

Region 6 - Enforcement & Compliance Assurance Division
INSPECTION REPORT

Inspection Date(s):	06/25/2024	
Media Program:	Water	
Regulatory Program(s)	CWA – NPDES	
Company Name:	Cuba, Village of	
Facility Name:	Village of Cuba Wastewater Treatment Plant	
Facility Physical Location:	Mile Marker 2 on NMSR 197	
(city, state, zip code)	Cuba, NM 87013	
Mailing address:	P.O. Box 426	
(city, state, zip code)	Cuba, NM 87013	
County/Parish:	Sandoval County	
Facility Phone Number	575-289-2020	
Facility Contact:	Denny Herrera	Mayor
	Mayorherrera63@gmail.com	
FRS Number:	110009831156	
Identification/Permit Number:	NM0024848	
Media Identifier Number:		
NAICS:	221320	
SIC:	4952	
Personnel participating in inspection:		
<i>Name</i>	<i>Affiliation/mailcode</i>	<i>Title</i>
Amy Andrews, P.E.	USEPA/6-ECDWM	Engineer/ Lead Inspector
Jason Martinez	NMED-GWQB	Inspector
Angelo Aragon	Cuba, Village of	Wastewater Operator
Vandora Casados	Cuba, Village of	Village Clerk Treasurer
Ester Hererra	Cuba, Village of	Village Water Clerk
EPA Lead Inspector Signature/Date	 AMY ANDREWS c=US, o=U.S. Government, ou=Environmental Protection Agency, cn=AMY ANDREWS, 0.9.2342.19200300.100.1.1=68001003659888 2024.08.20 11:13:28 -06'00'	
	Amy Andrews	Date
Supervisor Signature/Date	 ROBERTO BERNIER Digitally signed by ROBERTO BERNIER Date: 2024.08.20 12:44:53 -05'00'	
	Roberto Bernier	Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

Environmental Protection Agency (EPA) Region 6 inspector, Amy Andrews, and New Mexico Environment Department inspector, Jason Martinez, arrived at the Village of Cuba Office at 10:10 AM on 6/25/2024 for an unannounced inspection. We then proceeded to the Village of Cuba Wastewater Treatment Plant and met with Angelo Aragon, Village of Cuba Wastewater Operator. I presented my credentials to Mr. Aragon and informed him that this was an EPA inspection to determine compliance with the facility's National Pollutant Discharge Elimination System (NPDES) permit and the Clean Water Act (CWA). The inspection was conducted under the authority of the NPDES permit program, in accordance with the Federal CWA. This report is based on information supplied by Village of Cuba representatives (the permittee), observations made by the EPA inspector, and records and reports maintained by the permittee and the EPA.

FACILITY DESCRIPTION

The Village of Cuba Wastewater Treatment Plant (WWTP) is classified as a minor municipal discharger with a design flow of 0.144 million gallons per day (MGD). The wastewater discharge flows to the Rio Puerco in water quality Segment 20.6.4.131 NMAC from November 1 through March 31 of each year. Discharges are prohibited through months from April 1 through October 31 each year. The designated uses for this segment of the river are warmwater aquatic life, irrigation, livestock watering, wildlife habitat and primary contact.

The Cuba WWTP is an Aero-Mod extended aeration plant with two trains. Raw sewage enters the WWTP via an approximately 5-mile-long collection system. Flow is transported by gravity with one lift station. The Aero-Mod Extended treatment plant constructed in 2013 is an activated sludge process utilizing a sequential oxidation (SEQUOX) biological nutrient removal process. Influent enters the headworks and manual bar screen, flows through a flume and ultrasonic flow meter, and then is then split into two trains of aeration (activation) basins (A and B) where aerobic and anaerobic phases occur. After the activation basins, wastewater enters the two secondary clarifiers and then passes through ultraviolet (UV) disinfection. Flow is measured with a flume and ultrasonic flow meter prior to discharge to either the Rio Puerco through Outfall 001, or to a reuse storage pond. After the UV system, treated effluent enters a pipe to a wet well without a high-level alarm. That wet well has two exit pipes, each of which with a valve, and the pipes go to either a lined Reuse Pond or to Outfall 001 at the river. The Outfall is approximately 370 feet west of the main channel of the Rio Puerco.

Return Activated Sludge (RAS) is sent from the secondary clarifiers back to the aeration basins. Waste Activated Sludge (WAS) is sent to the solids thickeners then to the old plant's lagoon which now acts as a digester with two surface mixers. From the lagoon-digester the sludge is mixed with polymer inside the polymer building, and then sent to the drying beds, where it is windrowed and stockpiled.

Section II – OBSERVATIONS

The following observations were made during the inspection:

1. **Headworks:** The manual bar screen is cleaned out twice a day during the weekdays. Maintenance crews clean it at least once during weekends. Influent primary flow meter is trapezoidal, and no staff gauge is present. Calibration sticker is not present on secondary influent ultrasonic meter.
2. **Aeration basins:** Influent filter basket at aeration basin is a plastic milk crate that is replaced approximately every 2 weeks (see Photos 1 and 2). There is currently no grit removal system, which results in a significant amount of grit present in the aeration basins. Facility personnel stated that they skim the aeration basins manually with a net occasionally (see Photo 3).
3. **Disinfection and Effluent Flow meter:** The UV system has 4 banks of 4 bulbs each. Facility personnel clean bulb sleeves every 2 weeks. The effluent primary flow meter is a trapezoidal flow meter. The staff gauge on the effluent flow meter had come detached from the wall of the flow meter and cannot be used for flow rate verification (see Photo 4). The staff gauge should be repaired by a qualified flow meter technician. Facility personnel were not able to demonstrate that any flow meter verification against the staff gauge reading has been done since the flow meter was installed by an external contractor.
4. **Compliance Sampling:** Samples are collected immediately following the finger weirs after the UV system and prior to the valves that split the flow between the reuse pond and the outfall. Facility personnel stated that they collect compliance samples all year long, regardless of whether they are discharging to outfall or to reuse pond.
5. **Wet Well and Valves to Reuse Pond and Outfall:** The valve to the river outfall is next to a wet well with a second valve to the reuse pond. The valves are located underground and are opened and closed with a key on a long pole inserted into the valve cover at the ground level. At the time of the inspection, the key was in the valve to the river (see Photos 5 through 8). The potential exists that both valves (pond and outfall) could be closed at the same time, which would cause an overflow at the wet well with no alarm. There is no way to tell if the valves are open or closed without looking for water at end of pipe. The concrete skirt around the wet well is cracked and heaved; it is possible that the underground pipes are cracked.
6. **Outfall:** At the time of the inspection, effluent was flowing out of the outfall to the river (see Photos 9 and 10). Facility personnel stated that they turned the valve at the end of March to shut off the flow to the river, after collecting the WET test sample. They did not visit the river to observe whether there was effluent flow present or not.
7. **Process Control:** The SCADA system does not have call-out ability. Alarms are just flashing lights on the main panel inside the office.
8. **Sampling and Laboratory:** Sampling takes place at the finger weir after the UV system. Operators collect the compliance samples on a regular schedule regardless of whether the effluent is flowing to the outfall at the river or to the reuse pond. In-house analysis includes pH and process control

samples. WET testing goes to SeaCrest Group in Louisville, CO, and all other compliance samples go to Eurofins in Albuquerque, NM (previously Hall Environmental).

9. **Sampling and Laboratory:** pH buffers were not labeled with opened-on dates, and lids on pH bottles were not screwed on tight to prevent oxidation of the buffer solutions (see Photos 11, 12 and 13). pH buffers 4 and 7 from USABluebook are only good for 6 months after the bottle is opened and pH buffer 10 from USABluebook is only good for 3 months, if the lids are closed tightly. Opened-on dates must be written on the bottles, and a revised expiration date, based on the earliest of the manufacturer's printed expiration date, or 3 or 6 months from the opened-on date, must be written on the bottle.
10. **Sampling and Laboratory:** The numbers shown on the pH probe prior to pressing the calibrate button are not within reasonable calibrations parameters, which may indicate the need for a new pH probe, or that pH buffers have oxidized from being exposed to air. Calibration slope should be recorded, as it demonstrates measurement drift and is an indicator of issues with buffer solutions or probes. Verify acceptable slope values with pH probe manufacturer and replace probe if necessary. For additional information about pH meter calibration, inspector recommends reading the documentation that came with the meter, or the methodology for pH in the Standard Methods 4500-H⁺ B.
11. **Sampling and Laboratory:** An operator from Rural Water comes by the plant once a week to oversee plant operations and sampling. The lead operator who is at the plant daily does not receive the compliance sample results, and therefore cannot use the information for process control.
12. **Sludge Handling:** The large lagoon near the lab is a sludge pond (digester) with two surface aerators. The green metal building is both the polymer building and the laboratory. Piping goes from sludge pond through the polymer building to the drying beds. The small tractor used for moving sludge in the drying beds is stored inside the laboratory/polymer building (see Photo 14). Biosolids have not been removed from the facility since this plant was constructed in 2013.

