

Tables 3 and 4 review these camera system possibilities. Figure 3 discusses the baseline plan and the augmented plan, as appropriate.

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Attachment 6
Explosive Site Plan



Explosive Site Plan

14 January 2020

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Denver, Colorado

GORA EXEMPT – SECURITY INFORMATION
FOIA EXEMPT – SECURITY INFORMATION

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Revision History:

1/25/19	Initial Submittal.
01/14/20	Revisions include removal of medium-large launcher (only small launcher remains) and additional minor edits. Changes agreed with FAA/AST between January – December 2019 also included.

ACRONYMS & ABBREVIATIONS

CFR	Code of Federal Regulations
DoD	Department of Defense
DoDM	Department of Defense Manual
ESP	Explosive Site Plan
FAA	Federal Aviation Administration
ft	feet
FTS	Flight Termination System
gal	gallons
GSE	Ground Support Equipment
HD	Hazard Division
IBD	Inhabited Building Distance
ILD	Intraline Distance
lbs	pounds
LOX	Liquid Oxygen
MMH	Monomethylhydrazine
NEW	Net Equivalent Weight / Net Explosive Weight
NFPA	National Fire Protection Association
NTO	Nitrogen Tetroxide
OSHA	Occupational Safety and Health Administration
PAD	Public Area Distance
PTRD	Public Traffic Route Distance
QD	Quantity-Distance
RP-1	Rocket Propellant 1 (Kerosene)
TNT	trinitrotoluene
UDMH	Unsymmetrical Dimethyl Hydrazine
VIB	Vehicle Integration Building

SECTION 1 – INTRODUCTION

1.1 Description of Spaceport

The proposed spaceport is located in Camden County, Georgia. The property is approximately 11.5 miles due east of the town of Woodbine, Georgia. Access to the site is at the eastern termination of Union Carbide Road, an extension of Harriett's Bluff Road (Exit 7 from I-95). The site is on the water, surrounded by salt marshes to the east and south, and the Satilla River to the north. Figure 1 shows a map of the spaceport location.

1.2 Description of the Explosive Siting Regulations

This Explosive Site Plan (ESP) addresses the explosive siting regulations outlined in 14 CFR § 420.63, § 420.65, § 420.66, § 420.67, § 420.69 and § 420.70. These regulations require that a launch site operator licensee develop an explosive site plan that includes the following key components:

- A scaled map showing the location of all explosive hazard facilities and a description of each activity to be conducted at the facilities (see Section 2)
- A list of the maximum quantity of propellants at each hazard facility (see Section 3)
- A scaled map of the Explosive Site Plan (see Section 4)

The explosive site plan is required to ensure that appropriate separation distances are provided for handling co-located incompatible energetic liquids, co-located division 1.1 and 1.3 explosives, and the storage of energetic liquids and division 1.1 and 1.3 explosives.

The following nomenclature is from the FAA regulations for determination of Hazard Facilities and separation distances. In some instances, Department of Defense (DoD) definitions are used to augment the description.

- Explosive Hazard Facility – A facility of location at a launch site where solid propellants, energetic liquids, or other explosives are stored or handled.
- Public Area – Any area outside a hazard area and is an area that is not in the possession, ownership or other control of a launch site operator or of a launch site customer who possesses, owns or otherwise controls that hazard area.
- Public Area Distance (PAD) – A minimum distance permitted between a public area and an explosive hazard facility. The DoD typically refers to this distance as an Inhabited Building Distance (IBD) and is the distance to be maintained between a potential explosive site and an inhabited building.
- Public Traffic Route Distance (PTRD) – The minimum distance permitted between a public highway or railroad line and an explosive hazard facility.
- Intraline Distance (ILD) – The minimum distance permitted between any two explosive hazard facilities in the ownership, possession, or control of one launch site customer.

Spaceport Camden – Explosive Site Plan

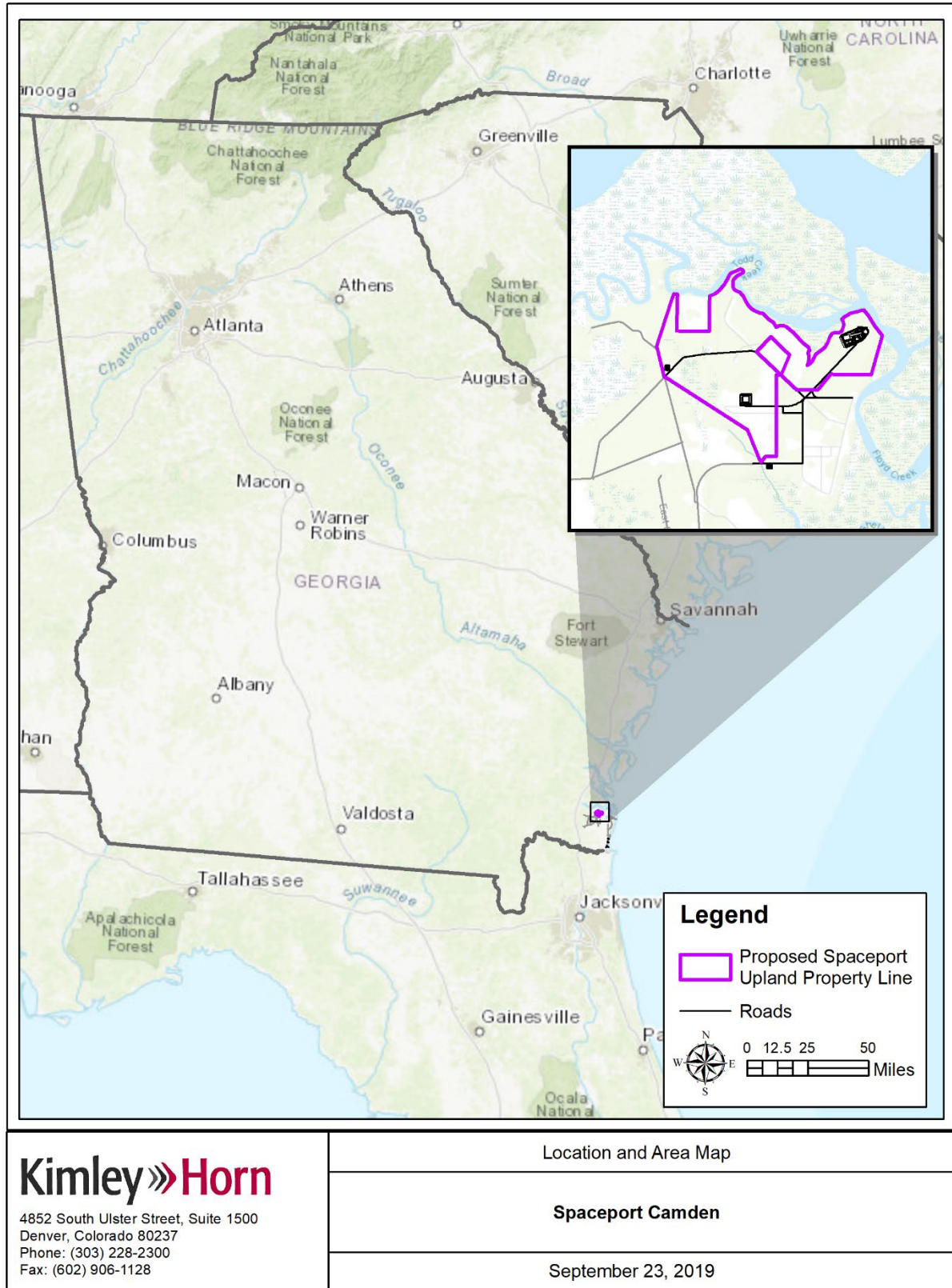


Figure 1. Spaceport Camden Location Map

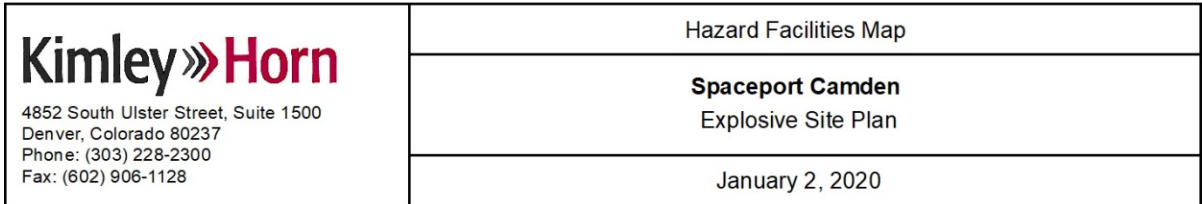
SECTION 2 – EXPLOSIVE HAZARD FACILITIES

2.1 Introduction

Spaceport Camden will have propellants storage and/or handling at the Explosive Hazard Facilities identified in Table 1 and Figure 2.

