

**Region 6 Compliance Assurance and Enforcement Division
INSPECTION REPORT**

Inspection Date(s):	07/11/2018		
Media:	Water		
Regulatory Program(s)	CWA		
Company Name:	City of Aztec		
Facility Name:	Aztec Wastewater Treatment Plant		
Facility Physical Location:	900 South Oliver Street		
(city, state, zip code)	Aztec, New Mexico 87410		
Mailing address:	201 W. Chaco		
(city, state, zip code)	San Juan County 87410		
County/Parish:	San Juan		
Facility Contact:	Andrew Galloway	Chief Operator	
	agalloway@aztecnm.gov		
FRS Number:	110022724471		
Identification/Permit Number:	NM0020168		
Media Number:	N/A		
NAICS:	221320		
SIC:	4952		
Personnel participating in inspection:			
Anthony Garcia	City of Aztec	Wastewater Operations Supervisor	505-334-8684
Laurie Martinez	City of Aztec	GIS Technician	505-334-7663
Tyrome Begay	City of Aztec	Wastewater Operator	505-334-8684
Jennifer Foote	NMED	Industrial and Stormwater Team Supervisor	505-827-0596
Magdeleine Dallemagne	USEPA	Inspector	214-665-7396
David Esparza	USEPA	Environmental Engineer	505-366-8402
EPA Lead Inspector Signature/Date			
	David Esparza		Date
Supervisor Signature/Date			
	Carol Peters		Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

EPA Region 6 inspectors David Esparza, PE, Jenifer Foote New Mexico Environment Department –Point Source Regulation Section (NMED), Industrial and Stormwater Team Supervisor, and Magdeleine Dallemagne, USEPA, arrived at the City of Aztec Treatment Plant (WWTP) (hereinafter referred to as WWTP) at approximately 9:00 AM on July 11, 2018 for an unannounced inspection. We met with Anthony Garcia, Wastewater Operations Supervisor, Laurie Martinez, GIS Technician, and Mr. Tyrome Begay, Wastewater Operator. Mr. Esparza presented his credentials to Mr. Garcia and informed him that this was an EPA inspection to determine the WWTP's compliance under the Clean Water Act (CWA). This compliance evaluation inspection (CEI) was conducted under the authority of the National Pollutant Discharge Elimination System (NPDES) permit program, in accordance with the CWA. The generation of this report is based on information supplied by Aztec representatives, observations made by the United States Environmental Protection Agency (US EPA) inspector, and records and reports maintained by the permittee (Aztec), and the US EPA. Before leaving the facility, an exit briefing was held at 10:54 AM with Mr. Garcia, the above-mentioned staff to explain areas of concern noted at the time of the inspection.

At this juncture it should be noted that a separate inspection was conducted to observe Aztec's laboratory procedures and related functions to ascertain their compliance with that aspect of their NPDES permit. Additionally, NMED conducted a separate NPDES-Stormwater inspection in conjunction with this site visit.

FACILITY DESCRIPTION

The WWTP is a major discharger with a design flow of 1.2 million gallons per day (MGD) Aero-Mod activated sludge treatment plant which was commissioned in September 2009. The activated sludge treatment facility is located at 900 South Oliver Street, Aztec, San Juan County New Mexico (depicted in Aerial Image #1 below). The WWTP facility serves a population of approximately 6,000 (2016 US Census) residents. The WWTP is operated by staff within the Public Works Department and consists of 5 full-time equivalent (FTE) positions on a Monday through Friday 7:00 AM to 5:00 PM. On-call staff is available on an as needed basis in addition to "spot-checks" on the weekends.

The headworks consist of a fine screen auger followed by a parallel pair of grit removal channels (used individually and rotated monthly) (Appendix 1 Photograph #1 and #2). Following the headworks, flow enters the on-site Llano lift station (equipped with three (3) pumps rated at 900 gallons per minute (gpm) that operate on a rotational basis) which pumps the wastewater into the Aero-Mod plant. The WWTP consists of a Bio Phosphorus Reactor with infrequent diffusers (run six (6) times for four (4) minutes at a time within a 24-hr period), followed by the Bio Phosphorous (P) Reactor that is equipped with mechanical mixers to maintain low anoxic dissolved oxygen (DO) and to maintain suspension of the solids. This fermentation stage is followed by dual train aeration basins that cycle between periods of

aeration and anoxic periods for denitrification. Each train has a fine bubble and a coarse air basin. Effluent from the aeration basins flows into two (2) secondary clarifiers. Solids are wasted from the Bio P Reactor, the aeration basins and the secondary clarifiers to an aerobic digester. Return Activated Sludge (RAS) from the clarifiers is sent back to the Bio P Reactor, along with decant from the aerobic digesters, where it mixes with the raw influent. From the digester, solids are sent to the belt press, mixed with a dewatering polymer, and transported to the sludge drying beds (Appendix 1 Photograph #11 and #12). Final disposal of solids is to the Waste Management Bondad Landfill in Colorado. The WWTP processes approximately 15 yd³ per week of solids and typically transports two (2) loads to the landfill. The sludge drying beds have under-drains that direct liquids back to the head works and mix with raw influent. The clarifiers are followed by the Advanced Nutrient Removal System (ANR) which also operates as a sand filter (Appendix 1 Photograph #3 and #4). Ferric chloride (FeCl₃) is added prior to the ANR to precipitate phosphorus (P) as it traverses through the ANR. The ANR is followed by the one (1) bank ultra violet (UV) disinfection unit (cleaned weekly) and the effluent is discharged into the Animas River in water quality segment 20.6.4.403 of the San Juan Basin (*State of New Mexico Standards for Interstate and Intrastate Surface Waters*) via 1,000-feet of closed conduit pipe (Appendix 1 Photograph #5).



