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AN ARCHEOLOGICAL OVERVIEW AND MANAGEMENT PLAN FOR THE
SAGINAW ARMY AIRCRA (U) WOODWARD-CLYDE CONSULTANTS
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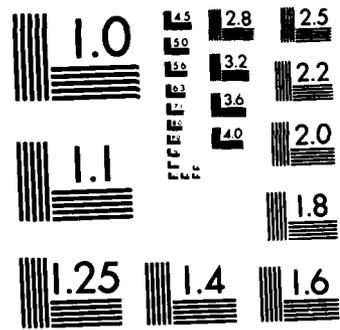
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Report No. 10

May 28, 1984

**An Archeological Overview and
Management Plan for the
Saginaw Army Aircraft Plant,
Tarrant County, Texas**

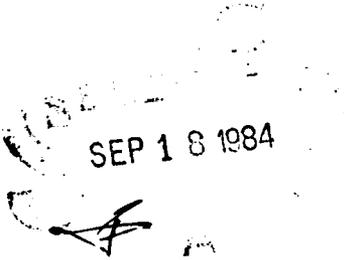
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for the
U.S. Army Materiel Development and
Readiness Command

by

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MANAGEMENT SUMMARY

The Saginaw Army Aircraft Plant (AAP) is located three miles north of Fort Worth in Saginaw, Texas, and covers 155 acres. It is a government-owned operation under the jurisdiction of the U. S. Army Troop Support and Aviation Materiel Readiness Command (TSARCOM). Its primary mission is the production and testing of helicopters for delivery to the Army and other government and commercial contractors.

There have been no previous cultural resource studies conducted on the facility and no previously recorded sites are present. No sites on or eligible for the National Register of Historic Places are presently identified there.

Cretaceous limestones characterize the area and the overlying soils are very thin (less than 15 centimeters in places), clayey, and poorly developed. The area is nearly level and drainage is provided by intermittent Little Fossil Creek. Little significant change is believed to have occurred in the local environment within the past 12,000 to 14,000 years. Flora in the area include grass and weedy species. Faunal resources are abundant in the general area.

Land surfaces at the facility are of sufficient age to contain cultural remains dating from the Paleo-Indian era but are unlikely to have significant prehistoric cultural remains. Preliminary archival research indicates that there is a low probability that historic archeological materials occur on the facility. Historic settlement did not begin until after the 1867 Treaty of Medicine Lodge which removed the Kiowa, Kiowa Apache, and Comanche to reservations west of the facility.

Twentieth-century land disturbance on the property is associated primarily with the construction of the Globe Aircraft Company in 1941. Subsequent activities associated with the Saginaw AAP have disturbed about 68.4 acres (44 percent) of the total 155 acres.

A limited cultural resources management program is recommended for the Saginaw AAP. This would begin with a more intensive review of national and local archival records, and be complemented by an on-the-ground survey of relatively undisturbed AAP acreage (about 87 acres) to identify any presently unrecorded cultural remains. If significant resources are identified on the facility, their conservation in place is recommended.

PREPARERS AND QUALIFICATIONS

Mr. Tony Dieste is the principal author of this report. He has a BA in Anthropology from the University of Texas with Highest Honors and approximately seven years of field experience in Louisiana, Arkansas, Texas and Mexico. Mr. Dieste has been with Heartfield, Price and Greene, Inc. for approximately five years and functioned successfully in project management and report preparation.

Mr. Dieste visited the facility and gathered all information necessary for report preparation. He prepared the report with the guidance and editorial assistance of Dr. Heartfield.

Dr. Lorraine Heartfield is the Principal Investigator for this report, and a contributing author. She has been President of Heartfield, Price and Green, Inc. since its inception in 1975. Dr. Heartfield, an archeologist, has a BS in Biology from Lamar State College of Technology, and an MA (University of Texas at Austin) and PhD (Washington State University) in Anthropology. She has managed and conducted cultural resources projects for federal and state agencies and private firms. She is well versed in federal and state cultural resources and environmental regulations and is extremely qualified to provide management expertise for cultural resources permitting. Dr. Heartfield has completed work in Louisiana, Texas, Arkansas, Mississippi, Washington and Alaska. Selected projects include the ETSI Coal Slurry Line, Oxbow and Chicot Pollux Lignite Leases in Louisiana, Yantis Lignite Project in northeast Texas, and the Ozark Pipeline Project in Arkansas and Oklahoma.

Dr. Heartfield provided guidance and editorial comments in all phases of data assessment and report preparation.

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Mr. Homer Bell, Industrial Specialist with the Industrial Property Branch of Bell Helicopter/TEXTRON in Hurst, Texas, was most cordial in the arrangements of Tony Dieste's visit to the facility. Mr. Bell, a former employee at the Saginaw Army Aircraft Plant, was a very knowledgeable and interested guide through the facility's various activities and property landscapes. He also provided the facility blueprints and documents detailing previous environmental studies of the facility. Ms. Carolyn Spock, Texas Archeological Research Laboratory, Austin, provided information regarding known archeological sites in the area and also concerning previous archeological surveys. Ms. Mable Pretzer, National Cartographic Information Center, Rolla, Missouri, provided information regarding early USGS map coverage of the Saginaw area.

Additional thanks go to Dr. Mark R. Barnes, NPS, SERO; Mr. Jack Rudy, NPS, RMRO; Ms. Mary Lee Jefferson, NPS, WASO; Dr. La Verne Herrington, Deputy SHPO, Texas; and Ms. Zandra Dillon, Contracting Officer, NPS.

Final report production, including graphics, has been completed by Woodward-Clyde Consultants, with editorial review (particularly of management recommendations) and text preparation completed by Dr. Ruthann Knudson, Ms. Betty Schmucker, and Mr. Charles McNutt, Jr.

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FOREWORD

As a federal agency with large public land holdings, the U. S. Army is responsible for the stewardship of a variety of natural and cultural resources that are part of its installations' landscapes. The Army's Materiel Development and Readiness Command (DARCOM) presently manages a nationwide network of 65 installations and 101 subinstallations and separate units, which range in size from one acre to over one million acres. As part of its programs of environmental and property management, DARCOM has requested that the U.S. Department of the Interior's National Park Service provide technical guidance to develop programs for managing installation cultural resources.

NPS is thus conducting the DARCOM Historical/Archeological Survey (DHAS), which has two major disciplinary elements. The architectural review and planning function is being directed by the Service's Historic American Buildings Survey (HABS), while the prehistoric and historic archeological resource assessment and planning function is the responsibility of the Service's Interagency Resource Division (IRD). IRD has contracted with Woodward-Clyde Consultants (WCC) for the development of guidelines for the DARCOM archeological management planning effort, and for the completion of over 40 overviews and plans throughout the central United States. WCC has in turn subcontracted the technical studies to several regional subcontractors, with final editorial review of reports and preparation of text and illustrations handled by WCC.

This overview and recommended management plan for the archeological resources of the Saginaw Army Aircraft Plant was prepared by Heartfield, Price and Greene, Inc., Monroe, Louisiana, under subcontract to WCC. It follows the guidance of "A Work Plan for the Development of Archeological Overviews and Management Plans for Selected U.S. Department of the Army DARCOM Facilities," prepared by Ruthann Knudson, David J. Fee, and Steven E. James as Report No. 1 under the WCC DARCOM contract. A complete list of DHAS project reports is available from the National Park Service, Washington, DC.

The DHAS program marks a significant threshold in American cultural resource management. It provides guidance that is nationally applicable, is appropriately directed to meeting DARCOM resource management needs within the context of the Army's military mission, and is developed in complement to state and regional preservation protection planning (the RP3

process, through state historic preservation offices). All of us participating in this effort, particularly in the development of this report, are pleased to have had this opportunity. Woodward-Clyde Consultants appreciates the technical and contractual guidance provided by the National Park Service in this effort, from the Atlanta and Washington DC offices and also from other specialists in NPS regional offices in Philadelphia, Denver, and San Francisco.

