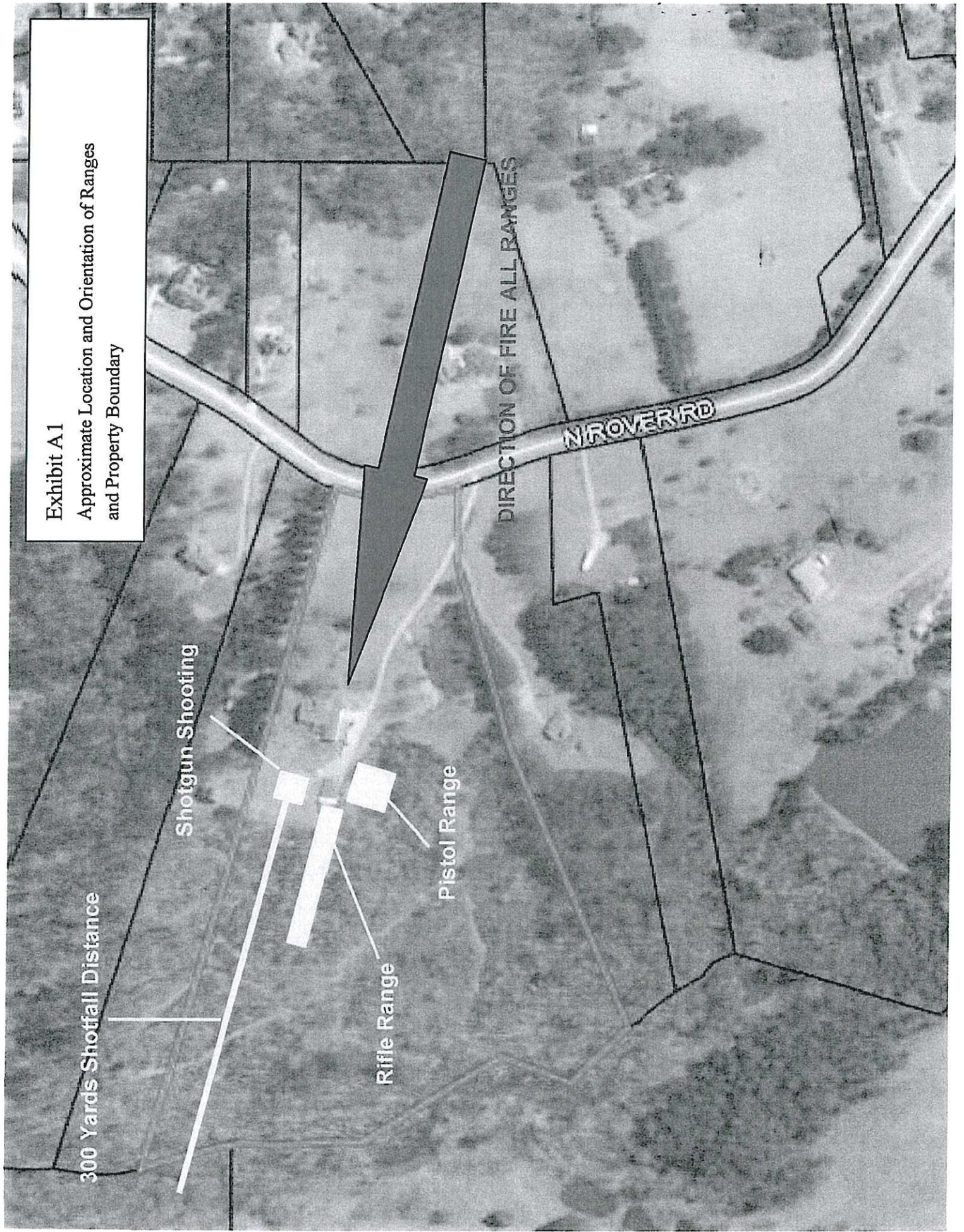
Shotgun Shooting

Rifle Range

Pistol Range

DIRECTION OF FIRE ALL RANGES

N ROVER RD



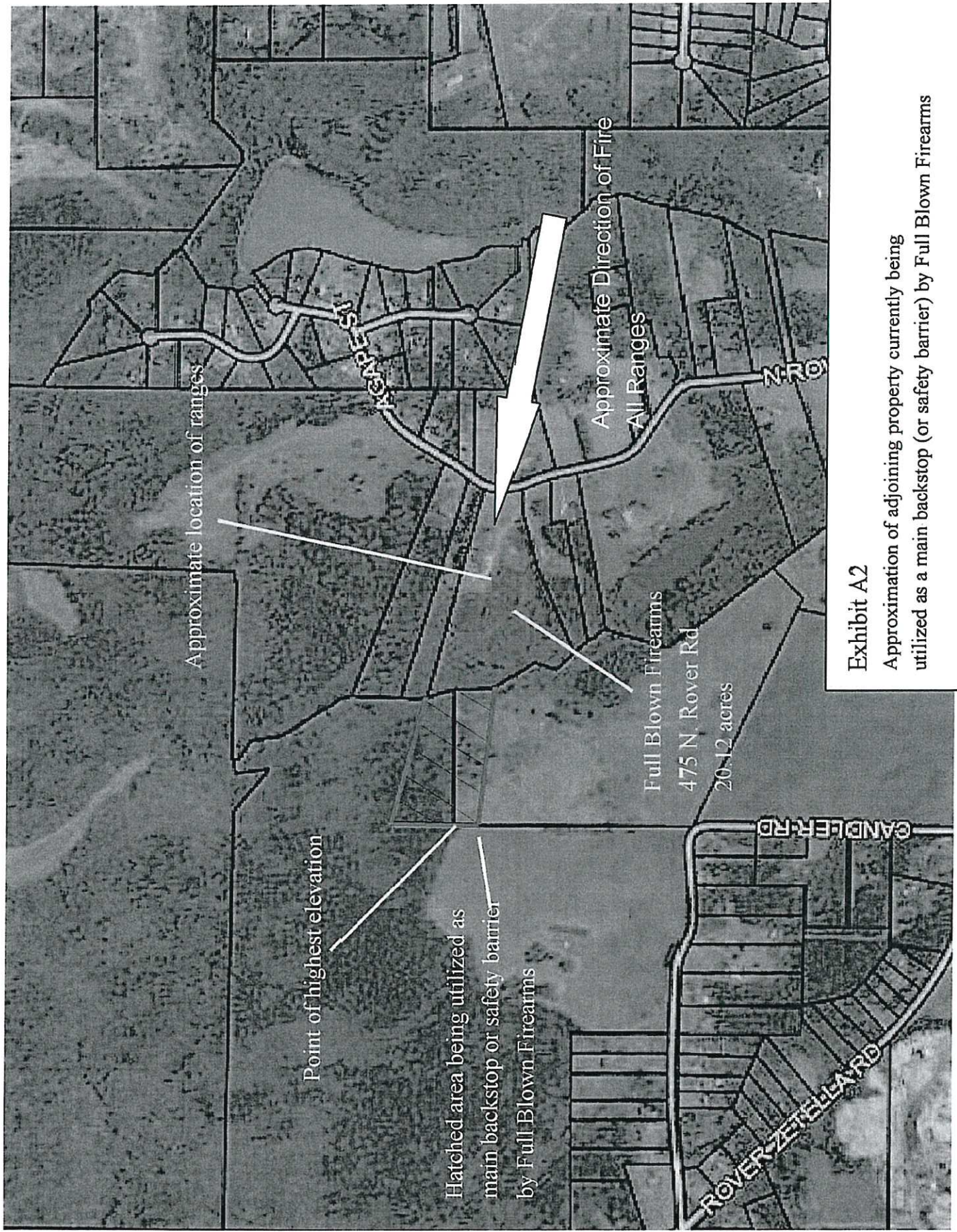


Exhibit A2

Approximation of adjoining property currently being utilized as a main backstop (or safety barrier) by Full Blown Firearms



Approximate property line

Approximate northern limit of the line of fire
from the firing line of the rifle range

