

ATZS-EHE (420-17a)

13 Feb 95

MEMORANDUM FOR RECORD Horne Engineering and Environmental
Services, Attention: Mr. Bryant Bullock

SUBJECT: Potable Water Sources Information Verification,
Contract No. DAAA15-94-D-0012, Aberdeen Proving Ground, MD

1. The information is submitted under subject contract. Request a copy of the final product be made available to the undersigned. This product be at a minimum a partial of Fort Huachuca only, or at best, a complete product of each installation located in the western United States.

2. Point of contact is the undersigned, telephone (602) 533-1864; Fax (602) 533-3709.

Encl


MICHAEL M. SHAUGHNESSEY
Realty Specialist
Fort Huachuca, Arizona 85613-6000

CF:

Cdr, U.S. Army Envir Center (ATTN: SFIM-AEC-IRG, Ms. Haines),
Aberdeen Proving Ground, MD 21010-5401

USF200003312



**Horne Engineering
And Environmental
Services**

4501 Ford Avenue
Suite 1100
Alexandria, VA 22302
(703) 379-5800
Fax (703) 379-5809

January 30, 1995

Fort Huachuca

Dear Mr. Shaughnessey:

Re: Portable water source information verification

We appreciate you taking the time to assist us in verifying the information we currently have concerning your installation's water system. Attached are several sheets which present our understanding of what your installation currently maintains as a potable water source.

The tables are organized so that there is a column for each water source, be it Well 1, Well 2, etc. What we have attempted to do is identify all the active, inactive, reserve, and abandoned potable water sources and attribute as many details as possible to each. We have attempted to identify which aquifer the water source taps, and what raw water treatment facility handles the water sources output, as well as generic information concerning the installation proper. Also attached, is a page which describes the information that is presented in each data field.

In addition, we are seeking information concerning the proximity of the water source to a variety of potential pollution sources.

If you have any questions concerning this information please call me at (703) 379-5600.

Sincerely,

A handwritten signature in black ink, appearing to read 'Bryant Bullock'.

Bryant Bullock

Enclosures

| INSTALLATION | Ft. Huachuca | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) |
|----------------------------------|---|---|---|---|
| WATER SOURCE | | | | |
| Potable Water Source | Well (75) | Well (75) | Well (75) | Well (75) |
| Source No./Name | 1 (75) 87 | 2 (75) | 3 (75) | 4 (75) |
| AEHA Sample Location # | - | - | - | - |
| Township/Stion/Rge | D 212022 BBB | D 222003 BBB | D 212033 DAB | D 212023 ABA |
| Source location | - | - | - | - |
| Permit #/State ID # | 55-626106 (301) | 55-626111 (301) | 55-626110 (301) | 55-626109 (301) |
| Bldg. #/name | - 79696 | - 90013 | - 90431 | - 90672 |
| Area served | Cantonment Area (83) | Cantonment Area (83) | Cantonment Area (83) | Cantonment Area (83) |
| Control | Army | Army | Army | Army |
| WHP Plan | - | - | - | - |
| Classification | | | | |
| Source status | 1942 (226) 1982 | 1942 (226) 1941 | 1942 (226) 1943 | 1942 (226) 1943 |
| Date constructed | 1982 | 1941 | 1943 | 1943 |
| Date terminated | - | - | - | - |
| Diameter (unspecified) (in) | 14 (75) 16 | 14 (75) 12 | 16 (75) 16-18 | 18 (75) |
| Hole diameter (in) | - | - | - | - |
| Casing diameter (outside) (in) | - | - | - | - |
| Casing diameter (inside) (in) | - | - | - | - |
| Screened/open hole interval (ft) | 762 to 762/open hole (301) | 710 to 710/open hole (301) | 802 to 802/open hole (301) | 912 to 912/open hole (301) |
| Depth (ft) | 702 (75); 762 (301) | 710 (75) | 802 (75) | 807 (75); 912 (301) |
| Specific yield (gpm/ft) | 600 | 455 | 455 | 455 |
| Static water level (ft) | 483 (75); 518 (301) | 484 (75); 515 (301) | 460 (75); 501 (301) | 462 (75); 494 (301) |
| Water level while pumping | 509 (83) | 523 (83) | 488 (83) | 482 (83) |
| Pump capacity (gpm) | 550 (75); 500 (301) 800 | 760 (75); 700 (301) | 700 (75) | 700 (75) |
| Pump setting (ft) | 540 | 615 | 576 | 575 |
| Notes | | | | |
| AQUIFER INFORMATION | | | | |
| Name | Upper San Pedro Basin | - same - | - same - | - same - |
| Sole source | Basin and Range-low lands | | | |
| Type | Basin Fill | | | |
| Material | Partially cemented sand and gravel (83) |
| Depth minimum (ft) | 300 | | | |
| Depth maximum (ft) | 1200 | | | |
| Thickness average (ft) | 450 | | | |
| Conductivity (cm/s) | 6-9 ft per day | | | |
| Average depth to water (ft) | 265 | | | |
| Flow direction | NE | | | |
| Recharge | 5000 ac ft | | | |
| Notes | Storage 31.8 million acre feet | | | |

