## **2016 EPA Region 8 TRIBAL SANITARY SURVEY FORM**

# INVENTORY

|  |  |  |  |
| --- | --- | --- | --- |
| **DATE OF SURVEY:** | **RESERVATION:** | **SURVEYOR NAME(S):** | |
| **PWS ID:** | **SYSTEM NAME:** | | |
| System representatives (including titles) present at survey:  IHS team members present:  BOR team members present:  Tribal engineer present:  Comments: | | **EMERGENCY CONTACT**  Emergency Contact Name:  Emergency cell phone: (     )  Emergency email address:  Title:  Street:  City:       State:       County:       Zip: | |
| **SYSTEM OWNER OR LEGAL REPRESENTATIVE**  Addressee Name:  Title:  Street:  City:       State:       Zip:  Owner Phone: (     )       Fax: (     )  Email Address:  Tribal Chairman (if different than owner): | | **PRIMARY ADMINISTRATIVE CONTACT**  **(to receive ALL correspondence from EPA)**  Addressee:  Title:  Street:  City:       State:       County:       Zip:  Administrative Contact Phone: (     )       Fax: (     )  Email Address: | |
| **ADDITIONAL CONTACT**  **(if any)**  Addressee:  Title:  Street:  City:       State:       County:       Zip:  Contact Phone: (     )       Fax: (     )  Email Address:  Comments: | | **PUBLIC WORKS DIRECTOR,**  **TRIBAL ENGINEER and/or WATER PLANT SUPERINTENDENT**  Addressee:  Title:  Street:  City:       State:       County:       Zip:  Contact Phone: (     )       Fax: (     )  Email Address: | |
| **DESIGNATED OPERATOR OF SYSTEM**  Name:  Certified Operator? @  Yes  No  TNC System (not required)  Treatment Cert. Level:       Distribution Cert. Level:  Treatment Cert. Exp. Date:       Distribution Cert. Exp. Date:  Cert. Authority:       Cert. Authority:  Phone: (     )  Email Address:  Contract Operator\*?  Yes  No  Date contract ends:  Comments: | | **ALTERNATE OPERATOR**  Name:  Certified Operator?  Yes  No  Not required  Treatment Cert. Level:       Distribution Cert. Level:  Treatment Cert. Exp. Date:       Distribution Cert. Exp. Date:  Cert. Authority:       Cert. Authority:  Phone: (     )  Email Address:  Comments: | |
| **WATER SYSTEM CLASSIFICATION BY EPA**  **for operator certification**  System Treatment Classification Level:  System Distribution Classification Level:  Comments: | | **WATER SYSTEM CLASSIFICATION**  **from PWS Inventory**  C = Community  NTNC = Non-Transient Non-Community  NC = Transient Non‑Community  Comments: | |
| **SYSTEM PHYSICAL ADDRESS**  Street:  City:       State:       Zip: | | **PHYSICAL LOCATION**  Physical Location and Directions: | |
| **CONTACTS**  **IHS TUC or Sanitarian:**  **Phone:**  **Email:** | | | **CONTACTS**  **BOR Contact:**  **Phone:**  **Email:** |
| **PERIOD OF OPERATION**  Year-round  Part of the year  From       to  If only open part of the year, does the entire distribution system remain pressurized during the entire off period?  Yes  No  Is this PWS operating with a lease on Federal land?  Yes  No  If yes, Federal land name:  Comments: | | | **SERVICE CONNECTIONS**  Total Service Connections (Active and Inactive):  Service Connections Metered?  Yes  No  Number of metered service connections:  Comments: |
|  | | |  |
| **OWNER TYPE**  1 Federal Government (BIA / BIE / BOR)  2 Federal Government under 638 contract with Tribe  3 Private: Subdivision, Investor, Trust, Cooperative, Water Association, etc.  4 Mixed Public/Private  5 Native American Indian Tribes & Reservations  Comments: | | | **POPULATION DIRECTLY SERVED**  **(do not include populations of consecutive PWSs)**  Residential Population:  (Number of year-round residents utilizing PWS)  Non-Transient Population:  (Number of the same persons utilizing PWS Daily for  6 months of the year – i.e. students, employees)  Transient Population:  (Average number of transient persons served by PWS **daily** during peak 60 days of operation – i.e. customers, visitors)  Does the water system serve at least 25 individuals daily at least 60 days of the year (does not need to be consecutive days)?  Yes  No  Comments (source(s) of population info): |
| **SERVICE CATEGORY (check all that apply)**  AP Airport  PC Picnic Area  BA Bathing/Swimming  RA Rest Area  BR Bar  RC Recreation  CG Campground  RS Residential  CH Church  RT Restaurant  DC Daycare Center  RV RV Park  DR Dude Ranch  SC School  HS Hospital  SD Subdivision  IB Interstate Bottler  SK Ski Area  IF Industrial/Agricultural  SS Service Station  IN Institution  US Water User's Association  LB Local Bottler  VC Visitor Center  LO Lodge  VM Vending Machine  MA Marina  WH Water Hauler  MH Mobile Home Park  XX Other  MO Motel/Hotel  Primary Service Category Description:  Comments: | | | **SOURCES (check all that apply)**  SW = Surface Water SWP = Surface Water Purchased  GW = Groundwater  GWP= Groundwater Purchased  GWUDI = Ground Water Under the Direct Influence of Surface Water  If mixed, does GW receive full SW Treatment?  Yes  No |
| Is the current water source adequate in quantity?  Yes  No Describe:  Have there been any interruptions in service since the last survey?  Yes  No Describe:  Have there been reports of a water borne disease (2 or more people)?  Yes  No Describe:  Have there been any changes to the water system since the last survey?  Yes  No Describe:  Are there any changes that are planned?  Yes  No Describe:  Comments: |
| **SUMMARY (Describe the water system in a paragraph or two)** | | | |
| The following abbreviations will be used throughout this document: NI = no information, NA = not applicable, NR = not requested,  @ = potential significant deficiency. | | | |

# SIGNIFICANT DEFICIENCIES

|  |
| --- |
| SIGNIFICANT DEFICIENCIES |
| Significant deficiencies include, but are not limited to, defects in the design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system, that EPA determines to be causing, or have the potential for causing, the introduction of contamination into the water delivered to consumers. Please note the instructions for responding to significant deficiencies in the attached cover letter. Failure to provide a response to EPA could result in a violation. |

**UNCORRECTED SIGNIFICANT DEFICIENCIES FROM PRIOR SANITARY SURVEY**

|  |
| --- |
| Numbered significant deficiencies and associated numbered photos if applicable |

# RECOMMENDATIONS

|  |
| --- |
| Numbered recommendations and associated numbered photos if applicable |

# CONSECUTIVE SYSTEMS

**(i.e. does this PWS receive some or all of its finished water from another PWS?)**

**NA**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of Wholesaler (System Receives Water From)** | **PWS ID of Wholesaler** | **Water Source Type** | **Connection Type** |
| Comments: | Comments: | GW  SW  Mixed | Permanent  Seasonal, # Days/Yr:  Emergency Only  Comments: |
| If mixed, does GW receive full SW Treatment?  Yes  No. |
| Type of residual disinfectant in water supplied:  Chlorine  Chloramines  None |
| Comments: |
| Comments: | Comments: | GW  SW  Mixed | Permanent  Seasonal, # Days/Yr:  Emergency Only  Comments: |
| If mixed, does GW receive full SW Treatment?  Yes  No. |
| Type of residual disinfectant in water supplied:  Chlorine  Chloramines  None |
| Comments: |
| Comments: | Comments: | GW  SW  Mixed | Permanent  Seasonal, # Days/Yr:  Emergency Only  Comments: |
| If mixed, does GW receive full SW Treatment?  Yes  No. |
| Type of residual disinfectant in water supplied:  Chlorine  Chloramines  None |
| Comments: |
| How many master meter connections exist from the wholesale system to the consecutive system?  Who is responsible for maintenance of the master meter connection(s) from the wholesale system?  Wholesaler  Consecutive system  Comments:  **If the consecutive system is responsible:**  Check the condition of the principal master meter and the pit for leaks or flooding and describe any concerns:  How often are inspections performed on the master meter connection?  How often is maintenance performed on the master meter connection(s)?  Does standing water exist in any meter pits?  Yes  No  If so, what is the source of the standing water?  Leaks @  Groundwater  Don’t know @  Comments: | | | |
| **If PWS Purchases Water from a WATER HAULER:**  Name of hauler:  Name of the water system supplying water to the hauler:  Is there a water tight cap on the (water system’s) fill port? @  Yes  No  How does the operator check chlorine residual at the time of delivery?  Comments: | | | |

# WHOLESALE SYSTEMS

**(i.e. does this PWS supply finished water to another PWS?)**

**NA**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of Consecutive (System Supplies Water To)** | **PWS ID or State ID of Consecutive (if no PWS ID provide contact and address)** | **Population** | **Connection Type** |
|  |  |  | Permanent  Seasonal, # Days/Yr  Emergency Only  Water is hauled (bulk water fill stations are described in Distribution section) |
|  |  |  | Permanent  Seasonal, # Days/Yr  Emergency Only  Water is hauled (bulk water fill stations are described in Distribution section) |
|  |  |  | Permanent  Seasonal, # Days/Yr  Emergency Only  Water is hauled (bulk water fill stations are described in Distribution section) |
| Comments: | | | |
| How many master meter connections exist off the wholesale system?  Who is responsible for maintenance of those connection(s)?  Wholesaler  Consecutive system  Comments:  If the wholesaler is responsible, how often is inspection performed on the master meter connection(s)?  If the wholesaler is responsible, how often is maintenance performed on the master meter connection(s)?  Does standing water exist in any meter pits for which the wholesale system is responsible?  Yes  No  If so, what is the source of the standing water?  Leaks @  Groundwater  Don’t know @  Comments: | | | |

# SOURCE DATA

## **ACTIVE (PHYSICALLY CONNECTED) WELLS AND WELL PUMPS**

**(if well is GWUDI and fully treated as SW, these will be recommendations)**

**NA**

| **Well Name:** |  |  |  |
| --- | --- | --- | --- |
| Well owner (if different than system owner): |  |  |  |
| Facility ID (from PWS inventory, e.g., WL01): |  |  |  |
| Well Location: (well house, well pit, pitless adapter, combination, driveway/parking lot, other) |  |  |  |
| Does system want this well to be considered inactive? @ | Yes  No | Yes  No | Yes  No |
| Adequately protected from vehicle damage? @ | Yes  No | Yes  No | Yes  No |
| If well is located in a pit or vault, is the pit or vault completely watertight? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| If no, is the pit or vault completed with drainage or a sump pump for permanent or portable use? @ If applicable, indicate type (permanent pump, portable pump, or drainage) | Yes  No  NA  Type: | Yes  No  NA  Type: | Yes  No  NA  Type: |
| Is the pit located in a building? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Total Well Depth (ft): |  |  |  |
| Depth range of shallowest casing perforations (ft): | to | to | to |
| Actual yield (gpm): |  |  |  |
| Well log or Statement of Completion on site?  **(If yes, please copy or photograph and submit with report)** | Yes  No | Yes  No | Yes  No |
| **Well Construction** |  |  |  |
| Does SW runoff drain away from the wellhead (including wells in pits or vaults)? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does well casing terminate at least 12” above the concrete floor? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the well casing terminate at least 18” above the natural ground surface? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| What is the actual casing height (inches)? |  |  |  |
| Any holes or openings observed in the well or its appurtenances? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| If yes, describe. |  |  |  |
| Does the well have a sanitary seal with tightly bolted cap? @ (May need operator to open well cap to verify; explain why if unable to verify) | Yes  No  Unknown | Yes  No  Unknown | Yes  No  Unknown |
| Is a gasket visible? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the well cap move? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Explain |  |  |  |
| Is well vented (vent not required)? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| What is the height from the ground level to the screen of the vent (inches)? |  |  |  |
| Does the vent terminate at or above the top of the casing or pitless unit? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is vent facing downward? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Vent screened with #24 mesh? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is there a source water sample tap for GWR compliance? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Where is the source water tap located? |  |  |  |
| Is there an air release/vacuum relief valve (not required)? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Discharge Piping Termination |  |  |  |
| - In a downward position? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| - At least 8” above the floor? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| - Screened with #24 mesh? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Comments: |  |  |  |
| **Well Pumps** |  |  |  |
| Submersible Pump? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Other type of pump?  (if other, describe and indicate location in the comment field below) | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| NSF-60 lubricant used? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Operable and in good condition? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Maintenance program in place? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the external pump subject to flooding? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Spare parts available? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Emergency power available? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Comments |  |  |  |
| Are there any sources of pollution near the wells which could possibly impact water quality? **@**  Yes  No  Examples: Septic systems, chemical storage/mixing facilities, agriculture activities, industrial activities, animal enclosures, cleaning supplies, oil/fuel, etc)  If yes, indicate impacted well(s) and provide general location and comments (please locate on aerial map and provide photos):  How far from the well is the source of pollution located?  Mice or other animals and their droppings in immediate area (well house, vault, pit, etc.)  **@**  Yes  No  Are there seasonal variations in the quantity of the water?  Yes  No  Are there seasonal variations in the quality of the water?  Yes  No  How does the system handle sewage?  Centralized Sewage Treatment  Septic Systems with Pumped Vaults  Septic Systems with Leach Fields  (mark location on aerial if near well)  Comments: | | | |

**SOURCE DATA**

## **ACTIVE (PHYSICALLY CONNECTED) WELLS AND WELL PUMPS**

**(if well is GWUDI and fully treated as SW, these will be recommendations)**

**NA**

| **Well Name:** |  |  |  |
| --- | --- | --- | --- |
| Well owner (if different than system owner): |  |  |  |
| Facility ID (from PWS inventory, e.g., WL01): |  |  |  |
| Well Location: (well house, well pit, pitless adapter, combination, driveway/ parking lot, other) |  |  |  |
| Does system want this well to be considered inactive? @ | Yes  No | Yes  No | Yes  No |
| Adequately protected from vehicle damage? @ | Yes  No | Yes  No | Yes  No |
| If well is located in a pit or vault, is the pit or vault completely watertight? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| If no, is the pit or vault completed with drainage or a sump pump for permanent or portable use? @ If applicable, indicate type (permanent pump, portable pump, or drainage) | Yes  No  NA  Type: | Yes  No  NA  Type: | Yes  No  NA  Type: |
| Is the pit located in a building? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Total Well Depth (ft): |  |  |  |
| Depth range of shallowest casing perforations (ft): | to | to | to |
| Actual yield (gpm): |  |  |  |
| Well log or Statement of Completion on site?  **(If yes, please copy or photograph and submit with report)** | Yes  No | Yes  No | Yes  No |
| **Well Construction** |  |  |  |
| Does SW runoff drain away from the wellhead (including wells in pits or vaults)? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does well casing terminate at least 12” above the concrete floor? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the well casing terminate at least 18” above the natural ground surface? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| What is the actual casing height (inches)? |  |  |  |
| Any holes or openings observed in the well or its appurtenances? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| If yes, describe. |  |  |  |
| Does the well have a sanitary seal with tightly bolted cap? @ (May need operator to open well cap to verify; explain why if unable to verify) | Yes  No  Unknown | Yes  No  Unknown | Yes  No  Unknown |
| Is a gasket visible? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the well cap move? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Explain |  |  |  |
| Is well vented (vent not required)? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| What is the height from the ground level to the screen of the vent (inches)? |  |  |  |
| Does the vent terminate at or above the top of the casing or pitless unit? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is vent facing downward? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Vent screened with #24 mesh? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is there a source water sample tap for GWR compliance? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Where is the source water tap located? |  |  |  |
| Is there an air release/vacuum relief valve (not required)? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Discharge Piping Termination |  |  |  |
| - In a downward position? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| - At least 8” above the floor? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| - screened with #24 mesh? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Comments: |  |  |  |
| **Well Pumps** |  |  |  |
| Submersible Pump? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Other type of pump?  (if other, describe and indicate location in the comment field below) | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| NSF-60 lubricant used? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Operable and in good condition? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Maintenance program in place? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the external pump subject to flooding? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Spare parts available? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Emergency power available? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Comments |  |  |  |
| Are there any sources of pollution near the wells which could possibly impact water quality? **@**  Yes  No  Examples: Septic systems, chemical storage/mixing facilities, agriculture activities, industrial activities, animal enclosures, cleaning supplies, oil/fuel, etc)  If yes, indicate impacted well(s) and provide general location and comments (please locate on aerial map and provide photos):  How far from the well is the source of pollution located?  Mice or other animals and their droppings in immediate area (well house, vault, pit, etc.) @  Yes  No  Are there seasonal variations in the quantity of the water?  Yes  No  Are there seasonal variations in the quality of the water?  Yes  No  How does the system handle sewage?  Centralized Sewage Treatment  Septic Systems with Pumped Vaults  Septic Systems with Leach Fields  (mark location on aerial if near well)  Comments: | | | |

**SOURCE DATA**

## **SPRINGS AND ASSOCIATED PUMPS**

**(if spring is GWUDI and fully treated as SW, these will be recommendations)**

**NA**

|  |  |
| --- | --- |
| Spring name:  Spring owner if different than system owner:  Facility ID (from PWS Inventory, e.g., SPR01): | Description of the intake to the spring collection box (i.e., how the spring water is collected and conveyed into the box):  Actual yield (gpm):  Please copy or photograph any available construction diagrams or “as-builts” and submit with the sanitary survey report.  Comments: |
| **SPRING** **COLLECTION CHAMBER** **Yes** **No** **NA**  Are the spring collection area and spring  box fenced to keep animals away? @  Does surface water runoff drain away  from the collection area? @  Is there deep rooted vegetation around  the spring collection area and spring box? @  Describe:  Does the spring collection box have the  following features:  Proper shoe box lid? @  Rubber gasket on the lid? @  Air vents screened with #24 mesh? @  Is the hatch locked? @  Overflow screened with #24 mesh screen? @  Does overflow have a free fall of at least  12 inches? @  Is the spring collection chamber water  tight to prevent inflow of unwanted surface  water? @  Comments: | **SOURCE PUMPS**  Location of the pump station:  How many pumps at the facility?  Type of pump(s):  **Yes No NA**  Are the correct types of lubricants (NSF-60) used?  Are pumps operable and in good condition?  Is there a maintenance program in operation?  Is the pump station subject to flooding? @  Are spare parts available?  Is emergency power available?  Comments: |
| For any other hatches/manholes that are part of the spring collection system or on the line from the spring box to the tank or distribution system: (describe the condition of each)  Proper shoe box lid? @  Yes  No Description and location:  Rubber gasket on the lid? @  Yes  No Description and location:  Locked? @  Yes  No Description and location: | |
| Are there any sources of pollution near the springs which could possibly impact water quality? **@**  Yes  No  (Examples: Septic systems, chemical storage/mixing facilities, agriculture activities, industrial activities, animal enclosures, cleaning supplies, oil/fuel, etc)  If yes, indicate impacted spring(s) and provide general location and comments (please locate on aerial map and provide photos):  How far from the spring is the source of pollution located?  Mice or other animals and their droppings in immediate area **(spring house, etc.) @**  Yes  No  Are there seasonal variations in the quantity of the water?  Yes  No  Are there seasonal variations in the quality of the water?  Yes  No  How does the system handle sewage?  Centralized Sewage Treatment  Septic Systems with Pumped Vaults  Septic Systems with Leach Fields (mark location on aerial if near spring)  Comments: | |

**SOURCE DATA FOR INTAKE LOCATED IN**

## **INFILTRATION GALLERIES AND ASSOCIATED PUMPS**

**NA**

|  |  |
| --- | --- |
| **INFILTRATION GALLERIES**  Infiltration gallery name:  Infiltration gallery owner if different than system owner:  Facility ID (from PWS Inventory, e.g., IG01):  Physical description:  Depth?  Actual yield (gpm):  Are there seasonal algal blooms present? Yes No  Describe:  Is an algaecide ever used to control algae? Yes No  If yes, describe:  Please copy or photograph any available construction diagrams or “as-builts” and submit with the sanitary survey report | **SOURCE PUMPS**  Location of the pump station:  How many pumps at the facility?  Type of pump(s):  **Yes No NA**  Are the correct types of lubricants (NSF-60) used?  Are pumps operable and in good condition?  Is there a maintenance program in operation?  Is the pump station subject to flooding?  Are spare parts available?  Is emergency power available?  Comments: |
| Are there any sources of pollution near the infiltration gallery (e.g., agriculture/industrial activities, cleaning supplies, oil/fuel, etc.) which could impact water quality? @  Yes  No  If yes, indicate impacted infiltration gallery(ies) and provide general location and comments (please locate on aerial map and provide photos):  How far from the infiltration gallery is the source of pollution located?  Are there seasonal variations in the quantity of the water?  Yes  No  Are there seasonal variations in the quality of the water?  Yes  No  Comments: | |

**SOURCE DATA FOR INTAKE LOCATED IN**

## **STREAMS, AND ASSOCIATED PUMPS**

**NA**

|  |  |
| --- | --- |
| **STREAMS**  Stream name:  Facility ID (from PWS Inventory, e.g., IN01):  Is the area around the intake restricted?  Yes  No  Are there multiple intakes located at different levels?  Yes  No Describe:  Are the intake(s) screened?  Yes  No  Frequency of intake inspection:  Date of last inspection:  Are there seasonal algal blooms present? Yes No  Describe:  Is an algaecide ever used to control algae? Yes No  If yes, describe:  Please copy or photograph any available construction diagrams or “as-builts” and submit with the sanitary survey report | **INTAKE PUMPS**  Location of the pump station:  How many pumps at the facility?  Type of pump(s):  **Yes No NA**  Are the correct types of lubricants (NSF-60) used?  Are pumps operable and in good condition?  Is there a maintenance program in operation?  Is the pump station subject to flooding?  Are spare parts available?  Is emergency power available?  Comments: |
| Are there any sources of pollution near the stream (e.g., agriculture/industrial activities, cleaning supplies, oil/fuel, etc.) which could impact water quality? @  Yes  No  If yes, indicate impacted stream(s) and provide general location and comments (please locate on aerial map and provide photos):  How far from the stream is the source of pollution located?  Are there seasonal variations in the quantity of the water?  Yes  No  Are there seasonal variations in the quality of the water?  Yes  No  Comments: | |

**SOURCE DATA FOR INTAKE LOCATED IN**

## **RESERVOIRS, LAKES AND PONDS AND ASSOCIATED PUMPS**

**NA**

|  |  |
| --- | --- |
| Reservoir or lake name:  Facility ID (from PWS Inventory, e.g., IN01): | |
| **RESERVOIRS**  Is the area around the intake(s) restricted?  Yes  No  Are there multiple intakes located at different  levels?  Yes  No Describe:  Depth of intake(s):  Distance from shore:  Are the intake(s) screened?  Yes  No  Frequency of intake inspection:  Date of last inspection:  Are there seasonal algal blooms present? Yes No  Describe:  Is an algaecide ever used to control algae? Yes No  If yes, describe:  Please copy or photograph any available construction diagrams or “as-builts” and submit with the sanitary survey report | **INTAKE PUMPS**  Location of the pump station:  How many pumps at the facility?  Type of pump(s):  **Yes No NA**  Are the correct types of lubricants (NSF-60) used?  Are pumps operable and in good condition?  Is there a maintenance program in operation?  Is the pump station subject to flooding?  Are spare parts available?  Is emergency power available?  Comments: |
| Are there any sources of pollution near the reservoir/lake/pond (e.g., agriculture/industrial activities, cleaning supplies, oil/fuel, etc.) which could impact water quality? @  Yes  No  If yes, indicate impacted reservoir/lake/pond(s) and provide general location and comments (please locate on aerial map and provide photos):  How far from the reservoir/lake/pond is the source of pollution located?  Are there seasonal variations in the quantity of the water?  Yes  No  Are there seasonal variations in the quality of the water?  Yes  No  Comments: | |

**SOURCE DATA**

## **EMERGENCY BACKUP SOURCE WATER**

**NA**

|  |
| --- |
| Describe any backup source water possibly available during an emergency to the PWS, or indicate none:  Is the backup water source physically disconnected from the water system?  Yes  No  (if this is a raw water source and is still physically connected to the system, then stop filling out this section and complete the applicable source data section) |
| Backup source name:  Facility ID (from PWS Inventory, e.g., IN01, WL01, etc.):  Are there seasonal algal blooms present?  Yes  No  NA  Describe:  Is an algaecide ever used to control algae?  Yes  No  NA  If yes, describe:  Please copy or photograph any available construction diagrams or “as-builts” and submit with the sanitary survey report |
| Are there any sources of pollution near the emergency backup source (e.g., agriculture/industrial activities, cleaning supplies, oil/fuel, etc.) which could impact water quality? @  Yes  No  If yes, indicate impacted emergency backup source(s) and provide general location and comments (please locate on aerial map and provide photos):  How far from the emergency backup source is the source of pollution located?  Mice or other animals and their droppings in immediate area **(well house, vault, pit, etc.).**  Yes  No  Are there seasonal variations in the quantity of the water?  Yes  No  Are there seasonal variations in the quality of the water?  Yes  No  Comments: |

# RAW WATER TO TREATMENT PLANT TRANSMISSION LINE

**NA**

|  |
| --- |
| Name or designation:  SW  GW  Point of origin:  Point of termination:  Approximate Length:  Material:  Are there any service connections off the raw water transmission line? @  Yes  No  (Check yes only if the water system provides treated water to the rest of the distribution system)  What does each connection serve?  If used for potable water supply, is there a legal agreement or contract in place?  Yes  No  If used for potable water supply, is the water treated at the connection and how?  Yes  No |
| Name or designation:  SW  GW  Point of origin:  Point of termination:  Approximate Length?  Material:  Are there any service connections off the raw water transmission line? @  Yes  No  (Check yes only if the water system provides treated water to the rest of the distribution system)  What does each connection serve?  If used for potable water supply, is there a legal agreement or contract in place?  Yes  No  If used for potable water supply, is the water treated at the connection and how?  Yes  No |

# DISTRIBUTION BOOSTER PUMP STATIONS

**NA**

|  |
| --- |
| Location of the pump station:  How many pumps at the facility?  Type of pumps:  **Yes No NA**  Are the correct types of lubricants (NSF-60) used?  Is the pump station subject to flooding? @ |
| Are pumps operable and in good condition?  Is there a maintenance program in operation?  Are spare parts available?  Is emergency power available? |

