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Advanced Manufacturing Processes Laboratory Building 878 Hazards Assessment Document

C. Wood, W. Thornton, A. Swihart, T. Gilman

Prepared by
Sandia National Laboratories
Albuquerque, New Mexico 87185 and Livermore, California 94550
for the United States Department of Energy
under Contract DE-AC04-94AL85000

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Albuquerque, New Mexico 87185

Sandia Contract No. AJ-5463

Abstract

The Department of Energy Order 5500.3A requires facility-specific hazards assessments be prepared, maintained, and used for emergency planning purposes. This hazards assessment document describes the chemical and radiological hazards associated with the Advanced Manufacturing Processes Laboratory, Building 878. The entire inventory was screened according to the potential airborne impact to onsite and offsite individuals. The air dispersion model, ALOHA, estimated pollutant concentrations downwind from the source of a release, taking into consideration the toxicological and physical characteristics of the release site, the atmospheric conditions, and the circumstances of the release. The greatest distance at which a postulated facility event will produce consequences exceeding the Early Severe Health Effects threshold is 92 meters. The highest emergency classification is a Site Area Emergency. The Emergency Planning Zone is 300 meters.

EXECUTIVE SUMMARY

This hazards assessment provides an evaluation of the chemical and radiological hazards at the Advanced Manufacturing Processes Laboratory (AMPL, Building 878) as mandated by the Department of Energy (DOE) Order 5500.3A, Planning and Preparedness for Operational Emergencies.

The hazards assessment process developed scenarios and estimated consequences for those chemical and radiological materials determined to be hazardous. The results were used to develop the following information for use in Sandia National Laboratories/New Mexico (SNL/NM) Emergency Management Program for the AMPL.

- The greatest distance at which a postulated facility event will produce consequences exceeding the Early Severe Health Effects threshold is 92 m. (This event involves the release of 5-15 gallon drums of hydrochloric acid.)
- The highest emergency classification is a Site Area Emergency.
- The recommended protective response action for a spill occurring on the AMPL dock is sheltering in place.
- The recommended protective response actions for a fire or a chemical spill within the AMPL are evacuating and accounting of personnel.
- The recommended protective response action for a hydrogen leak is evacuation from the northwest corner of the AMPL.
- The Emergency Planning Zone is 300 meters.

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KEY to ABBREVIATIONS

AACL	Administrative Access Control Laboratory
ACGIH	American Conference of Governmental Industrial Hygienists
AIHA	American Industrial Hygiene Association
ALOHA	Aerial Locations of Hazardous Atmospheres
AMPL	Advanced Manufacturing Processes Laboratory
CAMEO	Computer-Aided Management of Emergency Operations
CFR	Code of Federal Regulations
CRD	Confidential Restricted Data
CTF	Coyote Test Field
DESHE	Distance at which Early Severe Health Effects are reached
DOE	Department of Energy
DOT	Department of Transportation
EAL	Emergency Action Level
EMG	Emergency Management Guide
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
EPZ	Emergency Planning Zone
ERPG	Emergency Response Planning Guidelines
ESHE	Early Severe Health Effects
FEMA	Federal Emergency Management Agency
GVW	Gross Vehicle Weight
HTSF	Hydrogen Trailer Storage Facility
HWMF	Hazardous Waste Management Facility
KAFB	Kirtland Air Force Base
LEPC	Local Emergency Planning Committee
MSDS	Material Safety Data Sheets
NFPA	National Fire Protection Agency
NOAA	National Oceanic and Atmospheric Administration
PAG	Protective Action Guide
SNL/NM	Sandia National Laboratories/New Mexico
SOP	Safety Operating Procedures
TA-I	Technical Area-I
TA-II	Technical Area-II
TA-III	Technical Area- III
TA-IV	Technical Area-IV
TA-V	Technical Area-V
TLV	Threshold Limit Value
TWA	Time Weighted Average

1.0 INTRODUCTION

The purpose of the hazards assessment process is to document the impact of the release of hazards at the Advanced Manufacturing Processes Laboratory (AMPL) that are significant enough to warrant consideration in Sandia National Laboratories' operational emergency management program. This hazards assessment is prepared in accordance with the Department of Energy Order 5500.3A¹ requirement that facility-specific hazards assessments be prepared, maintained, and used for emergency planning purposes.

This hazards assessment provides an analysis of the potential airborne release of chemicals associated with the operations and processes at the AMPL. This research and development laboratory develops advanced manufacturing technologies, practices, and unique equipment and provides the fabrication of prototype hardware to meet the needs of Sandia National Laboratories, Albuquerque, New Mexico (SNL/NM). The focus of the hazards assessment is the airborne release of materials because this requires the most rapid, coordinated emergency response on the part of the AMPL, SNL/NM, collocated facilities, and surrounding jurisdiction to protect workers, the public, and the environment.

A key objective of DOE's emergency management program is to ensure that all DOE facilities and operations develop and maintain emergency planning, preparedness and response capabilities, as well as effective public and interagency communications; to minimize consequences to workers and the general public from events involving the release of hazardous materials. If planning and preparedness for emergencies is to be adequate and appropriate, then the hazards that are specific to each facility and operation must first be identified and understood. The hazards assessment herein provides the technical basis for such planning.

AMPL is a one-story structure that covers more than two acres, or approximately 8,500 square meters. The key laboratory functions occupy more than 6,500 square meters, and the remaining space is primarily office areas. The laboratory functions within AMPL include, but are not limited to, the Printed Circuits Division, the Ceramics Facility, the Organic Materials Department, the Hybrid Microcircuits Division, and the Thin Film, Vacuum, and Brazing Laboratory.

All chemical and radioactive materials within the AMPL have been identified. The entire inventory was screened according to the potential to affect onsite and offsite individuals. Those materials that were determined hazardous were fully characterized, accident scenarios developed, and consequences estimated. The resultant consequences were utilized to determine the appropriate emergency planning zone, emergency classes, and emergency action levels.

2.0 SITE AND FACILITY DESCRIPTION

This section provides a brief description of the SNL/NM site and the AMPL facility. Additional information may be found in the SNL site development plan.²

The SNL/NM site is unique in that it is a shared site with the DOD; it is located on the Kirtland Air Force Base (KAFB); access is controlled by the Air Force; and the general public is allowed unescorted access to many areas of the site, such as public roads, recreational facilities, schools, and visitor centers. This relatively open access is a consideration in emergency planning efforts such as defining the site boundary, which is described below.

2.1 SNL/NM Site Description

The SNL/NM site consists of five technical areas and several remote test areas located in the eastern half of the 240-square-km KAFB in Bernalillo County. KAFB is located at the foot of the Manzano Mountains adjacent to Albuquerque, New Mexico (Illustration 2-1). The Department of Energy owns land on KAFB and has co-use agreements with KAFB for other properties. An area of the Manzano Mountains east of KAFB has been withdrawn from the Forest Service for the exclusive use of the Air Force and the DOE.³

KAFB is located on two broad mesas bisected by the Tijeras Arroyo, an east/west canyon. These mesas are bound by the Manzano Mountains (Cibola National Forest) to the east and the Rio Grande River to the west. Elevations range from 1,500 meters at the Rio Grande River to 3,255 meters at the Sandia Crest, which is in the Sandia Mountains adjacent to Albuquerque.⁴

An estimated population of 578,313 people live within an 80 km radius of KAFB, including permanent residents in KAFB housing areas.⁵ The Isleta Indian Pueblo, which borders KAFB on the south, is the nearest population center to Albuquerque. It has a population of 1,872.

2.1.1 Site Natural Conditions

The following sections provide a brief description of the natural conditions encountered at SNL/NM. The site is subject to these natural conditions which include climate, topography, hydrology, seismology, and geology.

2.1.1.1 Climate

The Albuquerque basin is characterized by low precipitation; wide temperature extremes; frequent, drying winds; heavy rain showers, usually short in duration and often with erosive effects; and erratic, seasonal distribution of precipitation. Albuquerque has a wide variation of daytime temperature ranging from 34° C (summer months) to 10° C (winter months). The prevailing surface winds on KAFB are from the east with wind speeds reaching 13.3 meters/sec.⁶

Climatological records indicate that Albuquerque can be classified as a region of low tornado occurrence, with the highest frequency of tornadoes being observed in the eastern half of the state.⁷ However, extreme winds can be expected in Albuquerque. The UCRL 15910 recommends that the SNLA design criteria be based on extreme wind criteria.⁸ Between 1959 and 1988 the Albuquerque area has experienced six tornadoes and six funnels. The tornadoes are weak and rate a F0 and F1 on the Fujita Scale (F5 is the most severe).⁹

SNL/NM in central New Mexico

Illustration 2-1

2.1.1.2 Topography

The site is generally flat, with a few constraints such as the mountainous terrain to the east where much of the Coyote Test Field (CTF) is located.

2.1.1.3 Hydrology

The Tijeras and Coyote Arroyo floodplains, which run through the southeastern corner of TA-I, II and IV and through the CTF, respectively, are important natural features that act as corridors for storm-water runoff. Planning efforts should include these arroyos as they could effect evacuation routes.

2.1.1.4 Seismology and Geology

The Albuquerque basin is one of a north-south trending line of basins that make up the Rio Grande Rift Zone. The Rio Grande River enters the basin on the north near White Rock Canyon and flows roughly down the middle of the basin to where it is joined by the Rio Salado at the south end. The basin is bounded by uplifted fault blocks on the east and west. The Sandia, Manzanita, and Manzano Mountains are uplifted on the eastern boundary. The west side of the basin is bounded by the Lucero Uplift and the south side by the Ladrón mountains. There is relatively little topographic relief along the Nacimientito Uplift on the northwest side of the basin. The geology underlying the eastern section of KAFB includes three major faults: Tijeras Fault, Sandia Fault, and the Hubbel Spring Fault. The three faults may converge near the Chemical Waste Landfill in SNL Technical Area III. Many smaller faults are undoubtedly associated with the three major offsets.¹⁰

Seismic activity research is being conducted as mandated by DOE Order 5480.28.¹¹ Recent studies by the New Mexico Institute of Mining and Technology indicate that the Albuquerque area can be classified as a zone of high seismic activity in which moderate damage can be expected. The earthquakes are relatively low in magnitude and intensity. The highest magnitude earthquake which can be expected in a 100 year period would register a six on the Richter Scale.¹²

2.2 AMPL Location

The Advanced Manufacturing Processes Laboratory, Building 878, is located at the southwest corner of "F" and 14th street. Although the AMPL is not a DOE security area, there is an enclosed "safety area" with a chain link fence to the South and East of the building which fully encloses the chemical storage areas including the Acetone Storage Shed and the Hydrogen Storage Trailer. (Illustration 2.2)

2.3 Facility Mission

The mission of the AMPL is to develop technologies, practices and unique equipment; and to fabricate prototype hardware to meet the needs of SNL. AMPL personnel provide hardware and knowledge related to manufacturing customers in the defense, energy, environment, and industrial sectors.

2.4 AMPL Description

AMPL is located outside of TA-1 and is an unsecured area. The general public has access to the area immediately outside of AMPL with limited access inside the AMPL. One must have a DOE security clearance or an escort and an unclassified badge (red badge) to enter the building. The fenced "safety area" prevents casual pedestrian traffic near potentially hazardous places such as chemical storage areas. This safety area is secure at all times and borders Technical Area I on the south side of the AMPL.

Illustration 2-2

The AMPL facility boundary is defined as the north and west walls of the AMPL and the safety fence that encloses the south dock and east wall (Illustration 2-2). To employ a definitive distance for use in emergency classification, a conservative 30 meter facility boundary was established. This is the distance from the chemical storage area on the south dock to the fence. This 30 meter facility boundary is utilized in Section 6.0 for determining the emergency classification.

The AMPL site boundary is defined as a radial 300 meters and is also used in Section 6.0 for determining the emergency classification (Illustration 2-3). This was established in consonance with emergency planning practices. As stated in the Emergency Management Guide, areas subject to access by the general public must be considered offsite unless it is assured that those areas can be evacuated and access control can be established within (1) hour of any emergency declaration.¹³ The conservative 300 meter AMPL site boundary allows for such an evacuation and controlled access in the time required.

The AMPL is a mechanically intensive building. Two 790 square meter, rooftop equipment rooms provide enclosure for heating, cooling and ventilating equipment. Exhaust fans and stacks are also located on the roof, but are not enclosed. A 1,020 square meter basement accommodates equipment for assorted building and environmental services and provides storage for some hazardous materials.

All chemicals that enter the AMPL are initially delivered to one of two spill containment units located on the loading dock. There are designated employees assigned to each facility who check the dock area twice daily. The secondary units temporarily hold the chemicals until the employees pick up their delivery and bring it to the appropriate lab.

The AMPL is divided into 12 zones (Illustration 2-4). The following section provides a description of the primary lab functions and the zones where the labs are located. The primary lab functions include the Printed Circuits Division, the Ceramics Facility, the Organic Materials Department, the Hybrid Microcircuits Division, and the Thin Film, Vacuum, and Brazing Laboratory. The primary labs and the zones where the labs are located are depicted in Table 2.1. The location of the zones within the AMPL are shown in Illustration 2.4.

Table 2.1
AMPL Zones

Laboratory	Zone(s)
Printed Circuits	10
Ceramics	11
Organic Materials	8, 12
Hybrid Microcircuits	4
Thin Film, Vacuum, and Brazing	9

Facilities
Geographic Information System
 Site Utilities Engineering Department 7909

AMPL Site Boundary

SCALE: 1"=122 meters

MARCH 30, 1994

Illustration 2-3

2.4.1 The Printed Circuits Division

The Printed Circuits Division is an electronic interconnections and packaging division which provides Sandia component, subsystem and system designers with printed wiring products to interconnect active and passive circuit elements into functional assemblies. In the normal course of operation, single-sided, double-sided, and multilayer boards, and flex, rigid-flex and chem-milled products are fabricated. In addition, new board materials and processes are evaluated, new packaging concepts are studied, limits of technology are determined, and advanced development activities are performed.

Personnel in the division utilize a wide variety of hand tools such as scissors, knives, hammers, punches, pliers, and soldering irons. Power tools include electric drills, drill presses, band saws, and others. Personnel also use a variety of production sized equipment such as direct laser imagers, developers, strippers, etchers, hot air, leveler, cleaning lines, plating lines, wave solderer, and large hydraulic presses.

This division is located in zone 10 and is comprised of a large number of rooms. In addition, several rooms are located across the hallway, adjacent to zone 10. There is a fire wall that separates the Printed Circuit Division from its neighboring rooms and hallways. The division has 22 employees. It is not unusual to find as many as five to ten persons in a given room at one time.

2.4.2 The Ceramics Processing Facility

Sandia's Ceramics Processing Facility provides a wide range of processing options for many compositions of prototype ceramic components. This facility produces glasses and glass ceramics for seals, solution-derived glasses for coatings and aerogels, scientific glassware, chemically prepared and conventional ceramics for electrical components, and ceramic molds for investment casting of metals.

This facility is an Administrative Access Control Laboratory (AACL) and meets the requirements set forth by DOE Order 5632.5 and 5634.1A to receive, use, process, reproduce and transmit classified material. The Ceramics Lab works with Confidential Restricted Data (CRD) material and fabricates War Reserve Current Stock products. The Ceramics AACL is designated as a "Secure Facility" as defined by DOE Order 5632.5 and is protected in accordance with DOE Order 5632.A ("Physical Protection of Classified Matter").¹⁴

The Ceramics Processing Facility is consolidated in zone 11, the southwest quadrant of the AMPL, and is completely enclosed by a fire wall. Access to the Ceramics Lab is controlled through: two doors located in aisle Y at rooms Y702 and Y900; and a door located at the south dock between the Ceramics and Plastics Laboratory. These doors are each equipped with a Sargent and Greenleaf 3-position combination lock with spin dial and a HIRSCH key pad.

The Ceramics Facility comprises of staff offices and the following labs: the Investment Casting Ceramic Mold Facility, the Ceramics Hot Pressing and Machining Methods Laboratory, Ceramic Powder Processing Laboratory and the Neutron Generator Assembly.

2.4.2.1 Investment Casting Ceramic Mold Facility

The Investment Casting Ceramic Mold Facility is used for process and prototype development of ceramic investment casting molds and subsequent finishing of the metal castings obtained from the ceramic molds. This facility consists of rooms Y900, Y910, Y912 and Y704. These rooms are located in the Ceramics Section, the south-central area of Building 878.

2.4.2.2 Ceramics Hot Pressing and Machining Methods Laboratory

The Ceramics Hot Pressing and Machining Methods Laboratory provides the ceramics division's engineering staff and technicians with an area and the required equipment to perform experiments and develop processes for machining and hot pressing ceramic materials. This facility consists of Room Y702 of the Ceramics Facility. One person is assigned to this laboratory, but frequently two or more people are in this area.

2.4.2.3 Ceramic Powder Processing Laboratory

The Ceramic Powder Processing Laboratory processes ceramic powders into monolithic ceramic components. Due to the wide range of ceramic powders processed, a considerable amount of chemicals is stored in this lab, all of which are identified in Section 3.0. The lab consists of rooms Y717 and Y717A. It is immediately adjacent to the south loading dock and can be entered from the loading dock or the main Ceramics Lab hallway. One person is assigned to this laboratory, but frequently two or more people are in this area.

2.4.2.4 Neutron Generator Assembly Laboratory

The Neutron Generator Assembly Lab, owned by the Mechanical Process Engineering Department performs the assembly and testing of ferroelectric neutron generators. A neutron tube is a hermetically sealed device that produces neutrons when the material (tritium in the form of metal tritides) inside the tube is exposed to a strong electric field. This lab is located in room Y700A. Two personnel are assigned to the lab.

In addition, the Neutron Generator Assembly Laboratory provides manufacturing related engineering development, fabrication, and calibration services for components, systems, and other organizations throughout the SNL/NM. These services include designing, assembling, manufacturing, fixturing, precision machining, mechanical measurements, prototyping, mechanical testing, and engineering analysis. The functions associated with the Mechanical Process Engineering Department are performed in various zones throughout the AMPL.

2.4.3 Organic Materials Department

Organic Materials Department provides materials and processing expertise and prototype fabrication capabilities for a wide variety of polymer applications. This department is spread throughout the AMPL, however, it is primarily concentrated in zone 12, the Plastics Lab. There may be eight people in the Plastics Lab at any given time.

Activities associated with the Organic Materials Department involve the application of thermosetting, thermoplastic, and composite materials. These materials are used to join, package, and provide structural members to satisfy demanding electrical, mechanical, and environmental design requirements.

2.4.3.1 Acetone Storage Shed

The Acetone Storage Shed is a temporary facility which provides the Organic Materials Department an acetone supply/return system for the Plastics Lab and a storage area for flammable materials. The Acetone Storage Shed is adjacent to the southwest loading dock of the AMPL. The 8 x 8 x 22 foot steel storage shed is rated as a class 1, division 1, explosion proof unit.

The acetone supply/return system in the Acetone Storage Shed will soon be replaced by an Acetone Still. An Acetone Still has been built adjacent to the Plastics Lab, however, it is not yet operational. Once operational, the still will recycle the acetone used in the Plastics Lab. This will replace the current Acetone Storage Shed and alleviate the need to transport contaminated acetone offsite. The Acetone Still is currently being used as a chemical storage area. The chemicals stored within the Acetone Still are identified in Section 3.0.

2.4.4 Hybrid Microcircuits

The Hybrid Microcircuits Department is responsible for hybrid microcircuit technology engineering and prototype fabrication. This lab is used by engineers, technicians, tradesmen, and contract employees to develop processes and to fabricate, assemble, and test hybrid microcircuits. The functions associated with the Hybrid Microcircuit Department are performed in various zones throughout the AMPL.

2.4.5 Thin Film, Vacuum, and Brazing

The Thin Film, Vacuum, and Brazing Department is located in Zone 9, the southeast quadrant of the AMPL. The employees within the lab provide process development and prototype hardware to SNL/NM's research and development organizations. The primary responsibilities include the development of thin film processes, allied high vacuum and brazing/joining technologies, and the implementation of those technologies to the fabrication of hardware.

2.4.5.1 Hydrogen Trailer Storage Facility

The Hydrogen Trailer Storage Facility provides hydrogen to the atmospheric brazing processes in Zone 9. The hydrogen system is located approximately 30 meters south of the AMPL. It was installed in November, 1991, and consists of two independent hydrogen supplies (a primary and a backup supply), a hydrogen dryer, and all of the associated plumbing.

The primary hydrogen supply is a multi-tube semitrailer. The storage area for the trailer consists of an open air structure possessing no roof. It is enclosed on three sides by concrete walls, while the west side consists of a steel chain-link gate. The walls are 5 meters high. There are two egress paths from the hydrogen trailer supply area, one through the gate on the west and one through an opening in the block wall on the east.

2.5 Processes and Operations

2.5.1 Printed Circuits Division

The first process evaluated at the Printed Circuits Division involves soldering. Soldering is performed in two rooms: the machine room and the etching room. This process involves large quantities of molten solder which contain 37% lead. The temperature used in this process is approximately 380° F. The process produces flux by-products (i.e. mildly activated rosin flux and acid flux) which are directly discharged through the exhaust stack.

A second process associated with the Printed Circuits Division involves etching. Various etching, stripping, and cleaning solutions are used for printed wiring board processing. The floor is designed as a spill containment area with a capacity of 1,400 gallons which would adequately contain any conceivable spill.

A third process associated with the Printed Circuits Division involves plating. The plating process utilizes large quantities of corrosives which are used in two plating systems. A safety shower and an eye wash are located in the plating room. This room is designed with a spill containment capacity of greater than 800 gallons which would adequately contain any conceivable spill.

A fourth process associated with the Printed Circuits Division involves the handling of chemicals. The bulk of chemicals are stored in storage cabinets in the chemical storage room (Rm B1150). The room is equipped with a safety shower and eye wash. The floor drains have been plugged and serve as secondary containment. Spills in this room can be handled with spill pillows. Large quantities of chemicals (i.e. 55 gallon drums) are stored on secondary containment in the basement or in a fenced area on the AMPL dock.

There are three scrubber systems in the Printed Circuits Division. One scrubber system is associated with the etching process, one with the plating process and one in the chemical storage room (Rm B1150). This copper recovery, acid/base neutralization system uses concentrated acids and bases as part of a neutralization process. In addition, there are three-three meter deep pits that are available for future use for waste water treatment.

2.5.2 Ceramics Facility

The four major processes performed within the walls of the Ceramics Facility, Zone 11, include: the Investment Casting Mold Facility, the Ceramics Hot Pressing and Machining Methods Laboratory, the Ceramic Powder Processing Laboratory, and the Neutron Generator Assembly.

2.5.2.1 Investment Casting Ceramic Mold Facility

The first process evaluated in zone 11 involves the Investment Casting Ceramic Mold Facility. This facility is involved in the mixing of ceramic slurries; injection of molten wax into dies (cavity molds); the assembly of wax patterns and other wax shapes into wax-cluster patterns; the dipping of the wax cluster patterns into ceramic slurry, followed by the application of ceramic grains to the slurry coating. After the ceramic mold has thus been formed, the wax is melted and burned out using a steam autoclave system and a resistance heated furnace. Molds may then be repaired with like ceramic and insulated with ceramic felt.

Rooms Y910 and Y912 are maintained at positive pressure relative to room Y900. The burnout furnace in Y704 has its own fume exhaust system.

2.5.2.2 Ceramics Hot Pressing and Machining Methods Laboratory

The second process evaluated in zone 11 involves the Ceramics Hot Pressing and Machining Methods Laboratory. This process consists of placing a refractory die and punch set, which contains the ceramic powder or compact, into a heat source and applying pressure to the punches.

The major components of the hot pressing equipment are the hydraulic pressure system, pressing chamber, heating unit, and gas supply system. The water cooled pressing chambers of the controlled atmosphere hot presses are designed to permit the use of vacuum or selected gases as alternate processing atmospheres. In addition, the water cooled pressing chambers provide protection from the heat source, and should the punch and die set fail, flying debris. Other safety features include electrical interlocks, ram travel limit switches, gas pressure relief valves and gas valve lockouts.

2.5.2.3 Ceramic Powder Processing Laboratory

The third process evaluated in zone 11 involves the Ceramic Powder Processing Laboratory. The operations typically performed in this laboratory include powder sieving, blending, uniaxial and isostatic compaction, sintering, and component characterization.

2.5.2.4 Neutron Generator Assembly

The fourth process evaluated in zone 11 involves the Neutron Generator Assembly in which ferroelectric neutron generators are assembled and tested.

A small amount of radioactive material (< 0.1 Curie tritium in the form of metal tritides) is used in a sealed tube in each generator. The anticipated maximum quantity is < 2.5 Curies at one time. Since there is less than 2.5 Curies located in the AMPL, the radioactive hazard is considered to be minimal.

Prior to the delivery of the neutron tubes to the AMPL, external swipe analyses are performed by the Health Physics Department on all tubes. Tubes with outside contamination levels of greater than 200 disintegrations per minute (dpm) are not accepted by Department 2484.

2.5.3 Organic Materials Department

There are six primary processes associated with the Organic Materials Department. The first process involves the formulation of resin systems for a wide range of prototype applications. These resin systems include epoxies, silicones, and polyurethanes.

The second process involves a broad range of material characterizations. These characterizations include mechanical testing, surface analysis thermal property measurement, electron microscopy, spectrometry, contamination control, and wet chemical analysis.

The third process involves the fabrication of a wide variety of prototype parts. This process utilizes thermoforming, bonding, filament winding, coating, encapsulating, milling, compression molding, and transfer molding operations.

The fourth process involves product failure analyses. This process involves encapsulant and adhesive removal as well as the use of metallographic and scanning electron microscopic/x-ray techniques.

The fifth process involves the handling and delivery of chemicals, particularly those chemicals in the Acetone Storage Shed and those delivered to the dock. The smaller amount of chemicals (i.e. less than 35 gallon containers) are delivered to secondary containment units on the dock. The larger amounts of chemicals (i.e. 55 gallon drums) are delivered on wooden pallets and placed directly on the loading dock. The storage shed serves as a temporary storage area for those labs within AMPL that have an overflow of chemicals. Safety features within the Acetone Storage Shed include two separate compartments for chemical storage, each with its own spill containment and spill kits. In addition, there are exhaust fans and an internal halon system with a heat sensor.

The sixth process involves the encapsulation of the neutron tubes. The neutron tubes are received from the Neutron Generator Assembly Laboratory for encapsulation in the Organics Materials Department. The tubes are subjected to a gradual increase in temperature to complete the cure cycle.

