ATTACHMENT J3

Arnold AFB Water Distribution System

Table of Contents

List of Tables

J3 Arnold AFB Water Distribution System

J3.1 Arnold AFB Overview

Arnold Air Force Base (AFB) is located in middle Tennessee, 72 miles southeast of Nashville and 61 miles northwest of Chattanooga at exit 117 off Interstate Highway 24. Arnold AFB covers approximately 40,000 acres, straddling Coffee and Franklin counties and situated in the tri-city triangle composed of Tullahoma, Manchester, and Winchester, Tennessee.

The Arnold Engineering Development Center (AEDC) is a 4,000 acre industrial aerospace test facility located within Arnold AFB. It is not a typical military installation. The Center and its mission are unlike that of any other facility in the United States. It is perhaps the largest, most diverse aerospace testing and flight simulation facility in the world. The facility includes its own 4,000-acre lake to supply water to the Center's testing facilities.

Another unique element of the Center is workforce. Unlike most military installations, AEDC is Government managed and Contractor operated and maintained. In Oct 2003, the Government awarded a competitive, 12-year award-term, integrated Operations, Maintenance and Information Management support contract to Aerospace Testing Alliance (ATA), hereafter referred to as the Mission Support Contractor. The scope of this contract ranges from aerospace test planning, test cell, plant and facility maintenance and support functions such as civil engineering, security and fire protection to information management. Utility operation and maintenance and some repair projects are performed by the Mission Support Contractor. Other maintenance and repair efforts are competitively contracted by the Government with project management, access and check-out performed by the Mission Support Contractor. Integration between the test cells, plants, utilities and utility suppliers is highly complex and requires real-time decision making to support dynamic test mission requirements.

AEDC's primary mission is the development and testing of aerospace systems. The test mission is divided between three primary business areas: aerodynamics, aeropropulsion, and space and missiles. Wind tunnels and computational modeling are used to support the aerodynamic test mission. There are two 16-foot wind tunnels, one 4-foot tunnel, and three hypersonic tunnels used to test a full range of articles, including full-scale aircraft, spacecraft and rockets, as well as bombs, fuel tanks and other separation ordnance and externally deployed stores. The aeropropulsion facilities enable AEDC to test engines through their entire operational envelope – takeoff through climb to altitude, and in combat and performance maneuvers. The space and missiles facilities enable AEDC to test articles in specialized conditions, such as at sea level or at altitudes exceeding 300 miles above sea level, as well as through extreme performance – subsonic to well past Mach 20. Overall, the Center is capable of delivering a full spectrum of aerospace test support to its customers, which include military and private sector companies.

AEDC consumes vast quantities of energy and water to support its test missions. Its utility requirements differ dramatically from typical military installations, both in the amount of

the commodity used and the fluctuations in use. The consumption, demand, and fluctuation in use of electricity, water, and natural gas dictate a high degree of integration between the government and its contractors and between the Center and its utility providers. Utilities play a major role in the tactical and strategic execution of AEDC's mission.

While the Center does not have an active flying mission, it does have a single runway along the western edge of the Base that runs northeast to southwest. There are also 687 facilities and 329 buildings on AEDC, totaling approximately 2.8 million square feet. The distribution of facility space is approximately 79 percent industrial, 13 percent administrative, 6 percent laboratories, and 2 percent residential, primarily military family housing (MFH).

Tenant organizations are also located at Arnold AFB. The largest tenant is the Tennessee Army National Guard (TNARNG). The TNARNG conducts training activities, such as a small-arms firing range and tank maneuver area, on approximately 6,700 acres. An integral component of AEDC, although not considered a tenant, is the Naval Air Warfare Center Aircraft Division, which oversees naval testing at AEDC. Other tenants include:

- Air Force Office of Special Investigations
- Army and Air Force Exchange Services
- Detachment 2, Research and Acquisition Communications Division
- Detachment 36, Management Engineering Team, Squadron Manpower and Organization
- Defense Commissary Agency
- Defense Contract Audit Agency
- Defense Investigative Service

J3.2 Water Distribution System Description

J3.2.1 Water Distribution System Fixed Equipment Inventory

The Arnold AFB water distribution system consists of all appurtenances physically connected to the distribution system from the point in which the distribution system enters the Installation and Government ownership currently starts to the point of demarcation, defined by Section J3.12.2, General Description of the Utility System, Lateral Extent of the Right-of-Way, and Points of Demarcation. The system may include, but is not limited to, pipelines, valves, fire hydrants, storage facilities, exterior backflow devices, pumps, and meters. The actual inventory of items 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 UP Contractor with a general understanding of the size and configuration of the distribution system.

Specifically excluded from the water distribution system privatization are:

- Raw water supply system from Woods Reservoir to the Water Treatment Plant (WTP) including woods reservoir, raw water pump station, 60-inch raw water pipe line, and secondary reservoir
- Water rights, including surface water rights and ground water rights
- Water well casings and screens
- Abandoned pipes
- Irrigation systems
- TNARNG water well (facility 2839) and associated water distribution system infrastructure

J3.2.1.1 Description

AEDC supplies potable water to satisfy its domestic and industrial requirements. This includes water for public consumption, restrooms, fire hydrants, air conditioner condenser cooling, and steam plant make-up. A Class F-3-type 2.2 Million gallons per day (MGD) Water Treatment Plant (WTP) supplies potable water to the industrial portion of AEDC at a water distribution line pressure of approximately 56 pounds per square inch gauge (psig). This plant was constructed in 1952 with modifications and additions occurring in 1964 and 1992. Average plant flow is approximately 700,000 gallons per day (gpd). The WTP receives its water from a 57-million gallon (MG) secondary retention reservoir located south of the WTP. The secondary retention reservoir is fed from the Woods Reservoir. The primary pump station at the Woods Reservoir pumps water through a 60-inch pipeline to the secondary retention reservoir. The secondary retention reservoir, primary pump station and 60-inch pipeline are facilities associated with the Cooling Water/Raw Water System and will not be conveyed with the water distribution system.

The WTP includes a 7,264 square foot building, three filters rated at 500 gpm each, two 1,000 gpm effluent pumps, one 500 gpm effluent pump, a backwash pump rated at 5,000 gpm, and two clear wells with total storage of 500,000 gallons of treated water. A 1,100-gpm raw water pump is installed for use in low reservoir level conditions. A Wallace and Terrain Chlorination System feed chlorine for both the pre and post treatment. The Chlorine feeder has three injection systems that feed chlorine from one hundred and fifty pound gas cylinders. Lime and alum are fed through dry chemical hoppers to the flash mix. There are four hoppers. One for the carbon, alum, lime, and one backup for the lime or alum. Potassium permanganate is fed into the flash mix directly as a liquid. From the flash mix, the water flows into two flocculation chambers causing sediment and other foreign material to coagulate. The water then flows through a trough to two settling basins where the heavier solids settle out. After sedimentation carbon is added to the water and it is then filtered. Three sand filters are capable of filtering 500 gpm each. The filters are designed with Wheeler bottoms supported on piers. The Wheeler bottom consists of a 7-inch concrete slab with inverted pyramidal depressions on 12-inch center each way. The apex of each depression is fitted with a porcelain thimble on a 3/4-inch clear opening set in the concrete. Each depression is filled with porcelain spheres, varying in size from three inches to 1-1/4 inch. The filter medium is sand. The filters are washed by water pumped from the clearwell through the filters into concrete wash troughs that drain into the storm drainage system.

The Arnold Village military family housing area, the AEDC recreation area, the Gossick Leadership Center, the Visiting Officers Quarters (VOQ), FamCamp, the Girl Scout Camp, and the Arnold Lakeside Club are supplied from the Estill Springs utility District. Water is supplied through a metering station owned by the supplier.

Potable water for other outlying areas of the Base is supplied by groundwater wells at the Golf Course (facility 2829), the Airport (facility 2313), and the Rifle Range (facility 2839). The well and associated water distribution system infrastructure at the Rifle Range is not included with the system to be privatized. For the systems at the Golf Course and the Airport, the well pump, wellhead piping, chlorination equipment, and controls will be conveyed with the water distribution system. The government will retain the well casing/screen and water rights.

Potable drinking water is distributed about the Base through approximately 173,370 linear feet of steel, cast iron, transite, aluminum, and PVC piping. The rocket prep area has transite and aluminum piping. This piping is primarily along 6th Street. The service main at APTU is transite. Transite may be in other unknown locations. Pipe sizes range from 0.75-inch to 20-inch. The water distribution system also includes approximately 537 valves, 166 fire hydrants, and a 250,000-gallon elevated storage tank. There are 17 meters installed for internal charging purposes. Approximately 10,970 linear feet of distribution piping is located in the Arnold Village family housing area.