Woodward-Clyde Consultants

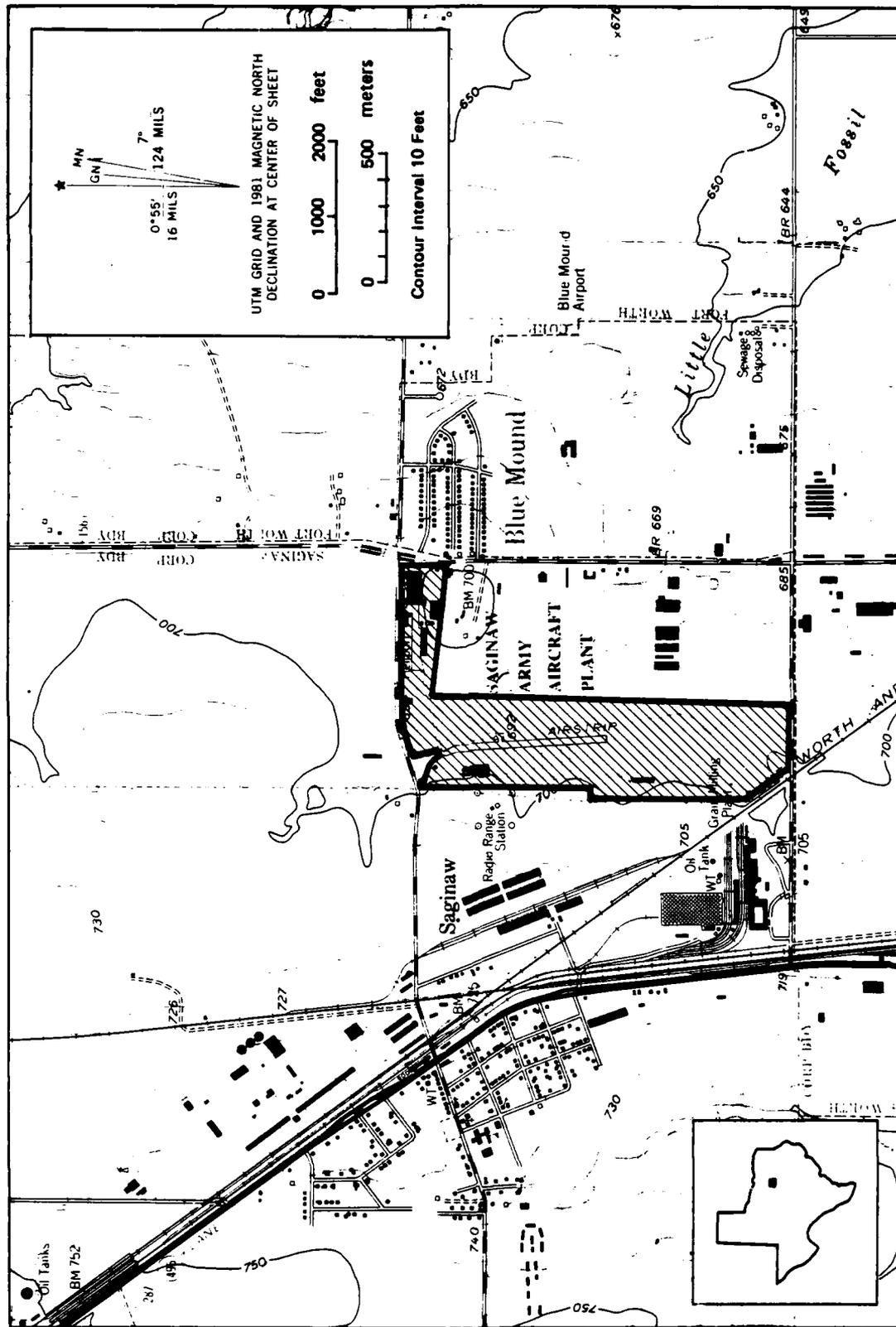
Ruthann Knudson

The following report is an overview of and recommended management plan for the prehistoric and historic archeological resources that are presently known or likely to occur on the Saginaw Army Aircraft Plant (AAP) in Tarrant County, Texas (Figure 1-1). This facility is an installation of the U. S. Department of the Army Materiel Development and Readiness (DARCOM) Command which, as a reservation of public land, has responsibilities for the stewardship of the cultural resources that are located on it. The assessments and recommendations reported here are part of a larger command-wide cultural resource management program (the DARCOM Historical/Archeological Survey, or DHAS), which is being conducted for DARCOM by the U. S. Department of the Interior's National Park Service. The following is that portion of the facility-specific survey that is focused on the prehistoric and historic resource base of the Saginaw AAP, and was developed in accordance with the Level A requirements as set forth in the archeological project Work Plan (Knudson, Fee, and James 1983). A companion historic architectural study is in preparation by NPS's Historic American Building Survey (HABS), but it is not yet available (William Brenner, personal communication 1984).

1.1 PURPOSE AND NEED

A corpus of Federal laws and regulations mandate cultural resources management on DARCOM facilities. Briefly these are:

- The National Historic Preservation Act of 1966 as amended (80 Stat. 915, 94 Stat. 2987; 16 USC 470), with requirements to
 - inventory, evaluate, and where appropriate nominate to the National Register of Historic Places all archeological properties under agency ownership or control [Sec. 110(a)(2)]
 - prior to the approval of any ground-disturbing undertaking, take into account the project's effect on any National Register-listed or eligible property; afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the proposed project (Sec. 106)
 - complete an appropriate data recovery program on an eligible or listed National Register archeological site prior to its being heavily damaged or destroyed (Sec. 110(b), as reported



Note: Base map is the U.S.G.S. Haltom City, Texas 7.5 min. (1955) sheet, photorevised 1981.

Figure 1-1. MAP OF THE GENERAL VICINITY OF THE SAGINAW ARMY AIRCRAFT PLANT

by the House Committee on Interior and Insular Affairs [96th Congress, 2d Session, House Report No. 96-1457, p. 36-37])

- Executive Order 11593 (36 FR 8921), whose requirements for inventory, evaluation, and nomination, and for the recovery of property information before site demolition, are codified in the 1980 amended National Historic Preservation Act
- The Archeological and Historic Preservation Act of 1974 (88 Stat. 174, 16 USC 469), which requires that notice of an agency project that will destroy a significant archeological site be provided to the Secretary of the Interior; either the Secretary or the notifying agency may support survey or data recovery programs to preserve the resource's information values
- The Archeological Resources Protection Act of 1979 (93 Stat. 721, 16 USC 470aa; this supersedes the Antiquities Act of 1906 [93 Stat. 255, 16 USC 432-43]), with provisions that effectively mean that
 - The Secretary of the Army may issue excavation permits for archeological resources on DARCOM lands (Sec. 4)
 - No one can damage an archeological resource on DARCOM lands without a permit, or suffer criminal (Sec. 6) or civil (Sec. 7) penalties
- 36 CFR 800, "Protection of Historic and Cultural Properties" (44 FR 5058, as amended in May 1982); these regulations from the Advisory Council on Historic Preservation set forth procedures for compliance with Section 106 of the National Historic Preservation Act
- Regulations from the Department of the Interior for determining site eligibility for the National Register of Historic Places (36 CFR 60, 36 CFR 63), and standards for data recovery (proposed 36 CFR 66)
- United States Department of the Army procedures and standards for preservation of historic properties (32 CFR 650.181-650.193; Technical Manual 5-801-1; Technical Note 78-17; Army Regulation 420); and procedures implementing the Archeological Resources Protection Act (32 CFR 229).

These procedures should be integrated with planning and management to insure continuous compliance during operations and management at each facility. This can best be achieved by an understanding of the procedures implied by the regulations and an awareness of the cultural resources potential at each facility.

1.2 THE SAGINAW ARMY AIRCRAFT PLANT

The Saginaw Army Aircraft Plant (AAP) is located in Saginaw, Texas, three miles north of Fort Worth, on U.S. Highways 81 and 287 in Tarrant County (Figures 1-1, 1-2). It covers an area of 155 acres.

The facility was constructed in 1941 by the Globe Aircraft Corporation (organized January, 1940) for the production of small military aircraft, especially the "Globe Swift" model (Homer Bell, personal communication 1983). It was operated by Globe Aircraft Corporation until bankruptcy in 1947 and remained idle for two years. It was then transferred to the General Services Administration (GSA).

Bell Helicopter/Textron began producing aircraft and parts at the plant for both the Army and Navy in 1950, and in 1951 the Navy acquired the facility from GSA. Except for spare parts, production for the Navy was phased out by 1958 while production for the Army increased substantially. Facility responsibility was transferred from the Navy to the Army in 1963, with the transfer of jurisdiction and control to the U. S. Army Aviation Systems Command (AVSCOM) taking place in 1965 (Environmental Science and Engineering, Inc. 1981). In 1977, the facility was transferred from AVSCOM to the U. S. Army Troop Support and Aviation Materials Readiness Command (TSARCOM) and remains today under its jurisdiction.

The L-shaped facility is divided into two functional sections: the production area (north section) and a flight area (south section). Production buildings are concentrated in the northeast end of the facility and the flight area, including hangars, a runway, and helicopter tie-down pads, is situated along the western edge of the facility. Infrastructures consist of three underground fuel storage tanks (Figure 1-2).

Saginaw Army Aircraft Plant is an active Class II military industrial installation. Its primary mission is the production and testing of helicopters for delivery to the Army and other governmental and commercial contractors (Saginaw Army Aircraft Plant 1968).

1.3 SUMMARY OF PREVIOUS ARCHEOLOGICAL WORK CONDUCTED ON THE SAGINAW AAP

Consultation with personnel of the Balcones Research Center, Texas Archeological Research Laboratory (TARL), Austin, Texas, revealed that no known previous archeological investigations have been conducted within the facility (Carolyn Spock, personal communication 1983).

1.4 THE SOCIOCULTURAL CONTEXT OF THE ARCHEOLOGICAL RESOURCES ON THE SAGINAW AAP

The major value of any prehistoric archeological resources that may be retained on the Saginaw facility is their ability to yield scientific information -- the community concerned about their preservation is thus

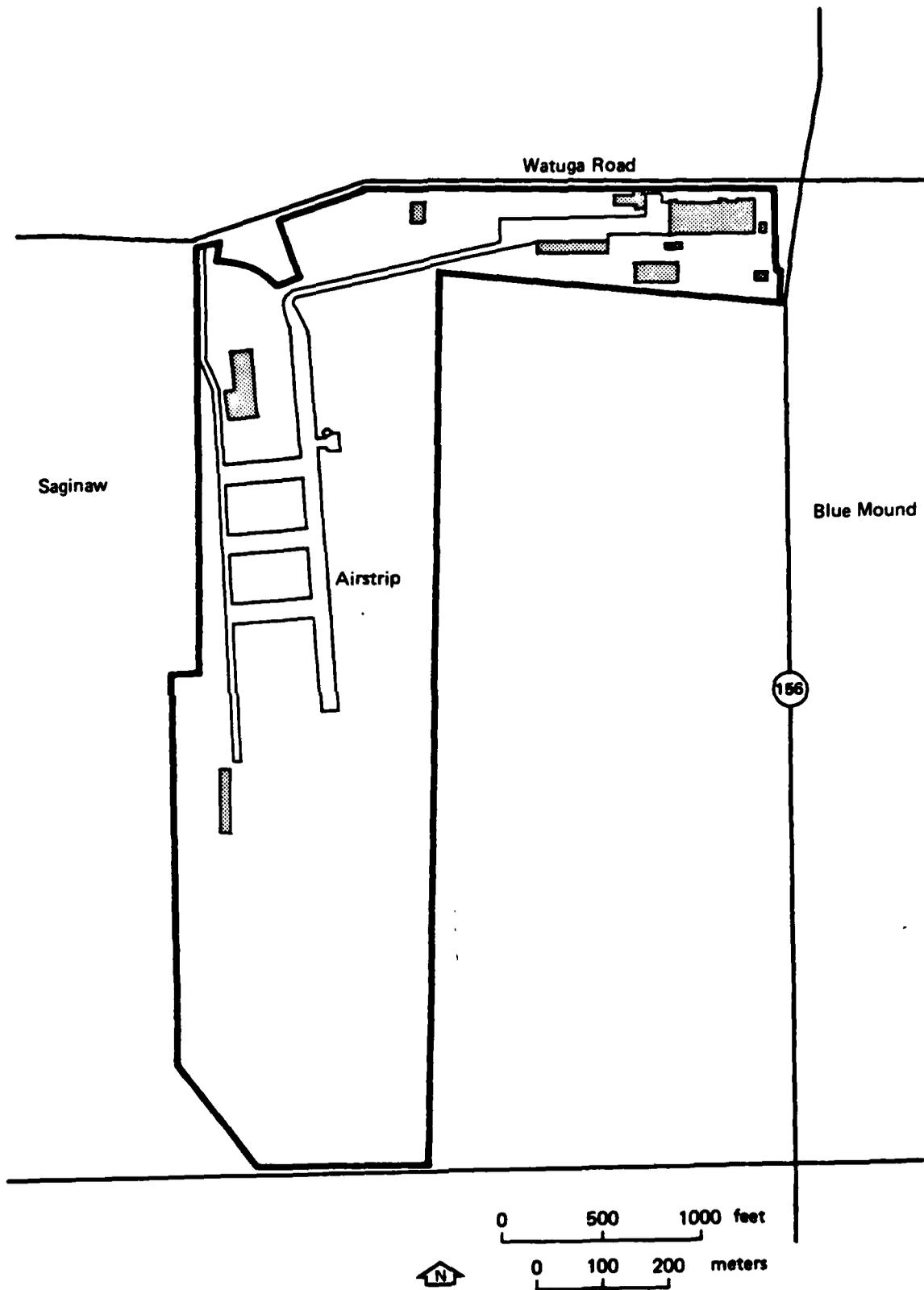


Figure 1-2. MASTER BASE MAP OF THE SAGINAW ARMY AIRCRAFT PLANT

more focused on scientific researchers. There are no presently identifiable ties of any modern Native American descendants to the prehistoric inhabitants of the facility.