2.5.4 Hybrid Microcircuits

The processes associated with the Hybrid Microcircuits Department involve establishing design practices, determining performance characteristics, and developing processes compatible with environmentally conscious manufacturing. Thick-film, thin-film, co-fired ceramic and soft-substrate networks are the primary hybrid technologies supported by the area.

2.5.5 Thin Film, Vacuum, and Brazing

The processes associated with the Thin Film, Vacuum, and Brazing Department include thin film deposition by physical or chemical vapor processes, vacuum and atmospheric brazing, surface processes, material characterization, equipment development, and manufacturing process engineering.

The atmospheric brazing processes utilize clean, anhydrous hydrogen supplied by the Hydrogen Storage Facility. The processes associated with the hydrogen facility are described below.

2.5.5.1 Hydrogen Trailer Storage Facility

A process associated with the Hydrogen Trailer Storage Facility involves the exchange of two hydrogen trailers. When the trailer pressure drops below 500 psig, a telephone request is made asking that a transportation contractor pick up a full trailer at the Hydrogen Storage Facility, deliver it to AMPL, and remove the "empty" (< 500 psig) trailer for filling and storage.

The exchange of the trailers must be performed by two employees; one who is an authorized operator using a formal checklist, while the other employee performs the checklist steps. The authorized operator must have the gas certification for the replacement trailer before the trailer may be connected to the hydrogen delivery system.

At the time of hydrogen trailer exchange, the hydrogen delivery system is valved out at the trailer manifold. The trailer regulators and delivery line are purged with argon. While the hydrogen trailer is "off-line", hydrogen is supplied to the building by the backup supply. The tractor bringing the full trailer is unhooked from and pulled clear of the trailer. The electrical ground is connected to the trailer. The trailer valves and connections are checked with the hydrogen sniffer to ensure an absence of leaks. Then, the trailer is connected to the hydrogen delivery manifold. After purging the hydrogen delivery manifold

with argon, one tube on the trailer is opened and the pressure is increased to 40 psig. All non-welded fittings in the delivery manifold are checked with the hydrogen sniffer to detect leaks. If no leaks are found, the other tubes are opened, and all valves are rechecked for hydrogen leaks with the hydrogen sniffer.

An engineered control associated with the Hydrogen Trailer Storage Facility is the hydrogen dryer which removes oxygen and water from the source hydrogen. The dryer is protected from overpressurization by two pressure relief valves (one for each drying tube) vented above the building roof. A hydrogen gas sensor is located above the hydrogen dryer to detect hydrogen leaking from the dryer. A second hydrogen sensor is located in the outer cylinder of the hydrogen line that connects the hydrogen supply with the dryer.

3.0 IDENTIFICATION AND SCREENING OF HAZARDS

This section outlines the processes used to identify both onsite and offsite hazards significant enough to warrant consideration in the SNL/NM emergency management program for the AMPL and to screen out those hazards that pose minimal risk to the health and safety of the onsite worker and the general public. Those hazards identified by the screening process that pose a significant risk are further evaluated in Section 4.0.

3.1 Identification and Screening of Onsite Hazards

For the purpose of emergency planning, onsite hazards of primary concern are those hazardous materials that if released to the environment may:

- immediately threaten those who are in close proximity to the release,
- have the potential for dispersal beyond the immediate vicinity in quantities which threaten the health and safety of onsite personnel or the public in collocated facilities and/or offsite,
- and have a rate of transport and dispersion sufficient to require time-urgent emergency response to implement protective actions.

The process of identifying the onsite hazards at AMPL consisted of the following steps: (a) reviewing the most current PHAs, (b) reviewing past chemical inventories to determine the maximum historical quantities, (c) reviewing the most recent chemical inventories, and (d) conducting walkthroughs of the facility to verify that the current inventory was complete and accurate.

The following primary sources of information were used to complete the hazard identification and screening process. Based on this information, a comprehensive list of hazardous materials was compiled for AMPL. The complete list was then screened to determine which hazards required further evaluation.

- Preliminary Hazard Assessments
- Standard Operating Procedures
- Chemical Inventories
- Material Safety Data Sheets (MSDSs)

3.1.1 Screening Criteria

The Emergency Management Guide (EMG) for Hazards Assessments states, in part, "... screening quantities or thresholds should be used to eliminate the need to analyze insignificant hazards."¹⁵ Using this guidance from the EMG and other applicable documents, the following screening criteria were developed and utilized to screen chemical and radiological hazards.

3.1.1.1 Chemical Hazards

Standard Industrial Hazard (SIH)

In accordance with 40 CFR, Part 355.20, "Any substance used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public" is not considered a hazardous chemical.¹⁶ Therefore, for the purpose of hazards assessments, such chemicals can be eliminated from further evaluation.

Quantity of Material

The quantity at which a chemical does not require evaluation is one pound. This was established based upon 40 CFR Part 302, the Hazardous Substances and Reportable Quantities¹⁷ and 40 CFR Part 355, Appendix A, the Extremely Hazardous Substances and Threshold Planning Quantities¹⁸ in which no chemical had a quantity greater than one pound.

Toxicity of Material

For those chemicals exceeding one pound, the MSDS and/or the Hazardous Chemical Desk Reference¹⁹ are reviewed to determine if a chemical is hazardous due to its toxicity. Occupational exposure limits are reviewed to determine the toxicity. Those chemicals determined to be non-toxic are screened from further evaluation.

Dispersibility

A chemical is removed from further evaluation if it is determined to be non-dispersible. In order for the chemical to be non-dispersible, it must meet at least one of the following criteria:

- have a boiling point of greater than 100° C,
- be a powder of greater than 100 microns, or
- cannot conceivably be involved in a high energy event such as a fire or explosion.

3.1.1.2 Radiological Hazards

For radioactive materials, the screening criteria is based on 10 CFR, Part 30.72, Schedule C²⁰ which lists radioactive materials that require consideration for emergency planning. Any radioactive materials that exceed the quantity in curies in 10 CFR, Part 30.72, Schedule C, are kept for further evaluation and characterization. All other radioactive materials are considered insignificant hazards and are removed from further evaluation.

3.2 Identification and Evaluation of Offsite Hazards

The objective of the hazards assessment is to determine the type and extent of planning and preparedness that is appropriate for each facility and site. Hazards originating outside the DOE facility and site that could impact the health and safety of onsite personnel or other DOE interests are identified and examined. Offsite facilities, airways, highways, railroads, and utility transportation arteries (i.e. pipelines) are considered as possible locations of hazardous material accidents.

The Local Emergency Planning Committee (LEPC) for the City of Albuquerque, on which Sandia is represented, is headquartered in the Albuquerque Fire Department, with an assistant Fire Chief being the chairman of the committee. The assistant Fire Chief was consulted to provide assistance in identifying nearby facilities in the city of Albuquerque that have hazardous material inventories that could potentially impact the Sandia Albuquerque site. Railroads, highways, and other transportation arteries near the facility or site were considered as possible locations of hazardous material transportation accidents. The effects on the facility of hazardous material events originating offsite were estimated and used as the basis for determining whether specific arrangements should be made with offsite authorities for notification of releases and joint response.

3.2.1 Offsite Facilities

The following offsite facilities with hazardous materials inventory large enough and within a reasonable distance of SNL/NM that could have a negative impact on the operation of AMPL have been identified by the LEPC.

- The City of Albuquerque water treatment plant is located approximately (11 km) from the Tech Area I boundary. This facility has the capacity to store up to 100,000 pounds of liquid chlorine in two 50,000 pound capacity tanks.²¹ Chlorine is used to treat the municipal water system for biological contaminants prior to distribution.
- Additional facilities are currently being researched as part of the City of Albuquerque's Emergency Preparedness program. Additional information will be incorporated, as it becomes available.

3.2.2 Airways

TA-I is located approximately 9 km ENE of the main runway of the Albuquerque International Airport. There are approximately 225,000 annual operations at the airport. The airport is utilized by commercial, military, and general aviation aircraft. General aviation and commuter flights comprise a little more than half of the traffic at the airport, with commercial air carriers accounting for 31% and finally military flights being 16% of the traffic.²²

3.2.3 Highways

Two major transportation routes are proximal to the Sandia Albuquerque site. These are U.S. Interstate 40, approximately 4.0 km to the North, and U.S. Interstate 25, approximately 4.0 km to the West of the KAFB site boundary.

Truck accident statistics (1989-1990) from the Motor Carrier Division of the National Highway Safety Council indicate the average accident rate for medium to heavy vehicles (>10,000 pounds Gross Vehicle Weight) to be one accident per 2.2 million miles.²³

The accident rate may appear to be statistically quite low. However, because of the size of the transportation routes surrounding SNL/NM and the high volume of truck traffic on the roads, the potential for a vehicle accident involving hazardous materials is considered to be a credible emergency. SNL/NM should consider a scenario that involves a truck accident with a hazardous materials release as part of their overall emergency preparedness activities.

3.2.4 Railways

The Atchison Topeka and Santa Fe, which is a class 1 railroad, has a line that runs parallel to Interstate 25 through the city of Albuquerque, approximately 4 km from the western boundary of the site. The inventory of materials transported along this stretch of track for calendar year 1991 was provided by the Director of Environmental Quality and Hazardous Materials.²⁴ This data indicates that the majority of hazardous material is either flammable liquid or gas, or corrosive material.

Published statistics regarding railroad accidents and trends indicate that the most common cause for train accidents is derailment with a rate of 3.36 accidents per million train miles. This is more than two times higher than the next cause for train accidents, track defects, with a rate of 1.68 accidents per million train miles. The third highest cause of train accidents is human factors, with a rate of 1.54 accidents per million train miles.²⁵

The accident rate may appear to be statistically quite low; however, because of the capacity of the rail cars and the frequency of rail traffic, the potential for an accident involving hazardous materials is considered to be a credible scenario. SNL/NM should consider a scenario that involves a railway accident with a hazardous materials release as part of their overall emergency preparedness activities.

3.2.5 Pipelines

No natural gas is distributed in AMPL.

3.3 Summary

3.3.1 AMPL Hazards

3.3.1.1 Chemical Hazards

As a result of screening the hazards at AMPL, 8 chemicals were kept for further evaluation. This evaluation is performed in Section 4.0, Hazard Characterization. The chemicals kept for further evaluation are listed below.

Table 3.1
AMPL Hazardous Material Summary

Chemical	Quantity	Location
1. Ammonium Hydroxide	110 gallons	Printed Circuits, Dock
2. Etchant 50 Solution	165 gallons	Printed Circuits, Dock
3. Diazo Developer	24 liters	Printed Circuits, Rm B1150
4. Hydrochloric Acid	100 gallons	Printed Circuits, Dock
5. Nitric Acid	25 liters	*
6. Acetone	165 gallons	Acetone Storage Shed
7. Acetonitrile (Cyanomethane)	2 gallons	Organic Materials, Rm B1000
8. Methylene Chloride	32 liters	*

* These chemicals are stored and used in various labs throughout the AMPL. See Section 4.0 for specific locations.

3.3.1.2 Radiological Hazards

The anticipated maximum quantity of tritium in the form of metal tritides in neutron tubes processed by Department 2484 is < 2.5 Curies. The radioactive hazard is considered to be minimal and is screened from further evaluation.

3.3.2 Offsite Hazards

SNL/NM provides a representative to the LEPC, and a strong working relationship with the offsite Emergency Response community has been established. Development of local plans is in progress, and the contemplation of both SNL/NM hazards to the city, and city hazards to SNL/NM are being incorporated in this planning development process. Therefore, no offsite hazards were considered for characterization or further evaluation.

4.0 HAZARD CHARACTERIZATION

The screening process described in the preceding section identified 8 chemical hazards that exceeded the screening criteria. These hazards are fully characterized (i.e. physical properties, storage, and use) in this section to support the development of accident scenarios and analysis of possible airborne releases. Engineered controls and/or safety systems designed to prevent or mitigate a hazardous material release will be discussed. The administrative controls for the following facilities include approved SOPs for all handling and use of hazardous chemicals in the AMPL. These procedures include the use of protective equipment and protective clothing as well as the training requirements for all workers.

In addition, Emergency Response Planning Guidelines (ERPGs) published by the American Industrial Hygiene Association (AIHA)²⁶ are listed in the characterization below. ERPGs are utilized in Section 6 to determine the consequences of the following hazards. For those chemicals in which no ERPG values were published, a conservative methodology was developed that expeditiously allows ERPG equivalents to be established for every chemical that has a Time Weighted Average (TWA) value.²⁷ ERPGs are discussed in detail in Section 6.0.

4.1 Ammonium Hydroxide

Ammonium Hydroxide is a clear, colorless liquid solution of less than 44% ammonia. It is soluble in water. It is a human poison by ingestion and an experimental poison by inhalation and ingestion. It is a severe eye irritant. Mutation data has been reported. It is considered dangerous as the liquid can inflict burns.

Inventory

- 110 gallons on dock
- 10 liters in Room B1150

Properties

• Density	0.90
• Melting Point	-77° C
• ERPG-1 for Ammonia	25 ppm
• ERPG-2 for Ammonia	200 ppm
• ERPG-3 for Ammonia	1000 ppm

Conditions of Storage and Use

Ammonia Hydroxide is stored in 55 gallon plastic drums and 2.5 liter glass bottles at ambient pressure and temperature. The drums are stored on secondary containment in a fenced area on the AMPL dock. The secondary containment could adequately contain any conceivable spill. The glass bottles are stored in the chemical storage room, B1150. The ERPG values for ammonia are the values used for ammonium hydroxide.

4.2 Ultra Etchant 50 Solution

Ultra Etchant 50 solution is a clear, colorless solution with an ammonical odor. It contains 10-25% ammonium chloride, 20-40% ammonia hydroxide, a trace of spent material which may contain lead salts and 35-70% nonhazardous material. It is completely soluble in water. Breathing of high vapor concentrations may be irritating. Intermittent stomach pains develop with constant inhalation, and a prolonged dry cough may result.

Toxicity studies have not been conducted on the Ultra Etchant 50 Solution. However, the hazardous components of this product have been evaluated and are described below.

Ammonium chloride is a poison by subcutaneous, intravenous, and intramuscular routes and moderately toxic by other routes. It consists of white crystals with a salty taste. Ammonium chloride has an ACGIH TLV TWA of 10 mg/m³. Ammonia hydroxide is characterized in section 4.1.1. The ERPG values for ammonia are the values used for the Ultra Etchant 50 Solution.

Lead is a suspected carcinogen of the lungs and kidneys. It is poisonous by ingestion and moderately toxic by intraperitoneal route. Lead has an ACGIH TLV TWA of 0.15 mg (Pb)/m³.

Inventory

- 165 gallons

Properties

• Density	8.52 lb/gl
• Specific Gravity	1.021
• Freezing Point	4° C
• ERPG-1 for Ammonia	25 ppm
• ERPG-2 for Ammonia	200 ppm
• ERPG-3 for Ammonia	1000 ppm

Conditions of Storage and Use

Ultra Etchant 50 Solution is stored in 55 gallon plastic drums at ambient temperature and pressure on the AMPL dock. This solution is stored on secondary containment which could adequately contain any conceivable spill.

4.3 Diazo Developer

Diazo Developer is 17.8% ammonium hydroxide gas dissolved in 82.2% water. It is a colorless liquid with a pungent irritating odor. The type of acute overexposure is irritation and destruction of tissue on any exposed part of the body due to freezing of tissue and caustic action produced by the reaction of ammonia and body moisture. In addition, severe coughing and bronchial spasms can occur.

Inventory

- 24 liters

Properties

- Freezing point ~ -75° C
- Boiling point 27° C
- Specific Gravity 0.8974 @ 15.5° C
- Vapor Pressure 475 mmHg @ 15.5° C
- ERPG-1 for Ammonia 25 ppm
- ERPG-2 for Ammonia 200 ppm
- ERPG-3 for Ammonia 1000 ppm

Conditions of Storage and Use

Ammonium Hydroxide Diazo Developer is stored in 3.7 liter glass bottles at ambient temperature and pressure in the chemical room, B1150. The bottles are delivered by the case in which there are 6 bottles per case.

4.4 Hydrochloric Acid

The hydrochloric acid used in the Printed Circuits Division is a 30% solution of hydrochloric acid. HCl is a colorless, fuming liquid. It is strongly corrosive with a pungent odor. It is miscible with water and alcohol. Hydrochloric acid is mildly toxic to humans by inhalation and moderately toxic experimentally by ingestion. It is a corrosive irritant to the skin, eyes, and mucous membranes. Some data indicates that HCl is mutagenic. A concentration of 35 ppm causes irritation of the throat after short exposure. Industrial uses of hydrochloric acid rarely causes injuries other than from accidental splashes and burns.

Inventory

- 75 gallons

Properties

- Melting point -114.3° C
- Boiling point -84.8° C
- Density 1.194 @ -26° C
- Vapor Pressure 4.0 atm @ 17.8° C
- ERPG-1 3 ppm
- ERPG-2 20 ppm
- ERPG-3 100 ppm

Conditions of Storage and Use

Hydrochloric Acid is stored in 15 gallon plastic drums at ambient pressure and temperature. These drums are stored on secondary containment in a fenced area on the AMPL dock. This containment could adequately contain any conceivable spill involving hydrochloric acid.

4.5 Nitric Acid

Nitric acid is a transparent, colorless or yellowish, fuming, suffocating, caustic and corrosive liquid. Nitric acid is a human poison. It has experimental teratogenic and reproductive effects. It is corrosive to eyes, skin, mucous membranes, and teeth. Nitric acid causes upper respiratory irritation which may seem

to clear up only to return in a few hours and more severely. Depending on environmental factors the vapor consists of a mixture of the various oxides of nitrogen and nitric acid. It is flammable by chemical reaction with reducing agents. Nitric acid is a powerful oxidizing agent. It will react with water or steam to produce heat and toxic and corrosive fumes. When heated to decomposition it emits highly toxic fumes of NO_x and hydrogen nitrate.

Inventory

- 25 liters

Properties

• Melting Point	-42° C
• Boiling Point	86° C
• Density	1.50269 @ 25°/4°
• AIHA Draft ERPG-1	2 ppm
• AIHA Draft ERPG-2	15 ppm
• AIHA Draft ERPG-3	30 ppm

Conditions of Storage and Use

Nitric acid is stored in 2.5 liter glass bottles at ambient pressure and temperature. These bottles are stored in rooms A700, B1000, B1150, B1718, and Y711. All bottles are stored in appropriate flammable cabinets. The largest quantity of nitric acid is located in room B1150. The floor in room B1150 has plugged drains which could adequately contain any conceivable spill of nitric acid.

4.6 Acetone

Acetone is moderately toxic by various routes. It is a moderate skin and severe eye irritant. The human systemic effects by inhalation include: changes in EEG, changes in carbohydrate metabolism, nasal effects, conjunctiva irritation, respiratory system effects, nausea and vomiting, and muscle weakness.

In industry, no injurious effects have been reported other than skin irritation or headache from prolonged inhalation. It is a common air contaminant and a highly flammable liquid. It is a dangerous disaster hazard due to fire and explosion.

Inventory

- 165 gallons

Properties

• Melting Point	-94.6° C
• Boiling Point	56.48° C
• Density	0.7972 at 15° C
• Autoign temp	869° F
• Vapor pressure	400mm @ 39.5° C
• ACGIH TLV TWA	750 ppm
• ERPG-1 equivalent	937 ppm
• ERPG-2 equivalent	2812 ppm

- ERPG-3 equivalent

6469 ppm

Conditions of Storage and Use

Acetone is stored in 55 gallon drums at ambient pressure and temperature. These drums are stored on secondary containment in the Acetone Storage Shed.

4.7 Cyanomethane (Acetonitrile)

Cyanomethane is a colorless liquid with an aromatic odor. It is poisonous by ingestion and intraperitoneal routes. It is moderately toxic by several routes. It is a moderate skin and severe eye irritant. The systemic effects by ingestion or inhalation include: convulsions, nausea or vomiting, and metabolic acidosis. Mutation data has been reported. It is a dangerous fire hazard when exposed to heat, flame, or oxidizers. When heated to decomposition, it emits highly toxic fumes of CN^- and NO_x . It has a potentially explosive reaction with lanthanide perchlorates and nitrogen-fluorine compounds. It will react with water, steam, and acids to produce toxic and flammable vapors.

Inventory

- 2 gallons

Properties

• Melting Point	-45° C
• Boiling Point	81.1° C
• Density	0.7868 @ 20°/20°
• Vapor Density	1.42
• Vapor Pressure	100 mm @ 27° C
• ACGIH TLV TWA	40 ppm
• ERPG-1 equivalent	50 ppm
• ERPG-2 equivalent	150 ppm
• ERPG-3 equivalent	345 ppm

Conditions of storage and use

Cyanomethane is stored in 1 gallon glass bottles at ambient pressure and temperature. These bottles are stored in room B1000.

4.8 Methylene Chloride

Methylene chloride is a colorless, volatile liquid with a chloroform odor. It is a suspected carcinogen with experimental carcinogenic and tumorigenic effects. It is a poison by intravenous route. It is moderately toxic by ingestion, subcutaneous, and intraperitoneal routes. It is mildly toxic by inhalation. The human systemic effects by ingestion and inhalation include: paresthesia, somnolence, altered sleep time, convulsions, euphoria, and change in cardiac rate. It is a moderate eye and severe skin irritant. Human mutation data has been reported. It is flammable in the range of 12-19 percent in air, but ignition is difficult. It will not form explosive mixtures with air at ordinary temperatures. It can be decomposed by contact with hot surfaces and open flame, and then yield toxic fumes which are irritating and give warning of their presence. When heated to decomposition it emits highly toxic fumes of phosgene and Cl^- .

Inventory

- 32 liters

Properties

• Boiling Point	39.8° C
• Lower Explosive Limit	15.5% in O ₂
• Upper Explosive Limit	66.4% in O ₂
• Flash Point	-96.7°
• Density	1.326 @ 20°/4°
• Autoignition Temperature	1139° F
• Vapor Pressure	380 mm @ 22°
• Vapor Density	2.93
• ACGIH TLV TWA	50 ppm
• ERPG-1 equivalent	63 ppm
• ERPG-2 equivalent	188 ppm
• ERPG-3 equivalent	432 ppm

Conditions of storage and use

Methylene chloride is stored in various locations throughout the lab in various bottle sizes. The largest bottle that contains methylene chloride is a 4 liter bottle. The various labs that store and use this chemical include rooms A700, B1000, Y711, and the Acetone Still. The largest quantity of methylene chloride delivered to the AMPL dock is a 16 liter case. It is possible to have two cases delivered to the dock. The methylene chloride is then delivered to the appropriate lab for storage in flammable cabinets.

5.0 EVENT SCENARIOS

The barriers that maintain control over each of the hazardous materials described in Section 4.0 have been analyzed, and the possible failure modes have been considered. The initiating events, barrier analyses, and release scenarios are described in the following section. Each scenario is identified by a release designation.

5.1 Chemical Event Scenarios

The chemical event scenarios described below are chemical spills and are classified as laboratory-type accidents. All scenarios consider the possibility of random bullets, as mandated in DOE Order 5480.16, Fire Arms Safety.²⁸ In addition, all scenarios postulated for the dock area consider an explosion from the Hydrogen Storage Facility as an initiating event.

Because a chemical in a solution or mixture will not display the same vapor pressure that it does when it's in pure form, two source term parameters are used for the chemical event scenarios to estimate how a chemical will behave if released. These parameters include puddle and direct source. If a chemical is in a solution, the direct source term parameter (i.e. evaporation rate) is determined. If a chemical is in pure form, the puddle source term parameter (i.e. quantity of the material available for release and the size of the puddle) is determined. The equations used to calculate the source term parameters listed below can be found in Appendix C.

5.1.1 Ammonium Hydroxide and Ultra Etchant 50 Solution

As mentioned in Section 4.0, ammonium hydroxide is a solution of less than 44% ammonia, and a key component in Ultra Etchant 50 Solution is ammonium hydroxide (20%-40%). It is difficult to accurately predict how these chemicals in solutions would behave if accidentally released. To compensate for this issue, an evaporation rate for the ammonium hydroxide mixture was calculated, and the resultant source term parameter was used to represent the Ultra Etchant 50 Solution, as well. For the purpose of emergency planning, it is reasonable to assume that an accident involving Ultra Etchant 50 Solution would create the same Emergency Action Level (EAL) and simulate the same level of response as an accident involving the same amount of ammonium hydroxide. Therefore, release designations AH-1 through AH-6 depicted in Table 5.1 are representative of scenarios involving ammonium hydroxide and Ultra Etchant 50 Solution.

Failure of the Primary Barrier

Both ammonium hydroxide and Ultra Etchant 50 Solution are stored in 55 gallon plastic drums. Therefore, the plastic drum is the primary barrier. This could fail as a result of a sharp object, a bullet hole, an explosion from the Hydrogen Trailer, a fire, or from impact to the ground. All methods of failure result in the release of ammonia vapor to the environment.

Ammonium hydroxide is also stored in 2.5 liter glass bottles. In this case, the glass bottle is the primary barrier. The primary barrier may rupture as a result of dropping the bottles on the floor, knocking them over onto the counter top, or an object falling on the bottles. All methods of failure result in the release of ammonia vapor to the surrounding environment.

Effects of Other Barriers

The plastic drums are stored on secondary containment which would adequately contain any conceivable spill. However, in the unlikely event of an explosion, the plastic drums could conceivably fall off the secondary containment; therefore, no credit is given for secondary barriers. In addition, during the transfer of a plastic drum, the drum could fall onto the ground creating a tear in the primary barrier.

In scenarios involving the glass bottles stored in the chemical room (Room B1150), the scrubber in the ventilation system is the only other barrier that would have an impact on the release. However, for the purpose of emergency planning, worst case scenario is assumed, and no credit is taken for the ventilation system. The release is considered unmitigated.

Table 5.1
Ammonium Hydroxide Scenarios

	Release Rate lb/second	Scenario	Barrier
Ammonium Hydroxide Spill 55 gallons	Direct 0.08 lb/second	Worst Case	AH-1
	Direct 0.08 lb/second	Average	AH-2
Ammonium Hydroxide Spill 110 gallons	Direct 0.17 lb/second	Worst Case	AH-3
	Direct 0.17 lb/second	Average	AH-4
Etchant 50 Solution Spill 165 gallons	Direct 0.25 lb/second	Worst Case	AH-5
	Direct 0.25 lb/second	Average	AH-6
Ammonium Hydroxide Spill 10 liters	Direct 0.0038 lb/second	Worst Case	AH-7
	Direct 0.0038 lb/second	Average	AH-8

5.1.2 Diazo Developer

Failure of the Primary Barrier

Diazo Developer is handled, used, and stored according to standard laboratory operating procedures. The solution is contained in six 3.7 liter glass bottles which are the primary barriers for the Diazo Developer. The primary barriers may rupture as a result of dropping the bottles on the floor, knocking them over onto the counter top, or an object falling on the bottles. All methods of failure result in the release of ammonia vapor to the surrounding environment.