There is an on-going project to repair the elevated potable water storage tank. The project will remove and replace interior and exterior tank coatings, replace deteriorated cathodic protection system inside tank, install locking anti-climb ladder gate, repair aircraft warning lights, repair grout, and seal column base flanges to prevent further deterioration.

The average depth of the burial for the water distribution piping is approximately 3 feet below ground surface. Approximately 15 percent of the system is located below paved surfaces. Portions of the water lines are located within a utility tunnel.

J3.2.1.2 Inventory

Table 1 provides a general listing of the major water distribution system fixed assets for the Arnold AFB water distribution system included in the sale.

TABLE 1
Fixed Inventory
Water Distribution System, Arnold AFB, TN

Item	Size	Quantity	Unit	Approximate Year of Construction
Main Base:				
Aluminum Pipe	2-in.	332	LF	1965
Aluminum Pipe	6-in.	110	LF	1955
Aluminum Pipe	6-in.	669	LF	1965
Aluminum Pipe	8-in.	3,909	LF	1955

Item	Size	Quantity	Unit	Approximate Year of Construction
Aluminum Pipe	8-in.	904	LF	1965
Cast Iron Pipe	4-in.	2,749	LF	1955
Cast Iron Pipe	4-in.	469	LF	1965
Cast Iron Pipe	4-in.	231	LF	1975
Cast Iron Pipe	5-in.	155	LF	1955
Cast Iron Pipe	6-in.	13,654	LF	1955
Cast Iron Pipe	6-in.	9,284	LF	1965
Cast Iron Pipe	6-in.	207	LF	1985
Cast Iron Pipe	8-in.	17,608	LF	1955
Cast Iron Pipe	8-in.	13,269	LF	1965
Cast Iron Pipe	8-in.	250	LF	1975
Cast Iron Pipe	10-in.	4,851	LF	1955
Cast Iron Pipe	10-in.	2,363	LF	1965
Cast Iron Pipe	12-in.	10,311	LF	1955
Cast Iron Pipe	12-in.	5,719	LF	1965
Cast Iron Pipe	14-in.	411	LF	1955
Cast Iron Pipe	20-in.	120	LF	1955
PVC Pipe	0.75-in.	730	LF	1975
PVC Pipe	1-in.	430	LF	1975
PVC Pipe	1-in.	580	LF	1985
PVC Pipe	1-in.	97	LF	1995
PVC Pipe	1.5-in.	289	LF	1975
PVC Pipe	1.5-in.	2,040	LF	1985
PVC Pipe	1.5-in.	159	LF	1995
PVC Pipe	2-in.	762	LF	1975
PVC Pipe	2-in.	1,523	LF	1985
PVC Pipe	2-in.	1,019	LF	1995
PVC Pipe	2.5-in.	23	LF	1985
PVC Pipe	3-in.	503	LF	1975
PVC Pipe	3-in.	2,273	LF	1985
PVC Pipe	3-in.	521	LF	1995
PVC Pipe	4-in.	67	LF	1975
PVC Pipe	4-in.	3,419	LF	1985

Item	Size	Quantity	Unit	Approximate Year of Construction
PVC Pipe	4-in.	1,004	LF	1995
PVC Pipe	6-in.	3,430	LF	1975
PVC Pipe	6-in.	1,163	LF	1985
PVC Pipe	6-in.	1,091	LF	1995
PVC Pipe	8-in.	842	LF	1975
PVC Pipe	8-in.	3,704	LF	1985
PVC Pipe	8-in.	2,527	LF	1995
PVC Pipe	10-in.	1,930	LF	1985
PVC Pipe	10-in.	4,023	LF	1995
PVC Pipe	12-in.	177	LF	1975
PVC Pipe	12-in.	3,214	LF	1985
PVC Pipe	12-in.	4,014	LF	1995
Steel Pipe	0.5-in.	118	LF	1955
Steel Pipe	0.5-in.	57	LF	1965
Steel Pipe	0.75-in.	74	LF	1955
Steel Pipe	1-in.	2,596	LF	1955
Steel Pipe	1-in.	484	LF	1965
Steel Pipe	1-in.	30	LF	1975
Steel Pipe	1.25-in.	121	LF	1955
Steel Pipe	1.5-in.	2,083	LF	1955
Steel Pipe	1.5-in.	1,117	LF	1965
Steel Pipe	2-in.	8,217	LF	1955
Steel Pipe	2-in.	3,579	LF	1965
Steel Pipe	2.5-in.	90	LF	1955
Steel Pipe	2.5-in.	290	LF	1965
Steel Pipe	3-in.	2,810	LF	1955
Steel Pipe	3-in.	1,021	LF	1965
Steel Pipe	3-in.	692	LF	1985
Transite Pipe	6-in.	607	LF	1985
Transite Pipe	10-in.	1,157	LF	1955
Transite Pipe	10-in.	3,531	LF	1965
Cast Iron Gate Valve	0.5-in.	1	EA	1965

Item	Size	Quantity	Unit	Approximate Year of Construction
Cast Iron Gate Valve	0.75-in.	2	EA	1965
Cast Iron Gate Valve	1-in.	6	EA	1955
Cast Iron Gate Valve	1-in.	1	EA	1965
Cast Iron Gate Valve	1-in.	5	EA	1985
Cast Iron Gate Valve	1.25-in.	2	EA	1955
Cast Iron Gate Valve	1.5-in.	7	EA	1955
Cast Iron Gate Valve	1.5-in.	2	EA	1965
Cast Iron Gate Valve	1.5-in.	10	EA	1985
Cast Iron Gate Valve	2-in.	20	EA	1955
Cast Iron Gate Valve	2-in.	37	EA	1965
Cast Iron Gate Valve	2-in.	2	EA	1975
Cast Iron Gate Valve	2-in.	3	EA	1985
Cast Iron Gate Valve	2-in.	4	EA	1995
Cast Iron Gate Valve	2.5-in.	1	EA	1955
Cast Iron Gate Valve	2.5-in.	1	EA	1965
Cast Iron Gate Valve	3-in.	7	EA	1955
Cast Iron Gate Valve	3-in.	4	EA	1965
Cast Iron Gate Valve	3-in.	20	EA	1985
Cast Iron Gate Valve	3-in.	4	EA	1995
Cast Iron Gate Valve	4-in.	13	EA	1955
Cast Iron Gate Valve	4-in.	2	EA	1965
Cast Iron Gate Valve	4-in.	1	EA	1975
Cast Iron Gate Valve	4-in.	7	EA	1985
Cast Iron Gate Valve	4-in.	7	EA	1995
Cast Iron Gate Valve	5-in.	1	EA	1955
Cast Iron Gate Valve	6-in.	75	EA	1955
Cast Iron Gate Valve	6-in.	13	EA	1965
Cast Iron Gate Valve	6-in.	13	EA	1975
Cast Iron Gate Valve	6-in.	17	EA	1985
Cast Iron Gate Valve	6-in.	8	EA	1995
Cast Iron Gate Valve	8-in.	32	EA	1955
Cast Iron Gate Valve	8-in.	19	EA	1965
Cast Iron Gate Valve	8-in.	6	EA	1975
Cast Iron Gate Valve	8-in.	11	EA	1985
Cast Iron Gate Valve	8-in.	11	EA	1995

Item	Size	Quantity	Unit	Approximate Year of Construction
Cast Iron Gate Valve	10-in.	9	EA	1955
Cast Iron Gate Valve	10-in.	6	EA	1965
Cast Iron Gate Valve	10-in.	1	EA	1975
Cast Iron Gate Valve	10-in.	4	EA	1985
Cast Iron Gate Valve	10-in.	16	EA	1995
Cast Iron Gate Valve	12-in.	30	EA	1955
Cast Iron Gate Valve	12-in.	21	EA	1965
Cast Iron Gate Valve	12-in.	2	EA	1975
Cast Iron Gate Valve	12-in.	18	EA	1985
Cast Iron Gate Valve	12-in.	3	EA	1995
Cast Iron Gate Valve	14-in.	4	EA	1955
Fire Hydrants	4-in.	4	EA	1975
Fire Hydrants	4.25-in.	1	EA	1955
Fire Hydrants	4.25-in.	1	EA	1965
Fire Hydrants	4.25-in.	1	EA	1985
Fire Hydrants	4.25-in.	3	EA	1995
Fire Hydrants	4-5-in.	3	EA	1975
Fire Hydrants	4-5-in.	5	EA	1985
Fire Hydrants	4-5-in.	12	EA	1995
Fire Hydrants, estimated size	4-5-in.	41	EA	1975
Fire Hydrants	5-in.	25	EA	1955
Fire Hydrants	5.25-in.	5	EA	1955
Fire Hydrants	5.25-in.	3	EA	1965
Fire Hydrants	5.25-in.	16	EA	1975
Fire Hydrants	5.25-in.	4	EA	1985
Fire Hydrants	5.25-in.	27	EA	1995
Fire Hydrants	5.5-in.	1	EA	1955
Fire Hydrants	5.5-in.	4	EA	1975
Water Well, Golf Course, Facility 2829		1	EA	1982
Water Well Controls		1	EA	1982
Water Well Supply, Building, concrete block construction		71	SF	1982
Pressure Tank	100 gal est.	1	EA	1982
Chlorination equipment		1	EA	1982

