



Chariot, Alaska

A PLOWSHARE SITE/OFFSITE

This fact sheet provides information about the **Chariot site**. Long-term stewardship responsibilities for this site are managed by the **U.S. Department of Energy Office of Legacy Management** as a **Plowshare Site/Offsite**.

Site Information and History

The Chariot, Alaska, Site is in the Ogotoruk Valley in the Cape Thompson region of northwest Alaska. This region is about 125 miles north of (inside) the Arctic Circle; the southwest border is the Chukchi Sea. The closest populated areas are the Inupiat villages of Point Hope, 32 miles northwest of the site, and Kivalina, 41 miles to the southeast. The site is accessible from Point Hope by ATV in the summer and by snowmobile in the winter.

In the early 1960s the U.S. Atomic Energy Commission (AEC), a predecessor agency of the U.S. Department of Energy (DOE), investigated and developed alternative sites, or "Offsites", to the Nevada National Security Site (formerly known as the Nevada Test Site) for underground nuclear testing. It was during this time that Project Chariot was initiated as part of the Plowshare Program, which AEC created in 1957 to study peaceful uses for atomic energy. Project Chariot was conceived in 1958 when a scientific field team chose Cape Thompson as a potential site to excavate a harbor using a series of nuclear explosions. AEC, with assistance from other agencies, conducted more than 40 pretest bioenvironmental studies of the Cape Thompson

area between 1959 and 1962. However, AEC canceled Plowshare Program work at the Project Chariot site because the public strongly opposed it. It also considered information collected during other Plowshare work. No nuclear tests were conducted at the site and no nuclear devices were ever brought to the site.

The U.S. Geological Survey (USGS) conducted a radioactive tracer experiment in August 1962 in test plots at the Chariot site. The test plots were located along and near Snowbank Creek and where it joins with Ogotoruk Creek. The purpose of the experiment was to evaluate the mobility of radioactive fission products in saturated soils, sediment, and surface water from simulated conditions of rain and runoff. The USGS brought soil contaminated with radioactive elements from an experimental nuclear detonation at the Nevada Test Site to the Chariot site to use in test plots, which ranged in size from 2 feet by 2 feet to 5 feet by 7 feet. The soil used in the tracer studies contained 6 millicuries (mCi) of cesium-137, 5 mCi of iodine-131, 5 mCi of strontium-85, and 10 mCi of various other isotopes, which were mixed with 15 pounds of clean native soil. After the tests, tracer-contaminated soil was removed and transported in drums to a nearby area, where it was mixed

with clean native soil. The soil mixture, along with boards and polyethylene sheeting used to enclose and cover the test plots, were covered with about 4 feet of clean, native soil, which formed a small mound that occupied an area of about 400 square feet. This material remained intact until DOE removed it in 1993.

Environmental Cleanup at the Chariot Site

In 1988, the U.S. Department of Defense approved the site for cleanup under the Defense Environmental Restoration Program for Formerly Used Defense Sites. Remedial action began in 1990 and concluded in 1992. Cleanup included removing debris, buildings, petroleum containers, and contaminated soils from the naval base. This corrective action did not include cleanup of the contaminated-soils mound.

In September 1992, the Alaska Department of Environmental Conservation (Alaska DEC) and DOE conducted a site investigation to reexamine the contaminated soil from the tracer studies. No surface radioactivity above background levels was found at the site. Risk assessments performed by the Oak Ridge Institute for Science and Education and the Alaska Department of Health and Social Services found that neither the original 1962 levels of radioactivity nor the levels remaining in 1992 posed a risk to human health or the environment. The agencies decided to leave the contaminated material in place.

The Inupiat Tribe uses the Cape Thompson area for subsistence hunting and fishing, and local residents expressed concern that the radioisotopes from the 1962 tracer study could have entered the food supply of animals the subsistence hunters depended on for survival. After further consideration, DOE, in consultation with Alaska DEC, decided that removing all remaining radiologically contaminated material from the site was the most effective means of assuring area residents that the site presented no risk to human health or the environment. DOE held public meetings in 1992 and 1993 in the communities of Point Hope, Kivalina, Kotzebue, and Barrow to give residents an opportunity to comment on the proposed activities at the Chariot site.