# HYDROPNEUMATIC TANKS

**NA**

|  |  |
| --- | --- |
| Type of Tanks  Captive Air Bladder Tank  Pressure Tank that uses an air compressor  Number of tanks:  Location, Description:  Dates put into service:  Is there an operable pressure gauge?  Yes  No  Is there evidence of severe rust? @  Yes  No  Is there evidence of water leaks? @  Yes  No  Is there evidence of air leaks? @  Yes  No  Is there evidence of flooding (if in a vault)? @  NA  Yes  No  Is there a pressure relief valve?  Yes  No  Can tank(s) be by-passed for repair?  Yes  No  For any tank that uses an air compressor,  Yes  No  is the tank age older than the life expectancy? @  (Manufacturer and model number)  Comments: |  |

# GRAVITY TANKS

**NA**

| **Complete for all tanks at ground water systems and consecutive systems. Also complete for finished water tanks at surface water / GWUDI systems. (Includes indoor clearwells and contact tanks or other finished water tanks.)** | | | |
| --- | --- | --- | --- |
| **Tank Name:** |  |  |  |
| Tank ID (from PWS inventory, e.g., ST01): |  |  |  |
| Tank owner (if different than system owner): |  |  |  |
| Location (indoor or outdoor): |  |  |  |
| Date put into service |  |  |  |
| Tank Type Below ground (buried or partially buried)  Ground level  Elevated (pedestal or standpipe) |  |  |  |
| Tank is constructed of: Concrete  Steel  Fiberglass  Other |  |  |  |
| What type of water is stored (GW systems only)? | Treated  Raw | Treated  Raw | Treated  Raw |
| Storage volume (gallons)? |  |  |  |
| Is the site subject to flooding? @ | Yes  No | Yes  No | Yes  No |
| Can the tank be isolated from the system? | Yes  No | Yes  No | Yes  No |
| Is the water level indicator accurate? | Yes  No | Yes  No | Yes  No |
| Does the tank appear structurally sound? @ | Yes  No | Yes  No | Yes  No |
| Does the foundation appear structurally sound? @ | Yes  No | Yes  No | Yes  No |
| Are there any unprotected openings in the tank (breaches, leaks, etc)? @ | Yes  No | Yes  No | Yes  No |
| **Inspection and cleaning history** |  |  |  |
| If the tank is more than 10 years old, was it cleaned and inspected within the last 10 years? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| When and how was the tank last cleaned and inspected? |  |  |  |
| Who performed the cleaning and inspection? |  |  |  |
| How was the tank disinfected after cleaning? (NA if diver used) |  |  |  |
| Surveyor able to view report and confirm date? | Yes  No | Yes  No | Yes  No |
| If so, note major concerns and/or recommendations: |  |  |  |
| Carcasses or other debris found in the tank? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| If yes, was EPA notified immediately? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Was the entry point for the carcass or debris eliminated? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Describe: |  |  |  |
| **Overflow** |  |  |  |
| Does the tank have an overflow separate from the vent? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the overflow accessible for inspection? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Overflow has a #24 mesh screen OR a duckbill valve OR a properly sealed flapper valve with screen inside (EPA recommends a #24 mesh screen)? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the overflow line terminate no less than 12 inches but no more than 24 inches above the ground surface? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the overflow discharge over an inlet structure, splash plate, or engineered rip-rap? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the discharge visible? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Comments about overflow: |  |  |  |
| **Drain Line** |  |  |  |
| Combined overflow and drain pipe? (If yes, skip drain questions) | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the drain accessible for inspection? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is there #24 mesh screen on the drain pipe? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does water accumulate in the drain discharge area? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the drain pipe have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the drain pipe terminate between 12 and 24 inches above a drainage area? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the drain pipe terminate above an inlet structure, splash plate, or engineered rip-rap? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Comments about drain: |  |  |  |
| **Air Vent** |  |  |  |
| Does the tank have a vent separate from the overflow? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the vent accessible for inspection? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| For above ground tanks (ground level or elevated/standpipe): |  |  |  |
| Is there #24 mesh screen? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| If not #24 mesh screen, what size mesh is the screen? |  |  |  |
| Does the tank have a vacuum/pressure relief valve or other mechanism to prevent tank damage? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the screen on the inside of the vent pipe to discourage vandalism? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Downturned vent: Is the vent at least 24“ above the roof? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| For non-downturned vents: Is there a solid cover down to the bottom of the vent screen? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| For non-downturned vents: Is the screen at least 8” above the roof surface? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Below Ground Tanks (buried or partially buried) |  |  |  |
| Is air vent covered with #24 mesh screen? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the screen on the inside of the vent pipe to discourage vandalism? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the air vent terminate downward? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the air vent at least 24” above the roof or ground surface (whichever is higher)? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Comments about air vent: |  |  |  |
| **Access Hatch** |  |  |  |
| Is the hatch accessible for inspection? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the hatch raised at least 24” above the roof or ground (whichever is higher) on below ground tanks (buried or partially buried) or 4“ above the roof for above ground tanks (ground level or elevated)? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| What is the height of the access hatch above the roof or ground surface? | in | in | in |
| Does the hatch have a shoe box lid? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the lid tight and sealed with a rubber gasket? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the hatch locked? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Comments about access hatch: |  |  |  |
| Comments: |  |  |  |

# GRAVITY TANKS

**NA**

| **Complete for all tanks at ground water systems and consecutive systems Also complete for finished water tanks at surface water / GWUDI systems. (Includes indoor clearwells and contact tanks or other finished water tanks.)** | | | |
| --- | --- | --- | --- |
| **Tank Name:** |  |  |  |
| Tank ID (from PWS inventory, e.g., ST01): |  |  |  |
| Tank owner (if different than system owner): |  |  |  |
| Location (indoor or outdoor): |  |  |  |
| Date put into service |  |  |  |
| Tank Type Below ground (buried or partially buried)  Ground level  Elevated (pedestal or standpipe) |  |  |  |
| Tank is constructed of: Concrete  Steel  Fiberglass  Other |  |  |  |
| What type of water is stored (GW systems only)? | Treated  Raw | Treated  Raw | Treated  Raw |
| Storage Volume (gallons)? |  |  |  |
| Is the site subject to flooding? @ | Yes  No | Yes  No | Yes  No |
| Can the tank be isolated from the system? | Yes  No | Yes  No | Yes  No |
| Is the water level indicator accurate? | Yes  No | Yes  No | Yes  No |
| Does the tank appear structurally sound? @ | Yes  No | Yes  No | Yes  No |
| Does the foundation appear structurally sound? @ | Yes  No | Yes  No | Yes  No |
| Are there any unprotected openings in the tank (breaches, leaks, etc)? @ | Yes  No | Yes  No | Yes  No |
| **Inspection and cleaning history** |  |  |  |
| If the tank is more than 10 years old, was it cleaned and inspected within the last 10 years? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| When and how was the tank last cleaned and inspected? |  |  |  |
| Who performed the cleaning and inspection? |  |  |  |
| How was the tank disinfected after cleaning?  (NA if diver used) |  |  |  |
| Surveyor able to view report and confirm date? | Yes  No | Yes  No | Yes  No |
| If so, note major concerns and/or recommendations: |  |  |  |
| Carcasses or other debris found in the tank? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| If yes, was EPA notified immediately? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Was the entry point for the carcass or debris eliminated? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Describe: |  |  |  |
| **Overflow** |  |  |  |
| Does the tank have an overflow separate from the vent? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the overflow accessible for inspection? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Overflow has a #24 mesh screen OR a duckbill valve OR a properly sealed flapper valve with screen inside (EPA recommends a #24 mesh screen)? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the overflow line terminate no less than 12 inches but no more than 24 inches above the ground surface? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the overflow discharge over an inlet structure, splash plate, or engineered rip-rap? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the discharge visible? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Comments about overflow: |  |  |  |
| **Drain Line** |  |  |  |
| Combined overflow and drain pipe? (If yes, skip drain questions) | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the drain accessible for inspection? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is there #24 mesh screen on the drain pipe? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does water accumulate in the drain discharge area? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the drain pipe have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the drain pipe terminate between 12 and 24 inches above a drainage area? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the drain pipe terminate above an inlet structure, splash plate, or engineered rip-rap? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Comments about drain: |  |  |  |
| **Air Vent** |  |  |  |
| Does the tank have a vent separate from the overflow? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the vent accessible for inspection? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| For above ground tanks (ground level or elevated/standpipe): |  |  |  |
| Is there #24 mesh screen? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| If not #24 mesh screen, what size mesh is the screen? |  |  |  |
| Does the tank have a vacuum/pressure relief valve or other mechanism to prevent tank damage? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the screen on the inside of the vent pipe to discourage vandalism? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Downturned vent: Is the vent at least 24“ above the roof? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| For non-downturned vents: Is there a solid cover down to the bottom of the vent screen? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| For non-downturned ventsis the screen at least 8” above the roof surface? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Below Ground Tanks (buried or partially buried) |  |  |  |
| Is air vent covered with #24 mesh screen? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the screen on the inside of the vent pipe to discourage vandalism? | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Does the air vent terminate downward@ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the air vent at least 24” above the roof or ground surface (whichever is higher)? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Comments about air vent: |  |  |  |
| **Access Hatch** |  |  |  |
| Is the hatch accessible for inspection? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the hatch raised at least 24” above the roof or ground (whichever is higher) on below ground tanks (buried or partially buried) or 4“ above the roof for above ground tanks (ground level or elevated)? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| What is the height of the access hatch above the roof or ground surface? | in | in | in |
| Does the hatch have a shoe box lid? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the lid tight and sealed with a rubber gasket? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Is the hatch locked? @ | Yes  No  NA | Yes  No  NA | Yes  No  NA |
| Comments about access hatch: |  |  |  |
| Comments: |  |  |  |

# WATER TREATMENT DATA

## **GROUNDWATER and CONSECUTIVE SYSTEMS THAT HAVE AVAILABLE TREATMENT**

**NA**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Describe the steps (as many as necessary) of the treatment process in order from the water source to distribution:  Plant Output (gal/day)  Design:  Maximum:  Any changes to treatment since the last sanitary survey?  Yes  No  Describe: | | | | |
|  | **Step 1** | **Step 2** | **Step 3** | **Step 4** |
| Process | Chemical  Type:  NSF 60 Certified?  UV  Filtration  Ion exchange  Softener  Other:  Dosage: | Chemical  Type:  NSF 60 Certified?  UV  Filtration  Ion exchange  Softener  Other:  Dosage: | Chemical  Type:  NSF 60 Certified?  UV  Filtration  Ion exchange  Softener  Other:  Dosage: | Chemical  Type:  NSF 60 Certified?  UV  Filtration  Ion exchange  Softener  Other:  Dosage: |
| Objective: | Treatment of bacteria, viruses  Turbidity removal  Hardness removal  Taste & odor removal  Metals removal  Other: | Treatment of bacteria, viruses  Turbidity removal  Hardness removal  Taste & odor removal  Metals removal  Other: | Treatment of bacteria, viruses  Turbidity removal  Hardness removal  Taste & odor removal  Metals removal  Other: | Treatment of bacteria, viruses  Turbidity removal  Hardness removal  Taste & odor removal  Metals removal  Other: |
| Is this process required by EPA? | Yes  No | Yes  No | Yes  No | Yes  No |
| Location of process? | At Well  At Treatment Plant  Other: | At Well  At Treatment Plant  Other: | At Well  At Treatment Plant  Other: | At Well  At Treatment Plant  Other: |
| Is this process adequate to meet the objective? | Yes  No  Explain: | Yes  No  Explain: | Yes  No  Explain: | Yes  No  Explain: |
| Frequency of use: | Permanent  Seasonal  Emergency  Other: | Permanent  Seasonal  Emergency  Other: | Permanent  Seasonal  Emergency  Other: | Permanent  Seasonal  Emergency  Other: |
| Redundant Equipment? | Yes  No  Explain: | Yes  No  Explain: | Yes  No  Explain: | Yes  No  Explain: |
| Backup power? | Yes  No  Explain: | Yes  No  Explain: | Yes  No  Explain: | Yes  No  Explain: |

***Groundwater and Consecutive Systems***

### ***UV Disinfection***

|  |
| --- |
| **Yes No**  Is there aflow meter to monitor/alarm or a flow restrictor valve so the max flow rate is not exceeded? Describe how the system ensures the flow does not exceed max flow rate:  Is there anintensity sensor and alarm (visible/audible) to indicate low intensity?  Is there aUV lamp status alarm (visible/audible) to indicate lamps off?  Is there aUV lamp age counter/alarm?  Is there anautomatic shut-off fail-safe solenoid valve so that water does not flow through the unit without adequate treatment?  Are there spare bulbs on hand?  How often are the unit cleaned and the bulbs changed? |

***Point of use Treatment***

|  |
| --- |
| For PWSs with required Point of Use (POU) treatment, ask the operator –  **Yes** **No** **NA**  Is the system adhering to the O&M Plan approved by EPA and conducting maintenance per the manufacturer’s recommendations?  (i.e. Is the operator replacing POU filters in accordance with the maintenance plan or manufacturer recommendations).  Is the system following its EPA-approved POU sampling plan?  If No, explain any difficulties:  Comments: |

# 

**WATER TREATMENT DATA**

## **SURFACE WATER / GWUDISW SYSTEMS**

**NA**

### **General Information**

|  |  |
| --- | --- |
| For each treatment plant indicated on the overall PWS schematic, update the separate treatment plant schematic. Show all treatment processes, recycle streams, turbidimeter locations, raw water and finished water sampling points, and disinfectant residual sampling points.  In this section, the ¥ symbol indicates a potential violation to be determined by the EPA Rule Manager | |
| **Plant Location and Information**  Plant / Office Location and Directions:  Date plant put online:  Modifications since the last survey? (if yes, describe):  Describe water sources treated by this plant:  Is treatment impacted by algae (describe)? | **Plant Output (gal / day)**  Design:  Summer Average:  Winter Average:  Maximum: |
| Provide a brief description of the plant’s treatment processes: | |
| Indicate all points in the treatment process where flow is determined and describe how (i.e. flowmeters, flow restrictors, valves, etc): | |
| Please indicate all of the treatment plant waste disposal methods the plant currently employs:  Discharge to surface, sewer, or equivalent. Please describe:  On-site disposal. Please describe:  Land application  Discharge to lagoon/drying bed, with no recovery/recycling – e.g., downstream outfall  Backwash recovery/recycling: discharge to basin or lagoon and then to source  Backwash recovery/recycling: discharge to basin or lagoon and then to plant intake  Other. Please describe:  No wastes generated | |

### **Pre-Filtration Processes**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pre-Sed Basin:  Yes  No  Describe Type and indicate volume:  Chemicals added:  YesNo (If yes, input chemical information in table below)  Rapid Mix: Yes No  Describe Type:  Chemicals added: YesNo (If yes, input chemical information in table below)  Flocculation:  Yes  No  Describe Type:  Chemicals added: Yes No (If yes, input chemical information in table below)  Sedimentation: Yes No  Describe Type:  Chemicals added:  YesNo (If yes, input chemical information in table below)  Other:  Yes No  Describe:  Chemicals added:  Yes  No (If yes, input chemical information in table below)  Chemical Information (ask system to provide information from chemical supplier / manufacturer):   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Manufacturer | Product Name | Location Chemical Added | Max Dose Used  (past 12 months): | NSF 60 Certified? | NSF 60 Max Allowable Dose | |  |  |  |  | YesNo |  | |  |  |  |  | Yes No |  | |  |  |  |  | Yes No |  | |  |  |  |  | Yes No |  | |  |  |  |  | YesNo |  |   NSF 60 certification and max. allowable dose info. can be found at: <http://info.nsf.org/Certified/PwsChemicals/>  Does the system use a chemical containing epichlorohydrin or polyacrylamide that is dosed in excess of the NSF 60 Max Allowable Dose? ¥  Yes  No |

### **Filtration Processes**

#### *General*

|  |
| --- |
| Indicate all types of filtration used:  Conventional  Bags / Cartridges  Slow Sand  Direct  Membranes  Diatomaceous Earth  Which is the final filtration barrier?: |
| Type and model # of combined filter effluent (CFE) turbidimeter:  Location of CFE turbidimeter:  Frequency of all turbidimeter calibration(s):  Date(s) of last turbidimeter calibration(s) for all turbidimeters:  Method used for all calibrations (primary formazin standard or other)?  **Yes No**  Does the location of the CFE turbidimeter comply with EPA policy SWTR #5? @  Are turbidimeters calibrated at least once every quarter? @  Does the system use a primary standard to perform the calibration? @  Are CFE turbidity records available for the last 5 years? ¥  Can CFE turbidities be recorded up to 5 NTU? @ How high can they be recorded:  Can turbidities associated with off-periods (backwash, FTW) be identified so they are not counted for compliance? (if applicable) @  Finished water CFE turbidity (NTU): PWS measurement:       Surveyor measurement: |

#### *Conventional and Direct Filtration*

|  |  |
| --- | --- |
| *Filter Information*  # of filters:  Type of filters:  open to atmosphere enclosed (pressure)  Manufacturer name & model (if applicable):        Depth of each media (in):  Sand:       Anthracite:       Garnet:  Total at least 24”? @ Yes  No  Has operator observed loss of media?  Has the operator inspected the media for mudball formation?  Average length of filter run (hours):  Maximum filter loading rate (gpm/ft2):  Is the filtration rate less than 2 gpm/sf (mono-media), 4 gpm/sf (dual media) or 6 gpm/sf (deep bed)? @  Yes  No | *Backwash Information*  What determines when backwash occurs?  Backwash rate (gpm/ft2):  What is used for a backwash?  Air scour  finished water  raw water @  **Yes No**  System starts up with clean filters (if not running 24/7)  System performs filter to waste (FTW) before putting filters back on line. |

##### ***Conventional and Direct IFE and CFE additional information (only if final barrier)***

|  |
| --- |
| IFE Questions  How are IFE records maintained?  SCADA strip chart circular chart  **Yes No**  Does each filter have an individual effluent (IFE) turbidimeter? ¥ Types and model #s:  Are there alarms on each filter? Alarm set point (NTU):  Are IFE turbidities measured continuously, and recorded at least every 15 Minutes? ¥  Is IFE turbidity recorder (SCADA or charts) calibrated to record turbidities≥ 2 NTU? @  Are IFE records kept for the last 3 years (as applicable)? ¥  Did any single filter IFE exceed 1.0 NTU in 2 consecutive 15 minute readings during the last 12 months? If yes, Indicate dates of all occurrences and copy those records.  a.If so, did they report to EPA and do a filter profile, if required? ¥  b. If this occurred 3 months in a row, did they conduct a filter self-assessment? ¥  Did any single filter IFE exceed 2.0 NTU in 2 consecutive 15 minute readings in the last 12 months? Indicate dates of all occurrences and copy those records.  a.If this occurred 2 months in a row for the same filter, did they report to EPA and have a CPE performed? ¥  For systems serving > 10,000, did the IFE of any filter exceed 0.5 NTU in 2 consecutive 15 minute readings after being online 4 hours (following backwash or other reason offline) in the last 12 months? Indicate dates of all occurrences and copy those records.  a.If so, did they report to EPA and do a filter profile, if required? ¥    CFE Questions  How are CFE records maintained?  SCADA  strip chart  circular chart  **Yes No**  Based on these records, has the system consistently met the CFE turbidity requirements for this type of filtration during the last 12 months? ¥ (0.3 NTU 95% of each month, 1 NTU max) If no, indicate date of all occurrences and copy those records: |
| Log removal credited for this type of filtration barrier for: *Giardia*:       Viruses:       Cryptosporidium: |

##### ***Conventional and Direct (only if filter backwash, thickener supernatant, or sludge dewatering liquid is recycled)***

|  |
| --- |
| Describe where recycle enters treatment process:  **Yes No**  Is recycle location before the TOC monitoring point?  Are records of recycle practices kept in an acceptable format for each year that includes all of the required elements (e.g., avg and max times/flows of backwashes; recycle treatment/equalization [chemical addition; hydraulic loading rates])? ¥ |

#### *Membranes*

|  |
| --- |
| Number of membrane skids:       Configuration:  parallel  series  Membrane type:  microfiltration  ultrafiltration  nanofiltration  RO  Manufacturer:       Model #:       Absolute pore size:  Each skid capacity (gpm):  **Yes No**  Has the PWS consistently been meeting the CFE turbidity requirements for this type of filtration? (0.3 NTU 95% of each month, 1 NTU max) ¥  Are direct integrity tests (DIT) performed at least daily (specify pressure or vacuum applied)? ¥ If yes, how often? ¥  For continuous indirect integrity testing, does each unit/skid have its own online turbidimeter? ¥  a.Is filtrate turbidity monitored continuously and recorded at least once every15 minutes? ¥  b.Is it set with a trigger level of 0.15 NTU for > 15 minutes (a DIT should be initiated when filtrate turbidity exceeds this level)? ¥  Do operators know how to check and repair membranes when a DIT fails? @  How/when are membranes cleaned?  Are spare membrane cassettes available? YesNo  Is thereadequate storage of cleaning chemicals in case of emergency weather? |
| Log removal credited for this type of filtration barrier for: *Giardia*:       Viruses:       Cryptosporidium: |

#### *Bags / Cartridges*

|  |
| --- |
| Number of parallel filter trains:       Each train capacity (gpm):  Pre Filter (if applicable)  Housing: Manufacturer:       Model:  Bag / Cartridge Filter: Manufacturer:       Model:       # per housing:  Final Filter  Housing: Manufacturer:       Model:  Bag / Cartridge Filter: Manufacturer:       Model:       # per housing:  Manufacturer’s recommended maximum flow rate (gpm):  Pore size rating (microns - indicate absolute or nominal):  Replacement frequency of all filters:  **Yes No**  Has the PWS consistently been meeting the CFE turbidity requirements for this type of filtration? (1 NTU 95% of each month, 5 NTU max) ¥  Are there working pressure gauges before and after filters? @  Does the PWS keep daily records of monitoring the pressure drop across the filters, and know when to change out filters? @  Has the final filter or pre/final filter combination been demonstrated to remove at least 99.9% of *Cryptosporidium* or equivalent size particles or have a 1 or 2 micron absolute pore size rating? (leave blank if unknown) @  Does the flow rate through the final filter exceed the manufacturer’s maximum recommended flow rate? @ |
| Log removal credited for this type of filtration barrier for: *Giardia*:       Viruses:       Cryptosporidium: |

#### *Diatomaceous Earth Filters*

|  |
| --- |
| Number of filters:        Pressure System  Vacuum System  Filter manufacturer/model # (if applicable):  Each filter capacity (gpm):  Describe pre-coat and body feed systems:  Has the PWS consistently been meeting the CFE turbidity requirements for this type of filtration? (1 NTU 95% of each month, 5 NTU max) ¥  Yes  No  Describe precoat and body feed systems:  Maximum filter loading rate (gpm/ft2):  Is the filtration rate less than 1.5 gpm/sf? @  Yes  No  Maximum head loss allowed:  What determines when backwash occurs?  time  turbidity automatic  head loss |
| Log removal credited for this type of filtration barrier for: *Giardia*:       Viruses:       Cryptosporidium: |

#### *Slow Sand Filtration*

|  |
| --- |
| Number of filters:       Each Filter capacity (gpm):  What is rate of filtration (gpm/ft)?  Is the filtration rate less than 0.1 gpm/sf? @  Yes  No  **Yes No**  Has the PWS consistently been meeting the CFE turbidity requirements for this type of filtration? (1 NTU 95% of each month, 5 NTU max) ¥  Is turbidity of raw water to filters always <10 NTU? @  Is water depth over sand at least 3 feet during operation? @  Can plant meet design capacity with one unit out of service?  Do they ripen after scraping (filter to waste) and how long?  Is head loss across filters monitored and used for process control? @ If yes, how is the head loss monitored?  How often is each unit scraped? |
| Log removal credited for this type of filtration barrier for: *Giardia*:       Viruses:       Cryptosporidium: |

### **Disinfection Processes**

#### *General*

|  |
| --- |
| Describe all inactivation processes, **both pre-filtration and post-filtration:** |

#### *UV Disinfection*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Point of application:       UV manufacturer/model #:  Validated maximum flow (gpm):       Validated UV dosage (mJ/cm2):  Log inactivation credited based upon validated dosage (use table below): *Giardia*:       Cryptosporidium:  Table 1. UV Dose Requirements in Millijoules per Square Centimeter (mJ/cm2)   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Target Pathogen | Log Inactivation | | | | | | | | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | | *Cryptosporidium* | 1.6 | 2.5 | 3.9 | 5.8 | 8.5 | 12 | 15 | 22 | | *Giardia* | 1.5 | 2.1 | 3.0 | 5.2 | 7.7 | 11 | 15 | 22 | | Viruses | \*\* | \*\* | \*\* | \*\* | \*\* | \*\* | \*\* | \*\* |   Source: 40 CFR 141.720(d)  \*\* UV not credited with virus inactivation by EPA R8 for SW/GU systems  **Yes No**  Does PWS keep records of UV reports sent monthly to EPA? ¥  Does public water system’s Emergency Response Plan address breakage of UV lamps? (Mercury hazard: OSHA guidelines 1910 Subparts H, I, Z, Response to breakage, Cleanup and disposal) |

##### ***UV Disinfection – less than 40 gpm***

|  |
| --- |
| **Yes No**  Is there aflow meter to monitor/alarm or a flow restrictor valve so the max flow rate is not exceeded? @ Describe how the system ensures the flow does not exceed max flow rate:  Is there anintensity sensor and alarm (visible/audible) to indicate low intensity? @  Is there aUV lamp status alarm (visible/audible) to indicate lamps off? @  Is there aUV lamp age counter/alarm? @  Is there anautomatic shut-off fail-safe solenoid valve so that water does not flow through the unit without adequate treatment? @  Does this UV unit have an NSF Standard 55A Certification or has it been validated according to the requirements of the 2006 UV Disinfection Guidance Manual? ¥ (leave blank if unknown)  Are there spare bulbs on hand?  How often is the unit cleaned and the bulbs changed? |