all wells 1-8

| INSTALLATION | Ft. Huachuca | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) |
|---|--|-------------------------------------|-------------------------------------|-------------------------------------|
| WATER SYSTEM | | | | |
| Name | Main Post Distribution System/TW 07 | Main Post Distribution System/TW 07 | Main Post Distribution System/TW 07 | Main Post Distribution System/TW 07 |
| State water supply number | 02078 (301) | 02078 (301) | 02078 (301) | 02078 (301) |
| Treatment | Chlorination and flouridation (75) | Chlorination and flouridation (75) | Chlorination and flouridation (75) | Chlorination and flouridation (75) |
| Bldg. No./Name | 70230- | | | |
| Maximum capacity (mgd) | 8.06 (3) | | | |
| Average production (mgpd) | 2.6 (3) | | | |
| Population served | 16039 (302) 18,420 | | | |
| Non-DOD population served | 10357 (302) | | | |
| Number of service connections | 1 | | | |
| Notes | | | | |
| INSTALLATION INFORMATION | | | | |
| Annual average precipitation (in) | 16.45 @ 5,000 feet 14.5 (83) | | | |
| Evaporation (in) | 7.5 | | | |
| Recharge (in) | 1.8 (5000 ac ft/yr) | | | |
| Annual average temperature (F) | 62 | | | |
| Annual average minimum temperature (F) | 32 | | | |
| Annual average maximum temperature (F) | 90 | | | |
| Topography (%) | 2-6 | | | |
| Soils | Sandy gravel and gravelly sand | | | |
| Vadose zone material | Red clay with sand and gravel | | | |
| Notes | | | | |
| POTENTIAL CONTAMINANT SOURCE INFORMATION | | | | |
| Landfill (proximity: mi.) | 1/4 to 1/2 miles | | | |
| Landfill (volume: yd3) | inactive | | | |
| Surface impoundment (proximity: mi.) | 1/4 to 1 mile | | | |
| Surface impoundment (vol. yd3) | 36 acre feet | | | |
| Drums (proximity: mi.) | 1/2 to 1 1/2 miles | | | |
| Drums (number) | | | | |
| Tanks and non-drum containers (proximity: mi.) | 1/2 mile | | | |
| Tanks and non-drum containers (gal.) | | | | |
| Contaminated soil (proximity: mi.) | | | | |
| Contaminated soil (vol. yd3) | | | | |
| Piles (proximity: mi.) | | | | |
| Piles (vol. yd3) | | | | |
| Land treatment (proximity: mi.) | | | | |
| Land treatment (vol. yd3) | | | | |
| Other | | | | |

* Refer to

U.S. Army Toxic and Hazardous Materials Agency
 "Installation Assessment-Relock Program"
 Working Document Fort Huachuca, AZ
 85X-12 Feb 86 (TS-71C-85X)
 Interagency Agreement #RW-21930148-01-8

| INSTALLATION | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) |
|----------------------------------|---|---|---|---|
| POTABLE SOURCE | | | | |
| Potable Water Source | Well (75) | Well (75) | Well (75) | Well (75) |
| Source No./Name | 5 (75) | 6 (75) | 7 (75) 8 | 8 (75) Ref base #1 |
| AEHA Sample Location # | — | — | — | — |
| Township/Station/Rge | D 2120 28 CAC | D 2120 33 DBB | D 2120 16 ADA | D 2120 26 ACA |
| Source location | — | — | — | — |
| Permit #/State ID # | 55-626108 (301) | 55-626107 (301) | 55-626105 (301) | 55-626104 (301) |
| Bldg. #/name | — 90860 | — | — P42 PW1-1W | — |
| Area served | Cantonment Area (83) | Cantonment Area (83) | <i>Cantonment</i> East Range (83) | East Range (83) |
| Control | Army | Army | Army | Army |
| WHP Plan | — | — | — | — |
| Classification | | | | |
| Source status | 1942 (226) 1943 | 1942 (226) 1959 | 1982 | 1978 |
| Date constructed | 1943 | 1959 | 1982 | 1978 |
| Date terminated | — | — | — | — |
| Diameter (unspecified) (in) | 18 (75) 16-18 | 16 (75) | 14 (75) 16 | 14 (75) |
| Hole diameter (in) | — | — | — | — |
| Casing diameter (outside) (in) | — | — | — | — |
| Casing diameter (inside) (in) | — | — | — | — |
| Screened/open hole interval (ft) | 800 to 800/open hole (301) | 803 to 1230 (301) | 807 to 807/open hole (301) | 422 to 422/open hole (301) |
| Depth (ft) | 800 (75) | 1200 (75): 1230 (301) | 800 (75) | 805 (75): 125 (301) |
| Specific yield (gpm/ft) | 455 | 500 | 600 | — |
| Static water level (ft) | 447 (75): 486 (301) | 1039 (75): 523 (301) | 480 (75): 500 (301) | 470 (75): 217 (301) |
| Water level while pumping | 517 (83) | 112 (83) | 508 (83) | 501 (83) |
| Pump capacity (gpm) | 750 (75): 700 (301) | 750 (75): 700 (301) | 800 (75) | 800 (75): 125 (301) |
| Pump setting (ft) | 660 | 660 | 540 | — |
| Notes | | | | |
| AQUIFER INFORMATION | | | | |
| Name | — same — | — same — | — same — | — same — |
| Sole source | | | | |
| Type | | | | |
| Material | Partially cemented sand and gravel (83) |
| Depth minimum (ft) | | | | |
| Depth maximum (ft) | | | | |
| Thickness average (ft) | | | | |
| Conductivity (cm/s) | | | | |
| Average depth to water (ft) | | | | |
| Flow direction | | | | |
| Recharge | | | | |
| Notes | | | | |