Table 1. List of Explosive Hazard Facilities

Explosive Hazard Facility	Typical Operations
Vertical Launch Facility	
RP-1 Storage Area	Storage and transfer of Kerosene (RP-1).
LOX Storage Area	Storage and transfer of Liquid Oxygen (LOX).
Vehicle Integration Building	Integration of launch vehicle and flight hardware components including flight ordnance and payload.
Launch Pad	Vehicle propellant transfer (loading and offloading).
Mission Preparation Area	
Mission Preparation Pad	Storage and handling of flight hardware and ground support equipment, hazardous operations and testing.
Launch Control Center Complex	
Payload Fuel Storage Area	Storage and transfer of payload fuels.
Payload Oxidizer Storage Area	Storage and transfer of payload oxidizers.
Payload Processing Facility	Payload processing and propellant transfer (loading and unloading).



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2.2 Vertical Launch Facility

The Vertical Launch Facility consists of various facilities and infrastructure to support the preparation and launch of a small class vertical launch vehicle. The Vertical Launch Facility is a secure facility that includes a vehicle integration building, offices, warehouse storage, commodity storage and distribution, lightning protection towers, flame deflection, launch vehicle erection, launch pad data/communications/lighting, and pad water systems. This facility is where the bulk of the propellants will be stored and handled. Propellant operations at the Vertical Launch Facility include propellant delivery, propellant storage, propellant transfer, launch vehicle propellant loading, cryogenic boil off venting and launch vehicle propellant offloading. The following explosive hazard facilities exist at the Vertical Launch Facility, 1) LOX Storage Area, 2) RP-1 Storage Area, 3) Vehicle Integration Building and 4) Launch Pad.

2.2.1. RP-1 Storage Area

The RP-1 Storage Area contains Kerosene storage tanks, transfer connections, pumps, and control systems to transfer RP-1 to and from the pad for loading and offloading the launch vehicle.

2.2.2. LOX Storage Area

The LOX Storage Area contains Liquid Oxygen (LOX) storage tanks, transfer connections, pumps, vents, and control systems to transfer LOX to and from the pad for loading and offloading the launch vehicle.

2.2.3. Vehicle Integration Building

The Vehicle Integration Building (VIB) is where most launch vehicle integration and final checkout occurs. The activities include the following:

- Installation of flight ordnance
 - Stage separation
 - Flight Termination System (FTS)
- Integration of fueled payload
- Loading and unloading of launch vehicle maneuvering propellants

2.2.4. Launch Pad

The Launch Pad is where the launch vehicle is erected prior to final vehicle checkout and propellant loading. In the event that a mission is scrubbed, the primary liquid propellants on the launch vehicle will be offloaded, filtered, and returned to the storage tanks.

2.3 Mission Preparation Area

The Mission Preparation Area consists of a 400 ft x 400 ft concrete pad that may support the following activities:

- Storage and handling of flight hardware and Ground Support Equipment (GSE)
- Hazardous payload propellant handling operations
- Ground-based testing of flight hardware or systems

Mission Preparation Pad

Propellants, such as MMH, UDMH, and NTO, may be loaded onto the payload at the Mission Preparation Pad prior to transport to the VIB for final integration with the launch vehicle. Other hazardous testing may occur at the site and utilize LOX and RP-1.

2.4 Launch Control Center Complex

The Launch Control Center Complex includes facilities to support payload processing and propellant storage and transfer. The following explosive hazard facilities exist at the Launch Control Center Complex, 1) Payload Fuel Storage Area and 2) Payload Oxidizer Storage Area, and 3) Payload Processing Facility.

2.4.1. Payload Fuel Storage Area

The Payload Fuel Storage Area provides an area for the storage of the payload fuels such as Monomethylhydrazine (MMH) and Unsymmetrical Dimethyl Hydrazine (UDMH).

2.4.2. Payload Oxidizer Storage Area

The Payload Oxidizer Storage Area provides a storage area of the payload oxidizer storage such as Nitrogen Tetroxide (NTO).

2.4.3. Payload Processing Facility

The Payload Process Facility is where the majority of the payload processing occurs. While most of the processing operations are nonhazardous, the loading of the propellants onto the payload is considered a hazardous operation. Propellants, such as NTO, may be loaded onto the payload and stored on the payload within the facility prior to transport to the other locations. Payload fuel (hydrazine) loading will occur elsewhere (e.g. at the Mission Preparation Area or Launch Pad Complex).

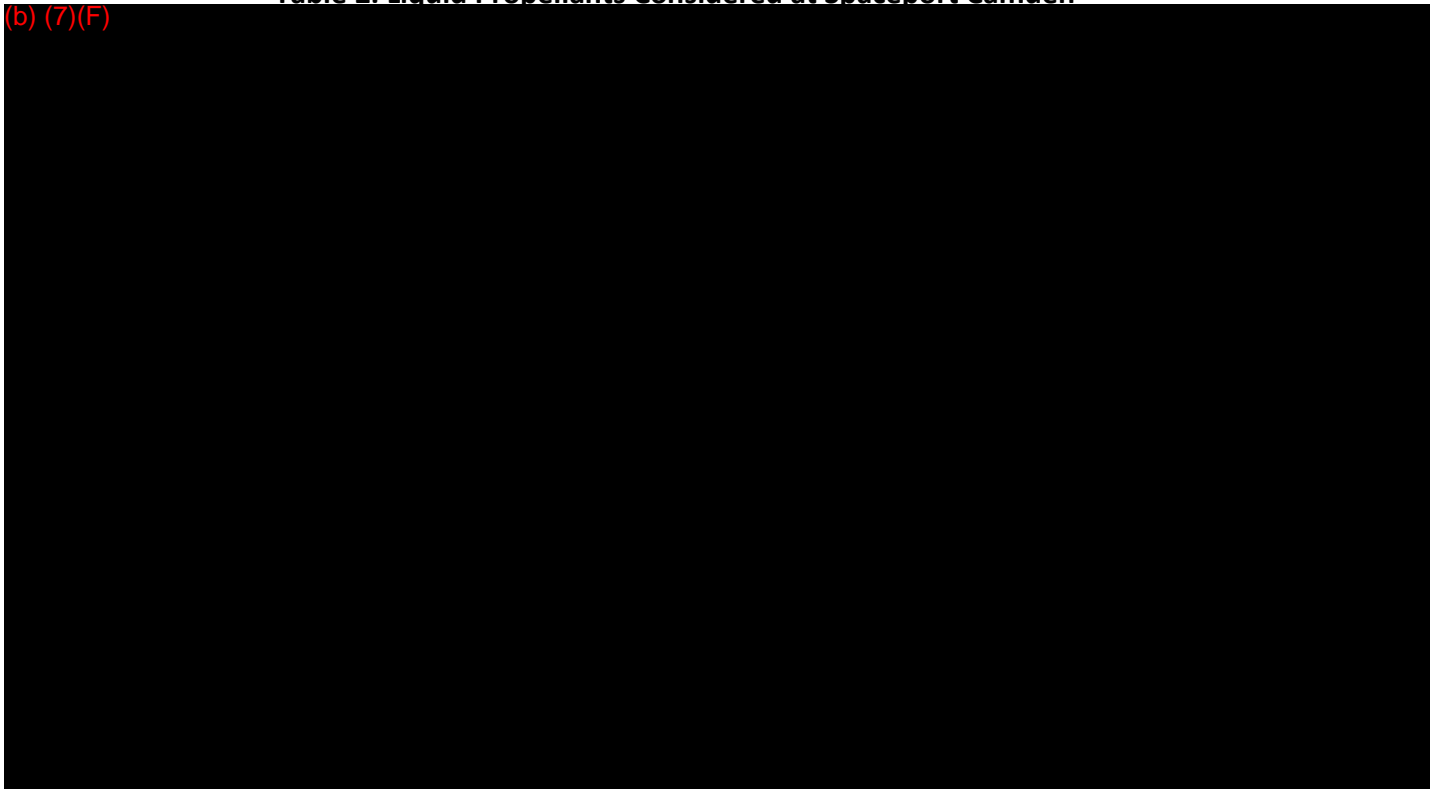
SECTION 3 – QUANTITIES OF PROPELLANTS

3.1 Propellants Types at Spaceport

A variety of liquid propellants are considered for use and storage at the spaceport (see Table 2). This list includes fuels and oxidizers that are cryogenic, hypergolic, or hydrocarbon based.

Table 2. Liquid Propellants Considered at Spaceport Camden

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In addition to standalone propellants, there are combinations and other explosives that are also stored and used at the spaceport (see Table 3). When rocket propellants (fuel and oxidizer) are combined, they can react similar to a Hazard Division 1.1 (HD 1.1) high explosive such as TNT. The Net Equivalent Weight (NEW) of HD 1.1 for the combined propellant is typically determined based on a percentage of the total propellant mass.

Table 3. Propellant Combinations and Other Explosives

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3.2 Propellant Quantities at Explosive Hazard Facilities

Table 4 lists the maximum quantities of propellants and other explosives expected to be stored or utilized at each Explosive Hazard Facility. Table 5 includes their associated separation distances, and the maximum allowable quantities for those distances.