Current research suggests that at present, the Euroamerican and Black communities surrounding the Saginaw property do not appear to have any culturally defined interest in the prehistoric or historic resources that may be retained there. Saginaw facility personnel may want to consult with the Texas SHPO regarding these topics as they relate to the state's RP3 plan.

AN OVERVIEW OF THE CULTURAL AND RELEVANT NATURAL HISTORY
OF THE SAGINAW AAP

2.1 THE PHYSICAL ENVIRONMENT

2.1.1 Earth Resources

The facility area is underlain by a sequence of Cretaceous (circa 100 million years old) and older rocks that gently dip toward the Gulf of Mexico. Limestones of the Lower Cretaceous Washita Group, specifically the Fort Worth limestone, outcrop on the facility (Environmental Science and Engineering, Inc. 1981). These belong to the Comanche series of the Cretaceous (Sellards et al. 1958). There is very little soil development and/or unconsolidated material overlying the limestone and all exposed sediments are Cretaceous or Holocene in age with the latter confined to areas along Little Fossil Creek.

The physiography of the facility area is very gently rolling to nearly level with elevations ranging from 700 to 685 feet AMSL. The facility is within the Grand Prairie Province which is bordered to the west by the Western Cross Timbers, a highland region with greater relief than the prairie (Raisz 1957).

Soils belong to the Houston Black-Heiden Association (Soil Conservation Service) and consist of deep, calcareous, clayey upland soils. In some areas of the facility the soils are very thin (less than 15 centimeters) and underlain by dense limestone (Environmental Science and Engineering, Inc. 1981).

Although available, it is thought unlikely that the clays and limestone of the facility area would have constituted an exploitable natural resource for prehistoric or historic populations.

2.1.2 Water Resources

Two small creeks drain the facility. Little Fossil Creek, the main stream, receives water from the developed areas of the facility by means of a system of gullies and swales. A small intermittent creek crosses the southern end of the facility and receives storm water from the undeveloped portions of the facility. This small creek eventually joins Little Fossil Creek beyond the facility boundary. Little Fossil Creek is a tributary to the Trinity River (Environmental Science and Engineering,

Inc. 1981). Both creeks are intermittent and would not have provided a significant riverine habitat (floral and faunal) for aboriginal or historic exploitation.

2.1.3 Modern Climate

Climate of the area is classified as subtropical, with fair, hot summers, westerly winds, and low humidities. Winters are mild and the average annual temperature is 18.8° C (65.84° F). The average warm season is 249 days; since 1940, the longest such season was 292 days in 1973 (National Oceanic and Atmospheric Administration 1977). Annual precipitation averages 80.3 centimeters (31.61 inches) but varies considerably from year to year. Based on 1977 annual summary data, there are 135 clear days, 109 partly cloudy days and 121 cloudy days. Prevailing winds are from the west.

2.1.4 Plant Resources

The facility is within the Cross Timbers and Prairies Vegetational Area (Gould 1975). Two vegetation communities are present. A mixture of short grasses and weedy species covers most of the unpaved acreage; this consists of a base cover of plantain, thistles, violet species, milkweeds and other weedy species, intermixed with lawn grass species. Taller dense grasses are found along Little Fossil Creek and in the drainage ditch running along the western edge of the facility (Environmental Science and Engineering, Inc. 1981). These would not have provided an exploitable resource for aboriginal or historic populations.

2.1.5 Animal Resources

The prairies support a wide assemblage of faunal species. The more notable are bison, wapiti, mule deer, antelope, timber wolf, black and grizzly bear and mountain lion. Smaller forms include lagomorphs (hares and rabbits), cricetids (mice, rats, lemmings, voles), as well as the teleosts (bony fishes). Avian species include hawk, vulture, blackbird, meadowlark, sparrow, grackle, goldfinch, and dove. Although abundant on the Plains in general, modern animal resources on the facility are limited by urban/industrial development of the surroundings and facility barrier fences.

2.1.6 Paleoenvironment

Although minor climatic fluctuations have occurred on the Plains, environmental characteristics in the region have changed little since the hypothesized arrival of people in North America about 12,000 BC (Gleason 1923; Harshberger 1958).

After the initial retreat of the Wisconsin ice front (about 35,000 years ago) the Plains flora changed from tundra to boreal conifers, indicating that there was still a cold climate (Wells 1970). As glaciation continued to retreat, the climate became warmer, allowing invasion by pine. This may indicate a warmer, drier climate. After complete glacial retreat (about 25,000 years ago), the climate became warmer and more humid. This was followed by a period of warmer but considerably drier climate that favored the advance of the grasslands. The Plains flora

remained essentially the same from Paleo-Indian to first Euroamerican settlement (Heartfield, Price and Greene, Inc. 1980).

During the late Pleistocene and early Holocene (about 18,000 years ago), the predominant large herbivores included proboscids, edentates, artiodactylids (even-hoofed herbivores), and perissodactylids (odd-hoofed herbivores). The dominant proboscid was the mammoth (Mammuthus sp.) (Domning 1969; Frison 1978; Hayes 1966; Osborn 1909; Stephens 1960). Mossiman and Martin (1975) stated that there are indications that four genera of edentates were present in the prairie. The most common genera was Northrotheriop while the largest was the Megatherium. Osborn (1909) and Domning (1969) also recorded several edentates from the prairie. These include mule deer, antelope, mountain sheep and goat, bison, musk-ox, moose, and wapiti. Perissodactylids recorded by Brown (1938), Domning (1969), Lewis (1970) Osborn (1909), and Simpson (1945) include tapirs, camel, and horse.

After the extinction of the megafauna following the beginning of the Holocene, bison, mule deer, antelope, wapiti, and moose became the dominant herbivores.

The extinction of the megafauna resulted in the demise and eventual extinction of several predator species, including the Machaerodontidae (sabertooth tigers), dire wolf (Canis dirus) and the giant jaguar (Felis atrox) (Downing 1969; Simpson 1941). Individuals of Ursidae (bears), Felidae (cats), and Canidae (dogs, wolves and coyotes) were able to effectively compete. These include the present species Ursus americanus (black bear), U. horribilis (grizzly bear), Lynx rufus (bobcat), Felis concolor (puma), Canis lupus (gray wolf), C. latrans (coyote) and the foxes Urocyon cinereoargenteus (gray fox) and Vulpes fulva (red fox).

The smaller forms, such as lagomorphs (hares and rabbits), cricetids (mice, rats, lemmings and voles), as well as the teleosts (bony fishes), amphibians, and reptiles have remained fairly stable since the Pleistocene. Avian species, although not well documented, are also assumed to have maintained stability. Families that may have been utilized by prehistoric inhabitants include the families Columbidae (doves), Anatidae (ducks, geese, and swans), Icteridae (meadowlarks, blackbirds, and orioles) and Meleagriidae (turkeys).

2.2 THE CULTURAL ENVIRONMENT

The facility lies within the Southern Plains culture area. The cultural chronology of the area is shown in Table 2-1.

2.2.1 Prehistory

Paleo-Indian Era (12,000 - 8,000 BC). The era is postulated as the time people first entered North America. The association of projectile point types (Clovis, Folsom, Plano, Agate Basin, Hell Gap, Alberta, Cody) with

Table 2-1. A SUMMARY OF THE CULTURAL CHRONOLOGY OF THE AREA OF THE SAGINAW ARMY AIRCRAFT PLANT

Cultural Unit		Date	General Settlement Patterns	General Subsistence Systems	Kinds of Archeological Remains Representative of Period
Tradition	Period or Phase				
American	Settlement	AD 1836 to Present	Expansion of population and areas settled after Texas independence; land claims for farms and settlements	Farming; animal husbandry; agriculture	Log and later frame houses; round and square nails; colored and clear glass; brick and rock foundations; stoneware, whiteware, china, black glass
Frontier	Mexican Colonial	AD 1821 to 1836	Mexican independence from Spain; settlement of southeast Texas coastal areas; mission and empresario activity	Animal husbandry; small-scale farming/agriculture; hunting and trapping	Spanish or Mexican majolica wares; tin or enameled earthenwares; black glass; wrought nails
Equestrian Bicon Hunter	Spanish Colonial	AD 1519 to 1836	Sporadic attempts at colonization; Texas coastal activity/settlements; missions established	Hunting and trapping; small farms for subsistence agriculture; animal husbandry	Spanish or Mexican majolica wares; tin or enameled earthenwares; black glass; wrought nails
Post-Archaic Agriculture	Historic Indian	AD 1500 to 1867	Introduction of horse by Spaniards; increased hunting efficiency; nomadic equestrian groups; camps along running streams; tipis	Primarily large scale communal bison hunting; trade with Spanish and Mexicans in Texas; supplementary hunting and gathering of small animal/plant foods	Tipi ring sites; goods of European manufacture (guns, metal objects, beads, cloth)
Hunting and Gathering	Plains Woodland	AD 900 to 1400	Large permanent or semi-permanent villages along major streams	Cultivation of crops in flood-plains; hunting herd animals on the plains; supplementary gathering and fishing	Shift from cord-marked to smoothed pottery; appearance of bison scapula hoe; bone digging sticks; bison horn core hoe
Big Game Hunters	Archaic	8000 BC to AD 1	Population increase; settlement of major river floodplain margins on camps and semi-permanent villages	General hunting, gathering and fishing; crop cultivation begins	Appearance of pottery (usually plain); arrow point types Fresno, Washito, Scallorn and Gary
			Seasonally occupied camps in variety of ecological/topographic zones	Hunting, gathering and fishing; little or no emphasis on bison hunting	Side notched stemmed dart points; pecked and ground stone tools
			Seasonal migrations and camps during following of herds; camps by springs and waterholes	Hunting of Pleistocene mega-fauna (especially mammoth) and later post-Pleistocene species (especially bison)	Dart point types Clovis, Folsom, Plano, Agate Basin, Hell Gap, Alberta, Cody

now-extinct Pleistocene megafauna, at least in the west, suggests a settlement and subsistence pattern consisting of small family bands following and hunting the herds during their seasonal migrations. Recent investigations in the eastern United States, however, suggest a greater exploitation of regional small game and less dependence on megafauna (Hester 1976).