Section III – RECORDS REVIEW

The following records were requested at the end of the inspection, and again via email sent on 7/8/2024, with a request due date of Friday, 7/12/2024.

Items with a checkmark ☒ in the box were received, items with an empty box ☐ were not received.

Records Request:

- ☐ Submitted and signed DMRs from January 2024 to March 2024 and all documentation directly related to the creation of these specific DMRs, including:
 - ☐ Laboratory Bench Sheets (handwritten &/or typed) used to construct DMRs from above.
 - *Only three (3) days of pH bench sheets were submitted from this time period.*
 - ☐ Laboratory Sampling Reports used to construct DMRs (i.e., lab reports from external labs).
 - ☐ Excel (or other database) spreadsheets used to construct DMRs listed above.
 - ☐ Chain of Custody records (usually included as last page of Laboratory Report)
- ☒ The latest WET Testing Laboratory report.

Records Request:

- ☐ Submitted and signed Sludge DMR with metals, pathogens and vector report from the last 1 year.
 - ☐ Related sludge sampling Laboratory Reports
- ☒ Flow meter logs showing daily flow rates from January 2024 to March 2024
- ☒ Calibration sheets for influent and effluent primary and secondary flow meters within the last 1 year.
- ☐ Calibration sheets for laboratory equipment (scales, thermometers, incubators, etc.) within the last 1 year.
- ☐ Excursion, Overflow or Bypass Summary Reports (if relevant) from the last 2 years.
- ☐ Pollution Prevention Program Documents as required by your NPDES permit (Part I.E.)

Section IV – AREAS OF CONCERN

Requirement 1

Federal Water Pollution Control Act (also known as the Clean Water Act), Section 301(a): *Except as in compliance with this section and sections 302, 306, 307, 318, 402 and 404 of this Act, the discharge of any pollutant by any person shall be unlawful.*

Federal Water Pollution Control Act, Section 402 requires that a discharge of any pollutant or combination of pollutants from a point source to surface water that are deemed waters of the United States be regulated by and NPDES permit.

NPDES Permit NM0024848, Part I: A. Limitations and Monitoring Requirements 1. *OUTFALL 001 - FINAL Effluent Limits – 0.144 MGD Design Flow: During the period beginning the effective date of the permit and lasting through the expiration date of the permit (unless otherwise noted), the permittee is authorized to discharge treated domestic wastewater from Outfall 001 to the Rio Puerco, in Segment 20.6.4.131 of the Rio Grande River Basin. Discharges are prohibited through months from April 1 through October 31 each year.*

Concern 1

At the time of the inspection, during the month of June, effluent was flowing out of the outfall to the river, which is a prohibited and unpermitted discharge.

Requirement 2

NPDES Permit NM0024848, Part I: A. Limitations and Monitoring Requirements 1. *OUTFALL 001 - FINAL Effluent Limits – 0.144 MGD Design Flow*

NPDES Permit NM0024848, Part II: E. Whole Effluent Toxicity Testing (7-Day Chronic NOEC Freshwater)

1.a. *The permittee shall test the effluent for toxicity in accordance with the provisions in this section.*

WHOLE EFFLUENT TOXICITY (7-Day Chronic Static Renewal/ NOEC) (*8)	VALUE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Ceriodaphnia dubia	Report	Yearly	24-hr Composite
Pimephales promelas	Report	Yearly	24-hr Composite

Concern 2

Sample dates for the WET Testing in 2024 occurred on 4/16/2024 and 4/17/2024 (see Appendix 2). The WET Test did pass the survivability criteria; however, these dates are during the time period when discharges at the outfall are prohibited, therefore there should be no “effluent” to sample. WET Test samples must be collected during times when the WWTP is authorized to discharge.

Requirement 3

NPDES Permit NM0024848, Part I: C. Monitoring and Reporting 1. *Reporting periods shall end on the last day of the months March, June, September, and December.* 2. *The permittee is required to submit regular reports as described above postmarked no later than the 28th day of the month following each reporting period.*

Concern 3

As of the writing of this inspection report, permittee has not submitted Discharge Monitoring Reports for the 11 months of April 2023, May 2023, June 2023, and November 2023, through June 2024. As Inspector did not receive requested copies of sampling results, it is not clear whether the required samples were collected.

Requirement 4

NPDES Permit NM0024848, Part I: C. Monitoring and Reporting 3. No Discharge Reporting: *If there is no discharge at Outfall 001 during the sampling month, place an "X" in the NO DISCHARGE box located in the upper right corner of the Discharge Monitoring Report.*

Concern 4

Discharge monitoring reports for April through October 2019, April through October 2020, April through October 2021, April through October 2022, and July through October 2023 appear to indicate that permittee has been discharging at Outfall 001. Permittee has never indicated “no discharge” on their DMRs.

Requirement 5

NPDES Permit NM0024848, Part I: E. Pollution Prevention Requirements: *The permittee shall institute a program within 12 months of the effective date of the permit (or continue an existing one) directed towards optimizing the efficiency and extending the useful life of the facility. The permittee shall consider the following items in the program: a. The influent loadings, flow and design capacity; b. The effluent quality and plant performance; c. The age and expected life of the wastewater treatment facility's equipment; d. Bypasses and overflows of the tributary sewerage system and treatment works; e. New developments at the facility; f. Operator certification and training plans and status; g. The financial status of the facility; h. Preventative maintenance programs and equipment conditions and; i. An overall evaluation of conditions at the facility.*

Concern 5

Permittee was unable to provide a Pollution Prevention Program.

Requirement 6

NPDES Permit NM0024848, Part III: Standard Conditions A.7. Duty To Provide Information: *The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.*

NPDES Permit NM0024848, Part III: Standard Conditions C.1. Inspection And Entry: *The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by the law to: b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.*

Concern 6

The Permittee did not submit all documents requested (see Section III – Records Review).

Requirement 7

NPDES Permit NM0024848, Part III: Standard Conditions B.2. Duty To Mitigate: *The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.*

Concern 7

After the valve to the Outfall is closed, permittee does not verify that flow to the river has stopped. There is no high-level alarm in the wet well prior to the valves to the Outfall and Reuse Pond (see Observations 5 and 6). If both valves were closed at the same time, the wet well would likely overflow, and effluent would unknowingly flow to the river.

Requirement 8

NPDES Permit NM0024848, Part III: Standard Conditions B.3. Proper Operation and Maintenance a. *The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by permittee as efficiently as possible and in a manner which will minimize upsets and discharges of excessive pollutants and will achieve compliance with the conditions of this permit.*

Concern 8A

Grit is not being removed properly at the headworks and is making it into the aeration basins where operators periodically remove the grit manually. Grit that is present in the treatment train causes excessive wear on piping and basin walls and may cause blowers and pumps to fail prematurely.

Concern 8B

Permittee is not properly operating the wet well and valves to ensure that flow has been redirected from the outfall to the reuse pond (see Observations 5 and 6) during the months when discharge is prohibited.

Concern 8C

Permittee is storing a small tractor in the laboratory that is used to move sludge in the drying beds. This could cause laboratory sample contamination.

Requirement 9

NPDES Permit NM0024848, Part III: Standard Conditions B.3. Proper Operation and Maintenance b. *The permittee shall provide an adequate operating staff which is duly qualified to carry out operation, maintenance and testing functions required to insure compliance with the conditions of this permit.*

In accordance with New Mexico Administrative Code (NMAC) 20.7.4, in order to “operate” this facility, a Level 3 Wastewater Certification is required. Operate is defined as “performing any activity or function or making any process control or system integrity decision regarding water quality or water quantity that has the

potential to affect the proper functioning of ... a public wastewater facility or to affect human health, public welfare or the environment."

Concern 9

At the time of the inspection, the facility had one full time operator with a Level 2 Wastewater certification and one operator with a Level 3 Wastewater certification who was contracted to visit the facility one day a week. Day to day operations require a qualified operator having full knowledge of the plant workings, including the quality of the effluent and whether or not effluent is being discharged to the river at the Outfall.

Requirement 10

NPDES Permit NM0024848, Part III. C.4. Record Contents: *Records of monitoring information shall include:*

a. The date, exact place, and time of sampling or measurements; c. The date(s) and time(s) analyses were performed; e. The analytical techniques or methods used; and f. The results of such analyses.

Concern 10

pH bench sheets, which are labeled as "pH Meter Calibration" (see Appendix 3) are missing the sample collection dates, sample collection times, as well as the dates of analysis. Analysis within the 15-minute holding times could not be verified. Dates recorded for "Date of Calibration" are difficult to read or have been scratched out. The pH values do not always match those listed for that day on the "Aero-Mod Log," leading to questions regarding whether the dates or pH value were filled in correctly on one or both sheets.

