EPA United States Environmental Protection Agency

Region 6 Compliance Assurance and Enforcement Division

INSPECTION REPORT

Inspection Date(s):	02/28/2018		
Media:	Drinking Water		
Regulatory Program(s)	SDWA		
Company Name:	**Mescalero Apache Tribe (MAT)**		
Facility Name:	**Mescalero Silver Lake Public Water System**		
Facility Physical Location:	Silver Lake, New Mexico 88340 (Mescalero)		
(city, state, zip code)	**Mescalero Apache Reservation**		
Mailing address:	PO Box 250, Mescalero, NM-88340		
(city, state, zip code)	**Mescalero, NM 88340**		
County/Parish:	Otero County		
Facility Contact:	Sterlen Kane, Jr.	Compliance Officer, Division of Resource Management & Protection (DRMP)	
	skanejr@mescalerodrmp.org		
Facility Contact:	Thomas Mendez	Director of Public Works	
	575-464-4711		
FRS ID	110050922212		
SDWIS Facility PWS ID	063507008		
ICIS Programmatic ID	3600842332		
Personnel participating in the inspection:			
Thora Padilla	MAT, DRMP	Director	575-464-4711
Thomas Mendez	MAT, DRMP	Director of Public Works	575-464-4711
Sterlen Kane, Jr.	MAT, DRMP	Compliance Officer	575-464-4711
Joseph Morgan	MAT, Utilities	Director	575-937-6461
Loren B. Gallerito	MAT, Parks and Recreation	Director	575-973-7255
Ernest Kadayso	MAT, Utilities	PWS Operator	575-464-4711
Robert Trujillo	IHS	Engineer	575-464-3871
Mark Nasi	IHS	Engineer	505-248-4068
David Esparza	EPA R6 6EN-WM	Inspector	505-366-8402
Damon McElroy	EPA R6 6EN-WM	Inspector	214-665-7159
EPA Lead Inspector Signature/Date	DAVID ESPARZA Digitally signed by DAVID ESPARZA DN: c=US, o=U.S. Government, ou=USEPA, ou=Staff, cn=DAVID ESPARZA, dnQualifier=0000105311 Date: 2018.05.17 14:11:35 -06'00'		
	David Esparza		Date
Supervisor Signature/Date	CAROL PETERS-WAGNON Digitally signed by CAROL PETERS-WAGNON DN: c=US, o=U.S. Government, ou=USEPA, ou=Staff, cn=CAROL PETERS-WAGNON, dnQualifier=0000009981 Date: 2018.05.18 09:47:20 -05'00'		
	Carol Peters		Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

EPA Region 6 inspectors David Esparza and Damon McElroy arrived at the Mescalero Apache Tribe's (MAT) Environmental Protection Office at 1:30 PM on February 26, 2018, for an announced opening interview regarding the MAT public water system (PWS) utility program. David Esparza and Damon McElroy similarly arrived on February 28, 2018 at 9:00 AM, for an announced Sanitary Survey of the MAT Silver Lake PWS. We presented our credentials and informed the MAT group that this was an EPA Sanitary Survey to determine compliance with the facility's ability to provide safe drinking water under the regulatory authority and conditions of the Safe Drinking Water Act (SDWA). A Sanitary Survey consists of an inspection of the following eight elements:

1. Sources
2. Pumps and pumping facilities
3. Water treatment
4. Distribution
5. Monitoring
6. Management & Operations
7. Operator certification
8. Water storage facilities

Following this Silver Lake PWS Sanitary Survey, MAT will be responsible for correcting any significant deficiencies observed and documented in this report (Ref. Section IV). According to the Enhanced Treatment for *Cryptosporidium* Rule, systems must respond in writing to significant deficiencies identified in sanitary survey reports no later than 45 days after receipt of the report, indicating how and on what schedule the system will address significant deficiencies noted in the survey.

SILVER LAKE FACILITY DESCRIPTION

The Silver Lake (campground) PWS is a transient non-community ground water under direct influence (GUDI) system that serves approximately 160 persons, inclusive of a 150-person transient population, through 65 service connections. The 10-person difference is seasonal residential staff members. Operations and maintenance (O&M) is generally conducted five days per week (Monday through Friday) when the facility is seasonally opened. The total MAT O&M program encompasses ten Mescalero PWSs, inclusive of two (2) which are opened on a seasonal basis (Silver Lake and Eagle Creek). It is reported MAT, currently does not have plans for new capital improvements. The average daily water demand is not quantified, though the peak daily demand is quantified at approximately 10 gallons per minute (GPM) and the system has an estimated total production capacity of 25 to 30 GPM.

The Silver Lake PWS has the following primary infrastructure or operational characteristics:

1. Silver Lake Spring Box, treatment/pump house, and chlorination system.
2. One (1) 10,000 Ground Storage Tanks (GST).
3. The distribution system consists of 2-inch diameter polyvinyl chloride (PVC) pipe, one (1) pressure reducing valve (PRV) and one (1) pressure zone.
4. The system maintains no hydrants (flush and fire) and does not interconnect with any other system.
5. The Facility was confirmed to have no (zero) residential service connections.
6. The system is maintained and operated by the MAT Water Utility staff, even though it is operated as an element of the Parks and Recreation Department.