Item	Size	Quantity	Unit	Approximate Year of Construction
Wellhead Filter		1	EA	1982
Pressure Tank with bladder for cartridge filter	120 gal	1	EA	1982
Meter, est. size	2-in.	1	EA	1982
Water Well, Airport, Facility 2313		1	EA	1982
Water Well Controls		1	EA	1982
Water Well Supply, Building, concrete block construction		71	SF	1982
Pressure Tank with bladder	100 gal est.	1	EA	1982
Chlorination equipment		1	EA	1982
Wellhead Filter		1	EA	1982
Cartridge Filter		1	EA	1982
Meter, est. size	2-in.	1	EA	1982
Elevated Storage Tank	250 KG	1	EA	1952
Altitude Valve	14-in.	1	EA	1980
Check Valve	12-in.	2	EA	1980
Gate Valve	12-in.	5	EA	1980
Water Tank Cathodic Protection System		1	EA	2004
Water Treatment Plant, Facility 1504	2.25 MGD	7,264	SF	1952
Water Meter, Raw Water Influent, Ultrasonic Meter	14-in	1	EA	1999
Water Meter, Finished Water Effluent, Ultrasonic Meter	14-in	1	EA	1999
Raw Water Pump #5 - 1140 rpm, 1100 gpm	10 hp	1	EA	1957
Raw Water Pump Controls		1	EA	1996
Chlorination System	200 lbpd	3	EA	1996
Chlorine Dioxide Generator	1 – 30lbpd	1	EA	2004
Backflow Preventers, [in]	2-in.	3	EA	1996
Chlorine Gas Leak Detection System		1	EA	1996
H S Pump - 500 GPM, 1745 rpm, 440V, 67A	30 hp	1	EA	1952
H S Pump - 1000 GPM, 1745 rpm, 440V, 67A	50 hp	2	EA	1952
Back Wash Pump - 5000 GPM, 1180 rpm, 440V, 88.5A	75 hp	1	EA	1952
Concrete Clearwell	250 KG	2	EA	1952
Concrete Slow Mix Tank Basins	26’ x 10’ x 14’	2	EA	1952
Concrete Flash Mix Tank - 230V, 1725 rpm	3 hp	1	EA	1952

Item	Size	Quantity	Unit	Approximate Year of Construction
Concrete Settling Basins	70' x 26.5' x 14'	2	EA	1952
Filter System	2.25 MGD	1	EA	1952
Motorized Valves - 115 V, 2 valve/filter	1/2 hp	6	EA	1952
Filter Drain Valves - 115 V, 3 valve/filter	1/2 hp	9	EA	1952
Chemical Pumps - 115 V, 1725 rpm	1/4 hp	4	EA	1952
Valve Pit, concrete, est. size	6' dia.	1	EA	1952
Generator, 227/480V, 225A, 1800 rpm	150 KW	1	EA	1957
Meters	1-in. est.	5	EA	1964
Meters with meter box	2-in est.	1	EA	1990
Meters with meter box	3-in est.	1	EA	1990
Meters	6-in. est.	1	EA	1964
Backflow Preventers	10-in.	1	EA	1996
Housing - Arnold Village:				
Cast Iron Pipe	4-in.	1,051	LF	1965
Cast Iron Pipe	6-in.	400	LF	1965
Steel Pipe	0.75-in.	86	LF	1965
Steel Pipe	1-in.	1,230	LF	1965
Steel Pipe	1.25-in.	249	LF	1965
Steel Pipe	1.5-in.	1,624	LF	1965
Steel Pipe	2-in.	1,957	LF	1965
Steel Pipe	3-in.	4,371	LF	1965
Cast Iron Valve	0.75-in.	1	EA	1965
Cast Iron Valve	1-in.	6	EA	1965
Cast Iron Valve	1.5-in.	4	EA	1965
Cast Iron Valve	2-in.	5	EA	1965
Cast Iron Valve	3-in.	8	EA	1965
Cast Iron Valve	4-in.	4	EA	1965

Item	Size	Quantity	Unit	Approximate Year of Construction
Cast Iron Valve	6-in.	4	EA	1965
Meters with box	1-in. est.	5	EA	1965
Fire Hydrants, estimated size	4.5-in.	1	EA	1965
Fire Hydrants	5-in.	3	EA	1965
Fire Hydrants	5.25-in.	2	EA	1995
Fire Hydrants	5.25-in.	1	EA	2000
Fire Hydrants	5.5-in.	3	EA	1955
Fam Camp				
Steel Pipe	1-in.	2,387	LF	1965
Steel Pipe	2-in.	1,242	LF	1965
Cast Iron Valve	6-in.	1	EA	1965
Cast Iron Valve	8-in.	2	EA	1965

Notes:
PVC = Polyvinyl chloride
EA = Each
est. = estimated
GAL= Gallon
HP = Horsepower
in. = inches
LF = Linear Feet
PVC = polyvinyl chloride
SF = Square Feet

J3.2.2 Water Distribution System Non-Fixed Equipment and Specialized Tools

Table 2 lists other ancillary equipment (spare parts) and **Table 3** lists specialized vehicles and tools included in the purchase. Offerors shall field verify all equipment, vehicles, and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment, vehicles, and tools.

TABLE 2
Spare Parts
Water Distribution System, Arnold AFB, TN

Qty	Item	Make/Model	Description	Remarks
1	75 hp Electric Motor	Unknown	Spare for the WTP Backwash Pump	BOM ID 101578

TABLE 3
Specialized Vehicles and Tools
Water Distribution System, Arnold AFB, TN

Description	Quantity	Location	Maker
None Identified			

J3.2.3 Water Distribution 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
Water Distribution System, Arnold AFB, TN

Qty	Item	Description	Remarks
	Various	See Bidders' Library for Manuals, Drawings and Records to be included with the system to be privatized	

J3.3 Specific Service Requirements

The service requirements for the Arnold AFB water distribution system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the Arnold AFB water distribution 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.

J3.3.1 AEDC Utility Operations

The AEDC mission is an on-going 24 hour a day operation. The UP Contractor shall provide all required support to the Mission Support Contractor and the Government that is necessary to coordinate his utility operations. The UP Contractor shall maintain a staff of management and personnel capable of reacting to interruptions, changes required by mission, disruptions, or other changes from routine operations, on-site, within the industrial complex, 24 hours a day, seven days a week, 365 days a year.

Potable water is used to support building occupation and mission requirements 24 hours per day, 7 days a week 52 weeks a year. Potable water directly supports testing at 33

locations including the Steam Plants. Steam Plant A is the single largest user of potable water.

The UP Contractor shall operate the utility system efficiently and effectively, minimizing interruptions in service, see Section J3.3.6, Service Interruptions. Service shall be to the interfaces defined by the points of demarcation specified in Section J3.12.2, General Description of the Utility System, Lateral Extent of the Right-of-Way, and Points of Demarcation, see Tables 11 and 12. The UP Contractor shall monitor the system for leaks and other disruptions of service. When these occur, the UP Contractor will be contacted and requested to join in an investigation of the cause. The UP Contractor shall participate fully in this investigation to include management and engineering resources. If the cause of this occurrence is determined to be the responsibility of the UP Contractor, reimbursement to the Government for any damages caused to equipment or lost service shall be in accordance with Section J3.3.6, Service Interruptions. The UP Contractor is not responsible for lost service assessment when caused by adverse weather or by actions of the Government or Mission Support Contractor which fail or damage UP Contractor operated and maintained equipment.

Response times for the purpose of this Contract fall into two categories, emergency and routine, see Section C.8, Routine and Emergency Repair Response. Emergencies are defined as loss of utility service that has a direct impact on on-going mission testing, safety, health and the welfare of AEDC personnel. All other responses are defined as routine. The UP Contractor shall respond immediately upon notice by the AEDC Operation Center of an emergency. The UP Contractor shall work the problem until resolution without delay or postponement. Prior to any break in response before resolution and return to service, the UP Contractor shall notify the AEDC Operation Center that a representative of the Government is needed to discuss the response plan and schedule. Upon approval by the Contracting Officer, the UP Contractor shall implement the approved resolution plan.

