

ATTACHMENT J4

Tinker AFB Wastewater Collection System

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J4 Tinker AFB Wastewater Collection System

J4.1 Tinker AFB Overview

Centrally located in Oklahoma County, Tinker AFB occupies 5,041 acres on the southeast edge of Oklahoma City, Oklahoma. Tinker AFB is the logistics leader in providing specialized logistics support, management, maintenance, and distribution to defense weapons systems worldwide. Tinker AFB is located near the intersection of three major interstate highway systems. The Base is bounded by Midwest City to the north, Del City to the west, and Oklahoma City to the east, south, and southwest. Tinker AFB maintains a close relationship with local communities and provides a substantial economic impact on the surrounding region.

J4.1.1 Installation History

In 1940, a group of Oklahoma City civic leaders and businessmen learned that the War Department was considering the central United States as a location for a maintenance and supply depot. The City leaders targeted a 480-acre site and acquired an option for 960 additional acres of land adjoining SE 29th Street. On 8 April 1941, the order was officially signed awarding the depot to Oklahoma City.

In 1942, the new installation was named Tinker Field in honor of Major General Clarence L. Tinker of Pawhuska, Oklahoma. General Tinker lost his life while leading a flight of LB-30 “Liberators” on a long-range strike against Japanese forces on Wake Island during the early months of World War II.

Immediately following World War II, Tinker expanded to include the Douglas aircraft assembly plant and was named the Oklahoma City Air Materiel Area (OCAMA). The Base remained an important logistics center as it began to service jet engines of the modern Air Force, and became an all jet maintenance facility by 1953. In June of 1954, Tinker accepted delivery of its first B-52 Stratofortress.

Throughout the Korean conflict, Tinker continued its output, keeping planes flying and funneling supplies to the Far East. In 1955, Tinker gained a major tenant with the addition of the 506th Tactical Fighter Wing.

By the end of the 1950s, OCAMA received a complete management system overhaul to accommodate the latest Air Force weapons – the B-52 bomber and the KC-135 tanker.

During the 1960s, Tinker’s support of additional aircraft grew. During that decade the depot became the single place for overhauling the J57, TF30, and J79 engines, as well as new communications and electronics systems. Tinker’s Combat Control Station played a major role during the Cuban Missile Crisis. In 1966, Tinker became the world’s largest jet engine repair and overhaul facility when it took on the maintenance of the TF30 engines which powered the swing-winged F-111 Aardvark. Tinker was designated an inland aerial port of embarkation (APOE) in December 1967 in recognition of Tinker's importance as a logistic hub.

During the 1970s, the Base took on management of new weapons including the A-7D Corsair, the E-3A Airborne Warning and Control (AWAC) aircraft, the E-4 Airborne Command Post aircraft, and the BGM 109 Ground Launched Cruise Missile. In 1974 the depot was renamed the Oklahoma City Air Logistics Center.

In the 1980s, the revitalized B-1B Lancer, the Air Launched Cruise Missile, and the KC-10 Extender were added to an already impressive list of OC-ALC management responsibilities. In the mid-1980s the 552nd Airborne Warning and Control Division upgraded to the E-3 Sentry, became a Wing once again, and was placed under the 28th Air Division.

In 1991, two Navy E-6 squadrons were activated at Tinker AFB to maintain a flying communications link between the National Command Authority and ballistic missile submarines around the world.

Tinker AFB and OC-ALC provided front line support to the forces engaged in Operation Desert Shield and Desert Storm in the early 1990s. In 1993, two significant changes occurred at Tinker when the Aerial Port of Embarkation closed, and the new B-2 Stealth Bomber Weapons Systems Support Center opened. In 1997, Tinker received the first shipment of equipment to support the core engine workload previously done at Kelly Air Force Base.

Today, Tinker AFB's mega aviation complex contains over 700 buildings (excluding housing), 2 operational runways, 234 acres of ramp space, and 48 miles of roadways. The Base is a multi-faceted member of the Air Force team containing several diversified organizations and missions including the Oklahoma City Air Logistics Center, and the Navy.

J4.1.2 Physical Assets

Facilities at the Base encompass two runways, associated taxiways and parking aprons; administrative areas; industrial facilities; dormitories and housing areas; and recreational facilities and open space. The physical profile of Tinker AFB is shown in the following table.

Installation Assets	
Land Area	5,041 Acres
Buildings	750; 15,625,507 SF
Military Family Housing	730 Units; 1,083,972 SF
Surface Roads	48 Miles
Runway 17/35	11,100 Feet
Runway 12/30	10,000 Feet
Aircraft Ramp Space	234 Acres
Indoor Maintenance	136 Acres
Covered Storage	79 Acres

Nearly all of the Tinker AFB land area is fee owned, including two GSUs. The one exception is the Glenwood Area GSU, a 343-acre leased plot located north of Interstate Highway 40.

Tinker AFB is comprised of several geographically defined sub-areas. These architectural/planning districts contain functionally related facilities, similar architectural treatments, and function as useful geographical identifiers. These districts are defined as follows:

- North Side Industrial District (Area A)
- Southeast Munitions District (Area B)
- Northeast Industrial District (Area C)
- 38 EIG District (Area D)
- West Community District (Area E)
- South Forty (Southwestern/Navy) District
- Airfield District

J4.1.3 Mission, Organization, and Associate Units

The primary mission of Tinker Air Force Base is to provide for the management, storage, and depot level maintenance of all components and the end items of all major weapon systems assigned to the Air Logistics Center.

