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City of Helena-West Helena (AR0043389 & AR0022021)
Quarterly Progress Reports
July 2023 – September 2023

Report Date : Oct 06, 2023
Current CAO Completion Date : TBD (Applied for extension on May 22, 2023)

Sl. No	TASK	ACTION/ PROGRESS
	MEETINGS/COMMUNICATIONS	
1.	June 20, 2023: City team lead by the Mayor and ETC Engineers met ADEQ team. The city requested extension of deadline to executed a mutually agreed CAO. Minutes of the meeting was not issued by ADEQ.	
	PEMIT RENEWAL	
2.	Renewal of West Helena NPDES Permit # **AR0022021**	• July 28, 2023: Renewal Application Package was submitted to DEQ. • Sep 18, 2023: Missing Information was submitted to DEQ in response to the Completeness letter of August 16, 2023.
	CORRECTIVE ACTION PLAN (CAP)	
3.	Collect all previous system inspection reports by ADEQ and other agencies and consultants	• Available information is collected from ADEQ server and from the City and reviewed.
4.	Determine status of the broken 12" sewer line and the areas around the broken pipe contaminated by the discharge.	• A report on the repair of broken pipe is included with this report. • Site visit was not possible for inaccessibility during this quarter. A site visit will be schedule during the winter.
5.	Determine status of the contaminated areas around SSOs.	• Site visit was not possible for inaccessibility during this quarter. A site visit will be schedule during the winter.
6.	Sources of unpermitted discharge and SSOs (Sewer System Overflow).	0%
7.	Develop comprehensive report on current collection system conditions by conducting field visits to collection system:	A 2017 report on the collection systems is included with this report. The finding will be updated with recent condition collected during upcoming site visits.
8.	Document condition of the pumping equipment.	2017 report will be updated with current condition
10.	Document condition of the pump control system.	2017 report will be updated with current condition
11.	Document condition of the power supply lines.	2017 report will be updated with current condition
12.	Document condition of the pump housing.	2017 report will be updated with current

Sl. No	TASK	ACTION/ PROGRESS
		condition
13.	Develop comprehensive report on current condition of the Sewer Treatment Plant and support system.	A 2017 report on the collection systems is included with this report. The finding will be updated with recent condition collected during upcoming site visits.
14.	Document condition of the access road	
15.	Document condition of the levee system	
16.	Document condition of outflow pipes	
17.	Develop milestone schedule for developing a systemwide CAP	Shall be developed after the completion of above tasks

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MS Registration No. 2632
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SURVEYORS and ENGINEERS

KENNETH L. WEILAND
Registered Professional Engineer
MS Registration No. 09971
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CORRECTIVE ACTION PLAN (CAP)

City of Helena-West Helena
'22 Oak Forrest Water Repair

1. Actions taken from 1200 Thursday, 24 February 2022 to 1600, 01 March 2022
    1) Engineer and staff made a field reconnaissance of the broken sewer line and began reviewing available plans of the line and adjoining manholes in order to make a rational plan to make the repair necessary to halt the sewer overflow. (Photo #1)
    2) During the field reconnaissance, an additional overflow from a blocked manhole upstream of the reported sewer line break was discovered and immediately reported to the water & sewer system manager.
    3) After the field reconnaissance and plan review, engineer developed a plan of how the existing broken line could be reconnected in a manner that would stop leakage using mechanical joints that would hold the line together and using ready mix bags to construct a temporary support pillar to lift the line back into alignment. The plan was discussed with water department staff to coordinate acquisition of the materials.
    4) Upon completion of the above line repair, the heavy utility contractor positioned a sewer cleaning machine downstream of the blocked manhole and was able to successfully clear the blockage in the line below the manhole.
    5) All repairs and clearing of the blocked line were completed as of 1600, Tuesday, 01 March 2022. The engineer and the utility contractor demobilized from the site. (Photo #2)

2. Proposed future corrective action plan
    - Detailed plans, technical specifications and contract documents should be developed for competitive bidding purposes (as desired by action of the city council) to accomplish the following:
        1) To prevent, or at least slow down the head cut occurring in the natural stream in and around the sewer line, erosion control such as rip-rap should be installed around the line crossing and the temporary support pillar.
        2) The "temporary" repair was made in such a manner that the repair may serve more than just a short-term leak stoppage. The weak joint that was over the middle of the ditch was shifted closer to the support of the embankment which strengthens the section spanning the stream bed. There is no data as to how high nor at what velocity water moves down the stream during major rainfall events. There is no data on how much debris or the nature of the debris that moves down the stream. It is recommended that city personnel make onsite inspections of the stream during the next heavy rainfall events to determine if significant

pressure is being applied to the sewer line during such events. If so, the following action should be added to the CAP.

3) To minimize the risk of debris striking the exposed line, a steel encasement or some other protective means should be installed on or around the exposed pipe.
4) Inspection of other exposed sewer lines in the area should be made and a plan to reinforce and protect those exposed lines can be included in the work.

- CAP Proposed Schedule-subsequent to the approval and engagement of an engineer and Notice to Proceed by the City:
  1) Assessment of city provided information/data of flow characteristics from (2) above = **1 week.**
  2) Additional review of reconnaissance of the existing, exposed sewer lines from which contract documents can be developed-**1 week.**
  3) Development of detailed plans, technical specifications, and contract documents-**4 weeks.**
  4) Approval of proposed contract documents for advertisement by the City-**2 weeks.**
  5) Advertise, bid, award-**6 weeks.**
  6) Construction complete-**4 weeks.**

3. Plan of Action for future reporting procedures
   - This item is the responsibility of the wastewater operator responsible under the NPDES permit and as required by all other local, state and federal reporting laws.
   - Any sewer overflow should be reported via the ADEQ Sanitary Sewer Overflow link:

     https://www.adeq.state.ar.us/water/enforcement/sso/submit.aspx?type=s.

   - Any sewer overflow shall be immediately brought to the attention of the Mayor and all appropriate action required by him and/or the City Council should be completed by emergency meetings if necessary and any other appropriate action as established by the city.

SMITH & WEILAND
SURVEYORS and ENGINEERS

This Corrective Action Plan was developed at the request of the City of Helena-West Helena as required by a letter from the AR Department of Environmental Quality dated February 23, 2022. (copy attached) Smith and Weiland is an independent consultant working under a specific contract for this project and as such takes no responsibility for the execution of the above recommended CAP nor any other wastewater operations by the city including required sanitary sewer overflow reporting procedures. Smith & Weiland makes no warranty or guarantee of work performed by the city's independent utility contractor for the temporary corrective action taken to date.

Please do not hesitate to call me if you have any questions regarding the above recommended CAP.

Respectfully submitted,

K.L. Weiland, P.E.