| INSTALLATION | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) |
|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| WATER SYSTEM | | | | |
| Name | Main Post Distribution System/TW 07 |
| State water supply number | 02078 (301) | 02078 (301) | 02078 (301) | 02078 (301) |
| Treatment | Chlorination and flouridation (75) |
| Bldg. No./Name | 22011 | 22003 | 15665 (75) 15664 | 15665 (75) 90015 |
| Maximum capacity (mgd) | -- | -- | -- | -- |
| Average production (mgpd) | -- | -- | -- | -- |
| Population served | -- | -- | -- | -- |
| Non-DOD population served | -- | -- | -- | -- |
| Number of service connections | -- | -- | -- | -- |
| Notes | Water Treatment Bldg | Water Treatment Bldg | Chlorinator Bldg | Water Treatment Bldg |
| INSTALLATION INFORMATION | | | | |
| Annual average precipitaton (in) | | | | |
| Evaporation (in) | | | | |
| Recharge (in) | | | | |
| Annual average temperature (F) | | | | |
| Annual average minimum temperature (F) | | | | |
| Annual average maximum temperature (F) | | | | |
| Topography (%) | | | | |
| Soils | | | | |
| Vadose zone material | | | | |
| Notes | | | | |
| POTENTIAL CONTAMINANT SOURCE INFORMATION | | | | |
| Landfill (proximity: mi.) | | | | |
| Landfill (volume: yd3) | | | | |
| Surface impoundment (proximity: mi.) | | | | |
| Surface impoundment (vol. yd3) | | | | |
| Drums (proximity: mi.) | | | | |
| Drums (number) | | | | |
| Tanks and non-drum containers (proximity: mi.) | | | | |
| Tanks and non-drum containers (gal.) | | | | |
| Contaminated soil (proximity: mi.) | | | | |
| Contaminated soil (vol. yd3) | | | | |
| Piles (proximity: mi.) | | | | |
| Piles (vol. yd3) | | | | |
| Land treatment (proximity: mi.) | | | | |
| Land treatment (vol. yd3) | | | | |
| Other | | | | |

| INSTALLATION | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) |
|---------------------------------|--|--|------------------------|------------------------|
| WATER SOURCE | | | | |
| Potable Water Source | Well (83) | Well (83) | Well (75) | Well (75) |
| Source No./Name | Windmill #1 | Windmill #2 | Test Well #7 | Test Well #9 |
| AEHA Sample Location # | - | - | - | - |
| Township/Stion/Rge | NESESW 34 20S 20E | SWSFSW 27 20S 20E | SESWNW 11 21S 20E | SWSWNW 17 21S 21E |
| Source location | - | - | - | - |
| Permit #/State ID # | - | - | - | - |
| Bldg. #/name | - | - | - | - |
| Area served | East Range (83) | East Range (83) | East Range (83) | East Range (83) |
| Control | Army | Army | Army | Army |
| WHP Plan | - | - | - | - |
| Classification | Non-potable w/potable potential (83) | Non-potable w/potable potential (83) | Test well (83) | Test well (83) |
| Source status | Active (83) Capped | Active (83) Capped | Abandoned (83) Capped | Abandoned (83) Capped |
| Date constructed | 1910 | 1905 | 1971 to 1972 (83) 1973 | 1971 to 1972 (83) 1973 |
| Date terminated | - | - | - | - |
| Diameter (unspecified) (in) | 4 | 4 | 8 to 12 (83) | 8 to 12 (83) |
| Hole diameter (in) | - | - | - | - |
| Casing diameter (outside) (in) | - | - | - | - |
| Casing diameter (inside) (in) | - | - | - | - |
| Screens/open hole interval (ft) | - | - | - | - |
| Depth (ft) | 80 | 125 | > 500 (83) | > 500 (83) |
| Specific yield (gpm/ft) | - | - | - | - |
| Static water level (ft) | - | - | - | - |
| Water level while pumping | - | - | - | - |
| Pump capacity (gpm) | - | - | - | - |
| Pump setting (ft) | - | - | - | - |
| Notes | Service single building in remote area, workers bring bottled water for consumption (83) | Service single building in remote area, workers bring bottled water for consumption (83) | | |
| QUIVER INFORMATION | | | | |
| Name | ~same~ | ~same~ | ~same~ | ~same~ |
| Sole source | | | | |
| Type | | | | |
| Material | | | | |
| Depth minimum (ft) | | | | |
| Depth maximum (ft) | | | | |
| Thickness average (ft) | | | | |
| Conductivity (cm/s) | | | | |
| Average depth to water (ft) | | | | |
| Flow direction | | | | |
| Recharge | | | | |
| Notes | | | | |