Effects of Other Barriers

The scrubber in the ventilation system in room B1150 is the only other barrier that would have an impact on the release of the chemical. However, for the purpose of emergency planning, worst case scenario is assumed, and no credit is taken for the ventilation system. The release is considered unmitigated.

Table 5.2
Diazo Developer Scenarios

Scenario	Source Term Parameter	Meteorological Conditions	Release Designation
Diazo Developer 24 liters	Direct 0.0094 lb/second	Worst Case	AH-9
	Direct 0.0094 lb/second	Average	AH-10

5.1.3 Hydrochloric Acid

Failure of the Primary Barrier

Hydrochloric acid (30% HCl) is stored in 15 gallon plastic drums. Therefore, the plastic drum is the primary barrier. This could fail as a result of a sharp object, a bullet hole, an explosion, a fire, or from impact to the ground. All methods of failure result in the release of HCl vapor to the environment.

Effects of Other Barriers

The plastic drums are stored on secondary containment which would adequately contain any conceivable spill. However, in the unlikely event of an explosion from the Hydrogen Trailer, the plastic drums could conceivably fall off the secondary containment; therefore, no credit is given for secondary barriers. In addition, during the transfer of a plastic drum, the drum could fall onto the ground creating a tear in the primary barrier. This would also result in an unmitigated release.

Table 5.3
Hydrochloric Acid Scenarios

Scenario	Source Term Parameter	Meteorological Conditions	Release Designation
Hydrochloric Acid Spill 15 gallons	Direct 0.0006 kg/second	Worst Case	HCl-1
	Direct 0.0016 kg/second	Average	HCl-2
Hydrochloric Acid Spill 45 gallons	Direct 0.0015 kg/second	Worst Case	HCl-3
	Direct 0.004 kg/second	Average	HCl-4
Hydrochloric Acid Spill 75 gallons	Direct 0.0025 kg/second	Worst Case	HCl-5
	Direct 0.007 kg/second	Average	HCl-6

5.1.4 Nitric Acid

Failure of the Primary Barrier

Nitric acid is handled, used, and stored according to standard laboratory operating procedures. The acid is contained in ten 2.5 liter glass bottles which are the primary barriers for the nitric acid. The primary barriers may rupture as a result of dropping the bottles on the floor, knocking them over onto the counter top, or an object falling on the bottles. All methods of failure result in the release of nitric acid vapor to the surrounding environment.

Effects of Other Barriers

The scrubber in the ventilation system in room B1150 is the only other barrier that would have an impact on the release of the chemical. However, for the purpose of emergency planning, worst case scenario is assumed, and no credit is taken for the ventilation system. The release is considered unmitigated.

Table 5.4
Nitric Acid Scenarios

Scenario	Source Term Parameter	Meteorological Conditions	Release Designation
Nitric Acid Spill 2.5 liters	Puddle Area - 0.25 m ² Puddle Volume - 2.5 liters	Worst Case	N-1
		Average	N-2
Nitric Acid Spill 12.5 liters	Puddle Area - 1.25 m ² Puddle Volume - 12.5 liters	Worst Case	N-3
		Average	N-4
Nitric Acid Spill 25.0 liters	Puddle Area - 2.5 m ² Puddle Volume - 25.0 liters	Worst Case	N-5
		Average	N-6

5.1.5 Acetone

Failure of the Primary Barrier

Acetone is stored in 55 gallon drums. Therefore, the drum is the primary barrier to be considered. The barrier could be breached if the drum is inadvertently dropped during its delivery to the shed. Two or three drums could be impacted from an explosion from the Hydrogen Trailer or from bullet holes.

Effects of Other Barriers

The secondary containment would adequately contain a spill inside the Acetone Storage Shed. However, no credit is taken for secondary barriers as a breach of the primary barrier could occur outside. In addition, credit is not given for secondary containment inside the storage shed as this could be impacted by an explosion which could expel the contents to the outside environment.

Table 5.5
Acetone Scenarios

Scenario	Source Term Parameter	Meteorological Conditions	Release Designation
Acetone Spill 55 gallons	Puddle Area - 21 m ² Puddle Volume - 55 gallons	Worst Case	AC-1
		Average	AC-2
Acetone Spill 110 gallons	Puddle Area - 42 m ² Puddle Volume - 110 gallons	Worst Case	AC-3
		Average	AC-4
Acetone Spill 165 gallons	Puddle Area - 62 m ² Puddle Volume - 165 gallons	Worst Case	AC-5
		Average	AC-6

5.1.6 Cyanomethane (Acetonitrile)

Failure of the Primary Barrier

Cyanomethane is handled, used, and stored according to standard laboratory operating procedures. It is received in different sized glass containers. The maximum size container holding cyanomethane at the AMPL is a one gallon glass bottle. The glass bottle is the primary barrier. The maximum inventory of Cyanomethane is two two-gallon glass bottles. The primary barriers may rupture as a result of dropping the bottle on the floor, knocking them over onto the counter top, or an object falling on the bottles. All methods of failure result in the release of cyanomethane vapor to the surrounding environment.

Effects of Other Barriers

Building ventilation is the only other barrier that would have an impact on the release of the chemical. However, the ventilation system is not designed to filter out cyanomethane vapors and would, in effect, speed the release to the outside environment. Therefore, no credit is taken for the ventilation system, and the release is considered unmitigated.

Table 5.6
Cyanomethane Scenarios

Scenario	Source Term Parameter	Meteorological Conditions	Release Designation
Cyanomethane Spill 1 gallon	Puddle Area - 0.38 m ² Puddle Volume - 1 gallon	Worst Case	CY-1
		Average	CY-2
Cyanomethane Spill 2 gallons	Puddle Area - 0.76 m ² Puddle Volume - 2 gallons	Worst Case	CY-3
		Average	CY-4

5.1.7 Methylene Chloride

Failure of the Primary Barrier

Methylene chloride is handled, used, and stored according to standard laboratory operating procedures. It is used in various glass container sizes in various locations throughout the AMPL. The largest container size is a four liter glass bottle. Therefore, the glass bottle is the primary barrier to be considered. Methylene chloride is received by the case on the AMPL dock. There are four four-liter glass bottles per case. The primary barrier may rupture as a result of dropping the bottles on the dock, knocking one or more bottles over, an object falling on the bottles, or an explosion or bullet holes. All methods of failure result in the release of methylene chloride vapor to the surrounding environment.

Effects of Other Barriers

Methylene chloride is adequately stored on secondary containment until delivery to the appropriate lab. However, the case could be dropped during delivery to the containment. Therefore, no credit is taken for the secondary containment, and the release is considered unmitigated.

Table 5.7
Methylene Chloride

Scenario	Source Term Parameter	Meteorological Conditions	Release Designation
Methylene Chloride Spill 4.0 liters	Puddle Area - 0.4 m ² Puddle Volume - 4.0 liters	Worst Case	MC-1
		Average	MC-2
Methylene Chloride Spill 16.0 liters	Puddle Area - 1.6 m ² Puddle Volume - 16.0 liters	Worst Case	MC-3
		Average	MC-4
Methylene Chloride Spill 32.0 liters	Puddle Area - 3.2 m ² Puddle Volume - 32.0 liters	Worst Case	MC-5
		Average	MC-6

5.2 Radiological Event Scenarios

No radiological scenarios are postulated because the radiological hazard located in the AMPL is considered minimal. The maximum quantity of tritium in the form of metal tritides located in the AMPL is < 2.5 Curies.

6.0 EVENT CONSEQUENCES

The consequences from the airborne release scenarios described in Section 5.0 are estimated to determine the area potentially affected, the need for personnel protective actions, and the time available to take those actions. This section describes computer codes, calculational techniques, input data used for dispersion modeling, and consequence criteria. The results of the dispersion modeling are summarized at the end of this section for each previously identified release designation. The dispersion model data sheets for each release designation are included in Appendix B.

6.1 Calculational Models and Methods

Event consequences are estimated using calculational models and methods that are most appropriate to the physical and atmospheric conditions of the site and the material released.

6.1.1 Calculational Models

The chemical model CAMEO and its air model, ALOHA, were utilized for estimating the movement and dispersion of gases.²⁹ CAMEO was designed by the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Environmental Protection Agency (EPA) to help emergency planners, facility operators, and first responders plan for and safely handle, chemical accidents. The air model estimates pollutant concentrations downwind from the source of a release, taking into consideration the toxicological and physical characteristics of the release site, the atmospheric conditions, and the circumstances of the release.

6.1.2 Calculational Methods

The transport of hazardous materials in the atmosphere from the AMPL to offsite locations during an accident is a significant concern. Several factors affect the downwind calculations. These factors include the source term (quantity of the material available for release and the size of the puddle, if applicable), release and evaporation rates, duration, mixture, and transport, diffusion, deposition, and stability. The calculations used to determine the evaporation rates for input into ALOHA are located in Appendix C.

Six classes of atmospheric stability are used to indicate mixing in the atmosphere. These classes are referred to as the Pasquill-Gifford Stability Classes.

Pasquill-Gifford Stability Classes

- A - Extremely unstable (bright, sunny days)
- B - Moderately unstable
- C - Slightly unstable (cloudy, low wind speed)
- D - Neutral (heavy overcast, day or night)
- E - Slightly stable (night, low winds)
- F - Moderately stable (very low wind, night or just before dawn)

The average Albuquerque meteorological conditions were obtained from the *Technical Guidance for Siting Criteria*,³⁰ by selecting data from four months (one from each season). This data provided a range of daily meteorological conditions. The calculations used to determine the average Albuquerque meteorological conditions can be found in the *1994 TA-V Hazards Assessment Document*.³¹

6.2 Consequence Thresholds

The consequence thresholds are based upon the Emergency Response Planning Guidelines (ERPGs) published by the American Industrial Hygiene Association (AIHA).³²

6.2.1 ERPGs

The ERPG values are intended to provide estimates of concentration ranges above which one could reasonably anticipate adverse effects as a consequence of exposure to a specific substance. ERPG-1, ERPG-2, and ERPG-3 are defined below.

- The ERPG-1 is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hour without experiencing other than mild transient adverse health effects or perceiving a clearly defined objectionable odor.
- The ERPG-2 is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hour without experiencing or developing irreversible or other serious health effects or symptoms that could impair their abilities to take protective action.
- The ERPG-3 is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hour without experiencing or developing life-threatening health effects.

Note: For those chemicals in which no ERPG values were published, a methodology was developed that allows ERPG equivalents to be established for every chemical that has a TWA value.³³

6.2.2 Application of ERPGs

The ERPGs are used to classify the operational emergency events. The three classes of operational emergencies in ascending order are: alert, site area emergency, and general emergency. The ERPGs that result in the various levels of operational emergencies are described below.

- The ERPG-2 value is compared with the maximum toxicity concentration at the facility and site boundaries to determine the appropriate emergency class. If the ERPG-2 is exceeded within the facility boundary, the event is considered an alert. If the ERPG-2 is exceeded within the site boundary, the event is considered a site area emergency. If the ERPG-2 is exceeded beyond the site boundary, the event is considered a general emergency.
- The ERPG-3 value is a consideration in defining the Emergency Planning Zone. The ERPG-3 value represents the Early Severe Health Effects (ESHE) value. The distance at which ESHE is reached is determined for each scenario.

6.3 Receptor Locations

Consequences of the hazardous material releases were quantitatively evaluated for various onsite and offsite receptor locations. The demarcation between the onsite and offsite receptors is the radial 300 m site boundary. These receptor locations include emergency response facilities and those areas that could potentially be impacted by an accident at the AMPL. The following distances are measured from the HTSF.

6.3.1 Onsite Receptors

The following onsite receptors include facilities within the 300 meter AMPL site boundary.

- Building 850, ~13 m
- Building 890, ~86 m
- Building 887, ~37 m
- Trailer 37, ~30.5 m
- Trailer 50, ~30.5 m
- Trailer 51, ~37 m

6.3.2 Offsite Receptors

The following offsite receptors include those facilities and areas outside the 300 meter AMPL site boundary.

- Building 800, (SNL/NM EOC), ~366 m
- Building 831, (Medical), ~381 m
- KAFB Fire Station, ~610 m
- National Atomic Museum, ~564 m
- Child Dev. Center, E Annex, ~762 m
- KAFB Housing (N. of "F" Blvd.), ~457 m
- Tijeras Arroyo Golf Course, ~3.2 km
- The Coronado Club, ~1.2 km
- Wherry Elementary School, ~1.6 km
- Sandia Base Elementary School, ~1.2 m
- Wilson High School, ~3.2 km
- Veterans Hospital, ~3.2 km
- Albuquerque Int'l Airport Terminal, ~6.4 km

Table 6.1
Summary of Consequences

Event Consequences for the AMPI						
Designation	Facility Boundary at 20 m (ppm)	Site Boundary at 200 m (ppm)	EMPG-2 (meters)	EMPG-1 (meters)	EAL(s) *	Emergency Event Classification
AH-1	2,320	55	127	47	1 NH ₄ OH drum spilled	Site Area
AH-2	712	8	57	23	1 NH ₄ OH drum spilled	Site Area
AH-3	4,810	96	184	71	2 NH ₄ OH drums spilled	Site Area
AH-4	1,300	18	82	34	2 NH ₄ OH drums spilled	Site Area
AH-5	7,030	130	223	86	3 Ultra Etch. 50 Sol. drums spilled	Site Area
AH-6	2,090	26	102	44	3 Ultra Etch. 50 Sol. drums spilled	Site Area
AH-7	184	5	28	11	4 NH ₄ OH bottles spilled	Alert
AH-8	34	.4	11	11	4 NH ₄ OH bottles spilled	Alert
AH-9	373	12	44	17	6 Diazo Developer bottles spilled	Site Area
AH-10	91	1.0	21	11	6 Diazo Developer bottles spilled	Alert
HCI-1	221	2.4	101	45	1 HCl drum spilled	Site Area
HCI-2	10.7	.1	22	10	1 HCl drum spilled	Alert
HCI-3	553	6.05	161	71	3 HCl drums spilled	Site Area
HCI-4	26.6	.3	34	16	3 HCl drums spilled	Site Area
HCI-5	921	10.1	210	92	5 HCl drums spilled	Site Area
HCI-6	46.6	.5	46	20	5 HCl drums spilled	Site Area
N-1	25	.3	39	27	1 HNO ₃ bottle spilled	Site Area
N-2	1	.01	< 10	< 10	1 HNO ₃ bottle spilled	n/a
N-3	109	1.3	84	59	5 HNO ₃ bottles spilled	Site Area
N-4	4.5	.05	16	11	5 HNO ₃ bottles spilled	Alert
N-5	198	2.5	117	82	10 HNO ₃ bottles spilled	Site Area
N-6	8.7	.09	23	16	10 HNO ₃ bottles spilled	Alert
AC-1	5,580	3,710	39	17	1 Acetone drum spilled	Site Area
AC-2	549	287	< 10	< 10	1 Acetone drum spilled	n/a
AC-3	8,020	5,130	53	24	2 Acetone drums spilled	Site Area
AC-4	842	488	< 10	< 10	2 Acetone drums spilled	n/a
AC-5	10,500	6,140	64	28	3 Acetone drums spilled	Site Area
AC-6	1,030	632	<10	<10	3 Acetone drums spilled	n/a
CY-1	76	.9	21	14	1 Acetonitrile bottle spilled	Alert
CY-2	3	.03	<10	<10	1 Acetonitrile bottle spilled	n/a
CY-3	146	1.6	30	19	2 Acetonitrile bottles spilled	Site Area
CY-4	6	.06	<10	<10	2 Acetonitrile bottles spilled	n/a
MC-1	88	3	20	11	1 Methylene Chloride bottle spilled	Alert
MC-2	16	.2	<10	<10	1 Methylene Chloride bottle spilled	n/a
MC-3	251	7.4	35	22	1 case Methylene Chloride spilled	Site Area
MC-4	59	.6	17	11	1 case Methylene Chloride spilled	Alert
MC-5	443	12	49	30	2 cases Methylene Chloride spilled	Site Area
MC-6	113	1.2	23	15	2 cases Methylene Chloride spilled	Alert

* EALs form the link between the severity of an emergency situation, as reflected in the event classification system and the facility specific indicators of the event.

7.0 THE EMERGENCY PLANNING ZONE

The results of the consequence analysis performed in section 6.0 were used to propose an Emergency Planning Zone (EPZ). An EPZ is an area within which special planning and preparedness efforts are warranted, as a means of apportioning preparedness resources to the areas where they are most needed.

7.1 The Minimum EPZ Radius

As can be seen from the data in Table 6.1, the highest facility emergency class is a Site Area Emergency, and the greatest distance at which a postulated facility event will produce consequences exceeding the Early Severe Health Effects (D_{ESHE}) threshold is 92 meters (Release Designation HCl-5). In accordance with Figure 4.1 of the EMG which states that if the D_{ESHE} and the site boundary are not greater than 2 km, then the "minimum EPZ radius" (EPZ_{min}) is equal to the minimum distance to the site boundary. Therefore, the EPZ_{min} for AMPL is 300 meters. The nominal 300 meter EPZ follows jurisdictional and physical boundaries and is depicted in Illustration 7.1.

7.1.1 Tests of Reasonableness

The EPZ meets the following five tests of reasonableness:

1. Are the maximum distances to PAG/ERPG-level impacts for most of the analyzed accident scenarios equal to or less than the EPZ radius selected?

Yes. All of the ERPG impacts are less than the 300 meter EPZ. As shown in table 6.1, the maximum distance for the ERPG-2 is 223 meters.

2. Is the selected EPZ radius large enough to provide a credible basis for extending response activities outside the EPZ if conditions warrant?

Yes. Lines of communication and decision processes involving KAFB, as well as city and county response agencies, have been established and practiced. In exercises, as well as actual events, the offsite agencies have demonstrated the flexibility to adapt and extend pre-planned response actions to different areas, depending upon the conditions of the particular event. This process is facilitated through the use of the Incident Command Structure.

3. Is the EPZ radius large enough to support an effective response at and near the scene of the emergency?

Yes. The nominal 300 meter EPZ encompasses AMPL and all routes leading to it. From previous exercises performed at AMPL, responders acting within this zone have effectively precluded interference from uninvolved people and activity, facilitated onsite protective actions, and optimized on-scene command, control, and mitigation efforts.

4. Does the proposed EPZ conform to natural and jurisdictional boundaries where reasonable, and are other expectations and needs of the offsite agencies likely to be met by the selected EPZ?

Yes. The EPZ conforms to jurisdictional boundaries and physical street boundaries. By utilizing streets as physical boundaries for portions of the EPZ, access within the EPZ can be adequately controlled as needed by offsite agencies.

Facilities
Geographic Information System
Site Utilities Engineering Department 7909

AMPL EPZ

SCALE: 1"=122 meters

MARCH 30, 1994

Illustration 7-1

Although AMPL is entirely within the confines of KAFB, the need for offsite agencies does exist if there is a significant event which requires offsite assistance. In this situation, the established EPZ would appropriately meet the needs of offsite agencies.

5. What enhancements of the facility and site preparedness stature would be achieved by increasing the selected radius?

The proposed EPZ radius ensures the involvement and integration of any required response organizations in the planning process. It is not obvious that any increase in the proposed EPZ boundary will provide significant improvement in the level of facility or site preparedness.

8.0 EMERGENCY CLASSES, PROTECTIVE ACTIONS, AND EALS

The correlation of event scenarios and estimated consequences developed in Sections 5.0 and 6.0 are used to determine the emergency classes and protective actions that are appropriate to the scenarios, as well as the observable indications (i.e. EALs) to trigger emergency declarations and protective actions.

8.1 Emergency Classes

As mentioned in section 6.0, the three classes of operational emergencies in ascending order of severity are alert, site area emergency, and general emergency. These classes are differentiated by severity for the purpose of specifying appropriate emergency actions, including required response activities and notifications, commensurate with the degree of hazard presented by the event. The three classes of emergencies are defined below.

8.1.1 Alert

An alert represents events in progress or have occurred which involve an actual or potential substantial reduction for the level of facility safety and protection. An environmental release of hazardous materials is expected to be limited to small fractions of the appropriate Protective Action Guideline (PAG) or ERPG-2 onsite. An alert represents an event that is noteworthy; the potential impacts are not expected to be serious; and a negligible long-term supply is anticipated. Declaration of an Alert requires the availability of personnel and resources to:

- Provide continuous assessment of pertinent information for DOE decision makers, offsite authorities, the public, and other appropriate entities;
- Conduct appropriate assessments, investigations, or preliminary or confirmatory sampling and monitoring;
- Mitigate the severity of the occurrence or its consequences; and
- Prepare for other response actions should the situation become more serious.

8.1.2 Site Area Emergency

A Site Area Emergency represents events which are in progress or have occurred involving actual or likely major failure(s) of facility safety or safeguards systems needed for the protection of onsite personnel, the public health and safety, the environment, or national security. An environmental release of hazardous materials is not expected to exceed the appropriate PAG or ERPG-2 levels offsite. A Site Area Emergency represents an event in which a substantial supply impact is anticipated. Declaration of a Site Area Emergency requires initiation of predetermined protective actions for onsite personnel and the notification and assembly of emergency response personnel and equipment to activate response centers to provide:

- Continuous assessment of pertinent information for DOE decision makers, offsite authorities, the public, and other appropriate entities;
- Establish communications, consultation, and liaison with offsite authorities;
- Provide information to the public through offsite authorities and the media;

- Conduct or assist in any evacuations and sheltering;
- Conduct appropriate assessments, investigations, or sampling and monitoring;
- Mitigate the severity of the actual or potential consequences; and
- Mobilize appropriate emergency response groups or security forces for immediate dispatch should the situation become more serious.

8.1.3 General Emergency

A General Emergency represents events which are in progress or have occurred that involve actual or imminent catastrophic failure of facility safety systems with potential for loss of confinement integrity, catastrophic degradation of facility protection systems, or catastrophic failure in safety or protection systems threatening the integrity of a weapon or test device which could lead to substantial offsite impacts. Any environmental release of hazardous materials can reasonably be expected to exceed the appropriate PAG or ERPG-2 levels offsite. Declaration of a General Emergency requires the notification, mobilization, and dispatch of all appropriate emergency response personnel and equipment including appropriate DOE national response assets to:

- Activate the response centers and other emergency assets to provide continuous assessment of information;
- Establish communications, consultation, and liaison with offsite authorities and recommend predetermined protective actions for the public;
- Provide information to the public through offsite authorities and the media;
- Conduct or assist evacuations and sheltering;
- Conduct appropriate assessments, investigations, or sampling and monitoring;
- Mitigate the severity of the actual or potential consequences; and
- Mobilize and dispatch appropriate emergency response groups or security forces.

8.2 Laboratory Release Events and EALs

The consequence analysis performed in Section 6.0 identified the following conditions which could precipitate an alert or a site area emergency involving chemicals inside the AMPL. The EAL involves:

- Any condition which could breach the primary and secondary barriers of those chemicals stored in the AMPL.

Basis: All chemicals analyzed in the AMPL are appropriately stored in hazardous material cabinets. If these chemicals are inadvertently knocked over, the EAL is the spilled container as indicated by a direct observation.

8.3 Acetone Release Events and EALs

The consequence analysis performed in Section 6.0 identified the following conditions which could precipitate an alert or a site area emergency involving acetone stored in the Acetone Storage Shed. The EAL involves:

- Any condition which could breach the acetone drums and the secondary containment on which they are stored.

Basis: In the event of a fire, there is an internal halon system with a heat sensor located inside the Acetone Storage Shed. The fire is indicated by a direct observation of smoke produced from the fire and an alarm sounding from the heat sensor located on the Acetone Storage Shed.

8.4 Dock Area Chemical Release Events and EALs

The consequence analysis performed in Section 6.0 identified the following conditions which could precipitate an alert and a site area emergency involving ammonium hydroxide, Ultra Etchant 50 Solution, and hydrochloric acid stored on the dock. In addition, those chemicals temporarily placed on the dock until delivery to the appropriate lab could also precipitate an alert or a site area emergency. These chemicals include nitric acid, acetonitrile, methylene chloride, and Diazo Developer. The EAL involves:

- Any condition which could breach the primary and secondary barriers of those chemicals stored on the dock area.

Basis: An explosion large enough to impact both the primary barrier and the secondary containment would release toxic fumes to the environment and could create a site area emergency. There are no leak detection sensors on the dock, and the EAL is indicated by a direct observation of the leak. The EALs associated with the initiating event that could impact the chemicals stored on the dock involves the Hydrogen Storage Facility. If one of the five hydrogen sensors associated with the Hydrogen Storage Facility detects hydrogen, both the hydrogen trailer and the bottle farm are turned off automatically and the delivery line is purged with argon.

8.5 Protective Actions

The recommended protective action involving all scenarios inside the AMPL (i.e. chemical spill, fire, etc.) is evacuation. The recommended protective actions for chemical spills on the dock is sheltering in place. The AMPL occupants should be made aware of the hazards associated with the release of chemicals stored on the dock.

In the event of a chemical release on the dock, mitigative measures should include an alternative warning system to prevent employees from exiting from the AMPL toward the release. The following recommendations complement the existing warning system:

- Place a manual warning system on the dock that includes an alarm and several warning lights. The alarm should sound on the dock only, and the lights should be visible from all doors exiting the AMPL, especially the doors facing the south dock.

- The current alarm system should not be triggered in order to effectively deliver instructions to shelter in place over the intercom.
- The intercom should be connected to a backup power supply to ensure that a message to shelter in place can be delivered in the case of loss of normal power.

Hydrogen Trailer Storage Facility

Although hydrogen is not considered a toxic hazard, and no protective measures concerning toxicity are warranted, hydrogen is an extremely dangerous fire and explosion hazard. The AMPL occupants should be made aware of these hazards. In the event of any hydrogen leak of the Hydrogen Trailer Storage Facility, evacuation of the building should be initiated. However, a different evacuation route should be considered. AMPL occupants should exit from the northwest corner of the AMPL to allow for the greatest protection from a hydrogen explosion.

The recommended protective action involving a fire associated with the Hydrogen Trailer Storage Facility is the establishment of a half mile (2,640 ft.) radial isolation zone, as prescribed in DOT P-5800.5³⁴. Although this distance exceeds the established AMPL EPZ, it was not a consideration in the scenario development except as an initiating event that could negatively impact the toxic chemicals associated with the AMPL.