##### ***UV Disinfection – greater than 40 gpm***

|  |
| --- |
| How is unit monitored? Intensity Setpoint Method Calculated Dose Method  Yes No  Is the calibration of the UV intensity sensors checked at least monthly using a reference sensor? @ How frequently are calibration checks performed?  Is the calibration of the UV transmittance analyzer checked at least weekly with a benchtop analyzer (Calculated Dose Method only)? @ How frequently are calibration checks performed?  Is there a calibrated flowmeter to ensure max flow rate is not exceeded? @  Are daily operational records kept of flow rates/production, run time, lamp status, UV intensity, UVT and UV dosage? ¥ (These should be monitored continuously and recorded at least once/4 hours. Small systems (less than 500 population) are allowed to record one time each day.)  Does the operator know how to identify an off-specification event and report it to the EPA? @  Does the system alarm when an off-specification event occurs? @  Are there spare bulbs on hand? |

#### Chemical Disinfection

##### ***Chlorine and Chloramines***

|  |
| --- |
| Type:       Dosage:       (lb / day or mg/L) NSF 60 Certified? Yes No  Point of application:  Where does the PWS measure disinfectant residual for compliance with the SWTR requirement of ≥ 0.2 mg/L at the POE?  Is this before the 1st user of the water? ¥  Yes  No  How is residual measured? continuous grab Equipment / manufacturer model #:  What type of measurement is taken? free total  Chlorine residual at POE (mg/L): PWS measurement:       Surveyor measurement:  Are the two measurements within 0.1 mg/L or 15% of one another (whichever is larger)? @  Yes  No  **Yes No**  Is there redundant disinfection equipment?  Is there emergency power for the disinfection equipment?  If measuring residual continuously, is the PWS conducting weekly verifications with a grab sample measurement? @ |

##### ***Ozone***

|  |
| --- |
| Number of Ozone generators:       Percent ozone being generated (%):  Where is the ozone applied?       Where is residual measured?  Ozone residual (%):       Ozone residual (mg/L):  Describe the purpose of the ozone addition:  Are all applicable residual monitors operational?  Are excess ozone destructors operational?  Is there a preventive maintenance program for the generators?  Is a SCBA or supplied-air respirator available for the operators when working with ozone?  Are operators exposed to ozone levels above 0.1 mg/L?  Does the system monitor bromate concentration at point of entry? ¥  Yes  No |

##### ***Chlorine Dioxide***

|  |
| --- |
| Number of Chlorine Dioxide generators:  Where is the Chlorine Dioxide applied?       Where is Chlorine Dioxide residual measured?  Chlorine Dioxide residual (mg/L):  Describe the purpose of the Chlorine Dioxide addition:  Are all applicable residual monitors operational?  Is there a preventive maintenance program for the generators?  Are operators exposed to Chlorine Dioxide levels above 0.1 ppm?  **Yes No**  Does the system monitor chlorine dioxide daily at point of entry? ¥  Does the system monitor chlorite at point of entry daily and monthly in the distribution system? ¥ |

#### *Chemical Disinfection – Inactivation Calculations*

|  |  |
| --- | --- |
| If the PWS performs ongoing daily or weekly CT calculations, use their actual data to document inactivation in the section below. Otherwise, do a conservative calculation for each inactivation segment.  Identify location of 1st user: | |
| Summer Calculations  Lowest\* disinfectant residual and where measured (mg/L):  Water temperature (lowest\*):      °C  Water pH (highest\*):  Maximum\* flow through segment:       gpm  Describe each segment and list appropriate baffling factor: | List the volume of each segment using minimum\* operating heights of tanks:  Total logs *Giardia* inactivation from all chemical disinfection segments:  Total logs virus inactivation from all chemical disinfection segments: |
| Winter Calculations  Lowest\* disinfectant residual and where measured (mg/L):  Water temperature (lowest\*):      °C  Water pH (highest\*):  Maximum\* flow through segment:       gpm  Describe each segment and list appropriate baffling factor: | List the volume of each segment using minimum\* operating height of tanks:  Total logs *Giardia* inactivation from all chemical disinfection segments:  Total logs virus inactivation from all chemical disinfection segments: |
| \* Use data from system’s ongoing CT calculations if available. Values should correlate to the system’s lowest calculated inactivation levels during the specified season in the previous year. | |

#### *Chemical Disinfection – Disinfection Profiling (if system is exempt, skip section)*

|  |
| --- |
| **Yes No**  Does the system have a disinfection profile on site that contains a year of weekly log inactivation calculations (<10,000 pop.) or a year of daily log inactivation calculations (>10,000 pop)? @  Did the PWS make a significant change (new disinfectant; new location; etc.) to disinfection practices after 7/1/03 or 1/1/04?  If yes, was EPA consulted? Describe the change and date made: ¥  When was the profile conducted?       to  Lowest monthly average log inactivation observed from the profile (month/value): *Giardia:*       Viruses: |

### **Overall Inactivation / Removal Calculations**

#### *Viruses / Giardia*

|  |  |
| --- | --- |
| ***Viruses***        Logs Removal (filtration)        Logs chemical inactivation (lowest value from Summer / Winter calculations)        Logs UV inactivation        Logs other removal or inactivation        Total logs inactivation / removal  > 4 logs? @ YesNo | ***Giardia***        Logs Removal (filtration)        Logs chemical inactivation (lowest value from Summer / Winter calculations)        Logs UV inactivation        Logs other removal or inactivation        Total logs inactivation / removal  > 3 logs? @ YesNo |

#### *Cryptosporidium*

|  |
| --- |
| Committed to install maximum treatment? Yes No  If no, what is the system’s bin #? Bin #1  Bin #2  Bin #3 Bin #4  System Classification:  Filtered  Unfiltered  \*If system completed sampling and was classified as a Bin #1 system, the section below does not need to be completed. For all other systems, please complete the section below. |
| Total logs Cryptosporidium inactivation / removal required based on max treatment, bin # or classification:  Date treatment required by:       Toolbox Components Utilized:        Logs Removal (filtration)        Logs chemical inactivation        Logs UV inactivation        Logs other Toolbox Components        Total logs inactivation / removal  > required logs? ¥ YesNo |

# WATER TREATMENT DATA (FOR ALL SYSTEMS)

## **CORROSION CONTROL**

**NA**

|  |  |  |  |
| --- | --- | --- | --- |
| Does this PWS add chemicals for Corrosion Control?  Yes  No  NA  Comments: | | | |
| Chemical added: | NSF 60 Certified? | Dosage at Treatment Plant | Added Continuously or Seasonally |
|  | Yes  No |  | Continuously  Seasonally |
|  | Yes  No |  | Continuously  Seasonally |
|  | Yes  No |  | Continuously  Seasonally |
|  | Yes  No |  | Continuously  Seasonally |
| Do you monitor Corrosion Control chemical residuals, pH or anything else in the distribution system to evaluate the process?  Yes  No  Comments: | | | |

# DISTRIBUTION DATA

|  |  |  |
| --- | --- | --- |
| Please provide a brief description of the distribution system, including source to use piping: | | |
| What are the location and estimated linear feet of asbestos pipe in the distribution system? | | |
| Have lines broken due to freezing?  Yes  No  Have lines broken due to traffic load?  Yes  No | | |
| Are lines properly disinfected after repairs are made? @  Yes  No | | |
| Is there at least 35 psi pressure in the distribution system at peak normal flow?  Yes  No | | |
| Is there at least 20 psi at all points in the system at all times? @  Yes  No | | |
| Total number of days of storage (Summer)?  Total number of days of storage (Winter)?  **Yes No NA**  Is the storage capacity adequate to meet current needs?  Is the storage capacity adequate to meet future needs?  Comments: | | |
| Are there any bulk water supply/fill stations attached to this system?  Yes  No  (note to surveyor: if yes, check each facility, note its condition and provide photos) | | |
| **Station name (if applicable)** | **Location** | **Appropriate Air Gap or RPZ?** |
|  |  | Air Gap  RPZ  Neither @ |
|  |  | Air Gap  RPZ  Neither @ |
|  |  | Air Gap  RPZ  Neither @ |
| Comments: | | |
| Are there any air relief valves in vaults/pits located in the distribution system?  Yes  No  Note to surveyor: If yes, inspect one representative ARV, note its condition and provide photos  Are they regularly inspected and maintained?  Yes  No  Do any have leaks and/or standing water that covers the discharge point? @  Yes  No | | |
| Location, length, number, and flushing frequency for dead ends in the system: | | |
| Are distribution system (“as-built”) drawings maintained (e.g., revised to show replacement or repair?)  Yes  No | | |
| For systems that add a chemical disinfectant or receive disinfected water from a wholesaler: **NA**  **Yes No**  Is test equipment available for measuring the chlorine residual in the distribution system? Describe equipment:  Are reagents up to date?  Does the operator know how to properly measure chlorine residual?  Measured chlorine residual distribution system location:  Indicate residual value measured at this distribution system location: By Surveyor:       (mg/L) By PWS:       (mg/L)  Indicate if free or total chlorine was measured:  It is recommended that a minimum residual of 0.5 mg/L total chlorine or 0.2 mg/L free chlorine be maintained. | | |

# CROSS CONNECTION CONTROL

|  |
| --- |
| **Yes** **No** **NA** |
| **Does each severe hazard connection** have the appropriate reduced pressure backflow assembly installed at the meter/service connection and approved air gap (twice the size of the supply pipe diameter but always greater than one inch)? Describe each severe hazard connection and its location. @ |
| Note: Severe hazard connections include radioactive materials processors, nuclear reactors, and sewage treatment plants/pump stations. |
| **Does each high hazard connection** in the treatment plant or distribution system have the appropriate air gap or reduced pressure backflow assembly installed? Describe each high hazard connection and its location. @ |
| Note: High hazard connections include hospitals, medical/dental facilities, laboratories, mortuaries, large taxidermies, chemical suppliers/processing facilities, petroleum plants, food processing facilities, wastewater treatment plants, piers and docks, car washes, dry cleaners, direct connections to raw or non-potable water, and any service connection with an unapproved auxiliary supply. |
| Do **trailers or mobile homes connected directly to the PWS** via a yard hydrant have a residential dual check valve at each connection? |
| Are any **frost-free hydrants** that drain into the soil directly connected to this PWS? |
| Are there any leaking system components in the water system observed by the surveyor that are not previously noted? @ |
| Explain where and what was leaking: |
| **At Community PWS**, do all low hazard connections have the appropriate dual check valve assemblies installed at the meter or service connection? |
| Note: Low hazard connections include mobile home parks, farms/dairies, ranches, and shopping centers. |
| **For Non-community Systems,** do the following connections have the indicated type of backflow prevention assemblies? |
| - Stock tanks – approved air gap or atmospheric vacuum breaker at the tank? @ |
| - Threaded yard hydrants – pressure vacuum breaker, atmospheric vacuum breaker or double check valve assembly? |
| Does the water supplier have a record keeping program and management procedures to ensure: |
| - The installation and certification by test or inspection (as applicable) of all backflow preventers (BFPs) at new service connections |
| - The annual certification by a certified tester of all high-hazard BFPs at service connections. |

# SAFETY

|  |
| --- |
| **Personnel Safety** |
| **Yes** **No** **NA** |
| Are all personnel trained in proper handling of all utilized chemicals and materials? |
| Are adequate masks, protective clothing, and safety equipment provided? |
| Does the operator understand relevant Occupational Safety and Health Administration (OSHA) regulations (e.g., confined space, hazard communication, trenching/shoring, lock out/tag out)? |
| **Chlorine Gas Safety** **NA** |
| Are there chlorine warnings posted on the outside of chlorine room doors? |
| - Do the doors open outward? |
| - Do they open to the exterior of the building? |
| - Are chlorine room doors equipped with crash bars? |
| - Are chlorine room doors equipped with viewports? |
| Is there a leak detector in the chlorine room with an audible alarm? |
| Are chlorine feed and storage areas isolated from other facilities? |
| Are chlorine areas adequately ventilated? |
| Are all chlorine cylinders adequately restrained? |
| Are self-contained breathing apparatus (SCBA) available for use in chlorine emergencies? |
| - Are they in good working condition? |
| - Are water system personnel adequately trained in the use and maintenance of the SCBA? |
| - Where are the SCBA stored? |
| Are chlorine leak kits available and are all personnel trained in their proper use? |
| **Chemical Safety** **NA** |
| **Yes** **No** **NA** |
| Are oxidizers, corrosives, and flammables stored in separate areas and in closed, marked containers? |
| Are flammables stored in appropriate containers and cabinets away from combustion sources? |
| Is there adequate ventilation in the areas where solvents, aerosols, and chemical feeders are in use? |
| Are bulk storage areas physically isolated from treatment areas to prevent spills from entering treated or untreated water? |
| Is the fire department familiar with the facilities and their contents? |

# MANAGEMENT DATA

|  |
| --- |
| **Yes** **No** **NA** |
| Are there rules governing new hookups to protect the integrity of this water system? |
| Is the treatment plant being properly operated to prevent inadequately treated water from being sent to the distribution system? @ |
| Does the system have arrangements in place to assure prompt supply and repair service? |
| Does the system have a current operations and maintenance manual which describes all procedures, equipment, sampling schedules and inspection data? |
| Is there a schedule for routine preventative maintenance for all facilities and equipment? |
| Does the system (treatment plant, finished water storage) have security measures in place (fencing, locks, lighting, alarms, etc.)? |
| Does the system have an emergency response plan (ERP) – system does not need to show the surveyor the ERP --that includes: @ |
| - Emergency contact phone numbers? |
| - Procedures to respond to a pressure loss/water outage? |
| - Procedures to respond to a water contamination incident? |
| Is the ERP accessible to the operator on-site? |
| Is the system part of a state’s WARN network? |
| Have you evaluated possible impacts to your system from extreme weather events? |
| If yes, what was the outcome? |
| Are you interested in training on extreme weather events? |
| Have you evaluated your facilities to see if they are in the 100 and 500 year flood plains? |
| If yes, what was the outcome? |
| What percentage of the utility’s power comes from your own renewable energy sources? |
| % wind:       % solar:       % hydro: |

# MONITORING AND RECORDS

|  |
| --- |
| **Revised Total Coliform Rule (RTCR) monitoring (all systems)** |
| **Yes** **No** |
| Does the operator know how to collect samples for total coliform analysis? (Review operator sampling procedure at time of survey to confirm) |
| Does the operator know what to do in the event of a total coliform “unsafe” result? (Consult the “RTCR/E-coli Positives” link on the Drinking Water Online site: <http://www2.epa.gov/region8-waterops> |
| Are extra bottles available in case of need for repeat coliform sampling? |
| Does the system have an RTCR sampling plan on file and available for the surveyor’s review? |
| Ask the operator - Is the system following their RTCR sampling plan? If No, explain any difficulties |
| **If subject to the Ground Water Rule (GWR), does the operator know:**  **NA** |
| **Yes** **No** **NA** |
| Within 24 hours of being notified of a *routine coliform* positive sample result, they must collect one triggered source water sample for *every* routine coliform positive sample at each active ground water source (e.g., three routine coliform positive samples requires the operator to collect three source water samples from *each* ground water source)? |
| They will need to submit both: |
| - Repeat samples under the RTCR (utilizing their regular lab form)? |
| - Source water samples utilizing the Ground Water Rule Sample Collection Form located on the Drinking Water Online site (<http://www2.epa.gov/region8-waterops>)? |
| Where to sample if they are required to sample all of their active ground water sources? |
| Are extra bottles available in case of the need for GWR source sampling? |
| **For Community and NTNC systems (including consecutives):** **NA** |
| **Yes** **No** **NA** |
| Is there a Disinfection Byproducts Rule Monitoring Plan on-site available for the surveyor’s review? |
| - Is it up-to-date reflecting the current distribution system? |
| - What types of maximum residual disinfectant levels (MRDLs) are measured (free, total or combined chlorine)? |
| Does the system have a Lead & Copper sample siting plan on file and available for the surveyor’s review? |
| - Is it up to date? |
| **For All Systems:** |
| **Yes** **No** **NA** |
| Does the operator know the location of each entry point to the distribution system? |
| Does the operator know how to properly label samples taken from the entry points? |
| Has the PWS completed the monitoring that is specified in the EPA-provided monitoring schedule so far for this calendar year? |
| Are copies of all monitoring results filed and readily accessible? |
| Is the operator familiar with the Drinking Water Online (<http://www2.epa.gov/region8-waterops>) and Drinking Water Watch (<https://sdwisr8.epa.gov/Region8DWW/JSP/loginForm.jsp>) websites created for their benefit? |