Most Plains Paleo-Indian sites are kill-butchering sites generally associated with waterholes, springs, or streamside situations. A need for water or the presence of better grazing probably drew the animals, usually mammoth, camel, horse, or giant bison to those areas. Paleo-Indian campsites or habitation areas are less frequently identified in this area (Wedel 1983), though the Lewisville site may be such a campsite (Dennis Stanford, personal communication 1984). The lack of sites other than temporary hunting butchering loci is probably due more to a lack of understanding of the Paleo-Indian cultural system rather than to any absolute absence of such locales.

The likelihood of finding such remains on the facility is considered low given the AAP's geomorphological setting and distance from permanent water sources. Given the shallow soils of the facility, sites would lack stratigraphic integrity and thus be limited in the quantity and quality of information they might yield.

Plains Archaic Era (8000 BC-AD 1). Cultural material of this era in the Central and Southern Plains have not been well known (Jennings 1983) and sites are generally regarded as representing small groups or bands living by hunting and gathering. Bison bone may be present, but only as a relatively minor element in the faunal debris (Dibble and Lorrain 1968). People were dependent on smaller and more varied fauna than were the Paleo-Indian groups. Settlements were temporary and seasonally occupied. Availability of floral and faunal resources and access to a permanent water supply directly influenced site location.

The Archaic has been divided in three periods. The Early Archaic (about 8000-6000 BC) was a time of environmental/climatic change at the end of the Pleistocene which led to an altered lifestyle, with less emphasis on the hunting of megafauna. The Middle Archaic (about 6000-4000 BC) was a time of increasing regional adaptation, with people following an annual or seasonal round of resource exploitation. Increasing geographically localized adaptation is indicated by a large number of dart point types and other lithic tools, including ground stone. The Late Archaic (about 4000-1000 BC) is the culmination of regional adaptation, and increased efficiency of hunting and gathering led to more stable, permanent settlements. Although the close of the Archaic is often considered to be marked by the first appearance of horticulture, pottery, and a shift from dart points to arrow points (marking replacement of atlatl or spear thrower by bow and arrow), the transition is not a clear one and the appearances of pottery and arrow points were not simultaneous.

The lack of any large rivers or permanent water sources on the Saginaw AAP suggests that sites from this time period are not likely to be present.

Plains Post-Archaic Era

Plains Woodland Era (250 BC-AD 950). The era is recognized archeologically by the appearance of pottery, agriculture, and more complex and stable settlements (Griffin 1967; Willey 1966). The improved subsistence mode, based on agriculture, led to population increases and a ranked society with status positions.

Major river floodplain margins, where a woodland environment extended into the Plains proper, were generally chosen for settlement. As no floodplains are present within the facility, it is unlikely that sites of the period will be present. Facility soils are shallow and clayey and not conducive to small-scale agricultural practices.

Plains Village Era (AD 900-1400). During this era, large village sites composed of permanent structures were located near major streams and creeks. Subsistence focused on the cultivation of crops in the floodplains, hunting herd animals on the plains, and living in a particular locale all year round (Stephenson 1965; Wedel 1964). Two regional foci have been identified.

During the Custer Focus (AD 900-1000), populations were semi-sedentary agriculturalists, also relying on hunting and gathering. Three types of settlements have been suggested (Lintz 1974): (1) semi-permanent settlements with less than six houses located on first terraces of major streams; (2) temporary specialized activity sites which were seasonally re-occupied; and (3) single occupation activity areas. Towards the end of the focus, populations increased and expanded to the east, with the eastern populations recognized archeologically as the Washita River Focus.

The Washita River Focus (circa AD 1100-1400) was characterized by a subsistence based on agriculture, hunting, and gathering (Bell 1973). Corn, beans, gourd, as well as uncultivated foods and wild animal remains have been recovered from sites of the focus. Settlements (villages) were less than five acres in size. Sites of the Plains Village era are concentrated on major river floodplain margins and are unlikely to be present on the facility. Other pertinent sources are noted in Appendix A.

2.2.2 Ethnohistory

Historic Indian Era (AD 1500-1867). The introduction of the horse by the Spaniards in the seventeenth century brought about significant cultural change in the Southern Plains as it enabled Plains tribes to more effectively hunt bison. Many tribes fought their way into the Plains to participate in the new life. In Texas these included the Comanche, Kiowa, and Kiowa Apache (Newcomb 1958). These were nomadic, equestrian tribes subsisting primarily by large-scale communal bison hunting. Typical settlements were camps, usually located along running water (Newcomb 1958).

Around AD 1700, Spanish Texas was invaded from the north by related Indian groups known as the Wichitas (Newcomb 1961). These were sedentary tribes whose settlements extended at times as far south as Waco and Central Texas. Their main headquarters was at Spanish Fort on the Red River.

The Comanche were able to obtain guns from the French while the Spanish denied them to the Apache, the result of previous frequent raiding of Spanish settlements by the Apache. The end result was the defeat of the Plains Apache groups by the Comanche. Until the last quarter of the nineteenth century, the Comanche raided throughout Texas and into Mexico. The 1867 Treaty of Medicine Lodge officially confederated the Comanche, Kiowa, and Kiowa Apache and they moved to their reservation in the Leased District (Gibson 1965), located west of the facility.

Ethnographic and archeological investigations in the Southern Plains culture area have documented a preference for settlement along larger running streams. It is therefore unlikely that primary ethnohistoric settlement remains will be present in the AAP. However, given the increased mobility provided by acquisition of the horse, there is a possibility that some archeological materials from this period remain on the facility.

2.2.3 History

Colonial Era (AD 1519-1836)

Spanish. Spain had claimed Texas since 1519 when Alvarez de Pineda, under orders of Governor Garay of Jamaica, mapped the Gulf Coast from Florida to Veracruz, Mexico.

During the next 300 years in which Spain held Texas (AD 1519-1821), only sporadic attempts were made at colonization (Miller 1972). The results of these efforts were only visible in three towns: Nacogdoches, La Bahia (Goliad), and San Antonio. No settlement or exploration in the vicinity of the facility is known to have been undertaken. Therefore, no material evidence of the Spanish Colonial era is expected in the area.

Mexican. Vicente Guerrero and Agustin de Iturbide agreed on the Plan of Iquala and proclaimed Mexico free on February 24, 1821. The Spanish Viceroy recognized Mexican independence in August leaving Mexico free and in possession of Texas (Miller 1972).

Lands granted by the Mexican government for settlement were located in southeast coastal areas. By 1829 Texas was being settled so rapidly by Americans that further American settlement was prohibited by law in 1830. In 1836 Texas independence from Mexico was declared and later won on the field of San Jacinto (Miller 1972). The constitution of March 1836 invalidated all Mexican land grants made after November 3, 1835 marking the close of Mexican grants in Texas. As no grants or settlements were made in the vicinity of the Saginaw AAP during the Mexican Colonial era, no material evidence of this time is expected to be found in the study area.

Settlement Era (AD 1836-Present). Section 10 (general provisions) of the Texas Constitution of 1836 provided that everyone in Texas on March 2, 1836, except Indians, persons of African descent, those who refused military service, or those who had not already received land from Mexico, was entitled to a first-class headright of land.

While this system caused an expansion of population and settlement areas, the Indian problem was not solved. Since the opening of the Comanche and Kiowa lands for general settlement after the 1867 Treaty of Medicine Lodge, the economy of the general vicinity of the AAP has focused primarily on farming and animal husbandry. The first settlers were primarily cattlemen, but farming soon became important. Early farmers settled in the timbered portions of the country due to the availability of materials for house construction and water. Principal crops included cotton, corn, and small grains.

Settlement has increased in the facility area and is associated with the arrival of industry, including the founding of Globe Aircraft Company and the beginning of the Saginaw Army Aircraft Plant. The adjacent towns of Blue Mound and Saginaw have grown significantly since 1955 as indicated by the 1955 USGS 7.5' Haltom City quad (photorevised 1981).

2.3 ARCHEOLOGICAL RESEARCH DIRECTIONS

Future research directions in prehistoric and historic Texas archeology are being more formally structured through the Texas Heritage Conservation Plan (THCP; Brown et al. 1982), though that plan is still in its early stages of formulation. The Saginaw AAP falls within the "North Central Plains" prehistoric THCP study unit, within the "Northeast Culture" Early Contact Period Historic Indian study unit, and within the "Caddoan-Language Groups" Late Contact Period Historic Indian study unit. It does not come within the "Mexican-Texan" or "Upper-South Anglo (Period One)" study unit. However, it is within the "Upper-South Anglo (Period Two)" and "Afro-American Texan" units, and is in the vicinity of the "German-Texan" study unit (Brown 1981:Fig. A-11). Thus, any of these associated study units may relate to archeological materials remnant on the Saginaw AAP.

Broad interpretive problems are generally considered the most fruitful directions for future research but the resolution of these are limited by the amount and accuracy of basic field and archival data. Modern researchers often develop elaborate research problems with interpretive potential and this certainly appears to be the direction of future research. But the compilation of basic information in the form of site inventories, excavation data and archival searches cannot be ignored as the underpinning for all future research in the Southern Plains culture area. These data can be used to refine and modify existing temporal and cultural models (Heartfield, Price and Greene, Inc. 1980).

This is not to say that interpretive problems should be ignored, for in fact we have ample evidence to address many of these and it is only by

posing problems and generating hypotheses that we can identify shortcomings in our data, limitations to research, and begin to understand the cultural processes and people being studied. Saginaw AAP personnel should also consult the Texas SHPO for current RP3 prehistoric and historic theme studies that may be applicable to their facility.

The following sections (extracted from Heartfield, Price and Greene, Inc. [1980]) consider two levels of current and proposed future research for the Plains cultural areas. These are: (1) problems pertaining to chronological frameworks and definitions of valid cultural units through time and space, and (2) problems that deal with interpreting cultural processes that occurred through time and space.

- Analyses of the relationships between topography and types of sites should be addressed. An association has been demonstrated between bison kill sites and riverine areas, canyons, draws, and dry gulches. Are there any systematic relations between landforms and other types of sites, e.g. campsites?
- More detailed analysis is needed of the internal spatial aspects of excavated campsites in order to gather data on what occurred at these sites during their occupation. Such information could be obtained from dimensional analysis of features, i.e., fire-pits and their contents, artifactual concentrations, postholes), and the spatial relationship between such features within the campsite.
- Interpretations of the type suggested above may be strengthened by researching the regional ethnohistorical literature for analogous geographical areas. Conversely, these ethnohistoric data may provide avenues whereby archeological phenomena may be explained.
- Preliminary reports and short notes regarding some of the very earliest Paleo-Indian sites have provided data whereby predictive models may be formulated to assist in searching for other sites of comparable age.
- It seems that on the Plains very little information has been gathered from the archeological standpoint about sites during the early historic period after the acquisition of the horse. Most of the data pertain to burials and/or pictographs. From the campsites, does it appear that demographic changes took place? Did cultural units become larger (band, clans, tribes)? Can differentiated social units be recognized from archeological distributions?
- A recent synthesis of ethnobiological data (Neuman, in press) has indicated that bison was not an important prehistoric subsistence staple in eastern Oklahoma and northeastern Texas. Other applications of zooarcheological analysis could include a

diachronic analysis of recovered horse material, to provide data independent of the documentary evidence on the spread of the horse complex.