Response

The emergency response personnel in the SNL Emergency Operations Center (EOC) will ensure prompt notification of the DOE Kirtland Area Office (DOE-KAO) emergency response staff and ensure that the coordinated actions of the Sandia and DOE Emergency plans are initiated. Sandia EOC cadre will recommend to DOE-KAO the protective action guidance for the personnel in the affected offsite area to DOE.

DOE-KAO staff will establish and maintain contact with the USAF command structure at Kirtland AFB. DOE-KAO is responsible for the notification to USAF, other DOE contractors, and other offsite authorities of the recommended Sandia protective actions, revising or supplementing the Sandia protective actions, or issuing any changes to the protective actions. After Sandia personnel have successfully mitigated the event, the Emergency Response Director will establish a recovery team and when conditions warrant, recommend termination of the emergency and prepare to initiate recovery actions.

9.0 MAINTENANCE AND REVIEW

The Risk Management and NEPA Department is responsible for ensuring that Hazards Assessment Documents are regularly reviewed and maintained.

It is the responsibility of the Facility Managers to periodically review Hazards Assessment Documents applicable to their facilities and insure that they accurately reflect any changes in facility design, operations, safety features, inventories of hazardous materials, and features of the surrounding area.

The line organizations should provide information relative to changes in facility design, operation, safety features, inventories of hazardous materials, and features of the surrounding area to the Facility Manager.

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Appendix A

Chemical Screening Worksheets

The screening criteria described in Section 3.1.1 were utilized to evaluate the entire chemical inventory at the AMPL. The Department of Transportation's Health Hazard Ratings were used to help determine the health hazards associated with the toxicity of various chemicals.

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CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard Source	Location	Quantity	Flammable	Corrosive	Reactive	Toxic	Environmental	Other
Acetone	Rm B1150	12.0 (l)	X					S
Adhesive, Epoxy, Cole Parmer	Rm B1120	1050.0 (g)	X					S
Adhesive, Loctite 242	Rm B1400	50.0 (ml)	X					S
Adhesive, Loctite 271	Rm B1400	10.0 (ml)	X					S
Adhesive, PVC Cement, Black Swan	Rm B1150	16.0 (ozf)	X					S
Adhesive, PVC Cement, Chemcut	Rm B1150	3.0 (pt)	X					S
Adhesive, PVC Cement, Oatey	Rm B1150	4.0 (ozf)	X					S
Adhesive, PVC Cleaner, Hercules	Rm B1150	1.0 (qt)	X					S
Adhesive, PVC Cleaner, Uniweld	Rm B1150	3.0 (pt)	X					S
Adhesive, PVC Cleaner, Weld on F-P70-1288	Rm B1150	32.0 (ozf)	X					S
Adhesive, PVC Cleaner, Weld on	Rm B1150	16.0 (ozf)	X					S
Adhesive, RTV, 128	Rm B1150	3.0 (ozf)	X					S
Adhesive, RTV, 3145	Rm B1150	6.0 (ozf)	X					S
Adhesive, RTV, 732	Rm B1150	124.0 (ozf)	X					S
Adhesive, RTV, 738	Rm B1150	9.0 (ozf)	X					S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard	Location	Quantity	Flammable	Corrosive	Reactive	Toxic	Other	Result
Alcohol, Isopropyl, 2-Propanol 1 litre	Rm B1150	12.0 (l)	X					S
Alcohol, Isopropyl, 2-Propanol 4 litre	Rm B1150	4.0 (l)	X					S
Alcohol, Isopropyl, 2-Propanol 5 gal	Dock	15.0 (gal)	X					S
Ammonium Bifluoride Flake	Rm B1150	50.0 (lb)				X		S
Ammonium Chloride	Dock	200.0 (lb)				X		S
Ammonium Hydrogen Difluoride	Rm B1150	1000.0 (g)				X		S
Ammonium Hydroxide	Dock	55.0 (gal)						K
Ammonium Hydroxide	Rm B1150	10.0 (l)						K
Ammonium Hydroxide, Diazo Developer	Rm B1150	24.0 (l)						K
Ammonium Peroxydisulfate	Rm B1150	3,000.0 (g)				X		S
Anydrous Reagent Alcohol	Rm B1150	500.0 (ml)		X				S
Boric Acid	Rm B1150	10,500.0 (g)			X			S
Buffer Solution PH10 Fisher	Rm B1150	500.0 (ml)		X				S
Buffer Solution PH4 Baxter	Rm B1150	1.0 (gal)			X			S
Buffer Solution PH4 Sodium Acetate Banco	Rm B1150	1.0 (l)					< ERPG-1 at 30 m	S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard Name	Location	Quantity	Flammable	Corrosive	Reactive	Health Hazard	Environmental	Overall Rating
Butyl Carbitol	Rm B1150	1.0 (pt)		X				S
Cleaner, Bioact EC-7	Rm B1150 Dock	165.0 (gal) 55.0 (gal)			X			S
Cleaner, Cascade Powder	Rm B1131	1,020.0 (ozd)	X					S
Cleaner, Copper Conditioner, Ardrox PC-7066	Rm B1150	55.0 (gal)					< ERPG-1 at 30 m	S
Cleaner, Copperbrite, Kepro CU3	Rm B1150	8.0 (ozf)		X				S
Cleaner, Dry Erase Surface	Rm B1400	8.0 (ozf)		X				S
Cleaner, Duster, Dust-Away+	Rm B1150	288.0 (ozf)				X		S
Cleaner, Duster, Effa	Rm B1400	14.0 (ozf)		X				S
Cleaner, Film, Byers Graphic Arts	Rm B1150	3.0 (gal)	X					S
Cleaner, Fluorinert FC-44	Dock	20.0 (gal)				X		S
Cleaner, Fluorinert FC-70, 1 Gal	Rm B1400	5.0 (gal)				X		S
Cleaner, Fluorinert FC-71	Rm B1400	75.0 (lb)				X		S
Cleaner, Fluorinert FC-77	Dock	3.0 (gal)			X			S
Cleaner, Fluorinert Galden D02TS	Rm B1150	56.0 (lb)				X		S
Cleaner, Fluorinert Galden D02TS-37	Rm B1150	74.0 (lb)			X		DOT Health Hazard Rating 0	S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard Source	Location	Quantity	Flammable	Corrosive	Reactive	Toxic	Other	Result
Cleaner, Glass, Spra-Away	Rm B1150	444.0 (ozf)	X					S
Cleaner, Hand I.C. Cleaner	Rm B1150	2.0 (gal)			X			S
Cleaner, Hand, Fast Orange	Rm B1150	140.0 (ozf)			X			S
Cleaner, Kni Solvent-2000	Rm B1150	55.0 (gal)				X		S
Cleaner, Kodak Liquid Developer System	Rm B1150	48.0 (ozf)	X					S
Cleaner, Kodak Liquid Developer System	Rm B1150	6.0 (l)	X					S
Cleaner, Kodak, Fixer Wash System	Rm B1150	8.0 (lb)	X					S
Cleaner, Room Deodorant, Big D	Rm B1150	60.0 (ozf)	X					S
Cleaner, Scrub 11 Shipley	Rm B1150	5.0 (gal)	X					S
Cleaner, Simple Green	Rm B1150	10.0 (l)			X			S
Cleaner, Solder Conditioner, 9233 Metex	Dock	110.0 (gal)				X		S
Cleaner, Solder Conditioner, Ardrex PC-6040	Dock	10.0 (gal)				X		S
Cleaner, Stainless Steel Polish Hyshine	Rm B1150	36.0 (ozf)	X					S
Cleaner, Stainless Steel Polish Majestic	Rm B1150	105.0 (ozf)	X					S
Cleaner, Sur Clean 91/92	Rm B1150	10.0 (gal)					< ERPG-1 at 30 m	S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard		Screening Criteria				
Cleaner, Thinner, Justrite	Rm B1150	2.0 (pt)	X			S
Coolant, Prestone Advanced Formula	Rm B1150	1.0 (gal)	X			S
Copper, Pellets	Rm B1150	150.0 (kg)		X		S
Developer, Kodak 2000 Replenisher RA 5 Gal	Rm B1150	50.0 (gal)	X			S
Developer, Kodak 3000 Fixer & Replenisher, Part A	Rm B1150	25.0 (gal)	X			S
Developer, Kodak 3000 Fixer & Replenisher, A & B	Dock	3.0 (gal)	X			S
Developer, Kodak 3000, Part B	Rm B1150	288.0 (ozf)	X			S
Developer, Kodak HRP Dev.	Rm B1150	250.0 (l)	X			S
Developer, Kodak Photo-Flo 200 Solution	Rm B1150	10.0 (pt)	X			S
Developer, Kodak Rapid Fixer Solution A	Rm B1150	160.0 (ozf)	X			S
Developer, Kodak Rapid Fixer Solution B	Rm B1150	26.0 (ozf)	X			S
Developer, Photoposit 303A Concentrate	Rm B1150	5.0 (gal)	X			S
Developer, Waycoat PF	Rm B1150	5.0 (gal)				S
Etchant, Kapton Polyimide Film Etchant	Rm B1150	1.0 (gal)		X		S
Etchant, Preposit 746	Rm B1150	15.0 (gal)		X		S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard Source	Location	Quantity	Flammable	Corrosive	Reactive	Health Hazard	Environmental	Other
Etchant, Ultratch 50	Dock	110.0 (gal)						K
Etchant, Ultratch 50 Makeup Solution	Dock	165.0 (gal)					DOT Health Hazard Rating 1	S
Ethy' Alcohol	Rm B1150	1.0 (l)	X					S
Ethyl Alcohol	Rm B1150	2.0 (pt)	X					S
Ferric Chloride	Rm B1150	128.0 (ozf)				X		S
Ferric Chloride	Dock	55.0 (gal)				X		S
Film, Silk Screen	Rm B1150	2.0 (oth)	X					S
Flux, Actiec #2	Rm B1400	57.0 (ml)			X			S
Flux, Actiec #5	Rm B1400	57.0 (ml)			X			S
Flux, AllenE100 All Sol Flux	Rm B1400	1.0 (qt)				X		S
Flux, Alpha #611 RMA	Rm B1400	4.0 (ozf)			X			S
Flux, Blackstone #1023	Rm B1400	1.0 (gal)				X		S
Flux, Blackstone #1452	Rm B1400	8.0 (ozf)			X			S
Flux, Flo-Rite II, Chemelex	Rm B1150	5.0 (gal)					< 1% of material toxic	S
Flux, Kester #109 Thinner, 1 gal	Rm B1400	2.0 (gal)					< ERPG-1 at 30 m	S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard Source	Location	Quantity	Flammable	Corrosive	Reactive	Other	Screening Criteria	Result
Flux, Kester #109 Thinner, 5 gal	Rm B1400	15.0 (gal)					< ERPG-1 at 30 m	S
Flux, Kester #135, 1 Gal	Rm B1400	1.0 (qt)					< ERPG-1 at 30 m	S
Flux, Kester #185, 1 Gal	Rm B1400	4.0 (gal)					< ERPG-1 at 30 m	S
Flux, Kester #185, 5 Gal	Rm B1400	20.0 (gal)					< ERPG-1 at 30 m	S
Flux, Kester #197, 1 Gal	Rm B1400	1.0 (gal)					< ERPG-1 at 30 m	S
Flux, Multicore PC70 Thinner	Rm B1400	57.0 (ml)		X				S
Flux, Multicore SM/NA	Rm B1400	57.0 (ml)		X				S
Flux, Terpeneol	Rm B1400	50.0 (g)		X				S
Flux, Voss Levelite	Dock	55.0 (gal)				X		S
Flux, Kester #1544, 1 qt	Rm B1400	1.0 (qt)					< ERPG-1 at 30 m	S
Gas, Freon 14, CF4 Carbon Fluoride 7%	Rm B1150 Dock	1155.0 (gcf) 231.0 (gcf)			X		A simple asphyxiant	S
Gas, Nitrogen, Compressed Gas	Rm B1150	936.0 (gcf)			X			S
Gas, Nitrogen, Cryogenic Liquid	Rm B1150	160.0 (l)			X			S
Hydrochloric Acid	Rm B1150	18.0 (l)						K
Hydrochloric Acid	Dock	75.0 (gal)						K

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard Source	Location	Quantity	Flammable	Corrosive	Reactive	Toxic	Health Hazard Rating	Score
Hydrogen Peroxide	Rm B1150	2,000.0 (ml)	X					S
Hydrogen Peroxide 30%	Rm B1150	32.0 (l)	X					S
Hypophosphorous Acid 50%	Rm B1150	1,000.0 (ml)				X		S
Imidazole	Rm B1150	1,000.0 (g)					DOT Health Hazard Rating 1	S
Ink, Ronascreen, Hardener	Rm B1400	30.0 (ozf)	X					S
Laminate, Prepreg, Ablestik Sta-Film 1040	Rm B1120	250.0 (oth)					DOT Health Hazard Rating 1	S
Laminate, Prepreg, Arlon Low Flow 37 N	Rm B1120	200.0 (oth)					DOT Health Hazard Rating 1	S
Laminate, Prepreg, Arlon No-Flow GFN	Rm B1120	200.0 (oth)					DOT Health Hazard Rating 1	S
Laminate, Prepreg, T-Series	Rm B1120	24.0 (oth)				X		S
Laminate, Prepreg, GE T086540	Rm B1120	24.0 (oth)			X		DOT Health Hazard Rating 0	S
Laminate, Prepreg, Hitachi GIA-67N Polyimide	Rm B1120	300.0 (oth)				X		S
Laminate, Prepreg, Keene PCGF 525 Quartz	Rm B1120	20.0 (oth)				X		S
Laminate, Prepreg, Nelco N8000 1080	Rm B1120	100.0 (oth)				X		S
Laminate, Prepreg, Nelco N8305 Cyanate Ester	Rm B1120	600.0 (oth)				X		S
Laminate, Prepreg, Norplex EGX-823/MICA GHP 5027	Rm B1120	1,200.0 (oth)				X		S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard Source	Location	Quantity	Flammable	Corrosive	Reactive	Explosive	Other	Result
Laminate, Prepreg, Norplex Oak PCGM G200	Rm B1120	100.0 (oth)				X		S
Laminate, Prepreg, Norplex Oak PGIN PY2260	Rm B1120	700.0 (oth)				X		S
Laminate, Prepreg, Norplex PCGF CE2245	Rm B1120	500.0 (oth)				X		S
Laminate, Prepreg, Norplex PGFN 1080 EM2145	Rm B1120	500.0 (oth)				X		S
Laminate, Prepreg, Pyralux, Adhesive Sheet LF0100	Rm B1120	100.0 (oth)			X			S
Laminate, Prepreg, Pyralux, Adhesive Sheet LF0110	Rm B1120	100.0 (oth)			X			S
Laminate, Prepreg, Pyralux, Adhesive Sheet LF0111	Rm B1120	50.0 (oth)			X			S
Laminate, Prepreg, Pyralux, Adhesive Sheet LF0120	Rm B1120	50.0 (oth)			X			S
Laminate, Prepreg, Pyralux, Adhesive Sheet LF0121	Rm B1120	50.0 (oth)			X			S
Laminate, Prepreg, Pyralux, Adhesive Sheet LF0200	Rm B1120	200.0 (oth)			X			S
Laminate, Prepreg, Pyralux, Adhesive Sheet LF0220	Rm B1120	200.0 (oth)			X			S
Laminate, Prepreg, Pyralux, Adhesive Sheet LF0222	Rm B1120	200.0 (oth)			X			S
Laminate, Prepreg, Pyralux, Adhesive Sheet LF0250	Rm B1120	500.0 (oth)			X			S
Laminate, Prepreg, Pyralux, Adhesive Sheet LF1500	Rm B1120	50.0 (oth)			X			S
Laminate, Prepreg, Pyralux, Adhesive Sheet LT0120	Rm B1120	100.0 (oth)			X			S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard Source	Location	Quantity of Material	Standard Industrial Hazard	Flammable	Corrosive	Reactive	Other	
Leak Detector, Bubble	Rm B1150	16.0 (ozf)		X				S
Lubricant, Aerokroil (Aerosol)	Rm B1150	10.0 (ozf)	X					S
Lubricant, Air Tool Oil, Dayton	Rm B1150	3.0 (ozf)	X					S
Lubricant, Belt Dressing 2X987-A	Rm B1150	12.7 (ozf)	X					S
Lubricant, Cutting Fluid, Rapid Tap	Rm B1150	1.0 (pt)	X					S
Lubricant, Dripless Oil	Rm B1150	100.0 (ml)	X					S
Lubricant, Duo Seal Oil, 1407K-11	Rm B1150	3.0 (qt)	X					S
Lubricant, Duo Seal Oil, 1407K-1S	Rm B1150	1.0 (gal)	X					S
Lubricant, Extreme High Temp. Grease, #362	Rm B1150	28.0 (ozf)	X					S
Lubricant, Fomblin Oil	Rm B1150	4.0 (kg)	X					S
Lubricant, General Use	Rm B1150	4.0 (ozf)	X					S
Lubricant, Grease, Magnalube G	Rm B1400	14.0 (ozf)	X					S
Lubricant, Halovac 190 Oil	Rm B1150	4.0 (gal)	X					S
Lubricant, Halovac 190 Oil	Rm B1150	15.0 (gal)	X					S
Lubricant, Kanokroil	Rm B1150	1.0 (gal)	X					S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard Source	Location	Quantity of Material	Standard Industrial Hazard	Flammable	Corrosive	Reactive	Other	Result
Lubricant< LPS 1 Greaseless	Rm B1150	44.0 (ozf)	X					S
Lubricant, LPS 2 General Purpose	Rm B1150	11.0 (ozf)	X					S
Lubricant, Lubit-8 Tufoil	Rm B1120	1.0 ozf	X					S
Lubricant, Mobil DTE 26 Hydraulic	Rm B1150	5.0 (gal)	X					S
Lubricant, Mold Release RF-300	Rm B1120	2.0 (lb)	X					S
Lubricant, Norton Oil	Rm B1120	18.0 (ozf)	X					S
Lubricant, Solvo Rust Super Penetrating Oil	Rm B1150	16.0 (ozf)	X					S
Lubricant, WD-40 Aerosol	Rm B1150	96.0 (ozf)	X					S
Mecuric Nitrate	Rm B1150	100.0 (g)		X				S
Methyl Orange	Rm B1150	500.0 (ml)		X				S
Methylthymol Blue	Rm B1150	5.0 (g)		X				S
Nickel Sulfate	Rm B1150	500.0 (g)		X				S
Nitric Acid	Rm B1150	25.0 (l)						K
Nitric Acid	Rm B1150	5,000.0 (ml)						K
Nitric Acid	Rm B1150	15.0 (l)						K

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard Source	Location	Quantity or Material	Flammable (F+)	Corrosive (C)	Reactive (R)	Health (H)	Environmental (E)	
Paint, KOP Coat Epoxy Polyamide PT 1 A810D-66	Rm B1150	1.0 (qt)	X					S
Paint, KOP Coat Epoxy Polyamide PT 2 C810D-66	Rm B1150	2.0 (qt)	X					S
Paint, Krylon Crystal White	Rm B1150	36.0 (ozf)	X					S
Paint, Plastic Dip	Rm B1150	32.0 (ozf)	X					S
Pan Indicator	Rm B1150	5.0 (g)		X				S
Photoresist, Kodak Type 3 Cat# 186 0121	Rm B1150	2.0 (qt)	X					S
Photoresist, LMB 4773 Laser-Sensitive	Rm B1202	1,400.0 (oth)				X		S
Photoresist, Photoposit 111S	Rm B1150	4.0 (gal)				X		S
Photoresist, Riston 9013 12"	Rm B1117	1,400.0 (oth)				X		S
Photoresist, Riston 9013 17"	Rm B1117	2,000.0 (oth)				X		S
Photoresist, Riston DI 1,000	Rm B1150	2,000.0 (oth)				X		S
Photoresist, Riston DI 1,015	Rm B1150 Rm B2477	4.0 (oth) 10.0 (oth)				X		S
Photoresist, Riston Luv 100	Rm B1150	2,000.0 (oth)				X		S
Photoresist, Treatment Powder RS-1231 Dynachem	Rm B1150	200.0 (lb)					< 1% of material toxic	S
Plating, Acid/Copper Solution, Lea Ronal	Rm B1150	220 (gal)				X		S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard Source	Location	Quantity of Material	Standard Limit (lb/gal)	Flammable	Corrosive	Reactive	Health Hazard	Environmental
Plating, Brown Oxide, Omnibond 9249	Dock	10.0 (gal)				X		S
Plating, Cataposit 44 Catalyst Concentrate	Rm B1150	4.0 (gal)				X		S
Plating, Cataposit 449 Replenisher	Rm B1150	4.0 (gal)				X		S
Plating, Cataprep 404 Concentrate	Rm B1150	200.0 (lb)				X		S
Plating, Copper Gleam PC (Product #300009)	Rm B1150	10.0 (gal)					< 1% of material toxic	S
Plating, Cuposit 328 A	Rm B1150	25.0 (gal)				X		S
		10.0 (gal)						
Plating, Cuposit 328 C	Rm B1150	6.0 (gal)				X		S
Plating, Cuposit 328 Q	Rm B1150	10.0 (gal)				X		S
		20.0 (gal)						
Plating, Cuposit Cleaner Conditioner 1175A	Rm B1150	10.0 (gal)				X		S
Plating, Cuposit Y	Dock	10				X		S
Plating, Cuposit Y	Rm B1150	15.0 (gal)				X		S
Plating, Stannous Sulfate 46562	Dock	25.0 (lb)				X		S
Plating, Tinposit LT-34	Rm B1150	25.0 (gal)				X		S
Plating, XD-7151-T, Surfactant	Rm B1150	5.0 (gal)			X		DOT Health Hazard Rating 0	S
Potassium Carbonate	Rm B1150	4,500 (g)				X		S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria				
Hazard Source	Location	Quantity (lb) Material	Standard Material Hazard	Flammable	Non-Flammable	Corrosive	
Potassium Chloride	Rm B1150	500.0 (g)		X			S
Potassium Ferrocyanide	Base	2.0 (l)				X	S
Potassium Hydroxide	Rm B1150	3,000.0 (g)				X	S
Potassium Hydroxide, Solution	Rm B1150	500.0 (ml)		X			S
Potassium Iodine	Rm B1150	1,500.0 (g)				X	S
Potassium Nitrate	Rm B1150	3.0 (kg)				X	S
Propane	Rm B1150	42.0 (ozf)	X				S
Resistor, Polymer Carbon M-1013-RS	Rm B1150	500.0 (g)		X			S
Resistor, Polymer Paste Conditioner 1175A	Rm B1150	400.0 (g)		X			S
Rosin Powder w/ Diluent, Fisher	Rm B1150	500.0 (g)		X			S
Silver Nitrate	Rm B1150	100.0 (g)		X			S
Sodium (DI) Ethylenediamine Tetraacetate Solution	Rm B1150	6.0 (l)			X		S
Sodium Bicarbonate	Rm B1117	30.0 (kg)			X		S
Sodium Bicarbonate	Rm B1150	6,000.0 (g)			X		S
Sodium Bisulfite	Rm B1150	50.0 (lb)					Low toxicity and low hazard to health S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard Source	Location	Quantity	Flammable	Corrosive	Reactive	Explosive	Other	Result
Sodium Carbonate Monohydrate	Rm B1150	200.0 (lb)			X			S
	Dock	200.0 (lb)						
Sodium Chlorate	Dock	200.0 (lb)			X			S
Sodium Hydroxide Solution 50%	Rm B1150	3,000.0 (ml)				X		S
Sodium Hydroxide Solution 50% Van Waters	Base	275 (gal)				X		S
Sodium Hydroxide, 1N Solution	Rm B1150	6.0 (l)			X			S
Sodium Hypochlorite Solution 5.5% Clorox	Rm B1150	12	X					S
Sodium Sulfide	Rm B1150	500.0 (g)		X				S
Sodium Sulfite	Rm B1150	100.0 (lb) 2,500 (g)			X			S
Sodium Thiosulfate	Rm B1150	200.0 (lb)	X					S
Solder Paste, CL30-5460 Cermalloy	Rm B1400	500.0 (g)		X				S
Solder Paste, Formon DuPont	Rm B1400	2.0 (ozd)		X				S
Solder Paste, Indalloy #7	Rm B1400	200.0 (g)		X				S
Solder Paste, SC 3401 HT Cermalloy	Rm B1400	6,500.0 (g)				X		S
Solder Paste, V-812 Cermalloy	Rm B1150	6,000.0 (g)				X		S
Solder, 62/36/AG2, Solid, 2 lb bar	Dock	50.0 (lb)				X		S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard Source	Location	Quantity (lb)	Flammable (F)	Corrosive (C)	Reactive (R)	Toxic (T)	Other (O)	Result
Solder, 63/37, Solid, .25 lb bar chip	Rm B1150	300.0 (lb)				X		S
Solder, 63/37, Solid, 1.67 lb bar	Dock	250.0 (lb)				X		S
Solder, 63.37, Solid, Ultrapure 10 lb bar	Rm B1150	860.0 (lb)				X		S
Solder, 63.37, Solid, Ultrapure 1 lb bar	Rm B1150	600.0 (lb)				X		S
Solder, Alpha, Ribbon 96.5 SN 3.5 AG	Rm B1400	1.0 (lb)	X					S
Solder, Equipment, 63/37, Solid, Hal	Rm B1131	1,000.0 (lb)				X		S
Solder, Equipment, 63/37, Solid, Solder Pot	Rm B1400	10.0 (lb)				X		S
Solder, Equipment, 63/37, Solid, Wave Solder	Rm B1400	750.0 lb				X		S
Solder, Ersin Multicore, SN63	Rm B1120	3.0 (lb)				X		S
Solder, Generic 63/37 Ribbon	Rm B1400	10.0 (lb)				X		S
Solder, Indalloy #106, Ribbon	Rm B1400	5.0 (lb)				X		S
Solder, Indalloy #12, Wire	Rm B1400	300.0 (oth)				X		S
Solder, Indalloy #121, Bar	Rm B1400	2.0 (lb)				X		S
Solder, Indalloy #125, Wire	Rm B1400	200.0 (oth)				X		S
Solder, Indalloy # 151, Ribbon	Rm B1400	1.0 (lb)		X				S
Solder, Indalloy #161, Wire	Rm B1400	300.0 (oth)				X		S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard Source	Location	Quantity	Flammable	Corrosive	Reactive	Health Hazard	DOT Health Hazard Rating	DOT Hazard Label
Solder, Indalloy #171, Ribbon	Rm B1400	1.0 (lb)				X		S
Solder, Indalloy #290, Wire	Rm B1400	100.0 (oth)				X		S
Solder, Indalloy #4, Wire	Rm B1400	100.0 (oth)				X		S
Solder, Indalloy #6, Ribbon	Rm B1400	25.0 (oth)				X		S
Solder, Indalloy #6, Wire	Rm B1400	300.0 (oth)				X		S
Solder, Indalloy #7, Ribbon	Rm B1400	10.0 (oth)				X		S
Solder, Indalloy #7, Ribbon	Rm B1400	50.0 (oth)				X		S
Solder, Indalloy #7, Wire	Rm B1400	400.0 (oth)				X		S
Solder, Indalloy #70, Ribbon	Rm B1400	50.0 (oth)				X		S
Solder, Indalloy #70, Wire	Rm B1400	100.0 (oth)				X		S
Solder, SN 60/40, Solid, 1 lb bar	Dock	50.0 (lb)				X		S
Solder, Soft Silver	Rm B1400	30.0 (oth)				X		S
Soldermask, Chemask CM8	Rm B1150	80.0 (ozf)				X		S
Soldermask, Dynamask KM Dry Film	Rm B1150	2.0 (oth)					DOT Health Hazard Rating 1	S
Soldermask, Riston Vacrel 8140	Rm B1150	400.0 (oth)				X		S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Printed Circuits Division