Requirement 11

NPDES Permit NM0024848, Part III. C.4. Record Contents: *Records of monitoring information shall include:*

b. The individual(s) who performed the sampling or measurements; [and] d. The individual(s) who performed the analyses;

Concern 11

Bench sheets must include separate locations for the recording of both the individual who collected the sample, and the individual who ran the analysis. The bench sheets include a single line for "tech initials" which appears to be the tech who performed the instrument calibration (see Appendix 3). The initials are often written in a different handwriting or color of ink pen than the rest of the form and these initials are not readily tied to the certified Operators as reported to the inspector. Initials noted on the bench sheets include "DM," "AA (Angelo Aragon)," and "AC" – it's not clear if DM and AC are certified operators.

Requirement 12

NPDES Permit NM0024848, Part III. C.5.a. *Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit or approved by the Regional Administrator.*

NPDES Permit NM0024848, Part III. C.5.b. *The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instruments at intervals frequent enough to insure accuracy of measurements and shall maintain appropriate records of such activities*

Concern 12

Permittee was unable to provide documentation of proper daily calibration of the pH meter for the time period requested. It is unknown when the pH buffers were opened, so they may have been expired. Expired pH buffers were also stored in the laboratory, so it could not be verified if analysts used the correct, unexpired buffers for each analysis. Calibration order of the buffers is typed into the bench sheet in the order of, "First

Buffer: 4:00; Second Buffer: 7:00; Third Buffer: 10:00" (see Appendix 2). This order would only be correct if the pH of the sample was expected to be less than pH 7 – pH measurements provided to the inspector from January 2024 through June 2024 show that all values were above pH 7. Calibration procedures that could change should not be pre-typed on bench sheets.

Requirement 13

NPDES Permit NM0024848, Part III. C.6 Flow Measurements: *Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than 10% from true discharge rates throughout the range of expected discharge volumes.*

Concern 13

Permittee's effluent flow meter is located prior to the wet well and valves that direct flow to either the Outfall at the river or the Reuse Pond. Permittee has no way to measure and has no awareness of whether water is flowing to the river through the Outfall. Flow meter values recorded on "AERO-MOD" Worksheets (see Appendix 4) are total plant influent and effluent flow, not flow to the Outfall. Permittee does not regularly verify electronic flow measurements against primary flow meters. The influent flow meter is missing the staff gauge completely, and the effluent flow meter staff gauge is unusable. Flow meter staff gauges must be fixed by a qualified technician and should be used to verify accuracy of electronic flow meters to within 10% monthly.

Section V – Closing Conference

EPA Region 6 inspector, Amy Andrews conducted a closing conference regarding the Village of Cuba Wastewater Treatment Plant at the Village Office at 1:00 PM on 6/25/2024, for the inspection. During the closing conference, Inspectors reviewed the Areas of Concern that were noted during the inspection. Additional AOCs were determined after the conclusion of the inspection and were not included in the closing conference.

Section VI – FOLLOW UP

The following information was received by EPA after exiting the Facility:

- Received 07/09/2024 – SEACREST GROUP-Report for Chronic Biomonitoring Tests.pdf
WET Test Laboratory Report dated 5/2/2024.
- Received 07/19/2024 – CUBA WWTP AERO-MOD Worksheets.pdf
Worksheets from 1/1/2024 to 6/30/2024; data includes daily influent flow meter readings, pH, process control, and effluent flow meter readings.
- Received 07/19/2024 – CUBA WWTP Instrument & Loop Calibration Record.pdf
Influent and effluent flow meter calibrations by Yukon & Associates LTD dated 12/13/2023.

- Received 07/19/2024 – Cuba WWTP PH & DO Calibration Worksheets.pdf
Worksheets with the following dates: 2/27/2024, 3/4/2024, 3/27/2024, 6/26/2024, 6/27/2024, 6/28/2024, 6/29/2024, 6/30/2024, 7/1/2024, 7/2/2024, 7/3/2024, 7/4/2024, 7/5/2024, 7/6/2024, 7/7/2024, 7/8/2024, 7/9/2024, and 7/10/2024.

Section VII – LIST OF APPENDICES

- Appendix 1 – Photograph Log – 14 photos taken 6/25/2024
- Appendix 2 – WET Test Laboratory Report – dated 5/2/2024
(first few pages, full report available upon request)
- Appendix 3 – PH & DO Calibration Worksheets – Various dates February 2024 through July 2024
- Appendix 4 – AERO-MOD Worksheets – dated January 2024 through June 2024

Appendix 1

Photograph Log

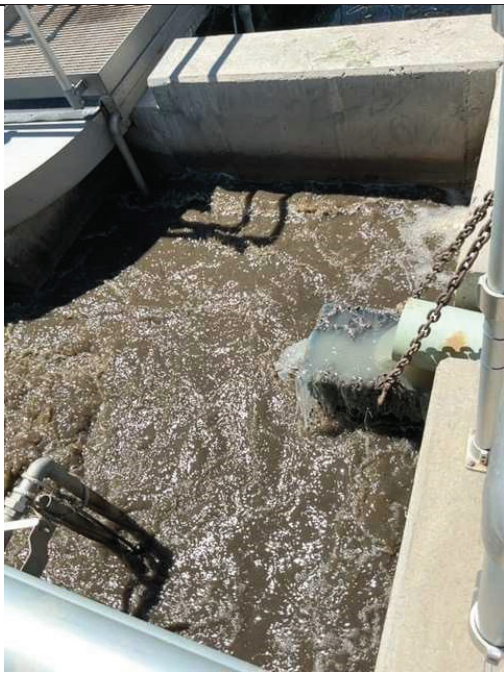


Photo 1			IMG-202406251118491849135305.jpg
06/25/2024 11:18 AM (MT)	No CBI	No PII	Photographer: Amy Andrews
Aeration basins			35.99274825, -106.98413847
Influent filter basket at the aeration basin is a plastic milk crate.			



Photo 2			IMG-202406251121272127126640.jpg
06/25/2024 11:21 AM (MT)	No CBI	No PII	Photographer: Amy Andrews
Aeration basins			35.99274825, -106.98413847
Influent filter basket at the aeration basin is a plastic milk crate.			



Photo 3			IMG-202406251125172517153917.jpg
06/25/2024 11:25 AM (MT)	No CBI	No PII	Photographer: Amy Andrews
Aeration basins			35.99274825, -106.98413847
Signification amount of grit present in aeration basins. Facility personnel skim the grit out manually with a net occasionally.			



Photo 4			IMG-2024062511300730789306.jpg
06/25/2024 11:30 AM (MT)	No CBI	No PII	Photographer: Amy Andrews
Effluent Flow Meter			35.99273351, -106.98408711
The staff gauge on the effluent flow meter had come detached from the wall of the flow meter and cannot be used for flow rate verification.			



Photo 5			IMG-202406251145244524145747.jpg
06/25/2024 11:45 AM (MT)	No CBI	No PII	Photographer: Amy Andrews
Wet Well and Valves to Reuse Pond and Outfall			35.99270124, -106.98406263
Valve to Outfall with key present in valve. Wet well is shown at right of the photo.			



Photo 6			IMG-202406251145354535198459.jpg
06/25/2024 11:45 AM (MT)	No CBI	No PII	Photographer: Amy Andrews
Wet Well and Valves to Reuse Pond and Outfall			35.99270124, -106.98406263
Valve to Outfall with key present in valve.			



Photo 7			IMG-202406251146144614163930.jpg
06/25/2024 11:46 AM (MT)	No CBI	No PII	Photographer: Amy Andrews
Wet Well and Valves to Reuse Pond and Outfall			35.99273505, -106.98411703
Valve to Outfall with key present in valve.			



Photo 8			IMG-202406251148584858121635.jpg
06/25/2024 11:48 AM (MT)	No CBI	No PII	Photographer: Amy Andrews
Wet Well and Valves to Reuse Pond and Outfall			35.99274824, -106.98413845
Inside of wet well, with no high level alarm sensor.			



Photo 9			IMG-202406251140104010201854.jpg
06/25/2024 11:40 AM (MT)	No CBI	No PII	Photographer: Amy Andrews
Outfall 001			35.99272503, -106.98405959
Effluent is flowing out of the Outfall.			



Photo 10			IMG-202406251140314031200587.jpg
06/25/2024 11:40 AM (MT)	No CBI	No PII	Photographer: Amy Andrews
Outfall 001			35.99272219, -106.98404994
Effluent is flowing out of the Outfall.			



Photo 11			DSCN2416.JPG
06/25/2024 11:17 AM	No CBI	No PII	Photographer: Amy Andrews
Laboratory			[Geographic Coordinates]
pH buffers without opened-on dates.			



Photo 12			DSCN2417.JPG
06/25/2024 11:17 AM	No CBI	No PII	Photographer: Amy Andrews
Laboratory			[Geographic Coordinates]
Expired pH buffers present in laboratory.			



Photo 13			DSCN2418.JPG
06/25/2024 11:18 AM	No CBI	No PII	Photographer: Amy Andrews
Laboratory			[Geographic Coordinates]
Expired pH buffers present in laboratory.			