| INSTALLATION | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) |
|---|-----------------------------|-----------------------------|----------------------|----------------------|
| WATER SYSTEM | | | | |
| Name | | | | |
| State water supply number | | | | |
| Treatment | Chlorination potential (83) | Chlorination potential (83) | | |
| Bldg. No./Name | 22011 | 22019 | 70563 | |
| Maximum capacity (mgd) | - | - | - | |
| Average production (mgpd) | - | - | - | |
| Population served | - | - | - | |
| Non-DOD population served | - | - | - | |
| Number of service connections | - | - | - | |
| Notes | Water Treatment Bldg | Water Treatment Bldg | Water Treatment Bldg | |
| INSTALLATION INFORMATION | | | | |
| Annual average precipitation (in) | | | | |
| Evaporation (in) | | | | |
| Recharge (in) | | | | |
| Annual average temperature (F) | | | | |
| Annual average minimum temperature (F) | | | | |
| Annual average maximum temperature (F) | | | | |
| Topography (%) | | | | |
| Soils | | | | |
| Vadose zone material | | | | |
| Notes | | | | |
| POTENTIAL CONTAMINANT SOURCE INFORMATION | | | | |
| Landfill (proximity: ml.) | | | | |
| Landfill (volume: yd3) | | | | |
| Surface impoundment (proximity: ml.) | | | | |
| Surface impoundment (vol. yd3) | | | | |
| Drums (proximity: ml.) | | | | |
| Drums (number) | | | | |
| Tanks and non-drum containers (proximity: ml.) | | | | |
| Tanks and non-drum containers (gal.) | | | | |
| Contaminated soil (proximity: ml.) | | | | |
| Contaminated soil (vol. yd3) | | | | |
| Piles (proximity: ml.) | | | | |
| Piles (vol. yd3) | | | | |
| Land treatment (proximity: ml.) | | | | |
| Land treatment (vol. yd3) | | | | |
| Other | | | | |

| INSTALLATION | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) |
|----------------------------------|---------------------------|---------------------------|-----------------------|-----------------------|
| WATER SOURCE | | | | |
| Potable Water Source | Well (83) | Well (83) | Well (83) | Well (83) |
| Source No./Name | TEST WELL #1 | TEST WELL #2 | TEST WELL #3 | TEST WELL #4 |
| AEHA Sample Location # | - | - | - | - |
| Township/Stion/Rge | NWSWSE 20 21S 20E | NESWNW 30 21S 20E | NENENE 16 21S 20E | SWSENE 15 21S 20E |
| Source location | - | - | - | - |
| Permit #/State ID # | - | - | - | - |
| Bldg. #/name | - | - | - | - |
| Area served | East Range (83) Main Post | East Range (83) Main Post | East Range (83) | East Range (83) |
| Control | Army | Army | Army | Army |
| WHP Plan | - | - | - | - |
| Classification | Test well (83) | Test well (83) | Test well (83) | Test well (83) |
| Source status | Abandoned (83) Capped | Abandoned (83) Capped | Abandoned (83) Capped | Abandoned (83) Capped |
| Date constructed | 1971 to 1972 (83) | 1971 to 1972 (83) | 1971 to 1972 (83) | 1971 to 1972 (83) |
| Date terminated | - | - | - | - |
| Diameter (unspecified) (in) | 8 to 12 (83) | 8 to 12 (83) | 8 to 12 (83) | 8 to 12 (83) |
| Hole diameter (in) | - | - | - | - |
| Casing diameter (outside) (in) | - | - | - | - |
| Casing diameter (inside) (in) | - | - | - | - |
| Screened/open hole interval (ft) | - | - | - | - |
| Depth (ft) | > 500 (83) | > 500 (83) | > 500 (83) | > 500 (83) |
| Specific yield (gpm/ft) | - | - | - | - |
| Static water level (ft) | - | - | - | - |
| Water level while pumping | - | - | - | - |
| Pump capacity (gpm) | - | - | - | - |
| Pump setting (ft) | - | - | - | - |
| Notes | | | | |
| AQUIFER INFORMATION | | | | |
| Name | ~ same ~ | ~ same ~ | ~ same ~ | ~ same ~ |
| Sole source | | | | |
| Type | | | | |
| Material | | | | |
| Depth minimum (ft) | | | | |
| Depth maximum (ft) | | | | |
| Thickness average (ft) | | | | |
| Conductivity (cm/s) | | | | |
| Average depth to water (ft) | | | | |
| Flow direction | | | | |
| Recharge | | | | |
| Notes | | | | |