Hazard			Screening Criteria					
Hazard Source	Location	Quantity	Flammable	Corrosive	Reactive	Health Hazard	Environmental	Overall Rating
Staticide	Rm B1150	1.0 (gal)	X					S
Stencil Remover Paste #5	Rm B1150	1.0 (gal)			X			S
Stripper, Alkastrip SQ-1	Rm B1150	30 (gal)					< ERPG-1 at 30 m	S
Stripper, Alkastrip SQ-1	Dock	40 (gal)					< ERPG-1 at 30 m	S
Stripper, Alkastrip SQ-1	Base	5 (gal)					< ERPG-1 at 30 m	S
Stripper, Strip-X	Rm B1400	2.0 (ozf)		X				S
Sulfuric Acid	Rm B1150	30.0 (l)				X		S
Sulfuric Acid, 1N Solution	Rm B1150	6.0 (l)				X		S
Sulfuric Acid, Bulk	Rm B1150	80 (gal)				X		S
	Base	120 (gal)						
Sulfuric Acid, Bulk	Dock	60 (gal)				X		S
Surfactant, DuPont Foamfree 940	Rm B1150	10 (gal)					DOT Health Hazard Rating 1	S
Surfactant, Dynachem Antifoam 80	Rm B1150	10.0 (gal)			X			S
Terpineol, Alpha	Rm B1400	1.0 (l)				X		S
Thiourea	Rm B1150	500.0 (g)	X					S
Trichloroethane Chlorothane	Rm B1150	5.0 (gal)					< ERPG -1 at 30 m	S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Substance	Location	Quantity	Flammable	Corrosive	Reactive	Toxic	Other	Result
2-(2-Butoxyethoxy) Ethyl Acetat,	Rm Y717	1.0 (l)				X		S
2-Propanol	Rm Y702	34.0 (l)	X					S
4- Methyl-2-Pentanone	Rm Y711	1.0 (l)				X		S
Ablebond 36-2	Rm Y717	25.0 (ml)		X				S
Ablefilm	Rm Y717	260.0 (g)		X				S
Acetic Acid	Rm Y711F	3000.0 (ml)				X		S
Acetic Acid, Glacial	Rm Y702	5.0 (l)				X		S
Acetone	Rm Y711F	4.0 (l)	X					S
Acidproof Cement Binder #31	Rm Y717	1.0 (gal)	X					S
Acidproof Cement Filler #31	Rm Y717	1.0 (gal)	X					S
Adhesive Sealant	Rm Y717	2.8 (ozf)	X					S
Alconox Detergent	Rm Y702	3.0 (lbs)	X					S
Alumina	Rm Y702	100 (lbs)				X		S
Alumina	Rm Y711	20.0 (lbs)				X		S
Alumina	Q Yard	900 (lbs)				X		S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity	Flammable	Corrosive	Reactive	Toxic	Other	Result
Alumina Cement	Rm Y717	1.0 (qt)				X		S
Alumina Nitride	Rm Y717	1.0 (kg)				X		S
Alumina Rigidizer/Hardner	Rm Y717	2.0 (qt)				X		S
Aluminum Nitrate	Rm Y711	500.0 (g)		X				S
Aluminum Oxide	Rm Y711	400.0 (g)		X				S
Aluminum Oxide	Rm Y702	10.0 (lbs)				X		S
Aluminum Powder	Rm Y711	50.0 (g)		X				S
Aminomethane	Rm Y711	100.0 (g)		X				S
Ammonium Chloride	Rm Y711	500.0 (g)		X				S
Ammonium Hydroxide	Rm Y711	5.0 (l)					<ERPG-1 at 30 m	S
Antarox BL 240 Wetting Agent	Rm Y900	1.0 (l)	X					S
Antifoam GE AF 60	Rm Y900	1.0 (l)					<ERPG-1 at 30 m	S
Antimony Oxide	Rm Y711	1.0 (lb)		X				S
Apiezon Grease	Rm Y702	50.0 (g)		X				S
Avicel Microcrystalline Cellulose	Q Yard	100.0 (lbs)			X			S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity	Flammable	Corrosive	Reactive	Toxic	Other	Result
Ayac Cement	Rm Y702	20.0 (lbs)	X					S
B-104 Boiler Treatment	Rm Y900	5.0 (gal)				X		S
B-7 Mek Acryloid Resin	Rm Y702	5.0 (gal)	X					S
B-71 Flake Wax	Rm Y704A &	160.0 (lbs)	X					S
Barium Carbonate	Rm Y711	7.0 (kg)				X		S
Barium Carbonate	Rm Y711A	1000.0 (g)				X		S
Barium Nitrate	Rm Y711	5000.0 (g)				X		S
Barium Oxide	Rm Y717	1000.0 (g)				X		S
Barium Titanate - Ticon HPB	Rm Y717	10.0 (lbs)				X		S
Barium Titanate - Ticon HPB	Rm Y717	10.0 (lbs)				X		S
Beacon Greese	Rm Y702	2.0 (qt)	X					S
Benzyl Alcohol	Rm Y702	4.0 (l)				X		S
Bioact 121 Precision Cleaner	Rm Y704A	1.0 (qt)			X			S
Bioact PCG	Rm Y704A	1.0 (qt)			X			S
Bismuth Powder	Rm Y711	300.0 (g)		X				S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity	Flammable	Corrosive	Reactive	Toxic	Other	Result
Bismuth Shot	Rm Y711	100.0 (g)		X				S
Bismuth Trioxide	Rm Y711	1.0 (lbs)		X				S
Bomb Lube Mold Release	Rm Y910	820.0 (ozf)	X					S
Boron Carbide	Rm Y717	2.0 (kg)			X			S
Boron Carbide Powder	Rm Y717	2.0 (lbs)					No TWA established	S
Brazo Flux #721F00	Rm Y711	1.0 (lbs)		X				S
Buffer Solution PH 10	Rm Y711	1000.0 (ml)				X		S
Buffer Solution PH 4	Rm Y711	1000 (ml)				X		S
Buffer Solution PH 7	Rm Y711	1000.0 (ml)				X		S
Buffered Oxide Etch 7:1 LP	Rm Y711F	1.0 (gal)				X		S
Butvar B-76	Rm Y711	50.0 (lbs)			X			S
Butvar B-90	Rm Y711	10.0 (lbs)				X		S
Butyl Carbitol	Rm Y702	1.0 (pt)				X		S
Butyl Cellosolve	Rm Y702	1.0 (pt)				X		S
Butyl Dipropasol Solvent	Rm Y702	1.0 (pt)				X		S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity	Flammable	Corrosive	Reactive	Toxic	Other	Result
Calcium Aluminate	Rm Y717	100.0 (g)		X				S
Calcium Carbide	Rm Y711	2.0 (kg)				X		S
Calcium Carbonate	Rm Y711A	200.0 (g)		X				S
Calcium Oxide	Rm Y717	500.0 (g)		X				S
Carbon Dioxide	Rm Y703	50.0 (l)			X			S
Carbon Dioxide	Rm Y711	50.0 (lbs)	X					S
Carver Special Hydraulic Fluid	Rm Y702	192.0 (ozf)	X					S
CDX 81-1 Dispersing Agent	Rm Y711	1.0 (qt)	X					S
CDX 81-2 Dispersing Agent	Rm Y711	1.0 (qt)	X					S
Ceramabond 503	Rm Y717	1.0 (qt)	X					S
Ceramic Adhesive	Rm Y717	1.0 (qt)	X					S
Ceramic Binder B73400	Rm Y702	3.0 (gal)	X					S
Ceramic Binder K490-5	Rm Y711	2000.0 (ml)	X					S
Ceramic Dielectric Composition	Rm Y717	2.0 (lbs)	X					S
Cerium Oxide	Rm Y717	1.0 (lbs)		X				S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity or Material	Standard Industrial Hazard	< 1 Pound	Non-Flammable	Non-Explosive	Non-Corrosive	
Cesium Iodide	Rm Y717	5.0 (kg)					No TWA established	S
Chill Ball Wax	Rm Y910	4.0 (lbs)	X					S
Chromium Chloride	Rm Y711	100.0 (g)		X				S
Chromium Oxide	Rm Y711	500.0 (g)		X				S
CMP 18 Mechanical Pump Fluid	Rm Y704	4.0 (gal)	X					S
Cobalt Chloride	Rm Y711	500.0 (g)		X				S
Cobalt Nitrate	Rm Y711	500.0 (g)		X				S
Cobalt Oxide	Rm Y711	225.0 (g)		X				S
Colloid 226/35	Rm Y717	250.0 (ml)		X				S
Conductive Composition 5542	Rm Y717	250.0 (g)		X				S
Conductor Composition #4817	Rm Y711	500.0 (g)		X				S
Conductor Composition #7095	Rm Y711 &	450.0 (g)		X				S
Conductor Composition 3045	Rm Y717	20.0 (g)		X				S
Conductor Composition 4869D	Rm Y717	100.0 (g)		X				S
Conductor Composition 52-028W	Rm Y717	100.0 (g)		X				S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard		Screening Criteria				
Hazard Source	Location	Quantity of Material	Standard Industrial Hazard	1 Pounds	Non-toxic	Acute or Chronic Hazard
Conductor Composition K-325c	Rm Y717	45.0 (g)		X		
Copper	Rm Y717	1.0 (kg)			X	
Copper Iodide	Rm Y717	100.0 (g)		X		
Copper Oxide	Rm Y711A	1000.0 (g)			X	
Cordafos N3Acid	Rm Y717	250.0 (ml)		X		
Corning 7052 Glass	Rm Y717	10.0 (lbs)			X	
Corning 7070 Glass	Rm Y717	200.0 (g)		X		
Corning 7740 Glass	Rm Y717	10.0 lbs			X	
Corning 9013 Glass	Rm Y717	10.0 lbs			X	
Cupric Nitrate	Rm Y711	2000.0 (g)			X	
Cupric Oxide	Rm Y711	3500.0 (g)			X	
Darvan C	Rm Y711	1.0 (qt)			X	
Darvan No. 7	Rm Y711	1.0 (qt)			X	
Daxad #34	Rm Y702	1.0 (gal)			X	
Dekhotinsky Cement	Rm Y702	3.0 (ozd)		X		

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity of Material	Standard Industrial Hazard	Flammable	Non-Flammable	Corrosive	Reactive	Health Hazard
Devon Plastic Steel Putty	Rm Y900	1.0 (lb)		X				S
Diffusion Pump Fluid 704	Rm Y702	11.0 (pt)	X					S
DOALL Cement	Rm Y702	100.0 (lbs)	X					S
DOW Corning High Vac Grease	Rm Y702	27.0 (ozf)	X					S
Drierite	Rm Y711	10.0 (lbs)			X			S
Duncan Gloss Glaze	Rm Y717	8.0 (ozf)		X				S
Duo Seal Pump Oil	Rm Y704A	5.0 (gal)	X					S
Dye Check Penetrant	Rm Y702	4.0 (pt)				X		S
Dykem Hi-Spot Blue #107	Rm Y702	0.2 (ozf)		X				S
EDTA	Rm Y711	100.0 (g)		X				S
Electric Insulating Cement Filter	Rm Y717	1.0 (qt)	X					S
Electrode Storage Solution	Rm Y711	2.0 (l)				X		S
Electrotemp Cement Powder	Rm Y717	1.0 (qt)	X					S
Emphos PS21A	Rm Y711	500.0 (ml)						DOT Health Hazard Rating 1 S
Epon 828	Rm Y711	500.0 (ml)		X				S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity of Material	Standard Industrial Hazard	Flammable	Non-Flammable	Corrosive	Reactive	Health Hazard
Eposolve #299R	Rm Y702	3.0 (gal)						<ERPG-1 at 30 m S
Epoxy-Patch 0151 Clear	Rm Y717	40.0 (ozf)	X					S
Epoxy-Patch 907	Rm Y717	40.0 (ozf)		X				S
Eriochrome Black T	Rm Y711	25.0 (g)		X			/	S
Estra Fast Setting Epoxy	Rm Y717	500.0 (g)		X				S
Ethylene Glycol	Rm Y711F	100.0 (ml)		X				S
Fiberfax Coating Cement	Rm Y717	1.0 (gal)	X					S
Fiberfax QF-180 Coating Cement	Rm Y702	8.0 (ozf)		X				S
Fiberfrax Rigidizer	Rm Y717	8.0 (gal)						<ERPG-1 at 30 m S
Fiberfrax Vatiform A	Rm Y702	50.0 (lbs)				X		S
Fiberstick Refractory Adhesive	Rm Y702	8.0 (ozf)		X				S
Fisherbrand 19 Mechanical	Rm Y702	4.0 (l)	X					S
Formamide	Rm Y711F	500.0 (ml)				X		S
Freon TF Solvent	Rm T900	10.0 (gal)	X					S
Fused Silica	Q Yard	2200 (lbs)				X		S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity (Mass or Volume)	Standard Hazardous Material	Flammable	Corrosive	Reactive	Health Hazard	Other
Fused Silica Rp-1	Q Yard	300.0 (lbs)					X	S
Fused Silica RP-2	Q Yard	2200.0 (lbs)					X	S
Gamma Alumina Powder	Rm Y717	1.0 (lbs)		X				S
Glenoil	Rm Y702	3.0 (qt)					X	S
Glycerin	Rm Y711	500 (ml)					X	S
Hexane	Rm Y711F	6.0 (l)						< ERPG-1 at 30 m S
Hexyl Carbitol	Rm Y702	1.0 (pt)						No TWA established S
Hydrochloric Acid	Rm Y711	5.0 (l)						<ERPG-1 at 30 m S
Hydrochloric Acid, /Cleanroom LP	Rm Y711D	1.0 (gal)						<ERPG-1 at 30 m S
Hydrogen Peroxide, 30%	Rm Y711F	4.0 (l)						<ERPG-1 at 30 m S
Hyprez Diamond Compound	Rm Y717	18.0 (g)		X				S
Incromectant AQ	Rm Y717	250.0 (ml)		X				S
Incromectant LQ	Rm Y717	250.0 (ml)		X				S
Inswool Blanket	Rm Y900	180.0 (lbs)						No TWA established S
Iron Powder Rm Y717	Rm Y717	500.0 (g)		X				S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity of Material	Standard Industrial Hazard	Flammable	Corrosive	Reactive	Health Hazard	Environmental
Isobutyl Alcohol	Rm Y702	4.0 (pt)					< ERPG-1 at 30 m	S
Isocut Fluid	Rm Y717	7.0 (qt)				X		S
Isopropyl Alcohol	Rm Y711F	4.0 (l)	X					S
Kaolin	Rm Y711	500.0 (g)		X				S
KC-18Dip Seal Wax	Rm Y702	120.0 (lbs)	X					S
Kerosene	Rm Y702	12.0 (l)	X					S
Kovar	Q Yard	55.0 (lbs)				X		S
Lanthanum Oxide	Rm Y702	50.0 (lbs)					DOT Health Hazard Rating 1	S
Lanthanum Oxide	Rm Y717	5.0 (lbs)					DOT Health Hazard Rating 1	S
Lead (II) Oxide	Rm Y711A	50.0 (g)		X				S
Lead (IV) Acetate	Rm Y711F	1000.0 (g)				X		S
Lead (IV) Acetate	Rm Y717	250.0 (g)		X				S
Lead Carbonate	Rm Y717	500.0 (g)		X				S
Lead Ceramic Powder	Rm Y717	2.0 (lbs)				X		S
Lead Oxide	m Y715 & 71	1000.0 (lbs)				X		S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity or Material	Sealed Industrial	Unsealed	Spillable	Compressed Gas	Reactive	Other
Leak Lock	Rm Y702	10.0 (ozd)		X				S
Leak-Tek 277C	Rm Y702	28.0 (ozf)				X		S
Liquid Nitrogen	Rm Y717	160.0 (l)			X			S
Lithium Floride	Rm Y717	1000.0 (g)				X		S
Lithium Niobate	Rm Y717	200 (g)		X				S
LPS 1	Rm Y702	80.0 (ozf)				X		S
Lubriplate 70	Rm Y702	1.0 (lbs)		X				S
Ludox SK	Rm Y900	25.0 (gal)				X		S
Machineable Wax	Rm Y900	1.0 (lbs)		X				S
Machineable Wax	Rm Y702	250 (lbs)	X					S
Maganese Chloride	Rm Y711	1000.0 (g)				X		S
Magnesium Oxide	Rm Y717	1.0 (lbs)		X				S
Magnesium Oxide	Q-Yard	200.0 (lbs)				X		S
Magnesium Oxide	Rm Y711	500.0 (g)		X				S
Magnesium Oxide	Rm Y702	250.0 (lb)				X		S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity of Material	Flammable	Corrosive	Reactive	Health Hazard	Other	
Magnesium Oxide	Rm Y717	100.0 (g)		X				S
Manganese Dioxide	Rm Y711	500.0 (g)		X				S
Master Sheet Wax	Rm Y900	243.0 (lbs)	X					S
Mercury	Rm Y711	454.0 (g)		X				S
Metadi Diamond Compound	Rm Y702	100.0 (g)		X				S
Methanol	Rm Y711	32.0 (l)					DOT Health Hazard Rating 1	S
Methy Purple	Rm Y711	500.0 (ml)		X				S
Micro Moly Dry Lube	Rm Y702	11.0 (lbs)	X					S
Micropolish Alumina 2	Rm Y702	12.0 (ozf)		X				S
Mineral Oil	Rm Y711	1.0 (l)	X					S
Minusil Quartz	Rm 2383	5.0 (lbs)				X		S
Molybdenum Powder	Rm Y717	1.0 (lbs)		X				S
Multipurpose Mold Release	Rm Y717	820.0 (ozf)					<ERPG-1 at 30 m	S
N,N-Dimethylformamide	Rm Y711F	100.0 (ml)		X				S
N-Pentane	Rm Y711	4.0 (ml)					<ERPG-1 at 30 m	S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity	Flammable	Corrosive	Reactive	Health Hazard	DOT Health Hazard Rating 1	S
Nalco 2594 MicroBiocide	Rm Y900	25.0 (gal)						S
Nickel Nitrate	Rm Y711	500.0 (g)		X				S
Nickel Oxide	Rm Y711	200.0 (g)		X				S
Nickel Powder	Rm Y717	500.0 (g)		X				S
Nickelous Acetate	Rm Y711	1.0 (lbs)		X				S
Niobium Oxide	Rm Y715	10.0 (lbs)				X		S
Niobium Pentoxide	Rm Y702	100.0 (lbs)					No TWA established	S
Nissen Metal Marker	Rm Y702	3.0 (ozf)		X				S
Nitric Acid	Rm Y711	10.0 (l)						K
Nitric Acid, Cleanroom LP	Rm Y711F	1.0 (gal)						K
Nyacol 830	Rm Y900	60.0 (gal)				X		S
Nyacol Ytria Binder	Plas	10.0 (gal)				X		S
OLOA 1200	Rm Y717	100.0 (ml)		X				S
Ox Chem (Powder)	Rm Y900	5.0 (gal)			X			S
Oxalic Acid	Rm Y711	15.0 (kg)				X		S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity of Material	Standard Industrial Hazard	Flammable	Corrosive	Reactive	Health Hazard	
Oxygen	Rm Y711	250.0 (l)	X					S
Pentahydrate	Rm Y711 A	9500.0 (g)				X		S
Phenolphthalein Solution	Rm Y711	500.0 (ml)					DOT Health Hazard Rating 1	S
Platinum Ink #65D	Rm Y717	5.0 (ozf)		X				S
Plurafac RA-20	Rm Y711	1.0 (pt)		X				S
Polyethylene Glycol	Rm Y702	4.0 (lbs)					No TWA established	S
Polyvinyl Alcohol	Q Yard	150.0 (lbs)			X			S
Positive Developer, Waycoat Dev.	Rm Y711D	3.0 (gal)					No TWA established	S
Potassium Hydroxide, Pellets	Rm Y711A	1000 (ml)		X		X		S
Potassium Hydroxide, Pellets	Rm Y711	100.0 (g)		X				S
Praseodymium Oxide	Rm Y711	220.0 (g)		X				S
Pre-Scribe Layout Fluid	Rm Y702	8.0 (ozf)		X				S
Pri Fused Silica	Q Yard	110.0 (lbs)					DOT Health Hazard Rating 1	S
Primcote Binder	Rm Y900	80.0 (gal)					No TWA established	S
Promyristyl PM-3	Rm Y717	100.0 (ml)		X				S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity	Flammable	Corrosive	Reactive	Health Hazard	Other	
Proto Wax	Rm Y702	50.0 (lbs)	X					S
Provol 10	Rm Y717	250.0 (ml)		X				S
PRS 3000 Stripper	Rm Y711D	4.0 (gal)					No TWA established	S
Prussian Blue	Rm Y900	0.7 (ozf)		X				S
Pump Fluid, Fisher 19	Rm Y702	4.0 (l)	X					S
Red C-Wax	m Y912 & 90	1900.0 (lbs)	X					S
Red Extruded Wax	Rm Y912	850.0 (lbs)	X					S
Red Extruded Wax	Rm Y702	100.0 (lbs)	X					S
Red Patch Wax	Rm Y900	20.0 (lbs)	X					S
Reference Electrode Filling	Rm Y711	30.0 (ozf)				X		S
Remasil 60 Aluminosilicate	Q Yard	3500.0 (lbs)					DOT Health Hazard Rating 1	S
Rio Rose Wax	Rm Y900	45.0 (lbs)	X					S
Roma Plastilina	Rm Y900	4.0 (lbs)					No TWA established	S
RTV Silicone Rubber	Rm Y717	2.8 (ozf)	X					S
Sairset Mortar	Rm Y717	30.0 (lbs)	X					S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity (Material)	Flammable (F+)	Corrosive (C+)	Reactive (R+)	Health (H+)	Other	Result
Santizer 711	Rm Y717	1.0 (pt)				X		S
SEF Bulk Chrome	Q Yard	40.0 (lbs)				X		S
Silica	Rm Y711	3.0 (kg)					DOT Health Hazard Rating 1	S
Silica Gel Dessicant	Q Yard	55.0 (gal)				X	/	S
Silicon Carbide	Rm Y717	5.0 (lbs)				X		S
Silicon Dioxide	Rm Y900	96.0 (lbs)				X		S
Silver Nitrate	Rm Y711	500.0 (g)		X				S
Smooth on Cement #1	Rm Y702	16.0 (ozf)		X				S
Sodium Chloridde	Rm Y711	500.0 (g)		X				S
Sodium Hydroxide 50% Solution	Rm Y711	60.0 (l)				X		S
Sodium Hydroxide Pellets	Rm Y711	500.0 (g)		X				S
Sodium Oxalate	Rm Y711	1.0 (lb)		X				S
Sodium Silicate	Rm Y717	500.0 (g)		X				S
Solution 810007	Rm Y711	30.0 (ozf)				X		S
Spray Lube SP-107	Rm Y717	16.0 (ozf)		X				S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity (lb/gal)	Flammable (F+)	Corrosive (C+)	Reactive (R+)	Health (H+)	Environmental (E+)	Overall (S)
Stannous Chloride	Rm Y711	500 (g)		X				S
Stearic Acid	Rm Y717	300.0 (g)		X				S
Stick Tite-T	Rm Y900	60.0 (lbs)	X					S
Strontium Carbonate	Rm Y711A	500.0 (g)		X				S
Sulfuric Acid	Rm Y711	10.0 (l)				X		S
Super Flux #3287	Rm Y711	8.0 (ozf)		X				S
T-2 Solvent	Rm Y702	5.0 (gal)	X					S
TALC	Rm Y711	5.0 (kg)	X					S
Tamol Dispersing Agent	Rm Y717	2.0 (lbs)					< 1 % of material toxic	S
Teletype Oil 5080-6614	Rm Y900	4.0 (ozf)		X				S
Tetramethylammonium	Rm Y711A	9500 (g)				X		S
Thermoset 781 Hardner	Rm Y702	1.0 (qt)				X		S
Thermoset 781 Resin	Rm Y702	1.0 (gal)	X					S
Thiemflux ICC	Rm Y900	12.0 (ozd)		X				S
Tin Metal	Rm Y711	500.0 (g)		X				S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria				
Hazard Source	Location	Quantity of Material	Storage	Handling	Transportation	Disposal	Notes
Tin Oxide	Rm Y702	200.0 (lbs)					No TWA established
Titanium (IV) Isopropoxide	Rm Y711F	5000.0 (ml)				X	
Titanium Diboride	Rm Y717	2.0 (kg)					No TWA established
Titanium Dioxide	Rm Y702	80.0 (lbs)				X	
Titanium Isopropoxide	Rm Y711F	1000.0 (ml)				X	
Titanium Powder	Rm Y717	500.0 (g)			X		
Toluene	Rm Y711	3.0 (l)				X	
Transoptic Powder	Rm Y715	6.0 (gal)			X		
Trichloroethane	Rm Y702	5.0 (l)					< ERPG-1 at 30 m
Trichloroethane	Rm Y900	1500.0 (ml)					< ERPG-1 at 30 m
Tris (Hydroxymethyl)	Rm Y711	100.0 (g)			X		
Triton X-100	Rm Y717	1.0 (pt)			X		
Trubble Bubble	Rm Y702	36.0 (ozf)		X			
UREA	Rm Y717	2500.0 (g)					DOT Health Hazard Rating 1
Vanadium Pentoxide	Rm Y717	300.0 (g)			X