In accordance with Section C.5, Utility System Ownership, Employees, and Security, the UP Contractor shall submit requests for personnel security clearance to the Contracting Officer. All personnel working within the AEDC industrial complex shall have appropriate clearances. It is not anticipated that a secret clearance will be required.

J3.3.2 Performance Measurement

The Government will measure the UP Contractor's performance using several methodologies. First, each of the more than 1,500 employees at AEDC measures the utilities delivered to them. For example, when the lights do not come on, water pressure drops or waste backs up, they are required to call the AEDC Operations Center and report the problem. A work request is generated and a determination of emergency or routine response is made. If the problem is utilities in nature, the UP Contractor will be called and requested to respond. In many instances, both the Mission Support Contractor and the UP Contractor will have to respond and determine who is responsible for fixing the problem (Section J3.12.2, General Description of the Utility System, Lateral Extent of the Right-of-Way, and Points of Demarcation). The UP Contractor shall take immediate action to resolve problems on his side of the interface and return service as soon as possible (see Section J3.3.6, Service Interruptions). When the problem impacts AEDC's test mission or support activities, the AEDC Operations Center will track the time from report of outage to the time

utility service is restored. If the lost service is determined to have been caused by the UP Contractor or UP Contractor's equipment, the cost of lost service will be assessed in accordance with Section J3.3.7, Cost of Lost Service.

Another method for measuring performance is meter data. There are many meters located at AEDC. These meters provide a good basis for establishing and measuring system performance, specifically system losses. The UP Contractor shall use historic data and initial meter readings to establish a baseline for system efficiency. The UP Contractor shall report system efficiency monthly in accordance with Section J3.6, Submittals.

The Government, in coordination with the Mission Support Contractor, will also monitor the UP Contractor's performance in coordinating work, complying with standards, policies and practices and in general, and the requirements of this work statement. The UP Contractor is expected to adequately maintain, properly design and protect his equipment to enable uninterrupted reliable service. Unscheduled interruptions due to the UP Contractor's equipment or operations are expected to be rare. All unscheduled interruptions will be investigated, and where found to be attributed to the UP Contractor, the cost for lost test time will be assessed in accordance with Section J3.3.6, Cost of Lost Service.

J3.3.3 System Transition

Transitioning the AEDC utility systems will not be an easy task. Most of the technical data and information available has not been maintained through configuration management over the 50 years of operation. The existing utility workforce is well trained and knowledgeable of the configuration of the systems and the effort required to operate and maintain the utility system without interrupting AEDC's test mission.

In accordance with Section C.13, Transition Plan, the UP Contractor shall plan for an efficient and effective transition of operation, maintenance and investment for the utility system. The UP Contractor's Transition Plan shall address:

a. Specific Transition Requirements, which may include service connections and disconnections, as well as other requirements necessary to support utilities privatization. See Section J3.10, Specific Transition Requirements.

b. Facilities (identify any requirements for facilities, both short term temporary and long term, to support management, engineering, and/or operations and maintenance personnel, and/or materials and equipment)

c. Labor (union or non-union, types, categories, certifications)

d. Training required (identify required training relative to the utility system infrastructure being transferred, infrastructure not being transferred but integrally related to the system being transferred, AEDC procedures, AEDC test operations, or other training requirements needed for system transition)

e. Method for managing technical information which must fall under change control processes discussed in Section J3.3.3, System Configuration and Control, and which will be used by the UP Contractor, the Government and the Mission Support Contractor

f. Current personnel working for the Mission Support Contractor and proposed to be hired by the UP Contractor

g. Access, security clearances, requirements for internet access,

h. Coordination (planning for access to AEDC's local area network, participating in planning and scheduling meetings, forms, practices or procedures the UP Contractor will want AEDC to adopt or adapt to, points of contact, understanding of AEDC response time and lost service assessment requirements)

i. Reducing technical risk (understanding of the work permit process, switching, AEDC Standards, policies and procedures, understanding of equipment to be operated and maintained)

j. Schedule for Investment Work (AEDC's test mission cannot be disrupted; therefore, access to utility system equipment is limited. This has historically resulted in significant additional costs to perform utility maintenance and equipment replacement due to having to work around test schedules.)

k. Final Checkout, Test and Transfer Activities (the UP Contractor shall define specific performance criteria for transition to demonstrate to the Government that the UP Contractor can successfully operate and maintain the utility system)

J3.3.4 System Configuration and Coordination

The Government requires configuration control across systems at AEDC, which dictates configuration control by the UP Contractor and the Mission Support Contractor for a commonly used, operated and maintained utility system. At AEDC, changes on one side of the system interface may cause disruptions or adverse impacts on the other side of the system interface. All routine configuration changes to the system shall be fully coordinated in advance with the Mission Support Contractor.

J3.3.4.1 Configuration Control

All routine configuration changes to the system shall be fully coordinated in advance with the Mission Support Contractor. The UP Contractor shall coordinate any configuration changes with AEDC that may impact Government-owned facilities, test cells or plant utilities. The UP Contractor shall coordinate and support all configuration changes identified by AEDC as required to maintain test facility schedules and objectives. The UP Contractor shall receive approval to switch, backfeed, and perform other similar operations from the Tactical Integration Chairman (a Mission Support Contractor employee).

At the end of each month, the UP Contractor shall report a summary of all configuration, switching and other changes made during the month. The summary shall be included in the UP Contractor's Monthly Operations and Maintenance Report (see Section J3.6). All switching and other changes shall be professionally logged. The UP Contractor shall make the logs available to the Government for review when requested.

The UP Contractor shall keep and maintain complete, current and accurate operation and maintenance manuals, diagrams, schematics, procedures, switching policies, confined space entry procedures, and lock out and tag out procedures. The UP Contractor shall submit

copies of this information as part of his Annual Operation, Maintenance, Repair, Improvement and Modernization Plan. The UP Contractor shall also make this information available to the Contracting Officer upon reasonable request and notification.

J3.3.4.2 Coordination – Tactical Integration Group Meetings

The UP Contractor shall coordinate with the Mission Support Contractor and the Government to develop a daily, weekly and monthly schedule of meetings for the purpose of reviewing work permit status, discussing emergency operations, scheduling and planning maintenance outages, and other activities requiring coordination. The Mission Support Contractor will have the final authority for the time and location of these meetings. The Mission Support Contractor will prepare minutes and track action items of these meetings. For meetings called by the UP Contractor, the UP Contractor will prepare meeting minutes and maintain an action item log. Meeting minutes shall be submitted within 3 working days to the Contracting Officer.

UP Contractor shall participate in daily Tactical Integration Group (TIG) meetings as directed by the Contracting Officer. The UP Contractor shall be available 24 hours a day to coordinate changes in schedule and requirements to support testing, weather or other concerns. The UP Contractor shall participate in coordination meetings to answer questions about system condition and ability to meet AEDC mission requirements. The Contracting Officer will provide the UP Contractor with a list of weekly scheduling meetings. Currently, the Mission Support Contractor convenes a 0715 daily meeting to coordinate utility test support. The weekly AEDC Outage meetings convene on Wednesday mornings at 0830 hours. The weekly TIG convenes formal meetings on Thursdays at 0830. The UP Contractor shall also attend other ad hoc meetings convened by the TIG Chairman (a Mission Support Contractor employee) as required. Ad hoc meetings are held whenever there is an incident, lost test time, or service interruption. Ad hoc meetings are estimated to occur approximately 3 times per week.

J3.3.4.3 Cross Connection Control and Backflow Prevention

The UP Contractor shall develop a Cross Connection Control Plan in accordance with the requirements of Tennessee Department of Environment and Conservation (TDEC) Rules for Public Water Supplies, Section 1200-5-1.17(6). The Plan shall be submitted to the TDEC and AEDC/SDE. A general description of the Plan contents shall be submitted with the bid.

The UP Contractor shall adhere to guidelines and perform testing of backflow preventers as outlined in federal, state, and local codes, including AWWA M14 - Recommended Practice for Backflow Prevention and Cross-Connection Control.

J3.3.4.4 Cathodic Protection Systems

The UP Contractor shall own, maintain, and operate the cathodic protection systems for the water distribution system. The UP Contractor shall submit copies of all cathodic protection system test readings to the Government as a part of his Annual Operation, Maintenance, Repair, Improvement and Modernization Plan.