Photo 14			DSCN2408.JPG
06/25/2024 11:07 AM	No CBI	No PII	Photographer: Amy Andrews
Laboratory			[Geographic Coordinates]
The small tractor used for moving sludge in the drying beds is stored inside the laboratory/polymer building where cross contamination of laboratory samples is possible.			

Appendix 2

WET Test Laboratory Report



SEACREST GROUP

ENVIRONMENTAL SERVICES LABORATORY

May 2, 2024

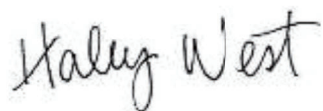
Esther Herrera
Village of Cuba
168 Cordova St
P.O. Box 426
Cuba, NM 87013

Dear Esther:

Enclosed is the report for chronic biomonitoring tests performed for the Village of Cuba on effluent from the WWTF 001 outfall. There was no statistically significant toxicity to either test species at any effluent concentration. The effluent passes WET (Whole Effluent Toxicity) testing requirements for this sampling period.

If you have any questions or concerns, please do not hesitate to contact me at (303) 661-9324.

Best regards,

A handwritten signature in black ink that reads "Haley West".

Haley West
Senior Laboratory Manager
Enclosure(s): Invoice
Report

**REPORT OF CHRONIC BIOMONITORING TESTS
CONDUCTED FOR
THE VILLAGE OF CUBA
ON EFFLUENT FROM
THE WWTF 001 OUTFALL**

Prepared for:

Esther Herrera
Village of Cuba
168 Cordova St
P.O. Box 426
Cuba, NM 87013

Prepared by:

Haley West
SeaCrest Group
500 S Arthur Ave. Suite 450
Louisville, Colorado 80027-3065
(303) 661-9324

May 2, 2024

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Chronic Toxicity Test Summary

Test:	7-day static renewal using <i>Ceriodaphnia dubia</i> 7-day static renewal using fathead minnow (<i>Pimephales promelas</i>)
Client:	Village of Cuba
Test Procedure Followed:	<i>Ceriodaphnia dubia</i> : EPA/821/R-02-013. Method 1002.0 (2002) fathead minnow: EPA/821/R-02-013. Method 1000.0 (2002)
Sample Number:	524171.B
Dilution Water:	matched receiving
Test Organism Source:	SeaCrest Group
Reference Toxicant:	Sodium Chloride

Sample	Time of Collection	Date of Collection	Time of Receipt	Date of Receipt
Effluent 1	NTR	NDR	0850	04-16-2024
Receiving 1	NTR	NDR	0850	04-16-2024
Effluent 2	1020	04-16-2024	0845	04-17-2024
Receiving 2	1030	04-16-2024	0845	04-17-2024
Effluent 3	1010	04-17-2024	0930	04-22-2024
Receiving 3	1000	04-17-2024	0930	04-22-2024

	<i>Ceriodaphnia dubia</i>	fathead minnow
Test Initiation Time	1335	1100
Test Initiation Date	04-16-2024	04-16-2024
Test Completion Time	1235	1130
Test Completion Date	04-23-2024	04-23-2024

Abstract with Results

Test Concentrations:	MR control (0%), 8%, 11%, 14%, 19%, 25%, MH control
Number of Organisms/Concentration:	10 for <i>Ceriodaphnia dubia</i> 40 for fathead minnow
Replicates at each Concentration:	10 for <i>Ceriodaphnia dubia</i> 5 for fathead minnow

	<i>Ceriodaphnia dubia</i>	fathead minnow
Test vessel size/Exposure volume	30ml/15ml	500ml/200ml
Sub-lethal NOEL/IC25	25%/>25%	25%/>25%
Pass/Fail Status	PASS	PASS
Temperature Range (°C)	24.1 – 25.5	24.1 – 25.4
Dissolved Oxygen Range (mg/L)	6.5 – 7.8	3.9 – 7.8
pH Range	7.7 – 8.4	6.2 – 8.4

	MR Control	MH Control (<i>Cerio</i> /FHM)	100% effluent	Receiving water
Hardness (mg/L as CaCO ₃)	103	86/95	400/442/367	103/88/101
Alkalinity (mg/L as CaCO ₃)	57	57/64	419/468/423	65/71/68
Total residual chlorine (mg/L)	<0.01	<0.01	0.01/<0.01/<0.01	N/A
Total ammonia (mg/L as NH ₃)	<0.03	<0.03	20.1/19.5/24.8	N/A

Appendix 3

PH & DO Calibration Worksheets

VILLAGE OF CUBA WASTE WATER LAB PH AND DO CALIBRATION WORKSHEET

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS) Using 10 buffer in place of 9

LE: GRAB GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

DATE OF CALIBRATION: 6:53 AM	DATE OF CALIBRATION: 3/24/24 2/27/24
TEC INITIALS: DM	TEC INITIALS: DM
DO SAMPLE READING: 4:00	DO SAMPLE READING: 5.10
METER READING: 6.93	TEMP OF DO SAMPLE:
METER READING: 9.71	
SAMPLE TEMP READING	SAMPLE ADJUSTMENT

In measurement mode, dip the pH and ATC sensor(s) into your first standard, then press **ENTER**. The primary display will search for the nearest standard value, while the secondary display will show the un-adjusted value.

When the "READY" indicator appears, press **ENTER** to accept. The primary reading will flash.

Then dip the electrode(s) into the next pH standard. The primary display will search for the nearest standard value that has not yet been calibrated, while the secondary display will show the unadjusted value. When the "READY" indicator appears, press **ENTER** to accept. Then dip the electrode(s) into another pH standard repeat Step 3 or press **MEAS** to return to pH measurement mode.

DO METER CALIBRATION

METER USE 40 CFR 136.3 – YSI, 55

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

DATE OF CALIBRATION: 3/4/24	TEC INITIALS: DM
TIME OF CALIBRATION: 8:53	DO SAMPLE READING: 5.10
TIME OF SAMPLE: 9:07	TEMP OF DO SAMPLE:

CHLORINE RESIDUAL

1. Rinse the probe well with clean water. From % saturation mode, press **CAL**.
2. The primary display will show the calibration value, While the secondary display shows Unadjusted value and the lower display shows the measured temperature.
3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to stabilize. Press **ENTER** to accept.

COMMENTS:

VILLAGE OF CUBA WASTE WATER LAB
PH AND DO CALIBRATION WORKSHEET

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS) Using 10 buffer in place of 9

LE: GRAB

GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

DATE OF CALIBRATION:	3/27/24
TEC INITIALS:	DM
DO SAMPLE READING:	5.28
TEMP OF DO SAMPLE:	

CHLORINE RESIDUAL

1. Rinse the probe well with clean water. From % saturation mode, press **CAL**.
2. The primary display will show the calibration value, While the secondary display shows Unadjusted value and the lower display shows the measured temperature.
3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to stabilize. Press **ENTER** to accept.

COMMENTS:

electrode(s) then dip into the next pH standard. The primary display will search for the standard value that has not yet been calibrated, while the secondary display shows the unadjusted value. When the "READY" indicator appears, press **ENTER** to accept. Press another pH standard repeat Step 3 or press **MEAS** to return to pH measurement mode.

VILLAGE OF CUBA WASTE WATER LAB PH AND DO CALIBRATION WORKSHEET

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS)

Using 10 buffer in place of 9

LE: GRAB

GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

PLE TEST: 845	DATE OF CALIBRATION: 2/27/24
o: AA	BUFFER DATE PURCHASED:
o: 10/14/21	EXPIRATION DATE: 4/24
: 4:00	METER RADING: 4.85
ER: 7:00	METER READING: 6.89
R: 10:00	METER READING 9.85
ADING	SAMPLE TEMP READING
	SAMPLE ADJUSTMENT

measurement mode, dip the pH and ATC sensor(s) into your first standard, then **AL**. The primary display will search for the nearest standard value, while the display will show the un-adjusted value.

READY "indicator appears, press **ENTER** to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for standard value that has not yet been calibrated, while the secondary display shows the unadjusted value. When the **"READY"** indicator appears, press **ENTER** to accept. another pH standard repeat Step 3 or press **MEAS** to return to pH measurement

DO METER CALIBRATION

METER USE 40 CFR 136.3 – YSI, 55

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

DATE OF CALIBRATION: 2/27/24	TEC INITIALS: AA
TIME OF CALIBRATION: 8:45	DO SAMPLE READING:
TIME OF SAMPLE: 8:50	TEMP OF DO SAMPLE:

CHLORINE RESIDUAL

1. Rinse the probe well with clean water. From % saturation mode, press **CAL**.

2. The primary display will show the calibration value, While the secondary display shows Unadjusted value and the lower display shows the measured temperature.

3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to stabilize. Press **ENTER** to accept.