CERTIFICATE OF AUTHORIZATION
Smith & Weiland
Surveyors and
Engineers, Inc.
NO. 1732
ARKANSAS

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REGISTERED
PROFESSIONAL
ENGINEER
No. 10791
KENNETH L. WEILAND

KLW/bls
Attachments

C:\Mainfile\City of Helena-WHelena\'22 Oak Forrest Water Emergency\CORRECTIVE ACTION PLAN03022022.docx


PHOTO #1
2022/02/23


PHOTO #2
2022/03/03

System Assessment Report
Existing Operational Condition
Helena-West Helena
(2017)

1	Executive Summary
2	HWWTP Satellite Photo
3	PowerPoint Slides
4	TenCarva Service Reports
5	Appendix

Executive Summary

Assessment of the Helena-West Helena Water Department has been conducted over the past 4 months. Contained in this report are the actual system conditions, repairs completed to date, and recommended infrastructure repairs to the existing systems.

Across America the infrastructure of the Water Systems has deteriorated due to age and lack of replacement. Helena-West Helena finds itself in the same position that most other rural cities across America are now facing. Most of the water service lines in the city are over 60 years old and now are deteriorating to the point that replacement is the most viable option. We have lines (galvanized steel service supply lines) that have over 5 clamps on them within a 25-foot section. The thickness of the pipe walls has deteriorated over the years to the point that some pieces are around 1/32" in places. This is the cause of 95% of the leaks experienced in the city service water lines.

The booster stations in Helena were in very poor condition. One Sunday the Helendale booster station completely failed and emergency repairs were made to keep the City from running out of water in the West Tank. Because of the failure we have rebuilt the booster pump that was leaking and have replaced the actuator valve coil to operate the pumps. We are replacing the seals and bearing on the impellor assembly removed from the rebuilt pump as a spare. The Hydromatic Booster Station has both pumps leaking water so badly that the outer motor casing is corroding and the physical integrity of the pumps is questionable. There has not been an inspection on the pressurized tank at the station in over 15 years. Both pumps need rebuilding and possibly more extensive repairs required once we get into the system. West Helena has no booster stations.

Helena currently has only two operating water supply wells for the entire Helena system. Currently it requires both wells to meet the daily water demand on the system which is approximately 1.7 MGPD. There are an additional two wells that are inoperable. I am calling Layne pumps which installed our last well to try and determine why it will not operate. We currently have no back up wells in Helena if something were to happen to one of the operating wells. West Helena has 4 operating wells that are in good working condition. We service them annually and they have just begun that program within the last month.

There are 4 lift stations in West Helena. They are located at Southern Hardware, Dennis Drive, Airport Road, and Eliza Miller Loop Road. These stations are in excellent condition and currently no repairs are needed other than routine maintenance.

Helena currently has 9 Lift Stations servicing the city. Lift Station 1 is located behind the Bungee Storage Grain Bins. The pumps currently are operational and we are scheduling service

for them over the next quarter. The RTU is inoperable. We are evaluating required repairs to begin operating the system again. Lift station #2 and #4 are old drive shaft pumping stations that we need to schedule for upgrading over the next year with above ground pumps like what we have over at LS's 1, 3, 5, 7 and LS 9. At LS #4 we only have one pump that will operate because the pump housing has deteriorated beyond the point of repair. The pump that is operating now was rebuilt in June and Fred Garrison is working on rebuilding the other one we have for a spare. LS 3 is operating as designed. LS 5 has been completely rebuilt and still needs additional work before it will operate. Both pumps have had complete overhauls due to lack of maintenance to the system. Attached in the appendix are TenCarva service reports for the work they have conducted in Helena-West Helena. Prior to this rebuild, LS 5 last had any service on June 28, 2011. Both pumps at LS 7 have been rebuilt. LS 6 has three pumps which are supposed to operate as Lead, Lag, and backup. Currently only one pump of the 3 will operate and this condition has been going on for the past 12+ years. This is the reason you have no level control in your ponds and the cause of the extensive deterioration of your ponds. They are now operating in automatic. The Remote Terminal units for Lift Station 1, 5, 6, 7, and 9 are not operational. They all need to have upgraded boards installed. DFA no longer supports that platform and made retrofits for their older equipment to upgrade to newer style. LS 9 pumps have not been serviced for many years. We are scheduling a service visit this fall.

The West Helena WWTP has some issue along the levee wall on the Northwest corner of pond 2. Beavers built two huts in the bank and caused it to erode back approximately 5 to 8 feet. Tyrone Collins is scheduled to backfill with #2 stone this fall. There are a few other sections along the walls that need some rip rap installed, however the work is very minimal. These ponds are in very good shape and will require minimal attention to give many more years of productive waste water treatment.

The Helena WWTP is in catastrophic shape. You have erosion along every levee wall in every pond of the system. You have potential outer levee wall collapse in the Northeast corner of pond 1, as can be seen in the attached PowerPoint slides. You also have potential outer wall collapse in pond 3 in the Southwest corner. The erosion is beyond the levee road and into the back-support wall as can be seen in the PowerPoint presentation. There has been a section of levee between pond 2 and 3 that has collapsed below the water level preventing the separation of the two ponds thereby altering all the engineering design characteristics of the WWTP. The section of collapse is between 250 to 400 feet long (complete collapse) and an additional 500 to 800 feet of approximately 25% additional levee wall collapse. All levee gates between the ponds have severe structural damage. The levee gate between pond 3 and 4 has collapsed on the North side and approximately 3 to 5 feet of levee wall has disintegrated to below the water level. This means that ponds 2, 3 and 4 no longer act as singular units rather they are now one big pond. (For further explanation of Pond operation read the section on System Assessment from Operational Standpoint). The discharge levee gate as seen in the PowerPoint presentation has

almost completely eroded all the support dirt around the gate. Once this collapses the likelihood of system breech is imminent.

The Helena WWTP issues are beyond the scope of my ability to recommend repairs. My recommendation to the City Council is to contact a Design Engineering Environmental Waste Water Treatment Co., have them come in and asses your Helena WWTP, and tell you if it is repairable or if you should build a new WWTP for the City. I also recommend to the City Council that you contact the Arkansas Department of Natural Resources and the Arkansas Department of Environmental Quality and inform them of your intentions to address the issues in your waste water treatment plant and solicit any guidance that they may be able to provide.

System Assessment from Operational Standpoint

Helena-West Helena, AR.

Today, over 8,000 wastewater treatment ponds, comprising more than 50 percent of the wastewater treatment facilities in the United States, are in place. Oxidation (Facultative) Ponds are used to treat wastewater generated by communities across America. In the Delta area they are the primary treatment scheme used for Municipal Sanitary wastes. Ponds can be used alone or in combination with other wastewater treatment processes. Ponds generally require less energy than other treatment systems and have lower operation and maintenance costs.

