

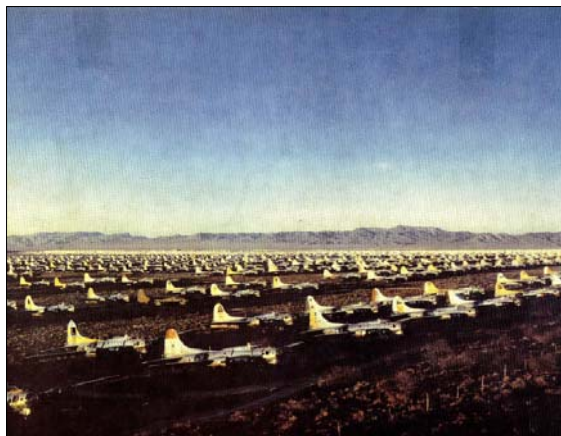
Kingman Army Air Field Dross

Defense Environmental Restoration Program (DERP)

Formerly Used Defense Site ([FUDS](#))

Boundaries:

The former Kingman Army Air Field (KAAF) Dross Disposal Area in Kingman, Mohave County, Arizona, is a Defense Environmental Restoration Program (DERP) Formerly Used Defense Site (FUDS). Following conversion from Department of Defense use to civilian use the KAAF was renamed the Kingman International Airport (KIA). The KIA, which is owned by the City of Kingman and operated by the [Kingman Airport Authority](#) (KAA), is located along Route 66, approximately 5 miles northeast of Kingman, Arizona. KIA and the associated industrial park, covering an area of approximately 4,000 acres, contain more than 70 businesses that employ over 2,100 people. The surrounding area is characterized by high desert and some commercial businesses along Route 66. The airport runways and taxiways are located along the southern and eastern sides of the industrial park. The Dross Disposal Area is located on the south western corner of the airport.



1946 Kingman Army Air Field

Site Status Update:

Although the Site is not a [National Priorities List](#) (NPL) site, all activities undertaken by the USACE as part of the FUDS program that address hazardous substances, pollutants, or contaminants are conducted in accordance with the provisions of the [Comprehensive Environmental Response, Compensation, and Liability Act](#) (CERCLA), and the National Oil and Hazardous Substances Pollution Contingency Plan ([National Contingency Plan](#) or NCP). This includes complying with public involvement requirements and appropriate regulatory coordination.

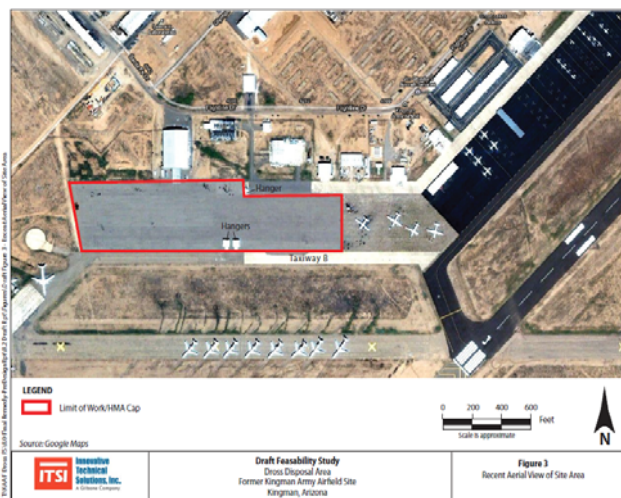
Community Involvement Activities:

No community involvement activities are planned at this time.

Site History:

1942-1949: Between 1942 and 1945, the Department of Defense (DoD) acquired 4,145 acres of land for the KAAF. The U.S. Army Air Force used the property as an air field and the Kingman Aerial Gunnery School training facilities. The site was declared DoD surplus on November 15, 1945, and the War Assets Administration (WAA) assumed management responsibility for the facility on March 31, 1946.

On August 9, 1946, the Wunderlich Company purchased 5,437 surplus aircraft from the WAA for salvage. In November 1946, a license was granted by the U.S. Army, through the WAA, to the Wunderlich Company, a government contractor, to develop and operate an aluminum smelting operation at the site to demolish World War I- and World War II- surplus war planes from the 7th Air Force for recovery of their aluminum content. The smelting operations took place between May 1947 and March 1948. Three furnaces located near Taxiway 3 (currently Taxiway B) were used during the operation.



Location of Dross Disposal Area

Aluminum dross was produced as a waste product from the recycling or smelting of the aluminum components. It consists of metal, salts oxides, and other non metallic substances. Dross tends to be granular, sand like material that has an extremely high metal content and smaller amounts of oxides and salts. The aluminum dross product includes waste ash and slag from the smelting furnace. This waste contains elevated levels of aluminum and heavy metals including copper, lead, cadmium, zinc, and chromium. This dross was left in mounds/piles and buried in numerous shallow pits and placed in trenches in the area surrounding the smelting furnaces on the north side of Taxiway 3.

On November 28, 1949, the KAAF facility was transferred to the Mohave County Board of Supervisors for the restricted use of the property for public airport purposes.