Tinker AFB's largest organization is the OC-ALC, one of three depot repair centers in the Air Force Materiel Command (AFMC), with headquarters at Wright-Patterson AFB, Ohio. Tinker AFB is also home to several major Department of Defense, Air Force, and Navy activities with critical national defense missions.

The OC-ALC is the worldwide manager for a broad range of aircraft, engines, missiles and commodity items. The OC-ALC manages over 40 aircraft types including the B-1B Lancer, B-52 Stratofortress, B-2 Spirit, E-3 Sentry and KC-135 series, in addition to providing logistics support for the Air Launched Cruise Missile, Short Range Attack Missile, Harpoon and Advanced Cruise Missiles. Overall, the center manages and maintains an inventory of more than 13,000 engines, 3,000 missile systems and 42,000 components supporting 9,100 aircraft.

Major units at TAFB include:

- 552 Air Control Wing (ACW)
- 507th Air Refueling Wing (ARW)
- Navy's Strategic Communications wing ONE
- 3rd Combat Communications Group (CCG)
- 38th Engineering Installations Group (EIG)
- 72nd Air Base Wing (ABW)
- Defense Distribution Depot
- Defense Megacenter Oklahoma City

J4.1.4 Population

The Base population profile is as shown in the following table:

Category	Population
Active Duty U.S. Military	7,791
Air National Guard/ Air Force Reserve	1,368
Appropriated Fund Civilians (including Reserve technicians)	12,765
Non-appropriated Fund Civilians	2,271
Total Employees	24,195
On/Off Base Dependents	18,237

J4.1.5 Housing

Military Family Housing consists of 730 dwelling units located in four neighborhood areas; Twining Fields, Vandenberg Hills, McNarney Manor, and Mitchell Heights. Units are a combination of multiplex (2-8 units per structure) and single family units.

Currently, many of the units are projected to be renovated, many are to be demolished (flood zone siting issues), and additional units will be constructed. All of this work is expected to be done in concert with, or as part of, an ongoing Housing Privatization (HP) initiative. The total number of units currently supported by the Housing Requirement Market Analysis and included as the total HP requirement will be 858 units. Because of the anticipated widespread changes to the housing layout, all military family housing utilities will be included in the HP package and excluded from this UP package.

J4.1.6 Geographically Separated Units

Other geographically separated units (GSUs) are summarized below:

38TH ENGINEERING INSTALLATION GROUP (EIG)

The 38th EIG has worldwide responsibility for engineering and installation of all AF electronic and communications facilities. This GSU is situated on approximately 120 acres located about ½ mile east of the Douglas Avenue (Tinker’s eastern border) and south of SE 59th Street.

COMPREHENSIVE HANDS-ON TRAINING (CHOT) SITE

This site is a remote training site for the 3rd Combat Communications Group on a 14-acre plot located a few hundred feet east of the EIG and also south of SE 59th Street.

GLENWOOD

As mentioned earlier, Glenwood is a leased 343-acre parcel situated a few hundred feet north of Tinker AFB. This property (formerly an off-base residential area) was purchased in 1985 by the County of Oklahoma. Residences were demolished and the parcel was leased for one dollar to Tinker AFB for a period of 50 years. This former residential area was in

Accident Potential Zone One (APZ-1) of the main runway (north end) and presented a serious encroachment problem. Oklahoma County officials took this action to resolve this encroachment problem, and to solidify the future viability of Tinker AFB. Because Glenwood is part of APZ-1, usage is limited to periodic troop bivouac activities and there will never be permanent facility development there.

J4.2 Wastewater Collection System Description

J4.2.1 Wastewater Collection System Fixed Equipment Inventory

The Tinker AFB wastewater collection system consists of all appurtenances physically connected to the collection system from the point of demarcation defined by the Right-of-Way. The system may include, but is not limited to, pipelines, manholes, lift stations, and controls. The actual inventory of items to be sold will be in the bill of sale at the time the system is transferred. The following description and inventory is included to provide the Contractor with a general understanding of the size and configuration of the system. The Government makes no representation that the inventory is accurate. The Contractor shall base its proposal on site inspections, information in the technical library, other pertinent information, and to a lesser degree the following description and inventory. Under no circumstances shall the Contractor be entitled to any service charge adjustments based on the accuracy of the following description and inventory.

Specifically excluded from the wastewater collection system privatization:

- Oklahoma City main that runs through the northwest part of the Base. This line is owned and operated by Oklahoma City.
- Septic tanks and drain fields. (There are no known septic tanks/drain fields in use on Tinker AFB or Tinker AFB GSUs.)
- Grease traps (food preparation facilities)
- Industrial wastewater and groundwater collection and treatment systems.
- Military Family Housing wastewater system (included in the separate ongoing Housing Privatization initiative).

J4.2.1.1 Wastewater Collection System Description

The wastewater system consists of collection lines, manholes and lift stations. There is no longer sanitary wastewater treatment on Base. All sanitary wastewater is collected and, along with the pre-treated industrial wastewater effluent, is conveyed to the City of Oklahoma City for treatment.

DISCHARGE POINTS AND METERING STATIONS

Wastewater flows from Tinker AFB are discharged into the Oklahoma City wastewater system on the western side of the Base. The Oklahoma City main runs through the northwest part of the Base. There are a total of four discharge points.