1983

Exhibit A3

Approximate northern limit of the line of fire from the firing line of the rifle range

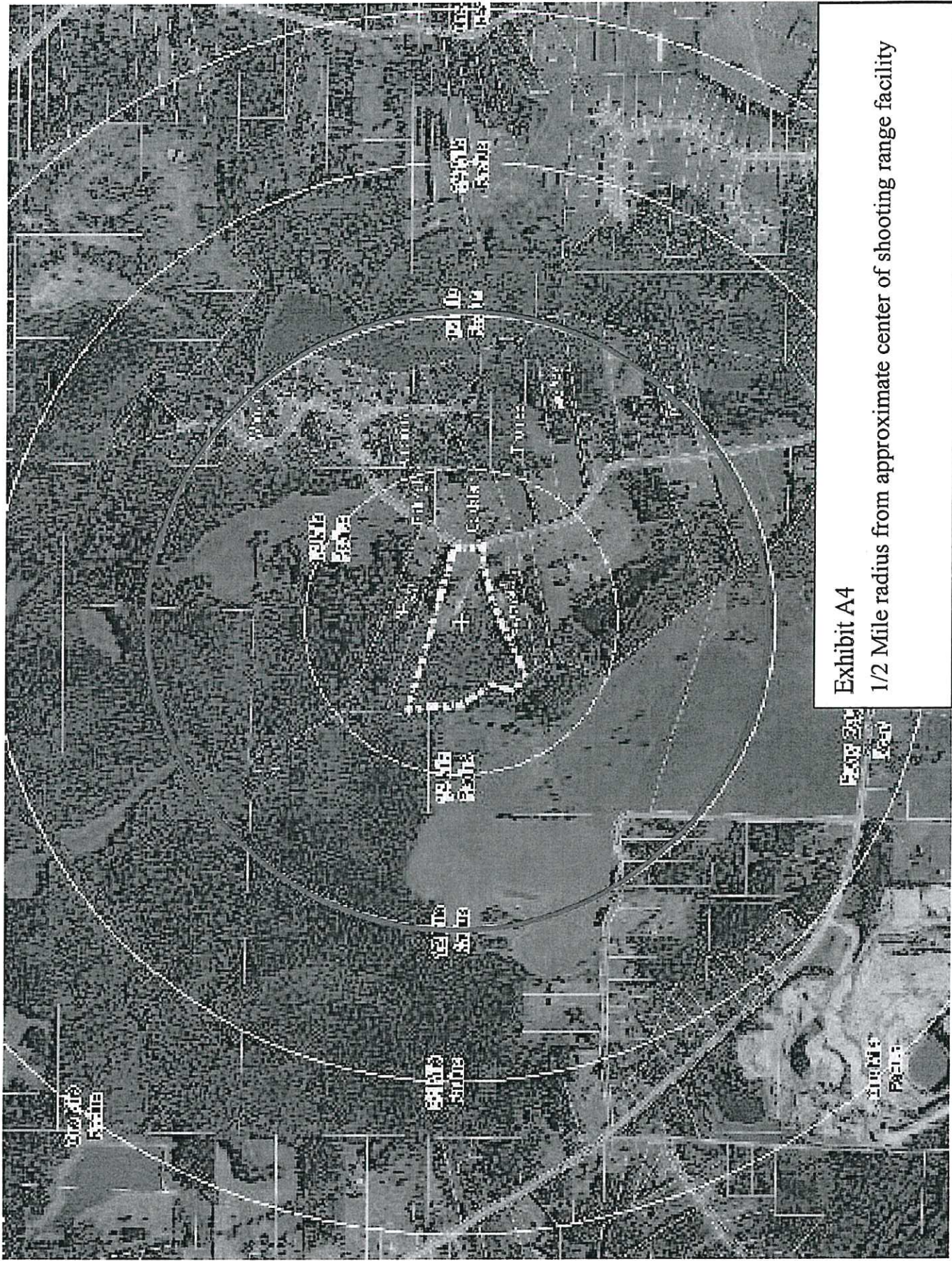


Exhibit A4

1/2 Mile radius from approximate center of shooting range facility

Exhibit A5

Approximate Suggested Shotfall Zone/Expected Shotfall Zone
Angle of Fire is Random



Brief Summary

Shooting Range Evaluation Report dated 19 April 2017

by

Kramer One, Inc.

of

Full Blown Firearms

Shooting Range Facility

Williamson, GA

Galloway & Lyndall, LLP, council for Spalding County, has requested that Kramer One, Inc. supply a brief summary of our findings with regard to Full Blown Firearms and the conditions of the Conditional Use Permit.

Summary

It is our opinion that Full Blown Firearms meets the conditions of the Conditional Use Permit except for the following:

Item 2a. The range does not have a ballistic background that extends for a sufficient distance past the end of the range to ensure that rounds that miss the backstop do not pose a danger to any other person or property.

Item 2b. Backstops being utilized would not be consistent with NRA suggested guidelines and practices.

Item 2c. There is no side berm on the right side (north side) of the rifle range, which in our opinion would not be consistent with NRA suggested guidelines and practices.

General compliance issues:

Shooters are positioned closer than 10 yards to steel targets, which would not be consistent with NRA suggested guidelines and practices.

Shooters are positioned closer than 10 yards to an earth backstop, which would not be consistent with NRA suggested guidelines and practices.

The structure being utilized as a safety baffle on the rifle range would not be consistent with NRA suggested guidelines and practices.

The Range Operator may not be consistently following the SOP requiring RSO supervision of all shooting activity, which would not be consistent with NRA suggested guidelines and practices.

FULL BLOWN FIREARMS: ANALYSIS OF ENVIRONMENTAL COMPLIANCE

Prepared for:

**Spalding County
119 East Solomon Street
Griffin, GA 30223**

Prepared by:

**Dick Peddicord & Company, Inc.
1115 Coopers Landing Road
Heathsville, VA 22473**

May 2017

**FULL BLOWN FIREARMS:
ANALYSIS OF ENVIRONMENTAL COMPLIANCE**

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**FULL BLOWN FIREARMS:
ANALYSIS OF ENVIRONMENTAL COMPLIANCE**

1.0 INTRODUCTION

1.1 PURPOSE

Spalding County's approval of a Special Exemption to allow Full Blown Firearms operation of shooting ranges at 475 North Rover Road was conditioned on, among other things, "compliance with industry, NSSF, or NRA design standards for outdoor shooting ranges, including but not limited to, ... compliance with EPA's *"Best Management Practices for Lead at Outdoor Shooting Ranges"*.

In March 2017, Dick Peddicord & Company, Inc. was contracted by Spalding County through the law firm of Galloway & Lyndall, LLC, to inspect the shooting ranges and activities of Full Blown Firearms to determine compliance or non-compliance with environmental aspects of the Special Exemption approval and provide a written report documenting findings and conclusions. The scope and content of this report are limited to fulfillment of this charge based on the information provided (Section 2.1) and a site visit (Section 2.2); this report and its conclusions should not be construed as reflecting an exhaustive and comprehensive professional environmental evaluation of the Full Blown Firearms shooting ranges.

1.2 ENVIRONMENTAL ASPECTS OF THE SPECIAL EXEMPTION APPROVAL

1.2.1 Industry Standards

Industry standards constituting the present state of the practice for environmental management of outdoor shooting ranges are reflected in the three sources specified in the Special Exemption approval:

- National Shooting Sports Foundation (NSSF) *"Environmental Aspects of Construction and Management of Outdoor Shooting Ranges"* (Facilities Development Series No. 2. National Shooting Sports Foundation, Facilities Development Division, 11 Mile Hill Road, Newtown, CT 06470-2359. 1997)
- National Rifle Association (NRA) *"Range Source Book"* (NRA Range Services, 11250 Waples Mill Road, Fairfax VA 22030. NRA# NR60401AR14865. 2012)
- U.S. Environmental Protection Agency (EPA) *"Best Management Practices for Lead at Outdoor Shooting Ranges"* (EPA-902-B-01-001. U.S. EPA Division of Enforcement and Compliance Assistance, RCRA Compliance Branch, 290 Broadway, 22nd Floor, New York, NY 10007-1866. January 2001, revised June 2005)

The environmental guidance in all three of these documents involves not only range design as explicitly mentioned in the Special Exemption approval, but also range operations and

FULL BLOWN FIREARMS ENVIRONMENTAL COMPLIANCE

management. The interaction of range design, operation, and management are considered in this determination. The environmental guidance in the NRA *Range Source Book* is largely derived from the NSSF and EPA documents, which provide the most extensive guidance and compliment each other with each emphasizing different aspects and perspectives. The publishers consider each of these documents to contain guidance, not requirements; the publishers, including EPA, do not intend them to have any regulatory status. Whatever regulatory status they have has been conferred on them by Spalding County by including them in its approval of the Special Exemption for Full Blown Firearms.