|  |  |  |
| --- | --- | --- |
| **fieldName** | **Question in Survey Form** | **Message** |
| chkCertOpN | (Inventory)  Certified Operator? | **No certified operator.**  Certified drinking water operators are essential to providing safe drinking water and protecting the public health of tribal communities. Regulations promulgated under the Safe Drinking Water Act require that public water systems be operated by qualified personnel. EPA Region 8 requires all community water systems and non-transient non-community water systems to have, or agree to obtain, a certified operator. Systems without at least one operator certified at the appropriate level are also ineligible to receive grant funding from EPA.  Operators can be certified under any EPA approved program, which includes the EPA National Tribal Drinking Water Operator Certification Program (which offers a Very Small Water System Option) and State operator certification programs. More information about the EPA program can be found at <http://www2.epa.gov/region8-waterops/training-and-certification-home>.  To address this significant deficiency, submittal of an EPA-approved program’s certificate or other documentation will be required to demonstrate that the operator has achieved the appropriate level of certification. Alternatively, the system could employ a certified contract operator; documentation will be required to show the contractual agreement and the contract operator’s certification level. |
| chkStandingWaterLeak | (Consecutive Systems)  Does standing water exist in any meter pits?  Yes  No  If so, what is the source of the standing water?  Leaks | **Master meter vault contains standing water from leaking water system components. (see photo #)**  The master meter vault at the connection to the [wholesaler] water system contained standing water caused by leaking water system components in the vault. This water could create a potential backflow problem if the system loses pressure and the water is siphoned back into the main. The components must be repaired to halt the leakage. |
| chkStandingWaterDtKn | (Consecutive Systems)  Does standing water exist in any meter pits?  Yes  No  If so, what is the source of the standing water?  Don’t know | **Master meter vault contains standing water from unknown origin. (see photo #)**  The master meter vault at the connection to the [wholesaler] water system contained standing water caused by unknown source(s).  This water could create a potential backflow problem if the system loses pressure and the water is siphoned back into the main.  Since the [consecutive] is responsible for the maintenance of the master meter connection, the [consecutive] must identify the source of the standing water.  If the source of the water is leakage from water system components, these must be repaired according to a schedule that you submit to the EPA. |
| chkTiteCapFilPortN | (Consecutive Systems)  Is there a water tight cap on the (water system’s) fill port? | **The water system’s fill port does not have a water tight cap.**  The cap on the water system’s fill port is not water tight. This could lead to the introduction of contamination into the distribution system. The cap must be repaired or replaced. |
| chkWSStdingWaterLeak | (Wholesale Systems)  Does standing water exist in any meter pits for which the wholesale system is responsible?  Yes  No  If so, what is the source of the standing water?  Leaks | **Master meter vault contains standing water from leaking water system components. (see photo #)**  The master meter vault at the connection to the [consecutive] water system contained standing water caused by leaking water system components in the vault. This water could create a potential backflow problem if the system loses pressure and the water is siphoned back into the main. The components must be repaired to halt the leakage. |
| chkWSStdingWatLeakDK | (Wholesale Systems)  Does standing water exist in any meter pits for which the wholesale system is responsible?  Yes  No  If so, what is the source of the standing water?  Don’t know | **Master meter vault contains standing water from unknown origin. (see photo #)**  The master meter vault at the connection to the [consecutive] water system contained standing water caused by unknown source(s).  This water could create a potential backflow problem if the system loses pressure and the water is siphoned back into the main.  Since the [wholesaler] is responsible for the maintenance of the master meter connection, the [wholesaler] must identify the source of the standing water.  If the source of the water is leakage from water system components, these must be repaired according to a schedule that you submit to the EPA. |
| WL1ConsInactY | (Source Data – Wells)  Does system want this well to be considered inactive? | **Clarify Status of Groundwater Well and Perform Appropriate Monitoring, Physical Disconnection, or Abandonment.**  During the sanitary survey, EPA was notified that this well is considered inactive and there are no plans to use it for potable water.  Please note that if you wish to keep the existing well physically connected as a backup source, you must monitor this well for compliance in the same way you would if the well was used on a regular basis. This well will also be inspected as part of the sanitary survey and you must address any significant deficiencies related to this well.  If you wish this well to be considered inactive, it must be either plugged and abandoned, or physically disconnected from the system. This means the line from the well to the pumphouse or to the transmission line must be severed (section of piping removed) and properly capped, or the pump must be removed, or the power source to the well pump must be physically disconnected (e.g. wires removed) such that an electrician is needed to restore power. The well must also be valved off to keep stagnant water from entering the system.  In order to correct this significant deficiency, please confirm whether this well is active or inactive. If this well is to be considered inactive, it must be physically disconnected or abandoned. Photos must be taken to document the inactive status of this well, and should be provided to EPA with your completed correction notice. |
| WL1VehicleProtectN | (Source Data – Wells)  Adequately protected from vehicle damage? | **Well not adequately protected from vehicle damage. (see photo #)**  The wellhead must be adequately protected to prevent damage due to vehicle operations. |
| WL1PitSumpPumpN | (Source Data – Wells)  If the pit or vault is not watertight, is it completed with drainage or a sump pump for permanent or portable use? | **Lack of drainage for well in pit or vault. (see photo #)**  When a well is located in a pit or vault that is not watertight, the pit or vault shall be constructed with proper drainage or a permanent or portable pump shall be provided. |
| WL1SWDrainN | (Source Data – Wells)  Does SW runoff drain away from the wellhead (including wells in pits or vaults)? | **Well area subject to surface drainage. (see photo #)**  The wellhead is located in a low lying area where surface water may drain toward the wellhead. The area surrounding the well must be recontoured, raised and sloped to drain surface water away from the wellhead. Permanent casing for the well must remain at least 18 inches above the natural ground surface. Drainage away from the well may also be accomplished by utilizing diversionary structures such as berms, walls, or ditches. |
| WL1CasTerm12InN | (Source Data – Wells)  Does well casing terminate at least 12” above the concrete floor? | **Insufficient well height. (see photo #)**  Permanent casing for all wells must project at least 12 inches above the concrete floor or apron and at least 18 inches above the natural ground surface. |
| WL1CasTerm18InGrdN | (Source Data – Wells)  Does the well casing terminate at least 18” above the natural ground surface? | **Insufficient well height. (see photo # )**  Permanent casing for all wells must project at least 12 inches above the concrete floor or apron and at least 18 inches above natural ground surface. |
| WL1HolesinWellY | (Source Data – Wells)  Any holes or openings observed in the well or its appurtenances? | **Holes or openings observed in the well or its appurtenances. (see photo # )**  To prevent contamination of the well, all openings must be sealed and watertight. [describe what must be sealed]. |
| WL1SanSealN | (Source Data – Wells)  Does the well have a sanitary seal with tightly bolted cap? (No) | **Lack of a sanitary seal on the well casing. (see photo #)**  To prevent contamination, the well must be fitted with a functioning sanitary seal and a tightly bolted cap. |
| WL1SanSealUnk | (Source Data – Wells)  Does the well have a sanitary seal with tightly bolted cap? (Unknown) | **Unknown integrity of sanitary seal on the well casing. (see photo #)**  To prevent contamination, the well must be fitted with a functioning sanitary seal and a tightly bolted cap. The surveyor was unable to determine the integrity of the seal during the survey; photo documentation must be provided showing the seal (describe what is needed such as remove the cap, etc.). |
| WL1VentAbvCasN | (Source Data – Wells)  Does the vent terminate at or above the top of the casing or pitless unit? | **Well vent height improvement needed. (see photo #)**  The height of the well vent must be at least as high as the well casing or pitless unit. |
| WL1VentFaceDwnN | (Source Data – Wells)  Is vent facing downward? | **Well vent position improvement needed. (see photo #)**  The vent must terminate in a downturned position. |
| WL1Screen24MeshN | (Source Data – Wells)  Vent screened with #24 mesh? | **Well vent screening improvement needed. (see photo #)**  The well vent must be screened with a #24-mesh corrosion-resistant screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. |
| WL1DischargPipDwnrdN | (Source Data – Wells)  Discharge Piping Termination- In a downward position? | **Well air release-vacuum relief valve improvement needed. (see photo #)**  For wells equipped with an air release-vacuum relief valve, the air release piping must terminate in a downturned position. The modified piping design must also maintain at least 8 inches above the floor. |
| WL1DischrgPip8InAbN | (Source Data – Wells)  Discharge Piping Termination- At least 8” above the floor? | **Insufficient height of well air release-vacuum relief valve. (see photo #)**  For wells equipped with an air release-vacuum relief valve, the air release piping must terminate at least 8 inches above the floor. The modified piping design must still terminate in a downward position. |
| WL1DischrgPip24MshN | (Source Data – Wells)  Discharge Piping Termination- Screened with #24 mesh? | **Screening of well air release-vacuum relief valve improvement needed. (see photo #)**  For well pipes equipped with an air release-vacuum relief valve, the air release piping must be covered with a #24 mesh corrosion-resistant screen. |
| WL1PumpSubjFloodY | (Source Data – Wells)  Is the external pump subject to flooding? | **External pump on well subject to flooding.**  Flood water could create a potential backflow problem if the system loses pressure and surface water is siphoned back into the well piping. The pump should be re-located or adequately protected from flooding. |
| WL2ConsInactY | (Source Data – Wells)  Does system want this well to be considered inactive? | **Clarify Status of Groundwater Well and Perform Appropriate Monitoring, Physical Disconnection, or Abandonment.**  During the sanitary survey, EPA was notified that this well is considered inactive and there are no plans to use it for potable water.  Please note that if you wish to keep the existing well physically connected as a backup source, you must monitor this well for compliance in the same way you would if the well was used on a regular basis. This well will also be inspected as part of the sanitary survey and you must address any significant deficiencies related to this well.  If you wish this well to be considered inactive, it must be either plugged and abandoned, or physically disconnected from the system. This means the line from the well to the pumphouse or to the transmission line must be severed (section of piping removed) and properly capped, or the pump must be removed, or the power source to the well pump must be physically disconnected (e.g. wires removed) such that an electrician is needed to restore power. The well must also be valved off to keep stagnant water from entering the system.  In order to correct this significant deficiency, please confirm whether this well is active or inactive. If this well is to be considered inactive, it must be physically disconnected or abandoned. Photos must be taken to document the inactive status of this well, and should be provided to EPA with your completed correction notice. |
| WL2VehicleProtectN | (Source Data – Wells)  Adequately protected from vehicle damage? | **Well not adequately protected from vehicle damage. (see photo #)**  The wellhead must be adequately protected to prevent damage due to vehicle operations. |
| WL2PitSumpPumpN | (Source Data – Wells)  If the pit or vault is not watertight, is it completed with drainage or a sump pump for permanent or portable use? | **Lack of drainage for well in pit or vault. (see photo #)**  When a well is located in a pit or vault that is not watertight, the pit or vault shall be constructed with proper drainage or a permanent or portable pump shall be provided. |
| WL2SWDrainN | (Source Data – Wells)  Does SW runoff drain away from the wellhead (including wells in pits or vaults)? | **Well area subject to surface drainage. (see photo #)**  The wellhead is located in a low lying area where surface water may drain toward the wellhead. The area surrounding the well must be recontoured, raised and sloped to drain surface water away from the wellhead. Permanent casing for the well must remain at least 18 inches above the natural ground surface. Drainage away from the well may also be accomplished by utilizing diversionary structures such as berms, walls, or ditches. |
| WL2CasTerm12InN | (Source Data – Wells)  Does well casing terminate at least 12” above the concrete floor? | **Insufficient well height. (see photo #)**  Permanent casing for all wells must project at least 12 inches above the concrete floor or apron and at least 18 inches above the natural ground surface. |
| WL2CasTerm18InGrdN | (Source Data – Wells)  Does the well casing terminate at least 18” above the natural ground surface? | **Insufficient well height. (see photo # )**  Permanent casing for all wells must project at least 12 inches above the concrete floor or apron and at least 18 inches above natural ground surface. |
| WL2HolesinWellY | (Source Data – Wells)  Any holes or openings observed in the well or its appurtenances? | **Holes or openings observed in the well or its appurtenances. (see photo # )**  To prevent contamination of the well, all openings must be sealed and watertight. [describe what must be sealed]. |
| WL2SanSealN | (Source Data – Wells)  Does the well have a sanitary seal? | **Lack of a sanitary seal on the well casing. (see photo #)**  To prevent contamination, the well must be fitted with a functioning sanitary seal and a tightly bolted cap. |
| WL2SanSealUnk | (Source Data – Wells)  Does the well have a sanitary seal with tightly bolted cap? (Unknown) | **Unknown integrity of sanitary seal on the well casing. (see photo #)**  To prevent contamination, the well must be fitted with a functioning sanitary seal and a tightly bolted cap. The surveyor was unable to determine the integrity of the seal during the survey; photo documentation must be provided showing the seal (describe what is needed such as remove the cap, etc.). |
| WL2VentAbvCasN | (Source Data – Wells)  Does the vent terminate at or above the top of the casing or pitless unit? | **Well vent height improvement needed. (see photo #)**  The height of the well vent must be at least as high as the well casing or pitless unit. |
| WL2VentFaceDwnN | (Source Data – Wells)  Is vent facing downward? | **Well vent position improvement needed. (see photo #)**  The vent must terminate in a downturned position. |
| WL2Screen24MeshN | (Source Data – Wells)  Vent screened with #24 mesh? | **Well vent screening improvement needed. (see photo #)**  The well vent must be screened with a #24-mesh corrosion-resistant screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. |
| WL2DischargPipDwnrdN | (Source Data – Wells)  Discharge Piping Termination- In a downward position? | **Well air release-vacuum relief valve improvement needed. (see photo #)**  For wells equipped with an air release-vacuum relief valve, the air release piping must terminate in a downturned position. The modified piping design must also maintain at least 8 inches above the floor. |
| WL2DischrgPip8InAbN | (Source Data – Wells)  Discharge Piping Termination- At least 8” above the floor? | **Insufficient height of well air release-vacuum relief valve. (see photo #)**  For wells equipped with an air release-vacuum relief valve, the air release piping must terminate at least 8 inches above the floor. The modified piping design must still terminate in a downward position. |
| WL2DischrgPip24MshN | (Source Data – Wells)  Discharge Piping Termination- Screened with #24 mesh? | **Screening of well air release-vacuum relief valve improvement needed. (see photo #)**  For well pipes equipped with an air release-vacuum relief valve, the air release piping must be covered with a #24 mesh corrosion-resistant screen. |
| WL2PumpSubjFloodY | (Source Data – Wells)  Is the external pump subject to flooding? | **External pump on well subject to flooding.**  Flood water could create a potential backflow problem if the system loses pressure and surface water is siphoned back into the well piping. The pump should be re-located or adequately protected from flooding. |
| WL3ConsInactY | (Source Data – Wells)  Does system want this well to be considered inactive? | **Clarify Status of Groundwater Well and Perform Appropriate Monitoring, Physical Disconnection, or Abandonment.**  During the sanitary survey, EPA was notified that this well is considered inactive and there are no plans to use it for potable water.  Please note that if you wish to keep the existing well physically connected as a backup source, you must monitor this well for compliance in the same way you would if the well was used on a regular basis. This well will also be inspected as part of the sanitary survey and you must address any significant deficiencies related to this well.  If you wish this well to be considered inactive, it must be either plugged and abandoned, or physically disconnected from the system. This means the line from the well to the pumphouse or to the transmission line must be severed (section of piping removed) and properly capped, or the pump must be removed, or the power source to the well pump must be physically disconnected (e.g. wires removed) such that an electrician is needed to restore power. The well must also be valved off to keep stagnant water from entering the system.  In order to correct this significant deficiency, please confirm whether this well is active or inactive. If this well is to be considered inactive, it must be physically disconnected or abandoned. Photos must be taken to document the inactive status of this well, and should be provided to EPA with your completed correction notice. |
| WL3VehicleProtectN | (Source Data – Wells)  Adequately protected from vehicle damage? | **Well not adequately protected from vehicle damage. (see photo #)**  The wellhead must be adequately protected to prevent damage due to vehicle operations. |
| WL3PitSumpPumpN | (Source Data – Wells)  If the pit or vault is not watertight, is it completed with drainage or a sump pump for permanent or portable use? | **Lack of drainage for well in pit or vault. (see photo #)**  When a well is located in a pit or vault that is not watertight, the pit or vault shall be constructed with proper drainage or a permanent or portable pump shall be provided. |
| WL3SWDrainN | (Source Data – Wells)  Does SW runoff drain away from the wellhead (including wells in pits or vaults)? | **Well area subject to surface drainage. (see photo #)**  The wellhead is located in a low lying area where surface water may drain toward the wellhead. The area surrounding the well must be recontoured, raised and sloped to drain surface water away from the wellhead. Permanent casing for the well must remain at least 18 inches above the natural ground surface. Drainage away from the well may also be accomplished by utilizing diversionary structures such as berms, walls, or ditches. |
| WL3CasTerm12InN | (Source Data – Wells)  Does well casing terminate at least 12” above the concrete floor? | **Insufficient well height. (see photo #)**  Permanent casing for all wells must project at least 12 inches above the concrete floor or apron and at least 18 inches above the natural ground surface. |
| WL3CasTerm18InGrdN | (Source Data – Wells)  Does the well casing terminate at least 18” above the natural ground surface? | **Insufficient well height. (see photo # )**  Permanent casing for all wells must project at least 12 inches above the concrete floor or apron and at least 18 inches above natural ground surface. |
| WL3HolesinWellY | (Source Data – Wells)  Any holes or openings observed in the well or its appurtenances? | **Holes or openings observed in the well or its appurtenances. (see photo # )**  To prevent contamination of the well, all openings must be sealed and watertight. [describe what must be sealed]. |
| WL3SanSealN | (Source Data – Wells)  Does the well have a sanitary seal? | **Lack of a sanitary seal on the well casing. (see photo #)**  To prevent contamination, the well must be fitted with a functioning sanitary seal and a tightly bolted cap. |
| WL3SanSealUnk | (Source Data – Wells)  Does the well have a sanitary seal with tightly bolted cap? (Unknown) | **Unknown integrity of sanitary seal on the well casing. (see photo #)**  To prevent contamination, the well must be fitted with a functioning sanitary seal and a tightly bolted cap. The surveyor was unable to determine the integrity of the seal during the survey; photo documentation must be provided showing the seal (describe what is needed such as remove the cap, etc.). |
| WL3VentAbvCasN | (Source Data – Wells)  Does the vent terminate at or above the top of the casing or pitless unit? | **Well vent height improvement needed. (see photo #)**  The height of the well vent must be at least as high as the well casing or pitless unit. |
| WL3VentFaceDwnN | (Source Data – Wells)  Is vent facing downward? | **Well vent position improvement needed. (see photo #)**  The vent must terminate in a downturned position. |
| WL3Screen24MeshN | (Source Data – Wells)  Vent screened with #24 mesh? | **Well vent screening improvement needed. (see photo #)**  The well vent must be screened with a #24-mesh corrosion-resistant screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. |
| WL3DischargPipDwnrdN | (Source Data – Wells)  Discharge Piping Termination- In a downward position? | **Well air release-vacuum relief valve improvement needed. (see photo #)**  For wells equipped with an air release-vacuum relief valve, the air release piping must terminate in a downturned position. The modified piping design must also maintain at least 8 inches above the floor. |
| WL3DischrgPip8InAbN | (Source Data – Wells)  Discharge Piping Termination- At least 8” above the floor? | **Insufficient height of well air release-vacuum relief valve. (see photo #)**  For wells equipped with an air release-vacuum relief valve, the air release piping must terminate at least 8 inches above the floor. The modified piping design must still terminate in a downward position. |
| WL3DischrgPip24MshN | (Source Data – Wells)  Discharge Piping Termination- Screened with #24 mesh? | **Screening of well air release-vacuum relief valve improvement needed. (see photo #)**  For well pipes equipped with an air release-vacuum relief valve, the air release piping must be covered with a #24 mesh corrosion-resistant screen. |
| WL3PumpSubjFloodY | (Source Data – Wells)  Is the external pump subject to flooding? | **External pump on well subject to flooding.**  Flood water could create a potential backflow problem if the system loses pressure and surface water is siphoned back into the well piping. The pump should be re-located or adequately protected from flooding. |
| WL4ConsInactY | (Source Data – Wells)  Does system want this well to be considered inactive? | **Clarify Status of Groundwater Well and Perform Appropriate Monitoring, Physical Disconnection, or Abandonment.**  During the sanitary survey, EPA was notified that this well is considered inactive and there are no plans to use it for potable water.  Please note that if you wish to keep the existing well physically connected as a backup source, you must monitor this well for compliance in the same way you would if the well was used on a regular basis. This well will also be inspected as part of the sanitary survey and you must address any significant deficiencies related to this well.  If you wish this well to be considered inactive, it must be either plugged and abandoned, or physically disconnected from the system. This means the line from the well to the pumphouse or to the transmission line must be severed (section of piping removed) and properly capped, or the pump must be removed, or the power source to the well pump must be physically disconnected (e.g. wires removed) such that an electrician is needed to restore power. The well must also be valved off to keep stagnant water from entering the system.  In order to correct this significant deficiency, please confirm whether this well is active or inactive. If this well is to be considered inactive, it must be physically disconnected or abandoned. Photos must be taken to document the inactive status of this well, and should be provided to EPA with your completed correction notice. |
| WL4VehicleProtectN | (Source Data – Wells)  Adequately protected from vehicle damage? | **Well not adequately protected from vehicle damage. (see photo #)**  The wellhead must be adequately protected to prevent damage due to vehicle operations. |
| WL4PitSumpPumpN | (Source Data – Wells)  If the pit or vault is not watertight, is it completed with drainage or a sump pump for permanent or portable use? | **Lack of drainage for well in pit or vault. (see photo #)**  When a well is located in a pit or vault that is not watertight, the pit or vault shall be constructed with proper drainage or a permanent or portable pump shall be provided. |
| WL4SWDrainN | (Source Data – Wells)  Does SW runoff drain away from the wellhead (including wells in pits or vaults)? | **Well area subject to surface drainage. (see photo #)**  The wellhead is located in a low lying area where surface water may drain toward the wellhead. The area surrounding the well must be recontoured, raised and sloped to drain surface water away from the wellhead. Permanent casing for the well must remain at least 18 inches above the natural ground surface. Drainage away from the well may also be accomplished by utilizing diversionary structures such as berms, walls, or ditches. |
| WL4CasTerm12InN | (Source Data – Wells)  Does well casing terminate at least 12” above the concrete floor? | **Insufficient well height. (see photo #)**  Permanent casing for all wells must project at least 12 inches above the concrete floor or apron and at least 18 inches above the natural ground surface. |
| WL4CasTerm18InGrdN | (Source Data – Wells)  Does the well casing terminate at least 18” above the natural ground surface? | **Insufficient well height. (see photo # )**  Permanent casing for all wells must project at least 12 inches above the concrete floor or apron and at least 18 inches above natural ground surface. |
| WL4HolesinWellY | (Source Data – Wells)  Any holes or openings observed in the well or its appurtenances? | **Holes or openings observed in the well or its appurtenances. (see photo # )**  To prevent contamination of the well, all openings must be sealed and watertight. [describe what must be sealed]. |
| WL4SanSealN | (Source Data – Wells)  Does the well have a sanitary seal? | **Lack of a sanitary seal on the well casing. (see photo #)**  To prevent contamination, the well must be fitted with a functioning sanitary seal and a tightly bolted cap. |
| WL4SanSealUnk | (Source Data – Wells)  Does the well have a sanitary seal with tightly bolted cap? (Unknown) | **Unknown integrity of sanitary seal on the well casing. (see photo #)**  To prevent contamination, the well must be fitted with a functioning sanitary seal and a tightly bolted cap. The surveyor was unable to determine the integrity of the seal during the survey; photo documentation must be provided showing the seal (describe what is needed such as remove the cap, etc.). |
| WL4VentAbvCasN | (Source Data – Wells)  Does the vent terminate at or above the top of the casing or pitless unit? | **Well vent height improvement needed. (see photo #)**  The height of the well vent must be at least as high as the well casing or pitless unit. |
| WL4VentFaceDwnN | (Source Data – Wells)  Is vent facing downward? | **Well vent position improvement needed. (see photo #)**  The vent must terminate in a downturned position. |
| WL4Screen24MeshN | (Source Data – Wells)  Vent screened with #24 mesh? | **Well vent screening improvement needed. (see photo #)**  The well vent must be screened with a #24-mesh corrosion-resistant screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. |
| WL4DischargPipDwnrdN | (Source Data – Wells)  Discharge Piping Termination- In a downward position? | **Well air release-vacuum relief valve improvement needed. (see photo #)**  For wells equipped with an air release-vacuum relief valve, the air release piping must terminate in a downturned position. The modified piping design must also maintain at least 8 inches above the floor. |
| WL4DischrgPip8InAbN | (Source Data – Wells)  Discharge Piping Termination- At least 8” above the floor? | **Insufficient height of well air release-vacuum relief valve. (see photo #)**  For wells equipped with an air release-vacuum relief valve, the air release piping must terminate at least 8 inches above the floor. The modified piping design must still terminate in a downward position. |
| WL4DischrgPip24MshN | (Source Data – Wells)  Discharge Piping Termination- Screened with #24 mesh? | **Screening of well air release-vacuum relief valve improvement needed. (see photo #)**  For well pipes equipped with an air release-vacuum relief valve, the air release piping must be covered with a #24 mesh corrosion-resistant screen. |
| WL4PumpSubjFloodY | (Source Data – Wells)  Is the external pump subject to flooding? | **External pump on well subject to flooding.**  Flood water could create a potential backflow problem if the system loses pressure and surface water is siphoned back into the well piping. The pump should be re-located or adequately protected from flooding. |
| WL5ConsInactY | (Source Data – Wells)  Does system want this well to be considered inactive? | **Clarify Status of Groundwater Well and Perform Appropriate Monitoring, Physical Disconnection, or Abandonment.**  During the sanitary survey, EPA was notified that this well is considered inactive and there are no plans to use it for potable water.  Please note that if you wish to keep the existing well physically connected as a backup source, you must monitor this well for compliance in the same way you would if the well was used on a regular basis. This well will also be inspected as part of the sanitary survey and you must address any significant deficiencies related to this well.  If you wish this well to be considered inactive, it must be either plugged and abandoned, or physically disconnected from the system. This means the line from the well to the pumphouse or to the transmission line must be severed (section of piping removed) and properly capped, or the pump must be removed, or the power source to the well pump must be physically disconnected (e.g. wires removed) such that an electrician is needed to restore power. The well must also be valved off to keep stagnant water from entering the system.  In order to correct this significant deficiency, please confirm whether this well is active or inactive. If this well is to be considered inactive, it must be physically disconnected or abandoned. Photos must be taken to document the inactive status of this well, and should be provided to EPA with your completed correction notice. |
| WL5VehicleProtectN | (Source Data – Wells)  Adequately protected from vehicle damage? | **Well not adequately protected from vehicle damage. (see photo #)**  The wellhead must be adequately protected to prevent damage due to vehicle operations. |
| WL5PitSumpPumpN | (Source Data – Wells)  If the pit or vault is not watertight, is it completed with drainage or a sump pump for permanent or portable use? | **Lack of drainage for well in pit or vault. (see photo #)**  When a well is located in a pit or vault that is not watertight, the pit or vault shall be constructed with proper drainage or a permanent or portable pump shall be provided. |
| WL5SWDrainN | (Source Data – Wells)  Does SW runoff drain away from the wellhead (including wells in pits or vaults)? | **Well area subject to surface drainage. (see photo #)**  The wellhead is located in a low lying area where surface water may drain toward the wellhead. The area surrounding the well must be recontoured, raised and sloped to drain surface water away from the wellhead. Permanent casing for the well must remain at least 18 inches above the natural ground surface. Drainage away from the well may also be accomplished by utilizing diversionary structures such as berms, walls, or ditches. |