All the discharge points are located on Base property. The discharge points and Base-owned wastewater meters are described as follows:

1. Two meters are located near the Industrial Wastewater Treatment Plant (IWTP) on the northeast corner of the Base. Meters are Parshall flume-type with local recording devices. These meters handle wastewater generated on the east side of Base and the treated effluent from the IWTP. A large lift station called the Regional Lift Station, (Facility 62512) handles the metered wastewater. This lift station pumps to the west side of the Base to a discharge point located near the intersection of Arnold Street and Rawlings Avenue.
2. A discharge point with a meter is located west of the Officers Club (Facility 5603). Meter is a Parshall flume-type with local recording device. This discharge point handles all the wastewater generated on the west side of the Base.
3. A discharge point with a meter is located across the street from the Youth Center (Facility 5520). Meter is a Parshall flume-type with local recording device. This discharge point handles wastewater from the Enlisted Family Housing area (7000 series housing buildings).
4. Additionally, there are two meters that measure potable water flow to the Golf Course. Because of the low volume of wastewater discharge from the clubhouse, sewer flow is estimated using measured potable water as the basis.

WASTEWATER COLLECTION SYSTEM

MAIN BASE

The area on the north side of the airfield area is called Area A. The majority of the piping in Area A is vitrified clay, installed in 1943. Periodically, segments of the collection system must be flushed for a variety of reasons, most of which are associated with the age and type of construction. Mains in this area are marginally adequate. The manholes in Area A are constructed of brick and do not have watertight covers. The manholes are generally in poor condition, but are adequately located. They are inspected on a semi-annually.

The area east of the runway on the Base proper includes Areas B and C. The wastewater collection system in Areas B and C was mostly installed in the mid 1940s; mains are primarily vitrified clay. Maintenance personnel indicated that much of this portion of the system, especially the north-south backbone, is in poor condition and overloaded due to added facilities. The lines have slope and sag problems and experience significant inflow/infiltration. There have been no replacement projects in the last 10 years. The manholes in Areas B and C are constructed of brick are adequately located but do not have watertight covers and are generally in poor condition. The manholes are inspected at least semi-annually.

Area D includes the EIG site GSU, approximately ½ mile east of the Main Base. The system in this area was constructed in 1951. The original piping material was clay and the lines were relined in 1995. The piping is currently in good condition. There have been no pipe failures or manhole overflows since relining the pipe. Manholes in this area were reconstructed with gunnite in 1995, and are equipped with a pan under the cover. They are adequately located, are inspected at least semi-annually, and are in good condition. A force main transports wastewater from the EIG area to the Main Base and was replaced in 1996 with PVC pipe.

Area E includes the housing and community facilities along the western and northwestern side of the Base. Housing systems were built during the late 1950s, early 1970s, and mid 1980s. Since housing utilities are excluded from this package, they will not be discussed any farther. Area E also includes community facilities (hospital, bowling area, chapel, craft center, theatre, gymnasium, clubs, convention center, dining facility, and multiple dormitories). Installation dates of the collection system components range from the 1940s to 2002. Condition of the system in this area is similarly variable. The most significant recent improvement in this area was the 2002 installation of a new 12" main with associated new manholes running north-south approximately 7,000 feet from a point near the NW end of the crosswind runway to a manhole near Bldg 1043 in the South Forty.

The South 40 Area, on the Base western and southwestern sides is sandwiched between the airfield and the housing areas. Since this area had the only available space for significant development over the last 20 years, there is a great range in the age and type of construction of the wastewater collection lines. Some of the facilities, constructed in 1940s, use vitrified clay. The AWAC alert complex, constructed in the mid 1980s and the Navy Area constructed in the early 1990s have used more modern materials. The collection lines serving the older facilities are vitrified clay and present maintenance problems. Some segments are in such poor condition that maintenance technicians are reluctant to flush the lines for fear of causing more damage. (Note comments in the preceding paragraph on the new 12" north-south main running north-south through Area E and the South Forty.)

The Airfield Area has virtually no wastewater collection components. The one major exception is the combined force main and gravity line that traverses the airfield, east to west. This line transports all wastewater from the east side of the Base to the western side discharge points.

Depth of burial of mains is eight feet. Generally, tracer wire or marker tape has not been effectively installed with non-metallic pipe during initial installation or replacement projects.

Tinker AFB has no Supervisory Control and Data Acquisition (SCADA) system or Energy Monitoring and Control System (EMCS) to be included in the privatization package.

GSUs

EIG: Components are described under Area D above.

CHOT Site: There are no wastewater components for privatization.

Glenwood: Minimal wastewater collection system components transport site wastewater to a separate Midwest City discharge point. There are no components for privatization.

SANITARY LIFT STATIONS

There are 46 sanitary wastewater lift stations (exterior to building footprints) with associated force mains located throughout the Main Base area. Many of the lift stations are located in the southeast corner of the Base. Four lift stations are vital to the overall function of the wastewater collection system; their function is briefly described herein.

The lift station at the EIG (Area D) pumps the wastewater to the Main Base. Two other lift stations are located on the south side of the Base: Facility 816 serves the Navy complex and

Facility 982 serves the AWAC alert complex. The fourth lift station, Facility 62512, also referred to as the Regional Lift Station, is located near the IWTP. This lift station pumps all wastewater generated on the east side of the Base and the treated effluent from the industrial wastewater plant to the City’s sewer main on the west side of the Base. The Regional Lift Station is the only lift station with an installed emergency power generator. The controls for the Regional Lift Station are located in the IWTP. All other lift stations are equipped with local high-water alarms and do not have remote annunciation.