1.2.2 Summary of Industry Standards

The major aspects of industry standards specified in the Special Exemption approval are that lead:

- Be periodically reclaimed and recycled to the extent practical
- Between reclamation intervals be managed to minimize environmental mobility and activity by a combination of approaches appropriate to site characteristics, which may include:
 - Liming as necessary to maintain soil pH above 6.5
 - Application of phosphate as appropriate
 - Optimizing organic matter in and on range soil
 - Minimizing standing water in the presence of lead
 - Minimizing erosion of lead particles or soil that may contain lead by
 - Maintaining ground cover vegetation
 - Grading, dikes, swales, sedimentation areas, etc. to reduce runoff velocity and increase particle settling
 - Containing lead on the ranges by:
 - Effective backstops, side berms, etc.
 - Location and orientation of ranges, especially shotgun shooting

2.0 SITE ASSESSMENT

2.1 INFORMATION CONSIDERED

The determination was based on information provided by Spalding County and Galloway & Lyndall, in addition to observations made during a visit to the ranges (Section 2.2). Sources of information considered included:

- Special Exemption approval letter dated March 4, 2015 from Spalding County to Bradley and Lisa Ward
- Property plat dated December 7, 1990
- Bing Maps™ image “Property Owners Near Full Blown Firearms” with radii of ¼ -mile increments
- A factual file (pictures, PDFs, videos and a Google Earth file) that was viewed at: https://1drv.ms/f/s!Akgre3BZLBBHgbRNhMdVLTKJac-_zA
- A link to the property on Spalding County’s GIS Map at: <https://qpublic.schneidercorp.com/Application.aspx?AppID=766&LayerID=11802&PageTypeID=1&KeyValue=275%2001045#>

- A Google Earth™ image “Approximate Location of Shotgun Shooting”
- *Full Blown Firearms Standard Operating Procedures* (hand marked “Feb 2015, Rev 3/17”)
- *Full Blown Firearms Training Course Offerings*

2.2 SITE VISIT

On March 31, 2017, Richard K. “Dick” Peddicord, Ph.D. discussed background and context of the determination with Steven Jones and Newton Galloway of Galloway & Lyndall, Spalding County Community Development Director Chad Jacobs, and Jack Giordano, who is performing an analogous determination of compliance with other aspects of the Special Exemption approval. The group, without Mr. Galloway, then drove to Full Blown Firearms, where we met with Mr. and Mrs. Ward and their associates. Mr. Ward briefed us on the ranges and activities conducted there. The group then walked each of the ranges and surrounding areas of the property (Figure 1), discussing observations and issues as they arose. Mr. Ward and his associates were cordial, cooperative, and informative, readily offering information and answering whatever questions were posed. During approximately 2 ½ hours at Full Blown Firearms, soil acidity was measured with a field pH meter at several locations of interest and numerous photographs were taken, including those in shown at the end of this report.

The Rifle Range, located behind the Full Blown Firearms building (Figure 1), provides a roofed firing line and shooting benches, with backstops at approximately 25, 50, and 100 yards. Appendix A, photo 1016, is a standing view from the firing line, in which light-colored targets can be recognized on target holders in front of the 25, 50, and 100-yard backstops. The floor of the rifle range is covered with shredded wood. On the left (southern) side of the range, the earthen side berm visible in photo 1016 extends downrange from the firing line to between the 50- and 100-yard backstops. The wooden fence on the right (northern) side of the range extends approximately the same distance downrange. Mr. Ward stated plans to extend the side berm and fencing to the 100-yard backstop, enclosing the Rifle Range.

The Pistol Range is southeast of the Rifle Range firing line (Figure 1) at perhaps 30 feet lower elevation. The hillside forms a side berm of this height on the north side of the Pistol Range, and an earthen side berm perhaps 15 feet high has been constructed on the south side of the Pistol Range. The Pistol Range backstop slopes from the elevation of the Rifle Range to the top of the southern side berm (photo 1028). The floor of the Pistol Range is covered with shredded wood like the Rifle Range.

The portion of the property referred to herein as the Shotgun Area encompasses the location from which Mr. Ward stated shooting takes place a short distance north of the front corner of the Full Blown Firearms building widens to the west through the grassy area from which clay targets are launched to be shot at, expands into the eastern portion of the wooded area where targets fall, and shotfall extends perhaps 700-800 feet into the wooded area. The Shotgun Area is not set up as a formal shotgun range, and is simply an area where shotguns are used for informal shooting at clay targets launched into the air in a somewhat “skeet-like” target presentation.

3.0 FINDINGS

Important findings and observations related to environmental aspects of the Special Exemption approval are provided below, organized by the ranges and areas in which they were observed. Coordinates provided with some photos are those recorded with the photos on the cell phone with which the photos were made, which are generally within perhaps 10 feet of the true location.

3.1 RIFLE RANGE

- Mr. Ward stated there is some tactical/home defense shotgun training on the 25-yard portion of the Rifle Range using “bird shot. Marks from impacts of this shot on trees in that area indicate scatter of this shot generally northwestward beyond the berm-and-fence perimeter of the Rifle Range.
- Mr. Ward stated that lime and phosphate are periodically applied to the backstops consistent with “environmental protocols” for the Full Blown Firearms ranges written by Southeastern Resource Management. During the site visit, Dr. Peddicord measured soil acidity in the bullet impact area in the center of the 25-yard backstop as pH 6.7 using a field pH meter. During the site visit, pH was 5.4 on the outer toe of the 100-yard backstop, and in the bullet impact area in the center of the backstop pH was 6.2.
- Little indication of erosion of material from the range floor or backstop faces was observed during the site visit, nor were indications of water standing in areas where lead deposition might be expected.

3.2 PISTOL RANGE

- Mr. Ward stated that perhaps 80% of the total shooting at Full Blown Firearms occurs on the Pistol Range.
- In the bullet impact area of the Pistol Range backstop, the measured pH was 6.9 on the northern portion which Mr. Ward stated was used predominantly for tactical shotgun training, and pH was 6.8 on the southern portion used primarily for pistol shooting.
- Little indication of erosion of material from the Pistol Range floor or backstop face was observed during the site visit, nor were indications of water standing in areas where lead deposition might be expected. The Pistol Range is graded and bermed in such a way that little runoff from upgradient runs onto areas where lead is likely to be deposited. The range floor drains to the southwest corner, where a pipe carries it under the side berm and the adjacent food plot to the woods south of the food plot.
- Mr. Ward stated much pistol shooting is at steel targets of the type commonly used in such applications. Lead flakes from bullets flattened by impact on the steel targets are readily visible (photo 1029) over a substantial portion of the Pistol Range floor.