| WL5CasTerm12InN | (Source Data – Wells)  Does well casing terminate at least 12” above the concrete floor? | **Insufficient well height. (see photo #)**  Permanent casing for all wells must project at least 12 inches above the concrete floor or apron and at least 18 inches above the natural ground surface. |
| WL5CasTerm18InGrdN | (Source Data – Wells)  Does the well casing terminate at least 18” above the natural ground surface? | **Insufficient well height. (see photo # )**  Permanent casing for all wells must project at least 12 inches above the concrete floor or apron and at least 18 inches above natural ground surface. |
| WL5HolesinWellY | (Source Data – Wells)  Any holes or openings observed in the well or its appurtenances? | **Holes or openings observed in the well or its appurtenances. (see photo # )**  To prevent contamination of the well, all openings must be sealed and watertight. [describe what must be sealed]. |
| WL5SanSealN | (Source Data – Wells)  Does the well have a sanitary seal? | **Lack of a sanitary seal on the well casing. (see photo #)**  To prevent contamination, the well must be fitted with a functioning sanitary seal and a tightly bolted cap. |
| WL5SanSealUnk | (Source Data – Wells)  Does the well have a sanitary seal with tightly bolted cap? (Unknown) | **Unknown integrity of sanitary seal on the well casing. (see photo #)**  To prevent contamination, the well must be fitted with a functioning sanitary seal and a tightly bolted cap. The surveyor was unable to determine the integrity of the seal during the survey; photo documentation must be provided showing the seal (describe what is needed such as remove the cap, etc.). |
| WL5VentAbvCasN | (Source Data – Wells)  Does the vent terminate at or above the top of the casing or pitless unit? | **Well vent height improvement needed. (see photo #)**  The height of the well vent must be at least as high as the well casing or pitless unit. |
| WL5VentFaceDwnN | (Source Data – Wells)  Is vent facing downward? | **Well vent position improvement needed. (see photo #)**  The vent must terminate in a downturned position. |
| WL5Screen24MeshN | (Source Data – Wells)  Vent screened with #24 mesh? | **Well vent screening improvement needed. (see photo #)**  The well vent must be screened with a #24-mesh corrosion-resistant screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. |
| WL5DischargPipDwnrdN | (Source Data – Wells)  Discharge Piping Termination- In a downward position? | **Well air release-vacuum relief valve improvement needed. (see photo #)**  For wells equipped with an air release-vacuum relief valve, the air release piping must terminate in a downturned position. The modified piping design must also maintain at least 8 inches above the floor. |
| WL5DischrgPip8InAbN | (Source Data – Wells)  Discharge Piping Termination- At least 8” above the floor? | **Insufficient height of well air release-vacuum relief valve. (see photo #)**  For wells equipped with an air release-vacuum relief valve, the air release piping must terminate at least 8 inches above the floor. The modified piping design must still terminate in a downward position. |
| WL5DischrgPip24MshN | (Source Data – Wells)  Discharge Piping Termination- Screened with #24 mesh? | **Screening of well air release-vacuum relief valve improvement needed. (see photo #)**  For well pipes equipped with an air release-vacuum relief valve, the air release piping must be covered with a #24 mesh corrosion-resistant screen. |
| WL5PumpSubjFloodY | (Source Data – Wells)  Is the external pump subject to flooding? | **External pump on well subject to flooding.**  Flood water could create a potential backflow problem if the system loses pressure and surface water is siphoned back into the well piping. The pump should be re-located or adequately protected from flooding. |
| WL6ConsInactY | (Source Data – Wells)  Does system want this well to be considered inactive? | **Clarify Status of Groundwater Well and Perform Appropriate Monitoring, Physical Disconnection, or Abandonment.**  During the sanitary survey, EPA was notified that this well is considered inactive and there are no plans to use it for potable water.  Please note that if you wish to keep the existing well physically connected as a backup source, you must monitor this well for compliance in the same way you would if the well was used on a regular basis. This well will also be inspected as part of the sanitary survey and you must address any significant deficiencies related to this well.  If you wish this well to be considered inactive, it must be either plugged and abandoned, or physically disconnected from the system. This means the line from the well to the pumphouse or to the transmission line must be severed (section of piping removed) and properly capped, or the pump must be removed, or the power source to the well pump must be physically disconnected (e.g. wires removed) such that an electrician is needed to restore power. The well must also be valved off to keep stagnant water from entering the system.  In order to correct this significant deficiency, please confirm whether this well is active or inactive. If this well is to be considered inactive, it must be physically disconnected or abandoned. Photos must be taken to document the inactive status of this well, and should be provided to EPA with your completed correction notice. |
| WL6VehicleProtectN | (Source Data – Wells)  Adequately protected from vehicle damage? | **Well not adequately protected from vehicle damage. (see photo #)**  The wellhead must be adequately protected to prevent damage due to vehicle operations. |
| WL6PitSumpPumpN | (Source Data – Wells)  If the pit or vault is not watertight, is it completed with drainage or a sump pump for permanent or portable use? | **Lack of drainage for well in pit or vault. (see photo #)**  When a well is located in a pit or vault that is not watertight, the pit or vault shall be constructed with proper drainage or a permanent or portable pump shall be provided. |
| WL6SWDrainN | (Source Data – Wells)  Does SW runoff drain away from the wellhead (including wells in pits or vaults)? | **Well area subject to surface drainage. (see photo #)**  The wellhead is located in a low lying area where surface water may drain toward the wellhead. The area surrounding the well must be recontoured, raised and sloped to drain surface water away from the wellhead. Permanent casing for the well must remain at least 18 inches above the natural ground surface. Drainage away from the well may also be accomplished by utilizing diversionary structures such as berms, walls, or ditches. |
| WL6CasTerm12InN | (Source Data – Wells)  Does well casing terminate at least 12” above the concrete floor? | **Insufficient well height. (see photo #)**  Permanent casing for all wells must project at least 12 inches above the concrete floor or apron and at least 18 inches above the natural ground surface. |
| WL6CasTerm18InGrdN | (Source Data – Wells)  Does the well casing terminate at least 18” above the natural ground surface? | **Insufficient well height. (see photo # )**  Permanent casing for all wells must project at least 12 inches above the concrete floor or apron and at least 18 inches above natural ground surface. |
| WL6HolesinWellY | (Source Data – Wells)  Any holes or openings observed in the well or its appurtenances? | **Holes or openings observed in the well or its appurtenances. (see photo # )**  To prevent contamination of the well, all openings must be sealed and watertight. [describe what must be sealed]. |
| WL6SanSealN | (Source Data – Wells)  Does the well have a sanitary seal? | **Lack of a sanitary seal on the well casing. (see photo #)**  To prevent contamination, the well must be fitted with a functioning sanitary seal and a tightly bolted cap. |
| WL6SanSealUnk | (Source Data – Wells)  Does the well have a sanitary seal with tightly bolted cap? (Unknown) | **Unknown integrity of sanitary seal on the well casing. (see photo #)**  To prevent contamination, the well must be fitted with a functioning sanitary seal and a tightly bolted cap. The surveyor was unable to determine the integrity of the seal during the survey; photo documentation must be provided showing the seal (describe what is needed such as remove the cap, etc.). |
| WL6VentAbvCasN | (Source Data – Wells)  Does the vent terminate at or above the top of the casing or pitless unit? | **Well vent height improvement needed. (see photo #)**  The height of the well vent must be at least as high as the well casing or pitless unit. |
| WL6VentFaceDwnN | (Source Data – Wells)  Is vent facing downward? | **Well vent position improvement needed. (see photo #)**  The vent must terminate in a downturned position. |
| WL6Screen24MeshN | (Source Data – Wells)  Vent screened with #24 mesh? | **Well vent screening improvement needed. (see photo #)**  The well vent must be screened with a #24-mesh corrosion-resistant screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. |
| WL6DischargPipDwnrdN | (Source Data – Wells)  Discharge Piping Termination- In a downward position? | **Well air release-vacuum relief valve improvement needed. (see photo #)**  For wells equipped with an air release-vacuum relief valve, the air release piping must terminate in a downturned position. The modified piping design must also maintain at least 8 inches above the floor. |
| WL6DischrgPip8InAbN | (Source Data – Wells)  Discharge Piping Termination- At least 8” above the floor? | **Insufficient height of well air release-vacuum relief valve. (see photo #)**  For wells equipped with an air release-vacuum relief valve, the air release piping must terminate at least 8 inches above the floor. The modified piping design must still terminate in a downward position. |
| WL6DischrgPip24MshN | (Source Data – Wells)  Discharge Piping Termination- Screened with #24 mesh? | **Screening of well air release-vacuum relief valve improvement needed. (see photo #)**  For well pipes equipped with an air release-vacuum relief valve, the air release piping must be covered with a #24 mesh corrosion-resistant screen. |
| WL6PumpSubjFloodY | (Source Data – Wells)  Is the external pump subject to flooding? | **External pump on well subject to flooding.**  Flood water could create a potential backflow problem if the system loses pressure and surface water is siphoned back into the well piping. The pump should be re-located or adequately protected from flooding. |
| sourceOPolutnNrWlY | (Source Data – Wells)  Are there any sources of pollution near the wells which could impact water quality? | **Source of possible contamination in immediate area of well. (see photo # )**  In the vicinity of the well there is [describe sources of pollution] that can potentially impact the water quality. (Describe remedy) |
| srce456OPolutnNrWlY | (Source Data – Wells)  Are there any sources of pollution near the wells which could impact water quality? | **Source of possible contamination in immediate area of well. (see photo # )**  In the vicinity of the well there is [describe sources of pollution] that can potentially impact the water quality. (Describe remedy) |
| WLone2or3animdropY | (Source Data – Wells)  Mice or other animals and their droppings in immediate area? | **Mice or other animals and their droppings in immediate area of the well (in well house, vault, or pit). (see photo # )**    The mice or other animals and their droppings must be removed. Please refer to the Center for Disease Control (CDC) website regarding how to properly clean up this area to prevent contracting the Hantavirus pulmonary syndrome: <http://www.cdc.gov/ncidod/diseases/hanta/hps/noframes/prevent3.htm> |
| WLfour5or6animdropY | (Source Data – Wells)  Mice or other animals and their droppings in immediate area? | **Mice or other animals and their droppings in immediate area of the well (in well house, vault, or pit). (see photo # )**    The mice or other animals and their droppings must be removed. Please refer to the Center for Disease Control (CDC) website regarding how to properly clean up this area to prevent contracting the Hantavirus pulmonary syndrome: <http://www.cdc.gov/ncidod/diseases/hanta/hps/noframes/prevent3.htm> |
| SprSrcFencedN | (Source Data Springs)  Are the spring collection area and spring  box fenced to keep animals away? | **Spring collection area and collection chamber/box not fenced to keep large animals away. (see photo #)**  The spring collection area and collection chamber/box must be enclosed by a fence to prevent stock and large wildlife from entering the spring area. |
| surfWatRunOfDrFColAN | (Source Data Springs)  Does surface water runoff drain away from the collection area? | **Surface runoff drains toward spring collection area. (see photo #)**  A diversion channel or berm capable of diverting surface water runoff away from the spring collection area must be constructed. |
| vegArndSprCollBxY | (Source Data Springs)  Is there deep rooted vegetation around the spring collection box? | **Deep-rooted vegetation within the spring collection area and/or around the spring box. (see photo #)**  The deep-rooted vegetation growing around the spring collection area and/or spring box provides a potential conduit for surface water into the water supply. Remove all deep-rooted bushes and trees around the vicinity of the spring collection area and spring box. |
| properShoeBxLidN | (Source Data Springs)  Proper shoe box lid? | **Spring collection chamber hatch/entry improvement needed. (see photo #)**  The cover must overlap the framed opening and extend down around the frame at least two inches. |
| RubberGasketOnLidN | (Source Data Springs)  Rubber gasket on the lid? | **Spring hatch/entry improvement needed. (see photo # )**  Spring hatches must be fitted with a solid, watertight cover with a rubber gasket. |
| AdequateAirVnt24MN | (Source Data Springs)  Air vents screened with #24 mesh? | **Spring air vent improvement needed. (see photo #)**  The air vent must be screened with a #24-mesh corrosion-resistant screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. |
| SprgHatchLockedN | (Source Data Springs)  Is the hatch locked? | **Spring hatch/entry not locked. (see photo #)**    Spring hatch covers must have a locking device. |
| spgScreenedOverFN | (Source Data Springs)  Overflow screened with #24 mesh screen? | **Spring collection chamber overflow screening improvement needed. (see photo #)**  The overflow pipe must have a #24 mesh screen on the exterior discharge ends to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The modified overflow design must also still freefall at least 12 inches above ground. |
| SprOvrflFreeFall12N | (Source Data Springs)  Does overflow have a free fall of at least 12 inches? | **Spring collection chamber overflow improvement needed. (see photo #)**  The overflow pipe must freefall at least 12 inches above ground. The modified overflow must also maintain a #24 mesh screen on the exterior discharge end. |
| sprCollChmbrWtrTiteN | (Source Data Springs)  Is the spring collection chamber water tight to prevent inflow of unwanted surface water? | **Spring collection chamber not watertight. (see photo #)**    The chamber must be watertight to prevent inflow of unwanted surface water. |
| srcPmpSubjToFloodY | (Source Data Springs)  Is the pump station subject to flooding? | **External pump on spring subject to flooding.**  Flood water could create a potential backflow problem if the system loses pressure and surface water is siphoned back into the spring transmission line. The pump should be re-located or adequately protected from flooding. |
| sprPropShoeBxLidN | (Source Data Springs)  (Spring collection or distribution system hatches / manholes)  Proper shoe box lid? | **Spring collection or transmission system hatch/entry improvement needed. (see photo #)**  The cover must overlap the framed opening and extend down around the frame at least two inches. [identify location of hatch in collection or transmission system] |
| sprRubbGaskLidN | (Source Data Springs)  (Spring collection or distribution system hatches / manholes)  Rubber gasket on the lid? | **Spring collection or transmission system hatch/entry improvement needed. (see photo #)**  Hatches / manholes in the spring collection and transmission system must be fitted with a solid, watertight cover with a rubber gasket. |
| sprSecureAccEntrN | (Source Data Springs)  (Spring collection or distribution system hatches / manholes)  Locked? | **Spring collection or transmission system hatch/entry not locked. (see photo #)**    Hatch covers / manholes in the spring collection or transmission system must have a locking device. |
| sprSrcOfPolluNrSprY | (Source Data Springs)  Are there any sources of pollution near the spring which could impact water quality? | **Source of possible contamination in immediate area of spring. (see photo # )**  In the vicinity of the spring there is [describe sources of pollution] that can potentially impact the water quality. [describe remedy] |
| sprSrcanimdropY | (Source Data Springs)  Mice or other animals and their droppings in immediate area? | **Mice or other animals and their droppings in immediate area of the spring (in spring house or collection box). (see photo # )**    The mice or other animals and their droppings must be removed. Please refer to the Center for Disease Control (CDC) website regarding how to properly clean up this area to prevent contracting the Hantavirus pulmonary syndrome: <http://www.cdc.gov/ncidod/diseases/hanta/hps/noframes/prevent3.htm>. |
| inflGllSourcePolluY | (Source Data Infiltration Galleries)  Are there any sources of pollution near the infiltration gallery (e.g., agriculture/industrial activities, cleaning supplies, oil/fuel, etc.) which could impact water quality? | **Source of possible contamination in immediate area of infiltration gallery. (see photo # )**  In the vicinity of the infiltration gallery there is [describe sources of pollution] that can potentially impact the water quality. [describe remedy] |
| intStrmSrcePolluY | (Source Data Streams)  Are there any sources of pollution near the stream (e.g., agriculture/industrial activities, cleaning supplies, oil/fuel, etc.) which could impact water quality? | **Source of possible contamination in immediate area of stream. (see photo # )**  In the vicinity of the stream there is [describe sources of pollution] that can potentially impact the water quality. [describe remedy] |
| intResvSrceSubPolluY | (Source Data Reservoirs)  Are there any sources of pollution near the reservoirs, lakes and ponds and associated pumps (e.g., agriculture/industrial activities, cleaning supplies, oil/fuel, etc.) which could impact water quality? | **Source of possible contamination in immediate area of reservoir. (see photo # )**  In the vicinity of the reservoir there is [describe sources of pollution] that can potentially impact the water quality. [describe remedy] |
| EmergSrceSubPolluY | (Source Data Emergency Back-up Sources)  Are there any sources of pollution near the emergency backup source (e.g., agriculture/industrial activities, cleaning supplies, oil/fuel, etc.) which could impact water quality? | **Source of possible contamination in immediate area of emergency backup source. (see photo # )**  In the vicinity of the emergency backup source there is [describe sources of pollution] that can potentially impact the water quality. [describe remedy] |
| RawTrans1ServConnY | (Raw Water Transmission)  Are there any service connections to the raw water transmission line? | **Customers connected to raw water transmission line.**  Some customers are connected to the raw water transmission line to the treatment plant and are receiving untreated water. Delivery of non-potable water for human consumption is a public health risk. The service must be disconnected or appropriate treatment must be provided prior to use. [put site specific info about treating the water or disconnecting] |
| RawTrans2ServConnY | (Raw Water Transmission)  Are there any service connections to the raw water transmission line? | **Customers connected to raw water transmission line.**  Some customers are connected to the raw water transmission line to the treatment plant and are receiving untreated water. Delivery of non-potable water for human consumption is a public health risk. The service must be disconnected or appropriate treatment must be provided prior to use. [put site specific info about treating the water or disconnecting] |
| distBoostPSubjFloodY | (Distribution Booster Pumps)  Is the pump station subject to flooding? | **Booster pump station subject to flooding [location of pump station].**  Flood water could create a potential backflow problem if the system loses pressure and the water is siphoned back into the main. The pump must be re-located or adequately protected from flooding. |
| hydrTnkRustY | (Hydropneumatic Tanks)  Is there evidence of severe rust? | **Hydropneumatic tank has evidence of severe rust. (see photo # )**  Failure to maintain the structural and sanitary integrity of the tank could lead directly to contamination within the tank, illness and/or the loss of property. The rust on the tank must be repaired or the tank must be replaced. |
| hydrTnkLeakY | (Hydropneumatic Tanks)  Is there evidence of water leaks? | **Hydropneumatic tank has evidence of water leaks. (see photo # )**  Failure to maintain the structural and sanitary integrity of the tank could lead directly to contamination within the tank, illness and/or the loss of property. The leaks in the tank must be repaired or the tank must be replaced. |
| hydrTnkAirLeakY | (Hydropneumatic Tanks)  Is there evidence of air leaks? | **Hydropneumatic tank has evidence of air leaks. (see photo # )**  Failure to maintain the structural and sanitary integrity of the tank could lead directly to contamination within the tank, illness and/or the loss of property. The leaks in the tank must be repaired or the tank must be replaced. |
| hydrTnkFloodingY | (Hydropneumatic Tanks)  Is there evidence of flooding (if in a vault)? | **Hydropneumatic tank in a vault with evidence of flooding. (see photo # )**  Standing water creates an environment that could damage the structural and sanitary integrity of the tank. The hydropneumatic tank must be re-located or adequately protected from standing water. |
| hydrTnkComprAgeY | (Hydropneumatic Tanks)  For any tank that uses an air compressor, is the tank age older than the life expectancy? | **Pressure tank that uses an air compressor is older than the manufacturer’s life expectancy. (see photo # )**  In order to protect the structural integrity of the pressure tank (prevent tank explosion), tanks that exceed manufacturer’s life expectancy must be replaced. |
| gvTk1FloodingY | (Gravity Tanks)  Is the site subject to flooding? | **Storage tank located in an area subject to flooding. (see photo # )**  [insert site specific problem and remedy] |
| gvTk1PropMaintN | (Gravity Tanks)  Does the tank appear structurally sound? | **Storage tank not structurally sound or properly maintained. (see photo # )**  The storage tank does not appear to be structurally sound. Specifically, the [tank component] of the tank must be evaluated by a professional engineer familiar with the construction of water-storage tanks to determine the integrity of the tank’s [tank component].  Failure to maintain the structural and sanitary integrity of the tank could lead directly to contamination within the tank, illness and/or the loss of property.  The professional evaluation of the storage tank must be made as soon as possible and it must be repaired if necessary to ensure the structural integrity and reliability of the tank. |
| gvTk1FounStrucSoundN | (Gravity Tanks)  Does the foundation appear structurally sound? | **Storage tank foundation does not appear to be structurally sound. (see photo # )**  The storage tank foundation does not appear to be structurally sound. It must be evaluated by a professional engineer familiar with the construction of water-storage tanks.  Failure to maintain the structural and sanitary integrity of the tank foundation could lead directly to contamination within the tank, illness and/or the loss of property.  The professional evaluation of the storage tank foundation must be made as soon as possible and the foundation repaired if necessary to ensure the structural integrity and reliability of the tank. |
| gvTk1OpeningsY | (Gravity Tanks)  Are there any unprotected openings in the tank (breaches, leaks, etc)? | **Storage tank not sealed. (see photo #)**  Other than the openings afforded by the #24 mesh screens on the vents and overflows, all openings must be sealed completely to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. [Describe specific openings such as: All openings between the roof and sidewalls must be sealed and watertight. Any openings from antennas, telemetry, and other appurtenances must be sealed and watertight.] |
| gvTk1InspectedN | (Gravity Tanks)  If the tank is more than 10 years old, was it cleaned and inspected within the last 10 years? | **Storage tank not cleaned and inspected within the last 10 years.**  The tank must be cleaned and inspected. Please see the enclosed Finished Water Storage Tank Inspection/Cleaning Checklist for a list of items that must be evaluated during the inspection. Tanks need to be periodically cleaned and inspected to prevent the growth of potentially harmful pathogens in the accumulated sediments and to address construction issues before they require major repairs. Inspections and cleaning may be done by a third-party professional or appropriately trained in-house staff. Please be aware that some tanks may be considered as confined spaces or hazardous environments; personnel working in or near the tanks should have all OSHA-required training, and proper safety equipment and procedures should be used at all times. After inspection and cleaning the tank must be disinfected according to AWWA standards (C652-92: Disinfection of Water Storage Facilities).  In order to correct this significant deficiency, you must provide EPA with the following documentation:  A completed copy of the Finished Water Storage Tank Inspection/Cleaning Checklist.  A copy of inspection results and labeled photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk1OvFlSepN | (Gravity Tanks)  Does the tank have an overflow separate from the vent? @ | **No overflow on finished water storage tank.**  In order to protect the integrity of the tank in the case of control system failure leading to overfilling, the tank must have an overflow that is separate from the vent. |
| gvTk1OvFlAccessN | (Gravity Tanks)  Is the overflow accessible for inspection? | **Unknown integrity of storage tank overflow [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank overflow [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk1OvFl24MeshN | (Gravity Tanks)  Overflow has a #24 mesh screen OR a duckbill valve OR a properly sealed flapper valve with screen inside (EPA recommends a #24 mesh screen)? | **Overflow screening on finished water storage tank improvement needed. (see photo #)**  Overflow must be fitted with a #24-mesh non corrodible screen, or properly sealed flapper or duckbill valve to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the pipe at a location least susceptible to vandalism. When a flapper valve is used, a screen must be placed inside the valve (EPA Region 8 recommends #24-mesh non-corrodible mesh be used). In cold climates, use of a flapper or duckbill valve should be considered to minimize air movement and hence ice formation in the tank. In cold climates, provisions should be considered to prevent the flapper or duckbill from freezing shut. |
| gvTk1OvFlTerm12InN | (Gravity Tanks)  Does the overflow line terminate no less than 12 inches but no more than 24 inches above the ground surface? | **Overflow on finished water storage tank discharges at improper height. (see photo #)**  Overflow must be piped to an elevation between 12 and 24 inches above the ground surface and discharge over a drainage inlet structure, splash plate, or engineered rip-rap. |
| gvTk1OvDrainStructN | (Gravity Tanks)  Does the overflow discharge over an inlet structure, splash plate, or engineered rip-rap? | **Overflow discharge point on finished water storage tank improvement needed. (see photo #)**  Overflow must discharge over a drainage inlet structure, splash plate, or engineered rip-rap. |
| gvTk1OvFlConnSewerN | (Gravity Tanks)  Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? | **Overflow on finished water storage tank is directly connected to a sanitary sewer, combined sewer or storm sewer drain. (see photo #)**  No overflow may be directly connected to a sanitary sewer, combined sewer or storm sewer drain. An air gap must be present such that the overflow pipe terminates at least three pipe diameters above the ground level at the sewer or storm drain, or over a splash pad. |
| gvTk1DLAccessblN | (Gravity Tanks)  Is the drain accessible for inspection? | **Unknown integrity of storage tank drain [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank drain [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk1DLAirGapN | (Gravity Tanks)  Does the drain pipe have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? | **Drain on finished water storage tank is directly connected to a sanitary sewer, combined sewer or storm sewer drain. (see photo #)**  No drain may be directly connected to a sanitary sewer, combined sewer or storm sewer drain. An air gap must be present such that the drain pipe terminates at least three pipe diameters above the ground level at the sewer drain, storm drain, splash pad or engineered rip-rap. |
| gvTk1VentSepN | (Gravity Tanks)  Does the tank have a vent separate from the overflow? | **No vent on finished water storage tank.**  In order to protect the structural integrity of the tank during changes to tank water levels, and other events affecting the confined air space, the tank must have a vent that is separate from the overflow. |
| gvTk1AirVentAccessN | (Gravity Tanks)  Is the vent accessible for inspection? | **Unknown integrity of storage tank air vent [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank air vent [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk1AirVntMeshN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  Is there #24 mesh screen? | **Air vent screening on finished water storage tank needs improvement. (see photo #)**  The vent must be fitted with a #24-mesh non corrodible screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the vent at a location least susceptible to vandalism. Prior to installing the screen, the PWS should evaluate whether the tank needs a vacuum/pressure relief valve or another mechanism to prevent damage to the tank. |
| gvTk1AirVnt24AbvRfN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  Downturned vent: Is the vent at least 24“ above the roof? | **Downturned air vent on finished water storage tank does not terminate at required height. (see photo #)**  The vent must terminate in an inverted U construction at least 24” above the tank surface to prevent inhalation of contaminants by the tank. |
| gvTk1AirVentSoldCovN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  For non-downturned vents: Is there a solid cover down to the bottom of the vent screen? | **Air vent on finished water storage tank does not have a solid cover. (see photo #)**  For non-downturned vents the screen must have a solid cover down to the bottom of the vent screen to prevent rain and blown debris from entering the tank. |
| gvTk1AirVnt8AbvRfN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  For non-downturned vents: Is the screen at least 8” above the roof surface? | **Air vent on finished water storage tank is not elevated above the roof at the required height. (see photo #)**  For non-downturned vents, the bottom of the vent screen must be at least 8” above the tank roof to prevent inhalation of contaminants by the tank. |
| gvTk1AirVen24MeshN | (Gravity Tanks)  Below Ground (buried or partially buried)  Is air vent covered with #24 mesh screen? | **Air vent screening on finished water storage tank improvement needed. (see photo #)**  The vent must be fitted with a #24-mesh non corrodible screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the vent at a location least susceptible to vandalism. |
| gvTk1AirVnTermDwnN | (Gravity Tanks)  Below Ground (buried or partially buried)  Does the air vent terminate downward? | **Air vent on finished water storage tank does not terminate in a downturned position. (see photo #)**  On buried or partially buried tanks the air vent must terminate in a downturned position. |
| gvTk1AirVnTrmAbvRfN | (Gravity Tanks)  Below Ground (buried or partially buried)  Is the air vent at least 24” above the roof or ground surface (whichever is higher)? | **Air vent on finished water storage tank does not terminate at required height. (see photo #)**  The vent must terminate in an inverted U construction at least 24 inches above the roof or ground surface (whichever is higher) to prevent rain from entering and to prevent inhalation of contaminants by the tank. |
| gvTk1AHAccessableN | (Gravity Tanks)  Is the hatch accessible for inspection? | **Unknown integrity of storage tank access hatch [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank access hatch [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk1AH24AboveRfN | (Gravity Tanks)  Is the hatch raised at least 24” above the roof or ground (whichever is higher) on below ground tanks (buried or partially buried) or 4“ above the roof for above ground tanks (ground level or elevated)? | **Hatch on Finished Water Storage Tank is not elevated to the required height. (see photo #)**  Above Ground Tanks (elevated or ground-level, where the hatch is greater than 4 feet above ground level): The tank hatch must be framed at least four inches above the surface of the roof.  Below Ground Tanks (buried or partially buried): The tank hatch must be elevated a minimum of 24 inches above the top of the tank surface or ground surface, whichever is higher. |