Ponds are designed to enhance the growth of natural ecosystems that are either anaerobic (providing conditions for bacteria that grow in the absence of oxygen *[O2]* environments), aerobic (promoting the growth of *O2* producing and/or requiring organisms, such as algae and bacteria), or facultative, which is a combination of the two. Helena and West Helena Oxidation Ponds are both Facultative Systems meaning they incorporate both Aerobic and Anaerobic Digestion Processes. Ponds are managed to reduce concentrations of biochemical oxygen demand (BOD), TSS, pH and coliform numbers (fecal or total) to meet water quality requirements.

Biological Oxidation Ponds

The most common type of pond is the biological oxidation pond, which may also be called an oxidation or photosynthetic pond. Oxidation ponds are usually 0.9 - 2.4 m (3 to 8 feet) deep or deeper, with an aerobic layer overlying an anaerobic layer. Our Ponds were designed with a 5 to 6-foot depth. Aerobic treatment processes in the upper layer provide odor control, nutrient and BOD removal. Anaerobic fermentation processes, such as sludge digestion, denitrification and some BOD removal, occur in the lower layer.

Oxidation ponds are used to treat raw municipal wastewater in small communities and for primary or secondary effluent treatment for small or large cities. Helena's NPDES permit effluent BOD (Biological Oxidation Demand) specification as measured in the BOD5 test are 30 mg/l monthly avg. and 45 mg/l 7 day avg. and TSS (Total Suspended Solids) are 90 mg/l monthly avg. to 135 mg/l 7 day avg. Our pH limits are a minimum of 6.0 S.U. to 10.5 S.U. Ponds are designed in such a way to remove the desired amount of BOD loading, TSS and maintain pH in

required operation for permit discharge requirements. Oxidation ponds must be maintained to design specifications in order to meet our discharge requirements. When the integrity of the system is compromised, you change the design characteristics that the ponds were designed to achieve.

The following summary reviews the current state of the Helena and West Helena WWT facilities and recommendations of improvements that need to be made to maintain our legal responsibility to process and discharge sanitary wastes.

Current Systems Assessment

I. Helena WWTP

A. Northeast levee wall on the #1 Oxidation Pond has eroded approximately 70%. If wall breeches we will be in violation of our NPDES permit issued by ADEQ.

B. The Levee wall between pond 1 and 2 have deteriorated approximately 30% due to high water levels in the ponds.

C. There has been significant erosion along the levee walls behind the concrete liner in all ponds. This was caused by improper water level control. The recent flooding of the past 10 years has caused significant structural damage to all Oxidation Ponds.

D. A complete levee wall collapse has occurred approximately 300 to 500 feet long between the #2 and #3 Oxidation Ponds. Along the remaining 500 feet of levee wall between 2 & 3, there has been approximately 25% additional erosion along the banks.

E. Oxidation Pond #3 along the South West levee wall there is erosion of that wall approximately 25 yds long and 2/3rd of the levee wall. It is the weakest outside wall and the most likely to give us problems first.

F. The levee gate between pond 3 & 4 has collapsed on the North side of the gate. There is approximately a 3-foot section of the wall that has collapsed.

G. The discharge levee gate has lost approximately 75% of the dirt around the gate due to erosion. Water has come all the way around the levee and this is our final discharge gate to Lift Station #6.

H. The levee gate between cells 3 & 4 has collapsed on the North-East side of the gate. There no longer is structural integrity between cells 2 & 3, and 3 & 4.

I. All levee gates need to be built back up and backfilled to prevent the collapse of the gates interconnecting all the Sedimentation Ponds.

J. Electrical controls on Lift Station #6 discharge pumps at the River Water pump house need to be reworked due to faulty wiring. Both Lead and Lag pumps will not operate. This has prevented the operators from being able to control the water level in the Ponds to prevent erosion of the levee walls.

K. Lift Station #5 has had to be completely rebuilt. Both pumps failed and were unable to pump the waste from the station. We have had to operate a by-pass pump on that station since the July 4th weekend.

L. Pumps are rebuilt on LS #5 however the wet well is full of sedimentation and has plugged the transfer lines between the two compartments not allowing water to our pump suction lines. We are trying to schedule ARWA in with their vac truck to clean the debris from the valves.

M. Lift Station #5 had to be completely rebuilt. Both impellors and wear plates were completely worn out and would not empty the lift station. That has been completed.

N. Lift Station #4 had to be completely rebuilt. We only have one pump that will operate at LS 4. The pump basket (old driveshaft) design has completely deteriorated on one of the pumps.

O. Both pumps failed at the Helendale booster station and we had to rebuild the #1 pump due to leaking seals. The coil on the #2 pump failed and we had it replaced. Fred Garrison Co. helped wire the pumps because the RTU is inoperative.

P. RTU's at station 1, 4, 5, 6, 7, and 9 are inoperative and need to be completely rebuilt. The panels are no longer supported by DFA and need to be replaced with new panel boards. Each board is $3500 plus installation costs. Due to the shape of each location, installation will vary from $1000-$3000/station.

Q. Hydromatic Booster Station pumps are in very bad condition. Each pump needs rebuilding and possible the pump housing on each is corroded to the point they may need replacing. Will not be able to fully evaluate until pumps are removed.

II. West Helena WWTP

A. Erosion of the Oxidation Pond #2 due to beaver intrusion has occurred affecting a section of wall approximately 15 yds long and 5 yds deep.

B. There is some erosion around the edges of two (minimal) Oxidation ponds that will require Rip Rap to build back up along with dirt for back fill.

C. The drive motor on the inlet lift station for the #1 pump was overheating and kicking out on high temperature. We have replaced the drive motor and it is back operating at 100%.

III. West Helena Filter Plant

A. The #3 filter needs backwash pipe replaced and sand and under bed needs to be replaced. We have a quote in house from 2015 that will need to be updated.

B. 8 valves need replacing on the filter system in the plant. Once that is completed the whole filter plant will have new valves installed.

C. The supply line for filters 3 & 4 has a hole from corrosion in the arc of the flange between the two pipes. It will have to be replaced. We currently have a patch in place however this could fail at any time.