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Centimeter

Inches

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2 of 4

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity (Weight or Volume)	Standard Material Hazard	Flammable	Corrosive	Reactive	Health Hazard	Other
Versamid 140	Rm Y711	8.0 (ml)		X				S
Versilube G-300	Rm Y702	6.0 (ozf)		X				S
Vinyl Bright Vinyl Dressing	Rm Y900	3.0 (qt)	X					S
Viscosity Standard	Rm Y711	64.0 (ozf)	X					S
Way Lubricant #2689	Rm Y702	1.0 (qt)	X					S
Waycoat Adhesion Promoter	Rm Y711D	1.0 (gal)				X		S
Waycoat HPR-206 Photoresist	Rm Y711D	1.0 (gal)					< ERPG-1 at 30 m	S
White Petrolatum	Rm Y910	64.0 (ozf)			X			S
Xylenes	Rm Y702	1.0 (l)				X		S
Yttrium Nitrate Pentahydrate	Rm Y703	1000.0 (g)				X		S
Yttrium Oxide	Rm Y702	100.0 (lbs)				X		S
Yttrium Oxide	Rm Y711	1000.0 (g)				X		S
Yttrium Oxide	Rm Y717	5.0 (lbs)				X		S
Yttrium Oxide	Rm Y704A	88.0 (lbs)				X		S
Zinc	Rm Y900	1500.0 (g)			X		DOT Health Hazard Rating 0	S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity of Material	Spill/Leak Hazard	Fire Hazard	Explosion Hazard	Corrosive Hazard	Other Hazards	Result
Zinc	Rm Y711	60.0 (g)		X				S
Zinc Chloride	Rm Y711	6000.0 (g)				X		S
Zinc Nitrate 6-Hydrate Crystal	Rm Y711	500.0 (g)		X				S
Zinc Nitrate Tetrahydrate	Rm Y711	16.0 (kg)				X		S
Zinc Oxide	Rm Y711	10.0 (lb)				X		S
Zircon	Q Yard	1000.0 (lbs)				X		S
Zirconia	Rm Y702	300.0 (lbs)				X		S
Zirconia Bulk Fiber	Rm Y717	5.0 (lbs)				X		S
Zirconia Cement	Rm Y717	1.0 (pt)				X		S
Zirconia Rigidizer	Rm Y717	1.0 (qt)					No TWA established	S
Zirconium Butoxide	Rm Y711F	1000.0 (ml)				X		S
Zirconium Hydride	Rm Y717	100.0 (g)		X				S
Zirconium Oxide	Rm Y702	200.0 (lbs)				X		S
Zirconium Oxide	Rm Y717	1.0 (l)				X		S
Zirconium Oxide	Q Yard	300.0 (lb)				X		S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Ceramics

Hazard			Screening Criteria					
Hazard Source	Location	Quantity (lbs)	Standard Hazard	Flammable	Corrosive	Reactive	Health Hazard	Other
Zirconium Oxide	Rm Y715	100.0 (lbs)				X		S
Zirconium Oxide SC10	Rm Y711	10.0 (lbs)					No TWA established	S
PZT Powder	Rm Y717	50.0 (lbs)				X		S

CHEMICAL HAZARD SCREENING WORKSHEET

Facility: Acetone Storage Shed

Hazard			Screening Criteria					
Hazard Source	Location	Quantity or Weight	Flammable	Corrosive	Reactive	Health Hazard	Other	Rating
Acetone	Shed	165.0 (gal)						K
2,6-DI-T-Butyl-P-Cresol	Shed	100 (lbs)				X		S
Ethyl Alcohol	Shed	100 (l)			X		DOT Health Hazard Rating 0	S
Ethacure 300 Curing Agent	Shed	10 (gal)				X		S
Freon	Shed	10 (gal)	X					S
Jeffamine T-403 Curing Agent	Shed	15 (gal)				X		S
Methyl Alcohol	Shed	16 (l)					DOT Health Hazard Rating 1	S
Polypropylene Glycol	Shed	10 (gal)	X				No TWA Established	S
Polyurethane Foam, Component T	Shed	92 (l)				X		S
Polyurethane Foam, Papi Foam	Shed	4 (gal)				X		S
Toluene	Shed	16 (l)				X		S
1,1,1, Trichloroethane	Shed	4 (gal)				X		S

Screening Results of the Remaining AMPL Laboratories

The previous worksheets included all chemicals located in the Printed Circuits Division, the Ceramics Facility, and the Acetone Storage Shed. The chemicals located in the remaining AMPL laboratories were screened through the use of the Chem Master Database. This analysis determined that there were 1,957 chemicals in the remaining AMPL laboratories. The inventory and the screening bases for these chemicals can be found in the Hazards Assessment Project File AMPL-1. The results of the screening process associated with the remaining AMPL facilities, excluding the chemicals on the previous worksheets, are summarized in the following table.

1,957	1,185	410	75	230	54	3
-------	-------	-----	----	-----	----	---

As a result of the screening process associated with the remaining AMPL facilities, 3 chemicals were kept for further analysis.

1. Cyanomethane	2 (gallons)	B1000
2. Methylene Chloride	32 (l)	*
3. Nitric Acid	10 (l)	*

* These chemicals are stored and used in various labs throughout AMPL.
See section 4.0, Hazard Characterization, for specific locations.

Appendix B

ALOHA Dispersion Model Printouts

Ammonium Hydroxide.....	1
Ultra Petchant 50 Solution.....	15
Diazo Developer.....	32
Hydrochloric Acid.....	40
Nitric Acid.....	66
Acetone.....	91
Cyanomethane (Acetonitrile).....	11
Methylene Chloride.....	131

Release Designation
AH-1

Ammonium Hydroxide

55 gallons
Worst case meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .08 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 2.18 kilograms/min
Total Amount Released: 131 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 127 meters
Max Threat Zone for IDLH: 72 meters
Note: The Heavy Gas footprint is an initial screening.
For short releases it may be an overestimation.
Be sure to check concentration information at specific locations.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 2,320 ppm
Indoor: 2,320 ppm
Note: Indoor graph is shown with a dotted line.

Chemical Name: AMMONIUM HYDROXIDE
Model Run: Heavy Gas
Wind: 1 meters/sec from 0° true

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 127 meters
Max Threat Zone for IDLH: 72 meters
Note: The Heavy Gas footprint is an initial screening.
For short releases it may be an overestimation.
Be sure to check concentration information at specific locations.

meters

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .08 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 2.18 kilograms/min
Total Amount Released: 131 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 127 meters
Max Threat Zone for IDLH: 72 meters
Note: The Heavy Gas footprint is an initial screening.
For short releases it may be an overestimation.
Be sure to check concentration information at specific locations.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 54.5 ppm
Indoor: 54.5 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 1000 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .08 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 2.18 kilograms/min
Total Amount Released: 131 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 1000 ppm
Max Threat Zone for LOC: 47 meters
Max Threat Zone for IDLH: 72 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

Release Designation
AH-2

Ammonium Hydroxide

55 gallons
Average meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
 Building Air Exchanges Per Hour: 60 (User specified)
 Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
 Molecular Weight: 35.06 kg/kmol
 TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
 Footprint Level of Concern: 200 ppm
 Boiling Point: 27.00° C
 Vapor Pressure at Ambient Temperature: 0.95 atm
 Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
 No Inversion Height
 Stability Class: C Air Temperature: 68° F
 Relative Humidity: 50% Ground Roughness: Open country
 Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .08 pounds/sec
 Source Height: 0
 Release Duration: ALOHA limited the duration to 1 hour
 Release Rate: 2.18 kilograms/min
 Total Amount Released: 131 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
 User specified LOC: 200 ppm
 Max Threat Zone for LOC: 57 meters
 Max Threat Zone for IDLH: 35 meters
 Note: Footprint wasn't drawn because effects of
 near-field patchiness make plume presentation
 unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
 Downwind: 300 meters
 Off Centerline: 0 meters
 Max Concentration:
 Outdoor: 8.36 ppm
 Indoor: 8.36 ppm
 Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .08 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 2.18 kilograms/min
Total Amount Released: 131 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 57 meters
Max Threat Zone for IDLH: 35 meters
Note: Footprint wasn't drawn because effects of near-field patchiness make plume presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 712 ppm
Indoor: 712 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 1000 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .08 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 2.18 kilograms/min
Total Amount Released: 131 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 1000 ppm
Max Threat Zone for LOC: 23 meters
Max Threat Zone for IDLH: 35 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

Release Designation
AH-3

Ammonium Hydroxide

110 gallons
Worst case meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .17 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 4.63 kilograms/min
Total Amount Released: 278 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 184 meters
Max Threat Zone for IDLH: 105 meters
Note: The Heavy Gas footprint is an initial screening.
For short releases it may be an overestimation.
Be sure to check concentration information at specific locations.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 96.1 ppm
Indoor: 96.1 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000.000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .17 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 4.63 kilograms/min
Total Amount Released: 278 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 184 meters
Max Threat Zone for IDLH: 105 meters
Note: The Heavy Gas footprint is an initial screening.
For short releases it may be an overestimation.
Be sure to check concentration information at specific locations.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 4,810 ppm
Indoor: 4,810 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 1000 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .17 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 4.63 kilograms/min
Total Amount Released: 278 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 1000 ppm
Max Threat Zone for LOC: 71 meters
Max Threat Zone for IDLH: 105 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

Release Designation

AH-4

Ammonium Hydroxide

110 gallons

Average meteorological conditions

B-10.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .17 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 4.63 kilograms/min
Total Amount Released: 278 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 82 meters
Max Threat Zone for IDLH: 49 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 1,300 ppm
Indoor: 1,300 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .17 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 4.63 kilograms/min
Total Amount Released: 278 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 82 meters
Max Threat Zone for IDLH: 49 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 1000 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .17 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 4.63 kilograms/min
Total Amount Released: 278 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 1000 ppm
Max Threat Zone for LOC: 34 meters
Max Threat Zone for IDLH: 49 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .17 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 4.63 kilograms/min
Total Amount Released: 278 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 82 meters
Max Threat Zone for IDLH: 49 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 17.5 ppm
Indoor: 17.5 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
AH-5

Ultra Etchant 50 Solution

165 gallons
Worst case meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .25 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 6.8 kilograms/min
Total Amount Released: 408 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 223 meters
Max Threat Zone for IDLH: 129 meters
Note: The Heavy Gas footprint is an initial screening.
For short releases it may be an overestimation.
Be sure to check concentration information at specific locations.

Chemical Name: AMMONIUM HYDROXIDE
Model Run: Heavy Gas
Wind: 1 meters/sec from 0° true

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas

User specified LOC: 200 ppm

Max Threat Zone for LOC: 223 meters

Max Threat Zone for IDLH: 129 meters

Note: The Heavy Gas footprint is an initial screening.

For short releases it may be an overestimation.

Be sure to check concentration information at specific locations.

meters

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 1000 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .25 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 6.8 kilograms/min
Total Amount Released: 408 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 1000 ppm
Max Threat Zone for LOC: 86 meters
Max Threat Zone for IDLH: 129 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 7,030 ppm
Indoor: 7,030 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 1000 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .25 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 6.8 kilograms/min
Total Amount Released: 408 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 1000 ppm
Max Threat Zone for LOC: 86 meters
Max Threat Zone for IDLH: 129 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 130 ppm
Indoor: 130 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
AH-6

Ultra Etchant 50 Solution

165 gallons
Average meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .25 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 6.8 kilograms/min
Total Amount Released: 408 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 102 meters
Max Threat Zone for IDLH: 62 meters
Note: The Heavy Gas footprint is an initial screening.
For short releases it may be an overestimation.
Be sure to check concentration information at specific locations.

Footprint Window

2842594529

Chemical Name: AMMONIUM HYDROXIDE
Model Run: Heavy Gas
Wind: 4 meters/sec from 0° true

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas

User specified LOC: 200 ppm

Max Threat Zone for LOC: 102 meters

Max Threat Zone for IDLH: 62 meters

Note: The Heavy Gas footprint is an initial screening.

For short releases it may be an overestimation.

Be sure to check concentration information at specific locations.

meters

75

25

0

25

75

meters

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .25 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 6.8 kilograms/min
Total Amount Released: 408 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 102 meters
Max Threat Zone for IDLH: 62 meters
Note: The Heavy Gas footprint is an initial screening.
For short releases it may be an overestimation.
Be sure to check concentration information at specific locations.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 26.1 ppm
Indoor: 26.1 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .25 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 6.8 kilograms/min
Total Amount Released: 408 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 102 meters
Max Threat Zone for IDLH: 62 meters
Note: The Heavy Gas footprint is an initial screening.
For short releases it may be an overestimation.
Be sure to check concentration information at specific locations.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 2,090 ppm
Indoor: 2,090 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 1000 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .25 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 6.8 kilograms/min
Total Amount Released: 408 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 1000 ppm
Max Threat Zone for LOC: 44 meters
Max Threat Zone for IDLH: 62 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

Release Designation

AH-7

Ammonium Hydroxide

10 liters

Worst case meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0038 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 103 grams/min
Total Amount Released: 6.21 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 28 meters
Max Threat Zone for IDLH: 16 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 5.51 ppm
Indoor: 5.51 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 1000 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0038 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 103 grams/min
Total Amount Released: 6.21 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 1000 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: 16 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0038 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 103 grams/min
Total Amount Released: 6.21 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 28 meters
Max Threat Zone for IDLH: 16 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 184 ppm
Indoor: 184 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
AH-8

Ammonium Hydroxide

10 liters
Average meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0038 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 103 grams/min
Total Amount Released: 6.21 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 34.2 ppm
Indoor: 34.2 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0038 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 103 grams/min
Total Amount Released: 6.21 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.397 ppm
Indoor: 0.397 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0038 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 103 grams/min
Total Amount Released: 6.21 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 1000 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0038 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 103 grams/min
Total Amount Released: 6.21 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 1000 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 25 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0038 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 103 grams/min
Total Amount Released: 6.21 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 25 ppm
Max Threat Zone for LOC: 34 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

Release Designation
AH-9

Diazo Developer

24 liters
Worst case meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0094 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 256 grams/min
Total Amount Released: 15.3 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 44 meters
Max Threat Zone for IDLH: 23 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 12 ppm
Indoor: 12 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 1000 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0094 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 256 grams/min
Total Amount Released: 15.3 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 1000 ppm
Max Threat Zone for LOC: 17 meters
Max Threat Zone for IDLH: 23 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0094 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 256 grams/min
Total Amount Released: 15.3 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 44 meters
Max Threat Zone for IDLH: 23 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 373 ppm
Indoor: 373 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0038 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 103 grams/min
Total Amount Released: 6.21 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of near-field patchiness make plume presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 34.2 ppm
Indoor: 34.2 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
AH-10

Diazo Developer

24 liters
Average meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 200 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0094 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 256 grams/min
Total Amount Released: 15.3 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 200 ppm
Max Threat Zone for LOC: 21 meters
Max Threat Zone for IDLH: 12 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 1000 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0094 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 256 grams/min
Total Amount Released: 15.3 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 1000 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: 12 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.988 ppm
Indoor: 0.988 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 1000 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0094 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 256 grams/min
Total Amount Released: 15.3 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 1000 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: 12 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 90.5 ppm
Indoor: 90.5 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: AMMONIUM HYDROXIDE
Molecular Weight: 35.06 kg/kmol
TLV-TWA: 25.00 ppm IDLH: 500.00 ppm
Footprint Level of Concern: 1000 ppm
Boiling Point: 27.00° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0094 pounds/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 256 grams/min
Total Amount Released: 15.3 kilograms

FOOTPRINT INFORMATION: (HEAVY GAS SELECTED)

Model Run: Heavy Gas
User specified LOC: 1000 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: 12 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

Release Designation
HCl-1

Hydrochloric Acid

15 gallons
Worst case meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 20 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0006 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 36 grams/min
Total Amount Released: 2.16 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 20 ppm
Max Threat Zone for LOC: 101 meters
Max Threat Zone for IDLH: 45 meters

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 20 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0006 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 36 grams/min
Total Amount Released: 2.16 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 20 ppm
Max Threat Zone for LOC: 101 meters
Max Threat Zone for IDLH: 45 meters

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 221 ppm
Indoor: 221 ppm
Note: Indoor graph is shown with a dotted line.

Chemical Name: HYDROGEN CHLORIDE
Model Run: Gaussian
Wind: 1 meters/sec from 0° true

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
User specified LOC: 20 ppm
Max Threat Zone for LOC: 101 meters
Max Threat Zone for IDLH: 45 meters

meters

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 20 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0006 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 36 gr. s/min
Total Amount Released: 2.16 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 20 ppm
Max Threat Zone for LOC: 101 meters
Max Threat Zone for IDLH: 45 meters

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 2.42 ppm
Indoor: 2.42 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 100 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0006 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 36 grams/min
Total Amount Released: 2.16 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 100 ppm
Max Threat Zone for LOC: 45 meters
Max Threat Zone for IDLH: 45 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

Release Designation
HCL-2

Hydrochloric Acid

15 gallons
Average meteorological condition

B-44.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 20 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0016 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 96 grams/min
Total Amount Released: 5.76 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 20 ppm
Max Threat Zone for LOC: 22 meters
Max Threat Zone for IDLH: 10 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 100 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0016 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 96 grams/min
Total Amount Released: 5.76 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 100 ppm
Max Threat Zone for LOC: 10 meters
Max Threat Zone for IDLH: 10 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 100 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0016 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 96 grams/min
Total Amount Released: 5.76 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 100 ppm
Max Threat Zone for LOC: 10 meters
Max Threat Zone for IDLH: 10 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 10.7 ppm
Indoor: 10.7 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 20 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0016 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 96 grams/min
Total Amount Released: 5.76 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.111 ppm
Indoor: 0.111 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
HCl-3

Hydrochloric Acid

45 gallons
Worst case meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 20 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0015 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 90 grams/min
Total Amount Released: 5.40 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 20 ppm
Max Threat Zone for LOC: 161 meters
Max Threat Zone for IDLH: 71 meters

Chemical Name: HYDROGEN CHLORIDE
Model Run: Gaussian
Wind: 1 meters/sec from 0° true

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
User specified LOC: 20 ppm
Max Threat Zone for LOC: 161 meters
Max Threat Zone for IDLH: 71 meters

meters

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 20 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0015 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 90 grams/min
Total Amount Released: 5.40 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 20 ppm
Max Threat Zone for LOC: 161 meters
Max Threat Zone for IDLH: 71 meters

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 553 ppm
Indoor: 553 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 100 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0015 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 90 grams/min
Total Amount Released: 5.40 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 100 ppm
Max Threat Zone for LOC: 71 meters
Max Threat Zone for IDLH: 71 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 100 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0015 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 90 grams/min
Total Amount Released: 5.40 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 100 ppm
Max Threat Zone for LOC: 71 meters
Max Threat Zone for IDLH: 71 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 6.05 ppm
Indoor: 6.05 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
HCl-4

Hydrochloric Acid

45 gallons
Average meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 20 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .004 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 240 grams/min
Total Amount Released: 14.4 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 20 ppm
Max Threat Zone for LOC: 34 meters
Max Threat Zone for IDLH: 16 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 20 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .004 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 240 grams/min
Total Amount Released: 14.4 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 20 ppm
Max Threat Zone for LOC: 34 meters
Max Threat Zone for IDLH: 16 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 26.6 ppm
Indoor: 26.6 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 100 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .004 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 240 grams/min
Total Amount Released: 14.4 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 100 ppm
Max Threat Zone for LOC: 16 meters
Max Threat Zone for IDLH: 16 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 100 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .004 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 240 grams/min
Total Amount Released: 14.4 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 100 ppm
Max Threat Zone for LOC: 16 meters
Max Threat Zone for IDLH: 16 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.277 ppm
Indoor: 0.277 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
HCl-5

Hydrochloric Acid

75 gallons
Worst case meteorological conditions

B-57,5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 20 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0025 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 150 grams/min
Total Amount Released: 9.00 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 20 ppm
Max Threat Zone for LOC: 210 meters
Max Threat Zone for IDLH: 92 meters

Chemical Name: HYDROGEN CHLORIDE
Model Run: Gaussian
Wind: 1 meters/sec from 0° true

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
User specified LOC: 20 ppm
Max Threat Zone for LOC: 210 meters
Max Threat Zone for IDLH: 92 meters

meters

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 20 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0025 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 150 grams/min
Total Amount Released: 9.00 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 20 ppm
Max Threat Zone for LOC: 210 meters
Max Threat Zone for IDLH: 92 meters

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 921 ppm
Indoor: 921 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 100 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0025 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 150 grams/min
Total Amount Released: 9.00 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 100 ppm
Max Threat Zone for LOC: 92 meters
Max Threat Zone for IDLH: 92 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 100 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .0025 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 150 grams/min
Total Amount Released: 9.00 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 100 ppm
Max Threat Zone for LOC: 92 meters
Max Threat Zone for IDLH: 92 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 10.1 ppm
Indoor: 10.1 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
HCl-6

Hydrochloric Acid

75 gallons
Average meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 20 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .007 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 420 grams/min
Total Amount Released: 25.2 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 20 ppm
Max Threat Zone for LOC: 46 meters
Max Threat Zone for IDLH: 20 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 100 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .007 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 420 grams/min
Total Amount Released: 25.2 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 100 ppm
Max Threat Zone for LOC: 20 meters
Max Threat Zone for IDLH: 20 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 46.6 ppm
Indoor: 46.6 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: HYDROGEN CHLORIDE
Molecular Weight: 36.46 kg/kmol
TLV-TWA: 5.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 100 ppm
Boiling Point: -85.00° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Direct Source: .007 kilograms/sec
Source Height: 0
Release Duration: ALOHA limited the duration to 1 hour
Release Rate: 420 grams/min
Total Amount Released: 25.2 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 100 ppm
Max Threat Zone for LOC: 20 meters
Max Threat Zone for IDLH: 20 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.485 ppm
Indoor: 0.485 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
N-1

Nitric Acid

2.5 liters
Worst case meteorological conditions

8-65.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 15 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .25 square meters
Puddle Volume: 2.5 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 7.11 grams/min
Max Average Sustained Release Rate: 7.09 grams/min
(averaged over a minute or more)
Total Amount Released: 413 grams

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 15 ppm
Max Threat Zone for LOC: 39 meters
Max Threat Zone for IDLH: 14 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 30 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .25 square meters
Puddle Volume: 2.5 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 7.11 grams/min
Max Average Sustained Release Rate: 7.09 grams/min
(averaged over a minute or more)
Total Amount Released: 413 grams

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 30 ppm
Max Threat Zone for LOC: 27 meters
Max Threat Zone for IDLH: 14 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 24.9 ppm
Indoor: 24.9 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 30 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .25 square meters
Puddle Volume: 2.5 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 7.11 grams/min
Max Average Sustained Release Rate: 7.09 grams/min
(averaged over a minute or more)
Total Amount Released: 413 grams

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 30 ppm
Max Threat Zone for LOC: 27 meters
Max Threat Zone for IDLH: 14 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.276 ppm
Indoor: 0.276 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation

N-2

Nitric Acid

2.5 liters

Average meteorological conditions

B-68,5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 15 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .25 square meters
Puddle Volume: 2.5 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 17.1 grams/min
Max Average Sustained Release Rate: 15.6 grams/min
(averaged over a minute or more)
Total Amount Released: 867 grams

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 15 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.998 ppm
Indoor: 0.998 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 2 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .25 square meters
Puddle Volume: 2.5 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 17.1 grams/min
Max Average Sustained Release Rate: 15.6 grams/min
(averaged over a minute or more)
Total Amount Released: 867 grams

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 2 ppm
Max Threat Zone for LOC: 21 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 15 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .25 square meters
Puddle Volume: 2.5 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 17.1 grams/min
Max Average Sustained Release Rate: 15.6 grams/min
(averaged over a minute or more)
Total Amount Released: 867 grams

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 15 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

AIM

Association for Information and Image Management

1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910
301/587-8202

Centimeter

Inches

MANUFACTURED TO AIM STANDARDS
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3 of 4

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 15 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .25 square meters
Puddle Volume: 2.5 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 17.1 grams/min
Max Average Sustained Release Rate: 15.6 grams/min
(averaged over a minute or more)
Total Amount Released: 867 grams

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 15 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.0104 ppm
Indoor: 0.0104 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
N-3

Nitric Acid

12.5 liters
Worst case meteorological conditions

B-72.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 30 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.25 square meters
Puddle Volume: 12.5 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 32.9 grams/min
Max Average Sustained Release Rate: 32.8 grams/min
(averaged over a minute or more)
Total Amount Released: 1.89 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 30 ppm
Max Threat Zone for LOC: 59 meters
Max Threat Zone for IDLH: 31 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 109 ppm
Indoor: 109 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 15 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.25 square meters
Puddle Volume: 12.5 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 32.9 grams/min
Max Average Sustained Release Rate: 32.8 grams/min
(averaged over a minute or more)
Total Amount Released: 1.89 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 15 ppm
Max Threat Zone for LOC: 84 meters
Max Threat Zone for IDLH: 31 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 30 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.25 square meters
Puddle Volume: 12.5 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 32.9 grams/min
Max Average Sustained Release Rate: 32.8 grams/min
(averaged over a minute or more)
Total Amount Released: 1.89 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 30 ppm
Max Threat Zone for LOC: 59 meters
Max Threat Zone for IDLH: 31 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 1.27 ppm
Indoor: 1.27 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
N-4