COMMENTS:

VILLAGE OF CUBA WASTE WATER LAB PH AND DO CALIBRATION WORKSHEET

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS)

Using 10 buffer in place of 9

LE: GRAB

GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

PLE TEST: 10:30	DATE OF CALIBRATION: 6/26/25
DO: DM	BUFFER DATE PURCHASED: 3/20/24
DO: 4:00	EXPIRATION DATE: 9/25
METER: 7:00	METER RADING: 420
ER: 10:00	METER READING: 678
ADING	METER READING 9.89
	SAMPLE TEMP READING 20.9
	SAMPLE ADJUSTMENT 20.9

measurement mode, dip the pH and ATC sensor(s) into your first standard, then **AL**. The primary display will search for the nearest standard value, while the display will show the un-adjusted value.

READY "indicator appears, press **ENTER** to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for standard value that has not yet been calibrated, while the secondary display shows unadjusted value. When the **"READY"** indicator appears, press **ENTER** to accept. another pH standard repeat Step 3 or press **MEAS** to return to pH measurement

DO METER CALIBRATION

METER USE 40 CFR 136.3 – YSI, 55

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

DATE OF CALIBRATION: 6/26/24	TEC INITIALS: Day
TIME OF CALIBRATION: 10:25	DO SAMPLE READING: 5.70
TIME OF SAMPLE: 10:30	TEMP OF DO SAMPLE: 20.0

CHLORINE RESIDUAL

1. Rinse the probe well with clean water. From % saturation mode, press **CAL**.

2. The primary display will show the calibration value, While the secondary display shows Unadjusted value and the lower display shows the measured temperature.

3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to stabilize. Press **ENTER** to accept.

COMMENTS:

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS)

LE: GRAB

GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

DATE OF CALIBRATION	6/27-24
BUFFER DATE PURCHASED:	3/20/14
EXPIRATION DATE:	9/23
METER READING:	4.11
METER READING:	6.47
METER READING	9.95
SAMPLE TEMP READING	SAMPLE ADJUSTMENT
21.9	21.9

measurement mode, dip the pH and ATC sensor(s) into your first standard, then **ALL**. The primary display will search for the nearest standard value, while the display will show the un-adjusted value.

READY "indicator appears, press **ENTER** to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for standard value that has not yet been calibrated, while the secondary display will show unadjusted value. When the "READY" indicator appears, press **ENTER** to accept. For another pH standard repeat Step 3 or press **MEAS** to return to pH measurement.

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS)

LE: GRAB

GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

DATE OF CALIBRATION	6/27-24
BUFFER DATE PURCHASED:	3/20/14
EXPIRATION DATE:	9/23
METER READING:	4.11
METER READING:	6.47
METER READING	9.95
SAMPLE TEMP READING	SAMPLE ADJUSTMENT
21.9	21.9

measurement mode, dip the pH and ATC sensor(s) into your first standard, then **ALL**. The primary display will search for the nearest standard value, while the display will show the un-adjusted value.

READY "indicator appears, press **ENTER** to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for standard value that has not yet been calibrated, while the secondary display will show unadjusted value. When the "READY" indicator appears, press **ENTER** to accept. For another pH standard repeat Step 3 or press **MEAS** to return to pH measurement.

DO METER CALIBRATION

METER USE 40 CFR 136.3 – YSI, 55

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

DATE OF CALIBRATION:	6-27-24	TEC INITIALS:	DM
TIME OF CALIBRATION:	9:20 AM	DO SAMPLE READING:	5.75
TIME OF SAMPLE:	9:15	TEMP OF DO SAMPLE:	21.1

CHLORINE RESIDUAL:

1. Rinse the probe well with clean water. From % saturation mode, press **CAL**.
2. The primary display will show the calibration value, While the secondary display shows Unadjusted value and the lower display shows the measured temperature.
3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to stabilize. Press **ENTER** to accept.

COMMENTS:

VILLAGE OF CUBA WASTE WATER LAB PH AND DO CALIBRATION WORKSHEET

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS) Using 10 buffer in place of 9

LE: GRAB

GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

PLE TEST:	1:20	DATE OF CALIBRATION:	6/28/24
TEC INITIALS:	AC	BUFFER DATE PURCHASED:	3/20/24
DO:	6/24/24	EXPIRATION DATE:	9/25
TIME:	4:00	METER RADING:	4.01
TEMPERATURE:	7:00	METER READING:	7.00
DO:	10:00	METER READING	10.00
READING	SAMPLE TEMP READING	SAMPLE ADJUSTMENT	
	25.0 c	25.0 c	

measurement mode, dip the pH and ATC sensor(s) into your first standard, then
AL. The primary display will search for the nearest standard value, while the
display will show the un-adjusted value.

READY "indicator appears, press ENTER to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for
standard value that has not yet been calibrated, while the secondary display
the unadjusted value. When the "READY" indicator appears, press ENTER to accept.
another pH standard repeat Step 3 or press MEAS to return to pH measurement

DO METER CALIBARATION

METER USE 40 CFR 136.3 – YSI, 55

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

DATE OF CALIBRATION:	6/28/24	TEC INITIALS:	AC
TIME OF CALIBRATION:	1:20	DO SAMPLE READING:	5.01
TIME OF SAMPLE:	1:25	TEMP OF DO SAMPLE:	23.2 c

CHLORINE RESIDUAL

1. Rinse the probe well with clean water. From % saturation mode, press CAL.

2. The primary display will show the calibration value, While the secondary display shows
Unadjusted value and the lower display shows the measured temperature.

3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to
Press ENTER to accept.

COMMENTS:

VILLAGE OF CUBA WASTE WATER LAB PH AND DO CALIBRATION WORKSHEET

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS)

Using 10 buffer in place of 9

LE: GRAB

GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

PLE TEST:	10:00	DATE OF CALIBRATION:	6-29-24
:	A.C	BUFFER DATE PURCHASED:	3/20/24
:	6/24/24	EXPIRATION DATE:	9/25
:	4:00	METER RADING:	4.91
ER:	7:00	METER READING:	7.99
:	10:00	METER READING	19.00
ADING	SAMPLE TEMP READING	SAMPLE ADJUSTMENT	
	25.0 °C		25.0 °C

measurement mode, dip the pH and ATC sensor(s) into your first standard, then **AL**. The primary display will search for the nearest standard value, while the display will show the un-adjusted value.

READY "indicator appears, press **ENTER** to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for standard value that has not yet been calibrated, while the secondary display shows unadjusted value. When the **"READY"** indicator appears, press **ENTER** to accept. another pH standard repeat Step 3 or press **MEAS** to return to pH measurement

DO METER CALIBARATION

METER USE 40 CFR 136.3 – YSI, 55

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

DATE OF CALIBRATION:	6-29-24	TEC INITIALS:	A.C
TIME OF CALIBRATION:	10:00	DO SAMPLE READING:	5.16
TIME OF SAMPLE:	10:20	TEMP OF DO SAMPLE:	21.2 °C

CHLORINE RESIDUAL

1. Rinse the probe well with clean water. From % saturation mode, press **CAL**.
2. The primary display will show the calibration value, While the secondary display shows Unadjusted value and the lower display shows the measured temperature.
3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to stabilize. Press **ENTER** to accept.

COMMENTS:

VILLAGE OF CUBA WASTE WATER LAB PH AND DO CALIBRATION WORKSHEET

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS) Using 10 buffer in place of 9

LE: GRAB GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

PLE TEST:	11:30	DATE OF CALIBRATION:	6-30-24
TECH:	A.C	BUFFER DATE PURCHASED:	3/10/24
EXP:	6/29/24	EXPIRATION DATE:	9-25
TIME:	4:00	METER RADING:	4.01
METER:	7:00	METER READING:	7.00
TIME:	10:00	METER READING:	10.00
ADJUSTING	SAMPLE TEMP READING	SAMPLE ADJUSTMENT	
	22.1 °C		22.1 °C

measurement mode, dip the pH and ATC sensor(s) into your first standard, then **ENTER**. The primary display will search for the nearest standard value, while the display will show the un-adjusted value.

READY "indicator appears, press **ENTER** to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for standard value that has not yet been calibrated, while the secondary display shows unadjusted value. When the **"READY"** indicator appears, press **ENTER** to accept. another pH standard repeat Step 3 or press **MEAS** to return to pH measurement

DO METER CALIBRATION

METER USE 40 CFR 136.3 – YSI, 55

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

DATE OF CALIBRATION:	6-30-24	TECH INITIALS:	A.C
TIME OF CALIBRATION:	11:30	DO SAMPLE READING:	5.06
TIME OF SAMPLE:	11:45	TEMP OF DO SAMPLE:	22.3 °C

CHLORINE RESIDUAL

1. Rinse the probe well with clean water. From % saturation mode, press **CAL**.

2. The primary display will show the calibration value, While the secondary display shows Unadjusted value and the lower display shows the measured temperature.

3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to stabilize. Press **ENTER** to accept.