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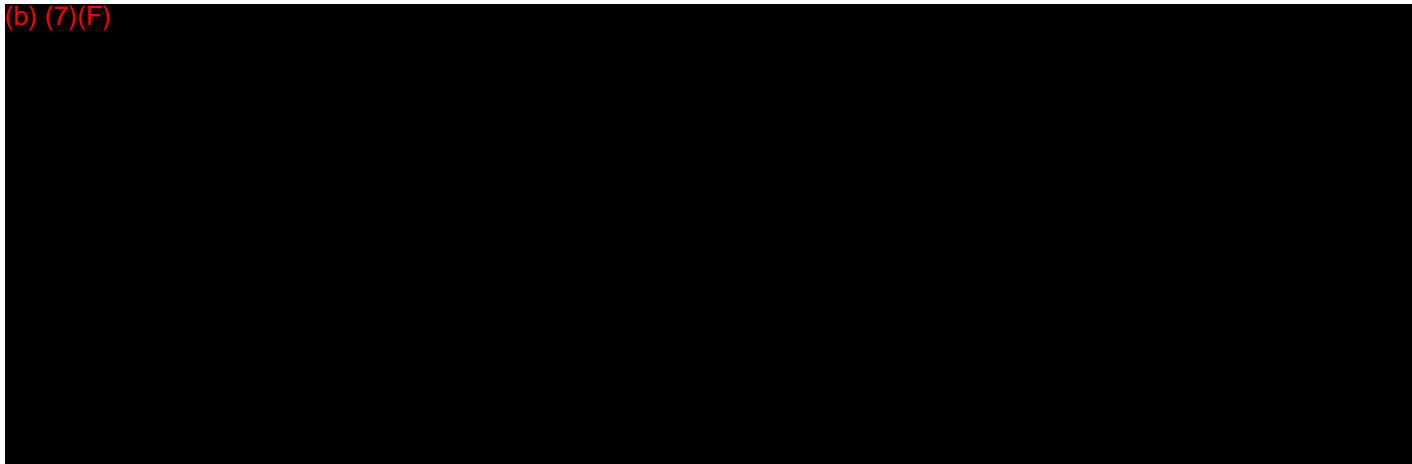


3.3 Liquid Propellant Storage

Liquid propellants are stored at both the Vertical Launch Facility and the Launch Control Center Complex. In some instances, mobile propellant vehicles may be used to prevent boil off of large storage tanks' chill down processes.

3.4 HD 1.1 Storage

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3.5 HD 1.3 Storage

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3.6 Propellant Quantities at each Hazard Facility

Table 4 lists the quantities of propellants at each of the hazard facilities.

3.7 Quantity Distance Calculations

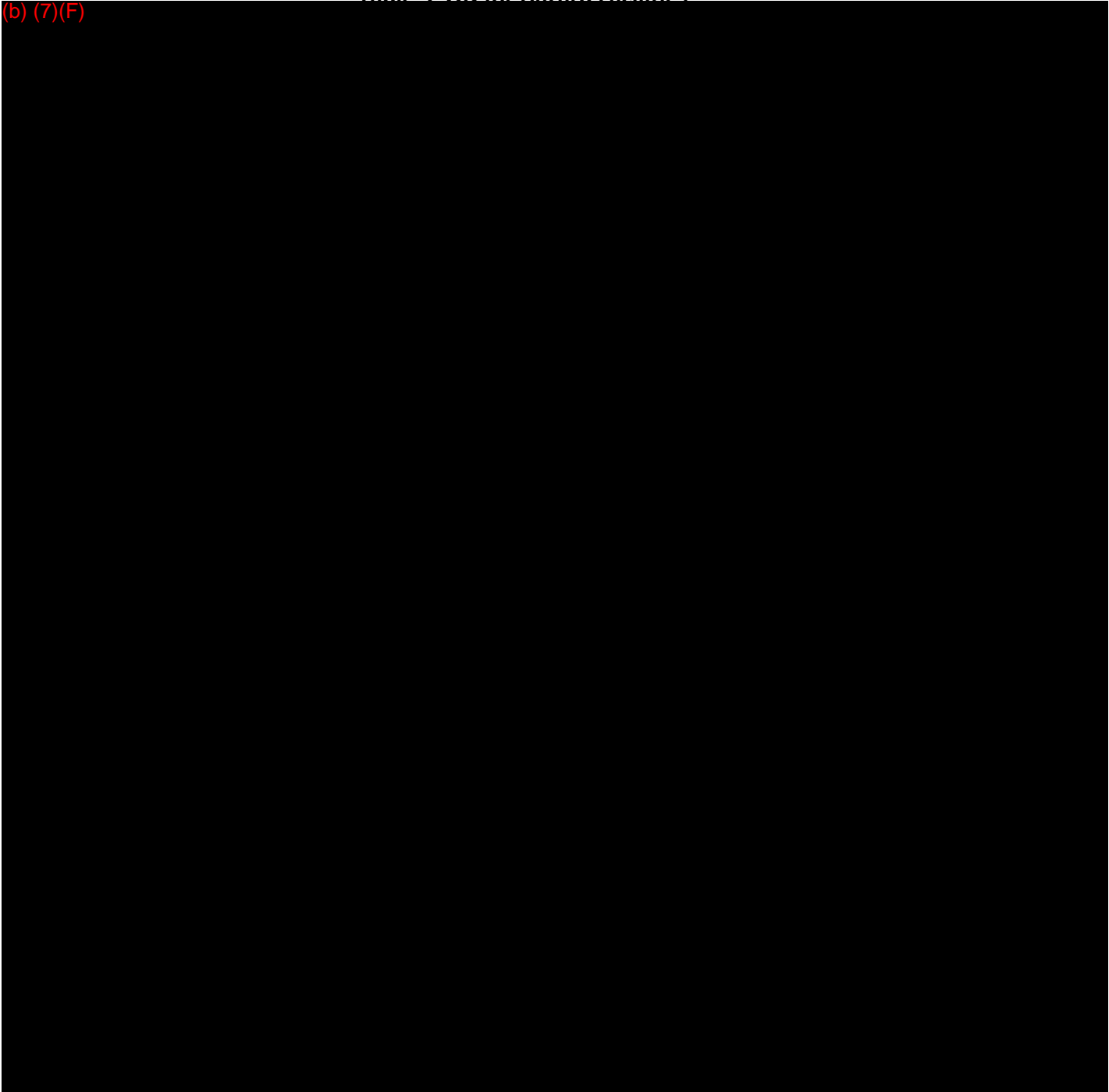
The Quantity Distance (QD) calculations provided in this explosive site plan are based on guidance provided in 14 CFR Part 420 Appendix E and DoD Ammunition and Explosive Safety Standards (DoDM 6055.09). The separation distances displayed in the explosive site plan figures are measured from the closest hazard source and along straight lines, in accordance with 14 CFR §420.70.

For each hazard facility and its associated propellants/explosives, a QD is calculated based on the anticipated maximum quantity of propellants located at the facility. The separation distances are only in affect when propellants/explosives are stored or handled at the facility. During times when no propellants/explosives are present the QD values do not apply.

For each hazard facility, the Public Area Distance (PAD), Public Traffic Route Distance (PTRD), and Intraline Distance (ILD) are calculated and shown in Table 5. It should be noted that DoDM 6055.09 was utilized when determining the structure/protected/barricaded QD distances for the FTS stored within the VIB and the MMH/UDMH stored at the Payload Fuel Storage Area. DoDM 6055.09 provides an equivalent level of safety as the explosive siting regulations in 14 CFR Part 420 and is therefore in compliance with 14 CFR §420.63(d).

Table 5. OD for Hazard Facilities

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SECTION 4 – EXPLOSIVE SITE PLAN (SCALED MAP)

4.1 Explosive Site Plan Descriptions

4.1.1. Vertical Launch Facility

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4.1.3. Launch Control Center Complex