Nitric Acid

12.5 liters
Average meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 15 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.25 square meters
Puddle Volume: 12.5 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 77.1 grams/min
Max Average Sustained Release Rate: 71.1 grams/min
(averaged over a minute or more)
Total Amount Released: 4.03 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 15 ppm
Max Threat Zone for LOC: 16 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 30 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.25 square meters
Puddle Volume: 12.5 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 77.1 grams/min
Max Average Sustained Release Rate: 71.1 grams/min
(averaged over a minute or more)
Total Amount Released: 4.03 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 30 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.0475 ppm
Indoor: 0.0475 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 30 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.25 square meters
Puddle Volume: 12.5 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 77.1 grams/min
Max Average Sustained Release Rate: 71.1 grams/min
(averaged over a minute or more)
Total Amount Released: 4.03 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 30 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.0475 ppm
Indoor: 0.0475 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 30 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.25 square meters
Puddle Volume: 12.5 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 77.1 grams/min
Max Average Sustained Release Rate: 71.1 grams/min
(averaged over a minute or more)
Total Amount Released: 4.03 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 30 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
 Building Air Exchanges Per Hour: 60 (User specified)
 Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
 Molecular Weight: 63.01 kg/kmol
 TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
 Footprint Level of Concern: 30 ppm
 Boiling Point: 83.00° C
 Vapor Pressure at Ambient Temperature: 0.063 atm
 Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
 No Inversion Height
 Stability Class: C Air Temperature: 68° F
 Relative Humidity: 50% Ground Roughness: Open country
 Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.25 square meters
 Puddle Volume: 12.5 liters
 Soil Type: Default Ground Temperature: 68° F
 Initial Puddle Temperature: Ground temperature
 Release Duration: ALOHA limited the duration to 1 hour
 Max Computed Release Rate: 77.1 grams/min
 Max Average Sustained Release Rate: 71.1 grams/min
 (averaged over a minute or more)
 Total Amount Released: 4.03 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
 User specified LOC: 30 ppm
 Max Threat Zone for LOC: 11 meters
 Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
 Note: Footprint was not drawn because
 effects of near-field patchiness make plume
 presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
 Downwind: 30 meters
 Off Centerline: 0 meters
 Max Concentration:
 Outdoor: 4.53 ppm
 Indoor: 4.53 ppm
 Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 2 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.25 square meters
Puddle Volume: 12.5 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 77.1 grams/min
Max Average Sustained Release Rate: 71.1 grams/min
(averaged over a minute or more)
Total Amount Released: 4.03 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 2 ppm
Max Threat Zone for LOC: 45 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

Release Designation
N-5

Nitric Acid

25.0 liters
Worst case meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 15 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 2.5 square meters
Puddle Volume: 25 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 63.7 grams/min
Max Average Sustained Release Rate: 63.5 grams/min
(averaged over a minute or more)
Total Amount Released: 3.65 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 15 ppm
Max Threat Zone for LOC: 117 meters
Max Threat Zone for IDLH: 44 meters

Footprint Window

2846068481

Chemical Name: NITRIC ACID
Model Run: Gaussian
Wind: 1 meters/sec from 0° true

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 15 ppm
Max Threat Zone for LOC: 117 meters
Max Threat Zone for IDLH: 44 meters

meters

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 15 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 2.5 square meters
Puddle Volume: 25 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 63.7 grams/min
Max Average Sustained Release Rate: 63.5 grams/min
(averaged over a minute or more)
Total Amount Released: 3.65 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 15 ppm
Max Threat Zone for LOC: 117 meters
Max Threat Zone for IDLH: 44 meters

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 198 ppm
Indoor: 198 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 30 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 2.5 square meters
Puddle Volume: 25 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 63.7 grams/min
Max Average Sustained Release Rate: 63.5 grams/min
(averaged over a minute or more)
Total Amount Released: 3.65 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 30 ppm
Max Threat Zone for LOC: 82 meters
Max Threat Zone for IDLH: 44 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 15 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 2.5 square meters
Puddle Volume: 25 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 63.7 grams/min
Max Average Sustained Release Rate: 63.5 grams/min
(averaged over a minute or more)
Total Amount Released: 3.65 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 15 ppm
Max Threat Zone for LOC: 117 meters
Max Threat Zone for IDLH: 44 meters

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 2.47 ppm
Indoor: 2.47 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation

N-6

Nitric Acid

25.0 liters

Average meteorological conditions

B-86.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 15 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 2.5 square meters
Puddle Volume: 25 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 148 grams/min
Max Average Sustained Release Rate: 137 grams/min
(averaged over a minute or more)
Total Amount Released: 7.81 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 15 ppm
Max Threat Zone for LOC: 23 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 30 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 2.5 square meters
Puddle Volume: 25 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 148 grams/min
Max Average Sustained Release Rate: 137 grams/min
(averaged over a minute or more)
Total Amount Released: 7.81 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 30 ppm
Max Threat Zone for LOC: 16 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 2 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 2.5 square meters
Puddle Volume: 25 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 148 grams/min
Max Average Sustained Release Rate: 137 grams/min
(averaged over a minute or more)
Total Amount Released: 7.81 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 2 ppm
Max Threat Zone for LOC: 63 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 8.67 ppm
Indoor: 8.67 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: NITRIC ACID
Molecular Weight: 63.01 kg/kmol
TLV-TWA: 2.00 ppm IDLH: 100.00 ppm
Footprint Level of Concern: 2 ppm
Boiling Point: 83.00° C
Vapor Pressure at Ambient Temperature: 0.063 atm
Ambient Saturation Concentration: 75,930 ppm or 7.59%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 2.5 square meters
Puddle Volume: 25 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 148 grams/min
Max Average Sustained Release Rate: 137 grams/min
(averaged over a minute or more)
Total Amount Released: 7.81 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 2 ppm
Max Threat Zone for LOC: 63 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.0918 ppm
Indoor: 0.0918 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
AC-1

Acetone

55 gallons
Worst case meteorological conditions

B-90.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 2812 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 21 square meters
Puddle Volume: 55 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 2.48 kilograms/min
Max Average Sustained Release Rate: 2.08 kilograms/min
(averaged over a minute or more)
Total Amount Released: 106 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 2812 ppm
Max Threat Zone for LOC: 39 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 20 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 5,580 ppm
Indoor: 5,580 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 2812 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 21 square meters
Puddle Volume: 55 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 2.48 kilograms/min
Max Average Sustained Release Rate: 2.08 kilograms/min
(averaged over a minute or more)
Total Amount Released: 106 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 2812 ppm
Max Threat Zone for LOC: 39 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 3,710 ppm
Indoor: 3,710 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 2812 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 21 square meters
Puddle Volume: 55 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 2.48 kilograms/min
Max Average Sustained Release Rate: 2.18 kilograms/min
(averaged over a minute or more)
Total Amount Released: 117 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 2812 ppm
Max Threat Zone for LOC: 40 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 90.7 ppm
Indoor: 90.7 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 6469 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 21 square meters
Puddle Volume: 55 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 2.48 kilograms/min
Max Average Sustained Release Rate: 2.08 kilograms/min
(averaged over a minute or more)
Total Amount Released: 106 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 6469 ppm
Max Threat Zone for LOC: 17 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

Release Designation
AC-2

Acetone

55 gallons
Average meteorological conditions

B-94.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 2812 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 21 square meters
Puddle Volume: 55 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 47 minutes
Max Computed Release Rate: 6.82 kilograms/min
Max Average Sustained Release Rate: 4.76 kilograms/min
(averaged over a minute or more)
Total Amount Released: 165 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 2812 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 20 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 549 ppm
Indoor: 547 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 2812 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 21 square meters
Puddle Volume: 55 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 47 minutes
Max Computed Release Rate: 6.82 kilograms/min
Max Average Sustained Release Rate: 4.76 kilograms/min
(averaged over a minute or more)
Total Amount Released: 165 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 2812 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 287 ppm
Indoor: 286 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 2812 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 21 square meters
Puddle Volume: 55 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 43 minutes
Max Computed Release Rate: 6.82 kilograms/min
Max Average Sustained Release Rate: 4.95 kilograms/min
(averaged over a minute or more)
Total Amount Released: 165 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 2812 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 3.58 ppm
Indoor: 3.57 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 6469 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 21 square meters
Puddle Volume: 55 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 45 minutes
Max Computed Release Rate: 6.82 kilograms/min
Max Average Sustained Release Rate: 4.82 kilograms/min
(averaged over a minute or more)
Total Amount Released: 165 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 6469 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 937.5 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 21 square meters
Puddle Volume: 55 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 47 minutes
Max Computed Release Rate: 6.82 kilograms/min
Max Average Sustained Release Rate: 4.76 kilograms/min
(averaged over a minute or more)
Total Amount Released: 165 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 937.5 ppm
Max Threat Zone for LOC: 13 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

Release Designation
AC-3

Acetone

110 gallons
Worst case meteorological conditions

B-99.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 2812 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 42 square meters
Puddle Volume: 110 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 4.76 kilograms/min
Max Average Sustained Release Rate: 4.05 kilograms/min
(averaged over a minute or more)
Total Amount Released: 207 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 2812 ppm
Max Threat Zone for LOC: 53 meters
Max Threat Zone for IDLH: 12 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 5,130 ppm
Indoor: 5,130 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 2812 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 42 square meters
Puddle Volume: 110 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 4.76 kilograms/min
Max Average Sustained Release Rate: 4.22 kilograms/min
(averaged over a minute or more)
Total Amount Released: 228 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 2812 ppm
Max Threat Zone for LOC: 55 meters
Max Threat Zone for IDLH: 12 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 174 ppm
Indoor: 174 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 2812 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 42 square meters
Puddle Volume: 110 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 4.76 kilograms/min
Max Average Sustained Release Rate: 4.05 kilograms/min
(averaged over a minute or more)
Total Amount Released: 207 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 2812 ppm
Max Threat Zone for LOC: 53 meters
Max Threat Zone for IDLH: 12 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 6469 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 42 square meters
Puddle Volume: 110 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 4.76 kilograms/min
Max Average Sustained Release Rate: 4.05 kilograms/min
(averaged over a minute or more)
Total Amount Released: 207 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 6469 ppm
Max Threat Zone for LOC: 24 meters
Max Threat Zone for IDLH: 12 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

Release Designation

AC-4

Acetone

140 gallons

Average meteorological conditions

B-103.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 2812 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 42 square meters
Puddle Volume: 110 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 44 minutes
Max Computed Release Rate: 13.1 kilograms/min
Max Average Sustained Release Rate: 9.59 kilograms/min
(averaged over a minute or more)
Total Amount Released: 330 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 2812 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 6.93 ppm
Indoor: 6.91 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 6469 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 42 square meters
Puddle Volume: 110 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 47 minutes
Max Computed Release Rate: 13.1 kilograms/min
Max Average Sustained Release Rate: 9.34 kilograms/min
(averaged over a minute or more)
Total Amount Released: 330 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 6469 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
 Building Air Exchanges Per Hour: 60 (User specified)
 Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
 TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
 Footprint Level of Concern: 2812 ppm
 Boiling Point: 56.29° C
 Vapor Pressure at Ambient Temperature: 0.24 atm
 Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
 No Inversion Height
 Stability Class: C Air Temperature: 68° F
 Relative Humidity: 50% Ground Roughness: Open country
 Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 42 square meters
 Puddle Volume: 110 gallons
 Soil Type: Default Ground Temperature: 68° F
 Initial Puddle Temperature: Ground temperature
 Release Duration: 48 minutes
 Max Computed Release Rate: 13.1 kilograms/min
 Max Average Sustained Release Rate: 9.22 kilograms/min
 (averaged over a minute or more)
 Total Amount Released: 330 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
 User specified LOC: 2812 ppm
 Max Threat Zone for LOC: less than 10 meters (10.9 yards)
 Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
 Note: Footprint was not drawn because
 effects of near-field patchiness make plume
 presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
 Downwind: 30 meters
 Off Centerline: 0 meters
 Max Concentration:
 Outdoor: 488 ppm
 Indoor: 487 ppm
 Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 937.5 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 42 square meters
Puddle Volume: 110 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 48 minutes
Max Computed Release Rate: 13.1 kilograms/min
Max Average Sustained Release Rate: 9.22 kilograms/min
(averaged over a minute or more)
Total Amount Released: 330 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 937.5 ppm
Max Threat Zone for LOC: 18 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

Release Designation
AC-5

Acetone

165 gallons.
Worst case meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 2812 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 62 square meters
Puddle Volume: 165 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 6.89 kilograms/min
Max Average Sustained Release Rate: 5.86 kilograms/min
(averaged over a minute or more)
Total Amount Released: 301 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 2812 ppm
Max Threat Zone for LOC: 64 meters
Max Threat Zone for IDLH: 14 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 6,140 ppm
Indoor: 6,140 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 2812 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 62 square meters
Puddle Volume: 165 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 6.89 kilograms/min
Max Average Sustained Release Rate: 6.13 kilograms/min
(averaged over a minute or more)
Total Amount Released: 332 kilograms

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
 Outdoor: 250 ppm
 Indoor: 250 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 2812 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 62 square meters
Puddle Volume: 165 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 6.89 kilograms/min
Max Average Sustained Release Rate: 5.86 kilograms/min
(averaged over a minute or more)
Total Amount Released: 301 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 2812 ppm
Max Threat Zone for LOC: 64 meters
Max Threat Zone for IDLH: 14 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 6469 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 62 square meters
Puddle Volume: 165 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 6.89 kilograms/min
Max Average Sustained Release Rate: 5.86 kilograms/min
(averaged over a minute or more)
Total Amount Released: 301 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 6469 ppm
Max Threat Zone for LOC: 28 meters
Max Threat Zone for IDLH: 14 meters
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

Release Designation

AC -6

Acetone

165 gallons

Average meteorological conditions

B-111.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 937.5 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 62 square meters
Puddle Volume: 165 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 50 minutes
Max Computed Release Rate: 19 kilograms/min
Max Average Sustained Release Rate: 13.4 kilograms/min
(averaged over a minute or more)
Total Amount Released: 494 kilograms

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
 Outdoor: 632 ppm
 Indoor: 632 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 2812 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 62 square meters
Puddle Volume: 165 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 46 minutes
Max Computed Release Rate: 19 kilograms/min
Max Average Sustained Release Rate: 13.9 kilograms/min
(averaged over a minute or more)
Total Amount Released: 494 kilograms

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
 Outdoor: 10 ppm
 Indoor: 10 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 6469 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 62 square meters
Puddle Volume: 165 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 48 minutes
Max Computed Release Rate: 19 kilograms/min
Max Average Sustained Release Rate: 13.5 kilograms/min
(averaged over a minute or more)
Total Amount Released: 494 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)

Dispersion Module: Gaussian
User specified LOC: 6469 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 937.5 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 62 square meters
Puddle Volume: 165 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 50 minutes
Max Computed Release Rate: 19 kilograms/min
Max Average Sustained Release Rate: 13.4 kilograms/min
(averaged over a minute or more)
Total Amount Released: 494 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 937.5 ppm
Max Threat Zone for LOC: 22 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONE Molecular Weight: 58.08 kg/kmol
TLV-TWA: 750.00 ppm IDLH: 20000.00 ppm
Footprint Level of Concern: 2812 ppm
Boiling Point: 56.29° C
Vapor Pressure at Ambient Temperature: 0.24 atm
Ambient Saturation Concentration: 291,612 ppm or 29.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 62 square meters
Puddle Volume: 165 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 50 minutes
Max Computed Release Rate: 19 kilograms/min
Max Average Sustained Release Rate: 13.4 kilograms/min
(averaged over a minute or more)
Total Amount Released: 494 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 2812 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

Release Designation
CY-1

Cyanomethane
(Acetonitrile)

1 gallon
Worst case meteorological conditions

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONITRILE
Molecular Weight: 41.05 kg/kmol
TLV-TWA: 40.00 ppm IDLH: 4000.00 ppm
Footprint Level of Concern: 50 ppm
Boiling Point: 81.60° C
Vapor Pressure at Ambient Temperature: 0.095 atm
Ambient Saturation Concentration: 114,357 ppm or 11.4%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .38 square meters
Puddle Volume: 1 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 13.8 grams/min
Max Average Sustained Release Rate: 13.2 grams/min
(averaged over a minute or more)
Total Amount Released: 755 grams

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 50 ppm
Max Threat Zone for LOC: 36 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONITRILE
Molecular Weight: 41.05 kg/kmol
TLV-TWA: 40.00 ppm IDLH: 4000.00 ppm
Footprint Level of Concern: 150 ppm
Boiling Point: 81.60° C
Vapor Pressure at Ambient Temperature: 0.095 atm
Ambient Saturation Concentration: 114,357 ppm or 11.4%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .38 square meters
Puddle Volume: 1 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 13.8 grams/min
Max Average Sustained Release Rate: 13.2 grams/min
(averaged over a minute or more)
Total Amount Released: 755 grams

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 150 ppm
Max Threat Zone for LOC: 20 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONITRILE
Molecular Weight: 41.05 kg/kmol
TLV-TWA: 40.00 ppm IDLH: 4000.00 ppm
Footprint Level of Concern: 345 ppm
Boiling Point: 81.60° C
Vapor Pressure at Ambient Temperature: 0.095 atm
Ambient Saturation Concentration: 114,357 ppm or 11.4%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .38 square meters
Puddle Volume: 1 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 14.2 grams/min
Max Average Sustained Release Rate: 14.2 grams/min
(averaged over a minute or more)
Total Amount Released: 847 grams

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 345 ppm
Max Threat Zone for LOC: 14 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONITRILE
Molecular Weight: 41.05 kg/kmol
TLV-TWA: 40.00 ppm IDLH: 4000.00 ppm
Footprint Level of Concern: 150 ppm
Boiling Point: 81.60° C
Vapor Pressure at Ambient Temperature: 0.095 atm
Ambient Saturation Concentration: 114,357 ppm or 11.4%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .38 square meters
Puddle Volume: 1 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 14.2 grams/min
Max Average Sustained Release Rate: 14.2 grams/min
(averaged over a minute or more)
Total Amount Released: 847 grams

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 150 ppm
Max Threat Zone for LOC: 21 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 75.8 ppm
Indoor: 75.8 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONITRILE
Molecular Weight: 41.05 kg/kmol
TLV-TWA: 40.00 ppm IDLH: 4000.00 ppm
Footprint Level of Concern: 150 ppm
Boiling Point: 81.60° C
Vapor Pressure at Ambient Temperature: 0.095 atm
Ambient Saturation Concentration: 114,357 ppm or 11.4%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .38 square meters
Puddle Volume: 1 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 14.2 grams/min
Max Average Sustained Release Rate: 14.2 grams/min
(averaged over a minute or more)
Total Amount Released: 847 grams

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 150 ppm
Max Threat Zone for LOC: 21 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.847 ppm
Indoor: 0.847 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
CY-2

Cyanomethane
(Acetonitrile)

1 gallon
Average meteorological conditions

B-121.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONITRILE
Molecular Weight: 41.05 kg/kmol
TLV-TWA: 40.00 ppm IDLH: 4000.00 ppm
Footprint Level of Concern: 50 ppm
Boiling Point: 81.60° C
Vapor Pressure at Ambient Temperature: 0.095 atm
Ambient Saturation Concentration: 114,357 ppm or 11.4%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .38 square meters
Puddle Volume: 1 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 36.5 grams/min
Max Average Sustained Release Rate: 30.6 grams/min
(averaged over a minute or more)
Total Amount Released: 1.63 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 50 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.0314 ppm
Indoor: 0.0314 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONITRILE
Molecular Weight: 41.05 kg/kmol
TLV-TWA: 40.00 ppm IDLH: 4000.00 ppm
Footprint Level of Concern: 50 ppm
Boiling Point: 81.60° C
Vapor Pressure at Ambient Temperature: 0.095 atm
Ambient Saturation Concentration: 114,357 ppm or 11.4%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .38 square meters
Puddle Volume: 1 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 36.5 grams/min
Max Average Sustained Release Rate: 30.6 grams/min
(averaged over a minute or more)
Total Amount Released: 1.63 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 50 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 3.01 ppm
Indoor: 3.01 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
CY-3

Cyanomethane
(Acetonitrile)

2 gallons
Worst case meteorological conditions

B-123.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONITRILE
Molecular Weight: 41.05 kg/kmol
TLV-TWA: 40.00 ppm IDLH: 4000.00 ppm
Footprint Level of Concern: 345 ppm
Boiling Point: 81.60° C
Vapor Pressure at Ambient Temperature: 0.095 atm
Ambient Saturation Concentration: 114,357 ppm or 11.4%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .76 square meters
Puddle Volume: 2 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 27.4 grams/min
Max Average Sustained Release Rate: 27.4 grams/min
(averaged over a minute or more)
Total Amount Released: 1.63 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 345 ppm
Max Threat Zone for LOC: 19 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 1.64 ppm
Indoor: 1.64 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONITRILE
Molecular Weight: 41.05 kg/kmol
TLV-TWA: 40.00 ppm IDLH: 4000.00 ppm
Footprint Level of Concern: 150 ppm
Boiling Point: 81.60° C
Vapor Pressure at Ambient Temperature: 0.095 atm
Ambient Saturation Concentration: 114,357 ppm or 11.4%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .76 square meters
Puddle Volume: 2 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 27.9 grams/min
Max Average Sustained Release Rate: 27.9 grams/min
(averaged over a minute or more)
Total Amount Released: 1.65 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 150 ppm
Max Threat Zone for LOC: 30 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 146 ppm
Indoor: 146 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONITRILE
Molecular Weight: 41.05 kg/kmol
TLV-TWA: 40.00 ppm IDLH: 4000.00 ppm
Footprint Level of Concern: 150 ppm
Boiling Point: 81.60° C
Vapor Pressure at Ambient Temperature: 0.095 atm
Ambient Saturation Concentration: 114,357 ppm or 11.4%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .76 square meters
Puddle Volume: 2 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 27.4 grams/min
Max Average Sustained Release Rate: 27.4 grams/min
(averaged over a minute or more)
Total Amount Released: 1.63 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 150 ppm
Max Threat Zone for LOC: 30 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

Release Designation
CY -4

Cyanomethane
(Acetonitrile)

2 gallons
Average meteorological conditions

B-126.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONITRILE
Molecular Weight: 41.05 kg/kmol
TLV-TWA: 40.00 ppm IDLH: 4000.00 ppm
Footprint Level of Concern: 50 ppm
Boiling Point: 81.60° C
Vapor Pressure at Ambient Temperature: 0.095 atm
Ambient Saturation Concentration: 114,357 ppm or 11.4%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .76 square meters
Puddle Volume: 2 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 69.6 grams/min
Max Average Sustained Release Rate: 59.4 grams/min
(averaged over a minute or more)
Total Amount Released: 3.15 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 50 ppm
Max Threat Zone for LOC: 10 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONITRILE
Molecular Weight: 41.05 kg/kmol
TLV-TWA: 40.00 ppm IDLH: 4000.00 ppm
Footprint Level of Concern: 150 ppm
Boiling Point: 81.60° C
Vapor Pressure at Ambient Temperature: 0.095 atm
Ambient Saturation Concentration: 114,357 ppm or 11.4%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .76 square meters
Puddle Volume: 2 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 69.6 grams/min
Max Average Sustained Release Rate: 59.4 grams/min
(averaged over a minute or more)
Total Amount Released: 3.15 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 150 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONITRILE
Molecular Weight: 41.05 kg/kmol
TLV-TWA: 40.00 ppm IDLH: 4000.00 ppm
Footprint Level of Concern: 150 ppm
Boiling Point: 81.60° C
Vapor Pressure at Ambient Temperature: 0.095 atm
Ambient Saturation Concentration: 114,357 ppm or 11.4%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .76 square meters
Puddle Volume: 2 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 69.6 grams/min
Max Average Sustained Release Rate: 59.4 grams/min
(averaged over a minute or more)
Total Amount Released: 3.15 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 150 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 5.82 ppm
Indoor: 5.82 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: ACETONITRILE
Molecular Weight: 41.05 kg/kmol
TLV-TWA: 40.00 ppm IDLH: 4000.00 ppm
Footprint Level of Concern: 150 ppm
Boiling Point: 81.60° C
Vapor Pressure at Ambient Temperature: 0.095 atm
Ambient Saturation Concentration: 114,357 ppm or 11.4%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .76 square meters
Puddle Volume: 2 gallons
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Computed Release Rate: 69.6 grams/min
Max Average Sustained Release Rate: 59.4 grams/min
(averaged over a minute or more)
Total Amount Released: 3.16 kilograms

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.0609 ppm
Indoor: 0.0609 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
MC-1

Methylene Chloride
(Dichloromethane)

4 liters
Worst case meteorological conditions

B-130.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 188 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .4 square meters
Puddle Volume: 4 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 45 minutes
Max Computed Release Rate: 186 grams/min
Max Average Sustained Release Rate: 145 grams/min
(averaged over a minute or more)
Total Amount Released: 5.31 kilograms

FOOTPRINT INFORMATION:

Model Run: Heavy Gas
User specified LOC: 188 ppm
Max Threat Zone for LOC: 20 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 432 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .4 square meters
Puddle Volume: 4 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 46 minutes
Max Computed Release Rate: 186 grams/min
Max Average Sustained Release Rate: 144 grams/min
(averaged over a minute or more)
Total Amount Released: 5.31 kilograms

FOOTPRINT INFORMATION:

Model Run: Heavy Gas
User specified LOC: 432 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 87.5 ppm
Indoor: 87.4 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO.
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 432 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .4 square meters
Puddle Volume: 4 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 46 minutes
Max Computed Release Rate: 186 grams/min
Max Average Sustained Release Rate: 144 grams/min
(averaged over a minute or more)
Total Amount Released: 5.31 kilograms

FOOTPRINT INFORMATION:

Model Run: Heavy Gas
User specified LOC: 432 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 2.86 ppm
Indoor: 2.84 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
MIC-2

Methylene Chloride
(Dichloromethane)

4 liters
Average meteorological conditions

B-133.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 63 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .4 square meters
Puddle Volume: 4 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 23 minutes
Max Computed Release Rate: 523 grams/min
Max Average Sustained Release Rate: 337 grams/min
(averaged over a minute or more)
Total Amount Released: 5.31 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 63 ppm
Max Threat Zone for LOC: 15 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 188 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .4 square meters
Puddle Volume: 4 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 23 minutes
Max Computed Release Rate: 523 grams/min
Max Average Sustained Release Rate: 334 grams/min
(averaged over a minute or more)
Total Amount Released: 5.31 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 188 ppm
Max Threat Zone for LOC: less than 10 meters(10.9 yards)
Max Threat Zone for IDLH: less than 10 meters(10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 432 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .4 square meters
Puddle Volume: 4 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 23 minutes
Max Computed Release Rate: 523 grams/min
Max Average Sustained Release Rate: 337 grams/min
(averaged over a minute or more)
Total Amount Released: 5.31 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 432 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 16 ppm
Indoor: 14.8 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 432 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: .4 square meters
Puddle Volume: 4 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 23 minutes
Max Computed Release Rate: 523 grams/min
Max Average Sustained Release Rate: 337 grams/min
(averaged over a minute or more)
Total Amount Released: 5.31 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 432 ppm
Max Threat Zone for LOC: less than 10 meters (10.9 yards)
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.167 ppm
Indoor: 0.155 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
MC-3

Methylene Chloride
(Dichloromethane)