| INSTALLATION | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) |
|---|----------------------|----------------------|----------------------|----------------------|
| WATER SYSTEM | | | | |
| Name | | | | |
| State water supply number | | | | |
| Treatment | | | | |
| Bldg. No./Name | | | | |
| Maximum capacity (mgd) | | | | |
| Average production (mgpd) | | | | |
| Population served | | | | |
| Non-DOD population served | | | | |
| Number of service connections | | | | |
| Notes | | | | |
| INSTALLATION INFORMATION | | | | |
| Annual average precipitation (in) | | | | |
| Evaporation (in) | | | | |
| Recharge (in) | | | | |
| Annual average temperature (F) | | | | |
| Annual average minimum temperature (F) | | | | |
| Annual average maximum temperature (F) | | | | |
| Topography (%) | | | | |
| Soils | | | | |
| Vadose zone material | | | | |
| Notes | | | | |
| POTENTIAL CONTAMINANT SOURCE INFORMATION | | | | |
| Landfill (proximity: mi.) | | | | |
| Landfill (volume: yd3) | | | | |
| Surface impoundment (proximity: mi.) | | | | |
| Surface impoundment (vol. yd3) | | | | |
| Drums (proximity: mi.) | | | | |
| Drums (number) | | | | |
| Tanks and non-drum containers (proximity: mi.) | | | | |
| Tanks and non-drum containers (gal.) | | | | |
| Contaminated soil (proximity: mi.) | | | | |
| Contaminated soil (vol. yd3) | | | | |
| Piles (proximity: mi.) | | | | |
| Piles (vol. yd3) | | | | |
| Land treatment (proximity: mi.) | | | | |
| Land treatment (vol. yd3) | | | | |
| Other | | | | |

| INSTALLATION | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) |
|----------------------------------|------------------------|------------------------------------|---------------------------|---|
| WATER SOURCE | | | | |
| Potable Water Source | Well (83) | Spring (75) | Well (75) | Prod. - raw source is Garden Canyon streams (83) Spring |
| Source No./Name | Test Well #6 | Huachuca Canyon | Test Well #8 | Garden Canyon |
| AEHA Sample Location # | - | - | - | - |
| Township/Section/Rge | SESW 35 20S 20E | T22S R19E | NW 1/4 SW 13 21S 20E | T22S R19-20E |
| Source location | - | - | - | - |
| Permit #/State ID # | - | - | - | - |
| Bldg. #/name | - | - | - | - |
| Area served | East Range (83) | Old Fort (75) Cantonment | East Post (75) East Range | Remote sites within training ranges (83) |
| Control | Army | Army | Army | Army |
| WHP Plan | - | - | - | - |
| Classification | Test well (83) | Non potable with potable potential | Potable (75) | Non potable with potable potential |
| Source status | Abandoned (83) Capped | Not in service (75) | capped | 1970 |
| Date constructed | 1971 to 1972 (83) 1973 | 1970 | 1973 | 1970 |
| Date terminated | - | 1983 | - | - |
| Diameter (unspecified) (in) | 8 to 12 (83) | - | - | - |
| Hole diameter (in) | - | - | - | - |
| Casing diameter (outside) (in) | - | - | - | - |
| Casing diameter (inside) (in) | - | - | - | - |
| Screened/open hole interval (ft) | - | - | - | - |
| Depth (ft) | > 500 (83) | - | - | - |
| Specific yield (gpm/ft) | - | @400 (75) 106 | - | 413 |
| Static water level (ft) | - | - | - | - |
| Water level while pumping | - | - | - | - |
| Pump capacity (gpm) | - | - | - | - |
| Pump setting (ft) | - | - | - | - |
| Notes | | | | |
| AQUIFER INFORMATION | | | | |
| Name | ~ same ~ | ~ same ~ | ~ same ~ | ~ same ~ |
| Sole source | | | | |
| Type | | | | |
| Material | | | | |
| Depth minimum (ft) | | | | |
| Depth maximum (ft) | | | | |
| Thickness average (ft) | | | | |
| Conductivity (cm/s) | | | | |
| Average depth to water (ft) | | | | |
| Flow direction | | | | |
| Recharge | | | | |
| Notes | | | | |

| INSTALLATION | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) |
|---|----------------------|----------------------|----------------------|----------------------|
| WATER SYSTEM | | | | |
| Name | | | | |
| State water supply number | | | | |
| Treatment | | | | |
| Bldg. No./Name | | | | |
| Maximum capacity (mgd) | | | | |
| Average production (mgpd) | | | | |
| Population served | | | | |
| Non-DOD population served | | | | |
| Number of service connections | | | | |
| Notes | | | | |
| INSTALLATION INFORMATION | | | | |
| Annual average precipitation (in) | | | | |
| Evaporation (in) | | | | |
| Recharge (in) | | | | |
| Annual average temperature (F) | | | | |
| Annual average minimum temperature (F) | | | | |
| Annual average maximum temperature (F) | | | | |
| Topography (%) | | | | |
| Soils | | | | |
| Vadose zone material | | | | |
| Notes | | | | |
| POTENTIAL CONTAMINANT SOURCE INFORMATION | | | | |
| Landfill (proximity: mi.) | | | | |
| Landfill (volume: yd3) | | | | |
| Surface impoundment (proximity: mi.) | | | | |
| Surface impoundment (vol. yd3) | | | | |
| Drums (proximity: mi.) | | | | |
| Drums (number) | | | | |
| Tanks and non-drum containers (proximity: mi.) | | | | |
| Tanks and non-drum containers (gal.) | | | | |
| Contaminated soil (proximity: mi.) | | | | |
| Contaminated soil (vol. yd3) | | | | |
| Piles (proximity: mi.) | | | | |
| Piles (vol. yd3) | | | | |
| Land treatment (proximity: mi.) | | | | |
| Land treatment (vol. yd3) | | | | |
| Other | | | | |