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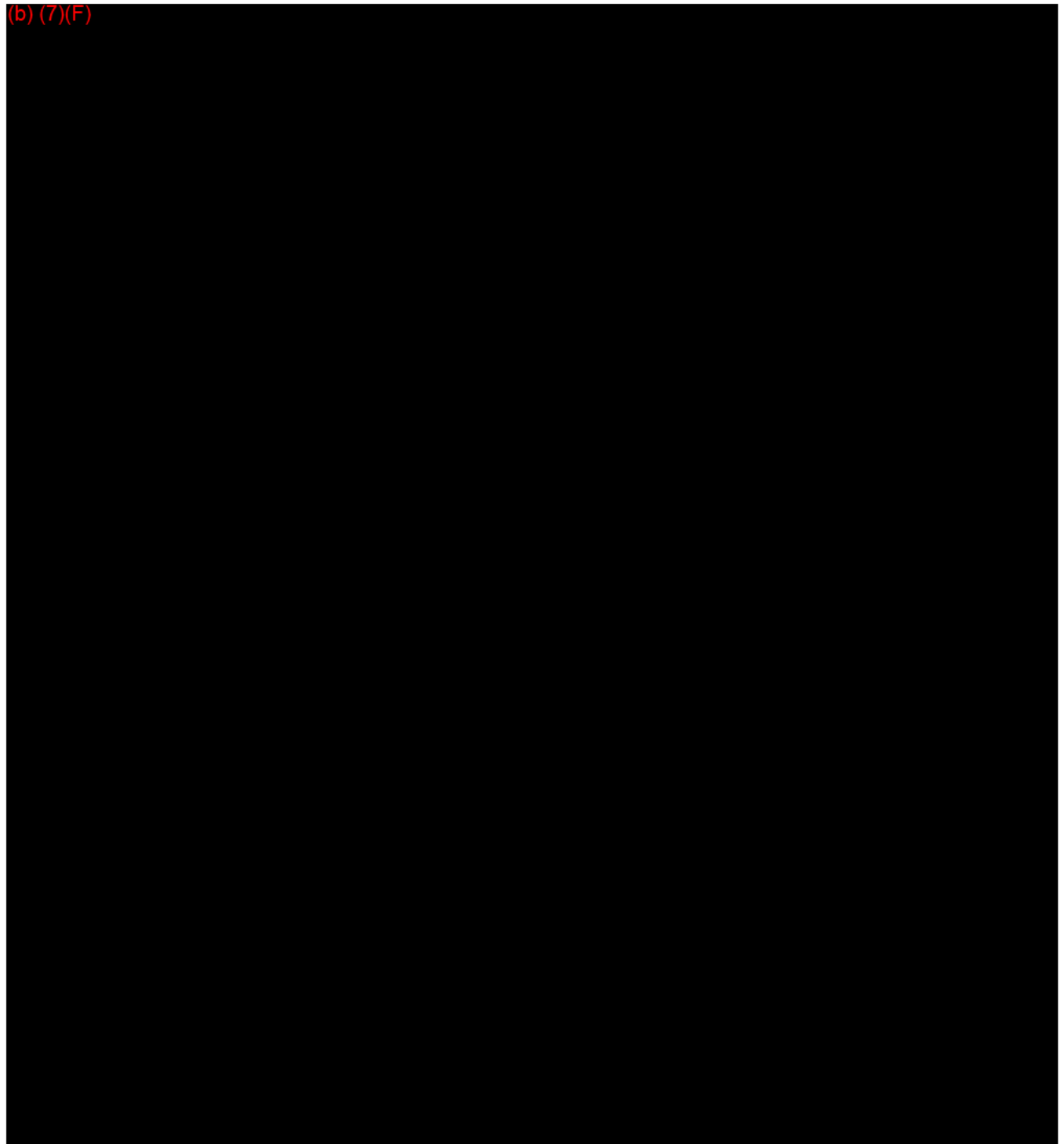
4.2 Explosive Site Plans

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It should be noted that the PADs for all explosive hazard facilities are within the proposed overall property boundary. In instances where the PADs extend into the waterways adjacent to the explosive hazard facilities, the waterways will be controlled in accordance with the Control of Public Access Plan.

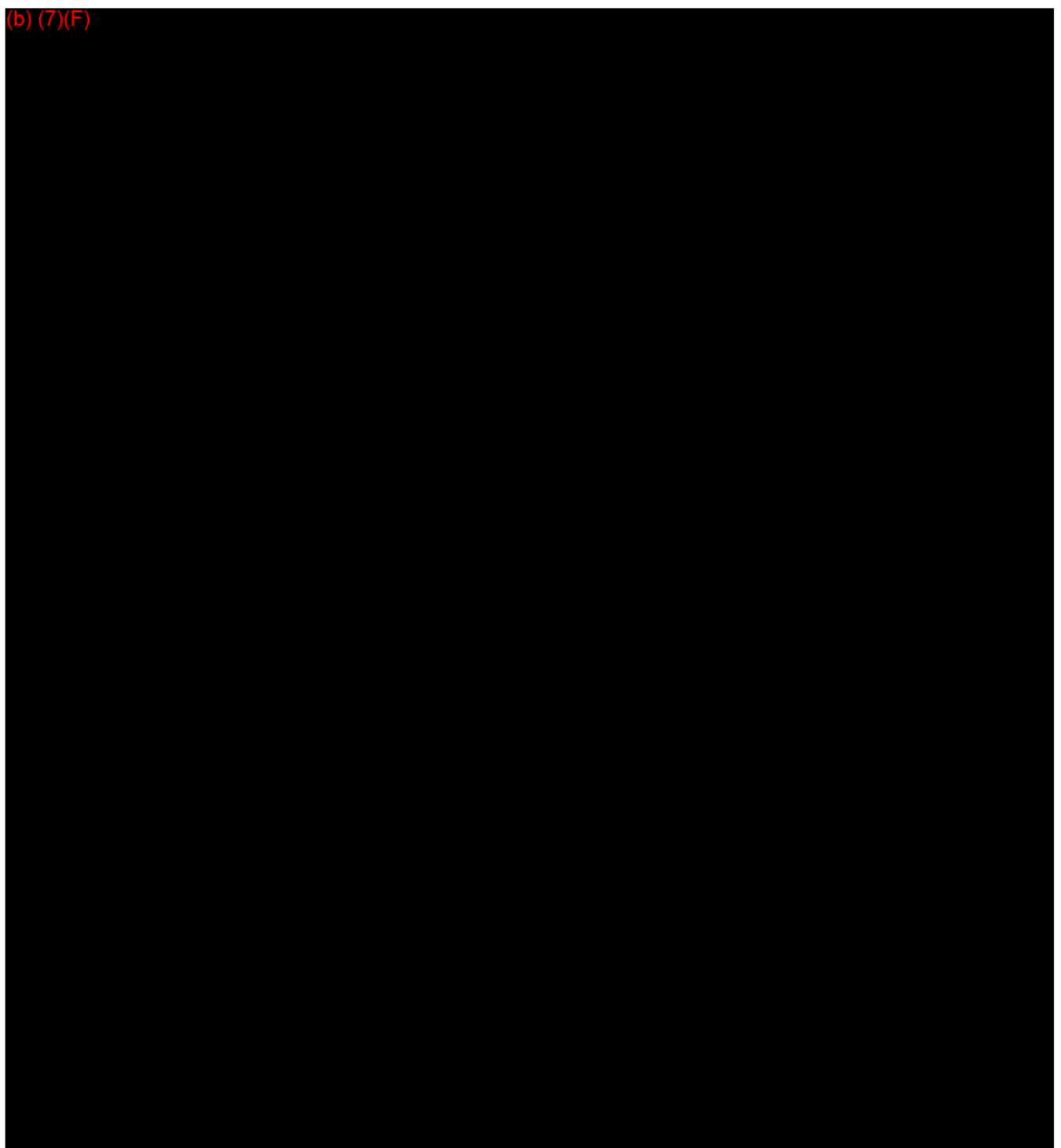
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Kimley»Horn 4852 South Ulster Street, Suite 1500 Denver, Colorado 80237 Phone: (303) 228-2300 Fax: (602) 906-1128	Launch Pad Complex - Routine Day-to-Day Operations
	Spaceport Camden Explosive Site Plan
	January 2, 2020

Figure 3. Vertical Launch Facility (Launch Pad Complex) – Routine Day-to-Day Operations

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Kimley»Horn 4852 South Ulster Street, Suite 1500 Denver, Colorado 80237 Phone: (303) 228-2300 Fax: (602) 906-1128	Launch Pad Complex - Hazardous VIB Operations
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Figure 4. Vertical Launch Facility (Launch Pad Complex) – Hazardous VIB Operations

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Figure 5. Vertical Launch Facility (Launch Pad Complex) – Hazardous Launch Pad Operations

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 4852 South Ulster Street, Suite 1500 Denver, Colorado 80237 Phone: (303) 228-2300 Fax: (602) 906-1128	Mission Preparation Area - Payload Propellant Handling Operations
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Figure 6. Mission Preparation Area – Payload Propellant Handling Operations