IV. Helena backwash line for sand filters empties into the storm drain which runs underneath the Arkansas Midland RR property. The storm drains on the drawings show it to be a 24" drain line. Due to sedimentation settling in the ditch over the years some of which was due to the RR when they rebuilt their line throwing material (cross ties and other debris into the storm drain line), the usable depth of that storm sewer is now approximately 6 to 8 inches. Everytime we backwash the sand filters in the plant, the flow is such that we cause the storm sewer line to overflow onto the RR property and onto Pontotoc Street. We have evaluated

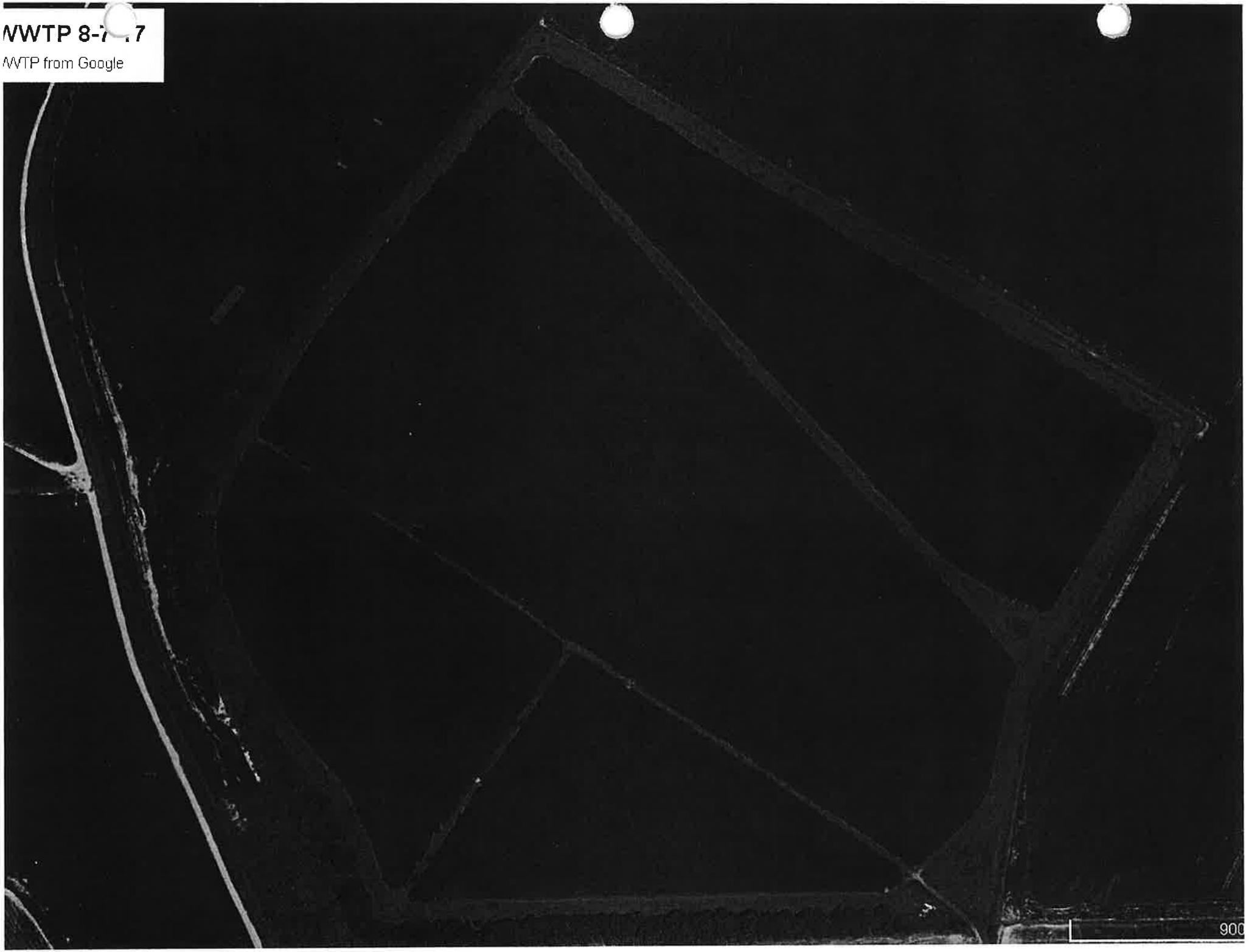
installing a new drain line running parallel to Chickasaw Street down to Arkansas however the sewer line under Arkansas is only 8" diameter and will not handle the water flow without backing up into the filter plant. I have looked at the original plant drawings and our backwash line was designed that way from the beginning. We have gotten quotes to clean the ditch of debris to help the drainage problem on the RR property.

V. A backwash valve at filter plant needs replacing because it is leaking through and allowing water to backflow into the filters from the clear well. Once this valve is installed we may see some relief in the water losses in Helena we are currently experiencing. We think there is significant losses occurring by backflow into the filters from the storage tanks. We should see a reduction in City water losses if this is the case.

VI. Filters 1 & 2 need to be reworked. We experience overflow problems from the filters which in turn flood the new electronic valves and we have had to replace them due to electrically shorting the units out.

VII. The DFA in the filter plant has had the internal electrical components corrode and short out due to high levels of chlorine in the atmosphere. You will have that because of how chlorine reacts when fed as a gas into the water for disinfection. We are looking at installing new exhaust fans to help alleviate the problem however the damage is done to the current system and it must be replaced.

Main service lines we should begin planning for replacement schedule along with sewer lines. Many of the City's main supply lines are over 50+ years old. The water department continues to repair leaks and the cost of repairs is becoming very high. We find that we are repairing the same lines over and over and over again. Some lines have as many as 4 clamps on them within a 15 foot section. Galvanized pipe has a life expectancy of 30 years or less. The deterioration of the piping is what is normally expected after 50+ yrs of service.