COMMENTS:

VILLAGE OF CUBA WASTE WATER LAB PH AND DO CALIBRATION WORKSHEET

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS) Using 10 buffer in place of 9

LE: GRAB GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

AMPLE TEST:	9.15	DATE OF CALIBRATION:	7/1/24
o: AA		BUFFER DATE PURCHASED:	3/20/24
o: 6/24/24		EXPIRATION DATE:	9/2
: 4:00		METER RADING:	4.01
ER: 7:00		METER READING:	7.10
R: 10:00		METER READING	10.09
ADING	25.0	SAMPLE TEMP READING	
		SAMPLE ADJUSTMENT	25.0

measurement mode, dip the pH and ATC sensor(s) into your first standard, then **AL**. The primary display will search for the nearest standard value, while the display will show the un-adjusted value.

READY "indicator appears, press **ENTER** to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for standard value that has not yet been calibrated, while the secondary display the unadjusted value. When the **"READY"** indicator appears, press **ENTER** to accept. another pH standard repeat Step 3 or press **MEAS** to return to pH measurement

New Ph sensor install, replaced old one
after solution as well

DO METER CALIBARATION

METER USE 40 CFR 136.3 – YSI, 55

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

DATE OF CALIBRATION:	7/1/24	TEC INITIALS:	AA
TIME OF CALIBRATION:	9:10	DO SAMPLE READING:	5.28
TIME OF SAMPLE:	9:05	TEMP OF DO SAMPLE:	25.0

CHLORINE RESIDUAL

1. Rinse the probe well with clean water. From % saturation mode, press **CAL**.

2. The primary display will show the calibration value, While the secondary display shows Unadjusted value and the lower display shows the measured temperature.

3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to stabilize. Press **ENTER** to accept.

COMMENTS:

VILLAGE OF CUBA WASTE WATER LAB
PH AND DO CALIBRATION WORKSHEET

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS) Using 10 buffer in place of 9

LE: GRAB GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

PLE TEST: 9:00 am	DATE OF CALIBRATION: 7-2-24
TEC: A.C.	BUFFER DATE PURCHASED: 4/20/21
DO: 4/19/24	EXPIRATION DATE: 9-2-5
: 4:00	METER RADING: 4.03
ER: 7:00	METER READING: 7.07
ER: 10:00	METER READING 10.21
ADING	SAMPLE TEMP READING
	25.0 c
	SAMPLE ADJUSTMENT
	25.0 c

measurement mode, dip the pH and ATC sensor(s) into your first standard, then
AL. The primary display will search for the nearest standard value, while the
display will show the un-adjusted value.

READY "indicator appears, press ENTER to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for
standard value that has not yet been calibrated, while the secondary display
the unadjusted value. When the "READY" indicator appears, press ENTER to accept.
another pH standard repeat Step 3 or press MEAS to return to pH measurement

DO METER CALIBRATION

METER USE 40 CFR 136.3 – YSI, 55

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

DATE OF CALIBRATION: 7-2-24	TEC INITIALS: A.C.
TIME OF CALIBRATION: 9:20 am	DO SAMPLE READING: 5.26
TIME OF SAMPLE: 9:30 am	TEMP OF DO SAMPLE: 25.0 c

CHLORINE RESIDUAL

1. Rinse the probe well with clean water. From % saturation mode, press CAL.

2. The primary display will show the calibration value, While the secondary display shows
Unadjusted value and the lower display shows the measured temperature.

3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to st
Press ENTER to accept.

COMMENTS:

VILLAGE OF CUBA WASTE WATER LAB
PH AND DO CALIBRATION WORKSHEET

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS) Using 10 buffer in place of 9

TYPE: GRAB

GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

SAMPLE TEST: 8:00		DATE OF CALIBRATION: 7-3-24	
TECH: A.C		BUFFER DATE PURCHASED: 3-20-24	
DO: 6-24-24		EXPIRATION DATE: 9-25	
TIME: 4:00		METER RADING: 4.07	
METER: 7:00		METER READING: 7.92	
TIME: 10:00		METER READING 10.00	
READING	SAMPLE TEMP READING	SAMPLE ADJUSTMENT	
	21.05	21.05	

In measurement mode, dip the pH and ATC sensor(s) into your first standard, then CAL. The primary display will search for the nearest standard value, while the display will show the un-adjusted value.

"READY" indicator appears, press ENTER to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for standard value that has not yet been calibrated, while the secondary display the unadjusted value. When the "READY" indicator appears, press ENTER to accept. another pH standard repeat Step 3 or press MEAS to return to pH measurement

DO METER CALIBRATION

METER USE 40 CFR 136.3 – YSI, 55

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

DATE OF CALIBRATION: 7-3-24	TEC INITIALS: AC
TIME OF CALIBRATION: 8:10 am	DO SAMPLE READING: 5.72
TIME OF SAMPLE: 8:20 am	TEMP OF DO SAMPLE: 22.15

CHLORINE RESIDUAL:

1. Rinse the probe well with clean water. From % saturation mode, press CAL.

2. The primary display will show the calibration value, While the secondary display shows Unadjusted value and the lower display shows the measured temperature.

3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to Press ENTER to accept.

COMMENTS:

DO METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

METER USE 40 CFR 136.3 – YSI, 55

1-1586.85 (USGS)

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

E: GRAB

GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

DATE OF CALIBRATION:	7/4/83	TEC INITIALS:	
TIME OF CALIBRATION:	16:03	DO SAMPLE READING:	5.47
TIME OF SAMPLE:	10:00	TEMP OF DO SAMPLE:	21.0

CHLORINE RESIDUAL

1. Rinse the probe well with clean water. From % saturation mode, press **CAL**.

2. The primary display will show the calibration value, While the secondary display shows Unadjusted value and the lower display shows the measured temperature.

3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to stabilize. Press **ENTER** to accept.

COMMENTS:

measurement mode, dip the pH and ATC sensor(s) into your first standard, then **AL**. The primary display will search for the nearest standard value, while the display will show the un-adjusted value.

READY" indicator appears, press **ENTER** to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for standard value that has not yet been calibrated, while the secondary display the unadjusted value. When the "READY" indicator appears, press **ENTER** to accept. another pH standard repeat Step 3 or press **MEAS** to return to pH measurement

VILLAGE OF CUBA WASTE WATER LAB PH AND DO CALIBRATION WORKSHEET

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS) Using 10 buffer in place of 9

LE: GRAB GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

PLE TEST:	9:30	DATE OF CALIBRATION:	7-5-24
TECH:	A.C	BUFFER DATE PURCHASED:	3-20-24
DO:	6-24-24	EXPIRATION DATE:	9/25
TIME:	4:00	METER RADING:	4.08
TEMPER:	7:00	METER READING:	7.16
DO:	10:00	METER READING	10.25
READING	SAMPLE TEMP READING	SAMPLE ADJUSTMENT	25.90c

measurement mode, dip the pH and ATC sensor(s) into your first standard, then **AL**. The primary display will search for the nearest standard value, while the display will show the un-adjusted value.

READY "indicator appears, press **ENTER** to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for standard value that has not yet been calibrated, while the secondary display the unadjusted value. When the **"READY"** indicator appears, press **ENTER** to accept. another pH standard repeat Step 3 or press **MEAS** to return to pH measurement

DO METER CALIBARATION

METER USE 40 CFR 136.3 – YSI, 55

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

DATE OF CALIBRATION:	7-5-24	TEC INITIALS:	A.C
TIME OF CALIBRATION:	9:38	DO SAMPLE READING:	5.62
TIME OF SAMPLE:	9:40	TEMP OF DO SAMPLE:	19.1c

CHLORINE RESIDUAL

1. Rinse the probe well with clean water. From % saturation mode, press **CAL**.

2. The primary display will show the calibration value, While the secondary display shows Unadjusted value and the lower display shows the measured temperature.

3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to Press **ENTER** to accept.

COMMENTS:

COMMENTS:

VILLAGE OF CUBA WASTE WATER LAB
PH AND DO CALIBRATION WORKSHEET

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS) Using 10 buffer in place of 9

LE: GRAB GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

DATE OF CALIBRATION:	7/27/24
TIME OF CALIBRATION:	9:03
TIME OF SAMPLE:	9:00

measurement mode, dip the pH and ATC sensor(s) into your first standard, then
 1. The primary display will search for the nearest standard value, while the
 display will show the un-adjusted value.

READY "indicator appears, press ENTER to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for
 standard value that has not yet been calibrated, while the secondary display
 the unadjusted value. When the "READY" indicator appears, press ENTER to accept.
 another pH standard repeat Step 3 or press MEAS to return to pH measurement

DO METER CALIBRATION

METER USE 40 CFR 136.3 – YSI, 55

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

DATE OF CALIBRATION:	7/27/24	TEC INITIALS:	CO
TIME OF CALIBRATION:	9:03	DO SAMPLE READING:	5.19
TIME OF SAMPLE:	9:00	TEMP OF DO SAMPLE:	23.1

CHLORINE RESIDUAL

1. Rinse the probe well with clean water. From % saturation mode, press CAL.

2. The primary display will show the calibration value, While the secondary display shows
 Unadjusted value and the lower display shows the measured temperature.

3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to st
 Press ENTER to accept.