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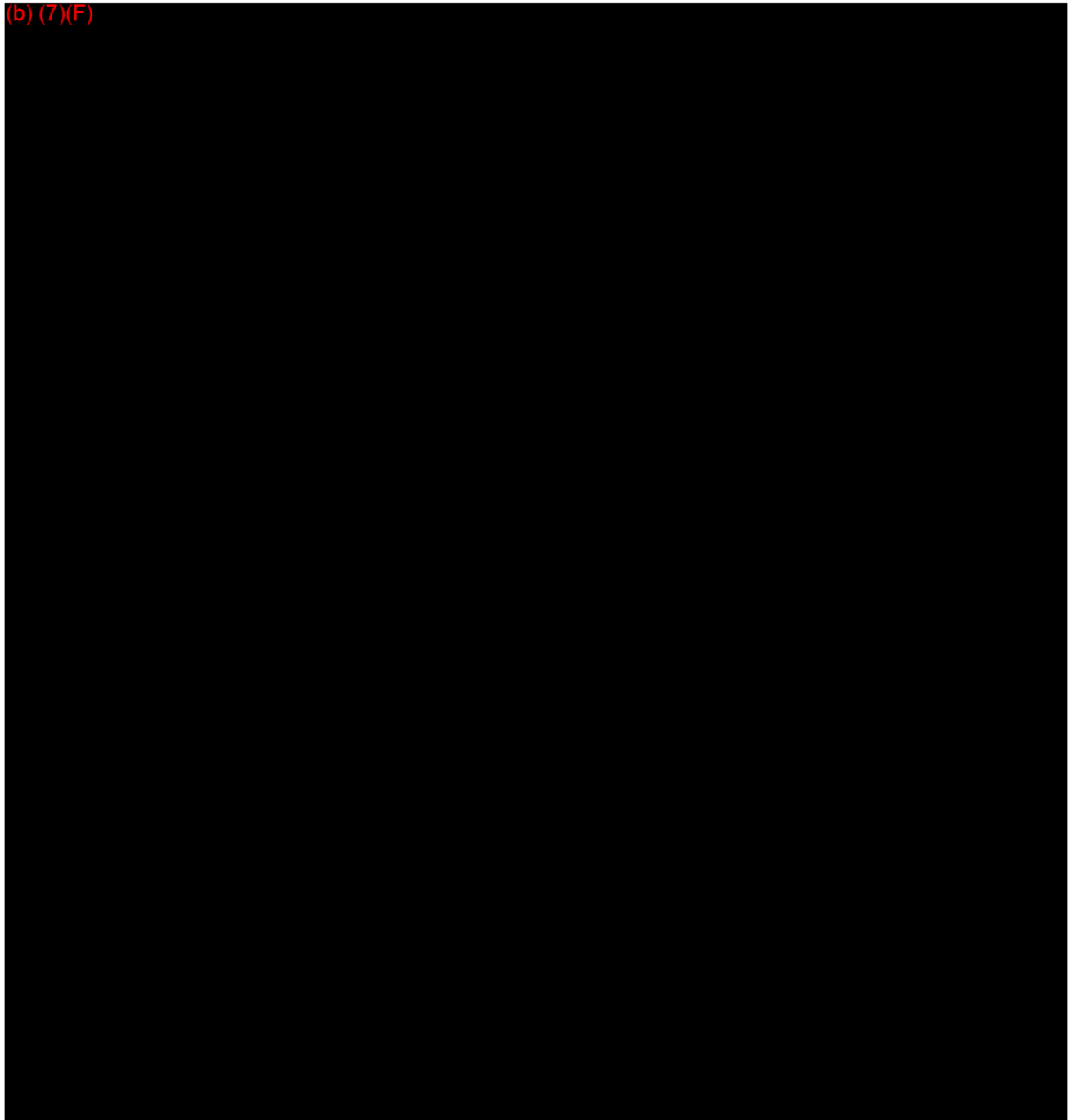
Mission Preparation Area - Other Hazardous Operations

Spaceport Camden
Explosive Site Plan

January 2, 2020

Figure 7. Mission Preparation Area – Other Hazardous Operations

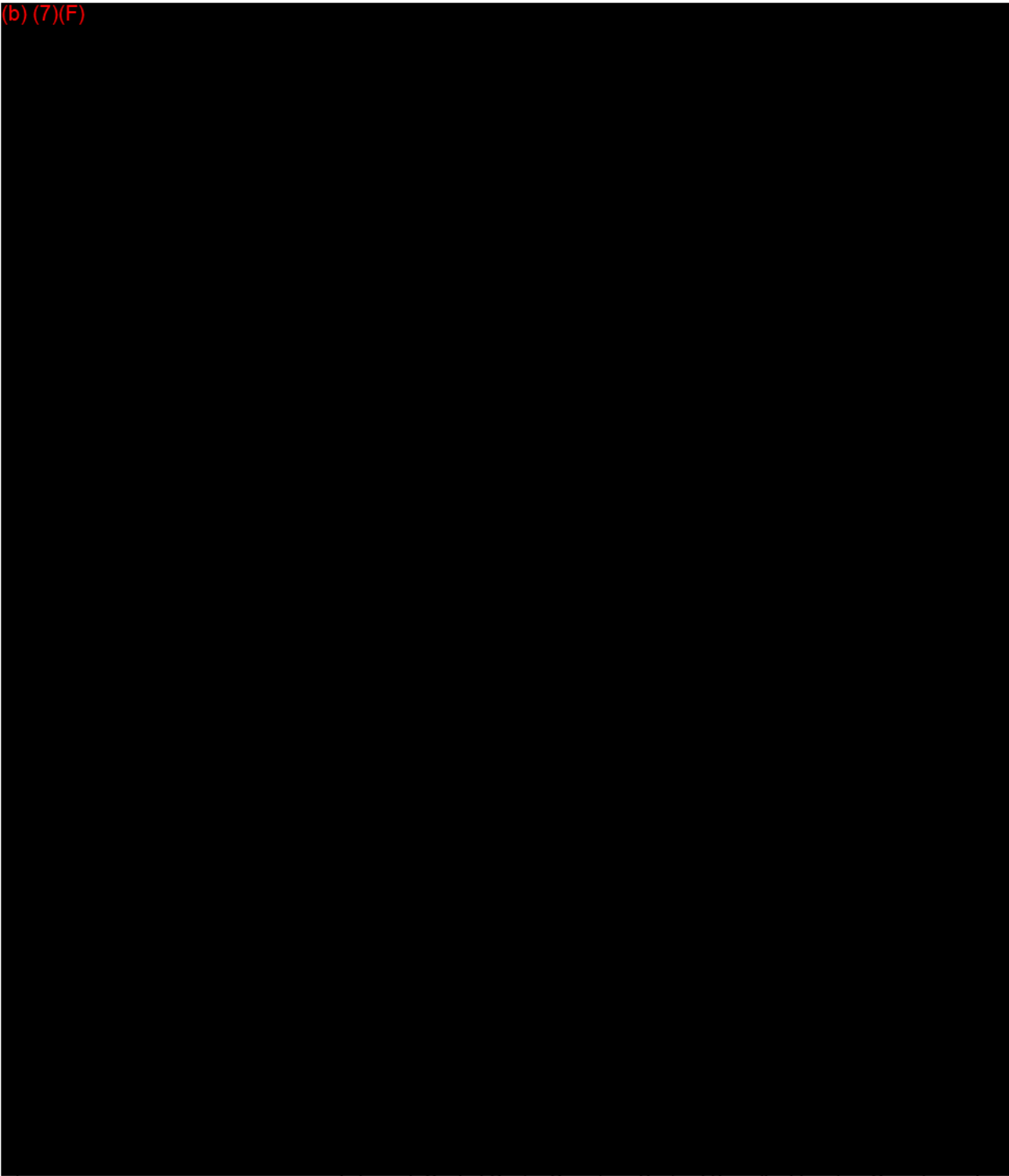
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Kimley»Horn 4852 South Ulster Street, Suite 1500 Denver, Colorado 80237 Phone: (303) 228-2300 Fax: (602) 906-1128	Launch Control Center Complex - Payload Propellant Storage
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Figure 8. Launch Control Center Complex – Payload Propellant Storage

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Launch Control Center Complex - Payload Propellant Loading Operations

Spaceport Camden
Explosive Site Plan

January 2, 2020

Figure 9. Launch Control Center Complex – Hazardous Payload Processing Operations



Attachment 7
Accident Investigation Plan



ACCIDENT INVESTIGATION PLAN

FINAL

14 January 2020

FOIA EXEMPT – PROPRIETARY DATA
GORA EXEMPT – SECURITY PLANNING INFORMATION


Jimmy Starline, Chairman
Camden County Board of Commissioners

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Revision History:

1/25/19 Initial Submittal.

01/14/20 Revisions include a clarification agreed with FAA/AST regarding the reference to Attachment 8 (Camden County Emergency Operations Plan Chapter 22 Excerpt) to the Spaceport Camden LSOL application and minor editorial updates.

1 GENERAL

1.1 Launch Site Accident Investigation Plan

The Launch Site Operator License (LSOL) for Spaceport Camden requires a Federal Aviation Administration (FAA) approved launch site accident investigation plan (AIP) to be in place before the license is issued. Within 14 CFR § 420.59 it states, *“A licensee shall develop and implement a launch site accident investigation plan that contains the licensee's procedures for reporting, responding to, and investigating launch site accidents, as defined by § 420.5, and for cooperating with federal officials in case of a launch accident.”*

Camden County has in place an overall county-wide Emergency Operations Plan that includes the requirements for accident and incident investigations and response procedures in Chapter 22 (found as Attachment 8 to the Spaceport Camden LSOL application). This AIP for spaceport launch operations is intended to fall within the overall scope and authority of the county-wide approved plans and procedures.

Within 14 CFR § 420.59(e) it states that the launch site accident investigation plans shall also address launch accidents, i.e., accidents that occur after liftoff. If such an accident occurs, all procedures in this launch site accident investigation plan that are applicable to the launch accident will be applied. Also, Spaceport Camden will cooperate with the FAA or National Transportation Safety Board (NTSB) investigations of a launch accident for launches launched from a launch site at Spaceport Camden. Therefore, the procedures in this document will apply to both launch site accidents and launch accidents.

Also, within 14 CFR § 420.59 it also states that *“The launch site accident investigation plan must be signed by an individual authorized to sign and certify the application in accordance with §413.7(c) of this chapter.”* This document is signed and certified by Jimmy Starline, Chairman of the Camden County Board of Commissioners, who is authorized to sign for Spaceport Camden.