1982 – 1991: The KAAF dross disposal area was initially proposed for listing on the United States Environmental Protection Agency’s (EPA) NPL in 1982, as part of the Kingman Municipal Airport and Industrial Park Site. In or around 1984, the Kingman Municipal Airport and Industrial Park Site was dropped from consideration for the NPL. USEPA Region IX Waste Compliance Division representatives conducted a site visit on January 11, 1991, and the Arizona Department of Environmental Quality (ADEQ) conducted a follow-up site visit on August 7, 1991. ADEQ recommended that an investigation of the dross waste piles be undertaken.

1995 – 1996: Various investigations of the aluminum smelting operations and dross disposal have occurred under the direction of the USACE. An initial cursory assessment was conducted in 1995–1996 and a [Remedial Investigation](#) (RI) report was compiled from 1997 to 1999 and resulted in a RI and supplemental RI in 1999. The RI report, dated June 8, 1999, reported the volume of dross material to be approximately 35,000 cubic yards. This RI report also reported that slag with embedded ferrous metal aircraft parts was observed across the Site.

2000: In February, under a USACE contract there was an attempted to excavate the dross material at the Site and relocate it into a series of pits. According to the completion report, the dross material

was placed in a total of eight pits, with a typical pit measuring 40 feet wide by 200 feet long by 20 feet deep. These pits and the surrounding area were to be capped with 1.5 inches of hot-mixed asphalt (HMA) over an 8-inch base course of soil stabilized with lime and fly ash. An initial survey at the time of the dross pit construction indicated that the Site area was 15.33 acres.

A Supplemental RI prepared in 2000, included a 1999 [risk assessment](#). The risk assessment identified arsenic, barium, cadmium, chromium, copper, lead, selenium, silver, aluminum, magnesium, mercury, nickel, zinc, and ammonia as contaminants of potential concern (COPCs). After evaluating all the COPCs and their exposure pathways, it was determined in the risk assessment that only arsenic presented a cancer risk greater than that allowed by the lower limit requirements for non-residential use under the [Arizona Administrative Code](#) (AAC) R18-7-206. The risk assessment determined that no COPCs exceeded the non-cancer risk allowed for non-residential use by AAC R 18-7-206.



HMA Cap Failure

2001-2006: Over the five years following installation of the HMA cap, the cap developed a number of features indicative of failure, and these continued to worsen with time. In 2006, the USACE investigated the HMA cap failure. The investigation was designed to quantify and characterize the nature, possible causes, and extent of the cap failure.

2010: The Final Cap Failure Report, which summarized the investigation to discover the mechanism for the subsurface failure of the HMA cap, was issued in May. This report also identified potential corrective actions. A Draft [Feasibility Study](#) (FS) was issued that evaluated and compared five potential corrective actions needed to provide a remedy at the site to addresses protection of human health and the environment.

Contaminants:

Potential contaminants that have been identified within the Dross Disposal Area are [arsenic](#), [aluminum](#), [barium](#), [cadmium](#), [chromium](#), [copper](#), [lead](#), magnesium, [mercury](#), [nickel](#), [selenium](#), [silver](#), [zinc](#), and [ammonia](#) (which is evolved when un-reacted dross is exposed to water).

Site Hydrogeology:

The Kingman AAF lies within the Basin and Range Physiographic Province. The Basin and Range Physiographic Province is comprised of approximately 200,000 square miles of the southwestern United States and extends along seven states, including Arizona. Geologic structure and lithology influence groundwater occurrence and movement in Basin and Range aquifers. The principal aquifers of the area are situated in thick deposits of basin fill along valleys, which are paralleled by mountain ranges comprised mostly of relatively impermeable rock.

Locally, the Kingman AAF is located within the Hualapai Valley, north of the Hualapai Mountains. The

valley is filled with alluvial deposits that are hundreds of feet thick. The up thrown blocks of Precambrian granite, schist and gneiss of the Hualapai Mountains are the source of the basin-fill deposits that compose the valley. These deposits tend to be finer in the central areas of the valley, and grade to coarser deposits approaching their source. Deformation and sedimentation occur at different rates through the area, causing the areal extent and grain size of the basin to be highly varied.

Contacts:

Name	Phone/Fax	E-mail
André Chiaradia, ADEQ Project Manager	(602) 771-2296* (602) 771-4272	chiaradia.andre@azdeq.gov
Felicía Calderon, ADEQ Community Involvement Coordinator	(602) 771-4167* (602) 771-4272	calderon.felicía@azdeq.gov
Claudia García, USACE Project Manager	(602) 640-2021	Claudia.García@usace.army.mil

*In Arizona, but outside the Phoenix area, call toll-free at (800) 234-5677

Information Repository:

Site files are located at the ADEQ Main Office located at 1110 W. Washington Street, Phoenix. Please contact (602) 771-4380 or (800) 234-5677 to schedule an appointment with 24-hour notice to review these documents. Once all documents requested have been collected, you will be contacted for a review Monday through Friday from 8:30 a.m. to 4:30 p.m. at the ADEQ Records Management Center, 1110 W. Washington Street in Phoenix, AZ.