| INSTALLATION | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) |
|----------------------------------|----------------------------|-----------------------------|----------------------------|--|
| WATER SOURCE | | | | |
| Potable Water Source | Well (301) | Well (301) Garden | Well (301) | Well (301) |
| Source No./Name | Well #SR (301) | Rembass No. 2 (301) Well #9 | Rembass No. 1 (301) 2 | Well #1 (301) |
| AEHA Sample Location # | — | — | — | — |
| Township/Stion/Rge | D 212022 BBB | D 222029 DDB | D 212014 DDC | D 222003 BBB |
| Source location | — | — | — | — |
| Permit #/State ID # | 55-626101 (301) | 55-626102 (301) | 55-626103 (301) | 55-626112 (301) |
| Bldg. #/name | — | — | — | — |
| Area served | East Range | Garden Cyn Area | East Range | Cantonment Area Garden Canyon (301) |
| Control | Army | Army | Army | Army |
| WHP Plan | — | — | — | — |
| Classification | | | | |
| Source status | Reserve (301) | Reserve (301) | Reserve (301) 1978 | 1940 |
| Date constructed | 1964 | 1930 | 1978 | 1940 |
| Date terminated | — | — | — | — |
| Diameter (unspecified) (in) | 8 | 8 | 8 | 14 |
| Hole diameter (in) | — | — | — | — |
| Casing diameter (outside) (in) | — | — | — | — |
| Casing diameter (inside) (in) | — | — | — | — |
| Screened/open hole interval (ft) | 750 to 750/open hole (301) | 202 to 202/open hole (301) | 420 to 420/open hole (301) | 823 to 823/open hole (301) |
| Depth (ft) | 750 (301) | 202 (301) | 420 (301) | 823 (301) |
| Specific yield (gpm/ft) | unmetered | 3 | unmetered | 455 |
| Static water level (ft) | 329 (301) | 17 (301) | 217 (301) | 518 (301) |
| Water level while pumping | — | — | — | — |
| Pump capacity (gpm) | 350 (301) | 80 (301) | 125 (301) | 500 (301) |
| Pump setting (ft) | — | — | — | 620 |
| Notes | | | | |
| AQUIFER INFORMATION | | | | |
| Name | ~same~ | ~same~ | ~same~ | ~same~ |
| Sole source | | | | |
| Type | | | | |
| Material | | | | |
| Depth minimum (ft) | | | | |
| Depth maximum (ft) | | | | |
| Thickness average (ft) | | | | |
| Conductivity (cm/s) | | | | |
| Average depth to water (ft) | | | | |
| Flow direction | | | | |
| Recharge | | | | |
| Notes | | | | |

| INSTALLATION | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) | Ft. Huachuca (cont.) |
|---|----------------------|----------------------|----------------------|----------------------|
| WATER SYSTEM | | | | |
| Name | | | | |
| State water supply number | | | | |
| Treatment | | | | |
| Bldg. No./Name | | | | |
| Maximum capacity (mgd) | | | | |
| Average production (mgpd) | | | | |
| Population served | | | | |
| Non-DOD population served | | | | |
| Number of service connections | | | | |
| Notes | | | | |
| INSTALLATION INFORMATION | | | | |
| Annual average precipitation (in) | | | | |
| Evaporation (in) | | | | |
| Recharge (in) | | | | |
| Annual average temperature (F) | | | | |
| Annual average minimum temperature (F) | | | | |
| Annual average maximum temperature (F) | | | | |
| Topography (%) | | | | |
| Soils | | | | |
| Vadose zone material | | | | |
| Notes | | | | |
| POTENTIAL CONTAMINANT SOURCE INFORMATION | | | | |
| Landfill (proximity: mi.) | | | | |
| Landfill (volume: yd3) | | | | |
| Surface impoundment (proximity: mi.) | | | | |
| Surface impoundment (vol. yd3) | | | | |
| Drums (proximity: mi.) | | | | |
| Drums (number) | | | | |
| Tanks and non-drum containers (proximity: mi.) | | | | |
| Tanks and non-drum containers (gal.) | | | | |
| Contaminated soil (proximity: mi.) | | | | |
| Contaminated soil (vol. yd3) | | | | |
| Piles (proximity: mi.) | | | | |
| Piles (vol. yd3) | | | | |
| Land treatment (proximity: mi.) | | | | |
| Land treatment (vol. yd3) | | | | |
| Other | | | | |

| | |
|----------------------------------|-----------------------------|
| INSTALLATION | Ft. Huachuca (cont.) |
| Potable Water Source | Well (301) |
| Source No./Name | East Range Bunker |
| AEHA Sample Location # | - |
| Township/Section/Rge | 0212107 BDB |
| Source location | - |
| Permit #/State ID # | 55-626113 (301) |
| Bldg. #/name | - |
| Area served | East Range |
| Control | Army |
| WHP Plan | - |
| Classification | OK |
| Source status | Reserve (301) MSB |
| Date constructed | 1958 |
| Date terminated | - |
| Diameter (unspecified) (in) | 4 |
| Hole diameter (in) | - |
| Casing diameter (outside) (in) | - |
| Casing diameter (inside) (in) | - |
| Screened/open hole interval (ft) | 350 to 350/open hole (301) |
| Depth (ft) | 350 (301) |
| Specific yield (gpm/ft) | unmetered |
| Static water level (ft) | 225 (301) |
| Water level while pumping | - |
| Pump capacity (gpm) | 35 (301) |
| Pump setting (ft) | - |
| Notes | |
| WATER INFORMATION | |
| Name | ~ same ~ |
| Sole source | |
| Type | |
| Material | |
| Depth minimum (ft) | |
| Depth maximum (ft) | |
| Thickness average (ft) | |
| Conductivity (cm/s) | |
| Average depth to water (ft) | |
| Flow direction | |
| Recharge | |
| Notes | |