1.2 Definitions

Within 14 CFR § 420.5 it defines a launch site accident as follows:

Launch site accident means an unplanned event occurring during a ground activity at a launch site resulting in a fatality or serious injury (as defined in 49 CFR 830.2) to any person who is not associated with the activity, or any damage estimated to exceed \$25,000 to property not associated with the activity.

Also, 14 CFR § 401.5 defines a launch accident as follows:

Launch accident means:

- (1) An event that causes a fatality or serious injury (as defined in 49 CFR 830.2) to any person who is not associated with the flight;
- (2) An event that causes damage estimated to exceed \$25,000 to property not associated with the flight that is not located at the launch site or designated recovery area;
- (3) An unplanned event occurring during the flight of a launch vehicle resulting in the impact of a launch vehicle, its payload or any component thereof:
 - (i) For an expendable launch vehicle, outside designated impact limit lines; and
 - (ii) For a reusable launch vehicle, outside a designated landing site.
- (4) For a launch that takes place with a person on board, a fatality or serious injury to a space flight participant or crew member.

Within 49 CFR § 830.2 it defines fatality and serious injury as follows:

Fatal injury means any injury which results in death within 30 days of the accident.

Serious injury means any injury which: (1) Requires hospitalization for more than 48 hours, commencing within 7 days from the date of the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, nerve, muscle, or tendon damage; (4) involves any internal organ; or (5) involves second- or third-degree burns, or any burns affecting more than 5 percent of the body surface.

Hazardous Materials are defined by OSHA as chemicals present in the workplace which are capable of causing harm. Tables of hazardous materials as defined by OSHA are provided in 49 CFR 172.101 which lists these materials alphabetically with information on hazard class or division, identification and labels, packaging, quantity limitations, and storage requirements

2 REPORTING REQUIREMENTS

2.1 Reports

The following reporting requirements as specified in 14 CFR § 420.59 will be followed:

- In the event of a launch site accident, the Federal Aviation Administration (FAA) Washington Operations Center (Phone +1-202-267-3333) will be notified immediately of the accident by the Range Director or their designee. A “Mishap Notification Form” (see Appendix A to this AIP for an example) will be prepared and submitted.

- Within five days of any launch site accident a written preliminary report will be submitted to the FAA, Associate Administrator for Commercial Space Transportation (FAA-AST). The report will include the following information:
 - Date and time of occurrence;
 - Location of the event;
 - Description of the event;
 - Number of injuries, if any, and general description of types of injuries suffered;
 - Property damage, if any, and an estimate of its value;
 - Identification of hazardous materials, as per 14 CFR §401.5, involved in the event;
 - Any action taken to contain the consequences of the event; and
 - Weather conditions at the time of the event.

3 RESPONSE PLAN

The following sections include the response procedures that would occur after an accident. The general organization of the Accident Investigation Plan key personnel is shown in Exhibit 1 below.

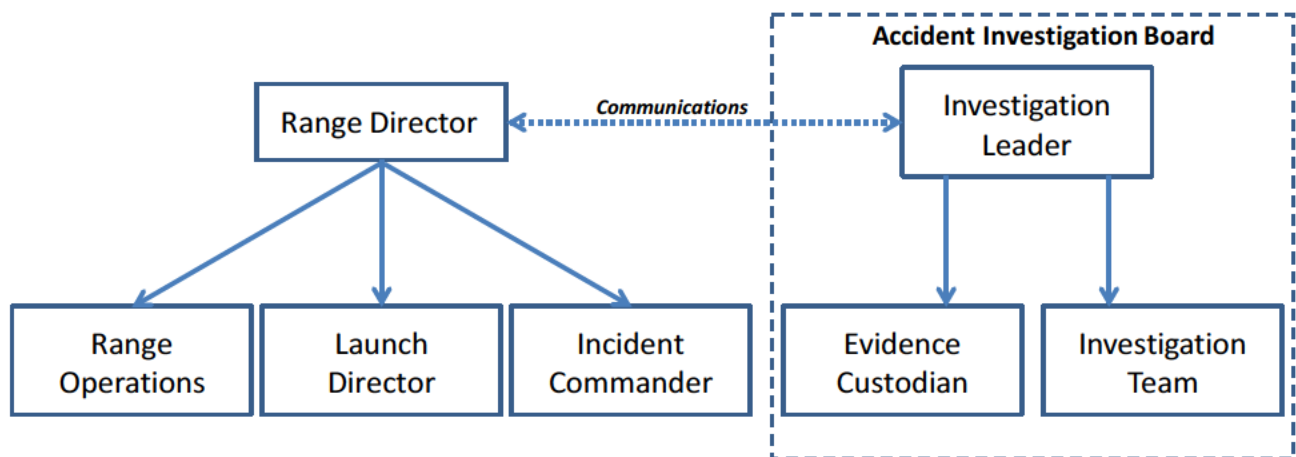


Exhibit 1. Organization of Key AIP Personnel Roles

3.1 Responsibilities

The personnel who will implement the response plan procedures and the checklists in Appendix B are:

- **Range Director:** Has primary authority during the launch operations and is responsible for direct coordination with range operations, launch director, the incident commander and other coordinating entities (e.g., US Navy, US Coast Guard, National Park Service, etc.) and the Board of County Commissioners (or their designated representative). The Range Director has final decision making authority.

- **Launch Director:** Has the primary responsibility for directing and managing all launch vehicle related activities. This person has go/no go authority for the launch vehicle only.
- **Range Operations:** Has the primary responsibility for directing and managing all range operations related activities. This person has go/no go authority for range systems only.
- **Incident Commander:** Has primary emergency operations, evacuation, and recovery responsibilities. Also is responsible for emergency communications and notifications.
- **Investigation Leader:** Has primary responsibility for the investigation of the accident, producing the initial and final accident reports, coordinating with FAA and NTSB incident / accident investigation personnel, Leads the investigation team, leads the Accident investigation board (AIB) and assigns the Evidence Custodian.
- **Evidence Custodian:** Responsible for all evidence.

3.2 Contain and Minimize Consequences of the Accident

The Incident Commander will coordinate immediately to respond to the accident and be responsible for execution of the procedures below and in accordance with the unique launch aspects captured within the Comprehensive Launch Plan (CLP) for the specific launch. The CLP will define all of the anticipated assets and personnel needed for an accident of the specific launch vehicle being launched. For example, fire suppression, hazardous materials, and emergency medical response teams will stand by at a safe location within the larger launch site or elsewhere as deemed appropriate. Pursuant to the CLP, launches and certain other types of hazardous operations (e.g., static engine firings) will require the presence of emergency response teams. These teams will respond to downrange accidents as appropriate pursuant to the CLP. On-site teams will be supplemented by nearby municipal and county service providers if they have insufficient capacity to deal with an accident that is beyond the scope anticipated during the CLP development process.

The following actions will occur, as appropriate, upon an accident occurring:

- (1) The Range Director, Range Operations and Launch Director will immediately ascertain to the extent possible the nature of the accident and coordinate with the Incident Commander.
- (2) Depending on the type of accident, the Incident Commander will direct personnel on site to be evacuated immediately to a safe distance to avoid further exposure to possible explosive events or release of hazardous materials.
- (3) The Incident Commander will, if the accident has caused personal injuries, or has the potential to cause injuries, to direct trained emergency medical personnel and equipment to be moved from their standby locations to the launch site or elsewhere as appropriate. These trained personnel, in

consultation with the Incident Commander, will determine the action to treat injuries and move injured persons to a medical facility. If injured persons are moved, their exact locations before and after the accident will be recorded as evidence.

(4) If the accident has caused a fire, or has the potential to cause a fire, the Incident Commander will direct trained fire suppression personnel and equipment to be moved from their standby locations to the launch site or elsewhere, as appropriate. These trained personnel, in consultation with the Incident Commander (as appropriate), will determine the action to be taken to suppress the fire or prevent a fire from occurring.

(5) Toxic materials released during an accident would typically come from the payload, smaller thruster engine fuel pods on the vehicle, or result from secondary emissions, e.g. toxic gases resulting from combustion of composite materials that make up parts of the launch vehicle. If the accident has caused release of hazardous materials, or has the potential to cause release of hazardous materials, trained HazMat personnel and equipment will be moved to the launch site or elsewhere as appropriate. These trained personnel, in consultation with the two lead personnel, will determine the action to be taken to protect persons from actual or potential hazardous materials. This would include measures to contain hazardous materials that are being released or have the potential to be released.

(6) Once all non-essential persons have been evacuated from the accident site and the site has been made safe, the area containing the accident will be cordoned off with clearly marked tape and/or barriers to prevent access prior to the investigation of the accident.

(7) A security guard or responsible person will be stationed at the site to prevent access to the accident area.

(8) Security measures will be taken to prevent the public from entering the general launch site area; such measures would include posting a guard and/or conducting surveillance of the area within 1,250 feet of the launch site.

(9) Launch site activities, other than those required for the response plan and accident investigation, will not be permitted until the final accident report is finished (see Section 4.2) and preventive measures and corrective actions to avoid recurrence of the accident are implemented.