Aerial Image #1: Overall view of the City of Aztec's Wastewater Treatment Plant and Outfall 001. Aerial from Google Earth maps.

Contingency/Emergency Operations

The WWTP maintains two (2) back-up generators to run the on-site lift station and one (1) UV disinfection system. In the event of a power or unit loss, the WWTP has an old clarifier (utilized for overflow) (Appendix 1 Photograph #6), a 1 million-gallon (MG) oxidation ditch for flow equalization (EQ), and a permanently positioned pump at the WWTP should a bypass occur to the EQ (Appendix 3 Aztec

WWTP Site Plan (revised pursuant to on-site inspection)). Additionally, there is a new supervisory control and data acquisition SCADA and call-out system, in the event of an electrical power disruption or unit failure, for the entire plant and the lift Station.

Section II - OBSERVATIONS

I observed the following and the following information was provided or stated by WWTP Staff.

- The Aero-Mod WWTP was commissioned in September 2009. Structural repairs were completed as noted in bullet items 2 and 3 below.
- The Return Activated Sludge (RAS) appeared to be a dark color (almost black). I was informed the WWTP had experienced a power outage on Monday night (July 9, 2018) and the blower shut down (Appendix 1 Photograph #7). The system has been restarted and the RAS is operating as normal.
- The Advanced Nutrient Removal System (ANR) experienced a potential sidewall structural failure in 2009 to the extent the ANR was taken offline (out of service) until a structure integrity assessment could be rendered. An earthen berm was placed against the length of the outside wall, approximately halfway up (from land surface) to offer potential strength. It should be noted the ANR along with the aeration basin were originally designed to be situated below land surface (BLS), however because of the high static water level (SWL) these treatment units were placed above land surface (ALS).
- The aeration basin experienced a similar potential sidewall structural failure in January 2014 (sidewalls were sagging or bulging). An assessment was done and multiple strands of wire rope cable and structural steel (I-beams) were placed at and within the basin in 2014 (Appendix 1 Photograph #8, #9 and #10). The sidewall (concrete) penetrations appurtenant to the transverse (perpendicular) wire rope cable exhibit cracks and/or spalling and are not sealed from exposure to the elements; thus, introducing an avenue or open conduit for concrete degradation due to freezing and thawing, and chemical exposure to the caustic wastewater at a minimum.
- Stormwater flows into the WWTP from the adjacent San Juan County owned property. The adjacent property is used for maintenance and vehicle storage. This stormwater flow has contributed to the accumulation of debris around the WWTP treatment units and has occasionally flooded the Sludge processing building (located approximately at southeast corner of the WWTP) as well as the backup generators.

Section III – AREAS OF CONCERN

The following areas of concern (AOCs) were observed and/or discussed with the City of Aztec.

- The Return Activated Sludge (RAS) appeared to be a dark color (almost black). I was informed the WWTP had experienced a power outage on Monday night (July 9, 2018) and the blower shut down (Appendix 1 Photograph #7). The system has been restarted and the RAS is operating as normal.

- The Advanced Nutrient Removal System (ANR) experienced a sidewall (potential) structural failure in 2009 to the extent the ANR was taken offline (out of service) until an assessment could be rendered. An earthen berm was placed against the length of the outside wall, approximately halfway up (from land surface) to offer potential strength. It should be noted the ANR along with the aeration basin were originally designed to be situated below land surface (BLS), however because of the high static water level (SWL) these treatment units were placed above land surface (ALS).
- The City of Aztec needs to perform a new structural assessment on the aeration basin sidewalls. The aeration basin experienced a (potential) sidewall structural failure in January 2014 (sidewalls were sagging or bulging). An assessment was done and multiple strands of wire rope cable and structural steel (I-beams) were placed at and within the basin in 2014 (Appendix 1 Photograph #8, #9 and #10). The sidewall (concrete) penetrations appurtenant to the transverse (perpendicular) wire rope cable exhibit cracks and/or spalling and are not sealed from exposure to the elements; thus, introducing an avenue or open conduit for concrete degradation due to freezing and thawing, and chemical exposure to the caustic wastewater at a minimum. Furthermore, there is a visible deflection approximately $\frac{1}{2}$ the length of the one exterior sidewall.

Section IV – Recommendations

- The City of Aztec (City) needs to establish back-up power for critical operational assets.
- The City needs to create standard operational procedures (SOP) for operational and maintenance including the WWTP unit processes.
- The City needs to implement an asset management plan. Asset management often enables facilities to operate at the lowest possible cost.

Section V – FOLLOW UP

The following information was received by EPA after exiting the Facility on July 11, 2018:

- Photograph copies of the City of Aztec WWTP Operator Certifications

Section VI – LIST OF APPENDICES

Appendix 1 – Photo Log – 28 photos taken 07/11/2018

Appendix 2 – Opening conference sign-in sheet

Appendix 3 – Current Wastewater Treatment Plant Site Plan (revised pursuant to on-site inspection)

Appendix 4 – Sanitary Sewer Overflow (SSO) Protocol

Appendix 5 – City of Aztec April, May & June DMR's

Appendix 6 – Summary of Training Schedule

Appendix 7 – City of Aztec Wastewater Treatment Plant Operator Certifications