J3.3.4.5 Fire-Flow Requirements

The UP Contractor shall perform flow testing and marking of fire hydrants in accordance with National Fire Protection Association (NFPA) standards and recommended practices. The Government reserves the right to review flow test records. The UP Contractor shall be required to meet all unique and specific fire-flow requirements for the Base, which will be listed and available in the Bidders' Library.

The UP Contractor shall submit a fire hydrant flushing plan in accordance with Section J3.6 and current AEDC practices. The UP Contractor shall perform flow testing and maintenance of fire hydrants and water lines on a quarterly basis in accordance with NFPA and AEDC requirements. The government reserves the right to review flow test records.

J3.3.4.6 Selection of Pipe Materials

Because a large portion of AEDC property is an industrial site, it is likely that buried piping may be exposed to significant concentrations of pollutants. The UP Contractor shall consider potential pollutants and select pipe materials accordingly and in accordance with AWWA C900, Section 4.1.

J3.3.4.7 Water Quality

As part of distribution service, the UP Contractor shall provide chlorination within applicable guidelines and Federal Safe Drinking Water Standards.

The UP Contractor is encouraged to use the AEDC Chem Lab for analysis of samples not tested in the WTP laboratory. The AEDC Chem Lab is located in facility 445 and can be reached at (931) 454-7349.

J3.3.4.8 Maintenance and Inspection of Water Storage Tanks

The UP Contractor shall maintain and operate the cathodic protection systems for the water storage tanks. The UP Contractor shall submit copies of all cathodic protection system test readings to the Government as part of their Annual Operation, Maintenance, Repair, Improvement and Modernization Plan.

The UP Contractor shall maintain Air Force marking on water tanks and shall coordinate with the Base Civil Engineer before painting the interior or exterior of any water tanks.

A copy of the five year elevated tank inspection report shall be submitted as part of the Annual Operation, Maintenance, Repair, Improvement and Modernization Plan.

J3.3.4.9 Maintenance and Inspection of Water Wells

The Government is retaining the water rights for the surface and ground water used to meet the potable water demands at the Base. The well casing and screen for the water wells at the Golf Course and Airport shall be retained by the Government to meet this requirement. The UP Contractor shall coordinate all well maintenance, repair, upgrades, testing, etc., with AEDC to ensure well integrity is maintained. The UP Contractor shall notify the Government immediately in the event of any damage to the well casing or screen.

J3.3.4.10 Water Treatment Plant Operations and Production

Over the last seven years (FY 1997 through FY 2004 to date), the WTP has produced between 0.42 million gallons per day (mgpd) and 0.84 mgpd, with the maximum demand occurring in February 2003. The average production during this period was 0.60 mgpd. The Bidders' Library contains more detailed water production data for the WTP. The UP Contractor shall provide WTP operations and production as necessary to meet potable water demands at Arnold AFB, which may exceed historical peaks and averages.

J3.3.5 Master Work Permits

The Government requires extreme measure be taken when clearing personnel for access to areas within test facilities, when entering confined spaces, interrupting service to work on utilities and infrastructure, and when digging or penetrating the grounds at AEDC. There have been numerous occurrences where personnel have been put into jeopardy, equipment has been damaged and AEDC's test mission impacted due to improper coordinated activities. The AEDC Master Work Permit process is very specific. All requests for work clearance, service interruption (outage) and digging require the UP Contractor to submit an AEDC Master Work Permit and gain approval for the permit prior to work.

In accordance with Section C.9.5, Excavation Permits, and Section C.9.6, Underground Utility Location and Points of Demarcation, the UP Contractor shall submit a Master Work Permit 10 working days prior to performing routine work. Work shall not be performed without a Government approved Master Work Permit. Requests for emergency work shall be coordinated with the AEDC Operations Center.

In response to Master Work Permits requested by others, the UP Contractor shall review and approve, or provide comments regarding disapproval, within 10 working days of requests for routine work. Requests in support of emergency actions shall be worked commensurate with the need for the work.

The UP Contractor shall adhere to AEDC prescribed methods for marking utilities in the field. The UP Contractor shall be responsible for all repairs, costs, and damages due to digging performed by others for which the UP Contractor did not properly mark his utilities on the approved response to the Master Work Permit. Both Government and UP Contractor approved Master Work Permits shall expire and become invalid 30 days after approval unless otherwise specified on the approved form.

J3.3.6 Service Interruptions

In accordance with Section C.7, Service Interruption/Contingency Plan, the UP Contractor shall notify the AEDC Operations Center of all interruptions to service or incidents where personnel are injured, damage to facilities and equipment are noted, or hazardous materials are spilled or released into the environment. The notification shall be made as soon as possible and no later than 10 minutes after first notice of the incident or interruption. The UP Contractor shall notify the National Response Center, and any other required agencies, of spills that meet reportable quantity thresholds.

J3.3.7 Cost of Lost Service

The UP Contractor shall reimburse the Government for costs associated with loss of mission or unproductive lost test or activity time resulting from unscheduled interruptions or outages determined to have been caused by the UP Contractor. **Table 5** identifies the lost service assessment for each test mission area. Service assessments are reviewed and new rates established for each fiscal year. Attachment J-51 details the AEDC processes for determining responsibility for lost or unproductive test time as a result of outages or equipment failure. Upon notification of a lost service assessment by the Contracting Officer, the UP Contractor shall annotate the credit in the next invoice. If the lost service assessment is greater than the monthly service charge, the monthly service shall be zero (0) and the invoice annotated to show the outstanding lost service assessment credit to be carried forward to the new monthly invoice.

TABLE 5
Lost Service Assessment
Water Distribution System, Arnold AFB, TN

Test Mission Area	Lost Service Assessment ($ per hour)
ETF/ASTF	$7,935
PWT	$8,856
VKF	$4,589

J3.3.8 Communications and Reporting System

AEDC has an integrated communications and reporting system. The UP Contractor shall submit request for and obtain access to the AEDC Local Area Network for access to unclassified information and to electronic mail. The request shall be submitted to the Administrative Contracting Officer. The UP Contractor shall acquire a local telephone number(s) and provide the Administrative Contracting Officer with the telephone number(s) for key personnel and emergency points of contact.

UP Contractor shall conform to the following AEDC requirements and obtain written approval from the AEDC Communications Chief, Network Control Center prior to altering or changing his system communication, meter reading, or reporting of system usage and performance. These requirements and coordination with the Communications Chief, Network Control Center include prior approval for all forms of wireless communication the UP Contractor proposes for use in maintaining, reporting, and operating his system.

- All personnel with access to AF computer systems, and/or networks or personnel that have access to AF data shall be US Citizens, and have a favorable National Agency Check (NAC).
- In addition, personnel that access AF computer systems, or networks shall complete the AF Network User Licensing course annually.
- Accounts are requested via GC-591.

- Submit communications/computer requirements Via AEDC Form 869.
- Communication/computer systems must comply with current AF/AEDC architecture and communications directives.
- All computer/communications systems must have an approved Certification & Accreditation package PRIOR to operation in accordance with AFI 33-202.

J3.3.9 Facility Metering Requirements

In accordance with Sections C.3.3, Sub-Metering, and J3.5.2, Required New Secondary Meters, the UP Contractor shall install new secondary meters as close as possible to the interface point. The interface point is defined by the most applicable point of demarcation as listed in Section J3.12.2, General Description of the Utility System, Lateral Extent of the Right-of-Way, and Points of Demarcation. Meters shall be revenue quality with calibrations performed annually by the owner with copies provided to the Government. All calibrations must be traceable to NIST (National Institute of Standards and Technology). New secondary meters shall be capable of communicating via modbus, ION, or DNP3 protocols. The Government and its Mission Support Contractor shall be allowed access to all sub-metering.

In accordance with Section J3.6, Submittals, the UP Contractor shall keep meter books with consumption and demand (if applicable) for each meter. Meter books shall also include building address or facility number, meter number, previous readings, current readings, multipliers for each meter, total consumption, points of contact for meter questions, and procedure for converting meter readings into consumption (including multipliers). Meter Books shall be submitted monthly in accordance with Section J3.6 in electronic format as Microsoft Excel files. The Government will provide an example format in a Microsoft Excel file to be used for meter reading reports.

J3.3.10 Joint-Use Requirements

In accordance with Section C.5.1.4, Air Force Property, there are requirements for joint-use of infrastructure to be conveyed with the utility system being sold. The UP Contractor shall allow the Government, and non-government entities identified by the Contracting Officer, to install or attach property and equipment to poles, conduits, pipes, duct banks, towers, buildings, and other portions of the utility systems to be transferred. Attachment fees shall not apply for Government or non-government entities identified by the Contracting Officer; however, costs of any make-ready work related to safety requirements may be recovered under the contract. All attachments will be coordinated with the UP Contractor prior to incorporating attachments.