General information on the lift stations is as follows:

SANITARY WASTEWATER LIFT STATIONS

Facility #	Facility Description	Pumps (ea.)	Manufacturer	Size (hp)
62512	Regional	4		35
5801		2	Myers	2
5603	Officer’s Club		Hydromatic Chopper	
4000	EIG – Main Gate	2	Hydromatic Chopper	7.5
4057		2	Weil Chopper	5
1075	507th	2	Hydromatic	5
506	Warehouse	2	Hydromatic	5
244	Old Passenger Terminal	2	Hydromatic	1
208	Steam Plant			
2101	Motor Pool	2	Weil	5
982	Alert Facility - outside	2	Weil	5
260	Old Air Freight	1	Barnes	1
	New Motor Pool	2	Paco	5
6605	Gate 1		Barnes Chopper	1
602	Gate 3		Barnes Chopper	1
1017	B-1B Radar Software		Air Comp Lift Station	
1036		2 ea	Myers	1.5
1037		2 ea	Myers	1.5
1120	B2 Avionics Facility	1 ea	Barnes (pkg. lift)	2
Gate 34	NE of Gate	1 ea	Barnes	1
7038	31st Combat			
1118		2	Myers	2
Navy Main		2	Barnes	5
1121	507th	2	Hydromatic	5
1073	South of 3rd Mob	2	Myers	2
3902	Consolidated Fuels W	2	Hydromatic	1.5
3761	B2	2	Myers	2
935	Control Tower	2	Myers	1.5
847	Near Navy Tower	2	Myers	1.5
7038	3rd Mob-South Perimeter	2	Gould	5
1113	S 40 NE of Beaver Pond	2	Reliance	2
	Old Metal Shop	2	Myers (pkg. lift)	0.5
5815	Vance Gate	1	Barnes (pkg. lift)	1

Facility #	Facility Description	Pumps (ea.)	Manufacturer	Size (hp)
7029	SW of old STP	1	Myers	0.4
5918	Ball Field	2	Myers	2
1070	AF Reserve		Hydromatic	2
1103	New Superette Area		Hydromatic	2
62505	Treatment Plant	1	Hydromatic	5
816	Navy	2	Myers	10
Gate 23		1	Hydromatic Chopper	2
62511		2	Hydromatic	5
4048	EIG	2	Barnes	2
285		2	Weil	2
67102	West of School	2	Barnes	2
1093	EM Conference Bldg	2	Myers	1.5
860	654th Education Ctr.	2	Myers	1
1089	Security K-9 Facility	2	Myers	1.5
61089	Security Police (New)	2		

J4.2.1.2 Inventory

Table 1 provides a general listing of the major wastewater collection system fixed assets for the Tinker AFB wastewater collection system included in the sale. The drawings used to develop the inventory are listed in Paragraph J4.2.3.

TABLE 1
 Fixed Inventory
 Wastewater Utility System - Tinker AFB

Component	Size	Unit	Quantity	Approximate Year of Construction
MAIN BASE				
Pipe				
Cast Iron	<4"	LF	580	1943
VC	4"	LF	21,970	1943
VC	4"	LF	1,720	1985
VC	6"	LF	51,850	1943
VC	8"	LF	41,480	1943
VC	10"	LF	6,820	1943
VC	12"	LF	4,220	1943
VC	15"	LF	7,120	1943
VC	18"	LF	7,200	1943
VC	20"	LF	2,690	1943
PVC	6"	LF	3,370	1993
PVC	12"	LF	7,000	2002
Concrete (Force Main)	22"	LF	16,320	1994

Component	Size	Unit	Quantity	Approximate Year of Construction
Manholes				
	4x6	EA	383	1943
	4x6	EA	13	1993
	4x6	EA	29	2002
Meters				
		EA	4	1994
Lift Stations				
Lift Station #62512				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1994
Building		EA	1	1994
Pumps, Piping, Controls, & Elect		EA	4	1994
Lift Station #5801				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1970
Building		EA	1	1970
Pumps, Piping, Controls, & Elect		EA	2	1970
Lift Station #5603				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1970
Building		EA	1	1970
Pumps, Piping, Controls, & Elect		EA	1	1970
Lift Station #4057				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1996
Building		EA	1	1996
Pumps, Piping, Controls, & Elect		EA	2	1996
Lift Station #1075				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1976
Building		EA	1	1976
Pumps, Piping, Controls, & Elect		EA	2	1976
Lift Station #506				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1974
Building		EA	1	1974
Pumps, Piping, Controls, & Elect		EA	2	1974
Lift Station #244				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1970
Building		EA	1	1970
Pumps, Piping, Controls, & Elect		EA	2	1970
Lift Station #208				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1970
Building		EA	1	1970
Pumps, Piping, Controls, & Elect		EA	1	1970
Lift Station #2101				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1970

Component	Size	Unit	Quantity	Approximate Year of Construction
Building		EA	1	1970
Pumps, Piping, Controls, & Elect		EA	2	1970
Lift Station #982				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1984
Building		EA	1	1984
Pumps, Piping, Controls, & Elect		EA	2	1984
Lift Station #260				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1970
Building		EA	1	1970
Pumps, Piping, Controls, & Elect		EA	1	1970
Lift Station - New Motor Pool				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1970
Building		EA	1	1970
Pumps, Piping, Controls, & Elect		EA	2	1970
Lift Station #6605				
Wet Well incl Exc, Bkfl, & Conc		EA	1	2002
Building		EA	1	2002
Pumps, Piping, Controls, & Elect		EA	1	2002
Lift Station #602				
Wet Well incl Exc, Bkfl, & Conc		EA	1	2002
Building		EA	1	2002
Pumps, Piping, Controls, & Elect		EA	1	2002
Lift Station #1017				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1993
Building		EA	1	1993
Pumps, Piping, Controls, & Elect		EA	1	1993
Lift Station #1036				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1966
Building		EA	1	1966
Pumps, Piping, Controls, & Elect		EA	2	1966
Lift Station #1037				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1970
Building		EA	1	1970
Pumps, Piping, Controls, & Elect		EA	2	1970
Lift Station #1120				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1994
Building		EA	1	1994
Pumps, Piping, Controls, & Elect		EA	1	1994
Lift Station - Gate 34				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1970
Building		EA	1	1970