3.3 Investigation Leader / Preserve Data and Physical Evidence

Spaceport Camden will designate an individual to lead and complete the investigation of the launch site accident. This individual, the Investigation Leader, will work with the personnel defined in Section 3.1. It may be that the Investigation Leader is the same person as the Range or Launch Director. These persons are designated as the Investigation Team. The Investigation Team will work with the concerned parties including launch operator personnel to execute the procedures in this section. The Investigation Leader may be augmented by trained investigative personnel from the Camden County Sheriff's Office, Camden Emergency Management and/or the Camden County Safety Officer. The Investigation Leader will have final decision-making authority for all aspects of the investigation. The following activities will

occur:

- (1) Photographs and videos will be taken at the launch/accident site and any other location relevant to the accident to preserve a visual record of the scene after the accident.
- (2) The Investigation Team will be responsible for verifying that potential evidence is not removed from the area or tampered with prior to the investigation. If materials are moved to a secure location, the Investigation Team will observe the move to verify the chain of custody. A chain-of-custody form will be used to list the items moved and be signed by the Investigation Leader.
- (3) All data, physical evidence, and other materials at the launch site relevant to the launch site accident will be preserved for the investigation. This may be accomplished by preventing access to the launch site or moving the materials to a secure location. The data and materials to be preserved may include computers, digital storage devices, hardcopies, cameras, handwritten notes, Material Safety Data Sheets (MSDSs), and other items deemed relevant by the Investigation Team. Physical evidence to be preserved may include buildings, launch vehicle components, explosive storage containers, generators, vehicles, and other items deemed relevant by the Investigation Team.
- (4) If persons were injured, the record of their locations before and after the accident (recorded immediately after the accident) will be considered evidence and stored in a secure location.

3.4 Reporting and Cooperation

The Spaceport Camden Range Director defined in Section 3.1 will perform the following:

- (1) Notify the FAA Washington Operations Center immediately of the accident and cooperate with the FAA in whatever actions they require to investigate the accident.
- (2) If requested by the FAA Washington Operations Center, notify the NTSB within the specified time period after the accident and cooperate with their investigations of the accident.
- (3) Designate the Range Director as the initial point of contact for the FAA and, if required, the NTSB.

Once appointed, the Investigation Leader becomes the primary point of contact with Federal investigative bodies. When that happens, the FAA and NTSB (if required) will be notified of this additional point of contact.

3.5 Preventive Measures to Avoid Recurrence of Accident

The Accident Investigation Board (AIB) is responsible for implementing corrective measures to avoid the recurrence of incidents and accidents. Membership in the AIB is discussed in Section 4. The following will be performed:

- (1) The AIB investigation will identify preventive measures and corrective actions (see next section) to avoid recurrence of the accident. The AIB will approve those measures and actions it deems sufficient to prevent a similar accident. These measures and actions will be incorporated into the Spaceport Camden and launch operator procedure and safety documents where appropriate and become standards of policies and/or procedures to be followed in the future. The AIB may consult with employees of the Spaceport Camden, the launch operator, other launch operators at Spaceport Camden, and/or outside experts in formulating its list of preventive measures and corrective actions.
- (2) The approved preventive measures and corrective actions will be reviewed with all affected personnel, whose job tasks are relevant to the accident findings, including contract employees.

4 INVESTIGATION PLAN

The Accident Investigation Board (AIB) is responsible for implementing these procedures. The members of the AIB will include the Investigation Team and at least two other persons with appropriate knowledge and experience to thoroughly investigate and analyze the accident. The other board members will be selected cooperatively by the Investigation Team. The Investigation Leader will lead the AIB.

4.1 Preliminary Investigation

The following preliminary investigation activities will be performed, as appropriate:

- (1) The AIB will convene as soon as the accident site is safe and evidence has been preserved. This should occur promptly, but not later than 48 hours following the accident, as possible.
- (2) The AIB will conduct recorded interviews with witnesses with knowledge of the accident to preserve as evidence their observations before, during, and after the accident.
- (3) The AIB will analyze all available evidence to form a preliminary conclusion as to the cause of the accident. Evidence will include all of the types discussed in Section 3.3 to include data, physical evidence, written materials, witness reports, photographs, videos, and any other type of evidence that the AIB deems as relevant. Personnel with direct knowledge of certain evidence, or with appropriate knowledge and experience of certain types of evidence, will be asked to provide analyses and conclusions based on the evidence to the AIB.
- (4) Based on the preliminary conclusion as to the cause of the accident, the AIB will prepare and submit a written preliminary report to the FAA-AST. This report will be submitted within five days of

the accident and will contain the information listed in Section 2.1.

4.2 Completion of Investigation

To complete the investigation, the following activities will occur, as appropriate:

- (1) After the preliminary investigation, the AIB will continue to interview witnesses and analyze evidence (as described above). These investigations will continue until the AIB reaches a firm conclusion as to the cause of the accident or determines that a firm conclusion is not possible and that continued investigations are not practicable. The cause of the accident may be a single event, or multiple events whose combination resulted in the accident. If a firm conclusion is not reached, the most likely event(s) that caused the accident will be identified.
- (2) The AIB investigation will identify to the extent possible the preventive measures and corrective actions necessary to avoid recurrence of the accident. These measures and actions will be included in the final report. They will also be incorporated in safety documents and reviewed with affected personnel, as described in Section 3.5.
- (3) The AIB will amend the preliminary report to prepare a final written report. This report will contain the information listed in Section 2.1 as well as a summary of the evidence, the conclusions as to the cause(s) of the accident, and the preventive measures and corrective actions necessary to avoid recurrence of the accident. It may also contain dissenting opinions. The report will be signed by the AIB members.
- (4) The final accident investigation report will be submitted by the Investigation Leader to the FAA-AST and the NSTB (if required) promptly once it is completed.

4.3 Responsibilities of AIB Participants & Witnesses

The responsibilities of personnel participating in the accident investigation are as follows:

Investigation Leader: This person has overall responsibility for preserving the accident site, conducting the investigation, leading the AIB, preparing the preliminary and final accident reports, and submitting the reports to the FAA and NSTB (if required). The Investigation Leader may also retain outside persons to assist in conducting and participating in the investigation. The Investigation Leader will be designated by Spaceport Camden and have final decision-making authority in all matters of the investigation.

Range Director and Launch Director: These two personnel are the lead individuals representing the Spaceport Camden and the launch operator. These positions are defined in Section 3.1. These two personnel will initially be responsible for containing and minimizing the consequences of the accident (Section 3.2) if the Incident Commander is not in place and standing by at the time of the accident. They will also be members of the Investigation Team. Prior to the designation of the Investigation Leader, the lead person representing Spaceport Camden (Range Director) will have final decision-making authority.

Investigation Team: This team consists of the Investigation Leader and the personnel defined in 3.1. It may be that the Investigation Leader is the same person as the Range Director or Launch Director, in which case the Investigation Team would have less members. This team is responsible for preserving the accident site, conducting the investigation, preparing the preliminary and final accident reports, and submitting the reports to the FAA and NSTB (if required). The Investigation Leader will have final decision-making authority.

Accident Investigation Board (AIB): The members of the AIB will include the Investigation Team and at least two other persons with appropriate knowledge and experience to thoroughly investigate and analyze the accident. The AIB will convene within 48 hours of the accident, as possible. The AIB is responsible for carrying out the investigation plan defined in section 4. The Investigation Leader will lead the AIB.

Witnesses: Witnesses to the accident may be Spaceport Camden, launch operator, and contractor personnel; they may also be visitors and other members of the public if they have substantive information related to the accident. They are responsible for providing the AIB with accurate and complete information on what they witnessed that is relevant to the accident. Public communication prior to and after launch will be augmented by the County Emergency Operations Plan “Mass Notification System.” The Mass Notification System would directly support investigative efforts by allowing for defined geographical based communications that would be used to reach all personnel within the affected area in support of information gathering from witnesses.