3.3 SOUTH SIDE OF PROPERTY

- The property adjacent to the south side berm of the Pistol Range is graded, tilled, and planted as a wildlife food plot perhaps several hundred feet wide.
- On the site visit, lead flakes like those created when bullets strike steel targets were observed outside the south side berm of the Pistol Range.
 - Photo 1053 – Lead flakes just outside the east end of the Pistol Range south side berm (Latitude: 33° 13' 26.082" N, Longitude: 84° 21' 30.102" W)
 - Photo 1034 – Lead flakes just beyond the southeast corner of the food plot roughly aligned with the eastern end of the Pistol Range (Latitude: 33° 13' 24.978" N, Longitude: 84° 21' 30.21" W)
 - Photo 1036 – Photo taken from the same location as photo 1034 showing relationship to south side berm of the Pistol Range and the access road (Latitude: 33° 13' 24.972" N, Longitude: 84° 21' 30.21" W)
 - Photo 1054 – Lead flakes on the outer toe of the Pistol Range south side berm; the base of the easternmost "Posted-Keep Out" signpost is visible at the top center of the photo (Latitude: 33° 13' 26.082" N, Longitude: 84° 21' 31.2" W)
 - Photo 1057 – Lead flakes on the outer toe of the Pistol Range south side berm; the base of the third "Posted-Keep Out" signpost is visible at the top center of the photo (Latitude: 33° 13' 26.64" N, Longitude: 84° 21' 31.5" W) Lead flakes were not seen on the south side berm around the fourth "Posted-Keep Out" sign, which is west of the Pistol Range backstop.
 - Photo 1058 – Lead flakes approximately 2/3 of the way across the wildlife food plot between the second and third "Posted-Keep Out" signs (Latitude: 33° 13' 25.848" N, Longitude: 84° 21' 31.878" W)
- On the site visit no deposition of lead flakes or material eroded from the Pistol Range was observed around the end of the drainpipe south of the food plot.

3.4 WEST PERIMETER OF PROPERTY

- The natural small stream along the south side of the property curves and extends along the western perimeter of the property, widening into a small pond. No indications of bullets, shot, or clay targets were observed on western perimeter of the property during the site visit.
- Signs alerting those approaching the ranges (photo 1037) were posted at frequent intervals around the sides of the property.

3.5 SHOTGUN AREA AND NORTH SIDE OF PROPERTY

- Mr. Ward stated shooting at aerial clay targets took place on the Shotgun Area perhaps 4-6 times per year in addition to use by a school shooting team 1-2 days a week for about 6 weeks.

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- Mrs. Ward stated that biodegradable targets were used predominantly. Fragments of both biodegradable targets and standard pitch targets were observed on the site visit. Photos and other information considered (Section 2.1) indicated that clay targets are launched generally north and south across the western side of the grassy area, with shooting in an arc generally westward from the east-central edge of the grassy area (Figure 1). This is consistent with the location of clay target fragments and shot observed on the ground observed during the site visit.

Clay Target Fragments

- Clay target fragments were observed on the western portion of the grassy area and into the eastern edge of the wooded area near the northern property boundary.
- Pieces of targets broken in flight by shooters were found in the grassy area (photo 1052), well into the woods to the west (photo 1041), and near the red barn that is reportedly on the adjacent property to the north:
 - Photo 1044 – target fragment (shiny whitish “trapezoid” in foreground) with barn in background to the east to illustrate photo location (Latitude: 33° 13' 30.822" N, Longitude: 84° 21' 31.002" W)
 - Photo 1047 – target fragment (black “square” in foreground above large brown leaf) with weathered red south side of barn in background to the north to illustrate photo location (Latitude: 33° 13' 30.378" N, Longitude: 84° 21' 30.318" W)
 - Photo 1051 – target fragment (black object in center foreground) with back (west side) of barn in shadow in background to illustrate photo location (Latitude: 33° 13' 30.648" N, Longitude: 84° 21' 30.228" W)

Shot

- As evident from the following photographs, lead shot pellets of the sizes typically used in clay target shooting (sizes 7½, 8 or 9) are small, dark, and difficult to find among grass, leaves, and mineral and organic matter in soil unless more shooting than has occurred at the Full Blown Firearms Shotgun Area has resulted in considerably more extensive deposits of shot than presently exist here. However, with several hundred pellets in each shotgun shell, even irregular and infrequent shooting would scatter pellets widely over several acres that would be difficult to find in the leaves.
- Lead shot pellets that appeared to be of the sizes indicated above were observed in two bare spots in the wooded area, both at locations that may be near the boundary of the adjacent property to the north:
 - Photo 1038 – A single shot pellet visible on bare soil (Latitude: 33° 13' 30.78" N, Longitude: 84° 21' 32.82" W)
 - Photo 1039 – Two pellets visible on bare soil (Latitude: 33° 13' 30.888" N, Longitude: 84° 21' 32.868" W)

3.6 ENVIRONMENTAL PROTOCOLS

The only material provided to me that could comprise the “environmental protocols” to which Mr. Ward referred (Section 3.1) is page 22 of the *Full Blown Firearms Standard Operating Procedures*. Under the heading “Range/Training Facility Lead Containment and Removal” are four paragraphs that make the following points:

- “Working within the guidelines of the EPA’s Best Management Practices Manual, Full Blown Firearms does not expect any adverse environmental issues or concerns.”
- “Full Blown Firearms will keep daily records on the numbers of shooters utilizing the training facility.”
- “These daily records will then be collected and analyzed annually for the estimated number of rounds fired into the berm containment.”
- “The annual round analysis will then be used by Full Blown Firearms and a licensed contractor in lead removal to determine when the soil and lead should be reclaimed from the existing berms.”
- “At the point where it becomes financially viable to Full Blown Firearms to harvest the lead, a professional lead reclamation service will be contracted for their services.”
- “Full Blown Firearms and the licensed contractor will follow all applicable Federal, State, and local laws in the proper and safe removal and disposal.”
- “Additionally, Full Blown Firearms will to take soil samples every 24 months in an effort to track any change of conditions in the soils surrounding the earthen berm containment structures.”
- Contact information for three “companies that provide lead removal services to gun ranges” is provided “to help locate and acquire licensed professional services”.
- The Full Blown Firearms environmental consultant is identified as Southeastern Resource Management, LLC, Cameron C. Kerr, GISP, and contact information is provided.

A letter dated 14 April 2017 from Galloway & Lyndall, LLP, to Dr. Richard K. Peddicord provided responses to Data Requests from Full Blown Firearms and neighbors of Full Blown Firearms. The only material in the responses that was directly related in environmental issues in a way affecting this report was Question 18 to Full Blown Firearms:

Question18: “State how FBF complies with the EPA’s “best management practices for lead at outdoor shooting ranges” and provide any documentation showing compliance.”

Full Blown Firearms Response: “See exhibit “C” – Lead abatement plan, also see FBF’s SOP’s provided on 3-31-2017.”

The SOP provided on 3-31-2017 is summarized above. The page referenced in the response that was labeled “Exhibit C” and titled Full Blown Firearms Lead Abatement Plan repeats information from the SOP summarized above on lead removal or abatement contractors, and the Full Blown Firearms environmental consultant. The new material is under the heading “CONTROL AND CONTAIN” and is repeated in its entirety below:

1. Bullet containment via earthen berms
2. Prevent migration

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- a. Mulch/compost/organic material. Change/add as needed. Minimum of once every 12 months.
- b. Lime
 - i. Addition every 6 months
 - ii. Rate of 100 lbs. per 1,000 sq. ft.
- c. Phosphate addition
 - i. 80 lbs. per 1,000 sq. ft.
 - ii. Normal agricultural fertilizer
 - iii. Twice yearly as filtration plots are planted spring and fall
3. Professional lead reclamation with preferred vendor when financially feasible.
4. Document
 - a. Date of soil testing – test every 24 months.
 - b. Date of lime and phosphate addition to the soil.
 - c. Record of # of shooters per day/month on range.

4.0 CONSISTENCY WITH ENVIRONMENTAL ASPECTS OF THE SPECIAL EXEMPTION APPROVAL

The findings in Section 3 are discussed in Section 4 in relation to compliance with environmental aspects of the Special Exemption approval.