Component	Size	Unit	Quantity	Approximate Year of Construction
Pumps, Piping, Controls, & Elect		EA	1	1970
Lift Station #7038				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1992
Building		EA	1	1992
Pumps, Piping, Controls, & Elect		EA	1	1992
Lift Station #1118				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1970
Building		EA	1	1970
Pumps, Piping, Controls, & Elect		EA	2	1970
Lift Station - Navy Main				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1993
Building		EA	1	1993
Pumps, Piping, Controls, & Elect		EA	2	1993
Lift Station #1121				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1970
Building		EA	1	1970
Pumps, Piping, Controls, & Elect		EA	2	1970
Lift Station #1073				
Wet Well incl Exc, Bkfl, & Conc		EA	1	2003
Building		EA	1	2003
Pumps, Piping, Controls, & Elect		EA	2	2003
Lift Station #3902				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1995
Building		EA	1	1995
Pumps, Piping, Controls, & Elect		EA	2	1995
Lift Station #3761				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1990
Building		EA	1	1990
Pumps, Piping, Controls, & Elect		EA	2	1990
Lift Station #935				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1970
Building		EA	1	1970
Pumps, Piping, Controls, & Elect		EA	2	1970
Lift Station #847				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1995
Building		EA	1	1995
Pumps, Piping, Controls, & Elect		EA	2	1995
Lift Station #7038				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1970
Building		EA	1	1970
Pumps, Piping, Controls, & Elect		EA	2	1970

Component	Size	Unit	Quantity	Approximate Year of Construction
Lift Station #1113				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1992
Building		EA	1	1992
Pumps, Piping, Controls, & Elect		EA	2	1992
Lift Station - Old Metal Shop				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1970
Building		EA	1	1970
Pumps, Piping, Controls, & Elect		EA	2	1970
Lift Station #5815				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1983
Building		EA	1	1983
Pumps, Piping, Controls, & Elect		EA	1	1983
Lift Station #7029				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1996
Building		EA	1	1996
Pumps, Piping, Controls, & Elect		EA	1	1996
Lift Station #5918				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1985
Building		EA	1	1985
Pumps, Piping, Controls, & Elect		EA	2	1985
Lift Station #1070				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1976
Building		EA	1	1976
Pumps, Piping, Controls, & Elect		EA	1	1976
Lift Station #1103				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1994
Building		EA	1	1994
Pumps, Piping, Controls, & Elect		EA	1	1994
Lift Station #62505				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1970
Building		EA	1	1970
Pumps, Piping, Controls, & Elect		EA	1	1970
Lift Station #816				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1993
Building		EA	1	1993
Pumps, Piping, Controls, & Elect		EA	2	1993
Lift Station - Gate 23				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1994
Building		EA	1	1994
Pumps, Piping, Controls, & Elect		EA	1	1994

Component	Size	Unit	Quantity	Approximate Year of Construction
Lift Station #62511				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1994
Building		EA	1	1994
Pumps, Piping, Controls, & Elect		EA	2	1994
Lift Station #285				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1986
Building		EA	1	1986
Pumps, Piping, Controls, & Elect		EA	2	1986
Lift Station #67102				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1977
Building		EA	1	1977
Pumps, Piping, Controls, & Elect		EA	2	1977
Lift Station #1093				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1995
Building		EA	1	1995
Pumps, Piping, Controls, & Elect		EA	2	1995
Lift Station #860				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1997
Building		EA	1	1997
Pumps, Piping, Controls, & Elect		EA	2	1997
Lift Station #1089				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1995
Building		EA	1	1995
Pumps, Piping, Controls, & Elect		EA	2	1995
Lift Station #61089				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1999
Building		EA	1	1999
Pumps, Piping, Controls, & Elect		EA	2	1999
EIG				
PVC Pipe	6"	LF	2,000	1996
PVC Pipe	8"	LF	2,470	1996
PVC Pipe	12"	LF	3,940	1996
Manholes	4x6	EA	21	1996
Lift Station #4000				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1996
Building		EA	1	1996
Pumps, Piping, Controls, & Elect		EA	2	1996
Lift Station #4048				
Wet Well incl Exc, Bkfl, & Conc		EA	1	1996
Building		EA	1	1996
Pumps, Piping, Controls, & Elect		EA	2	1996

Component	Size	Unit	Quantity	Approximate Year of Construction
Notes:				
VC = vitrified clay	CI = cast iron			Exc = excavation
PVC = polyvinyl chloride	LS = lift station			Bkfl = backflow preventers
LF = linear feet	EA = each			Conc = concrete
Elect = electrical	incl = including			gal = gallon

J4.2.2 Wastewater Collection System Non-Fixed Equipment and Specialized Tools

Tables 2 and 3 list other ancillary equipment (spare parts) and specialized vehicles and tools included in the purchase.