- It would be worthwhile to develop our understanding of the transition from using indigenously produced goods to a dependence upon European-made trade items in protohistoric sites. Both existing archeological and documentary evidence could be employed to examine the advent of markets and changes in the relations of production among historic groups.
- Lorrain (1974) has suggested that relationships between the western Caddo Indian groups (east of the Saginaw AAP) and Southern Plains groups from AD 1500 to AD 1700 could be tested by excavating western Caddo protohistoric sites in an attempt to locate sites identifiable with the Southern Plains groups, including the Washita River focus.

At present there is little information on early farm patterns or communities in northeast Texas (though see Fox 1980, and Appendix A). However, there is a growing national interest in vernacular architecture and rural or folk lifeways. This research and general sociocultural interest may not be addressed by investigation of the historic archeological materials left on the Saginaw AAP, and hence this topic has not been addressed in this overview under the topic of research goals and directions. Remains of this time are ubiquitous and better preserved in adjacent areas. However, eventual historic preservation planning on the facility, which should integrate archeological, architectural, and more "intangible" culture historical values, needs to give this topic more attention from other than a focused archeological perspective.

AN ASSESSMENT OF ARCHEOLOGICAL RESOURCE
PRESERVATION AND SURVEY ADEQUACY

3.1 ENVIRONMENTAL CONSTRAINTS TO SITE PRESERVATION

The facility acreage is nearly level and gently sloping from 700 feet AMSL along its western edge down to 685 feet AMSL along its eastern edge. Given the very gentle slope, it is thought highly unlikely that cultural remains will have been exposed by erosion in the western portion of the facility or consequently buried by eroded sediment deposition in the eastern portion of the facility. Also, surrounding terrain is nearly level and sediment introduction by water transportation from areas beyond the facility is minimal to non-existent.

Outcroppings of limestone are present on the facility and in some areas the soils are very thin (less than 2.5 centimeters) and underlain by a dense limestone. This combination of conditions precludes the possibility that deeply buried cultural material will exist on the facility and it is likely that any surface remains will lack integrity.

3.2 HISTORIC AND RECENT LAND USE PATTERNS

Recent ground disturbance on the Saginaw AAP is summarized in Table 3-1, and mapped in Figure 3-1. Of the 155 acres comprising the facility, a total of 68.4 acres (44 percent) have been disturbed. Approximately 62 acres have been disturbed by surfacing with cement/asphalt, building and runway construction (GDA 11). Additional disturbances include the excavation of two burning pits (1.5 acres) (GDAs 8, 9), a former holding pond (2.25 acres) (GDA 10), about 1900 feet of buried sewer lines, and 950 feet of buried gas lines (total of about 1.65 acres, GDA 12). Two 10-inch pipelines and a railroad right-of-way border the southwest edge of the facility (GDAs 13, 14), and have disturbed about one acre of facility property.

Areas currently covered with grass (about 86.6 acres) have never been subject to landscaping or construction activities (Homer Bell, personal communication 1983).

Table 3-1. A SUMMARY OF HISTORIC AND MODERN GROUND DISTURBANCE THAT MIGHT LIMIT THE PRESENT ARCHEOLOGICAL RESOURCE BASE ON THE SAGINAW ARMY AIRCRAFT PLANT

GDA No. a	Type of Disturbance	Date Conducted (yr)	Reference	Area Disturbed (acres)	Estimated Depth Below Surface (ft)	Ratio of Disturbed to Total Area	Location of Disturbed Area				Coincidental Sites		
							Morthing	Easting	Northing	UTM		Legal Reference	USGS Quad Map
1	Building construction	1941-1963	Blueprint R-G-1284-21; ESE (1981)	7	1-1.5	10:10	654997.1	3636889.5	NA	NA	NA	HC755R	None
2	Building construction	1941-1963	Blueprint R-G-1284-21; ESE (1981)	7	1-1.5	10:10	654857.6	3636917.5	NA	NA	NA	HC755R	None
3	Building construction	1941-1963	Blueprint R-G-1284-21; ESE (1981)	7	1-1.5	10:10	654897.6	3636795.0	NA	NA	NA	HC755R	None
4	Building construction	1941-1963	Blueprint R-G-1284-21; ESE (1981)	7	1-1.5	10:10	654772.5	3636844.0	NA	NA	NA	HC755R	None
5	Building construction	1941-1963	Blueprint R-G-1284-21; ESE (1981)	7	1-1.5	10:10	654540.8	3636905.5	NA	NA	NA	HC755R	None
6	Building construction	1941-1963	Blueprint R-G-1284-21; ESE (1981)	7	1-1.5	10:10	654269.6	3636642.5	NA	NA	NA	HC755R	None
7	Building construction	1941-1963	Blueprint R-G-1284-21; ESE (1981)	7	1-1.5	10:10	654231.0	3635984.5	NA	NA	NA	HC755R	None
8	Former burn pits (2)	Pre-1967	ESE (1981)	1.5	1.5-2.5	10:10	654494.7	3636696.5	NA	NA	NA	HC755R	None
9	Former burn pits (2)	Pre-1967	ESE (1981)	1.5	1.5-2.5	10:10	654492.5	3636540.5	NA	NA	NA	HC755R	None
10	Former holding pond	Pre-1954	ESE (1981)	2.25	3-5	10:10	654400.6	3636846.0	NA	NA	NA	HC755R	None

Table 3-1. A SUMMARY OF HISTORIC AND MODERN GROUND DISTURBANCE THAT MIGHT LIMIT THE PRESENT ARCHEOLOGICAL RESOURCE BASE ON THE SAGINAW ARMY AIRCRAFT PLANT (concluded)

GDA No. a	Type of Disturbance	Date Conducted (yr)	Reference	Area Disturbed (acres)	Estimated Depth Below Surface (ft)	Ratio of Disturbed to Total Area	Location of Disturbed Area				USGS Quad Map	Coincidental Sites	
							Morphing	Easting	Township	Legal Reference			
11	Paved surfaces (parking, road, runway, helicopter tie-down, building slabs)	1941-1963	Blueprint R-G-1284-21; USGS quad	53.6	6-8"	10:10	--	NA	NA	NA	NA	HC755R	None
12	Facility related sewer and gas line installation	Pre-1955	Blueprint R-G-1284-21	2.5	3-3.5	10:10	--	NA	NA	NA	NA	HC755R	None
13	Private pipeline right-of-way and 10" line installation (2)	Post-1955	Blueprint R-G-1284-21	0.95	3-3.5	10:10	--	NA	NA	NA	NA	HC755R	None
14	Railroad right-of-way	Pre-1955	Blueprint R-G-1284-21	0.6	1	10:10	--	NA	NA	NA	NA	HC755R	None

a Ground Disturbance Areas (GDAs) as mapped in Figure 3-1.

b UTM = Universal Transverse Mercator coordinates, Zone 14. If the area is less than 10 acres in extent, the coordinates record the approximate center of the site. If it is larger, they record the corners of a 3-or-more sided figure than encloses the site. Coordinates have been calculated specifically for this study.

c Legal locations not applicable in this area of Texas.

d Haltom City, TX 7.5 min. sheet (1955, photorevised 1981).

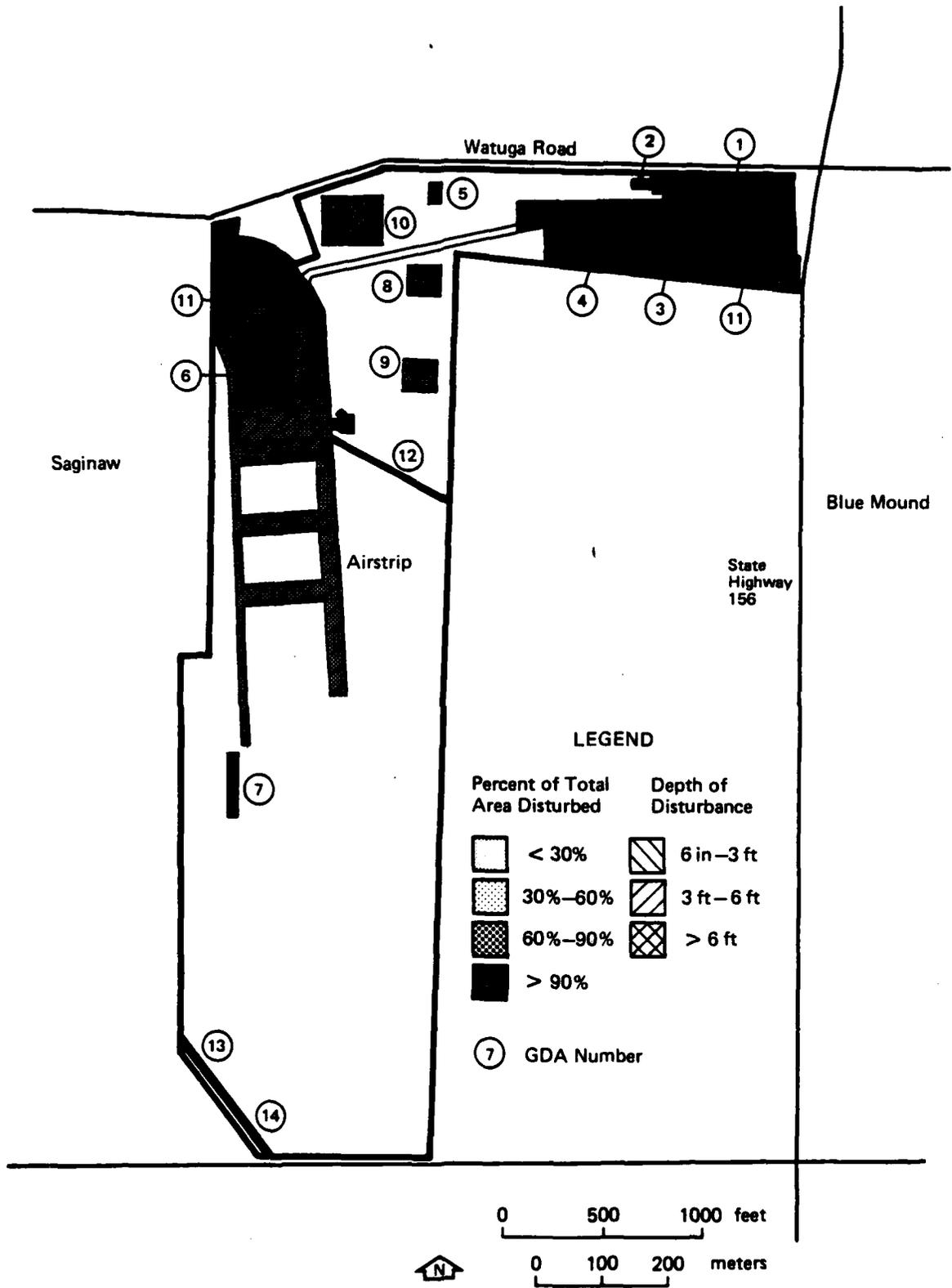


Figure 3-1. MAP OF AREAS OF HISTORIC AND/OR MODERN GROUND DISTURBANCE THAT MIGHT LIMIT THE PRESENT ARCHEOLOGICAL RESOURCE BASE ON THE SAGINAW ARMY AIRCRAFT PLANT

3.3 PREVIOUS CULTURAL RESOURCE INVESTIGATIONS: COVERAGE AND INTENSITY

There have been no previous archeological investigations within the area of the Saginaw Army Aircraft Plant (Carolyn Spock, personal communication 1983). A historical archeological study is currently being undertaken on the facility (William Brenner, personal communication 1984), but is not available for the archeological review.