4.1 RIFLE RANGE

- An important aspect of compliance with the industry standards specified in the Special Exemption approval is the application of lime to the Rifle Range backstops as findings (Section 3.1) indicate. The measurements of pH during the site visit indicate that lime has been applied to backstops and is raising the pH toward the range recommended in the EPA guidance. This subject is discussed further in Section 4.6 dealing with the Full Blown Firearms environmental protocols.
- An important aspect of compliance with the industry standards specified in the Special Exemption approval are the findings of minimal indication of (a) erosion of material from the Rifle Range floor or backstop faces, or (b) water standing in areas where lead deposition might be expected (Section 3.1).
- That the Full Blown Firearms environmental protocols do not address reclamation or other management of lead shot scattered beyond the Rifle Range by tactical shotgun training (Section 3.1) is not in compliance with the industry standards specified in the Special Exemption approval. It appears that this situation might be brought into compliance, if feasible, by:
 - Determining the perimeter of the area over which shot from tactical shotgun training on the Rifle Range is scattered, and applying the environmental protocols in that area
 - Moving shotgun tactical training from the Rifle Range to a location and orientation on the Shotgun Area such that the shot would be distributed within

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the shotfall area of other shotgun shooting on the Shotgun Area, and applying the environmental protocols there

- Ceasing tactical shotgun training
 - Other approaches as may become apparent and prove appropriate
- Other aspects of environmental compliance and non-compliance on the Rifle Range are addressed in relation to the Full Blown Firearms environmental protocols in Section 4.6.

4.2 PISTOL RANGE

- An important aspect of compliance with the industry standards specified in the Special Exemption approval is the application of lime to the Pistol Range backstop as findings (Section 3.2) indicate.
- An important aspect of compliance with the industry standards specified in the Special Exemption approval is the finding of minimal indication of (a) erosion of material from the Pistol Range floor or backstop face, or (b) water standing in areas where lead deposition might be expected (Section 3.2).
- Implications of lead flakes apparently from the Pistol Range (Section 3.2) that are found outside the Pistol Range on the south side of the property are discussed in Section 4.3.
- Other aspects of environmental compliance and non-compliance on the Pistol Range are addressed in relation to the Full Blown Firearms environmental protocols in Section 4.6.

4.3 SOUTH SIDE OF PROPERTY

- Lead flakes from the Pistol Range found on the south (outer) side of the south side berm and in the wildlife food plot (Section 3.3) are not in compliance with the industry standards specified in the Special Exemption approval. The locations at which these flakes were found (Section 3.3) indicate flakes may be distributed over the south side berm face and perhaps much of the wildlife food plot east of the alignment of the Pistol Range backstop. Given their thin, flat configuration the flakes may be susceptible to being distributed progressively more widely by high-volume runoff, despite their density. Regardless of their ultimate distribution, the industry standards specified in the Special Exemption approval expect that lead be managed by appropriate means as summarized in Section 1.2.2. No indication was seen or provided that Full Blown Firearms plans to reclaim or otherwise manage lead outside the bermed ranges. It appears that this situation might be brought into compliance, if feasible, by:
 - Determining how these flakes are leaving the Pistol Range and being deposited on the outer side berm and wildlife food plot, and making changes to contain them within the Pistol Range where lead management is planned (see Section 4.6)
 - Determining the perimeter of the area where lead flakes occur, and applying the environmental protocols in that area
 - Other approaches as may become apparent and prove appropriate

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- The absence of observed lead flakes or material eroded from the Pistol Range around the end of the drainpipe south of the food plot may be considered positive in the sense that it indicates soil and visible lead particles are being retained within the range where management is planned (see Section 4.6).
- Other aspects of environmental compliance and non-compliance on the south side of the property are addressed in relation to the Full Blown Firearms environmental protocols in Section 4.6.

4.4 WEST PERIMETER OF PROPERTY

- An important aspect of compliance with the industry standards specified in the Special Exemption approval is the finding of no indications of bullets, shot, or clay targets along the western perimeter of the property. This is outside the ranges where such materials should not occur, and no management should be necessary.

4.5 SHOTGUN AREA AND NORTH SIDE OF PROPERTY

- The distribution of fragments of both standard and biodegradable clay targets from the Shotgun Area on the north side of the property (Section 3.5) is *potentially* not in compliance with the industry standards specified in the Special Exemption approval. Determination of whether this distribution is, in fact, non-compliance requires further analysis per the following discussion. The locations at which some target fragments were found (Section 3.5) appeared to be near the northern property boundary, which was not precisely determined during the site visit. Using the coordinates given in Section 3.5, a surveyor or other qualified professional should determine the locations of the photographed target fragments in relation to the property boundary within the variability inherent in the cell phone location system. If target fragments occur on adjacent property:

- Full Blown Firearms would not have access to manage these target fragments consistent with the industry standards specified in the Special Exemption approval. All three documents comprising the industry standards (Section 1.2.1) are based on management, which requires access to the property on which it is to occur. The NRA *Range Source Book* (Section II, Chapter 3, page 10) explicitly states that a range's Environmental Stewardship Plan (e.g., the Full Blown Firearms environmental protocols) should address "retention of bullets, shot, wads, and targets on range property".
- These target fragments might be considered litter and/or trespass on the adjacent property.

If target fragments are found to occur on adjacent property, it appears that Full Blown Firearms might bring this non-compliance into compliance, if feasible and agreeable to all parties, by:

- Purchasing the property on which target fragments occur
- Obtaining a lease, easement, or other agreement allowing access to the property on which target fragments occur for purposes of management

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- The absence of management of clay target fragments in the Full Blown Firearms environmental protocols, even fragments on the property, is not in compliance with the industry standards specified in the Special Exemption approval, and is addressed in Section 4.6.
- The distribution of shot pellets from the Shotgun Area on the north side of the property (Section 3.5) is *potentially* not in compliance with the industry standards specified in the Special Exemption approval. As with target fragments discussed in the first point of this section, determination of whether the distribution of shot is, in fact, non-compliance requires further analysis to determine shot distribution in relation to the property boundary. The locations at which some shot pellets were found (Section 3.5) appeared to be near the northern property boundary, which was not precisely determined during the site visit. The coordinates given in Section 3.5 should allow a surveyor or other qualified professional to determine the locations of the photographed shot pellets in relation to the property boundary within the variability inherent in the cell phone location system. Even though the two locations at which shot pellets were observed may be on the Full Blown Firearms property, the possibility that some shot may cross the property boundary must be recognized in consideration of:
 - The difficulty of finding shot pellets among grass, leaves, and soil material of similar size and color
 - The number of pellets in each shotgun shell
 - The distance pellets may travel
 - The area over which pellets may be deposited as indicated by Figures 4-2 and 4-3 on pages 39 and 40 of the NSSF guidance (Section 1.2.1)
 - The shooting location on the Shotgun Area in relation to the property boundary
 - The angles at which some shotgun shooting may occur in relation to the property boundary as indicated by information considered (Section 2.1), especially photographs and videos in the “factual file”

If shot pellets were to occur on adjacent property, they might pose a safety risk as well as being inaccessible for management and possibly being considered litter and/or trespass, as discussed for target fragments in the first point of this section. If shot pellets were to occur on adjacent property, it appears that this non-compliance might be brought into compliance by one or more of the following:

- If possible and feasible after appropriate evaluation, retaining shot on Full Blown Firearms property by such means as, for example:
 - Relocate/reorient the shooting position so that shooting is less northerly
 - Reorient target presentations so that shooting is less northerly
 - Change shooting from a somewhat “skeet-like” target presentation to amore “trap-like” target presentation so that shooting is over a narrower arc oriented westerly with less northerly component
 - Lower the maximum height of target trajectories to minimize the distance shot travels
 - Limit shotgun shooting to low velocity loads and number 9 shot to minimize the distance shot travels

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- Obtaining access for management to the entire area containing shot, as discussed for target fragments
- The absence of reclamation or other management of lead shot on the Shotgun Area in the Full Blown Firearms environmental protocols is not in compliance with the industry standards specified in the Special Exemption approval, and is addressed in Section 4.6.
- Other aspects of environmental compliance and non-compliance on the Shotgun Area are addressed in relation to the Full Blown Firearms environmental protocols in Section 4.6.