J3.3.10.1 Manhole Access

The UP Contractor shall adhere to AEDC policy on maintaining locked communication manholes.

J3.3.10.2 Costs of Services

The UP Contractor is responsible for all utilities, janitorial services, building maintenance, and grounds maintenance for its facilities on Base without cost to the Government. Reimbursement shall be in accordance with Base guidelines for reimbursable services in

effect at the time of contract award, and as may change over the life of the contract. The Government shall provide supporting utilities, e.g., electricity to operate pumps and motors at the WTP, well sites, etc., as necessary to operate utility system infrastructure being conveyed under this contract.

J3.3.11 Safety, Health, and Environmental Standards

The UP Contractor shall comply with the latest edition of AEDC Safety, Security, Health, Engineering, Configuration Management, Maintenance and Systems Engineering Standards. Copies of these standards are available to the UP Contractor electronically on the AEDC Intranet Homepage.

The UP Contractor shall adhere to AEDC lockout and tagout procedures.

The UP Contractor is responsible for all sampling, monitoring, and reporting requirements to regulatory authorities. Any permit excursions, any Notices of Violation, or any deficiencies noted by regulatory agencies or discovered during Air Force inspections must be addressed immediately. The UP Contractor shall submit copies of all correspondence with, or submittals to, regulatory agencies to the Contracting Officer within 5 days of submittal to the regulatory agency.

In accordance with Section C.10.2, Spill Contingencies, the UP Contractor shall adopt the AEDC Spill Contingency Plan.

In accordance with Section C.10.3, Hazardous Material and Waste Minimization, the UP Contractor shall adopt the AEDC Hazardous Material and Waste Minimization Plan.

In accordance with Section C.10.3, Hazardous Material and Waste Minimization, the UP Contractor shall submit copies of MSDSs to the AEDC Hazardous Materials Pharmacy 15 days in advance of bringing any hazardous materials onto the installation.

None of the facilities to be conveyed have existing storage areas sufficient to handle bulk storage of hazardous materials. None of the facilities to be conveyed are permitted for storage of hazardous waste. In accordance with Section C.10.3, Hazardous Material and Waste Minimization, and Section H.8, Hazardous Substances, construction, operation, and permitting of any such storage areas will be the responsibility of the UP Contractor. The UP Contractor shall not dispose construction debris, demolition materials or wastes, other hazardous materials or wastes, asbestos, or any other material or waste in Arnold AFB landfills.

In accordance with Section C.2.1, Qualified Utility Providers and H.11, Historic Preservation, the UP 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.

The UP Contractor shall meet all Tennessee Department of Environment and Conservation (TDEC) Rules for Public Water Supplies, Section 1200-5-1. Modifications to the water system shall be completed in accordance to TDEC Community Public Water Systems Design Criteria and the American Water Works Association Standards (AWWA).

The UP Contractor shall adhere to water utility operational standards as outlined in AWWA manuals and Tennessee Regulatory Authority Chapter 1220-4-3.

The UP Contractor shall perform testing of Base water system within requirements of applicable standards, regulations, rules, and codes. The UP Contractor shall provide the Contracting Officer with a copy of the testing information within 5 days of submittal to the regulatory agency.

J3.3.12 Fire Control and Safety

The UP Contractor shall enter into a Memorandum of Understanding with AEDC Fire Department for fire protection of all facilities included in the purchase of the utility, and any facilities installed in the future. The UP Contractor will agree to adhere to all fire protection requirements of AEDC. The UP Contractor shall maintain fire alarm system and equipment in facilities on-base and owned by the UP Contractor. The UP Contractor further agrees to permit Fire Department personnel access to their facilities for the sole purpose of performing fire inspections and emergency response.

The UP Contractor shall coordinate any change to the water distribution system that may affect fire protection with the AEDC Operations Center.

The UP Contractor shall coordinate replacement or changes to fire hydrants with the AEDC Operations Center. The UP Contractor shall inform when a hydrant is taken out of service and returned to service. When a hydrant is placed out of service a sign shall clearly mark the hydrant as being out of service.

The AEDC Fire Department currently maintains emergency rescue equipment including a chlorine tank repair kit. The UP Contractor is encouraged to coordinate with the AEDC Fire Department for emergency support.

J3.3.13 Crisis Situations

In accordance with Section C.9.8, *Exercises and Crisis Situations Requiring Utility Support*, the UP Contractor shall provide support as directed by the AEDC Commander or equivalent agency control center for exercises and crisis situations.

J3.4 Current Service Arrangement

AEDC supplies potable water to satisfy its domestic and industrial requirements. This includes water for public consumption, restrooms, fire hydrants, air conditioner condenser cooling, and steam plant make-up. The average demand for potable water is 0.7 million gallons per day.

Arnold Village, AEDC's military family housing area, receives its water from the Town of Estill Springs. Water is conveyed to Arnold Village through a pipeline that runs along North Shore Road.

If AEDC privatizes its water utility service by conveying its water treatment and distribution facilities to an investor-owned utility, the investor-owned utility would be required to obtain a CCN from the TRA. If AEDC conveyed its water treatment and

distribution facilities to a municipal utility or utility district, the municipal utility or utility district would not be required to obtain a CCN from the TRA. Municipal utilities and utility districts are not considered public utilities under T.C.A. §§ 65-4-101; therefore, they are not subject to any jurisdiction by the TRA. Because AEDC is not located within the boundaries of any municipality, no local franchise to operate on the Center would be needed by any of these entities.

The Government retains responsibility for the purchase of the utility commodity and the associated delivery schedule of the commodity. The UP Contractor shall be required to obtain written approval prior to contacting any Base commodity providers. The Government shall notify the UP Contractor of changes in commodity providers or delivery schedules that will impact the UP Contractor's system in accordance with the requirements of this contract.

J3.5 Secondary Metering

J3.5.1 Existing Secondary Meters

Table 6 provides a listing of the existing (at the time of contract award) secondary meters that will be transferred to the UP Contractor. The UP Contractor shall provide meter readings for all secondary meters in accordance with Section C.3.3 and J3.6 below.

TABLE 6
Existing Secondary Meters
Water Distribution System, Arnold AFB, TN

Meter Location	Meter Description (Type)
Golf Course (facility 2829)	Well Effluent
Arnold Airport (facility 2313)	Well Effluent
Water Treatment Plant (facility 1504)	Plant Influent
Water Treatment Plant (facility 1504)	Plant Effluent
Community Activity Center (Arnold Village, facility 3505)	Car Wash – hose bib connection in the parking lot
Community Activity Center (Arnold Village, facility 3505)	Auto Hobby Shop – stall located in the back of the Community Center
Lakeside Club (Arnold Village, facility 3017)	
Lakeside Club Bath House (Arnold Village, facility 3018)	
Pavilion (Arnold Village)	
Family Campground (North Shore Drive, facility 2910)	
Recreation Area (North Shore Drive, facility 2903)	
Girl Scout Camp (North Shore Drive)	
Yacht Club (North Shore Drive)	
J6 Steam Plant (facility 563)	
Commissary (facility 125)	

Meter Location	Meter Description (Type)
Carroll Building (facility 1103)	
Fitness Center (facility 1358)	

J3.5.2 Required New Secondary Meters

The UP Contractor shall install and calibrate new secondary meters as listed in **Table 7**. New secondary meters shall be installed in accordance with Section C.13, Transition Plan. After installation, the UP Contractor shall maintain and read these meters in accordance with Sections C.3.3 and J3.6 below.

TABLE 7
New Secondary Meters
Water Distribution System, Arnold AFB, TN

Meter Location	Meter Description
None Identified	

J3.6 Submittals

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

1. Invoice (in accordance with G.2). The UP Contractor's monthly invoice shall be presented in a format proposed by the UP Contractor and accepted by the Contracting Officer. Invoices shall be submitted by the 5th of each month for the previous month. Invoices shall be submitted to:

   Name: AEDC / MAT
   Address: MS 9015, Building 1099, 1099 Avenue C, Arnold AFB, TN, 37389
   Phone number: (931) 454-6712

2. Operations and Maintenance (O&M) Report. The UP Contractor's monthly O&M report will be prepared in the format proposed by the UP Contractor and accepted by the Contracting Officer. O&M reports shall include the following information for utility work:

   Scheduled outages: Requestor, date, time, duration, facilities affected, feedback provided during outage, outage notification form number, and digging clearance number.