TABLE 2
 Spare Parts
 Wastewater Utility System - Tinker AFB

Item	Quantity	Location	Description
Miscellaneous Fittings	Variable	Utility Shop	
Repair Clamps	Variable	Utility shop	
Lift Station Pump Parts	Variable	Utility shop	

TABLE 3
 Specialized Vehicles and Tools
 Wastewater Utility System - Tinker AFB

Description	Size	Location	Quantity	Maker
None				

J4.2.3 Wastewater Collection System Manuals, Drawings, and Records

Table 4 lists the manuals, drawings, and records that will be transferred with the system.

TABLE 4
 Manuals, Drawings, and Records
 Wastewater Utility System - Tinker AFB

Quantity	Item	Description	Remarks
1	Utility Maps	Waste & Industrial Waste, 2004, Scale 1" = 100'	Sheets 1 - 54
1	Project Drawings	Area E & South Forty 12" Main	Sheets 1-19
1	Planning Document	General Plan	One Volume
1	Planning Document	Comprehensive Plan	Multiple Volumes

Quantity	Item	Description	Remarks
1	Video Recordings	Video Sewer Main, Areas A & C	Multiple Tapes

J4.3 Specific Service Requirements

The service requirements for the Tinker AFB wastewater collection system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the Tinker AFB wastewater collection and treatment system and are in addition to those found in Section C. If there is a conflict between requirements described below and Section C, the requirements listed below take precedence over those found in Section C.

- The Contractor will be required to mark his own utilities and will be responsible for initiating, officiating, and tracking digging permits for his own utilities. The Contractor will provide not less than 2 and not more than 5 working days notice (emergencies being excepted) of any needed excavations to 72nd Civil Engineers and to said Utilities Privatization Administrative Contracting Officer so the location of underground utilities may be located and marked by the applicable utility owner. The applicable utility owner must mark their utilities as requested within 48 hours of receipt of request for non-emergency work.
- In accordance with Condition C of Attachment 1 to the ROW, the Contractor shall follow the Base digging permit process. The Contractor shall obtain all necessary authorizations, permits and line locates prior to performing any excavations on Base.
- The Contractor shall support the Base digging permit process by routinely accepting and promptly processing digging permit requests which may impact on the integrity of the Contractor’s utility system and/or the safety of the requestors. The Contractor shall be a participant of the Base digging permit process and shall attend any meetings called in support of the process. Contractor shall be responsible to locate and mark their utilities in the affected areas. The digging permit process involves weekly attendance at the scheduled meeting and subsequent appointments for location and marking of utilities throughout the week.
- The Contractor will respond to emergency wastewater problem within 20 minutes of notification during duty hours and within one hour during non-duty hours.
- The Contractor’s representative that responds to emergency service requests shall be knowledgeable of the utility system and the Contractor’s Service Interruption/Contingency Plan. The representative shall be able to assess damages and estimate the time it will take to make temporary or full-service repairs. In accordance with Paragraph H.6, Rights of the Government to Perform Function with Its Own Personnel, the Government reserves the right to substitute or supplement the Contractor’s efforts during emergency situations where the Contractor’s failure or inability to perform is beyond the Contractor’s control and without the Contractor’s fault or negligence. In this situation, the Contractor would not be held responsible for costs incurred by the Government. However, the Contractor could be held financially responsible if the Government substitutes or supplements the Contractor’s efforts

during emergency situations and the Contractor's failure or inability to perform was the result of the fault or negligence of the Contractor.

- IAW Paragraph C.5.1.3, and in compliance with Base architectural standards, new and renewal distribution piping shall normally be installed using the most economical trenching method unless otherwise prohibited by the Government. Excavation of paved surfaces is prohibited without consultation and approval from the Base Civil Engineer.
- In accordance with Paragraph C.9, Coordination of Work, the Contractor shall coordinate planned outages using the Civil Engineer Outage Form.
- In addition to Section 8 of the ROW, the utility contractor (grantee) shall repair at no cost to the Government any utilities improperly marked by the contractor and subsequently damaged as a result of the incorrect marking by other contractors or Government organizations working in the area. Property damaged by the contractor in the conduct of his business shall be corrected in accordance with ROW Section 8.
- In accordance with Section 12 of the ROW, the Contractor is responsible for all supporting utilities that may be required to own, operate and maintain the utility system being privatized. For example, electricity is needed to power substation lighting. Supporting utilities are defined as the supply of electricity, natural gas, water, or wastewater collection, and any infrastructure or materials necessary to connect to the supply of electricity, natural gas, water, or wastewater collection. The Contractor shall coordinate with the Tinker AFB Civil Engineer and the Contracting Officer for any supporting utilities to be provided by the Government.
- The Contractor shall enter into a Memorandum of Understanding (MOU) with the Base Fire Department for fire protection of all facilities included in the purchase of the utility. The MOU shall be completed during the transition period and a copy provided to the Contracting Officer.
- The Contractor shall abide by Base fire protection requirements. The utility system purchased by the Contractor includes facilities. These facilities may or may not include fire alarm systems. Where required by federal, state or local regulation, the Contractor shall maintain the fire alarm system for all facilities owned and operated by the Contractor. The Contractor shall permit Fire Department personnel access to their facilities to perform fire inspections and emergency response.
- In accordance with Paragraph C.9.8, Exercises and Crisis Situations Requiring Utility Support, the Contractor shall provide support as directed by Base Civil Engineer for exercises and crisis situations.
- The Contractor shall ensure that employees understand, implement and enforce Force Protection Condition (FPCON) requirements specified in AFI 10-245. The Contractor is advised that FORCE PROTECTION conditions vary and that these changes may cause delays in access to Tinker AFB. These conditions are outlined in the Tinker AFB FPCON Checklist. This checklist will be available in the technical library. The Contractor will plan accordingly to provide uninterrupted support. Compliance with and staffing in support of FORCE PROTECTION condition changes shall not result in service charge adjustments to the contract.