NWTP 8-7 7
NWTP from Google
900

Helena WWTP Cell 1, North East Side Wall

Helena WWTP Cell 1, North East Side Wall

Helena WWTP Cell 1, North East Side Wall

Helena WWTP Cell 1, South Side Wall

Helena WWTP Cell 1, South Side Wall

Helena WWTP Cell 1, West Side Wall

HWWTP Cell 2 NW Side Levee

Helena WWTP Cell 2, West Side Wall

Helena WWTP Cell 2, West Wall

Helena WWTP Cell 2, West Wall

Helena WWTP Cell 2, West Wall

HWWTP Levee Wall Between 2 & 3

HWWTP Cell 2 & 3 Levee Wall Collapse

Helena WWTP Cell 2 & 3 Complete Levee Wall Collapse between Cells

Helena WWTP Cell 2 & 3 Complete Levee Wall Collapse between Cells

Helena WWTP Cell 2 & 3 Complete Levee Wall Collapse between Cells

HWWTP Cell 3 SW Levee Wall

Helena WWTP Cell 3 West Levee Wall

Helena WWTP Cell 3 & 4 Levee Wall

Helena WWTP Cell 4 South East Levee Wall

Helena WWTP Cell 4 South West Levee Wall

HWWTP Cell 4 NW Levee Wall

HWWTP Cell 4 SW Discharge Levee Gate