16 liters
Worst case meteorological conditions

B-137.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 432 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.6 square meters
Puddle Volume: 16 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 49 minutes
Max Computed Release Rate: 682 grams/min
Max Average Sustained Release Rate: 536 grams/min
(averaged over a minute or more)
Total Amount Released: 21.2 kilograms

FOOTPRINT INFORMATION:

Model Run: Heavy Gas
User specified LOC: 432 ppm
Max Threat Zone for LOC: 22 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 251 ppm
Indoor: 250 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 432 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.6 square meters
Puddle Volume: 16 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 49 minutes
Max Computed Release Rate: 682 grams/min
Max Average Sustained Release Rate: 536 grams/min
(averaged over a minute or more)
Total Amount Released: 21.2 kilograms

FOOTPRINT INFORMATION:

Model Run: Heavy Gas
User specified LOC: 432 ppm
Max Threat Zone for LOC: 22 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 7.37 ppm
Indoor: 7.33 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 188 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.6 square meters
Puddle Volume: 16 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 48 minutes
Max Computed Release Rate: 682 grams/min
Max Average Sustained Release Rate: 539 grams/min
(averaged over a minute or more)
Total Amount Released: 21.2 kilograms

FOOTPRINT INFORMATION:

Model Run: Heavy Gas
User specified LOC: 188 ppm
Max Threat Zone for LOC: 35 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

Release Designation
VIC-4

Methylene Chloride
(Dichloromethane)

16 liters
Average meteorological conditions

B-140.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 63 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.6 square meters
Puddle Volume: 16 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 24 minutes
Max Computed Release Rate: 1.92 kilograms/min
Max Average Sustained Release Rate: 1.26 kilograms/min
(averaged over a minute or more)
Total Amount Released: 21.2 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 63 ppm
Max Threat Zone for LOC: 29 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 188 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.6 square meters
Puddle Volume: 16 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 25 minutes
Max Computed Release Rate: 1.92 kilograms/min
Max Average Sustained Release Rate: 1.25 kilograms/min
(averaged over a minute or more)
Total Amount Released: 21.2 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 188 ppm
Max Threat Zone for LOC: 17 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 432 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.6 square meters
Puddle Volume: 16 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 24 minutes
Max Computed Release Rate: 1.92 kilograms/min
Max Average Sustained Release Rate: 1.26 kilograms/min
(averaged over a minute or more)
Total Amount Released: 21.2 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 432 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 59.2 ppm
Indoor: 54.8 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 432 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 1.6 square meters
Puddle Volume: 16 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 24 minutes
Max Computed Release Rate: 1.92 kilograms/min
Max Average Sustained Release Rate: 1.26 kilograms/min
(averaged over a minute or more)
Total Amount Released: 21.2 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 432 ppm
Max Threat Zone for LOC: 11 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 0.623 ppm
Indoor: 0.577 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
MC-5

Methylene Chloride
(Dichloromethane)

32 liters
Worst case meteorological conditions

B-144.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 63 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 3.2 square meters
Puddle Volume: 32 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 49 minutes
Max Computed Release Rate: 1.31 kilograms/min
Max Average Sustained Release Rate: 1.04 kilograms/min
(averaged over a minute or more)
Total Amount Released: 42.5 kilograms

FOOTPRINT INFORMATION:

Model Run: Heavy Gas
User specified LOC: 63 ppm
Max Threat Zone for LOC: 97 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 188 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 3.2 square meters
Puddle Volume: 32 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 49 minutes
Max Computed Release Rate: 1.31 kilograms/min
Max Average Sustained Release Rate: 1.04 kilograms/min
(averaged over a minute or more)
Total Amount Released: 42.5 kilograms

FOOTPRINT INFORMATION:

Model Run: Heavy Gas
User specified LOC: 188 ppm
Max Threat Zone for LOC: 49 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 432 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 3.2 square meters
Puddle Volume: 32 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 50 minutes
Max Computed Release Rate: 1.31 kilograms/min
Max Average Sustained Release Rate: 1.03 kilograms/min
(averaged over a minute or more)
Total Amount Released: 42.5 kilograms

FOOTPRINT INFORMATION:

Model Run: Heavy Gas
User specified LOC: 432 ppm
Max Threat Zone for LOC: 30 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 443 ppm
Indoor: 443 ppm
Note: Indoor graph is shown with a dotted line.

AIM

Association for Information and Image Management

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Silver Spring, Maryland 20910
301/587-8202

Centimeter

Inches

MANUFACTURED TO AIM STANDARDS
BY APPLIED IMAGE, INC.

4 of 4

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 432 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 1 meters/sec from 0° true
No Inversion Height
Stability Class: F Air Temperature: 68° F
Relative Humidity: 5% Ground Roughness: Open country
Cloud Cover: 1 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 3.2 square meters
Puddle Volume: 32 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 50 minutes
Max Computed Release Rate: 1.31 kilograms/min
Max Average Sustained Release Rate: 1.03 kilograms/min
(averaged over a minute or more)
Total Amount Released: 42.5 kilograms

FOOTPRINT INFORMATION:

Model Run: Heavy Gas
User specified LOC: 432 ppm
Max Threat Zone for LOC: 30 meters
Max Threat Zone for IDLH: 11 meters
Note: Footprint wasn't drawn because effects of
near-field patchiness make plume presentation
unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 11.7 ppm
Indoor: 11.7 ppm
Note: Indoor graph is shown with a dotted line.

Release Designation
MC-6

Methylene Chloride
(Dichloromethane)

32 liters
Average meteorological conditions

B-148.5

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 63 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 3.2 square meters
Puddle Volume: 32 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 25 minutes
Max Computed Release Rate: 3.69 kilograms/min
Max Average Sustained Release Rate: 2.43 kilograms/min
(averaged over a minute or more)
Total Amount Released: 42.5 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 63 ppm
Max Threat Zone for LOC: 41 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 188 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 3.2 square meters
Puddle Volume: 32 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 25 minutes
Max Computed Release Rate: 3.69 kilograms/min
Max Average Sustained Release Rate: 2.41 kilograms/min
(averaged over a minute or more)
Total Amount Released: 42.5 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 188 ppm
Max Threat Zone for LOC: 23 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 432 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 3.2 square meters
Puddle Volume: 32 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 25 minutes
Max Computed Release Rate: 3.69 kilograms/min
Max Average Sustained Release Rate: 2.43 kilograms/min
(averaged over a minute or more)
Total Amount Released: 42.5 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 432 ppm
Max Threat Zone for LOC: 15 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 30 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 113 ppm
Indoor: 105 ppm
Note: Indoor graph is shown with a dotted line.

SITE DATA INFORMATION:

Location: ALBUQUERQUE, NEW MEXICO
Building Air Exchanges Per Hour: 60 (User specified)
Date and Time: Using computer's internal clock

CHEMICAL INFORMATION:

Chemical Name: DICHLOROMETHANE
Molecular Weight: 84.93 kg/kmol
TLV-TWA: 50.00 ppm IDLH: 5000.00 ppm
Note: Potential or confirmed human carcinogen.
Footprint Level of Concern: 432 ppm
Boiling Point: 39.75° C
Vapor Pressure at Ambient Temperature: 0.46 atm
Ambient Saturation Concentration: 557,689 ppm or 55.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)

Wind: 4 meters/sec from 0° true
No Inversion Height
Stability Class: C Air Temperature: 68° F
Relative Humidity: 50% Ground Roughness: Open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:

Puddle Area: 3.2 square meters
Puddle Volume: 32 liters
Soil Type: Default Ground Temperature: 68° F
Initial Puddle Temperature: Ground temperature
Release Duration: 25 minutes
Max Computed Release Rate: 3.69 kilograms/min
Max Average Sustained Release Rate: 2.43 kilograms/min
(averaged over a minute or more)
Total Amount Released: 42.5 kilograms

FOOTPRINT INFORMATION:

Dispersion Module: Gaussian
User specified LOC: 432 ppm
Max Threat Zone for LOC: 15 meters
Max Threat Zone for IDLH: less than 10 meters (10.9 yards)
Note: Footprint was not drawn because
effects of near-field patchiness make plume
presentation unreliable for short distances.

TIME DEPENDENT INFORMATION:

Concentration Estimates at the point:
Downwind: 300 meters
Off Centerline: 0 meters
Max Concentration:
Outdoor: 1.2 ppm
Indoor: 1.11 ppm
Note: Indoor graph is shown with a dotted line.

Appendix C

Calculation Sheets

Ammonium Hydroxide Evaporation Plate	1
Hydrochloric Acid Evaporation Plate	6

CALCULATION SHEET

CALCULATION TITLE: Estimation of the airborne quantity released to the atmosphere

CALCULATION ID: RD-AM-1-2 (55 gallons of ammonium hydroxide)

REVISION: 0

Prepared by:	Signature	CARRIE L. WOOD Printed Name	6/16/94 Date
Checked by:	Signature	Stephen Coffing Printed Name	6/21/94 Date
Approved by:	Signature	WILLIAM THORNTON Printed Name	6/21/94 Date

The following equation is used to calculate the evaporation rate of ammonium hydroxide for a direct source input parameter in ALOHA.³⁵

Equation 1:
$$QR = \frac{(.106)(U)^{.78}(MW)^{2/3}(A)(VP)}{R(T1 + 273)}$$

where:

QR	= Rate of release to air (lbs/min)
U	= Windspeed (m/s)
MW	= Molecular weight (g/g mole)
A	= Surface area of spilled material (ft ²)
VP	= Vapor Pressure
R	= 82.05 atm cm ³ /g mole K
T	= Temperature at which the material is stored (°C)

$$QR = \frac{(.106)(1)^{.78}(35.06)^{2/3}(224)(475)}{82.05(20 + 273)} = 5 \text{ lb/min} = .08 \text{ lb/sec}$$

CALCULATION SHEET

CALCULATION TITLE: Estimation of airborne quantity released to the atmosphere

CALCULATION ID: RD-AM-3-4 (110 gallons of ammonium hydroxide)

REVISION: 0

Prepared by: Carrie L. Wood Carrie L. Wood 6/16/94
Signature Printed Name Date

Checked by: Stephen Copping Stephen Copping 6/21/94
Signature Printed Name Date

Approved by: William Thornton William Thornton 6/21/94
Signature Printed Name Date

The following equation is used to calculate the evaporation rate of ammonium hydroxide for a direct source input parameter in ALOHA.³⁵

Equation 1:
$$QR = \frac{(.106)(U)^{.78}(MW)^{2/3}(A)(VP)}{R(T1 + 273)}$$

where: QR = Rate of release to air (lbs/min)
U = Windspeed (m/s)
MW = Molecular weight (g/g mole)
A = Surface area of spilled material (ft²)
VP = Vapor Pressure
R = 82.05 atm cm³/g mole K
T = Temperature at which the material is stored (°C)

$$QR = \frac{(.106)(1)^{.78}(35.06)^{2/3}(448)(475)}{82.05(20 + 273)} = 10.05 \text{ lb/min} = .17 \text{ lb/sec}$$

CALCULATION SHEET

CALCULATION TITLE: Estimation of airborne quantity released to the atmosphere

CALCULATION ID: RD-AM-5-6 (165 gallons of Ultra Etchant 50 Solution)

REVISION: 0

Prepared by: CARRIE L. WOOD 6/16/94
Signature Printed Name Date

Checked by: Stephen Coffing 6/21/94
Signature Printed Name Date

Approved by: WILLIAM THORNTON 6/21/94
Signature Printed Name Date

The following equation is used to calculate the evaporation rate of Ultra Etchant 50 Solution for a direct source input parameter in ALOHA.³⁵ The properties of ammonium hydroxide are used below to represent Ultra Etchant 50 Solution.

Equation 1:
$$QR = \frac{(.106)(U)^{.78}(MW)^{2/3}(A)(VP)}{R(T1 + 273)}$$

where: QR = Rate of release to air (lbs/min)
U = Windspeed (m/s)
MW = Molecular weight (g/g mole)
A = Surface area of spilled material (ft²)
VP = Vapor Pressure
R = 82.05 atm cm³/g mole K
T = Temperature at which the material is stored (°C)

$$QR = \frac{(.106)(1)^{.78}(35.06)^{2/3}(672.5)(475)}{82.05(20 + 273)} = 15.09 \text{ lb/min} = .25 \text{ lb/sec}$$

CALCULATION SHEET

CALCULATION TITLE: Estimation of airborne quantity released to the atmosphere

CALCULATION ID: RD-AM-7-8 (10 liters of ammonium hydroxide)

REVISION: 0

Prepared by:	Signature	CARRIE L. WOOD Printed Name	6/16/94 Date
Checked by:	Signature	Stephen Coffing Printed Name	6/21/94 Date
Approved by:	Signature	William Thornton Printed Name	6/21/94 Date

The following equation is used to calculate the evaporation rate of ammonium hydroxide for a direct source input parameter in ALOHA.³⁵

Equation 1:
$$QR = \frac{(.106)(U)^{.78}(MW)^{2/3}(A)(VP)}{R(T1 + 273)}$$

where:

QR	= Rate of release to air (lbs/min)
U	= Windspeed (m/s)
MW	= Molecular weight (g/g mole)
A	= Surface area of spilled material (ft ²)
VP	= Vapor Pressure
R	= 82.05 atm cm ³ /g mole K
T	= Temperature at which the material is stored (°C)

$$QR = \frac{(.106)(1)^{.78}(35.06)^{2/3}(10.5)(475)}{82.05(20 + 273)} = .236 \text{ lb/min} = .0039 \text{ lb/sec}$$

CALCULATION SHEET

CALCULATION TITLE: Estimation of airborne quantity released to the atmosphere

CALCULATION ID: RD-AM-9-10 (24 liters of Diazo Developer)

REVISION: 0

Prepared by:	<u> </u> Signature	<u>CARRIE L. WOOD</u> Printed Name	<u>6/16/94</u> Date
---------------------	---	---------------------------------------	------------------------

Checked by:	<u> </u> Signature	<u>Stephen Coffing</u> Printed Name	<u>6/21/94</u> Date
--------------------	---	--	------------------------

Approved by:	<u> </u> Signature	<u>WILLIAM THORNTON</u> Printed Name	<u>6/21/94</u> Date
---------------------	---	---	------------------------

The following equation is used to calculate the evaporation rate of diazo developer for a direct source input parameter in ALOHA.³⁵ The properties of ammonium hydroxide are used below to represent the Diazo Developer Solution.

Equation 1:
$$QR = \frac{(.106)(U)^{.78}(MW)^{2/3}(A)(VP)}{R(T1 + 273)}$$

where:

QR	=	Rate of release to air (lbs/min)
U	=	Windspeed (m/s)
MW	=	Molecular weight (g/g mole)
A	=	Surface area of spilled material (ft ²)
VP	=	Vapor Pressure
R	=	82.05 atm cm ³ /g mole K
T	=	Temperature at which the material is stored (°C)

$$QR = \frac{(.106)(1)^{.78}(35.06)^{2/3}(25.0)(475)}{82.05(20 + 273)} = .56 \text{ lb/min} = .0094 \text{ lb/sec}$$

CALCULATION SHEET

CALCULATION TITLE: Direct source input (i.e. evaporation rate) for hydrochloric acid in ALOHA.

CALCULATION ID: RD-HCl-1 (15 gallons, worst case met. conditions)

REVISION: 0

Prepared by:		Carrie L. Wood	6/16/94
	Signature	Printed Name	Date
Checked by:		Stephen Coffing	6/21/94
	Signature	Printed Name	Date
Approved by:		William Thornton	6/21/94
	Signature	Printed Name	Date

The following calculations follow a two-step procedure to model the evaporation and dispersion of 30% hydrochloric acid in ALOHA.³⁶

Equation 1:
$$E = (A)(K_m) \left[\frac{(M_w)(P_v)}{(R)(T)} \right] (\text{kg/s})$$

where:

- E = evaporation rate, in kg/s
- A = area of the evaporating puddle, (5.68 m² for 15 gal)
- K_m = mass transfer coefficient, in m/s
- M_w = molecular weight of HCl (36.5 kg kmol⁻¹)
- P_v = vapor pressure, (1413 Pa for 30% HCl at 20°C)
- R = the gas constant (8314 J kmol⁻¹K⁻¹), and
- T = ambient temperature, in K (20°C is equal to 293.2 K).

Equation 2:
$$K_m = (0.0048)(U^{7/9})(Z^{-1/9})(Sc^{-2/3})(\text{m/s})$$

where:

- K_m = mass transfer coefficient of the HCl, in m/s
- U = wind speed at a height of 10 m (1 m/s for worst case met. conditions)
- Z = the pool diameter in the along-wind direction (2.69 m for 15 gal) and
- Sc = the laminar Schmidt number for HCl (0.9).

Solution:

$$K_m = (0.0048)(1^{7/9})(2.69^{-1/9})(.9^{-2/3}) = .0046 \text{ m/s}$$

$$E = (5.68)(.0046) \left[\frac{(36.5)(1413)}{(8314)(293.2)} \right] = .0006 \text{ kg/s}$$

CALCULATION SHEET

CALCULATION TITLE: Direct source input (i.e. evaporation rate) for hydrochloric acid in ALOHA.

CALCULATION ID: RD-HCl-2 (15 gallons, average met. conditions)

REVISION: 0

Prepared by:	Signature	CARRIE L. WOOD Printed Name	6/16/94 Date
Checked by:	Signature	Stephen Cuffing Printed Name	6/21/94 Date
Approved by:	Signature	WILLIAM THORNTON Printed Name	6/21/94 Date

The following calculations follow a two-step procedure to model the evaporation and dispersion of 30% hydrochloric acid in ALOHA.³⁶

Equation 1:
$$E = (A)(K_m) \left[\frac{(M_w)(P_v)}{(R)(T)} \right] (\text{kg/s})$$

where:

- E = evaporation rate, in kg/s
- A = area of the evaporating puddle, (5.68 m² for 15 gal)
- K_m = mass transfer coefficient, in m/s
- M_w = molecular weight of HCl (36.5 kg kmol⁻¹)
- P_v = vapor pressure, (1413 Pa for 30% HCl at 20°C)
- R = the gas constant (8314 J kmol⁻¹K⁻¹), and
- T = ambient temperature, in K (20°C is equal to 293.2 K).

Equation 2:
$$K_m = (0.0048)(U^{7/9})(Z^{-1/9})(Sc^{-2/3})(\text{m/s})$$

where:

- K_m = mass transfer coefficient of the HCl, in m/s
- U = wind speed at a height of 10 m (4 m/s for average met. conditions)
- Z = the pool diameter in the along-wind direction (2.69 m for 15 gal) and
- Sc = the laminar Schmidt number for HCl (0.9).

Solution:

$$K_m = (0.0048)(4^{7/9})(2.69^{-1/9})(.9^{-2/3}) = .0133 \text{ m/s}$$

$$E = (5.68)(.0133) \left[\frac{(36.5)(1413)}{(8314)(293.2)} \right] = .0016 \text{ kg/s}$$

CALCULATION SHEET

CALCULATION TITLE: Direct source input (i.e. evaporation rate) for hydrochloric acid in ALOHA.

CALCULATION ID: RD-HCl-3 (45 gallons, worst case met. conditions)

REVISION: 0

Prepared by:	Signature	Carrie L. Wood Printed Name	6/16/94 Date
Checked by:	Signature	Stephen Coffing Printed Name	6/21/94 Date
Approved by:	Signature	WILLIAM THORNTON Printed Name	6/21/94 Date

The following calculations follow a two-step procedure to model the evaporation and dispersion of 30% hydrochloric acid in ALOHA.³⁶

Equation 1:
$$E = (A)(K_m) \left[\frac{(M_w)(P_v)}{(R)(T)} \right] (\text{kg/s})$$

where:

- E = evaporation rate, in kg/s
- A = area of the evaporating puddle, (17 m² for 45 gal)
- K_m = mass transfer coefficient, in m/s
- M_w = molecular weight of HCl (36.5 kg kmol⁻¹)
- P_v = vapor pressure, (1413 Pa for 30% HCl at 20°C)
- R = the gas constant (8314 J kmol⁻¹K⁻¹), and
- T = ambient temperature, in K (20°C is equal to 293.2 K).

Equation 2:
$$K_m = (0.0048)(U^{7/9})(Z^{-1/9})(Sc^{-2/3})(\text{m/s})$$

where:

- K_m = mass transfer coefficient of the HCl, in m/s
- U = wind speed at a height of 10 m (1 m/s for worst case met. conditions)
- Z = the pool diameter in the along-wind direction (4.7 m for 45 gal) and
- Sc = the laminar Schmidt number for HCl (0.9).

Solution:

$$K_m = (0.0048)(1^{7/9})(4.7^{1/9})(.9^{-2/3}) = .0043 \text{ m/s}$$

$$E = (17)(.0043) \left[\frac{(36.5)(1413)}{(8314)(293.2)} \right] = .0015 \text{ kg/s}$$

CALCULATION SHEET

CALCULATION TITLE: Direct source input (i.e. evaporation rate) for hydrochloric acid in ALOHA.

CALCULATION ID: RD-HCl-4 (45 gallons, average met. conditions)

REVISION: 0

Prepared by:	Signature	Carrie L. Wood Printed Name	6/16/94 Date
Checked by:	Signature	Stephen Coffing Printed Name	6/21/94 Date
Approved by:	Signature	William Thornton Printed Name	6/21/94 Date

The following calculations follow a two-step procedure to model the evaporation and dispersion of 30% hydrochloric acid in ALOHA.³⁶

Equation 1:
$$E = (A)(K_m) \left[\frac{(M_w)(P_v)}{(R)(T)} \right] (\text{kg/s})$$

where:

- E = evaporation rate, in kg/s
- A = area of the evaporating puddle, (17 m² for 45 gal)
- K_m = mass transfer coefficient, in m/s
- M_w = molecular weight of HCl (36.5 kg kmol⁻¹)
- P_v = vapor pressure, (1413 Pa for 30% HCl at 20°C)
- R = the gas constant (8314 J kmol⁻¹ K⁻¹), and
- T = ambient temperature, in K (20°C is equal to 293.2 K).

Equation 2:
$$K_m = (0.0048)(U^{7/9})(Z^{-1/9})(Sc^{-2/3})(\text{m/s})$$

where:

- K_m = mass transfer coefficient of the HCl, in m/s
- U = wind speed at a height of 10 m (4 m/s for average met. conditions)
- Z = the pool diameter in the along-wind direction (4.7 m for 45 gal) and
- Sc = the laminar Schmidt number for HCl (0.9).

Solution:

$$K_m = (0.0048)(4^{7/9})(4.7^{-1/9})(.9^{-2/3}) = .0127 \text{ m/s}$$

$$E = (17)(.0127) \left[\frac{(36.5)(1413)}{(8314)(293.2)} \right] = .004 \text{ kg/s}$$

CALCULATION SHEET

CALCULATION TITLE: Direct source input (i.e. evaporation rate) for hydrochloric acid in ALOHA.

CALCULATION ID: RD-HCl-5 (75 gallons, worst case met. conditions)

REVISION: 0

Prepared by: Carrie L. Wood CARRIE L. WOOD 6/16/94
Signature Printed Name Date

Checked by: Stephen Coffing Stephen Coffing 6/21/94
Signature Printed Name Date

Approved by: William Thornton WILLIAM THORNTON 6/21/94
Signature Printed Name Date

The following calculations follow a two-step procedure to model the evaporation and dispersion of 30% hydrochloric acid in ALOHA.³⁶

Equation 1:
$$E = (A)(K_m) \left[\frac{(M_w)(P_v)}{(R)(T)} \right] (\text{kg/s})$$

where:

- E = evaporation rate, in kg/s
- A = area of the evaporating puddle, (28.4 m² for 75 gal)
- K_m = mass transfer coefficient, in m/s
- M_w = molecular weight of HCl (36.5 kg kmol⁻¹)
- P_v = vapor pressure, (1413 Pa for 30% HCl at 20°C)
- R = the gas constant (8314 J kmol⁻¹K⁻¹), and
- T = ambient temperature, in K (20°C is equal to 293.2 K).

Equation 2:
$$K_m = (0.0048)(U^{7/9})(Z^{-1/9})(Sc^{-2/3})(\text{m/s})$$

where:

- K_m = mass transfer coefficient of the HCl, in m/s
- U = wind speed at a height of 10 m (1 m/s for worst case met. conditions)
- Z = the pool diameter in the along-wind direction (6.012 m for 75 gal) and
- Sc = the laminar Schmidt number for HCl (0.9).

Solution:

$$K_m = (0.0048)(1^{7/9})(6.012^{-1/9})(.9^{-2/3}) = .0042 \text{ m/s}$$

$$E = (28.4)(.0042) \left[\frac{(36.5)(1413)}{(8314)(293.2)} \right] = .0025 \text{ kg/s}$$

CALCULATION SHEET

CALCULATION TITLE: Direct source input (i.e. evaporation rate) for hydrochloric acid in ALOHA.

CALCULATION ID: RD-HCl-6 (75 gallons, average met. conditions)

REVISION: 0

Prepared by:	Signature	CARRIE L. WOOD Printed Name	6/16/94 Date
Checked by:	Signature	Stephen Corring Printed Name	6/21/94 Date
Approved by:	Signature	WILLIAM HORTON Printed Name	6/21/94 Date

The following calculations follow a two-step procedure to model the evaporation and dispersion of 30% hydrochloric acid in ALOHA.³⁶

Equation 1:
$$E = (A)(K_m) \left[\frac{(M_w)(P_v)}{(R)(T)} \right] (\text{kg/s})$$

where:

- E = evaporation rate, in kg/s
- A = area of the evaporating puddle, (28.4 m² for 75 gal)
- K_m = mass transfer coefficient, in m/s
- M_w = molecular weight of HCl (36.5 kg kmol⁻¹)
- P_v = vapor pressure, (1413 Pa for 30% HCl at 20°C)
- R = the gas constant (8314 J kmol⁻¹K⁻¹), and
- T = ambient temperature, in K (20°C is equal to 293.2 K).

Equation 2:
$$K_m = (0.0048)(U^{7/9})(Z^{-1/9})(Sc^{-2/3})(\text{m/s})$$

where:

- K_m = mass transfer coefficient of the HCl, in m/s
- U = wind speed at a height of 10 m (4 m/s for average met. conditions)
- Z = the pool diameter in the along-wind direction (6.012 m for 75 gal) and
- Sc = the laminar Schmidt number for HCl (0.9).

Solution:

- K_m = (0.0048)(4^{7/9})(6.012^{-1/9})(.9^{-2/3}) = .0124 m/s
- E = (28.4)(.0124) $\left[\frac{(36.5)(1413)}{(8314)(293.2)} \right]$ = .007 kg/s

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