COMMENTS:

VILLAGE OF CUBA WASTE WATER LAB
PH AND DO CALIBRATION WORKSHEET

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS) Using 10 buffer in place of 9

LE: GRAB GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

DATE OF CALIBRATION:	7/8/24
TIME OF CALIBRATION:	10:33
TIME OF SAMPLE:	10:50

measurement mode, dip the pH and ATC sensor(s) into your first standard, then
AL. The primary display will search for the nearest standard value, while the
display will show the un-adjusted value.

READY "indicator appears, press ENTER to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for
standard value that has not yet been calibrated, while the secondary display
the unadjusted value. When the "READY" indicator appears, press ENTER to accept.
another pH standard repeat Step 3 or press MEAS to return to pH measurement

DO METER CALIBRATION

METER USE 40 CFR 136.3 – YSI, 55

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

DATE OF CALIBRATION:	7/8/24	TEC INITIALS:	QO
TIME OF CALIBRATION:	10:33	DO SAMPLE READING:	5.32
TIME OF SAMPLE:	10:50	TEMP OF DO SAMPLE:	21.1

CHLORINE RESIDUAL

1. Rinse the probe well with clean water. From % saturation mode, press CAL.

2. The primary display will show the calibration value, While the secondary display shows
Unadjusted value and the lower display shows the measured temperature.

3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to st
Press ENTER to accept.

COMMENTS:

VILLAGE OF CUBA WASTE WATER LAB
PH AND DO CALIBRATION WORKSHEET

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS) Using 10 buffer in place of 9

TYPE: GRAB GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

SAMPLE TEST: 8:35 AM		DATE OF CALIBRATION: 7-9-24
TECH: DM		BUFFER DATE PURCHASED: 3/10/14
DO: 7-9-24		EXPIRATION DATE: 9/25
TIME: 4:00		METER RADING: 4.17
TEMPER: 7:00		METER READING: 7.07
TIME: 10:00		METER READING 9.89
READING	SAMPLE TEMP READING	SAMPLE ADJUSTMENT
	25.0	25.0

measurement mode, dip the pH and ATC sensor(s) into your first standard, then
CAL. The primary display will search for the nearest standard value, while the
display will show the un-adjusted value.

READY "indicator appears, press ENTER to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for
standard value that has not yet been calibrated, while the secondary display
the unadjusted value. When the "READY" indicator appears, press ENTER to accept.
another pH standard repeat Step 3 or press MEAS to return to pH measurement

DO METER CALIBRATION

METER USE 40 CFR 136.3 – YSI, 55

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

DATE OF CALIBRATION: 7-9-24	TEC INITIALS: DM
TIME OF CALIBRATION: 8:40	DO SAMPLE READING: 5.07
TIME OF SAMPLE: 8:35	TEMP OF DO SAMPLE: 20.5

CHLORINE RESIDUAL

1. Rinse the probe well with clean water. From % saturation mode, press CAL.

2. The primary display will show the calibration value, While the secondary display shows
Unadjusted value and the lower display shows the measured temperature.

3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to st
Press ENTER to accept.

COMMENTS:

VILLAGE OF CUBA WASTE WATER LAB
PH AND DO CALIBRATION WORKSHEET

PH METER CALIBRATION

Make, model of PH meter- Oakton PH-cot

1-1586.85 (USGS) Using 10 buffer in place of 9

LE: GRAB GRAB LOCATION: UV EFFLUENT

PH METER CALIBRATION

PLE TEST:	9:10 AM	DATE OF CALIBRATION:	7-10-24
TECH:	DM	BUFFER DATE PURCHASED:	3/20/14
DO:	7-9-24	EXPIRATION DATE:	9/25
TIME:	4:00	METER RADING:	4.20
TEMPER:	7:00	METER READING:	7.04
TIME:	10:00	METER READING:	9.87
ADJUSTING	SAMPLE TEMP READING	SAMPLE ADJUSTMENT	
	25.0	25.0	

measurement mode, dip the pH and ATC sensor(s) into your first standard, then
AL. The primary display will search for the nearest standard value, while the
display will show the un-adjusted value.

READY "indicator appears, press ENTER to accept. The primary reading will flash

electrode(s) then dip into the next pH standard. The primary display will search for
standard value that has not yet been calibrated, while the secondary display
the unadjusted value. When the "READY" indicator appears, press ENTER to accept.
another pH standard repeat Step 3 or press MEAS to return to pH measurement

DO METER CALIBRATION

METER USE 40 CFR 136.3 -- YSI, 55

TYPE OF SAMPLE: GRAB

GRAB LOCATION:

DATE OF CALIBRATION:	7-10-24	TECH INITIALS:	DM
TIME OF CALIBRATION:	9:15	DO SAMPLE READING:	5.09
TIME OF SAMPLE:	9:10 AM	TEMP OF DO SAMPLE:	20.8

CHLORINE RESIDUAL

1. Rinse the probe well with clean water. From % saturation mode, press CAL.

2. The primary display will show the calibration value, While the secondary display shows
Unadjusted value and the lower display shows the measured temperature.

3. Submerge probe in zero oxygen calibration solution and stir. Wait for the reading to stabilize.
Press ENTER to accept.

COMMENTS:

Appendix 4

AERO-MOD Worksheets

AERO-MOD LOG

DATE	INF.FLOW MGD FLUME	PH	COMPRESSOR HOURS #1	COMPRESSOR HOURS #2	EFFLUENT DO	DO READING A-1	DO READING B-2	TEMP A-1	TEMP B-2	EFF FLOW MGD	TOTAL DAILY GALLONS
1	155648368	7.69	11496.4	9750.7	5.05	1.50	6.32			106408016	68,832
2	155712448	7.60	11496.4	9758.7	5.19	4.09	6.37			106469328	61,312
3	155792112	7.55	11496.4	9767.4	5.11	0.98	10.16			106546688	77,360
4	155875904	7.62	11496.4	9776.6	5.13	2.80	10.16			106625352	78,664
5	155956640	7.77	11496.4	9784.9	5.22	4.30	10.90			106702492	77,640
6	156046080	7.80	11496.4	9794.5	5.30	5.80	9.74			1067791120	88,128
7	156121168	7.79	11496.4	9804.0	5.29	2.69	7.10			106868384	77,264
8	156186992	7.63	11496.4	9812.8	5.19	4.56	9.48			106931072	62,688
9	156251632	7.49	11496.4	9821.6	5.08	5.03	9.45			107004280	73,208
10	156314960	7.56	11496.4	9832.1	5.13	5.13	10.16			107074464	70,184
11	156387232	7.39	11496.4	9841.5	5.20	5.28	9.38			107150152	75,688
12	156444968	7.76	11496.4	9852.5	5.06	4.46	10.16			107220144	69,992
13	156537296	7.70	11496.4	9862.1	5.19	2.18	7.36			107311560	91,416
14	156615456	7.71	11496.4	9873.8	5.16	2.90	8.34			107388136	76,576
15	156677344	7.73	11496.4	9882.0	5.23	4.77	8.08			107450560	62,424
16	156789280	7.76	11496.4	9892.6	5.19	5.18	8.29			107536680	86,120
17	156834944	7.69	11496.4	9904.2	5.07	3.93	10.16			107616544	79,864
18	156920768	7.63	11496.4	9914.5	5.32	3.42	8.24			107700680	84,136
19	157022864	7.60	11496.4	9924.1	5.27	4.30	9.53			107800208	99,528
20	157120704	7.59	11496.4	9933.6	5.20	3.52	8.08			107844696	94,488
21	157251328	7.73	11496.4	9943.3	5.41	3.37	9.07			108023336	128,640
22	157336112	7.64	11496.4	9953.2	5.31	3.11	7.41			108104704	81,868
23	15743632	7.67	11496.4	9962.8	5.27	3.26	10.16			108179816	74,312
24	157491088	7.63	11496.4	9972.8	5.19	3.68	10.16			108252200	73,184
25	157827328	7.40	11496.4	9983.6	5.16	5.34	1.61			108342258	90,088
26	157654016	7.62	11496.4	9993.1	5.13	5.47	5.68			108404280	62,008
27	157749344	7.64	11496.4	10003.1	5.20	2.75	5.34			108493752	89,456
28	157831696	7.69	11496.4	10014.1	5.29	1.14	5.49			108570896	77,144
29	157882916	7.77	11496.4	10021.7	5.01	3.42	10.16			108616344	45,448
30	157949728	7.65	11496.4	10031.8	5.05	4.30	8.81			108676880	60,536
31	15804192	7.59	11496.4	10042.0	5.07	3.94	10.16			108735072	58,192