| gvTk1AHShoeBxLidN | (Gravity Tanks)  Does the hatch have a shoe box lid? | **Hatch on Finished Water Storage Tank does not have a shoe box lid. (see photo #)**  The tank hatch must be fitted with a solid watertight cover which extends down around the frame at least two inches. |
| gvTk1AHRubberGaskN | (Gravity Tanks)  Is the lid tight and sealed with a rubber gasket? | **Hatch on Finished Water Storage Tank does not have a gasket that creates a water tight seal. (see photo #)**  The tank hatch must have a rubber gasket to seal the hatch lid to the frame tightly to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. |
| gvTk1AHALockedN | (Gravity Tanks)  Is the hatch locked? | **Hatch on Finished Water Storage Tank does not have a locking device. (see photo #)**  The cover must have a locking device. |
| gvTk2FloodingY | (Gravity Tanks)  Is the site subject to flooding? | **Storage tank located in an area subject to flooding. (see photo # )**  [insert site specific problem and remedy] |
| gvTk2PropMaintN | (Gravity Tanks)  Does the tank appear structurally sound? | **Storage tank not structurally sound or properly maintained. (see photo # )**  The storage tank does not appear to be structurally sound. Specifically, the [tank component] of the tank must be evaluated by a professional engineer familiar with the construction of water-storage tanks to determine the integrity of the tank’s [tank component].  Failure to maintain the structural and sanitary integrity of the tank could lead directly to contamination within the tank, illness and/or the loss of property.  The professional evaluation of the storage tank must be made as soon as possible and it must be repaired if necessary to ensure the structural integrity and reliability of the tank. |
| gvTk2FounStrucSoundN | (Gravity Tanks)  Does the foundation appear structurally sound? | **Storage tank foundation does not appear to be structurally sound. (see photo # )**  The storage tank foundation does not appear to be structurally sound. It must be evaluated by a professional engineer familiar with the construction of water-storage tanks.  Failure to maintain the structural and sanitary integrity of the tank foundation could lead directly to contamination within the tank, illness and/or the loss of property.  The professional evaluation of the storage tank foundation must be made as soon as possible and the foundation repaired if necessary to ensure the structural integrity and reliability of the tank. |
| gvTk2OpeningsY | (Gravity Tanks)  Are there any unprotected openings in the tank (breaches, leaks, etc)? | **Storage tank not sealed. (see photo #)**  Other than the openings afforded by the #24 mesh screens on the vents and overflows, all openings must be sealed completely to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. [Describe specific openings such as: All openings between the roof and sidewalls must be sealed and watertight. Any openings from antennas, telemetry, and other appurtenances must be sealed and watertight.] |
| gvTk2InspectedN | (Gravity Tanks)  If the tank is more than 10 years old, was it cleaned and inspected within the last 10 years? | **Storage tank not cleaned and inspected within the last 10 years.**  The tank must be cleaned and inspected. Please see the enclosed Finished Water Storage Tank Inspection/Cleaning Checklist for a list of items that must be evaluated during the inspection. Tanks need to be periodically cleaned and inspected to prevent the growth of potentially harmful pathogens in the accumulated sediments and to address construction issues before they require major repairs. Inspections and cleaning may be done by a third-party professional or appropriately trained in-house staff. Please be aware that some tanks may be considered as confined spaces or hazardous environments; personnel working in or near the tanks should have all OSHA-required training, and proper safety equipment and procedures should be used at all times. After inspection and cleaning the tank must be disinfected according to AWWA standards (C652-92: Disinfection of Water Storage Facilities).  In order to correct this significant deficiency, you must provide EPA with the following documentation:  A completed copy of the Finished Water Storage Tank Inspection/Cleaning Checklist.  A copy of inspection results and labeled photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk2OvFlSepN | (Gravity Tanks)  Does the tank have an overflow separate from the vent? @ | **No overflow on finished water storage tank.**  In order to protect the integrity of the tank in the case of control system failure leading to overfilling, the tank must have an overflow that is separate from the vent. |
| gvTk2OvFlAccessN | (Gravity Tanks)  Is the overflow accessible for inspection? | **Unknown integrity of storage tank overflow [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank overflow [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk2OvFl24MeshN | (Gravity Tanks)  Overflow has a #24 mesh screen OR a duckbill valve OR a properly sealed flapper valve with screen inside (EPA recommends a #24 mesh screen)? | **Overflow screening on finished water storage tank improvement needed. (see photo #)**  Overflow must be fitted with a #24-mesh non corrodible screen, or properly sealed flapper or duckbill valve to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the pipe at a location least susceptible to vandalism. When a flapper valve is used, a screen must be placed inside the valve (EPA Region 8 recommends #24-mesh non-corrodible mesh be used). In cold climates, use of a flapper or duckbill valve should be considered to minimize air movement and hence ice formation in the tank. In cold climates, provisions should be considered to prevent the flapper or duckbill from freezing shut. |
| gvTk2OvFlTerm12InN | (Gravity Tanks)  Does the overflow line terminate no less than 12 inches but no more than 24 inches above the ground surface? | **Overflow on finished water storage tank discharges at improper height. (see photo #)**  Overflow must be piped to an elevation between 12 and 24 inches above the ground surface and discharge over a drainage inlet structure, splash plate, or engineered rip-rap. |
| gvTk2OvDrainStructN | (Gravity Tanks)  Does the overflow discharge over an inlet structure, splash plate, or engineered rip-rap? | **Overflow discharge point on finished water storage tank improvement needed. (see photo #)**  Overflow must discharge over a drainage inlet structure, splash plate, or engineered rip-rap. |
| gvTk2OvFlConnSewerN | (Gravity Tanks)  Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? | **Overflow on finished water storage tank is directly connected to a sanitary sewer, combined sewer or storm sewer drain. (see photo #)**  No overflow may be directly connected to a sanitary sewer, combined sewer or storm sewer drain. An air gap must be present such that the overflow pipe terminates at least three pipe diameters above the ground level at the sewer or storm drain, or over a splash pad. |
| gvTk2DLAccessblN | (Gravity Tanks)  Is the drain accessible for inspection? | **Unknown integrity of storage tank drain [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank drain [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk2DLAirGapN | (Gravity Tanks)  Does the drain pipe have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? | **Drain on finished water storage tank is directly connected to a sanitary sewer, combined sewer or storm sewer drain. (see photo #)**  No drain may be directly connected to a sanitary sewer, combined sewer or storm sewer drain. An air gap must be present such that the drain pipe terminates at least three pipe diameters above the ground level at the sewer drain, storm drain, splash pad or engineered rip-rap. |
| gvTk2VentSepN | (Gravity Tanks)  Does the tank have a vent separate from the overflow? | **No vent on finished water storage tank.**  In order to protect the structural integrity of the tank during changes to tank water levels, and other events affecting the confined air space, the tank must have a vent that is separate from the overflow. |
| gvTk2AirVentAccessN | (Gravity Tanks)  Is the vent accessible for inspection? | **Unknown integrity of storage tank air vent [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank air vent [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk2AirVntMeshN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  Is there #24 mesh screen? | **Air vent screening on finished water storage tank needs improvement. (see photo #)**  The vent must be fitted with a #24-mesh non corrodible screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the vent at a location least susceptible to vandalism. Prior to installing the screen, the PWS should evaluate whether the tank needs a vacuum/pressure relief valve or another mechanism to prevent damage to the tank. |
| gvTk2AirVnt24AbvRfN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  Downturned vent: Is the vent at least 24“ above the roof? | **Downturned air vent on finished water storage tank does not terminate at required height. (see photo #)**  The vent must terminate in an inverted U construction at least 24” above the tank surface to prevent inhalation of contaminants by the tank. |
| gvTk2AirVentSoldCovN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  For non-downturned vents: Is there a solid cover down to the bottom of the vent screen? | **Air vent on finished water storage tank does not have a solid cover. (see photo #)**  For non-downturned vents the screen must have a solid cover down to the bottom of the vent screen to prevent rain and blown debris from entering the tank. |
| gvTk2AirVnt8AbvRfN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  For non-downturned vents: Is the screen at least 8” above the roof surface? | **Air vent on finished water storage tank is not elevated above the roof at the required height. (see photo #)**  For non-downturned vents, the bottom of the vent screen must be at least 8” above the tank roof to prevent inhalation of contaminants by the tank. |
| gvTk2AirVen24MeshN | (Gravity Tanks)  Below Ground (buried or partially buried)  Is air vent covered with #24 mesh screen? | **Air vent screening on finished water storage tank improvement needed. (see photo #)**  The vent must be fitted with a #24-mesh non corrodible screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the vent at a location least susceptible to vandalism. |
| gvTk2AirVnTermDwnN | (Gravity Tanks)  Below Ground (buried or partially buried)  Does the air vent terminate downward? | **Air vent on finished water storage tank does not terminate in a downturned position. (see photo #)**  On buried or partially buried tanks the air vent must terminate in a downturned position. |
| gvTk2AirVnTrmAbvRfN | (Gravity Tanks)  Below Ground (buried or partially buried)  Is the air vent at least 24” above the roof or ground surface (whichever is higher)? | **Air vent on finished water storage tank does not terminate at required height. (see photo #)**  The vent must terminate in an inverted U construction at least 24 inches above the roof or ground surface (whichever is higher) to prevent rain from entering and to prevent inhalation of contaminants by the tank. |
| gvTk2AHAccessableN | (Gravity Tanks)  Is the hatch accessible for inspection? | **Unknown integrity of storage tank access hatch [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank access hatch [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk2AH24AboveRfN | (Gravity Tanks)  Is the hatch raised at least 24” above the roof or ground (whichever is higher) on below ground tanks (buried or partially buried) or 4“ above the roof for above ground tanks (ground level or elevated)? | **Hatch on Finished Water Storage Tank is not elevated to the required height. (see photo #)**  Above Ground Tanks (elevated or ground-level, where the hatch is greater than 4 feet above ground level): The tank hatch must be framed at least four inches above the surface of the roof.  Below Ground Tanks (buried or partially buried): The tank hatch must be elevated a minimum of 24 inches above the top of the tank surface or ground surface, whichever is higher. |
| gvTk2AHShoeBxLidN | (Gravity Tanks)  Does the hatch have a shoe box lid? | **Hatch on Finished Water Storage Tank does not have a shoe box lid. (see photo #)**  The tank hatch must be fitted with a solid watertight cover which extends down around the frame at least two inches. |
| gvTk2AHRubberGaskN | (Gravity Tanks)  Is the lid tight and sealed with a rubber gasket? | **Hatch on Finished Water Storage Tank does not have a gasket that creates a water tight seal. (see photo #)**  The tank hatch must have a rubber gasket to seal the hatch lid to the frame tightly to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. |
| gvTk2AHALockedN | (Gravity Tanks)  Is the hatch locked? | **Hatch on Finished Water Storage Tank does not have a locking device. (see photo #)**  The cover must have a locking device. |
| gvTk3FloodingY | (Gravity Tanks)  Is the site subject to flooding? | **Storage tank located in an area subject to flooding. (see photo # )**  [insert site specific problem and remedy] |
| gvTk3PropMaintN | (Gravity Tanks)  Does the tank appear structurally sound? | **Storage tank not structurally sound or properly maintained. (see photo # )**  The storage tank does not appear to be structurally sound. Specifically, the [tank component] of the tank must be evaluated by a professional engineer familiar with the construction of water-storage tanks to determine the integrity of the tank’s [tank component].  Failure to maintain the structural and sanitary integrity of the tank could lead directly to contamination within the tank, illness and/or the loss of property.  The professional evaluation of the storage tank must be made as soon as possible and it must be repaired if necessary to ensure the structural integrity and reliability of the tank. |
| gvTk3FounStrucSoundN | (Gravity Tanks)  Does the foundation appear structurally sound? | **Storage tank foundation does not appear to be structurally sound. (see photo # )**  The storage tank foundation does not appear to be structurally sound. It must be evaluated by a professional engineer familiar with the construction of water-storage tanks.  Failure to maintain the structural and sanitary integrity of the tank foundation could lead directly to contamination within the tank, illness and/or the loss of property.  The professional evaluation of the storage tank foundation must be made as soon as possible and the foundation repaired if necessary to ensure the structural integrity and reliability of the tank. |
| gvTk3OpeningsY | (Gravity Tanks)  Are there any unprotected openings in the tank (breaches, leaks, etc)? | **Storage tank not sealed. (see photo #)**  Other than the openings afforded by the #24 mesh screens on the vents and overflows, all openings must be sealed completely to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. [Describe specific openings such as: All openings between the roof and sidewalls must be sealed and watertight. Any openings from antennas, telemetry, and other appurtenances must be sealed and watertight.] |
| gvTk3InspectedN | (Gravity Tanks)  If the tank is more than 10 years old, was it cleaned and inspected within the last 10 years? | **Storage tank not cleaned and inspected within the last 10 years.**  The tank must be cleaned and inspected. Please see the enclosed Finished Water Storage Tank Inspection/Cleaning Checklist for a list of items that must be evaluated during the inspection. Tanks need to be periodically cleaned and inspected to prevent the growth of potentially harmful pathogens in the accumulated sediments and to address construction issues before they require major repairs. Inspections and cleaning may be done by a third-party professional or appropriately trained in-house staff. Please be aware that some tanks may be considered as confined spaces or hazardous environments; personnel working in or near the tanks should have all OSHA-required training, and proper safety equipment and procedures should be used at all times. After inspection and cleaning the tank must be disinfected according to AWWA standards (C652-92: Disinfection of Water Storage Facilities).  In order to correct this significant deficiency, you must provide EPA with the following documentation:  A completed copy of the Finished Water Storage Tank Inspection/Cleaning Checklist.  A copy of inspection results and labeled photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk3OvFlSepN | (Gravity Tanks)  Does the tank have an overflow separate from the vent? @ | **No overflow on finished water storage tank.**  In order to protect the integrity of the tank in the case of control system failure leading to overfilling, the tank must have an overflow that is separate from the vent. |
| gvTk3OvFlAccessN | (Gravity Tanks)  Is the overflow accessible for inspection? | **Unknown integrity of storage tank overflow [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank overflow [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk3OvFl24MeshN | (Gravity Tanks)  Overflow has a #24 mesh screen OR a duckbill valve OR a properly sealed flapper valve with screen inside (EPA recommends a #24 mesh screen)? | **Overflow screening on finished water storage tank improvement needed. (see photo #)**  Overflow must be fitted with a #24-mesh non corrodible screen, or properly sealed flapper or duckbill valve to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the pipe at a location least susceptible to vandalism. When a flapper valve is used, a screen must be placed inside the valve (EPA Region 8 recommends #24-mesh non-corrodible mesh be used). In cold climates, use of a flapper or duckbill valve should be considered to minimize air movement and hence ice formation in the tank. In cold climates, provisions should be considered to prevent the flapper or duckbill from freezing shut. |
| gvTk3OvFlTerm12InN | (Gravity Tanks)  Does the overflow line terminate no less than 12 inches but no more than 24 inches above the ground surface? | **Overflow on finished water storage tank discharges at improper height. (see photo #)**  Overflow must be piped to an elevation between 12 and 24 inches above the ground surface and discharge over a drainage inlet structure, splash plate, or engineered rip-rap. |
| gvTk3OvDrainStructN | (Gravity Tanks)  Does the overflow discharge over an inlet structure, splash plate, or engineered rip-rap? | **Overflow discharge point on finished water storage tank improvement needed. (see photo #)**  Overflow must discharge over a drainage inlet structure, splash plate, or engineered rip-rap. |
| gvTk3OvFlConnSewerN | (Gravity Tanks)  Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? | **Overflow on finished water storage tank is directly connected to a sanitary sewer, combined sewer or storm sewer drain. (see photo #)**  No overflow may be directly connected to a sanitary sewer, combined sewer or storm sewer drain. An air gap must be present such that the overflow pipe terminates at least three pipe diameters above the ground level at the sewer or storm drain, or over a splash pad. |
| gvTk3DLAccessblN | (Gravity Tanks)  Is the drain accessible for inspection? | **Unknown integrity of storage tank drain [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank drain [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk3DLAirGapN | (Gravity Tanks)  Does the drain pipe have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? | **Drain on finished water storage tank is directly connected to a sanitary sewer, combined sewer or storm sewer drain. (see photo #)**  No drain may be directly connected to a sanitary sewer, combined sewer or storm sewer drain. An air gap must be present such that the drain pipe terminates at least three pipe diameters above the ground level at the sewer drain, storm drain, splash pad or engineered rip-rap. |
| gvTk3VentSepN | (Gravity Tanks)  Does the tank have a vent separate from the overflow? | **No vent on finished water storage tank.**  In order to protect the structural integrity of the tank during changes to tank water levels, and other events affecting the confined air space, the tank must have a vent that is separate from the overflow. |
| gvTk3AirVentAccessN | (Gravity Tanks)  Is the vent accessible for inspection? | **Unknown integrity of storage tank air vent [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank air vent [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk3AirVntMeshN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  Is there #24 mesh screen? | **Air vent screening on finished water storage tank needs improvement. (see photo #)**  The vent must be fitted with a #24-mesh non corrodible screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the vent at a location least susceptible to vandalism. Prior to installing the screen, the PWS should evaluate whether the tank needs a vacuum/pressure relief valve or another mechanism to prevent damage to the tank. |
| gvTk3AirVnt24AbvRfN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  Downturned vent: Is the vent at least 24“ above the roof? | **Downturned air vent on finished water storage tank does not terminate at required height. (see photo #)**  The vent must terminate in an inverted U construction at least 24” above the tank surface to prevent inhalation of contaminants by the tank. |
| gvTk3AirVentSoldCovN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  For non-downturned vents: Is there a solid cover down to the bottom of the vent screen? | **Air vent on finished water storage tank does not have a solid cover. (see photo #)**  For non-downturned vents the screen must have a solid cover down to the bottom of the vent screen to prevent rain and blown debris from entering the tank. |
| gvTk3AirVnt8AbvRfN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  For non-downturned vents: Is the screen at least 8” above the roof surface? | **Air vent on finished water storage tank is not elevated above the roof at the required height. (see photo #)**  For non-downturned vents, the bottom of the vent screen must be at least 8” above the tank roof to prevent inhalation of contaminants by the tank. |
| gvTk3AirVen24MeshN | (Gravity Tanks)  Below Ground (buried or partially buried)  Is air vent covered with #24 mesh screen? | **Air vent screening on finished water storage tank improvement needed. (see photo #)**  The vent must be fitted with a #24-mesh non corrodible screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the vent at a location least susceptible to vandalism. |
| gvTk3AirVnTermDwnN | (Gravity Tanks)  Below Ground (buried or partially buried)  Does the air vent terminate downward? | **Air vent on finished water storage tank does not terminate in a downturned position. (see photo #)**  On buried or partially buried tanks the air vent must terminate in a downturned position. |
| gvTk3AirVnTrmAbvRfN | (Gravity Tanks)  Below Ground (buried or partially buried)  Is the air vent at least 24” above the roof or ground surface (whichever is higher)? | **Air vent on finished water storage tank does not terminate at required height. (see photo #)**  The vent must terminate in an inverted U construction at least 24 inches above the roof or ground surface (whichever is higher) to prevent rain from entering and to prevent inhalation of contaminants by the tank. |
| gvTk3AHAccessableN | (Gravity Tanks)  Is the hatch accessible for inspection? | **Unknown integrity of storage tank access hatch [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank access hatch [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk3AH24AboveRfN | (Gravity Tanks)  Is the hatch raised at least 24” above the roof or ground (whichever is higher) on below ground tanks (buried or partially buried) or 4“ above the roof for above ground tanks (ground level or elevated)? | **Hatch on Finished Water Storage Tank is not elevated to the required height. (see photo #)**  Above Ground Tanks (elevated or ground-level, where the hatch is greater than 4 feet above ground level): The tank hatch must be framed at least four inches above the surface of the roof.  Below Ground Tanks (buried or partially buried): The tank hatch must be elevated a minimum of 24 inches above the top of the tank surface or ground surface, whichever is higher. |
| gvTk3AHShoeBxLidN | (Gravity Tanks)  Does the hatch have a shoe box lid? | **Hatch on Finished Water Storage Tank does not have a shoe box lid. (see photo #)**  The tank hatch must be fitted with a solid watertight cover which extends down around the frame at least two inches. |
| gvTk3AHRubberGaskN | (Gravity Tanks)  Is the lid tight and sealed with a rubber gasket? | **Hatch on Finished Water Storage Tank does not have a gasket that creates a water tight seal. (see photo #)**  The tank hatch must have a rubber gasket to seal the hatch lid to the frame tightly to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. |
| gvTk3AHALockedN | (Gravity Tanks)  Is the hatch locked? | **Hatch on Finished Water Storage Tank does not have a locking device. (see photo #)**  The cover must have a locking device. |
| gvTk4FloodingY | (Gravity Tanks)  Is the site subject to flooding? | **Storage tank located in an area subject to flooding. (see photo # )**  [insert site specific problem and remedy] |
| gvTk4PropMaintN | (Gravity Tanks)  Does the tank appear structurally sound? | **Storage tank not structurally sound or properly maintained. (see photo # )**  The storage tank does not appear to be structurally sound. Specifically, the [tank component] of the tank must be evaluated by a professional engineer familiar with the construction of water-storage tanks to determine the integrity of the tank’s [tank component].  Failure to maintain the structural and sanitary integrity of the tank could lead directly to contamination within the tank, illness and/or the loss of property.  The professional evaluation of the storage tank must be made as soon as possible and it must be repaired if necessary to ensure the structural integrity and reliability of the tank. |
| gvTk4FounStrucSoundN | (Gravity Tanks)  Does the foundation appear structurally sound? | **Storage tank foundation does not appear to be structurally sound. (see photo # )**  The storage tank foundation does not appear to be structurally sound. It must be evaluated by a professional engineer familiar with the construction of water-storage tanks.  Failure to maintain the structural and sanitary integrity of the tank foundation could lead directly to contamination within the tank, illness and/or the loss of property.  The professional evaluation of the storage tank foundation must be made as soon as possible and the foundation repaired if necessary to ensure the structural integrity and reliability of the tank. |
| gvTk4OpeningsY | (Gravity Tanks)  Are there any unprotected openings in the tank (breaches, leaks, etc)? | **Storage tank not sealed. (see photo #)**  Other than the openings afforded by the #24 mesh screens on the vents and overflows, all openings must be sealed completely to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. [Describe specific openings such as: All openings between the roof and sidewalls must be sealed and watertight. Any openings from antennas, telemetry, and other appurtenances must be sealed and watertight.] |
| gvTk4InspectedN | (Gravity Tanks)  If the tank is more than 10 years old, was it cleaned and inspected within the last 10 years? | **Storage tank not cleaned and inspected within the last 10 years.**  The tank must be cleaned and inspected. Please see the enclosed Finished Water Storage Tank Inspection/Cleaning Checklist for a list of items that must be evaluated during the inspection. Tanks need to be periodically cleaned and inspected to prevent the growth of potentially harmful pathogens in the accumulated sediments and to address construction issues before they require major repairs. Inspections and cleaning may be done by a third-party professional or appropriately trained in-house staff. Please be aware that some tanks may be considered as confined spaces or hazardous environments; personnel working in or near the tanks should have all OSHA-required training, and proper safety equipment and procedures should be used at all times. After inspection and cleaning the tank must be disinfected according to AWWA standards (C652-92: Disinfection of Water Storage Facilities).  In order to correct this significant deficiency, you must provide EPA with the following documentation:  A completed copy of the Finished Water Storage Tank Inspection/Cleaning Checklist.  A copy of inspection results and labeled photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk4OvFlSepN | (Gravity Tanks)  Does the tank have an overflow separate from the vent? @ | **No overflow on finished water storage tank.**  In order to protect the integrity of the tank in the case of control system failure leading to overfilling, the tank must have an overflow that is separate from the vent. |
| gvTk4OvFlAccessN | (Gravity Tanks)  Is the overflow accessible for inspection? | **Unknown integrity of storage tank overflow [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank overflow [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk4OvFl24MeshN | (Gravity Tanks)  Overflow has a #24 mesh screen OR a duckbill valve OR a properly sealed flapper valve with screen inside (EPA recommends a #24 mesh screen)? | **Overflow screening on finished water storage tank improvement needed. (see photo #)**  Overflow must be fitted with a #24-mesh non corrodible screen, or properly sealed flapper or duckbill valve to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the pipe at a location least susceptible to vandalism. When a flapper valve is used, a screen must be placed inside the valve (EPA Region 8 recommends #24-mesh non-corrodible mesh be used). In cold climates, use of a flapper or duckbill valve should be considered to minimize air movement and hence ice formation in the tank. In cold climates, provisions should be considered to prevent the flapper or duckbill from freezing shut. |
| gvTk4OvFlTerm12InN | (Gravity Tanks)  Does the overflow line terminate no less than 12 inches but no more than 24 inches above the ground surface? | **Overflow on finished water storage tank discharges at improper height. (see photo #)**  Overflow must be piped to an elevation between 12 and 24 inches above the ground surface and discharge over a drainage inlet structure, splash plate, or engineered rip-rap. |
| gvTk4OvDrainStructN | (Gravity Tanks)  Does the overflow discharge over an inlet structure, splash plate, or engineered rip-rap? | **Overflow discharge point on finished water storage tank improvement needed. (see photo #)**  Overflow must discharge over a drainage inlet structure, splash plate, or engineered rip-rap. |
| gvTk4OvFlConnSewerN | (Gravity Tanks)  Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? | **Overflow on finished water storage tank is directly connected to a sanitary sewer, combined sewer or storm sewer drain. (see photo #)**  No overflow may be directly connected to a sanitary sewer, combined sewer or storm sewer drain. An air gap must be present such that the overflow pipe terminates at least three pipe diameters above the ground level at the sewer or storm drain, or over a splash pad. |
| gvTk4DLAccessblN | (Gravity Tanks)  Is the drain accessible for inspection? | **Unknown integrity of storage tank drain [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank drain [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk4DLAirGapN | (Gravity Tanks)  Does the drain pipe have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? | **Drain on finished water storage tank is directly connected to a sanitary sewer, combined sewer or storm sewer drain. (see photo #)**  No drain may be directly connected to a sanitary sewer, combined sewer or storm sewer drain. An air gap must be present such that the drain pipe terminates at least three pipe diameters above the ground level at the sewer drain, storm drain, splash pad or engineered rip-rap. |
| gvTk4VentSepN | (Gravity Tanks)  Does the tank have a vent separate from the overflow? | **No vent on finished water storage tank.**  In order to protect the structural integrity of the tank during changes to tank water levels, and other events affecting the confined air space, the tank must have a vent that is separate from the overflow. |
| gvTk4AirVentAccessN | (Gravity Tanks)  Is the vent accessible for inspection? | **Unknown integrity of storage tank air vent [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank air vent [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk4AirVntMeshN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  Is there #24 mesh screen? | **Air vent screening on finished water storage tank needs improvement. (see photo #)**  The vent must be fitted with a #24-mesh non corrodible screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the vent at a location least susceptible to vandalism. Prior to installing the screen, the PWS should evaluate whether the tank needs a vacuum/pressure relief valve or another mechanism to prevent damage to the tank. |
| gvTk4AirVnt24AbvRfN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  Downturned vent: Is the vent at least 24“ above the roof? | **Downturned air vent on finished water storage tank does not terminate at required height. (see photo #)**  The vent must terminate in an inverted U construction at least 24” above the tank surface to prevent inhalation of contaminants by the tank. |