DOE conducted another site assessment and remedial action between July and September 1993. The assessment included:

- Radiometric analyses of surface water, soil, and sediment.
- Tissue analysis of plants and animals in the site area.
- Radiometric ground surveys of the tracer test plots.
- An aerial radiometric gamma survey.

The purpose of the aerial survey was to determine the natural background radiation in the area and map any potential anomalies that might indicate the presence of radiation related to the tracer test. Following the assessment, about 162 cubic yards of soils containing cesium-137 at levels exceeding established cleanup guidelines were excavated from the test plots and soil mound, packaged in metal containers, and shipped to the Nevada Test Site for permanent disposal. Based on the sampling results after the cleanup, the state of Alaska issued a clean closure status.

In the early 1960s, when work for Project Chariot began, AEC drilled five boreholes using refrigerated diesel as a drilling fluid for stability and to keep the boreholes open. In 2014, DOE remediated the five borehole sites. Contaminated soil near each borehole was excavated to the permafrost level. The casing was completely removed at test hole X1; other well casings were abandoned by removing any liquids, removing existing thermistor cables, plugging and cutting, and capping the casings off at the permafrost level. A total of 786 tons of diesel-contaminated soil was removed. DOE consulted Alaska DEC throughout the project to confirm that all contaminated soil was removed and the soil remaining at the borehole sites was at or below clean-soil levels regulated by the state of Alaska. The excavated areas were backfilled with native material and reclaimed with native vegetation.

Land Ownership Status

The site chosen for Project Chariot was managed by the U.S. Bureau of Land Management (BLM). In 1959, AEC requested a land withdrawal of 1,024,000 acres and an 18-month permit to enter the site to conduct studies. In 1960, BLM extended the permit for three more years. In 1962, the Plowshare Program work at the Project Chariot site was terminated.

AEC transferred the Chariot site to the Naval Arctic Research Laboratory in 1963. The U.S. Navy used the buildings, airstrips, and improvements at the site as a logistical support base. Naval operations ceased at the site in 1970, and administration was transferred back to BLM. The entire Project Chariot site, including the base camp, was withdrawn in March of 1972 using Public Land Order 5197, subject to valid existing rights concerning addition to or creation of units of a national park, forest, or wildlife refuge. One month later, Wilfred Lane formally filed a native allotment application for 160 acres surrounding the base camp and two air strips. The native allotment was approved in 1987, and a patent was issued in 1990 with easement reserved to the U.S. government. In March 1976, an agreement between Arctic Slope Regional Corporation (ASRC), the Tigara Corporation (Point Hope Village Corporation) and the Secretary of the Interior drafted (but never signed) the establishment of the National Environmental Research Park. The Alaska National Interest Lands Conservation Act of 1980 (Public Law 96-487) passed jurisdiction to the U.S. Fish and Wildlife

Service (USFWS). Included in the transfer to USFWS was the Navy application for withdrawal, ASRC land selection, and Wilfred Lane's native allotment application. In October 2011, BLM transferred surface and subsurface rights encompassing approximately 22,000 acres, including the Chariot site, to ASRC, but included an easement for access by the U.S. government.

Regulatory Setting

DOE is responsible for radioactive and other hazardous materials generated by DOE and predecessor agencies at the Chariot site. The state of Alaska issued a clean closure status of the site following the 1993 remediation and clean closure with institutional controls following the 2014 cleanup of diesel-contaminated soils.

Legacy Management Activities

The DOE Office of Legacy Management (LM) is responsible for long-term management of the Chariot site. LM's responsibilities include managing site records and responding to stakeholder inquiries. Institutional control monuments will be inspected every five years in accordance with Alaska DEC requirements.

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Contact Information

In case of an emergency at the site, contact 911.

LM toll-free emergency hotline: **(877) 695-5322**

Site-specific documents related to the Chariot site are available on the LM website at **www.energy.gov/lm/chariot-alaska-site**.

For more information about LM activities at the Chariot site, contact:

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