| INSTALLATION | Ft. Huachuca (cont.) |
|--|----------------------|
| Name | |
| State water supply number | |
| Treatment | |
| Bldg. No./Name | |
| Maximum capacity (mgd) | |
| Average production (mgpd) | |
| Population served | |
| Non-DOD population served | |
| Number of service connections | |
| Notes | |
| Annual average precipitation (in) | |
| Evaporation (in) | |
| Recharge (in) | |
| Annual average temperature (F) | |
| Annual average minimum temperature (F) | |
| Annual average maximum temperature (F) | |
| Topography (%) | |
| Soils | |
| Vadose zone material | |
| Notes | |
| Landfill (proximity: mi.) | |
| Landfill (volume: yd3) | |
| Surface impoundment (proximity: mi.) | |
| Surface impoundment (vol. yd3) | |
| Drums (proximity: mi.) | |
| Drums (number) | |
| Tanks and non-drum containers (proximity: mi.) | |
| Tanks and non-drum containers (gal.) | |
| Contaminated soil (proximity: mi.) | |
| Contaminated soil (vol. yd3) | |
| Piles (proximity: mi.) | |
| Piles (vol. yd3) | |
| Land treatment (proximity: mi.) | |
| Land treatment (vol. yd3) | |
| Other | |

| | |
|---|--|
| INSTALLATION | Fort Huachuca |
| I.D. No./ARLOC | 04005 |
| MACOM | U.S. Army Training and Doctrine Command |
| Town/City | Sierra Vista |
| County/Parish | Cochise |
| State | Arizona |
| Zip code | 85613-6000 |
| POC | Who provided information. Mr Mike Shaughnessy |
| Office | What office are they affiliated with (ex: DPW, Real Property, etc) DPW - Real Property ofc |
| Telephone | (520) 533-1864 Fax 533-3709 |
| WATER SOURCE INFORMATION | |
| Potable Water Source | What are the potable water sources (surface water, spring, well, etc.) for the installation. List each one in a separate column. |
| Source No./Name | What name or number is used to identify the water source at the installation (ex: 1, 1A, Health Field well). |
| Township/Section/Range | |
| Source location | Where on the installation is the water source located (ex: 12 miles north of the cantonment area) |
| Permit # | What is the state, community or federal permit number for the water source. |
| Bldg. #/name | What building is the potable water source associated with. |
| Area served | What area of the installation is served by the potable water source. |
| Control | Who controls the potable water source (ex: Army, City, Municipality, etc.) |
| WHP Plan | If the water source uses groundwater, is there a WHP plan for the source. Identify if each source is covered under the plan. |
| Classification | Is the potable water source: Potable or non-potable; community or non-community; transient or non-transient; industrial or agricultural) |
| Source status | Is the water source: active; inactive; reserve; or abandoned. |
| Date constructed | In what year was the water source completed. |
| Date terminated | In what year was the water source removed from service. |
| Diameter (unspecified) (in) | What is the diameter of the well (ex: 8 inches) |
| Hole diameter (in) | What is the diameter of the drilled or dug hole (ex: 24 inches). |
| Casing diameter (outside) (in) | What is the diameter of the outside of the well casing (ex: 18 inches) |
| Casing diameter (inside) (in) | What is the diameter of the inside of the well casing (ex: 16 inches) |
| Screened/open hole interval (ft) | Over what intervals is the well open to the aquifer/formation (ex: 100 to 200 ft and 300 to 450 ft) |
| Depth (ft) | What is the completed depth of the well (ex: 450 ft) |
| Specific yield (g/ft) | What is the possible yield of the well or spring (ex: 450 gallons per minute). |
| Static water level (ft) | What is the depth to groundwater in each well when the pump is not in operation (ex: artesian, 23 ft below ground surface, etc.) |
| Drawdown (ft) | What is the depth to water in each well when the pump is in operation (ex: 45 ft below ground surface) |
| Pump capacity (gpm) | What is the rated capacity of the water extraction pump (ex: 100 gallons per minute) |
| Pump setting (ft) | At what depth in the well is the pump set (ex: 300 ft below ground surface) |
| Notes | Any comments on the water system (ex: the well was abandoned due to high nitrate concentrations) |
| AQUIFER INFORMATION | |
| Name | What is the name(s) of the water bearing units tapped by the well or spring (ex: Edward's aquifer) |
| Sole source | Is this aquifer the sole source of water for the installation. |
| Type | Is the aquifer: unconfined, confined, artesian, semi-confined/leaky, etc. |
| Material | What is the aquifer composed of (ex: sandstone, sand and gravel, silty sands, etc.) |
| Depth minimum (ft) | What is the average minimum depth of the aquifer beneath the installation (ex: 100 ft below ground level) |
| Depth maximum (ft) | What is the average maximum depth of the aquifer beneath the installation (ex: 500 ft below ground level) |
| Thickness average (ft) | What is the average thickness of the aquifer beneath the installation (ex: 250 ft) |
| Conductivity (cm/s) | What is the measured/calculated hydraulic conductivity of the aquifer, ideally based on a data collected from the well. |
| Average depth to water (ft) | At what depth can groundwater be found under the installation (ex: 25 feet) |
| Flow direction | What is the general flow direction of the aquifer, irrespective of changes due to pumping. |
| Recharge | In what area and how is the aquifer recharged (ex: direct recharge through infiltration of precipitation on the installation) |
| Notes | Any comments on the aquifer (ex: the water bearing zones are capped by 300 feet of dense clay, and are impervious) |
| WATER SYSTEM INFORMATION | |
| Name | What is the name of the raw water treatment system (East Area Water Treatment Plant), please assign each treatment plant to the water sources that supply its raw water. |
| State water supply number | What is the state identification number for the water treatment system (ex: WTP 1002) |
| Treatment | How is the raw water treated (ex: pre- and post chlorination, rapid sand filtration, aeration, chemical addition) |
| Bldg. No./Name | What is the water treatment plants building number. |
| Maximum capacity (mgd) | What is the maximum capacity in million gallons per day of the water treatment plant. |
| Average production (mgpd) | What is the average production of the water treatment plant based on actual usage. |
| Population served | How many people are served by the water system (the sum of all Army, civilian, family, full time reserve, or national guard personnel) |
| Non-DOD population served | How many non DOD personnel are served (sum of all civilians and families served) |
| Number of service connections | How many services connections are there which are fed by this water treatment plant (ex: 56) |
| Notes | Any comments on the plant. |