3.4 SUMMARY ASSESSMENT OF DATA ADEQUACY, GAPS

The facility acreage consists of a nearly level upland area and is not near permanent water sources. Limestone bedrock is near the surface and outcrops in some areas. The overlying soils are thin, clayey, and poorly developed. These characteristics would have made the Saginaw AAP a very unattractive area for aboriginal settlement. Previous archeological research in the Southern Plains culture area has suggested that these populations preferred riverine or stream habitats with a permanent water supply. During post-Archaic times, aboriginal populations preferred relatively wide floodplain environments characterized by sandy soils conducive to the practice of agriculture. Since the Saginaw AAP possesses none of the above natural qualities, it is considered unlikely that cultural remains associated with peoples dating from the Paleo-Indian Era through the Plains Village Era will be present on the facility. Although the possibility exists that some of the nomadic equestrian groups (Comanche, Kiowa, Kiowa Apache, Wichita) may have passed through the area during bison hunting excursions, it is unlikely that cultural material associated with their passing will be present.

Preliminary archival research has yielded no information regarding historic structures or other features on the facility. Therefore, it appears unlikely that modern historic remains will be located.

KNOWN ARCHEOLOGICAL RESOURCES ON THE SAGINAW AAP

There are no known prehistoric or historic cultural resources on the Saginaw AAP and, based on archival research, the probability is low that such unidentified resources exist on the facility.

**AN ASSESSMENT OF THE SIGNIFICANCE OF THE ARCHEOLOGICAL
RESOURCE BASE ON THE SAGINAW AAP**

5.1 THE SIGNIFICANT RESOURCE BASE

There have been no prehistoric or historic archeological resources recorded on the facility. Based on archival research, including ethnographic accounts of the area, the potential for locating unrecorded prehistoric cultural resources on the facility is considered to be low. No information regarding early settlement or structures on the facility has been located and it is unlikely that evidence of such will be present. Classifications of these potential resources and geomorphological/topographic association are shown in Table 5-1. Each is discussed in the following section.

Preliminary archival research indicates that there is little potential for the occurrence of modern historic material on the facility other than possible post-1940 remains associated with Globe Aircraft Company and later the Saginaw Army Aircraft Plant. However, more intensive review of federal and local archives is needed to substantiate this conclusion [though some of this review may be included within the ongoing historic architectural study].

5.2 IDEAL GOALS AND OBJECTIVES

The ideal goals and objectives for the management of Saginaw AAP archeological resources include the following:

- Intensive archival review to identify or eliminate the possibility of identifying any historic archeological resources. A preliminary archival search at the Washington National Federal Records Center in Suitland, MD, has identified facility documents in record group RG 156, Records of the Office of the Chief of Ordnance. A more intensive search should be made of that and the following record groups: RG 77, Records of the Office of the Chief of Engineers; RG 92, Records of the Office of the Quartermaster General; RG 338, Records of U.S. Army Commands; and RG 394, Records of U.S. Army Continental Commands
- Intensive field survey of the unpaved facility area to identify any surface-evident prehistoric or historic sites

Table 5-1. SUMMARY OF SIGNIFICANT ARCHEOLOGICAL RESOURCES ON THE SAGINAW ARMY AIRCRAFT PLANT

Temporal Unit	Thematic Unit	Resource Type	Type Occurrence ^a			Sociocultural Association	Landform Association	Physical Integrity	Research Value ^b	Socio-cultural Value ^d	SCV CR ^c
			Known Occurrences (no.)	Potential Occurrences (no.)	Other Likely Occurrences						
Paleo-Indian	Not defined	Not defined	0	0	-	Native American	Surface	Poor	MA 1	0	3
Archaic	Seasonal subsistence patterns	Habitation camp; resource specific area	0	0	-	Native American	Surface	Poor	MA 1	0	3
Post-Archaic/Village	Permanent to semi-permanent settlements	Camps/villages	0	0	-	Native American	Surface	Poor	3 2	0	2
Post-Archaic/Woodland	Permanent to semi-permanent settlements	Villages	0	0	-	Native American	Surface	Poor	3 2	0	3
Historic Indian	Settlements, possibly relating to bison hunting	Camps and villages	0	0	+	Native American	Surface	Poor	3 2	0	3
Spanish Colonial	Colonization	Towns/missions	0	0	-	Anglo American	Surface	Poor	3 3	0	3
Mexican Colonial	Colonization	Towns/missions	0	0	-	Anglo American	Surface	Poor	3 3	0	3
Settlement	Farming/ranching	Towns, house sites	0	0	-	Anglo American	Surface	Poor	0 3	0	3

^a The number of presently known or potential archeological resources of this type is specified here. In addition a judgement has been made as to the likelihood that other members of this resource occur within the facility, based on an analysis of the ethnohistoric or historic land use patterns and/or a review of the landform patterning of prehistoric materials. The probability of these additional occurrences has been noted as negative (-), positive (+), or highly positive (++).

^b This is a subjective summary assessment of the overall research value (RV) of the resource class. It is an evaluation of the class' quality of preservation, representation of activity diversity or uniqueness, and temporal distinctiveness or reflection of diachronic relationships. It incorporates the need to avoid triviality, but to acquire what may be redundant data so as to discern patterns among these data. Based on these research values, the resource classes under discussion are ranked from 0 (no value) to 5 (highest value), including "MA" if such an evaluation is believed to be impossible given the available information.

^c The Confidence Rating (CR) is a further evaluation of the perceived reliability of the research (RV) or sociocultural (SCV) values of the resource class. 1 = the judgement is more guess than science, and likely not to be reliable; 2 = the judgement is moderately reliable; 3 = the judgement is most likely reliable.

^d This is a subjective summary assessment of the overall sociocultural value (SCV) of the resource class. It is an evaluation of the social, religious, or political importance of the resource to a contemporary community, from 0 (no value) to 5 (highest value).

- If sites are found, evaluation of their scientific and sociocultural value
- If assessed as important, development of a plan to conserve, use, or enhance those values

However, based on the information received from the Texas SHPO, it would appear that the Saginaw AAP has little potential, according to the Texas State Plan, to produce significant cultural resources. For this reason, Saginaw facility personnel may find it more appropriate to work with the Texas SHPO on a project-to-project basis.

A RECOMMENDED ARCHEOLOGICAL MANAGEMENT PLAN FOR THE SAGINAW AAP

6.1 FACILITY MASTER PLANS AND PROPOSED IMPACTS

There is no specific long-range planning document for the Saginaw AAP, and there are currently no plans for future building construction or facility expansion (Homer Bell, personal communication 1983).

6.2 APPROPRIATE ARCHEOLOGICAL MANAGEMENT GOALS WITHIN THE SAGINAW AAP'S MASTER PLAN**6.2.1 General Facility Planning**

Under Army Regulations 420, each DARGOM installation and sub-installation should have a Historic Preservation Plan or have documentation on file indicating that there are no installation resources appropriate to such management planning.

There is a possibility that archeological materials may remain within the 155 acres of the facility, and some more specific archival and/or field inventory may need to be completed to demonstrate the presence or absence of potential cultural materials there. The archeological evaluation of the need for further facility historic preservation planning needs to be reviewed by historical architects upon completion of the ongoing architectural study, to ensure that the preservation planning addresses all potential issues of historical values.

The following archival and field inventory program is recommended as a further stage in the documentation of the overall character of the Saginaw AAP archeological resource base, fundamental to the development of an adequate preservation plan. This recommended work may be postponed until there is a specific ground-disturbing project that requires compliance with the National Historic Preservation Act (see Sections 1.1, 5.2.2), if development of a historic preservation plan more specific than this archeological overview and management plan is also to be postponed.

As outlined in the previous discussion of ideal archeological management goals (Section 4.2), a recommended next stage in the assessment of the facility's historic archeological resources is a more intensive search of archival material. This would focus on information that is stored in the National Archives and Records Service, as well as a more intensive review of Tarrant County land records, wills, and other pertinent documents. The goal of this research would be to define the

historic land use and ground-disturbance of this property, and more specifically identify any historic archeological resources that might be located there as well as evaluate their potential significance.

Following the completion of the archival review, a field inventory of the property to identify the surface evidence of any potential prehistoric or historic archeological sites is recommended. Given the small acreage of the Saginaw AAP (87 undisturbed acres), we recommend that a standard pedestrian professional archeological survey of the unpaved portions of the facility is the most cost-effective option (rather than one or more sample surveys). Because of the low probability that significant archeological materials are located within the facility boundaries, we suggest that that area does not require intensive field review.

If the archival and field surveys result in the identification of archeological resources, the significance of these should be evaluated following criteria set forth in 36 CFR 60.6 and in accordance with guidelines from the Texas Historical Commission (Brown et al. 1982). If sites are judged to be significant, a plan for their long-term management should be developed in the context of overall property management (including the management of any identified ethnohistoric or historic architectural/engineering resources). If significant sites are identified, it is recommended that the TSARCOM offices responsible for the Saginaw AAP operations provide the Texas State Historic Preservation Officer (SHPO) with the opportunity to review and comment on the proposed management plan. This will enhance the opportunities for the facility preservation plan and the Texas Heritage Conservation Plan (Brown et al. 1982) to complement each other. If no significant sites are identified, filing of a report to that effect with the SHPO would complete the compliance requirements for preservation planning.