4.6 ENVIRONMENTAL PROTOCOLS

- Important aspects of compliance with the industry standards specified in the Special Exemption approval are that the environmental protocols (Section 3.6) address the following on the Rifle Range and Pistol Range:
 - Lead reclamation
 - Application of:
 - Lime (The EPA guidance [Section 1.2.1] recommends that lime be applied as necessary to maintain range soil between pH 6.5 and 8.5. Lime application according to the Full Blown Firearms environmental protocols appears likely to accomplish this, but it would be preferable for the protocols to explicitly state that lime will be applied to maintain this pH range in soil where lead is present.)
 - Phosphate (The EPA guidance [Section 1.2.1] states that phosphate application may be advantageous, but does not provide quantitative guidance.)
 - Organic matter (The EPA guidance [Section 1.2.1] states that application of organic matter may be advantageous, but does not provide quantitative guidance.)

Other major aspects of compliance with the industry standards (Section 1.2.2), while not addressed in the environmental protocols, were apparently considered in Rifle Range and Pistol Range siting and construction:

- Topography and grading minimize runoff velocity, erosion, and standing water in the presence of lead
- Shredded wood on the Rifle Range and Pistol range floors helps optimize organic matter and minimize runoff velocity and erosion
- Non-compliance related to the environmental protocols not being applied to shot scattered by tactical shotgun training on the Rifle Range is addressed in Section 4.1.
- That the environmental protocols do not apply to the Shotgun Area is not in compliance with the industry standards specified in the Special Exemption approval. The environmental protocols do not mention the Shotgun Area and no intention to apply the protocols to the Shotgun Area was indicated. The industry standards (Section 1.2.1) clearly address not only rifle and pistol shooting, but also apply to shotgun shooting and

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both shot pellets and target fragments. The NSSF guidance (page 43) explicitly discusses environmental management of clay target fragments. It appears that this situation might be brought into compliance with the industry standards by:

- Explicitly applying the environmental protocols to the Shotgun Area
- Providing access to target fragments and shot as may be necessary (Section 4.5)
- Expanding the environmental protocols so that management of the Shotgun Area includes the provisions of the industry standards specific to shotgun shooting as well as those that apply to all types of shooting (e.g., those discussed above for the Rifle Range and Pistol Range). Note that lead reclamation, the cornerstone of the industry standards, is generally considered infeasible and impractical in wooded areas. Therefore, reclamation of shot on the Shotgun Area would likely require that:
 - The shotfall area be modified as necessary consistent with the third point of Section 4.5
 - The perimeter of the shotfall area on the Full Blown Firearms property be determined
 - The shotfall area be cleared, and graded as necessary, to allow shot reclamation and other management (i.e., lime application)
- Ceasing shotgun shooting at aerial targets on the present Shotgun Area



FIGURE 1. Overview of Full Blown Firearms property. Red pin is on FBF building. Rifle Range firing line is under the roof at the base of the pin; 100-yard backstop is near the white line west of the pin. Pistol Range is the earthen bermed square south of the pin. Shotgun Area shooting location is the barren oval about 1/3 of the distance across the grassy area north of the building.

PHOTOGRAPHS: FULL BLOWN FIREARMS

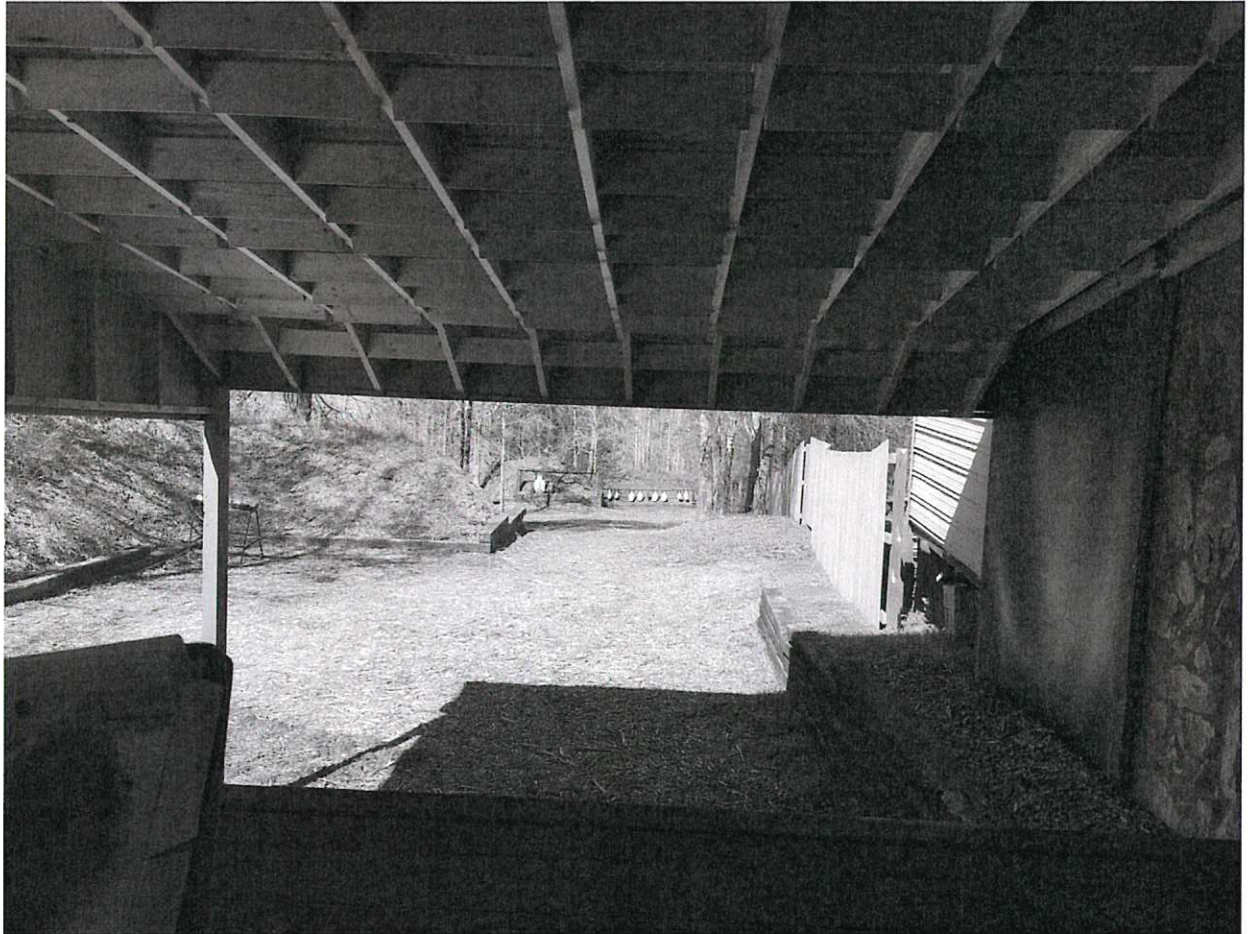


Photo 1016. View downrange from the Rifle Range firing line. 25-yard backstop and targets are to left, 50-yard backstop and single white target is in the center, 100-yard backstop and 8 white targets are directly downrange.