Section II – OPENING DISCUSSION:

During the initial February 26, 2018, opening discussion observations points were documented below:

- I observed that the MAT Utility officials recognize the importance of providing safe drinking water, and struggles to achieve a PWS that is sustainable to best serve their community.
- SDWA sampling and disinfection is handled by the DRMP compliance official(s).
- The PWS Utility O&M is the responsibility of the MAT Utility officials.
- MAT needs new staff and new equipment for such tasks as to:
    - Provide adequate PWS O&M.
    - Analyze and add infrastructure including new piping (as appropriate or necessary), control valves and associated appurtenances or ancillary equipment.
    - Implement supervisory control and data acquisition (SCADA) monitoring and mapping, inclusive of memorializing leakage hot spots and initiation of SCADA operational capability.
    - Analyze and install a capital improvement program (CIP).
- MAT needs to addresses significant deficiencies in a timely manner, and generally modify the observed culture of apathetic public health protection.
- MAT ought to implement a work order management system with an asset management component to operate efficiently and at a lower cost.
- When a water line is replaced, Indian Health Service (IHS) standards, inclusive of disinfection or an equivalent standard operating procedure (SOP) is not followed subjecting costumers to a potential contamination risk.
- The existing infrastructure is not currently 'sustainable'.
- The current six (6) PWS operators for all 10 MAT PWSs spend about 80% of their time fixing drinking water leaks or breaks; and about 20% on road and right-of-way (ROW) work. This equates to an approximate 32-hours out of a normal work week to system maintenance.
- I observed that MAT should add additional five (5) or six (6) FTEs (full time employees) capable of operating the MAT PWSs. Such skills needed may include SCADA operations, GIS mapping, electrical, asset maintenance, mechanical, etc.

Section III – SILVER LAKE SANITARY SURVEY

I observed the following sanitary survey characteristics regarding the Silver Lake PWS:

A. Sources

1. Silver Lake Spring (box) gravity flows into the treatment (disinfection) building located approximately 3,500-feet east of the spring box (Appendix 1 Photograph #1).
2. The spring box cover lacks a gasket and is not locked (Appendix 1 Photograph #2 &#3).
3. The source is susceptible to excessive vermin infestation and/or impacts from cattle/wildlife.
4. The perimeter (security) fencing surrounding the spring box is damaged (Appendix 1 Photograph #4).
5. The average daily demand is unknown, while the peak daily demand is 10 gallons per minute (GPM) with an estimated total production capacity of 25 to 30 GPM. Additionally, the existing 3-phase treatment pump is rated at 35.5 GPM.
6. The treatment/filtration pump has no auxiliary power.
7. The treatment pump has:
    - Operational records that did not appear to be maintained.
    - No pump failure alarm.
    - No known flow records are maintained or analyzed.
    - Lightning protection.
    - Need to provide routine or preventive maintenance, with respect to all water sources, disinfection, and storage and distribution equipment, inclusive of all associated ancillary appurtenances. This is true and/or consistent for all MAT wells and infrastructure.

B. Pumps or compliance filtration facilities

The treatment facility ancillary equipment consists of:

1. Chlorine disinfection system, treatment house and three stage compliance filtration system, inclusive of pumping equipment to provide required pressure for filtration system.

C. Water Treatment (Disinfection)

Silver Lake PWS treatment observations:

1. Chlorine feed to maintain a ≈ 0.6 ppm residual.
2. Chlorine is applied on the discharge pipe after the meter and pressure gauge.
3. Residual is calibrated on weekdays.
4. Filtration system (Appendix 1 Photograph #14).

D. Distribution

1. MAT has commenced the creation of geographical information system (GIS) maps of its PWSs assets, inclusive of distribution system pipeline alignments and system infrastructure. These

maps are updated as repairs or alignment changes occur. However, Silver Lake is operated as a seasonal business venture within the MAT Parks and Recreation Department; therefore, they have not been incorporated into the GIS maps at this time.

2. The existing system is reported to have 2-inch PVC piping.
3. Installing new water lines and pipeline repair SOPs are not established as mentioned above.
4. Repaired or replaced water mains are not disinfected.
5. O&M does not include a formal flushing program.
7. Water pressure has not been measured or assessed.
8. The gravity flow GUDI system is comprised of one (1) pressure reducing valve (PRV) and one (1) pressure zone. Furthermore, the system maintains no hydrants (flush and fire) or dead end lines and does not interconnect with any other system.

E. Monitoring

1. The filtration/disinfection and monitoring is observed by MAT Utility Department personnel on weekdays.
2. Chlorine dose calibration and final dose records (based on gravity flow) are not maintained.