APPENDIX A – MISHAP NOTIFICATION FORM – 2 PAGES

IMMEDIATE MISHAP NOTIFICATION FORM	
Unknown information should not delay notification.	
Date / Time Reported:	Type of Mishap: <input type="checkbox"/> Accident (Fatality, Serious Injury, Substantial Damage) <input type="checkbox"/> Incident (Property Damage >\$25,000, System Failures)
Date / Time Occurred:	Location of Mishap: <input type="checkbox"/> Spaceport Camden <input type="checkbox"/> Other: _____
CONTACT INFORMATION	
Name (Last, First MI):	Title:
Organization:	
Address (Street, City, State Zip Code):	
Phone:	Email:
FACTUAL REPORT	
Type of Mishap: <input type="checkbox"/> Midair Collision <input type="checkbox"/> Explosion / Fire <input type="checkbox"/> Crash (ground / water impact) <input type="checkbox"/> Midair disintegration <input type="checkbox"/> Other: _____	Phase of Operations: <input type="checkbox"/> Static Ground <input type="checkbox"/> Wet Dress Rehearsal / Testing <input type="checkbox"/> Propellant Loading <input type="checkbox"/> Launch <input type="checkbox"/> Flight <input type="checkbox"/> Landing
Location of Launch Site: Camden County, GA	
Launch Site Operator: Camden County Board of Commissioners	
Launch Vehicle Operator (if applicable):	
Description of Mishap:	
Damage to Launch Site Property: <input type="checkbox"/> Yes <input type="checkbox"/> No	Estimated Damage to Launch Site Property: \$
Description of Damage to Launch Site Property:	
Specific Location of Mishap:	

Current Situation (i.e., fire / explosive / toxic / chemical hazards present):		
Emergency Response Procedures in Effect (i.e., rescue-recovery or damage control):		
OCCUPANTS <small>Indicate Injuries: Fatal, Serious, Minor, None</small>		
Name (Last, First MI):	Phone:	Injury:
Please attached page(s) for additional occupants, if applicable		

Immediate Reporting Procedure: Fax or email this form and contact the WOC to verify receipt or contact the WOC and provide this information. Unknown Information should not delay notification

POINTS OF CONTACT

Washington Operations Center (WOC):
 Fax: (202) 267-5289
 Email: 9-awa-ash-woc@faa.gov
 Phone: (202) 267-3333 or (800) 322-3804

Camden County Emergency Operations Center
 Phone: (XXX) XXX-XXX

Sheriff's Department (Camden County):
 Phone: (XXX) XXX-XXXX

Camden County Fire Department
 Phone: (XXX) XXX-XXXX

APPENDIX B – KEY PERSONNEL CHECK LISTS

B.1 Range Director or Designee Check List

- a. Notify the FAA Washington Operations Center per Section 2 and Appendix A.
- b. Designate / authorize the Investigation Leader.
- c. Inform FAA and as appropriate NTSB, of Investigation Leader appointment and contacts
- d. Provide periodic updates to FAA on the status of the investigation.
- e. If not leading the Investigation Team, contribute as a member.
- f. Submit final Accident Investigation Report to FAA upon completion.
- g. Lead appropriate actions to implement corrective action / lessons learned from accident.

B.2 Launch Director Check List

- a. Immediately inform and require all launch and payload system leads and personnel to lock down and preserve all data from systems for the Investigation Team.
- b. Determine if any range operations team members are injured. Inform the Incident Commander of their location and status if known.
- c. Assess the accident from known data streams and knowledge of the launch vehicle and payload of the accident location, debris patterns based on status of the vehicle at time of accident and weather conditions, potential toxins, fire hazard, or emissions.
- d. Inform the Incident Commander of the launch team's assessment to determine appropriate immediate response, as information becomes known in the immediate aftermath of the accident, and as appropriate later.
- e. Commence initial launch operator assessment of accident cause(s).
- f. Participate as a member of the Investigative Team.
- g. Participate as a member of the AIB.
- h. Support clean up/recovery operations. As appropriate, lead these efforts.
- i. Support Evidence Custodian to ensure data and physical evidence is preserved and turned over to the Evidence Coordinator.

B.3 Incident Commander Check List

- a. Ensure personnel and/or others impacted by the accident are evacuated from the accident site to the appropriate recovery / treatment location pursuant to advanced planning contained in the Comprehensive Launch Plan (CLP) document for the launch or operation. Ensure personnel are interviewed by the Investigation Leader or designee.
- b. Coordinate with the Range and Launch Directors to determine extent of emergency and the need for various hazard response teams (e.g., fire, toxics, medical, forestry, and/or waterborne vessel response teams) and direct those assets on standby to the appropriate location.
- c. Determine the need for Spaceport Camden personnel, tenants, visitors, the public, regional officials, and other stakeholders for information notification and act upon those determinations. As necessary activate the Mass Notification System operated by the Camden County Emergency Operations Center.
- d. Participate as a member of the Investigation Team.
- e. Participate as a member of the AIB.
- f. Support clean up/recovery operations. As appropriate, lead efforts.
- g. Support Evidence Custodian to ensure data and physical evidence is preserved and turned over to the Evidence Coordinator.

B.4 Range Operations Check List

- a. Immediately inform and require all range operations system leads and personnel to lock down and preserve all data from systems for the Investigation Team.
- b. Determine if any range operations team members are injured. Inform the Incident Commander of their location and status if known.
- c. Assess the accident from known data streams and knowledge of the launch vehicle and payload tracking systems, potential debris patterns based on status of the vehicle at time of accident and weather conditions.
- d. Inform the Incident Commander of the range operations team's assessment to determine appropriate immediate response, as information becomes known in the immediate aftermath of the accident, and as appropriate later.
- e. Commence initial range operator assessment of accident cause(s).
- f. Participate as a member of the Investigative Team.
- g. Participate as a member of the AIB.
- h. Support clean up/recovery operations.
- i. Support Evidence Custodian to ensure data and physical evidence is preserved and turned over to the Evidence Coordinator.

B.5 Investigation Leader Check List

- a. Lead the Accident Investigation Team that consists of the Investigation Leader, Incident Commander, Range Operations, Range Director, Launch Director and the Evidence Custodian.
- b. Designate an appropriate member of the Camden County staff to perform the duties of the Evidence Custodian.
- c. Conduct initial interviews of witnesses and collect witness data.
- d. Designate additional roles as needed.
- e. Establish role as primary point of contact for FAA and, if required, the NTSB.
- f. Initiate or delegate collecting interview statements from staff involved in the accident or evacuated from the accident site.
- g. Initiate or delegate collecting the locations of injured persons and secure the data with the Evidence Custodian.
- h. Provide all interview data to Evidence Custodian.
- i. Provide periodic updates on the status of the investigation to the Range Director to share with FAA, and the Camden County Administrator and Board of Commissioners to keep them informed.
- j. Lead and schedule all meetings for the AIB.
- k. Submit preliminary written report prepared by the AIB within five days of the accident to FAA.

B.6 Evidence Custodian Check List

- a. Collect photographs and videos of the launch/accident site and any other locations relevant to the accident. The location (coordinates) should be recorded when taking photos and video.
- b. Document and secure evidence as required.
- c. Verify that potential evidence is not removed from the secure area or tampered with.
- d. Develop a chain of custody form to be used if evidence is moved.
- e. In the event of adverse weather, protect weather sensitive debris from the effects of weather.
- f. If persons were injured, the record of their locations before and after the accident (recorded immediately after the accident) will be considered evidence and stored in a secure location.
- g. In accordance with 420.61(a) collect all records, data, and other materials needed to verify that the operations were conducted in accordance with representations contain in the license application.
- h. Retain all records for a minimum of 3 years.



Attachment 8

Camden County Emergency Operations Plan



Camden County Emergency Operations Plan Excerpt (Ch 22)

As of 21 December 2017

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Office of the County Clerk

P.O. Box 99/200 East 4th Street • Woodbine, GA 31569

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December 21, 2017

To whom it may concern:

I, Kathryn A. Bishop, County Clerk, Camden County Board of County Commissioners, hereby certify the attached copy of the Official Code of Ordinances, Chapter 22, Civil Emergencies as amended and approved in lawful assembly during the regularly scheduled Board of County Commissioners meeting held on March 1, 2005.

Kathryn A. Bishop

*Kathryn A. Bishop,
County Clerk*

“Award-Winning Government”

STEVE L. HOWARD
County Administrator

JOHN S. MYERS
County Attorney

LANNIE BRANT
Commissioner, District 1

CHUCK CLARK
Commissioner, District 2

JIMMY STARLINE
Commissioner, District 3

GARY BLOUNT
Commissioner, District 4

BEN L. CASEY
Commissioner, District 5

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Chapter 22

CIVIL EMERGENCIES

Article I. In General

Sec. 22-1. Definitions.
Secs. 22-2--22-35. Reserved.

Article II. Emergency Management

Sec. 22-36. Emergency management policy.
Sec. 22-37. Definitions.
Sec. 22-38. Enforcement.
Sec. 22-39. Organization.
Sec. 22-40. Emergency powers.
Sec. 22-41. Regulations.
Sec. 22-42. Penalty.
Secs. 22-43--22-60. Reserved.

Article III. State of Emergency

Division 1. Generally

Sec. 22-61. Definitions.
Sec. 22-62. Overcharging prohibited.
Sec. 22-63. Unlawful acts during emergencies.
Secs. 22-64--22-80. Reserved.

Division 2. Suspension of Ordinances, Formalities

Sec. 22-81. Definitions.
Sec. 22-82. Meetings.
Sec. 22-83. Purchasing and public works contracts.
Sec. 22-84. Code enforcement.
Sec. 22-85. Fees.
Sec. 22-86. Temporary dwellings.
Secs. 22-87--22-100. Reserved.

Division 3. Registration of Building Contractors

Sec. 22-101. Required.
Sec. 22-102. Penalties.
Sec. 22-103. Application.
Sec. 22-104. Fees.
Sec. 22-105. Transferability.
Sec. 22-106. Display of registration certification.
Sec. 22-107. Revocation, suspension.
Secs. 22-108--22-120. Reserved.

Division 4. Curfew During Emergency or Disaster

Sec. 22-121. Definitions.
Sec. 22-122. Institution.
Sec. 22-123. Prohibition.

ARTICLE I.

IN GENERAL