- In accordance with Section 8 of the ROW, the Contractor shall maintain existing security mechanisms (i.e. locks, fences) to protect the utility systems. The security mechanisms should prevent tampering and sabotage. Should the Contractor become aware of any suspicious incident, security breach or act of sabotage at or against the utility system, or any of its associated facilities, they will immediately contact the Security Police Squadron and Civil Engineer Squadron.
- Due to heightened security concerns on military installations, all Contractor and subcontractor personnel who must enter Tinker AFB to perform this contract must undergo a background check. Background checks will be conducted using the following information: name, drivers license number, social security number, and date of birth. These procedures are considered permanent. Any Contractor or subcontractor employee that does not consent to this background investigation will not be allowed access to Tinker AFB. Any derogatory information resulting from the investigation, or which otherwise becomes known to the contracting officer, may also result in such individuals being prevented from entering the installation. However, nothing in this requirement shall excuse the Contractor from proceeding with any resulting contract as required.
- The Contractor shall ensure their employees, and those of their subcontractors, have the proper credentials allowing them to work in the United States. Employees must have valid Social Security Cards. Non-US Citizens must have current and valid permission from the Bureau of Immigration and Naturalization. Persons found to be undocumented or illegal aliens will be remanded to the proper authorities. The Contractor shall not be entitled to any compensation for delays or expenses associated with complying with the provisions of this requirement. Contractor personnel and their subcontractors must identify themselves as Contractors or subcontractors during meetings, telephone conversations, in electronic messages, or correspondence related to this contract. Contractor occupied facilities on Tinker AFB such as offices, separate rooms, or cubicles must be clearly identified with Contractor-supplied signs, name plates or other identification, showing that these are work areas for Contractor or subcontractor personnel.
- The Contractor shall notify OC-ALC/SEG (Safety Office) and the Contracting Officer, or a designated Government Representative (GR) within one (1) hour of all mishaps or incidents at or exceeding \$2,000 (material + labor) in damage to DOD and contractor-owned property. This notification requirement shall also include physiological mishaps/incidents. A written or e-mail copy of this mishap/incident notification shall be sent within three calendar days to the GR, who will forward it to OC-ALC/SEG (Safety Office). For information not available at the time of initial notification, the Contractor shall provide the remaining information not later than 20 calendar days after the mishap, unless extended by the Contracting Officer. Mishap notifications shall contain, as a minimum, the following information:
 - (a) Contract, Contract Number, Name and Title of Person(s) Reporting
 - (b) Date, Time and exact location of mishap/incident
 - (c) Brief Narrative of mishap/incident (Events leading to accident/incident)
 - (d) Cause of mishap/incident, if known

- (e) Estimated cost of mishap/incident (material and labor to repair/replace)
 - (f) Nomenclature of equipment and personnel involved in mishap/incident
 - (g) Corrective actions (taken or proposed)
 - (h) Other pertinent information.
- If requested by Government Personnel or designated Government representative, the Contractor shall immediately secure the mishap scene/damaged property and impound pertinent maintenance and training records, until released by the OC-ALC Safety Office. Also, the Contractor and their subcontractors shall cooperate fully and assist Government personnel until the investigation is finalized and closed out. Safety requirements listed in this package that do not relate to the Contractor's operations or services shall be considered self-deleting as mutually agreed by the Contractor and the Contracting Officer.
 - The Contracting Officer is the only individual authorized to incur Government obligations and to make changes to contracts. The Administrative Contracting Officer (ACO) may make certain obligations and changes as provided by the Federal Acquisition Regulation part 42.302 (and supplements) or as may be specifically designated in writing by the Procuring CO. The Contracting Officer's Technical Representative (COTR), if designated, is strictly limited to the authority described in the designation letter executed by the CO. The Installation Commander's duly authorized representative is strictly limited to the tasks described and under no circumstance is authorized to incur additional obligations on behalf of the Government. The Defense Energy Support Center (DESC) is the procuring agent, and after appropriate post-award contract management transition, the Contracting Directorate, Oklahoma City Air Logistics Center, shall assume the procuring and administration contracting authority.
 - In accordance with Condition F of Attachment 1 to the ROW, the Contractor shall be responsible for grounds maintenance (except grass cutting) of all areas within the boundaries of the ROW in accordance with base standards. Maintenance problems caused by others (AF or a third party) will not be the Contractor's responsibility.
 - In accordance with ROW, the Contractor shall not deliberately injure or kill protected species of wildlife (i.e., non-domesticated animals) without permission from the Contracting Officer, or other representative(s) as designated by the Contracting Officer.
 - In accordance with Condition J of Attachment 1 to the ROW, the provisions of ROW Sections 15, 17 and 18 also cover sites identified under the Resource Conservation Recovery Act (RCRA) Corrective Action program.
 - The Contractor shall not perform alterations to any building or structure deemed to be eligible or potentially eligible for placement on the National Register of Historic Places until approved by said officer.

J4.4 Current Service Arrangement

The vast majority of the wastewater flow from Tinker AFB is discharged into the Oklahoma City wastewater system on the western side of the Base. These discharge points are

described in Paragraph J4.2.1.1 above. A minimal amount of wastewater is periodically discharged into the Midwest City wastewater collection system located in the Glenwood GSU. Billing is based on the water charge.