F. Management & Operations

1. MAT has a total annual budget of approximately $1.1 million, inclusive of emergency funding.
2. Most of the budget is used for PWS water and wastewater operator wages and distribution line repairs.
3. Staff mainly receives adequate training to obtain a Level 1 operator licenses.
4. Normally infrastructure improvements are funded and often designed through IHS (via the Sanitation Deficiency System (SDS) process) with EPA grant supplementation. However, both Silver Lake and Eagle Creek are MAT business ventures; thus disqualifying them for typical IHS assistance.
5. There is no observed source water protection plan.
6. PWS records are kept in accordance with corresponding SDWA federal law.
7. MAT does not implement a preventive maintenance program.
8. MAT has a TCR monitoring plan.
9. MAT does not implement SOPs as a general process.

G. Operator certification

The PWS Utility staff has adequate (Level 1 NMED) certification.

H. Water storage facilities

1. Ground Storage Tanks (GST):

- One (1) 10,000-gallon steel storage tank. (Appendix 1 Photograph #5).
- Tank lid does not have a gasket and is locked (Appendix 1 Photograph #6 & #7).
- Internal views of the tank exhibited extensive rusting and corrosion along the interior sides and structural members (Appendix 1 Photograph #8).

- Abundant amounts of floating insects including flies were observed floating on the interior water surface (Appendix 1 Photograph #9).
- The tank level control valve had frozen and was leaking.
- It is unknown when the tank was last cleaned.
- The GST is vented and screened, but the screen does not appear to be 24-mesh (Appendix 1 Photograph #10).
- The exterior surface of the GST has been painted and is generally in fair to good condition, though at various areas along the bottom of the tank rust was visible. This is indicative of metallic structures (GST, piping, valves etc.) lacking cathodic protection (Appendix 1 Photograph #11).
- The overflow or drain pipe has an installed flapper valve, and the splash pad appeared to be in good condition (Appendix 1 Photograph #12).
- The perimeter fencing along the backside provides inadequate security; the fence is too low (Appendix 1 Photograph #13).

Section IV – SIGNIFICANT DEFICIENCIES (Reference photos in Appendix 1)

1. There is insufficient maintenance at the MAT water systems as evidenced by the repeated significant deficiencies from previous sanitary surveys.
2. Surface water flow should be diverted away from the spring box to prevent high turbidity water from entering. The cartridge filtration system is more affected at very low raw water turbidity.
3. The perimeter (security) fencing surrounding the spring box is damaged; thus potentially allowing unauthorized access by humans or animals (Appendix 1 Photograph #4).
4. There is no alarm for chlorine within the treatment building.
5. The tank hatch lid does not have a gasket (Appendix 1 Photograph #7). Abundant amounts of floating insects including flies were observed on the interior water surface (Appendix 1 Photograph #9).
6. The structural integrity of the tank may be compromised as internal views of the tank exhibited extensive rusting and corrosion along the interior sides and structural members (Appendix 1 Photograph #8). The exterior surface of the GST has been painted and is generally in fair to good condition, though at various areas along the bottom of the tank rust was visible (Appendix 1 Photograph #10).
7. The tank level control valve had frozen and was leaking causing the facility to pressurize and the water storage tank to continually overflow (via gravity).
8. The storage tank needs to be cleaned and inspected every 5 years. The recommendations from the tank inspection report should be completed and proof of completion sent to EPA Region 6.
9. The tank is vented and screened, but the screen does not appear to be 24-mesh (Appendix 1 Photograph #9).
10. Significant deficiencies from past sanitary surveys, as shown below in Table B below, need to be fixed, and relevant photos provided to EPA:

TABLE B: Past Survey Significant Deficiencies

ID	Survey Year	Significant Deficiency or Fixed Deficiency Description
1	2016	A portion of the spring collection box security fence is bent, the barbed wire is broken and there is erosion underneath the fence that leaves a gap big enough to allow access to the site.

ID	Survey Year	Significant Deficiency or Fixed Deficiency Description
2	2016	There is no alarm for chlorine feed failure at the facility.
3	2016	The storage tank needs to be cleaned and inspected every 5 years. The recommendations from the tank inspection report should be completed and proof of completion sent to EPA Region 6.
4	2016	The vent to the storage tank does not have 24 mesh screen.
5	2016	The security fence at the storage tank site is too low in the back.

Section IV – Recommendations

1. MAT needs to addresses significant deficiencies in a timely manner; generally, respond to EPA administrative orders (AO), and to modify the culture of apathetic public health protection.
2. A GWUDI water system must meet the filtration and disinfection requirements of the Surface Water Treatment Rules (SWTRs). The SWTRs require that the disinfection process meet the *giardia lamblia* and virus inactivation requirements every day the system is in operation. The operators, therefore, should monitor the chlorine residual, temperature and pH at or before the first customer 7 days a week.
3. According to the April 2018 monthly operating report, monitoring is being conducted seven days a week. In addition, it was observed that the chlorine residual must be maintained at approximately 1.0 mg/l to achieve the required giardia lamblia and virus inactivation. It is important that the operators continue to monitor seven days a week and to maintain a chlorine residual of at least 1.0 mg/l.

Section IV – FOLLOW UP

No information was received by EPA after exiting the Facility on 2/28/2018.

Section VI – LIST OF APPENDICES

Appendix 1 – Photo Log – 14 photos taken 2/28/2018
Appendix 2 – Silver Lake Distribution System GIS Example Map