   Unscheduled outages: Include date, time and duration, facilities affected, response time after notification, completion times, feedback provided at time of outage, specific item failure, probability of future failure, long term fix, and emergency digging clearance number.

Maintenance, maintenance and repair, investment and modernization accomplishments: Identify work performed to maintain safe, environmentally compliant, reliable and available operations. Compare and contrast actual work accomplished with annual M&R Plan. Provide a list of all configuration changes and supporting documentation (identify assets changed, documentation numbers or identifiers, scope of change, revision after change, reason for change, date documentation updated). Provide planning to reduce or eliminate system losses.

O&M reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to:

Name: AEDC / MAT
Address: MS 9015, Building 1099, 1099 Avenue C, Arnold AFB, TN, 37389
Phone number: (931) 454-6712

3. Meter Reading Report. The monthly meter reading report shall show the current and previous month readings for all identified secondary meters. The UP Contractor's monthly meter reading report will be prepared in the format proposed by the UP Contractor and accepted by the Contracting Officer. Meter reading reports shall be submitted by the 5th of each month for the previous month. Meter reading reports shall be submitted to:

   Name: AEDC / MAT
   Address: MS 9015, Building 1099, 1099 Avenue C, Arnold AFB, TN, 37389
   Phone number: (931) 454-6712

4. System Efficiency Report. In accordance with Section C.3, the UP Contractor shall submit a monthly system efficiency report in a format proposed by the UP Contractor and accepted by the Contracting Officer. The UP Contractor shall establish a baseline documenting the efficiency of commodity delivery through the distribution system. The basis for efficiency reporting shall incorporate an approach that accounts for commodity received from the commodity providers, commodity delivered to end users and system losses and unaccounted for uses. The UP Contractor 's report shall demonstrate performance relative to the baseline, to include efforts planned and implemented to reduce system losses and unaccounted for uses. System efficiency reports shall be submitted by the 25th of each month for the previous month. System efficiency reports shall be submitted to:

   Name: AEDC / MAT
   Address: MS 9015, Building 1099, 1099 Avenue C, Arnold AFB, TN, 37389
   Phone number: (931) 454-6712

5. System Flushing Plan. The UP Contractor shall submit a Quarterly Flushing Plan in a format proposed by the UP Contractor and accepted by the Contracting Officer. Revisions to the plan shall be submitted before implementation. Flushing plans and revisions to the plan shall be submitted to:

   Name: AEDC / MAT
   Address: MS 9015, Building 1099, 1099 Avenue C, Arnold AFB, TN, 37389
   Phone number: (931) 454-6712

6. Annual Operation, Maintenance, Repair, Improvement and Modernization Plan. The UP Contractor shall submit its first Plan 30 Days after Contract Award and shall update the Plan annually thereafter. The Plan shall identify any planned outages or interruptions to service, configuration changes or facility modifications, and system upgrades. The Plan shall also identify system improvements to reduce losess. The Plan shall clearly delineate points of contact, their responsibilities and any interfacing operational policies and procedures.

   Name: AEDC / MAT
   Address: MS 9015, Building 1099, 1099 Avenue C, Arnold AFB, TN, 37389
   Phone number: (931) 454-6712

J3.7 Water Conservation Projects

In accordance with Section C.3, Utility Service Requirement, the following projects have been implemented by the Government for conservation purposes.

- None identified.

J3.8 Service Area

In accordance with Section C.4, Service Area, the service area is defined as all areas within the Arnold AFB boundaries.

J3.9 Off-Installation Sites

No off-installation sites are included in the sale of the Arnold AFB water distribution system.

J3.10 Specific Transition Requirements

In accordance with Section C.13, Transition Plan, **Table 8** provides a listing of transition requirements to be completed by the UP Contractor upon transfer. Transition requirements may include service connections and disconnections, as well as other requirements necessary to support utilities privatization.

TABLE 8
Service Connections and Disconnections
Water Distribution System, Arnold AFB, TN

Location	Description
Water Treatment Plant	Filter backwash and sedimentation basin drainageis currently discharged from the Water Treatment Plant into Rowland Creek. This procedure cannot be used after the system is privatized. The UP Contractor shall evaluate and determine the best approach to manage filter backwash and sedimentation basin drainage generated at the Water Treatment Plant. The UP Contractor shall coordinate any changes to the water distribution system with AEDC prior to making any changes. The UP Contractor shall make all changes necessary eliminate

Location	Description
	discharge of filter backwash and sedimentation basin drainage into Rowland Creek during the transition period.
Water Distribution System	The cathodic protection for the water distribution system may be protecting other utility systems and cathodic protection on other utility systems may be protecting the water system. The UP Contractor shall evaluate and determine the best approach to isolate and cathodically protect the water distribution system. The UP Contractor shall coordinate any changes to the water distribution system and cathodic protection systems with AEDC prior to making any changes. The UP Contractor shall effect all changes necessary to isolate and cathodically protect the water distribution system within two years of contract award.

J3.11 Government Recognized System Deficiencies

Table 9 provides a listing of system improvements that the Government has planned. The Government recognizes these improvement projects as representing current deficiencies associated with the Arnold AFB water distribution system. If the utility system is sold, the Government will not accomplish these planned improvements. The UP 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 9
System Deficiencies
Water Distribution System, Arnold AFB, TN

Project Location	Project Description
Rocket Propellant Area	Install elevated storage tank to satisfy distribution storage requirements. Based on modeling at Node J 600, an elevated tank of at least 750,000 gallons is needed to improve available flows in this area. AEDC Project ANZY023003
Potable Water Elevated Tank	Repair/replace altitude valve on the influent line of the potable water elevated storage tank.
Potable Water Distribution System	Replace Fire Hydrants Basewide (Sustainment). Most of the potable water fire hydrants were originally installed when the base was constructed in 1951. Repair parts are either no longer obtainable or hard to get. The failure rate continues to increase, causing multiple repairs and leaving many hydrants out-of-service for extended periods. Replacement of all the hydrants will allow for standardization of repair parts, many years of minimal repairs, and increased availability of hydrants for fire fighting. Replacing this component of the potable water distribution system will maintain an acceptable level of function and reliability. AEDC Project ANZY010039

Project Location	Project Description
Potable Water Distribution System	Replace Potable Water Distribution System (REPLACE WATER MAINS). Replace the water mains throughout the industrial portion of the base. These mains are approximately 50 years old. Included within this project will be repairing dead end lines that require routine flushing. If the Government were to complete this project, it would be implemented in five phases. AEDC Project ANZY012012
Potable Water Distribution System	RPR WATER LINES IN THE WAREHOUSE 6 AREA. Install a looped water line for additional fire protection in this area. This is for Building 1421 and other buildings in the area.
Water Treatment Plant	RPR Water Treatment Plant (Sustainment). Replace Potable Water Pumps, Motor, Motor Control, and Vacuum Primer Pump, first floor piping, filter valves, secondary backwash pump & Install Tube Settlers at the Potable Water Treatment Plant (WTP). Replace 1960 vintage emergency generator and associated electrical components. AEDC Project ANZY010058
Water Treatment Plant	Upgrade Area Lights. Upgrade outside lighting for facility 1504 Water Treatment Plant. Area Requirements --- surrounding building, parking area, and outside sedimentation basins. This is not a requirement to meet electrical codes. The lighting needs to be upgraded to meet the requirements of MIL-HDBK-1013/1A, Para 4.7 through 4.7.5.1. Need continuous boundary light to allow the facility custodian and police to observe pedestrian activity around the rear of the facility. AEDC Project ANZY000028A, FY2007.
Water Treatment Plant	UTIL CONSOL-INSTL CONTROLS, H20 Install a new electronic based control system to replace the existing hardwired filter and pump control panels. Existing standalone instrumentation within the plant will be integrated or replaced with devices that are capable of remote monitoring. The system programming shall include automation of processes were applicable. A computer interface capable of generating reports, displaying trends, controlling equipment and modifying set points will be installed within the plant. The system will be compatible with and connected to the existing mechanical utility control system.

J3.12 Right of Access to the Utility System

J3.12.1 Map of the Utility System

Maps from the Base Comprehensive Plan or other drawings show the known locations of the utility system and are available at the Base Civil Engineering Office. Portions of the utility system may not be fully shown on the map or maps. Any such failure to show the complete utility system on the map or maps shall not be interpreted as that part of the utility system being outside the Installation. The Installation is co-extensive with the entire linear extent of the utility system sold to Grantee, whether or not precisely shown on the map or maps.