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14-22

March 2014

AERO-MOD LOG ~~2014~~ ~~2013~~ M/LSS

DATE	INF.FLOW MGD FLUME	PH	COMPRESSOR HOURS #1	COMPRESSOR HOURS #2	EFFLUENT DO	DO READING A-1	DO READING B-2	TEMP A-1	TEMP B-2	EFF FLOW MGD	TOTAL DAILY GALLONS
1	160297296	7.60		10183.0	5.28	1.45	4.82			110723104	
2	160379432	7.71			5.31					1110805240	82,134
3	160446156	7.64		10199.2	5.39	0.57	5.34			1110810768	65,528
4	160519808	7.58		10191.4	5.10	4.61	6.22	2400	2600	110921000	50,232
5	160600144	7.61		10199.2	5.31	4.82	6.22			111001336	80,380
6	160680480	7.65		10197.2	5.28	4.82	6.22	1800	2400	111046568	25,232
7	160717920	7.77		10200.2	5.21	2.85	8.81	2200	2500	111095878	69,307
8	160789088	7.71		10203.3	5.38	3.16	10.10	3000	3300	111152696	56,824
9	160801243	7.68		10201.2	5.31	2.66	9.32	3200	3400	111201346	48,650
10	160853614	7.60		10210.0	5.50	3.48	8.62	3000	3200	111264251	62,905
11	16094472	7.58		10211.6	5.21	5.18	10.16	2600	2800	111328738	64,485
12	161065152	7.55		10214.3	5.25	4.97	6.44	2100	2400	111394216	65,480
13	161139430	7.67		10217.2	5.61	1.41	5.08	2700	2900	461370	62,160
14	161225440	7.72		10219.7	5.38	5.08	7.36	2200	2500	111534420	73,544
15	161326551	7.77		10222.8	5.36	0.62	5.13	2300	2400	111646132	111,212
16	161396256	7.50		10225.0	5.39	4.97	6.89	2800	3500	111686896	140,764
17	161467808	7.59		10230.8	5.27	0.47	6.87			111749276	69,256
18	161544320	7.60		10239.1	5.29	0.74	7.36	1700	2300	111814032	67,256
19	161625064	7.60		10243.4	5.25	1.12	4.87	2400	2700	111816704	74,672
20	161699296	7.78		10254.1	5.30	2.10	5.23	2100	2200	111954152	61,448
21	161716321	7.81		10271.6	5.21	4.17	6.09	2000	2200	112403178	149,020
22	161937088	7.85		10276.0	5.31	7.10	5.23	2200	2500	112493888	90,710
23	16203776	7.41		10287.5	5.29	4.40	7.48	2100	2300	112760424	66,536
24	162128904	7.61		10299.1	5.22	5.67	4.92	2000	2200	112829460	79,036
25	162207696	7.65		10306.9	5.27	3.32	7.51	1800	1900	112410880	71,428
26	162294446	7.58		10316.1	5.30	3.38	7.05	2200	2400	112471784	66,504
27	162367776	7.64		10325.9	5.28	3.49	6.37	2100	2300	112549616	72,232
28	162416784	7.71		10335.2	5.19	4.92	6.58	2200	2400	11260248	90,629
29	162554528	7.65		10346.1	5.15	3.21	8.44	2000	2100	112719744	79,496
30	162722608	7.60		10351.6	5.23	4.62	7.81	1900	2100	112857264	137,920
31											

14-22

April 20th

112857664

AERO-MOD LOG February 2020

[illegible]

MAY 2024

11496880

AERO-MOD LOG

MLSS

DATE	INF.FLOW MGD FLUME	PH	COMPRESSOR HOURS #1	COMPRESSOR HOURS #2	EFFLUENT DO	DO READING A-1	DO READING B-2	EFF FLOW MGD	TOTAL DAILY GALLONS
1	165010880	7.49	N/A	10641.1	5.14	0.67	8.24	115027576	65,736
2	165114112	7.56	N/A	10643.6	5.09	0.47	8.08	115125176	97,600
3	165186992	7.61	N/A		5.19	0.47	4.46	115192360	67,184
4	165225312	7.69	N/A		5.23	0.68	6.24	115260680	68,320
5	165349248	7.73		10651.3	5.20	3.75	0.47	115349896	83,216
6	165404176	7.70	N/A	10653.2	5.15	2.44	4.15	115400600	84,204
7	165449216	7.65		10656.5	5.17	0.47	5.13	115483960	83,860
8	165564592	7.63		10659.4	5.07	0.73	4.15	115561872	77,912
9	165650880	7.69		10662.2	5.25	2.93	4.15	115682080	80,208
10	165727312	7.80	N/A	10664.5	5.09	0.47	4.82	115715208	73,108
11	165842848	7.77	N/A	10665.4	5.11	0.42	4.21	115875960	80,325
12	165958384	7.73	N/A	10669.6	5.11	0.62	4.09	115930296	54,334
13	166035856	7.69	N/A	10671.7	5.25	0.47	4.35	116005832	75,586
14	166125960	7.54		10674.4	5.80	0.47	4.72	116153840	148,008
15	166286256	7.40		10676.6	5.23	0.47	4.61	116224648	80,808
16	166368656	7.63		10681.3	5.19	0.47	3.44	116285013	50,365
17	166441360	7.48			5.17			116326512	41,499
18	166496560	7.59		10683.9	5.09	0.47	4.04	116350002	83,420
19	166494522	7.67		10685.7	5.06	0.47	4.46	116424856	74,854
20	166569376	7.66			5.14	4.04	0.43	116507896	83,040
21	16655952	7.80			5.10	4.72	0.47	116600816	92,926
22	166746400	7.50			5.23	4.04	0.47	116644232	83,416
23	166830208	7.62		10731.6	5.35	0.47	6.01	116789668	75,430
24	166906171	7.46			5.17	0.47		116838325	78,663
25	166985824	7.66			5.20	0.47	3.44	116930504	92,174
26	167075728	7.73		10749.4	5.20	0.47		116999096	68,592
27	167141840	7.59			5.16			117067688	68,600
28	167204952	7.60	N/A		5.11	3.94	0.47	117138912	71,884
29	167282192	7.64		10768.6	5.09	0.47	3.94	117213216	74,304
30	167357728	7.67		10791.6	5.16	0.47	4.92	117279208	65,992
31	167426816	7.73	N/A	10799.0	5.06	0.47	5.44		

5/11- 115795584

Time 2024

117279208

AERO-MOD LOG

DATE	INF.FLOW MGD FLUME	PH	COMPRESSOR HOURS #1	COMPRESSOR HOURS #2	EFFLUENT DO	DO READING A-1	DO READING B-2	MLSS	EFF FLOW MGD	TOTAL DAILY GALLONS
1	6.7504	7.68		10797	5.20	0.47	3.78	2200	117364616	85,408
2	6.727854	7.71		10795	5.19	0.47	4.09		117420600	55,984
3	6.7125736	7.69		10801	5.29	0.47	2.73	2300	117469496	48,896
4	6.779296	7.73		10813.7	5.35	0.47	3.78	2200	117578412	109,416
5	6.7778912	7.79		10822.8	5.22	0.47	4.72	2200	117629920	51,008
6	6.7865884	7.80		10835.1	5.09	0.47	3.73	2300	117708344	78,824
7	6.79427600	7.85			5.15	0.47	3.73	2200	117751248	42,904
8	6.7865884	16.799600	7.69		5.12	0.47	4.21	2200	117823248	72,000
9	6.8061600	7.64			5.11	0.47	3.72	2100	117891248	68,000
10	6.8136960	7.59			5.04	0.47	3.73	2900	117950584	59,336
11	6.8230608	7.55			5.39	0.47	3.73	2300	118033592	83,008
12	6.8317328	7.32		10893.1	5.37	0.62	5.28	1900	118117912	84,320
13	6.8395600	7.61		10900.2	5.34	0.52	3.94	2500	118188576	70,664
14	6.84726521	7.90			5.29				118257240	68,664
15	6.8582208	7.89	—	10909.4	5.04	0.47	4.65		118355720	98,536
16	6.8642828	7.48		10919.7	5.15	0.67	4.80		118429804	73,480
17	6.8727744	7.59			5.09				118491247	62,041
18	6.8792560	7.60			5.64	0.57	7.95	1900	118553256	62,009
19	6.8867232	7.64			5.28	0.57	5.03	2000	118625498	72,242
20	6.8946240	7.71		10960.1	5.61	0.62	7.36	1900	118700160	71,662
21	6.9052446	7.76			5.49	0.47	5.44	2200	118811912	89,782
22	6.9148928	7.77			5.33	0.47	3.83	1900	118905416	93,504
23	6.9236864	7.63		10977.3	5.33	0.47	5.34	2100	118971058	65,592
24	6.9269824	7.61		10979.1	5.29	0.52	3.18	2000	119019816	48,808
25	6.9353680	7.59		10981.7	5.31	0.47	4.72	2300	119105272	85,454
26	6.9423728	7.91		10981.9	5.26	0.47	1.72	2000	119178160	66,544
27	6.9507888	7.97		10984.2	5.75	0.49	6.30	2100	119251848	80,032
28	6.9581312	7.57		10986.5	5.01	0.47	5.13	1700	11930112	78,264
29	6.9664712	7.44			5.16				119408680	78,568
30	6.9762096	7.55			5.06				119500792	99,112
31										

(Signature)