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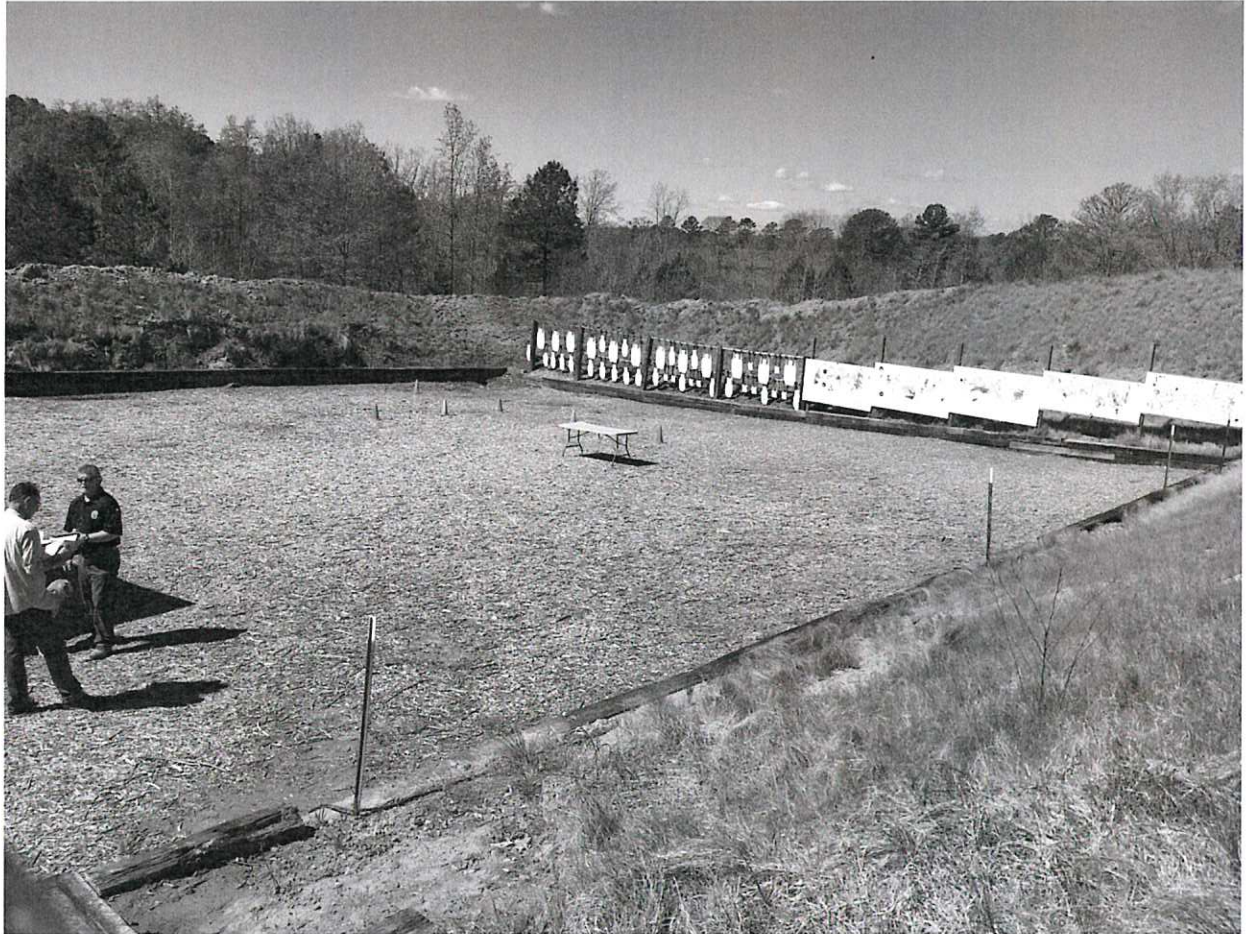


Photo 1028. Pistol Range, with targets and backstop to the right (west), north side berm in right foreground, and south side berm beyond personnel.



Photo 1029. Lead flakes on Pistol Range floor from bullets flattened by impact on steel targets.



Photo 1053. Lead flakes just outside the east end of the Pistol Range south side berm.



Photo 1034. Lead flakes just south of the southeast corner of the food plot, roughly aligned with the eastern end of the Pistol Range.



Photo 1036. Photo taken from the same location as photo 1034, showing the relationship to the south side berm of Pistol Range and the access road.



Photo 1054. Lead flakes on the outer toe of the Pistol Range south side berm. The base of the easternmost “Posted - Keep Out” signpost is visible at the top center of the photograph.

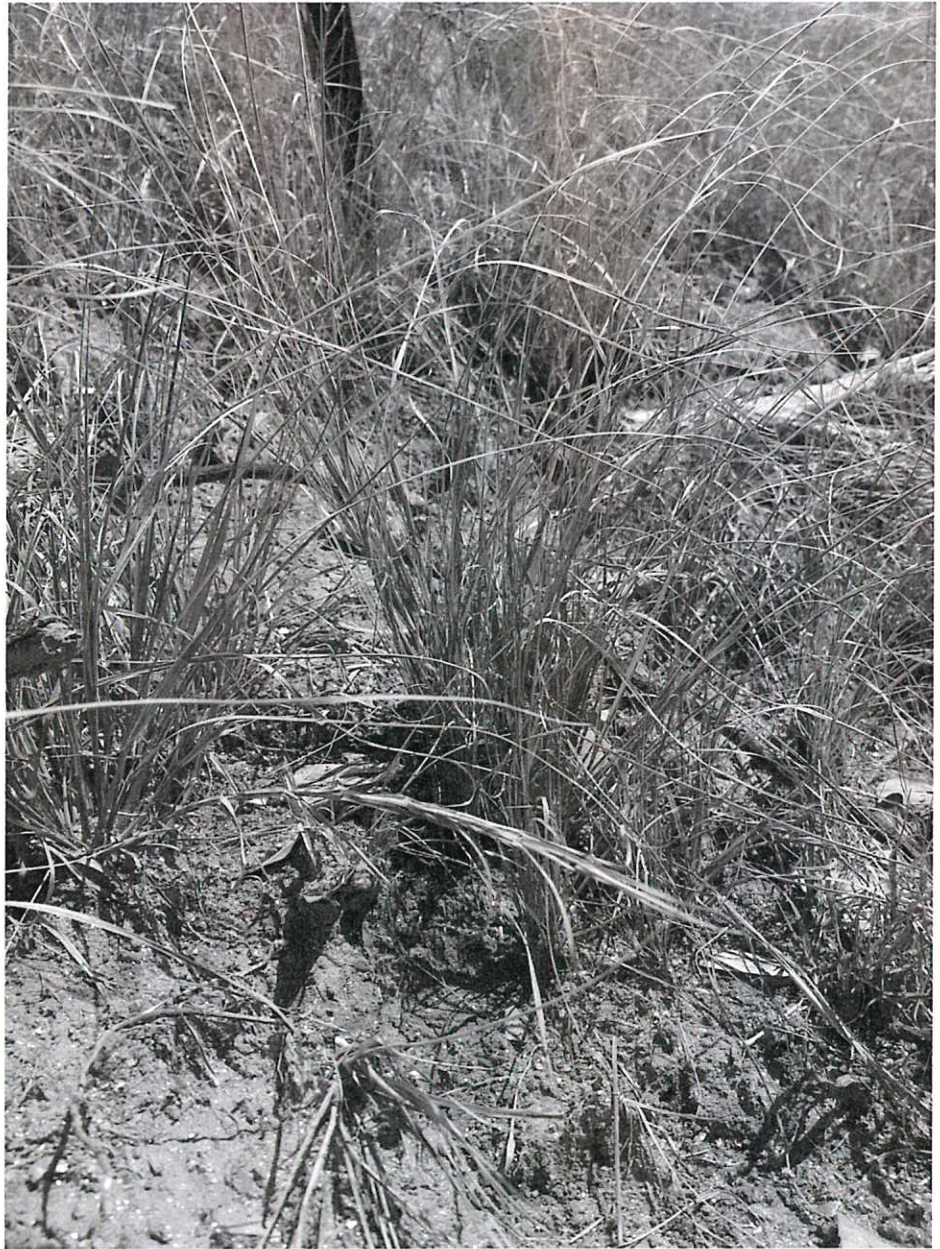


Photo 1057. Lead flakes on the outer toe of the Pistol Range south side berm. The base of the third "Posted - Keep Out" signpost is visible at the top center of the photograph.



Photo 1058. Lead flakes approximately 2/3 of the way across the wildlife food plot between the second and third "Posted - Keep Out" signs.