Helena WWTP Cell 4 South East Discharge Gate

Helena WWTP Cell 4 South East Discharge Gate

Helena WWTP Cell 4 South East Discharge Gate

Lift Station #1

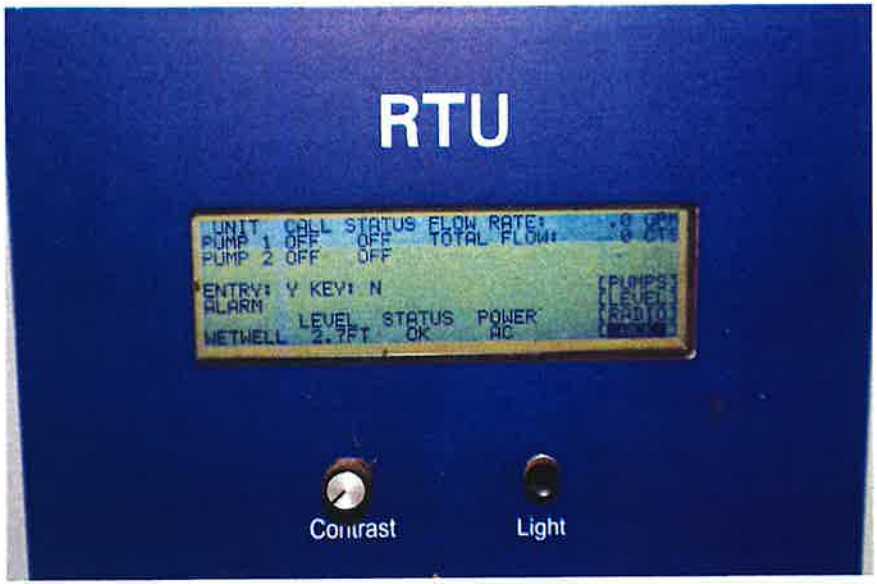
Lift Station #1

Lift Station #1

Lift Station #2

Lift Station #2

Lift Station #2



Lift Station #3

Lift Station #3

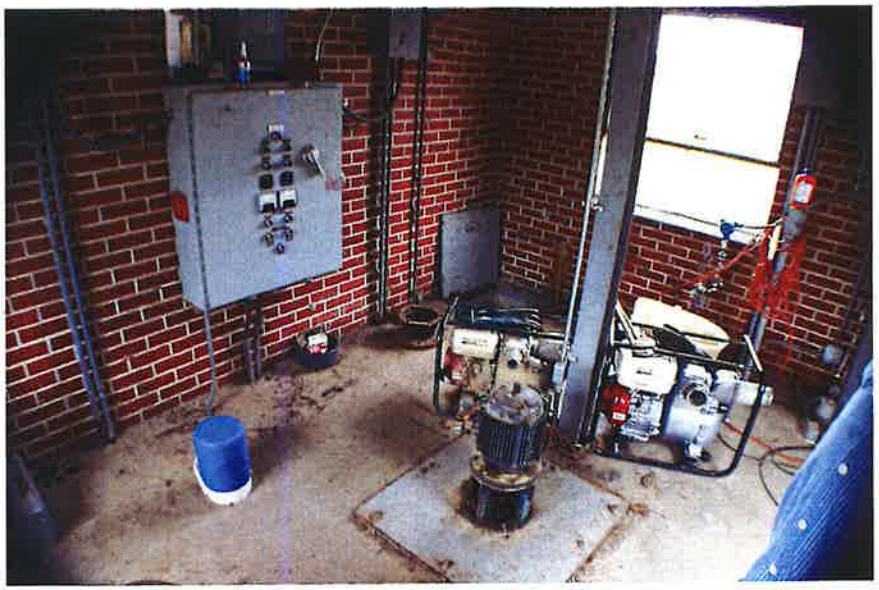
Lift Station #3

LS 3 and LS 4

Lift Station #4

Lift Station #4

Lift Station #4

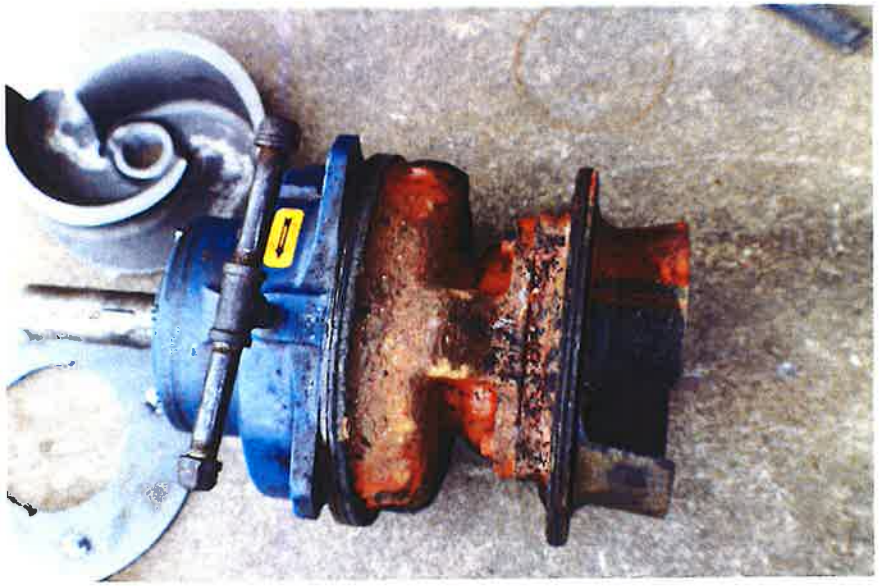


Lift Station #5

Lift Station #5

Lift Station #5

Lift Station #5



Lift Station #5 Pump 1

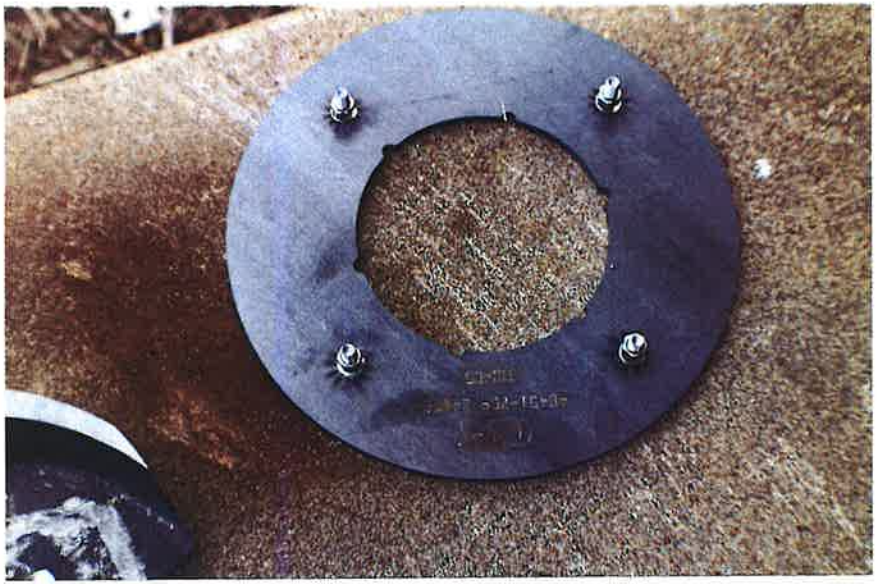
Lift Station #5 Pump 1

Lift Station #5 Pump 2

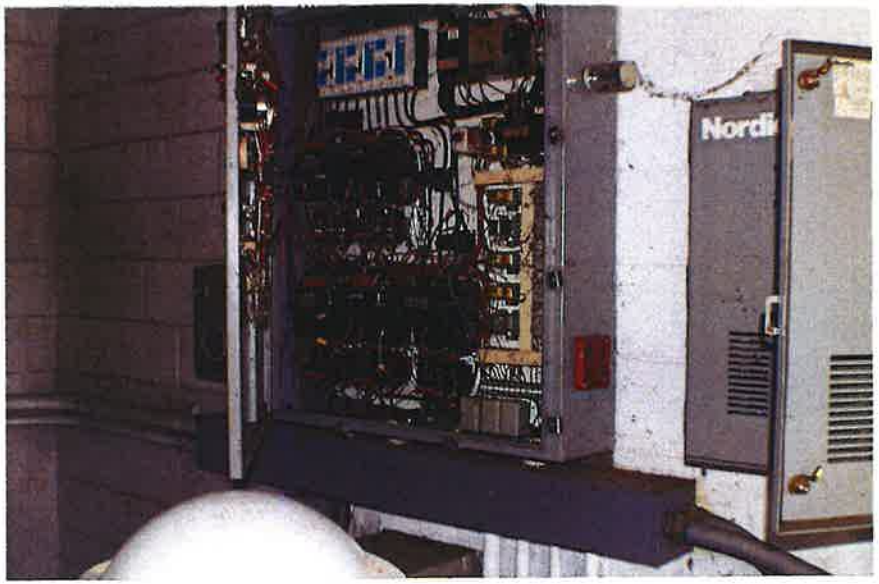
Lift Station #5 Pump 2

Lift Station #5 Pump 2

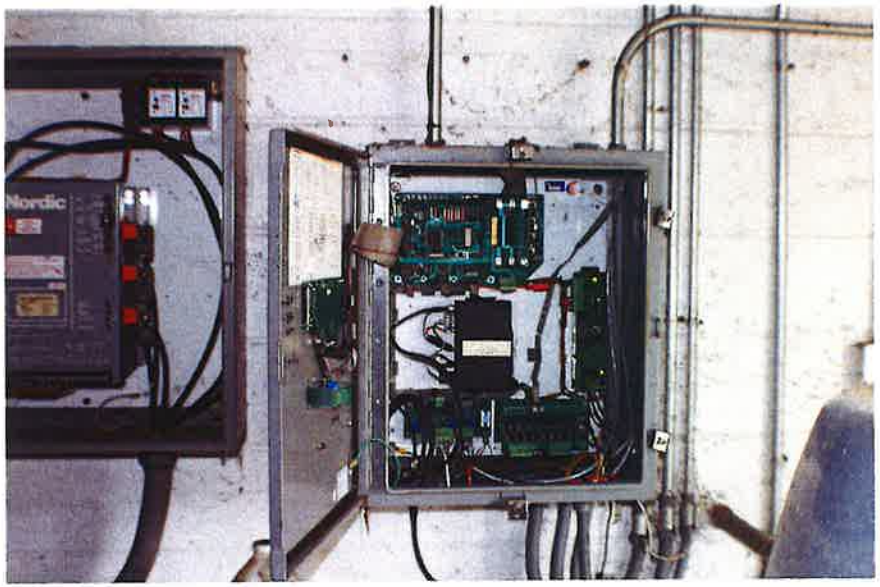
Lift Station #5 New Impeller & Wear Plate



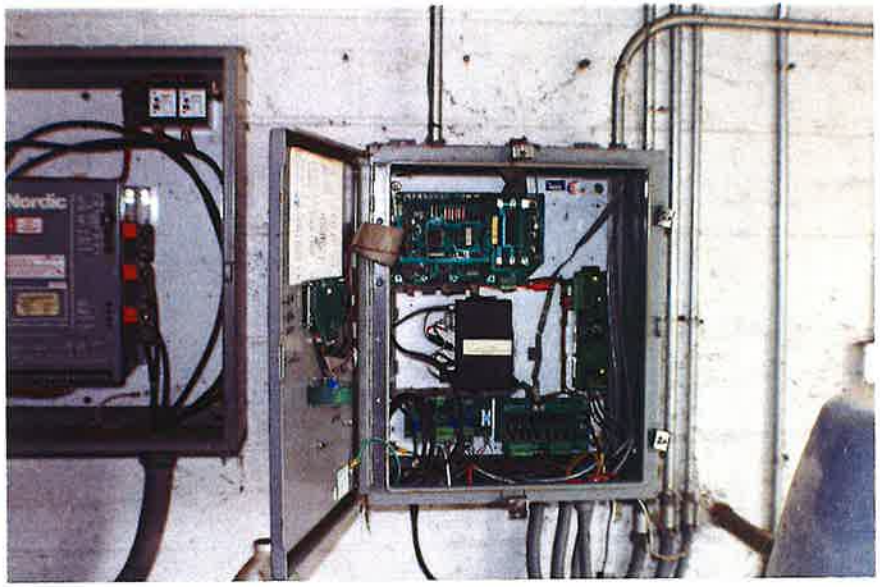
Lift Station 6 Electrical Panels and Pumps