6.2.2 Project-Specific Resource Protection or Treatment Options

No ground-disturbing activities are presently scheduled to occur on the Saginaw facility. However, should such be scheduled a complete program of project-area archival and surface reconnaissance, identified resource evaluation, and impact mitigation planning must be completed prior to the initiation of such ground disturbance. In addition, again prior to the start of construction activities, the National Historic Preservation Act requires that the Saginaw AAP administrators consult with the Texas SHPO and with the Advisory Council on Historic Preservation about the proposed mitigation plan. Such consultation must be complemented by consultation with the SHPO and with the Keeper of the Register about the recommendations of the significance of sites that are to be impacted. Such an evaluation and consultation process, as outlined in Section 1.1 and in AR 420, can usually be expedited if the appropriate preservation planning has been completed and reviewed by the Texas SHPO.

6.3 ESTIMATED SCOPE OF WORK AND COST LEVELS FOR PRESENTLY IDENTIFIABLE MANAGEMENT NEEDS

6.3.1 Scope of Work

The estimated scope of work recommended here is to provide the archival and field reconnaissance of the Saginaw facility basic to the development of a facility-specific historic preservation plan. This will consist of these work tasks:

- Additional archival review and report to document more adequately the historic land use of the facility, and any archeological remnants of that use; this is estimated to require a minimum of 60 work-hours and travel to both Washington, DC and to Tarrant County
- Intensive pedestrian archeological survey of the facility, evaluation of any identified archeological resources, and completion of a report of those activities; this survey is assumed to follow a minimal collection policy such that there are no or only a few artifacts requiring analysis and curation. Survey time is estimated to take one work-day (8 work-hours), supplemented by 32 work-hours to complete all laboratory and report effort; it will require support for travel to Tarrant County
- Based on the archival and field survey information, development of either (1) a recommended plan for the management of significant identified resources, or (2) development of a negative case report for review by the SHPO, documenting the lack of archeological materials on the facility; this will require from 8 to 32 work hours, depending upon the type of report appropriate to the survey results.

6.3.2 Implementation and Cost Estimates

Personnel needed for completion of the above-outlined tasks need professional expertise in historic archival review and both prehistoric and historic archeology; that expertise may reside in one person but is more likely to require work effort by at least two people. The archeological professional qualifications should meet the standards of the Society for Professional Archaeologists (SOPA), and the individual making the archeological resource evaluations of significance should be skilled in management and compliance procedures, have a thorough understanding of regional archeological needs and goals, and have field experience in the area.

The archivist/archeologist should be supported by adequate secretarial/drafting personnel. The physical plant administering implementation of the project should have adequate field equipment, laboratory facilities, and word processing and duplication capability to quickly and professionally prepare needed documents and correspondence.

Costs of professional archival expertise, including all necessary travel (using expertise local to each of the Washington, DC and Tarrant

County archival research areas), reference, telecommunications, data management, search fee, and report preparation costs generally average between \$25 and \$30/work-hour across the country. This rate does not include business, general and administrative costs, or inflation costs, and is expressed in 1984 dollars. Using this rate, the 60 hours of professional time estimated above for archival activities would have a baseline cost range of \$1500 to \$1800.

Costs of archeological inventory expertise, including assumptions as stated above, generally average between \$20 and \$25 for such small survey areas. A similar cost range in 1984 dollars can be applied to the development of management recommendations. Thus the 48 to 72 hours estimated above to be required to complete a field inventory, evaluation, and management recommendation report appropriate for SHPO review could range between \$960-\$1200 and \$1440-\$1800.

Thus, the total work effort outlined above is estimated to require between 108 and 132 work-hours and range in cost between \$2160 and \$3300. Again, however, Saginaw AAP facility personnel may find it more expeditious to approach their cultural resource inventory on a project-by-project basis, in light of the Texas SHPO comments (see Appendix A).

The Saginaw Army Aircraft Plant is situated in a nearly level upland area and is underlain by Cretaceous limestone deposits which outcrop in some areas of the facility. Overlying soils are shallow (less than 15 centimeters in some places), undeveloped, and clayey.

The area has no permanent water sources and Little Fossil Creek, which flows through and drains most of the facility acreage, is intermittent. Climate is moderate. Floral assemblages include a cover of plantain, thistles, violet species, milkweed, and other weedy species, intermixed with lawn grass species. Taller, dense grasses vegetate the area along Little Fossil Creek and the drainage along the facility's west edge. Faunal resources are abundant in surrounding areas, but are limited in the facility proper due to the presence of barrier fencing.

Prehistoric occupation of the general area of the facility, which lies within the Southern Plains culture area, may have begun during Paleo-Indian times. However, evidence of these and the succeeding Archaic population of the area are not well documented. It is likely that Archaic and Post-Archaic cultures (Plains Woodland and Village Era, Comanche, Kiowa, Kiowa Apache, and Wachita) made only occasional use of the facility area.

Euroamerican settlement did not begin in the area until after 1867 when the Treaty of Medicine Lodge removed the Comanche, Kiowa, and Kiowa Apache populations to reservations west of the facility area. The historic settlement pattern was one of small farms devoted mainly to animal husbandry, but farming soon became important. Both activities continued to be important until 1940, when the facility acreage was acquired by the Globe Aircraft Company.

Archival research indicates that there are presently no known cultural resources on the facility. This research, combined with geological and geomorphological information, suggests that the potential for identifying presently unrecorded cultural resources on the facility is relatively remote. It is recommended, however, that more intensive archival and archeological field inventory of the Saginaw AAP be completed, for the development of any needed historic preservation plan or any ground-disturbing project-specific compliance with NHPA. Such additional work is estimated to require between 108 and 132 professional work-hours and to cost between \$2160 and \$3300 in FY84 dollars, although this goal may be attained over a longer period of time by consultation with the Texas SHPO on a case-by-case basis.

8.1 PRIMARY SOURCES AND REFERENCES CITED

- Bell, Homer. 1983. Personal communication. Industrial Specialist, Army Plant Representative Office, at Bell Helicopter TEXTRON and former employee at Saginaw Army Aircraft Plant.
- Bell, Robert E. 1973. The Washita River Focus of the Southern Plains. In Variation in Anthropology, edited by Donald W. Lathrap and Jody Douglas, pp. 171-187. Urbana: Illinois Archeological Survey.
- Brenner, William B. 1984. Personal communication. Principal Investigator, DARCOM HABS Survey, Building Conservation Technology, Inc., Silver Spring, MD.
- Brown, C. A. 1983. The Flora of Pleistocene Deposits in the Western Florida Parishes, West Feliciana Parish and East Baton Rouge Parish. The Louisiana Geological Survey Bulletin No. 12.
- Brown, Theodore M. 1981. German-Texas Study Unit. In Resource Protection Planning Process for Texas, by Theodore M. Brown, Kay L. Killen, Helen Simons, and Virginia Wulfkuhle, pp. 95-194. Austin: Texas Historical Commission.
- Brown, Theodore M., Kay L. Killen, Helen Simons, and Virginia Wulfkuhle. 1982. Resource Protection Planning Process for Texas. Austin: Texas Historical Commission.
- Dibble, D. S., and D. Lorrain. 1968. Bonfire Shelter: A Stratified Bison Kill Site, Val Verde County, Texas. Miscellaneous Papers of the Texas Memorial Museum 1.
- Domning, D. P. 1969. A List, Bibliography and Index of the Fossil Vertebrates of Louisiana and Mississippi. Transactions, Gulf Coast Association of Geological Societies 19:385-422.
- Environmental Science and Engineering, Inc. 1981. Installation Assessment of TSARCOM Saginaw Army Aircraft Plant. Report No. 303. Prepared for U.S. Army Toxic and Hazardous Materials Agency, Environmental and Safety Division, Aberdeen Proving Ground, MD.

- Frison, George C. 1978. Prehistoric Hunters of the High Plains. New York: Academic Press.
- Gibson, Arrell M. 1965. Oklahoma: A History of Five Centuries. Norman: Harlow Publishing Company.
- Gleason, H.A. 1923. The Vegetation History of the Midwest. Annals of the Association of American Geographers 12:39-85.
- Gould, Frank. 1975. Texas Plants - A Checklist and Ecological Summary. College Station: The Texas A & M University System, The Texas Agriculture Experiment Station.
- Griffin, James B. 1967. Eastern North American Archeology: A Summary. Science 156:175-191.
- Haines, Francis. 1966. The Northward Spread of Horses Among the Plains Indians. In Readings in Anthropology, edited by E. A. Hoebel and J. D. Jennings, pp. 184-188. New York: McGraw-Hill.
- Harshberger, J. W. 1958. Photographic Survey of North America. New York: Hafner Publishing Company.
- Haynes, C. V. 1966. Elephant Hunting in North America. Scientific American 214:104-122.
- Heartfield, Price and Greene, Inc. 1980. Cultural Resources Technical Report. Report submitted by Woodward-Clyde Consultants in support of the U.S. Bureau of Land Management's Environmental Impact Statement, Energy Transportation System, Inc.; on file, U.S. Bureau of Land Management, Special Projects Staff, Denver, CO.
- Hester, Thomas R. 1976. Late Pleistocene Aboriginal Adaptations in Texas. In Papers on Paleo-Indian Archeology in Texas: I. Center for Archeological Research, the University of Texas at San Antonio Special Report No. 3.
- Jennings, Jesse D. 1983. Ancient Native Americans. San Francisco: W. H. Freeman and Co.
- Knudson, Ruthann, David J. Fee, and Steven E. James. 1983. A Work Plan for the Development of Archeological Overviews and Management Plans for Selected U. S. Department of the Army DARCUM Facilities. Walnut Creek, CA: Woodward-Clyde Consultants [available through the U. S. Department of the Interior, National Park Service, Atlanta].
- Lewis, G. E. 1970. New Discoveries of Pleistocene Bisons and Peccaries in Colorado. U.S. Geological Survey Professional Papers, 700-B:B137-B140.