| gvTk4AirVentSoldCovN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  For non-downturned vents: Is there a solid cover down to the bottom of the vent screen? | **Air vent on finished water storage tank does not have a solid cover. (see photo #)**  For non-downturned vents the screen must have a solid cover down to the bottom of the vent screen to prevent rain and blown debris from entering the tank. |
| gvTk4AirVnt8AbvRfN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  For non-downturned vents: Is the screen at least 8” above the roof surface? | **Air vent on finished water storage tank is not elevated above the roof at the required height. (see photo #)**  For non-downturned vents, the bottom of the vent screen must be at least 8” above the tank roof to prevent inhalation of contaminants by the tank. |
| gvTk4AirVen24MeshN | (Gravity Tanks)  Below Ground (buried or partially buried)  Is air vent covered with #24 mesh screen? | **Air vent screening on finished water storage tank improvement needed. (see photo #)**  The vent must be fitted with a #24-mesh non corrodible screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the vent at a location least susceptible to vandalism. |
| gvTk4AirVnTermDwnN | (Gravity Tanks)  Below Ground (buried or partially buried)  Does the air vent terminate downward? | **Air vent on finished water storage tank does not terminate in a downturned position. (see photo #)**  On buried or partially buried tanks the air vent must terminate in a downturned position. |
| gvTk4AirVnTrmAbvRfN | (Gravity Tanks)  Below Ground (buried or partially buried)  Is the air vent at least 24” above the roof or ground surface (whichever is higher)? | **Air vent on finished water storage tank does not terminate at required height. (see photo #)**  The vent must terminate in an inverted U construction at least 24 inches above the roof or ground surface (whichever is higher) to prevent rain from entering and to prevent inhalation of contaminants by the tank. |
| gvTk4AHAccessableN | (Gravity Tanks)  Is the hatch accessible for inspection? | **Unknown integrity of storage tank access hatch [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank access hatch [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk4AH24AboveRfN | (Gravity Tanks)  Is the hatch raised at least 24” above the roof or ground (whichever is higher) on below ground tanks (buried or partially buried) or 4“ above the roof for above ground tanks (ground level or elevated)? | **Hatch on Finished Water Storage Tank is not elevated to the required height. (see photo #)**  Above Ground Tanks (elevated or ground-level, where the hatch is greater than 4 feet above ground level): The tank hatch must be framed at least four inches above the surface of the roof.  Below Ground Tanks (buried or partially buried): The tank hatch must be elevated a minimum of 24 inches above the top of the tank surface or ground surface, whichever is higher. |
| gvTk4AHShoeBxLidN | (Gravity Tanks)  Does the hatch have a shoe box lid? | **Hatch on Finished Water Storage Tank does not have a shoe box lid. (see photo #)**  The tank hatch must be fitted with a solid watertight cover which extends down around the frame at least two inches. |
| gvTk4AHRubberGaskN | (Gravity Tanks)  Is the lid tight and sealed with a rubber gasket? | **Hatch on Finished Water Storage Tank does not have a gasket that creates a water tight seal. (see photo #)**  The tank hatch must have a rubber gasket to seal the hatch lid to the frame tightly to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. |
| gvTk4AHALockedN | (Gravity Tanks)  Is the hatch locked? | **Hatch on Finished Water Storage Tank does not have a locking device. (see photo #)**  The cover must have a locking device. |
| gvTk5FloodingY | (Gravity Tanks)  Is the site subject to flooding? | **Storage tank located in an area subject to flooding. (see photo # )**  [insert site specific problem and remedy] |
| gvTk5PropMaintN | (Gravity Tanks)  Does the tank appear structurally sound? | **Storage tank not structurally sound or properly maintained. (see photo # )**  The storage tank does not appear to be structurally sound. Specifically, the [tank component] of the tank must be evaluated by a professional engineer familiar with the construction of water-storage tanks to determine the integrity of the tank’s [tank component].  Failure to maintain the structural and sanitary integrity of the tank could lead directly to contamination within the tank, illness and/or the loss of property.  The professional evaluation of the storage tank must be made as soon as possible and it must be repaired if necessary to ensure the structural integrity and reliability of the tank. |
| gvTk5FounStrucSoundN | (Gravity Tanks)  Does the foundation appear structurally sound? | **Storage tank foundation does not appear to be structurally sound. (see photo # )**  The storage tank foundation does not appear to be structurally sound. It must be evaluated by a professional engineer familiar with the construction of water-storage tanks.  Failure to maintain the structural and sanitary integrity of the tank foundation could lead directly to contamination within the tank, illness and/or the loss of property.  The professional evaluation of the storage tank foundation must be made as soon as possible and the foundation repaired if necessary to ensure the structural integrity and reliability of the tank. |
| gvTk5OpeningsY | (Gravity Tanks)  Are there any unprotected openings in the tank (breaches, leaks, etc)? | **Storage tank not sealed. (see photo #)**  Other than the openings afforded by the #24 mesh screens on the vents and overflows, all openings must be sealed completely to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. [Describe specific openings such as: All openings between the roof and sidewalls must be sealed and watertight. Any openings from antennas, telemetry, and other appurtenances must be sealed and watertight.] |
| gvTk5InspectedN | (Gravity Tanks)  If the tank is more than 10 years old, was it cleaned and inspected within the last 10 years? | **Storage tank not cleaned and inspected within the last 10 years.**  The tank must be cleaned and inspected. Please see the enclosed Finished Water Storage Tank Inspection/Cleaning Checklist for a list of items that must be evaluated during the inspection. Tanks need to be periodically cleaned and inspected to prevent the growth of potentially harmful pathogens in the accumulated sediments and to address construction issues before they require major repairs. Inspections and cleaning may be done by a third-party professional or appropriately trained in-house staff. Please be aware that some tanks may be considered as confined spaces or hazardous environments; personnel working in or near the tanks should have all OSHA-required training, and proper safety equipment and procedures should be used at all times. After inspection and cleaning the tank must be disinfected according to AWWA standards (C652-92: Disinfection of Water Storage Facilities).  In order to correct this significant deficiency, you must provide EPA with the following documentation:  A completed copy of the Finished Water Storage Tank Inspection/Cleaning Checklist.  A copy of inspection results and labeled photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk5OvFlSepN | (Gravity Tanks)  Does the tank have an overflow separate from the vent? @ | **No overflow on finished water storage tank.**  In order to protect the integrity of the tank in the case of control system failure leading to overfilling, the tank must have an overflow that is separate from the vent. |
| gvTk5OvFlAccessN | (Gravity Tanks)  Is the overflow accessible for inspection? | **Unknown integrity of storage tank overflow [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank overflow [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk5OvFl24MeshN | (Gravity Tanks)  Overflow has a #24 mesh screen OR a duckbill valve OR a properly sealed flapper valve with screen inside (EPA recommends a #24 mesh screen)? | **Overflow screening on finished water storage tank improvement needed. (see photo #)**  Overflow must be fitted with a #24-mesh non corrodible screen, or properly sealed flapper or duckbill valve to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the pipe at a location least susceptible to vandalism. When a flapper valve is used, a screen must be placed inside the valve (EPA Region 8 recommends #24-mesh non-corrodible mesh be used). In cold climates, use of a flapper or duckbill valve should be considered to minimize air movement and hence ice formation in the tank. In cold climates, provisions should be considered to prevent the flapper or duckbill from freezing shut. |
| gvTk5OvFlTerm12InN | (Gravity Tanks)  Does the overflow line terminate no less than 12 inches but no more than 24 inches above the ground surface? | **Overflow on finished water storage tank discharges at improper height. (see photo #)**  Overflow must be piped to an elevation between 12 and 24 inches above the ground surface and discharge over a drainage inlet structure, splash plate, or engineered rip-rap. |
| gvTk5OvDrainStructN | (Gravity Tanks)  Does the overflow discharge over an inlet structure, splash plate, or engineered rip-rap? | **Overflow discharge point on finished water storage tank improvement needed. (see photo #)**  Overflow must discharge over a drainage inlet structure, splash plate, or engineered rip-rap. |
| gvTk5OvFlConnSewerN | (Gravity Tanks)  Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? | **Overflow on finished water storage tank is directly connected to a sanitary sewer, combined sewer or storm sewer drain. (see photo #)**  No overflow may be directly connected to a sanitary sewer, combined sewer or storm sewer drain. An air gap must be present such that the overflow pipe terminates at least three pipe diameters above the ground level at the sewer or storm drain, or over a splash pad. |
| gvTk5DLAccessblN | (Gravity Tanks)  Is the drain accessible for inspection? | **Unknown integrity of storage tank drain [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank drain [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk5DLAirGapN | (Gravity Tanks)  Does the drain pipe have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? | **Drain on finished water storage tank is directly connected to a sanitary sewer, combined sewer or storm sewer drain. (see photo #)**  No drain may be directly connected to a sanitary sewer, combined sewer or storm sewer drain. An air gap must be present such that the drain pipe terminates at least three pipe diameters above the ground level at the sewer drain, storm drain, splash pad or engineered rip-rap. |
| gvTk5VentSepN | (Gravity Tanks)  Does the tank have a vent separate from the overflow? | **No vent on finished water storage tank.**  In order to protect the structural integrity of the tank during changes to tank water levels, and other events affecting the confined air space, the tank must have a vent that is separate from the overflow. |
| gvTk5AirVentAccessN | (Gravity Tanks)  Is the vent accessible for inspection? | **Unknown integrity of storage tank air vent [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank air vent [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk5AirVntMeshN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  Is there #24 mesh screen? | **Air vent screening on finished water storage tank needs improvement. (see photo #)**  The vent must be fitted with a #24-mesh non corrodible screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the vent at a location least susceptible to vandalism. Prior to installing the screen, the PWS should evaluate whether the tank needs a vacuum/pressure relief valve or another mechanism to prevent damage to the tank. |
| gvTk5AirVnt24AbvRfN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  Downturned vent: Is the vent at least 24“ above the roof? | **Downturned air vent on finished water storage tank does not terminate at required height. (see photo #)**  The vent must terminate in an inverted U construction at least 24” above the tank surface to prevent inhalation of contaminants by the tank. |
| gvTk5AirVentSoldCovN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  For non-downturned vents: Is there a solid cover down to the bottom of the vent screen? | **Air vent on finished water storage tank does not have a solid cover. (see photo #)**  For non-downturned vents the screen must have a solid cover down to the bottom of the vent screen to prevent rain and blown debris from entering the tank. |
| gvTk5AirVnt8AbvRfN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  For non-downturned vents: Is the screen at least 8” above the roof surface? | **Air vent on finished water storage tank is not elevated above the roof at the required height. (see photo #)**  For non-downturned vents, the bottom of the vent screen must be at least 8” above the tank roof to prevent inhalation of contaminants by the tank. |
| gvTk5AirVen24MeshN | (Gravity Tanks)  Below Ground (buried or partially buried)  Is air vent covered with #24 mesh screen? | **Air vent screening on finished water storage tank improvement needed. (see photo #)**  The vent must be fitted with a #24-mesh non corrodible screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the vent at a location least susceptible to vandalism. |
| gvTk5AirVnTermDwnN | (Gravity Tanks)  Below Ground (buried or partially buried)  Does the air vent terminate downward? | **Air vent on finished water storage tank does not terminate in a downturned position. (see photo #)**  On buried or partially buried tanks the air vent must terminate in a downturned position. |
| gvTk5AirVnTrmAbvRfN | (Gravity Tanks)  Below Ground (buried or partially buried)  Is the air vent at least 24” above the roof or ground surface (whichever is higher)? | **Air vent on finished water storage tank does not terminate at required height. (see photo #)**  The vent must terminate in an inverted U construction at least 24 inches above the roof or ground surface (whichever is higher) to prevent rain from entering and to prevent inhalation of contaminants by the tank. |
| gvTk5AHAccessableN | (Gravity Tanks)  Is the hatch accessible for inspection? | **Unknown integrity of storage tank access hatch [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank access hatch [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk5AH24AboveRfN | (Gravity Tanks)  Is the hatch raised at least 24” above the roof or ground (whichever is higher) on below ground tanks (buried or partially buried) or 4“ above the roof for above ground tanks (ground level or elevated)? | **Hatch on Finished Water Storage Tank is not elevated to the required height. (see photo #)**  Above Ground Tanks (elevated or ground-level, where the hatch is greater than 4 feet above ground level): The tank hatch must be framed at least four inches above the surface of the roof.  Below Ground Tanks (buried or partially buried): The tank hatch must be elevated a minimum of 24 inches above the top of the tank surface or ground surface, whichever is higher. |
| gvTk5AHShoeBxLidN | (Gravity Tanks)  Does the hatch have a shoe box lid? | **Hatch on Finished Water Storage Tank does not have a shoe box lid. (see photo #)**  The tank hatch must be fitted with a solid watertight cover which extends down around the frame at least two inches. |
| gvTk5AHRubberGaskN | (Gravity Tanks)  Is the lid tight and sealed with a rubber gasket? | **Hatch on Finished Water Storage Tank does not have a gasket that creates a water tight seal. (see photo #)**  The tank hatch must have a rubber gasket to seal the hatch lid to the frame tightly to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. |
| gvTk5AHALockedN | (Gravity Tanks)  Is the hatch locked? | **Hatch on Finished Water Storage Tank does not have a locking device. (see photo #)**  The cover must have a locking device. |
| gvTk6FloodingY | (Gravity Tanks)  Is the site subject to flooding? | **Storage tank located in an area subject to flooding. (see photo # )**  [insert site specific problem and remedy] |
| gvTk6PropMaintN | (Gravity Tanks)  Does the tank appear structurally sound? | **Storage tank not structurally sound or properly maintained. (see photo # )**  The storage tank does not appear to be structurally sound. Specifically, the [tank component] of the tank must be evaluated by a professional engineer familiar with the construction of water-storage tanks to determine the integrity of the tank’s [tank component].  Failure to maintain the structural and sanitary integrity of the tank could lead directly to contamination within the tank, illness and/or the loss of property.  The professional evaluation of the storage tank must be made as soon as possible and it must be repaired if necessary to ensure the structural integrity and reliability of the tank. |
| gvTk6FounStrucSoundN | (Gravity Tanks)  Does the foundation appear structurally sound? | **Storage tank foundation does not appear to be structurally sound. (see photo # )**  The storage tank foundation does not appear to be structurally sound. It must be evaluated by a professional engineer familiar with the construction of water-storage tanks.  Failure to maintain the structural and sanitary integrity of the tank foundation could lead directly to contamination within the tank, illness and/or the loss of property.  The professional evaluation of the storage tank foundation must be made as soon as possible and the foundation repaired if necessary to ensure the structural integrity and reliability of the tank. |
| gvTk6OpeningsY | (Gravity Tanks)  Are there any unprotected openings in the tank (breaches, leaks, etc)? | **Storage tank not sealed. (see photo #)**  Other than the openings afforded by the #24 mesh screens on the vents and overflows, all openings must be sealed completely to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. [Describe specific openings such as: All openings between the roof and sidewalls must be sealed and watertight. Any openings from antennas, telemetry, and other appurtenances must be sealed and watertight.] |
| gvTk6InspectedN | (Gravity Tanks)  If the tank is more than 10 years old, was it cleaned and inspected within the last 10 years? | **Storage tank not cleaned and inspected within the last 10 years.**  The tank must be cleaned and inspected. Please see the enclosed Finished Water Storage Tank Inspection/Cleaning Checklist for a list of items that must be evaluated during the inspection. Tanks need to be periodically cleaned and inspected to prevent the growth of potentially harmful pathogens in the accumulated sediments and to address construction issues before they require major repairs. Inspections and cleaning may be done by a third-party professional or appropriately trained in-house staff. Please be aware that some tanks may be considered as confined spaces or hazardous environments; personnel working in or near the tanks should have all OSHA-required training, and proper safety equipment and procedures should be used at all times. After inspection and cleaning the tank must be disinfected according to AWWA standards (C652-92: Disinfection of Water Storage Facilities).  In order to correct this significant deficiency, you must provide EPA with the following documentation:  A completed copy of the Finished Water Storage Tank Inspection/Cleaning Checklist.  A copy of inspection results and labeled photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk6OvFlSepN | (Gravity Tanks)  Does the tank have an overflow separate from the vent? @ | **No overflow on finished water storage tank.**  In order to protect the integrity of the tank in the case of control system failure leading to overfilling, the tank must have an overflow that is separate from the vent. |
| gvTk6OvFlAccessN | (Gravity Tanks)  Is the overflow accessible for inspection? | **Unknown integrity of storage tank overflow [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank overflow [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk6OvFl24MeshN | (Gravity Tanks)  Overflow has a #24 mesh screen OR a duckbill valve OR a properly sealed flapper valve with screen inside (EPA recommends a #24 mesh screen)? | **Overflow screening on finished water storage tank improvement needed. (see photo #)**  Overflow must be fitted with a #24-mesh non corrodible screen, or properly sealed flapper or duckbill valve to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the pipe at a location least susceptible to vandalism. When a flapper valve is used, a screen must be placed inside the valve (EPA Region 8 recommends #24-mesh non-corrodible mesh be used). In cold climates, use of a flapper or duckbill valve should be considered to minimize air movement and hence ice formation in the tank. In cold climates, provisions should be considered to prevent the flapper or duckbill from freezing shut. |
| gvTk6OvFlTerm12InN | (Gravity Tanks)  Does the overflow line terminate no less than 12 inches but no more than 24 inches above the ground surface? | **Overflow on finished water storage tank discharges at improper height. (see photo #)**  Overflow must be piped to an elevation between 12 and 24 inches above the ground surface and discharge over a drainage inlet structure, splash plate, or engineered rip-rap. |
| gvTk6OvDrainStructN | (Gravity Tanks)  Does the overflow discharge over an inlet structure, splash plate, or engineered rip-rap? | **Overflow discharge point on finished water storage tank improvement needed. (see photo #)**  Overflow must discharge over a drainage inlet structure, splash plate, or engineered rip-rap. |
| gvTk6OvFlConnSewerN | (Gravity Tanks)  Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? | **Overflow on finished water storage tank is directly connected to a sanitary sewer, combined sewer or storm sewer drain. (see photo #)**  No overflow may be directly connected to a sanitary sewer, combined sewer or storm sewer drain. An air gap must be present such that the overflow pipe terminates at least three pipe diameters above the ground level at the sewer or storm drain, or over a splash pad. |
| gvTk6DLAccessblN | (Gravity Tanks)  Is the drain accessible for inspection? | **Unknown integrity of storage tank drain [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank drain [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk6DLAirGapN | (Gravity Tanks)  Does the drain pipe have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? | **Drain on finished water storage tank is directly connected to a sanitary sewer, combined sewer or storm sewer drain. (see photo #)**  No drain may be directly connected to a sanitary sewer, combined sewer or storm sewer drain. An air gap must be present such that the drain pipe terminates at least three pipe diameters above the ground level at the sewer drain, storm drain, splash pad or engineered rip-rap. |
| gvTk6VentSepN | (Gravity Tanks)  Does the tank have a vent separate from the overflow? | **No vent on finished water storage tank.**  In order to protect the structural integrity of the tank during changes to tank water levels, and other events affecting the confined air space, the tank must have a vent that is separate from the overflow. |
| gvTk6AirVentAccessN | (Gravity Tanks)  Is the vent accessible for inspection? | **Unknown integrity of storage tank air vent [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank air vent [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk6AirVntMeshN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  Is there #24 mesh screen? | **Air vent screening on finished water storage tank needs improvement. (see photo #)**  The vent must be fitted with a #24-mesh non corrodible screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the vent at a location least susceptible to vandalism. Prior to installing the screen, the PWS should evaluate whether the tank needs a vacuum/pressure relief valve or another mechanism to prevent damage to the tank. |
| gvTk6AirVnt24AbvRfN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  Downturned vent: Is the vent at least 24“ above the roof? | **Downturned air vent on finished water storage tank does not terminate at required height. (see photo #)**  The vent must terminate in an inverted U construction at least 24” above the tank surface to prevent inhalation of contaminants by the tank. |
| gvTk6AirVentSoldCovN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  For non-downturned vents: Is there a solid cover down to the bottom of the vent screen? | **Air vent on finished water storage tank does not have a solid cover. (see photo #)**  For non-downturned vents the screen must have a solid cover down to the bottom of the vent screen to prevent rain and blown debris from entering the tank. |
| gvTk6AirVnt8AbvRfN | (Gravity Tanks)  Above Ground (ground level or elevated / standpipe)  For non-downturned vents: Is the screen at least 8” above the roof surface? | **Air vent on finished water storage tank is not elevated above the roof at the required height. (see photo #)**  For non-downturned vents, the bottom of the vent screen must be at least 8” above the tank roof to prevent inhalation of contaminants by the tank. |
| gvTk6AirVen24MeshN | (Gravity Tanks)  Below Ground (buried or partially buried)  Is air vent covered with #24 mesh screen? | **Air vent screening on finished water storage tank improvement needed. (see photo #)**  The vent must be fitted with a #24-mesh non corrodible screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the vent at a location least susceptible to vandalism. |
| gvTk6AirVnTermDwnN | (Gravity Tanks)  Below Ground (buried or partially buried)  Does the air vent terminate downward? | **Air vent on finished water storage tank does not terminate in a downturned position. (see photo #)**  On buried or partially buried tanks the air vent must terminate in a downturned position. |
| gvTk6AirVnTrmAbvRfN | (Gravity Tanks)  Below Ground (buried or partially buried)  Is the air vent at least 24” above the roof or ground surface (whichever is higher)? | **Air vent on finished water storage tank does not terminate at required height. (see photo #)**  The vent must terminate in an inverted U construction at least 24 inches above the roof or ground surface (whichever is higher) to prevent rain from entering and to prevent inhalation of contaminants by the tank. |
| gvTk6AHAccessableN | (Gravity Tanks)  Is the hatch accessible for inspection? | **Unknown integrity of storage tank access hatch [add other inaccessible components to consolidate language].**  The sanitary surveyor was unable to evaluate the tank access hatch [add other components to consolidate], and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.  In order to correct this significant deficiency you must provide EPA with the following documentation:  A completed copy of the Unknown Integrity Checklist.  A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.  The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions. |
| gvTk6AH24AboveRfN | (Gravity Tanks)  Is the hatch raised at least 24” above the roof or ground (whichever is higher) on below ground tanks (buried or partially buried) or 4“ above the roof for above ground tanks (ground level or elevated)? | **Hatch on Finished Water Storage Tank is not elevated to the required height. (see photo #)**  Above Ground Tanks (elevated or ground-level, where the hatch is greater than 4 feet above ground level): The tank hatch must be framed at least four inches above the surface of the roof.  Below Ground Tanks (buried or partially buried): The tank hatch must be elevated a minimum of 24 inches above the top of the tank surface or ground surface, whichever is higher. |
| gvTk6AHShoeBxLidN | (Gravity Tanks)  Does the hatch have a shoe box lid? | **Hatch on Finished Water Storage Tank does not have a shoe box lid. (see photo #)**  The tank hatch must be fitted with a solid watertight cover which extends down around the frame at least two inches. |
| gvTk6AHRubberGaskN | (Gravity Tanks)  Is the lid tight and sealed with a rubber gasket? | **Hatch on Finished Water Storage Tank does not have a gasket that creates a water tight seal. (see photo #)**  The tank hatch must have a rubber gasket to seal the hatch lid to the frame tightly to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. |
| gvTk6AHALockedN | (Gravity Tanks)  Is the hatch locked? | **Hatch on Finished Water Storage Tank does not have a locking device. (see photo #)**  The cover must have a locking device. |
| swEpichlorohidrinY | (SW Treatment)  Does the system use a chemical containing epichlorohydrin or polyacrylamide that is dosed in excess of the NSF 60 Max Allowable Dose? | System has a potential violation for excess dosing of a chemical that contains epichlorohydrin or polyacrylamide (141.111). |
| filtPrLocationEPAN | (SW Treatment)  Does the location of the CFE turbidimeter comply with EPA policy SWTR #5? | **Combined Filter Effluent (CFE) turbidity monitoring location is not representative of the filtered water.**  The system’s finished water (CFE) turbidimeter sampling location is not representative of the filtered water.  [describe system specific situation and remedy] |
| swTurbimCalibrateN | (SW Treatment)  Are turbidimeters calibrated at least once every quarter? | **Turbidimeters Must Be Calibrated Quarterly.**  Turbidity is used to measure filtration effectiveness, and incorrect turbidity monitoring has the potential to allow contamination to pass into the finished water. The Long Term 1 Enhanced Surface Water Treatment Rule requires that turbidimeter calibration be conducted using procedures specified by the manufacturer. To be consistent with typical manufacturer specifications for surface water treatment plants, turbidimeters for measuring individual filter effluent (IFE) and combined filter effluent (CFE) turbidity must be calibrated at least quarterly according to manufacturer procedures using a primary standard such as formazin. |
| swPrimaryStndCalibrN | (SW Treatment)  Does the system use a primary standard to perform the calibration? | **Primary Standard Not Used to Calibrate Turbidimeters.**  Turbidity is used to measure filtration effectiveness, and incorrect turbidity monitoring has the potential to allow contamination to pass into the finished water. The Long Term 1 Enhanced Surface Water Treatment Rule requires that turbidimeter calibration be conducted using procedures specified by the manufacturer. To be consistent with typical manufacturer specifications for surface water treatment plants, turbidimeters for measuring individual filter effluent (IFE) and combined filter effluent (CFE) turbidity must be calibrated at least quarterly according to manufacturer procedures using a primary standard such as formazin. |
| swPotVioTurbRecN | (SW Treatment)  Are CFE turbidity records available for the last 5 years? | System has a potential violation for failing to maintain CFE turbidity records (141.33a). |
| filtPrRec5NTUN | (SW Treatment)  Can CFE turbidities be recorded up to 5 NTU? | **Inadequate treatment process monitoring, recording, and recordkeeping for surface water treatment plants.**  The SCADA system must be able to record and store combined filter effluent (CFE) turbidity values up to at least 5 NTU. |
| filtPrBkWshTurbIdntN | (SW Treatment)  (Conventional and Direct)  Can turbidities associated with off-periods (backwash, FTW) be identified so they are not counted for compliance? | **Inadequate Treatment Process Monitoring, Recording, and Recordkeeping for Surface Water Treatment Plants.**  The IFE turbidity recording method employed by the system does not adequately identify the status of the filter at the time each turbidity reading is recorded (i.e. filtering to clearwell, backwashing, filtering to waste, offline). As a result, the surveyor was not able to determine which turbidity values were valid readings that counted toward compliance. |
| convDirF24InchN | (SW Treatment)  (Conventional and Direct)  Total at least 24”? | **Inadequate filtration design or operation.**  During the survey, the operators indicated that the depth of the filtration media is insufficient. The 2012 Recommended Standards for Water Works (10 States Standards) Section 4.3.1.6 Filter Material states that filter media depth for rapid sand filtration should not be less than 24 inches. |
| convDirFRateLT2gpmN | (SW Treatment)  (Conventional and Direct)  Is the filtration rate less than 2 gpm/sf (mono-media), 4 gpm/sf (dual media) or 6 gpm/sf (deep bed)? | **Inadequate treatment process operations. Operations at the water treatment plant create the potential for sending inadequately treated water to distribution.**  The current operation of the filter exceeds the recommended loading rate. |
| convDirFBckWshRaw | (SW Treatment)  (Conventional and Direct)  What is used for a backwash?  raw water | System is using raw water to backwash conventional or direct filters that are the system's final filtration barrier. (no standard language) |
| convDirFTMTurbConN | (SW Treatment)  (Conventional and Direct)  Does each filter have an individual effluent (IFE) turbidimeter? | System has a potential violation for failing to monitor the IFE turbidity as required by the regulations for conventional / direct filtration plants (141.560 or 141.174a). |
| convDirAdRecRdgN | (SW Treatment)  (Conventional and Direct)  Are IFE turbidities measured continuously, and recorded at least every 15 Minutes | System has a potential violation for failing to adequately record the IFE turbidity readings as required by the regulations for conventional / direct filtration plants (141.560c or 141.174a). |