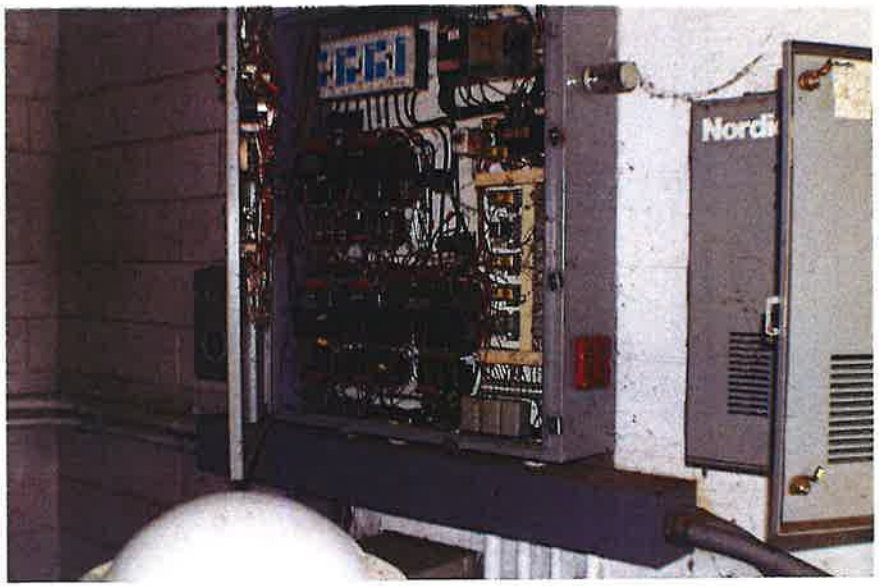


Lift Station 6 Electrical Panel & Confined Space Enclosure



Lift Station #6 Helena



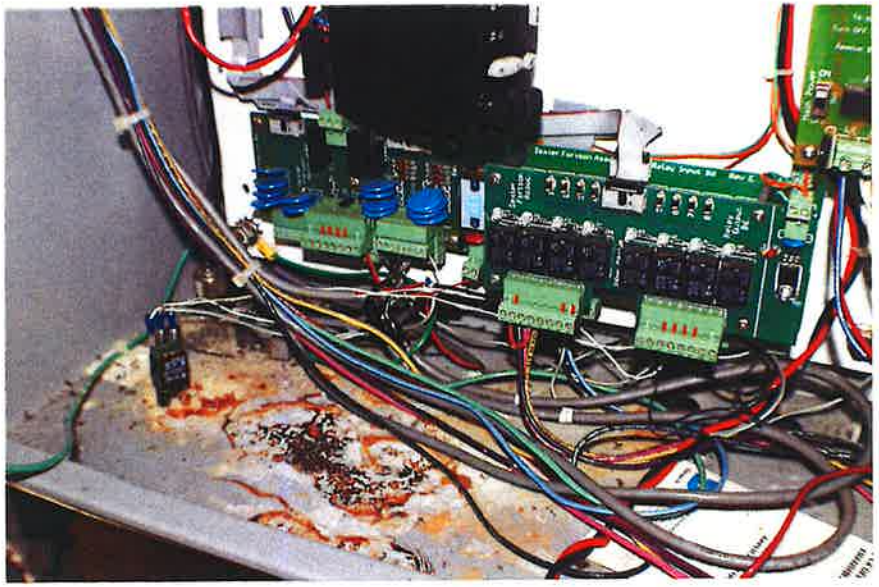


Lift Station #6 Helena

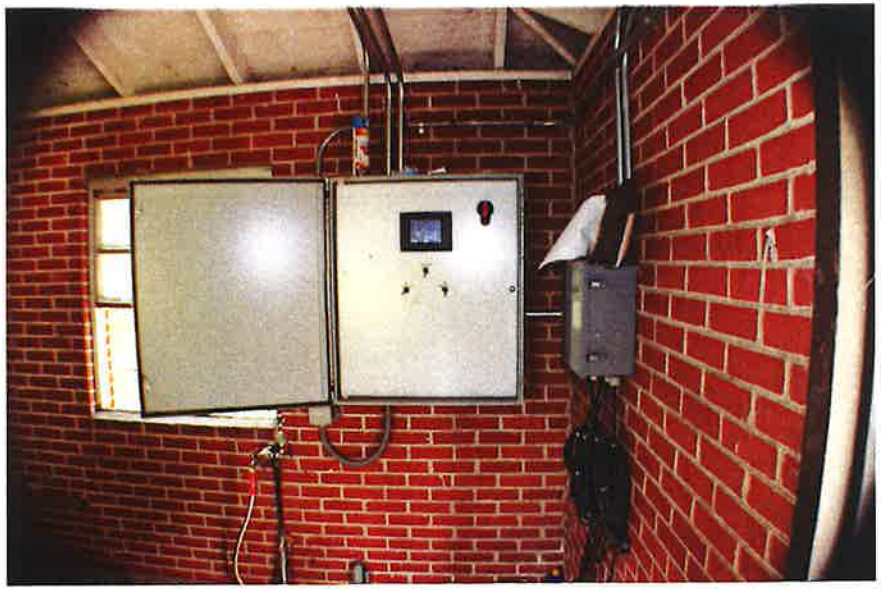
LS 7 and LS 5

Lift Station #7

Lift Station #7



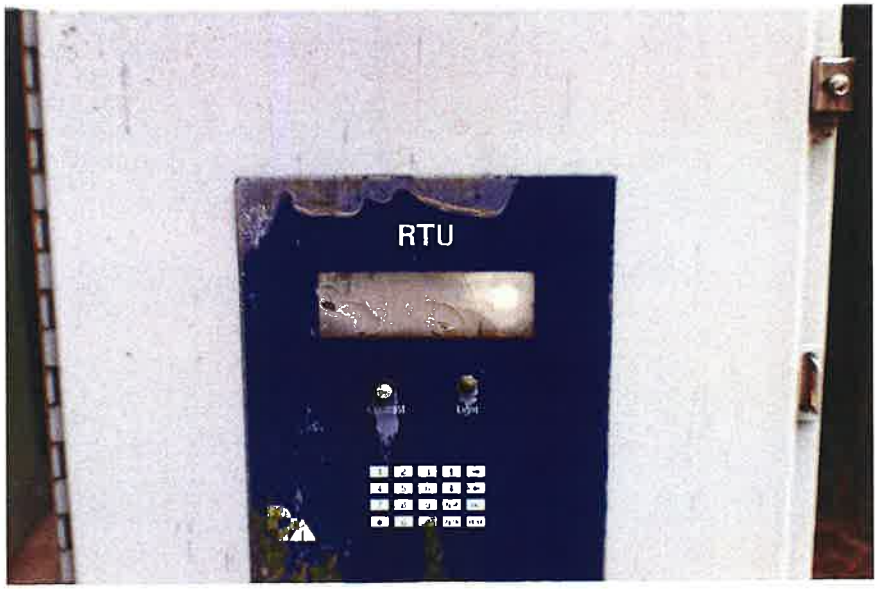
Lift Station #7



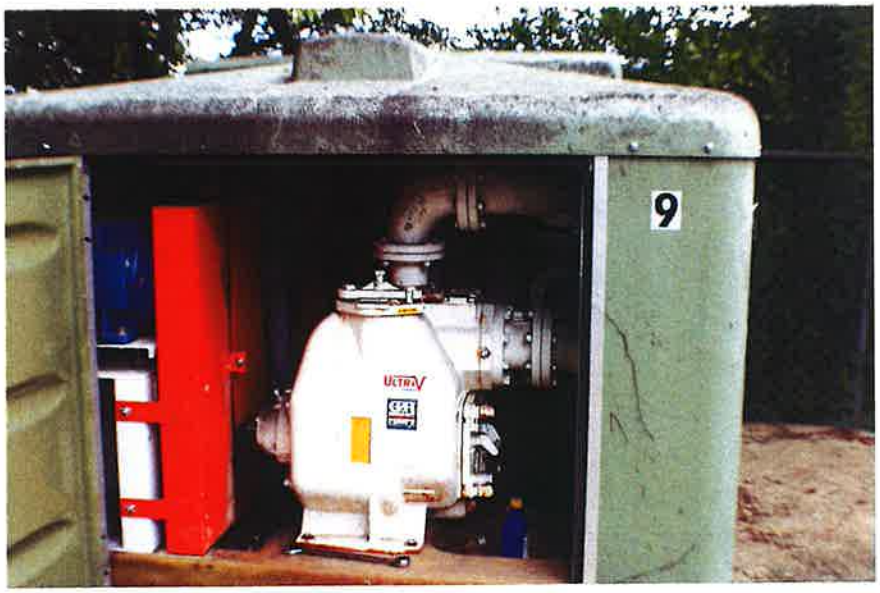
Lift Station #8