For Tinker Main Base, annual purchased wastewater treatment quantity (merged sanitary and pre-treated industrial wastewater flows) for fiscal year (FY) 2003 was 671.249 million gallons. Monthly wastewater totals ranged from a low of 35.525 million gallons to a high of 76.672 million gallons. Approximately 45 percent of the annual total is the effluent from the industrial wastewater pretreatment facility; the remainder is sanitary wastewater.

J4.5 Secondary Metering

J4.5.1 Existing Secondary Meters

Parshall flume-type flow meters are described in Paragraph J4.2.1.1

J4.5.2 Required Meters

There are no known requirements for additional metering devices.

J4.6 Monthly Submittals

The Contractor shall provide the Government monthly submittals for the following:

1. **Invoice** (IAW G.2): The Contractor's monthly invoice shall be presented in a format proposed by the Contractor and accepted by the Contracting Officer. Invoices shall be submitted by the 25th of each month for the previous month. Invoices shall be submitted to:

Name: 72 ABW/CE
Address: 7535 5th Street (Bldg 400)
Tinker AFB, OK 73145-9010
Phone number: (405) 734-3451

2. **Outage Report:** The Contractor's monthly outage report (blockage and overflow information) will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Outage reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to:

Name: 72 ABW/CE
Address: 7535 5th Street (Bldg 400)
Tinker AFB, OK 73145-9010
Phone number: (405) 734-3451

3. **Infiltration and Inflow Report:** If required by Paragraph C.3, the Contractor shall submit an Infiltration and Inflow report in a format proposed by the Contractor and accepted by the Contracting Officer. System efficiency reports shall be submitted by the 25th of each month for the previous month. System efficiency reports shall be submitted to:

Name: 72 ABW/CE
Address: 7535 5th Street (Bldg 400)
Tinker AFB, OK 73145-9010
Phone number: (405) 734-3451

- Meter Reading Report:** The monthly meter reading report shall show the current and previous month readings for all identified meters. The Contractor's monthly meter reading report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Meter reading reports shall be submitted by the 15th of each month for the previous month. Meter reading reports shall be submitted to:

Name: 72 ABW/CE
Address: 7535 5th Street (Bldg 400)
Tinker AFB, OK 73145-9010
Phone number: (405) 734-3451

J4.7 Infiltration and Inflow (I&I) Projects

IAW Paragraph C.3, Requirement, there are currently no I&I efforts that require continuation after privatization other than the I&I report mentioned in J4.6.

J4.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Tinker AFB boundaries, the boundaries of Tinker GSUs, and easements/right-of-ways granted to the AF.

J4.9 Off-Installation Sites

Tinker GSU's wastewater is handled as described in Paragraph 4.2.1.1 above.

J4.10 Specific Transition Requirements

Since this package includes no wastewater treatment components (includes only pipe, lift stations, manholes, etc.) the wastewater itself remains the property of the AF. As such, the Government will retain the wastewater discharge permits.

IAW Paragraph C.13, Transition Plan, **Table 5** provides a listing of service connections and disconnections required upon transfer.

TABLE 5
 Service Connections and Disconnections
Wastewater Utility System - Tinker AFB

Location	Description
Housing Area	As stated earlier, all housing area wastewater components are excluded from this package and are included in the ongoing Housing Privatization (HP) initiative. Associated points of demarcation are described in the ROW documents. However, as the HP initiative evolves with demolition, new construction, etc., these points of demarcation will change. The general trend will be to isolate the housing areas on their own dedicated collection systems leaving only non-housing facilities connected to the UP wastewater collection lines.

J4.11 Government Recognized System Deficiencies

The general condition of the wastewater collection system is fair at best. Widespread replacement or sliplining of mains is needed badly. In some situations sliplining would not be a good solution because the mains need to be increased in size to accommodate increased development.

It is important to note that the City of Oklahoma City is designing a new wastewater main running east-west just inside the Base northern boundary. This new line would connect with the existing City-owned line located at the northwest corner of the Base. Though this project will have no immediate impact on the Base wastewater system, when the line is completed, it would be possible to connect the Regional Lift Station to this new line with a relatively short force main. Thus, all east side wastewater could be connected more directly with the City system and eliminate the need for the 16,500-foot force main and 22" gravity line currently moving all east side wastewater to the west side discharge points.

Wastewater projects that have some form of programming action underway are listed in **Table 6**; the latest information on these projects will be available in the technical library. The Government recognizes these improvement projects as representing current deficiencies associated with the Tinker AFB wastewater system. In all cases these projects would replace parts of the wastewater system that have exceeded their expected/useful life. As such, they are classic R&R projects. If the utility system is sold, the Government will not accomplish these planned improvements. The Contractor shall make a determination as to its actual need to accomplish and the timing of any and all such planned improvements. Capital upgrade projects shall be proposed through the Capital Upgrades and Renewal and Replacement Plan process and will be recovered through Schedule L-3. Renewal and Replacement projects will be recovered through Sub-CLIN AB.

TABLE 6
System Deficiencies
Wastewater Utility System - Tinker AFB

Project No.	Project Description	Program Amount (000)
000046A	Construct Lift Station/Connect Sewer	\$350
980184	Replace U-53 Lift Station	\$320
000013	Replace Lift Station #10	\$358
000046	Replace Sewer Lines Zone B	\$1,500
10004	Replace Sewer Lines Zone A	\$1,600
10003	Replace Sewer Lines Zone A	\$1,600