TABLE 10
Drawings
Water Distribution System, Arnold AFB, TN

Qty	Item	Description	Remarks
	Various	See Bidders' Library for Maps, Drawings and Records to be included with the system to be privatized	

J3.12.2 General Description of the Utility System, Lateral Extent of the Right-of-Way, and Points of Demarcation

J3.12.2.1 Utility System Description

The utility system may be composed of, without limitation, wells, well pumps, supporting emergency generator sets, water treatment equipment, valves, fire hydrants, water distribution mains, meters, booster station pumps, storage tanks, all related electrical controls, and computer hardware and software used to operate and control the production and delivery of water to end users on the Installation.

J3.12.2.2 Lateral Extent of Utility System Right-Of-Way:

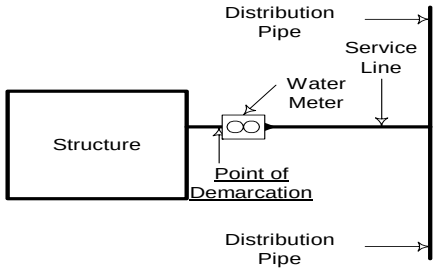
For pipe sizes of 24 inches in diameter or less, 26-feet-wide, extending 13 feet on each side of the utility system, as installed.

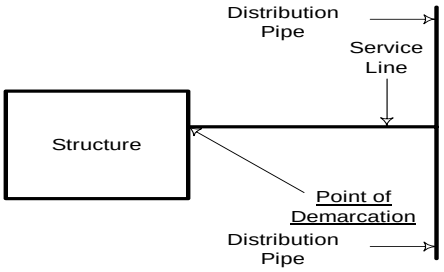
For pipe sizes greater than 24 inches in diameter, 50-feet-wide, extending 25 feet on each side of the utility system, as installed.

J3.12.2.3 Utility System Points of Demarcation

The point of demarcation is defined as the point on the utility system where ownership changes from the utility system owner to the facility owner. **Table 11** identifies the type and general location of the point of demarcation with respect to the facility for each scenario.

TABLE 11
General Points of Demarcation
Water Distribution System, Arnold AFB, TN

Point of Demarcation (POD)	Applicable Scenario	Sketch
POD is at the water meter, backflow device, or valve (closest apparatus to the exterior of the structure).	Water meter, backflow device, or valve is located on the service line entering the structure within 25 feet of the exterior of the structure.	

Point of Demarcation (POD)	Applicable Scenario	Sketch
POD is where the service line enters the structure.	No water meter, backflow device, or valve exists on the service line entering the structure. Service valve may be within 25 feet of the structure at any time. Down stream side of the service valve will become the new point of demarcation.	
If the fire suppression system has a storage tank, then the POD is located on the inlet side of the isolation valve or backflow prevention device closest to the storage tank. If no storage tank is present, the POD is located on the inlet side of the PIV or isolation valve closest to the fire suppression pumps.	**Fire suppression system** is provided flow and/or pressure by the potable water distribution system. These systems are typically dedicated to serving one facility or a small cluster of facilities.	None
POD is located on the inlet side of the PIV, isolation valve, or backflow prevention device closest to the fire suppression system.	**Fire suppression system** is connected to the potable water distribution system.	None
POD for irrigation systems is the inlet side of the backflow prevention device or isolation valve closest to the irrigation system.	**Irrigation system** is fed directly from potable water distribution system.	None
POD is the inlet side of the hose bib or water fountain assembly's connection to the service lateral. Note: A service valve may be installed within 25 feet of the hose bib or water fountain at any time. Once installed, the inlet side of the service valve becomes the new POD.	**Drinking Fountains and Hose Bibs** connected to the water distribution system (typically found at ballfields and outdoor recreation areas). No valve is located on the lateral providing water service to the drinking fountain or hose bib within 25 feet of these connections.	None
POD is the inlet side of the service valve.	**Drinking Fountains and Hose Bibs** connected to the water distribution system (typically found at ball fields and outdoor recreation areas). Service valve is located on the lateral providing water service to the drinking fountain or hose bib within 25 feet of these water use devices.	None

Point of Demarcation (POD)	Applicable Scenario	Sketch
POD is at the overhead service line's connection to the service entrance mast. Note: If an electric meter is present, or is to be installed, the owner of the electric distribution system on the installation is the owner and maintainer of the electric meter and the can. The POD for the electric meter is at the water utility owner's conductors to the electric utility owner's conductors. This meter POD applies regardless of the location of the electric utility owner's meter. The water utility owner will own the service entrance mast.	Electric power is provided to a water facility via an overhead service drop. This configuration could be found at facilities dedicated to the water utility such as a water well, pump station, or water tower.	None
POD is at the transformer secondary terminal spade. Note: If an electric meter is present, or is to be installed, the owner of the electric distribution system on the installation is the owner and maintainer of the electric meter. The POD for the meter is at the water utility owner's conductors to the electric utility owner's conductors. This meter POD applies regardless of the location of the electric meters and transformers.	Electric power is provided to a water facility via an underground service connection. This configuration could be found at facilities dedicated to the water utility such as a water well, pump station, or water tower.	None

Table 12 lists anomalous points of demarcation that do not fit any of the above scenarios. These anomalous or unique points of demarcation shall take precedence over the general points of demarcation shown in Table 11.

TABLE 12
Unique Points of Demarcation
Water Distribution System, Arnold AFB, TN

Building No.	Point of Demarcation (POD) Description
Influent to WTP (facility 1504)	The point of demarcation will be located at the inlet flange of the valve located on the 14-inch line leading from the secondary retention reservoir to the WTP. The valve is located in a valve pit located just south of the WTP on the other side of the road.

Building No.	Point of Demarcation (POD) Description
Water Supply from the Estill Springs Utility District	Water is supplied to the Arnold Village family housing area, the AEDC recreation area, the Gossick Leadership Center, the Visiting Officers Quarters (VOQ), FamCamp, the Girl Scout Camp, and the Arnold Lakeside Club from the Estill Springs Utility District. The point of demarcation is located at the outlet of the water meter owned by Estill Springs.
Water Supply to Facilities Along North Shore Drive	Water is supplied to tenant organizations along North Shore Drive through service lines that include backflow preventers. Some of these backflow preventers are located inside structures. The point of demarcation will be located at the outlet of the downstream valve of the backflow preventer assembly.
Water Wells at the Golf Course (facility 2829) and Airport (facility 2313)	The Government is retaining the water rights and associated well casing/screen. The UP Contractor shall own all other infrastructure associated with the well. The Government will continue to maintain the well casing and wellfield. The UP Contractor shall maintain the well pump and associated piping and controls.
Water Meters	The Government reserves the right to access the UP Contractor's meters. The point of demarcation for communication equipment attached to the UP Contractor's meters is the point where the Government's communication lines attach to the meter.

For the areas identified in **Table 13**, Arnold AFB shall not grant any additional easements, rights-of-way, leases, permits, licenses, or other access. Arnold AFB recognizes that these areas require restricted access and the UP Contractor may take appropriate action to prevent unauthorized access to such areas. This only applies to access by others than the UP Contractor and will not limit any right of access by public authorities charged with the regulation of UP Contractor's activities or law enforcement.

TABLE 13
Restricted Access Areas
Water Distribution System, Arnold AFB, TN

Description	Facility #	Tennessee State Plane Coordinates (FT)	Other Information
Water Treatment Plant and Chlorination Building	1504	LL = E1,953,170, N379,600 LR = E1,953,200, N379,610 TR = E1,953,230, N379,710 TL = E1,953,200, N379,700	Backing up to the right of the Settling Basin and Coagulation
Elevated Water Storage Tank	351	LL = E1,955,520, N382,360 LR = E1,955,570, N382,370 TR = E1,955,570, N382,410 TL = E1,955,520, N382,420	Located north of Building 678
Golf Course Water Well	2829	LL= E1,917,360, N371,630 LR= E1,917,370, N371,640 TR= E1,917,370, N371,650 TL= E1,917,360, N371,640	Located in the western portion of Arnold AFB adjacent to the Golf Course, approximately 10 feet southwest of Golf Club House No.2 (facility 2808)

Description	Facility #	Tennessee State Plane Coordinates (FT)	Other Information
Airport Water Well	2313	LL= E1,945,440, E388,170 LR= E1,945,470, E388,160 TR= E1,945,480, E388,180 TL= E1,945,450, E388,190	Located adjacent to the Arnold Airport, approximately 100 feet northwest of the Operations Building (facility 2303)

Coordinates are the lower left (LL) lower right (LR), top left (TR), and top left (TL) corners of the structures. All coordinates reference the Tennessee State Plane coordinate system NAD83, feet.

3.12.3 Environmental Baseline Survey

The Air Force has determined that it is not required to conduct an EBS in regard to the sale of this utility system.