| convDirIFECalibrateN | (SW Treatment)  (Conventional and Direct)  Is IFE turbidity recorder (SCADA or charts) calibrated to record turbidities ≥ 2 NTU? | **Inadequate Treatment Process Monitoring, Recording, and Recordkeeping for Surface Water Treatment Plants**  The Long Term 1 Enhanced Surface Water Treatment Rule requires that the turbidity of the finished water from the individual filters be monitored continuously and recorded at least once every 15 minutes. This data is used to determine whether an individual filter effluent (IFE) turbidity exceeds either 1.0 or 2.0 NTU in two consecutive 15 minute readings, which may trigger the need for corrective actions. The IFE turbidimeters must be calibrated to record turbidity values of at least 2.0 NTU. |
| convDirFToMntIFEN | (SW Treatment)  (Conventional and Direct)  Are IFE records kept for the last 3 years (as applicable)? | System has a potential violation for failing to maintain IFE records for 3 years (conventional and direct filtration) (141.571a or 141.175b). |
| convDirFToRptIFETrbN | (SW Treatment)  (Conventional and Direct)  If so, did they report to EPA and do a filter profile, if required? | System has a potential violation for failing to report high IFE turbidities to the EPA and conduct a filter profile (141.175b1). |
| convDirFTRSelfAssN | (SW Treatment)  (Conventional and Direct)  If this occurred 3 months in a row, did they conduct a filter self-assessment? | System has a potential violation for failing to report high IFE turbidity readings to the EPA and conduct a filter self-assessment following 3 months of IFE turbidity readings over 1 NTU (141.563b or 141.175b3). |
| convDirFTR2NTUN | (SW Treatment)  (Conventional and Direct)  If this occurred 2 months in a row for the same filter, did they report to EPA and have a CPE performed? | System has a potential violation for failing to report to the EPA and have a CPE performed following 2 months of IFE turbidity readings over 2 NTU (141.563c or 141.175b4). |
| convDirFTRGT10KN | (SW Treatment)  (Conventional and Direct)  If so, did they report to EPA and do a filter profile, if required? | System has a potential violation for failing to report high IFE turbidities to the EPA and conduct a filter profile (IESWTR - systems greater than 10,000) (141.175b2). |
| convDirExdCFELimN | (SW Treatment)  (Conventional and Direct)  Based on these records, has the system consistently met the CFE turbidity requirements for this type of filtration during the last 12 months? | System has a potential violation for exceeding the CFE turbidity limits for conventional or direct filtration and failing to report to the EPA (141.551a1 / 141.551b1 or 141.173a / 141.173a2). |
| convDirFTMBckWshN | (SW Treatment)  (Conventional and Direct)  Are records of recycle practices kept in an acceptable format for each year that includes all of the required elements? | System has a potential violation for failing to maintain the records required by the Filter Backwash Recycling Rule (141.76). |
| conDirExdTurMemN | (SW Treatment)  (Membranes)  Has the PWS consistently been meeting the CFE turbidity requirements for this type of filtration? | System has a potential violation for exceeding the CFE turbidity limits for membrane filtration and failing to report to the EPA (141.551a2 / 141/551b2 or 141.173b). |
| convDirDITMemN | (SW Treatment)  (Membranes)  Are direct integrity tests (DIT) performed at least daily (specify  pressure or  vacuum applied)? | **Inadequate Membrane Filtration Operation resulting in Inadequate Treatment** (this is a violation of 141.719b3 for systems that receive credit for additional filtration under the LT2ESWTR):  Due to plant design and / or equipment problems, direct integrity tests (DIT) are not being performed on all membrane skids on a daily basis. Daily direct integrity testing is required to evaluate whether there are breaches in the membrane modules which would allow contamination to pass through to the filtered water. Membrane units that are not being assessed for integrity by daily direct integrity testing are considered cartridge filtration rather than membrane filtration.  Cartridge filters are credited with only 2 logs removal of Giardia rather than the 3 logs Giardia removal credited to membrane filtration. To meet the treatment technique for 3 logs Giardia reduction of 40 CFR §141.70(a)(1) of the Surface Water Treatment Rule, cartridge filtration systems must achieve an additional 1.0 log inactivation of Giardia.  As documented in the sanitary survey, under winter conditions the plant disinfection process is not able to achieve 1.0 log inactivation of Giardia at the first user. Therefore, the system must resume conducting and passing daily direct integrity tests on both membrane skids to receive the higher Giardia removal credits associated with membrane filtration. |
| convDirInadFilDesN | (SW Treatment)  (Membranes)  For continuous indirect integrity testing, does each unit/skid have its own online turbidimeter | **Inadequate Filtration Design or Operation, resulting in Inadequate Treatment** (this is a violation of 141.719b4 for systems that receive credit for additional filtration under the LT2ESWTR):  The individual membrane filtration units are not equipped with a turbidimeter that continuously samples the individual filter effluent (IFE). Membrane units that do not (1) have an individual filter turbidimeter, and (2) are not continuously monitoring turbidity from each unit with a 0.15 NTU trigger for repeat direct integrity testing, are considered cartridge filtration rather than membrane filtration.  Cartridge filters are credited with only 2 logs removal of Giardia rather than the 3 logs Giardia removal credited to membrane filtration. To meet the treatment technique for 3 logs Giardia reduction of 40 CFR §141.70(a)(1) of the Surface Water Treatment Rule, cartridge filtration systems must achieve an additional 1.0 log inactivation of Giardia.  As documented in the sanitary survey, the plant disinfection process does not consistently achieve 1.0 log inactivation of Giardia at the first user. Therefore, the system must install an IFE turbidimeter on each membrane unit that triggers an integrity test when the turbidity exceeds 0.15 NTU in order to receive the higher Giardia removal credits associated with membrane filtration. |
| convDirIFEMon15N | (SW Treatment)  (Membranes)  Is filtrate turbidity monitored continuously and recorded at least once every15 minutes? | System has a potential violation for not monitoring IFE continuously and recording values once every 15 minutes (membrane filtration) (141.719b4) (systems not receiving additional filtration credit under the LT2ESWTR - considered a significant deficiency). (no standard language) |
| convDirIFETurTr15N | Is it set with a trigger level of 0.15 NTU for > 15 minutes (a DIT should be initiated when filtrate turbidity exceeds this level)? | System has a potential violation - IFE turbidimeters not set with a trigger level of 0.15 NTU for longer than 15 minutes to initiate a DIT (membrane filtration) (141.719b4) (systems not receiving additional filtration credit under the LT2ESWTR - considered a significant deficiency). (no standard language) |
| membrOpKwChkMembrN | (SW Treatment)  (Membranes)  Do operators know how to check and repair membranes when a DIT fails? | System operators do not know how to check and repair membranes if a direct integrity test fails. (no standard language) |
| bgsCartExdTurbLimN | (SW Treatment)  (Bags and Cartridges)  Has the PWS consistently been meeting the CFE turbidity requirements for this type of filtration? | System has a potential violation for exceeding the CFE turbidity limits for bag / cartridge filtration and failing to report to the EPA (141.551a2 / 141/551b2 or 141.173b) |
| bgsCartPressGaugeN | (SW Treatment)  (Bags and Cartridges)  Are there working pressure gauges before and after filters? | **Inadequate filtration design or operation.**  Adequate microbial removal requires that a cartridge system not be used at conditions exceeding its design specifications (flow rate, inlet pressure and pressure drop), and that the cartridge be properly installed in the housing for which it was designed. The current treatment system does not have flowmeters or flow restrictors, nor pressure gauges to monitor pressure drop across the cartridges. It is unclear what the system design limitations are.  The filter housings and cartridge elements should be evaluated to ensure that manufacturer’s recommended flow and pressure limits are not exceeded; flowmeters and flow restrictors should be installed as needed if the filters are not designed for the maximum flow from the intake pumps. Pressure gauges should be installed up and downstream of the cartridges to allow daily monitoring and recording of pressure drops and to trigger filter change outs when manufacturer’s limits are close to being reached. |
| bgsCartRecPressDrpN | (SW Treatment)  (Bags and Cartridges)  Does the PWS keep daily records of monitoring the pressure drop across the filters, and know when to change out filters? | **Inadequate filtration design or operation**  Adequate microbial removal requires that a cartridge system not be used at conditions exceeding its design specifications (flow rate, inlet pressure and pressure drop), and that the cartridge be properly installed in the housing for which it was designed.  In order to ensure that these conditions are met, the differential pressure across the filter bags should be monitored and recorded daily and the filters should be changed out when the manufacturer’s limits are close to being reached. The system is currently not monitoring and / or recording these values on a daily basis. |
| bgsCartRemvCrytoN | (SW Treatment)  (Bags and Cartridges)  Has the final filter or pre/final filter combination been demonstrated to remove at least 99.9% of *Cryptosporidium* or equivalent size particles or have a 1 or 2 micron absolute pore size rating? | **Inadequate filtration design or operation**  In order to ensure 99% removal of Cryptosporidium as required by the Long Term 1 Enhanced Surface Water Treatment Rule, the final cartridge filter must be one to two micron absolute pore size, unless the manufacturer can provide challenge testing results showing 99.9% removal of Cryptosporidium or a surrogate of the same size. According to the manufacturer, the bag filter currently being used as the final filtration barrier has not been certified for Cryptosporidium removal. The PWS should provide documentation indicating that the existing filter meets the above requirements, or use a different filter that does meet these requirements. |
| bgsCartFlowExceedY | (SW Treatment)  (Bags and Cartridges)  Does the flow rate through the final filter exceed the manufacturer’s maximum recommended flow rate? | **Inadequate filtration design or operation.**  The bag filter currently being used as the final filtration barrier is being operated at a rate that exceeds the manufacturer’s recommended maximum flow rate. Adequate microbial removal requires that a cartridge system not be used at conditions exceeding its design specifications (flow rate, inlet pressure and pressure drop). |
| bgsCartDEFilTurbN | (SW Treatment)  (DE Filtration)  Has the PWS consistently been meeting the CFE turbidity requirements for this type of filtration? | System has a potential violation for exceeding the CFE turbidity limits for DE filtration and failing to report to the EPA (141.551a2 / 141/551b2 or 141.173b). |
| ditEaFRateN | (SW Treatment)  (DE Filtration)  Is the filtration rate less than 1.5 gpm/sf? | The Diatomaceous Earth filters are being operated at a rate that exceeds 1.5 gpm/sf. (no standard language) |
| slwSndFilRateN | (SW Treatment)  (Slow Sand)  Is the filtration rate less than 0.1 gpm/sf? | The slow sand filters are being operated at a rate that exceeds 0.1 gpm/sf. (no standard language) |
| slwSndExdTurbLN | (SW Treatment)  (Slow Sand)  Has the PWS consistently been meeting the CFE turbidity requirements for this type of filtration? | System has a potential violation for exceeding the CFE turbidity limits for slow sand filtration and failing to report to the EPA (141.551a2 / 141/551b2 or 141.173b) |
| slwSndRwTurbLT10N | (SW Treatment)  (Slow Sand)  Is turbidity of raw water to filters always <10 NTU? | The slow sand filters are being used to treat raw water that exceeds 10 NTU. (no standard language) |
| slwSndDepthOSand3FtN | (SW Treatment)  (Slow Sand)  Is water depth over sand at least 3 feet during operation? | The depth of the water being maintained at the slow sand filters is less than 3 feet during operation. (no standard language) |
| slwSndHeadLossMonN | (SW Treatment)  (Slow Sand)  Is head loss across filters monitored and used for process control? | The system is using slow sand filters as a final filtration barrier and not monitoring the head loss for process control. (no standard language) |
| slwSndFTMUVRecN | (SW Treatment)  (UV Disinfection)  Does PWS keep records of UV reports sent monthly to EPA? | System has a potential violation for failing to maintain UV operation records (141.722c) |
| uvDisFlowMeterAlarmN | (SW Treatment)  (UV Disinfection <40 gpm)  Is there a flow meter to monitor/alarm or a flow restrictor valve so the max flow rate is not exceeded | The system does not have a means of ensuring that the flow rate through the UV unit does not exceed the manufacturer’s maximum validated flow rate (less than 40 gpm UV). (no standard language) |
| uvDisIntensitySensN | (SW Treatment)  (UV Disinfection <40 gpm)  Is there an intensity sensor and alarm (visible/audible) to indicate low intensity? | The system does not have an intensity sensor alarm to indicate low UV intensity (less than 40 gpm UV). (no standard language) |
| uvDisUVStatusAlmN | (SW Treatment)  (UV Disinfection <40 gpm)  Is there a UV lamp status alarm (visible/audible) to indicate lamps off | The system does not have a UV lamp status alarm (less than 40 gpm UV). (no standard language) |
| uvDisLampAgeAlmN | (SW Treatment)  (UV Disinfection <40 gpm)  Is there a UV lamp age counter/alarm? | The system does not have a UV lamp age counter / alarm (less than 40 gpm UV). (no standard language) |
| uvDisAutoShutOffN | (SW Treatment)  (UV Disinfection <40 gpm)  Is there an automatic shut-off fail-safe solenoid valve so that water does not flow through the unit without adequate treatment? | **The UV disinfection unit is not equipped with a fail safe solenoid valve.**  A fail safe solenoid valve that shuts off flow through the units when an adequate UV dose is not being achieved must be installed. |
| uvDisNSFStndCertN | (SW Treatment)  (UV Disinfection <40 gpm)  Does this UV unit have an NSF Standard 55A Certification or has it been validated according to the requirements of the 2006 UV Disinfection Guidance Manual? | The system has a potential violation. The UV unit being used by the system for Cryptosporidium inactivation credit does not have the required NSF 55A Certification (less than 40 gpm UV) or validation according to the UVDGM / DVGW (greater than 40 gpm UV). |
| uvDisLT40SensCaliN | (SW Treatment)  (UV Disinfection >40 gpm)  Is the calibration of the UV intensity sensors checked at least monthly using a reference sensor | **The system does not check the calibration of their UV intensity sensors at least monthly.**  As a system that utilizes UV disinfection to achieve *Cryptosporidium* inactivation credit to meet the requirements of the Long Term 2 Enhanced Surface Water Treatment Rule, you are required to verify the calibration of all UV sensors monthly and recalibrate the sensors if they do not meet the quality control requirements specified in the EPA UV Disinfection Guidance Manual. The system currently does not conduct UV intensity sensor calibration verifications. The system must work with the UV unit manufacturer to begin performing and documenting monthly UV intensity sensor calibration verifications on all UV units. If any UV sensor does not meet the quality control requirements specified in the UV Disinfection Guidance Manual, it must be recalibrated. |
| uvDisLT40TrnsmCalibN | (SW Treatment)  (UV Disinfection >40 gpm)  Is the calibration of the UV transmittance analyzer checked at least weekly with a benchtop analyzer (Calculated Dose Method only)? | **The system does not check the calibration of their online UV transmittance analyzer on a weekly basis.**  As a system that utilizes UV disinfection to achieve *Cryptosporidium* inactivation credit to meet the requirements of the Long Term 2 Enhanced Surface Water Treatment Rule, you are required to continuously monitor the finished water UV transmittance. This parameter is a primary input into the calculated dose equation used to demonstrate that adequate inactivation is being achieved. The system currently does not conduct UV transmittance analyzer calibration verifications. The system must begin conducting weekly verification of the online UVT analyzer using a grab sample. |
| uvDisLT40CalibFlowMN | (SW Treatment)  (UV Disinfection >40 gpm)  Is there a calibrated flowmeter to ensure max flow rate is not exceeded? | **The system currently does not have a calibrated flow meter on one or more of the UV disinfection units.**  As a system that utilizes UV disinfection to achieve *Cryptosporidium* inactivation credit to meet the requirements of the Long Term 2 Enhanced Surface Water Treatment Rule, you are required to monitor the flow rate at each UV unit to ensure that the units are being operated within the validated conditions. Currently, the flow meter at one or more of the UV units is inoperable. The system must repair all flow meters as necessary to allow for direct monitoring of the flow rate at each UV unit. |
| uvdisFTMRecs40N | (SW Treatment)  (UV Disinfection >40 gpm)  Are daily operational records kept of flow rates/production, run time, lamp status, UV intensity, UVT and UV dosage? | System has a potential violation for failing to maintain UV operation records (greater than 40 gpm UV) (141.720d5). |
| uvDisLT40OperIDEvntN | (SW Treatment)  (UV Disinfection >40 gpm)  Does the operator know how to identify an off-specification event and report it to the EPA? | The system operators do not know how to properly identify an off-specification event and report it to the EPA (greater than 40 gpm UV). (no standard language) |
| uvDisLT40SysAlarmEvN | (SW Treatment)  (UV Disinfection >40 gpm)  Does the system alarm when an off-specification event occurs? | The plant's SCADA is not set up to alarm when an off-specification event occurs (greater than 40 gpm UV). (no standard language) |
| uvDisFTMPoeRsdN | (SW Treatment)  (Chlorination)  Is this before the 1st user of the water? | System has a potential violation for monitoring the POE chlorine residual at a point that is not prior to the first user of the water (141.74c2). |
| chmDis2MsmtN | (SW Treatment)  (Chlorination)  Are the two measurements within 0.1 mg/L or 15% of one another (whichever is larger)? | **Inadequate Treatment Process Monitoring for Surface Water Treatment Plants.**  The online chlorine residual analyzer at the point of entry was not adequately calibrated and periodically verified. The chlorine residual at the point of entry measured by the surveyor using a handheld DPD device varied substantially from the reading by the online analyzer. According to EPA Method 334.0: Determination of Residual Chlorine in Drinking Water Using an On-Line Chlorine Analyzer; during routine calibration checks of the online analyzer, the continuous analyzer chlorine residual reading must be within 0.1 mg/L or 15% (whichever is greater) of the grab sample measurement. If the readings are outside of this range, follow-up calibration procedures are required.  The following actions must be taken:  a. The online analyzer should be calibrated per manufacturer’s specifications and then checked with a grab sample taken at the same location (using an accurate handheld DPD analyzer) to ensure that the variance is within the specified limits. If after calibration the device still does not meet the above requirements, the system should contact the manufacturer to troubleshoot the problem and calibrate the instrument.  b. The online analyzer should be verified with a grab sample once every seven days and records of the verifications kept in the operating logs. If the variance between the two readings is ever outside of the specified limits (0.1 mg/L or 15%, whichever is larger), the online chlorine residual analyzer should be calibrated and re-checked. If this does not bring the readings within the specified limits, the system should contact the manufacturer to troubleshoot the problem. |
| chmDisMeaResidContN | (SW Treatment)  (Chlorination)  If measuring residual continuously, is the PWS conducting weekly verifications with a grab sample measurement? | **Inadequate Treatment Process Monitoring, Recording, and Recordkeeping for Surface Water Treatment Plants.**  The online chlorine residual analyzer at the point of entry to the distribution system was not periodically verified to determine the need for calibration per the requirements of EPA Method 334.0: Determination of Residual Chlorine in Drinking Water Using an On-Line Chlorine Analyzer. The online analyzer must be verified with a grab sample once every seven days and records of the weekly verifications kept in the operating logs. The continuous analyzer chlorine residual reading must be within 0.1 mg/L or 15% (whichever is greater) of the grab sample measurement. If the readings are outside of this range, follow-up calibration procedures are required. |
| chmDisFTMBromaN | (SW Treatment)  (Ozonation)  Does the system monitor bromate concentration at point of entry? | System has a potential violation for failing to monitor bromate at the point of entry according to the required frequency (system using ozone) (141.132b3). |
| chmDisFTMClDioxN | (SW Treatment)  (Chlorine Dioxide)  Does the system monitor chlorine dioxide daily at point of entry? | System has a potential violation for failing to monitor chlorine dioxide at the point of entry according to the required frequency (system using chlorine dioxide) (141.132c2). |
| chmDisFTMChloritN | (SW Treatment)  (Chlorine Dioxide)  Does the system monitor chlorite at point of entry daily and monthly in the distribution system? | System has a potential violation for failing to monitor chlorite at the point of entry according to the required frequency (system using chlorine dioxide) (141.132b2). |
| chmDis1YrProfNCmN | (SW Treatment)  (Disinfection Profiling)  Does the system have a disinfection profile on site that contains a year of weekly log inactivation calculations (<10,000 pop.) or a year of daily log inactivation calculations (>10,000 pop)? | **One year disinfection profile not completed.**  This public water system was required to conduct one year of disinfection profiling as part of the Long Term 1 Enhanced Surface Water Treatment Rule. The disinfection profile consists of inactivation calculations for Giardia and viruses calculated once per week over a year’s time. During this sanitary survey, a complete one year profile was not available for review. The system must collect information on the plant’s flow rate, contact tank volume, pH, temperature, and chlorine residual on at least a weekly basis to calculate Giardia and virus inactivation levels for one year. This information should be used to complete the required one year disinfection profile and the profile should then be kept in the plant’s records indefinitely. Failure to have the profile available for review during sanitary surveys is a recordkeeping violation of 40 C.F.R. §141.536. |
| chmDisFTConsultN | (SW Treatment)  (Disinfection Profiling)  If yes, was EPA consulted? | System has a potential violation for failing to consult the EPA prior to making a significant change to their disinfection practices (141.570d or 141.172c). |
| virGiVGt4RmvN | (SW Treatment)  (Overall Removal Virus)  > 4 logs? | **Inadequate inactivation design or operation (CT)**.  The Surface Water Treatment Rule requires that water systems achieve at least 99.99% (4-log) removal and/or inactivation of viruses. The cartridge filtration system employed is not credited with any virus removal due to the large size of the pores in comparison with the size of viruses. In addition, the UV system is not credited with virus inactivation due to the relatively high UV resistance of viruses. The system must therefore achieve 99.99% inactivation of viruses through chemical disinfection.  Based upon calculations made in this sanitary survey using conservative values, the required level of virus inactivation is not achieved by the time the water reaches the first user. The system must ensure adequate inactivation; the disinfection profiling spreadsheet sent to the system should be used weekly for one year to document adequate inactivation. If the system is unable to achieve the required 4 log inactivation by adjusting the flow rate or chlorine residual, it is possible that modifications to the system design will be necessary. |
| virGiGt3RmvN | (SW Treatment)  (Overall Removal Giardia)  > 3 logs? | **Inadequate inactivation design or operation (CT).**  The water treatment system operation and/ or design does not provide for adequate inactivation of *Giardia lamblia*. The SWTR requires that water systems achieve at least 99.9% (3-log) removal and/or inactivation of *Giardia lamblia* cysts and 99.99% (4-log) removal and/or inactivation of viruses. As documented in this sanitary survey, the filtration system when properly operated does not achieve the required reduction of Giardia; therefore, the system must achieve additional reduction of Giardia through inactivation.  The system does not routinely collect and record the data necessary to determine the level of inactivation. Inactivation calculations made based on data collected during the sanitary survey and standard conservative estimates for peak hourly flows and tank and pipeline volumes indicated that the system was not obtaining enough Giardia inactivation to achieve a total reduction (removal plus inactivation) of 99.9%.  The system must ensure adequate Giardia reduction; the disinfection profiling spreadsheet provided to the water system should be used weekly to document that the inactivation necessary to achieve the required total reduction of Giardia is achieved. A completed copy must be provided to EPA to show that this significant deficiency has been resolved. If the system is unable to obtain the required inactivation, the system should be modified to increase the level of inactivation (i.e. installation of a second method of inactivation or installation of additional storage to increase contact time). |
| InCryptoInacN | (SW Treatment)  (Overall Removal Cryptosporidium)  > required logs? | System has a potential violation for failing to maintain adequate treatment for Cryptosporidium as required in the LT2 rule (Bins 2 or higher system or system that committed to install maximum treatment) (141.711a). |
| disDatLinesDisinfN | (Distribution)  Are lines properly disinfected after repairs are made? | **Distribution lines are not properly disinfected after repairs.**  Failure to adequately disinfect drinking water lines following repair can lead to introduction of contamination into the distribution system. Water lines must be disinfected according to accepted standards (e.g. AWWA C651) following repair. |
| disDat20PSIN | (Distribution)  Is there at least 20 psi at all points in the system at all times? | **Low pressure or loss of pressure (less than 20 psi).**  Presently, some areas of the distribution system have pressure less than 20 psi. This low pressure creates significant risk for backflow and system contamination. In order to correct this significant deficiency, you must identify the cause(s) of the low pressure and provide documentation of how it was corrected. |
| disDatbulkrpz1N | (Distribution)  Bulk Water Supply / Fill Station  Appropriate Air Gap or RPZ? | **Inadequate backflow prevention on [insert station name] bulk water fill station. (See photo #)**  Bulk water fill stations present a potential cross-connection. Cross-connections provide a pathway for contamination to enter the drinking water system during backflow events and therefore present a potential public health threat. A reduced pressure backflow assembly (RPZ) or permanent air gap device must be installed at this facility. An RPZ must be inspected and tested at least annually to ensure proper function. |
| disDatbulkrpz2N | (Distribution)  Bulk Water Supply / Fill Station  Appropriate Air Gap or RPZ? | **Inadequate backflow prevention on [insert station name] bulk water fill station. (See photo #)**  Bulk water fill stations present a potential cross-connection. Cross-connections provide a pathway for contamination to enter the drinking water system during backflow events and therefore present a potential public health threat. A reduced pressure backflow assembly (RPZ) or permanent air gap device must be installed at this facility. An RPZ must be inspected and tested at least annually to ensure proper function. |
| disDatbulkrpz3N | (Distribution)  Bulk Water Supply / Fill Station  Appropriate Air Gap or RPZ? | **Inadequate backflow prevention on [insert station name] bulk water fill station. (See photo #)**  Bulk water fill stations present a potential cross-connection. Cross-connections provide a pathway for contamination to enter the drinking water system during backflow events and therefore present a potential public health threat. A reduced pressure backflow assembly (RPZ) or permanent air gap device must be installed at this facility. An RPZ must be inspected and tested at least annually to ensure proper function. |
| disDatARVLeakY | (Distribution)  Do any (ARVs) have leaks and/or standing water that covers the discharge point? | **Air relief valve (ARV) vault contains standing water (see photo #)**  An ARV vault near [describe location] contained standing water from ground water intrusion or leaks in the pipes or valves. Standing water at the discharge point of the air relief valve could create a potential backflow problem if the system loses pressure and the water is siphoned back into the main. |
| crsConnRedPrsBckN | (Cross Connection Control)  Does each severe hazard connection have the appropriate reduced pressure backflow assembly installed at the meter/service connection and approved air gap (twice the size of the supply pipe diameter but always greater than one inch)? | **Unprotected, severe hazard cross-connection present. (See photo #) (see examples listed below)**  Cross-connections provide a pathway for contamination to enter the drinking water system during backflow events and therefore present a potential public health threat. The survey identified [specify the cross connection found during the survey] as a severe hazard cross connection. A reduced pressure backflow assembly and air gap that is twice the size of the supply pipe diameter but always greater than one inch must be installed at the service connection to this facility and must be inspected and tested at least annually to ensure proper function. |
| crsConnAirGapN | (Cross Connection Control)  Does each high hazard connection in the treatment plant or distribution system have the appropriate air gap or reduced pressure backflow assembly installed? | **Unprotected, high hazard cross-connection present. (See photo #) (see examples listed below)**  Cross-connections provide a pathway for contamination to enter the drinking water system during backflow events and therefore present a potential public health threat. The survey identified [specify the cross connection found during the survey] as a high hazard cross connection. A reduced pressure backflow assembly (RPZ) or air gap must be installed at the service connection to this facility. An RPZ must be inspected and tested at least annually to ensure proper function. |
| crsConnLeakCompY | (Cross Connection Control)  Were there any leaking system components observed by the surveyor that are not previously noted? | **Leaking system components were identified [describe type and location].**  [Describe potential concern and remedy] |
| crsConnStckTnkAirGpN | (Cross Connection Control)  (non-community systems only)  Stock tanks – approved air gap or atmospheric vacuum breaker at the tank? | **Unprotected, high hazard cross-connection present. (See photo #)(see examples listed below)**  For Noncommunity Systems Only:  Stock tanks are high hazard cross connections because of the potential for protozoan, bacterial and viral contamination. An approved air gap or atmospheric vacuum breaker or greater backflow prevention device must be installed at the tank(s). |
| mangDatPropOpN | (Management)  Is the treatment plant being properly operated to prevent inadequately treated water from being sent to the distribution system? | **The treatment plant is not being operated to prevent inadequately treated water from being sent to the distribution system.**  During the sanitary survey the operator demonstrated lack of operational understanding or other limiting conditions existed [describe]. [Describe potential concern and remedy] |
| mangDatEmerRespPlnN | (Management)  Does the system have an emergency response plan (ERP) – system does not need to show the surveyor the ERP --that includes: | **No emergency response plan (ERP).**  The Emergency Response Plan (ERP) must detail emergency operations procedures for possible foreseeable emergencies such as power outage, loss of water, equipment failure, development of unsafe conditions, and other emergency conditions. Templates, including instructions, for developing ERPs may be found on the USEPA Region 8 Drinking Water Online website: <http://www2.epa.gov/region8-waterops/reporting-forms-and-instructions-reporting-forms>. Select the “Emergency Response Plan Templates” link on the main page. |