| INSTALLATION INFORMATION | |
|--|---|
| Annual average precipitation (in) | What is the average annual precipitation on the installation (ex: 45 inches) 16.45 @ 5,000' elev. |
| Evaporation (in) | What is the average evaporation rate on the installation (ex: 45 inches) 75 |
| Recharge (in) | What is the average recharge at the installation (ex: 0 inches) .8 (5000 ac ft per year) |
| Annual average temperature (F) | What is the average annual temperature at the installation (ex: 78 degrees farenheit) 62° |
| Annual average minimum temperature (F) | What is the average annual minimum temperature at the installation (ex: 34 degrees farenheit) 32° |
| Annual average maximum temperature (F) | What is the average annual maximum temperature at the installation (ex: 87 degrees farenheit) 90° |
| Topography (%) | What is the characteristic topography of the installation (ex: slopes 1 to 2%, 2 to 6%, mildly rolling hills, etc.) 2-6% |
| Soils | What are the major soil units at the installation, specifically in the vicinity of the water source and recharge areas (ex: silty loams, clayey organic sands, etc.) Sandy gravel and gravelly sand |
| Vadose zone material | What is the vadose zone comprised of, specifically in the vicinity of the water source and recharge areas (ex: silty sands, loose gravels, etc.) Red clay with sand and gravel |
| Notes | Any comments on the installation. |
| POTENTIAL CONTAMINANT SOURCE INFORMATION | |
| Landfill (proximity: mi.) | How close is the nearest landfill to each source of water (ex: 0.5 miles, 1.0 miles, etc.). |
| Landfill (volume: yd3) | What is the approximate volume of the landfill (ex: 100,000 cubic yards) |
| Surface impoundment (proximity: mi.) | How close is the nearest surface impoundment to each source of water (ex: 0.5 miles, 1.0 miles, etc.). |
| Surface impoundment (vol. yd3) | What is the approximate volume of the surface impoundment (ex: 100,000 cubic yards) |
| Drums (proximity: mi.) | How close is the nearest drum field to each source of water (ex: 0.5 miles, 1.0 miles, etc.). |
| Drums (number) | How many drums are in this area (ex: 1,000) |
| Tanks and non-drum containers (proximity: mi.) | How close is the nearest tanks and non-drum containers to each source of water (ex: 0.5 miles, 1.0 miles, etc.). |
| Tanks and non-drum containers (gal.) | What is the total capacity of the containers in this area (ex: 100,000 gallons) |
| Contaminated soil (proximity: mi.) | How close is the nearest contaminated soil to each source of water (ex: 0.5 miles, 1.0 miles, etc.). |
| Contaminated soil (vol. yd3) | What is the approximate volume of the contaminated soil (ex: 100,000 cubic yards) |
| Piles (proximity: mi.) | How close is the nearest pile to each source of water (ex: 0.5 miles, 1.0 miles, etc.). |
| Piles (vol. yd3) | What is the approximate volume of the piles (ex: 100,000 cubic yards) |
| Land treatment (proximity: mi.) | How close is the nearest land treatment to each source of water (ex: 0.5 miles, 1.0 miles, etc.). |
| Land treatment (vol. yd3) | What is the approximate volume of the land treatment unit (ex: 100,000 cubic yards) |
| Other | Any comments on other existing conditions or potential sources of contamination. |