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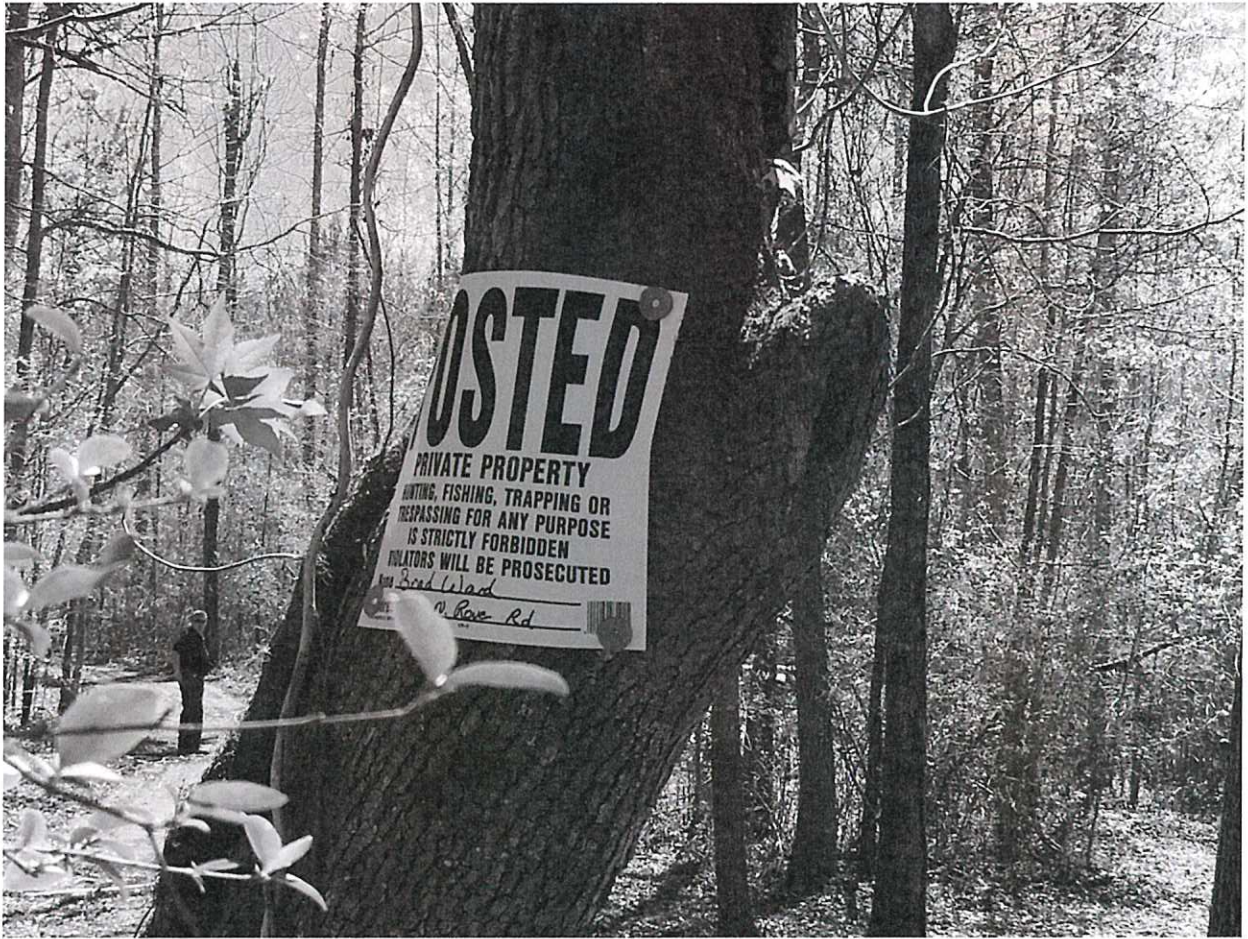


Photo 1037. One of the signs posted at frequent intervals around the sides of the property.



Photo 1052. Off-white fragments of biodegradable clay targets in the grassy portion of the Shotgun Area.

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Photo 1041. Large target fragment in the wooded portion of the Shotgun Area.



Photo 1044. Target fragment (“trapezoid” near bottom center edge of photograph that appears whitish due to reflection). The red barn in the background to the east illustrates the location of the photograph.



Photo 1047. Target fragment (black “square” in center foreground just above the large brown leaf). The south side of the red barn in the background to the north illustrates the location of the photograph.



Photo 1051. Target fragment (black object in right-center foreground just behind the first clump of grass). The back (west side) of the red barn in the shadow in the background (to the east) illustrates the location of the photograph.



Photo 1038. A single shot pellet visible on bare soil.



Photo 1039. Two shot pellets visible on bare soil.

**FULL BLOWN FIREARMS
ENVIRONMENTAL COMPLIANCE**

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SUMMARY

FULL BLOWN FIREARMS: ANALYSIS OF ENVIRONMENTAL COMPLIANCE

Prepared by:

Dick Peddicord & Company, Inc.

May 2017

Dick Peddicord & Company, Inc. was contracted to inspect and prepare a report on the shooting ranges and activities of Full Blown Firearms to determine compliance or non-compliance with environmental aspects of the Special Exemption for the ranges approved by Spalding County. That approval was conditioned on, among other things, "compliance with industry, NSSF, or NRA design standards for outdoor shooting ranges, including but not limited to, ... compliance with EPA's *"Best Management Practices for Lead at Outdoor Shooting Ranges"*. Major compliance points of the report related to environmental aspects of the specified standards may be summarized as follows. If this summary appears to be inconsistent with the full report on any matter, the full report should be relied upon.

1. Rifle Range

- a. Appears to be in compliance or in process of being brought into compliance with the specified standards by
 - i. plans for periodic reclamation and recycling of lead
 - ii. minimizing potential for lead to dissolve by
 - 1. bringing soil acidity (pH) into recommended range
 - 2. eliminating standing water in areas with lead
 - iii. minimizing erosion
- b. Appears not to be in compliance with environmental aspects of the specified standards by not managing lead shot scattered beyond the Rifle Range by tactical shotgun training on that range

2. Pistol Range

- a. Appears to be in compliance or in process of being brought into compliance with the specified standards by
 - i. plans for periodic reclamation and recycling of lead
 - ii. minimizing potential for lead to dissolve by

1. bringing soil acidity (pH) into recommended range
2. eliminating standing water in areas with lead
- iii. minimizing erosion

- b. Appears not to be in compliance with environmental aspects of the specified standards by not managing lead flakes created by bullet impacts on steel targets on the Pistol Range that are deposited outside that range to the south, as addressed in Point 3

3. South Side of Property

- a. Appears not to be in compliance with environmental aspects of lead management in the specified standards in regard to lead flakes from the Pistol Range that are deposited outside that range on portions of the south side of the property

4. West Perimeter of Property

- a. Appears to be in compliance with environmental aspects of lead management in the specified standards in that no indications of bullets, shot, or clay targets were found along the western perimeter of the property. This is outside the ranges, where such materials should not occur, and no management should be necessary.

5. Shotgun Area and North Side of Property

- a. Appears not to be in compliance with the specified standards by
 - i. No plans for environmental management of clay target fragments wherever they may be deposited
 - ii. Clay target fragments from shotgun shooting may be deposited off the Full Blown Firearms property, although determination of this remains to be confirmed
 - iii. No plans for environmental management of lead shot pellets wherever they may be deposited
 - iv. Lead shot pellets from shotgun shooting may be deposited off the Full Blown Firearms property, although determination of this remains to be confirmed

6. Environmental Protocol

- a. Appear to be in compliance with the specified standards in regard to the Rifle Range and Pistol Range as summarized in Points 1a and 2a above
- b. Appear not to be in compliance with the specified standards in not being applied to
 - i. the Shotgun Area, including clay target fragments
 - ii. lead flakes south of the Pistol Range
 - iii. lead shot scattered outside the Rifle Range by tactical shotgun training on that range



SPALDING COUNTY BOARD OF COMMISSIONERS Executive Session

Requesting Agency

County Clerk

Requested Action

Zoning Attorney requests an Executive Session to discuss pending or threatened litigation.

Requirement for Board Action

Is this Item Goal Related?

Summary and Background

Fiscal Impact / Funding Source

STAFF RECOMMENDATION