- Lorrain, Dessamae. 1974. The Glass Site. In Wichita Indians: Wichita Indian Archeology and Ethnology; A Pilot Study of Wichita Indian Archeology and Ethnohistory, edited by Robert E. Bell, E. B. Jelks, and W. W. Newcomb, pp. 24-22. New York: Garland.
- Miller, Thomas Lloyd. 1972. The Public Lands of Texas, 1519-1870. Norman: University of Oklahoma Press.
- Mossiman, J. E., and P. S. Martin. 1975. Simulating Overkill by Paleo-Indians. American Scientist 63:304-313.
- National Oceanic and Atmospheric Administration. 1977. Local Climatological Data Annual Summary with Comparative Data, Dallas-Fort Worth, TX. Asheville, NC: NOAA Environmental Data Service, National Climatic Center.
- Neuman, Robert W. 1984. The Buffalo in Southeastern United States Post-Pleistocene Pre-history. Norman: Oklahoma Archeological Survey.
- Newcomb, W. W., Jr. 1958. Indian Tribes of Texas. In A Review of Texas Archeology-Part 1, edited by T. N. Campbell, E. B. Jelks, E. Mott Davis, and H. B. Sturgis, pp. 1-34. Bulletin of the Texas Archeological Society 29.
- _____. 1961. The Indians of Texas from Prehistoric to Modern Times. Austin: University of Texas Press.
- Osborn, H.F. 1909. Cenozoic Mammal Horizons of Western North America. U.S. Geological Survey Bulletin, 361.
- Raisz, E. 1957. Physiographic Map of Texas (reproduced from Landforms of Texas). In Geological Highway Map of Texas, by the Dallas Geological Society.
- Saginaw Army Aircraft Plant. 1968. Details of Industrial Defense Survey. Manuscript on file, Saginaw Army Aircraft Plant, Saginaw, TX.
- Sellards, E. H., W. S. Sellards, and F. B. Plummer. 1958. The Geology of Texas, Volume I: Stratigraphy. Bureau of Economic Geology, the University of Texas Bulletin 3232.
- Simpson, G. G. 1941. Large Pleistocene Felines of North America. American Museum Novitates, No. 1136:19-27.
- _____. 1945. Notes on Pleistocene and Recent Tapirs. American Bulletin Museum of Natural History 86121:52-81.
- Spock, Carolyn. 1983. Personal communication. Keeper of Site Records at Texas Archeological Research Laboratory, Austin.

Stanford, Dennis. 1984. Personal communication. Curator, Department of Anthropology, National Museum of Natural History, Smithsonian Institution, Washington, DC.

Stephens, J. J. 1960. Stratigraphy and Paleontology of the Late Pleistocene Basin, Harper County, Oklahoma. Geological Society of America Bulletin 71:1675-1702.

Wedel, Waldo R. 1961. Prehistoric Man on the Great Plains. Norman: University of Oklahoma Press.

_____. 1983. The Prehistoric Plains. In Ancient Native Americans, edited by Jesse D. Jennings, pp. 203-241. San Francisco: W. H. Freeman and Co.

Wells, P. V. 1970. Post-glacial Vegetational History of the Great Plains. Science 167 (3925):1574-1582.

Willey, Gordon R. 1966. An Introduction to American Archeology, Vol. 1, North and Middle America. Englewood Cliffs: Prentice-Hall, Inc.

8.2 OTHER PERTINENT LITERATURE

Ewers, John C. 1962. The Horse Complex in Plains Indian History. In The North American Indians: A Sourcebook, edited by R. C. Owen, J. Deetz, and A. Fisher, pp. 96-118. New York: Macmillan Co.

Fries, Howard B. 1971. The Koelliker Site (14DP25). Plains Anthropologist 16(53): 190-194.

Frison, George, C. 1973. The Plains. In The Development of North American Archeology, edited by James E. Fitting, pp. 151-184. New York: Anchor Books.

_____. 1978. Prehistoric Hunters of the High Plains. New York: Academic Press.

Gorman, Frank. 1972. The Clovis Hunters: An Alternative View of Their Environment and Ecology. In Contemporary Archeology, edited by Mark P. Leone, pp. 206-291. Carbondale, Edwardsville: Southern Illinois University Press..

Gunnerson, J.H. 1956. Plains-Promontory Relationships. American Antiquity 22(1): 69-72.

_____. 1960. An Introduction to Plains Apache Archeology - The Dismal River Aspect. Bureau of American Ethnology, Anthropological Papers No. 58.

_____. 1968. Plains Apache Archeology: A Review. Plains Anthropologist 41(13): 167-189.

- Haines, Francis. 1966a. Where Did the Plains Indians Get Their Horses? In Readings in Anthropology, edited by E. A. Hoebel and J. D. Jennings, pp. 180-183. New York: McGraw-Hill.
- _____. 1966b. The Northward Spread of Horses Among the Plains Indians. In Readings in Anthropology, edited by E. A. Hoebel and J. D. Jennings, pp. 184-188. New York: McGraw-Hill.
- Jameson, J. Franklin, editor. 1907. Original Narratives of Early American History. Spanish Explorers in the Southern United States 1528-1543, New York: Charles Scribner's Sons.
- Jennings, Jesse D. 1974. Prehistory of North America. San Francisco: W. H. Freeman.
- Krieger, Alex D. 1946. Culture Complexes and Chronology in Northern Texas. University of Texas Publication No. 4640.
- Kroeber, A. L. 1953. Cultural and Natural Areas of Native America. Berkeley: University of California Press.
- Lipe, William D. 1977. A Conservation Model for American Archeology. In Conservation Archeology: A Guide for Cultural Resource Management Studies, edited by Michael B. Schiffer and George J. Gumerman, pp. 19-42. New York: Academic Press.
- Lowie, Robert H. 1954. Indians of the Plains. New York: American Museum of Natural History.
- National Park Service. 1983. Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation: Professional Qualifications Standards. Federal Register 48(190):44716-44740.
- Neuman, Robert W. 1968. Additional Annotated References: An Archeological Bibliography of the Central and Northern Great Plains Prior to 1930. Plains Anthropologist 13(40): 100-102.
- Newcomb, W. W. 1961. The Indians of Texas. Austin: University of Texas Press.
- Newcomb, W. W., and W. J. Field. 1974. An Ethnographic Investigation of the Wichita Indians in the Southern Plains. In Wichita Indians: Wichita Indian Archeology and Ethnology: A Pilot Study, by Robert E. Bell, E. B. Jelks, and W. W. Newcomb, pp. 240-309. New York: Garland.
- Secoy, F.R. 1953. Changing Military Patterns of the Great Plains. Monograph of American Ethnological Society, No. 21.
- Society of Professional Archeologists. 1983. The Directory of Professional Archeologists. Tampa: Society of Professional Archeologists.

- Swanton, John R. 1946. The Indians of the Southeastern United States. Bureau of American Ethnology Bulletin 137.
- Thomas, Alfred Barnaby. 1928. Spanish Exploration of Oklahoma. Chronicles of Oklahoma, 6(2): 16-25.
- Ubelaker, Douglas H. 1976. The Sources and Methodology for Mooney's Estimates of North American Indian Population. In The Native Population of the Americas in 1942, edited by William M. Denevas, pp. 243-288. Madison: University of Wisconsin Press.
- U. S. Department of the Interior. 1982. Guidelines for the Disposition of Archeological and Historic Human Remains. Ms., Departmental Consulting Archeologist, National Park Service, U. S. Department of the Interior, Washington, DC.
- _____. 1983. Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation: Professional Qualifications Standards. Ms. in preparation, National Park Service, U. S. Department of the Interior, Washington, DC.
- Weaver, J. E. 1954. North American Prairie. Lincoln, NB: Johnson Publishing Company.
- Weaver, J.E., and F.W. Albertson. 1956. Grasslands of the Great Plains. Lincoln, NB: Johnson Publishing Company.
- Wedel, Waldo R. 1940. Culture Sequence in the Central Great Plains. In Essays in the Historical Anthropology of North America, pp. 291-352.
- _____. 1947. Culture Chronology in the Central Great Plains. American Antiquity 12(3):148-156.
- _____. 1961. Prehistoric Man on the Great Plains. Norman: Oklahoma Press.
- _____. 1964. The Great Plains. In Prehistoric Man in the New World, edited by J. D. Jennings, and E. Norbeck, pp. 193-220. Chicago: University of Chicago Press.
- Wissler, Clark. 1955. The Influence of the Horse in the Development of Plains Culture. In Readings in Anthropology, edited by E. A. Hoebel, J. D. Jennings and E. R. Smith, pp. 155-172. New York: McGraw-Hill.
- Wormington, H. M. 1957. Ancient Man in North America. Denver Museum of Natural History, Popular Series, No. 4.

APPENDIX
TEXAS DEPUTY SHPO COMMENTS

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December 1, 1983

Mark R. Barnes, Ph.D.
DARCOM Regional COR
U.S. Department of the Interior
National Park Service
Southeast Regional Office
75 Spring Street, S.W.
Atlanta, Georgia 30303

Re: Review and Comment on "An Archeological
Overview and Management Plan for Saginaw
Army Aircraft Plant, Tarrant County, Texas"

Dear Dr. Barnes:

We have reviewed the draft report referenced above and our comments are made in light of the Council of Texas Archeologists Report Standards Guidelines and pertinent federal regulations.

Page 2-5. 12,000 to 5,000 BC is stretching the normal interval of "paleo time".

2-5. The "controversial" Lewisville site is now not so controversial, please refer to Stanford 1982.

Page 2-7. "Normal temporal interval" is again pushed back and complicated by perhaps working with "Plains Archaic" versus "Texas Archaic" stages. The Bonfire Site (Dibble and Lorraine 1968) is some 400 miles from the project area; there are known sources closer to the project area which can be cited.

Page 2-8. Very general information with reference which do not appear in the bibliography are presented. The data given has little, if any substance for Fort Worth. North Texas can be considered part of the "Plains Culture Region", but on a more region-specific discussion there has been a fair quantity of work done to better define the North Texas version of "Plains Woodland" than Willey, Bell, Griffin, Wedel or Linty. For instance, Lakeview 1982 is especially pertinent (Bruseth 1982), others include Gunn 1979, Skinner and Connors 1979, Raab et al 1981, Cliff et al 1981.

Mark R. Barnes, Ph.D.
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Page 2-9. The references should be closer to the area to be of some value. It is unlikely, given the amount of disturbance, that sites as ephemeral as described are still present.

Page 2-11. In-depth information on the historic settlement of the Saginaw Plant area should be provided.

Page 2-14. There is interest in early farm patterns and communities in northeast Texas. Projects such as Lakeview 1982, Ray Roberts 1982, Troop 1982, Aquilla 1983, and Richland Chambers 1981, 1982, and 1983 prove that out.

Page 5-1. Additional field survey, given the small acreage, low density site potential and quantity of disturbance, seems unwarranted for this facility.

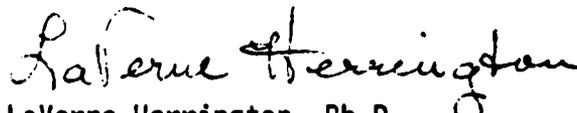
Page 5-4. Archival work of 120 hours is too much. Sixteen hours for survey of 85 acres is too much, 8 hours is more likely.

In general, the report needs more adequate background work specific to the area and the recommendations need re-thinking from the point of view of data return based on what is known about the project area.

Given the size, status of this facility, and our present information base, we would elect not to survey this project area. We would be glad to provide preliminary information on other facilities of this type in the state and offer our recommendations and comments on the need for work and/or ensuing reports.

Thank you for the opportunity to comment.

Sincerely,



LaVerne Herrington, Ph.D.
Deputy
State Historic Preservation
Officer

PEP/LH/1ft