Lift Station #9

Lift Station #9



Lift Station #9



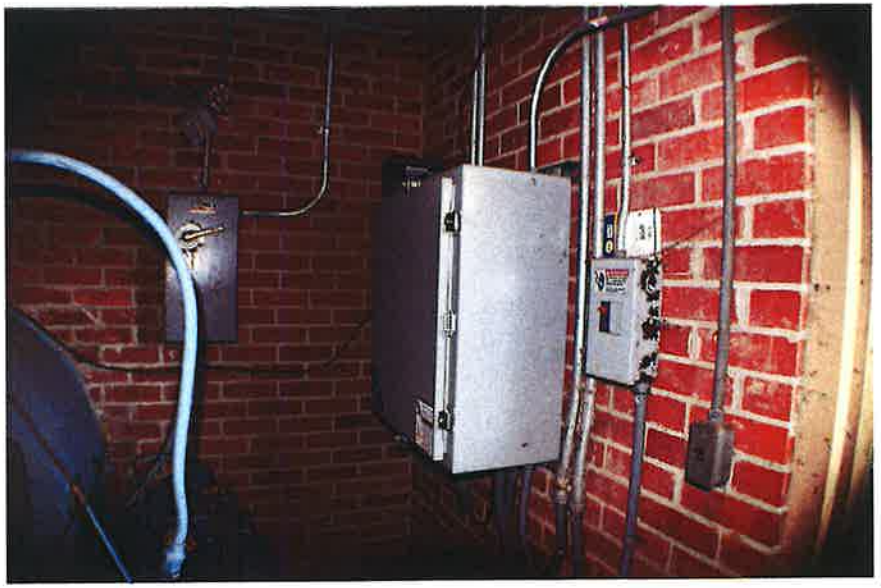
Hydromatic Booster Station

Hydromatic Booster Station

Biscoe Hydromatic Booster Station

Bisco Hydromatic Booster Station, behind old High School off Arkansas

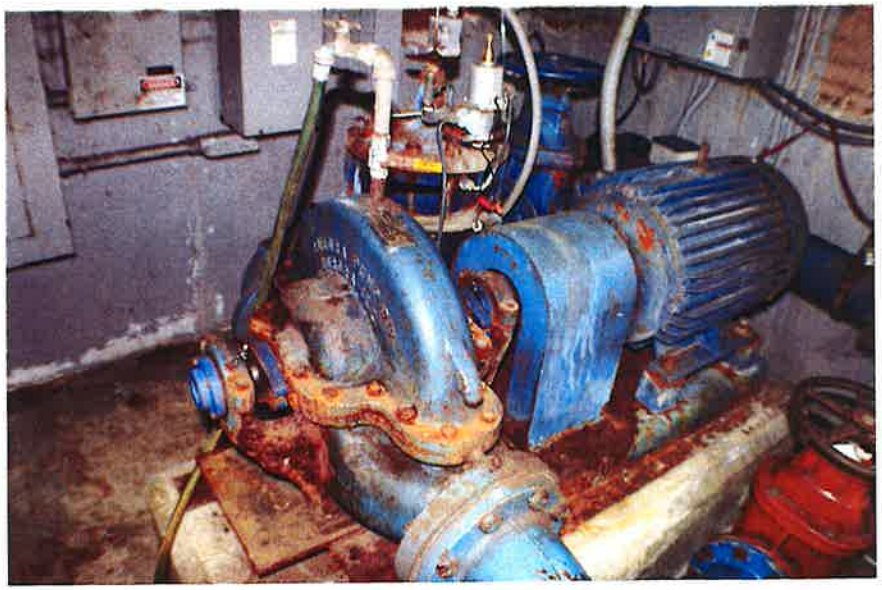
Hydromatic Booster Station



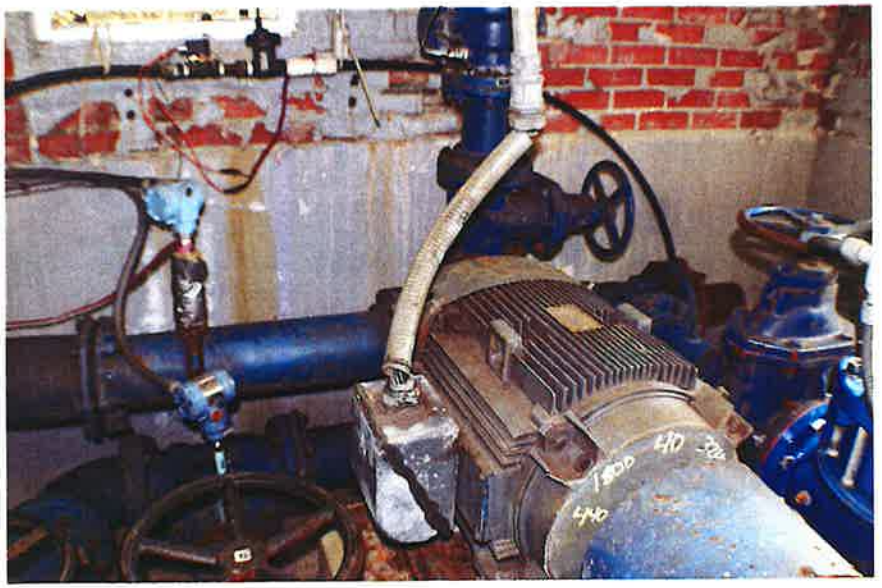
Hydromatic Booster Station

Helendale Booster Pump

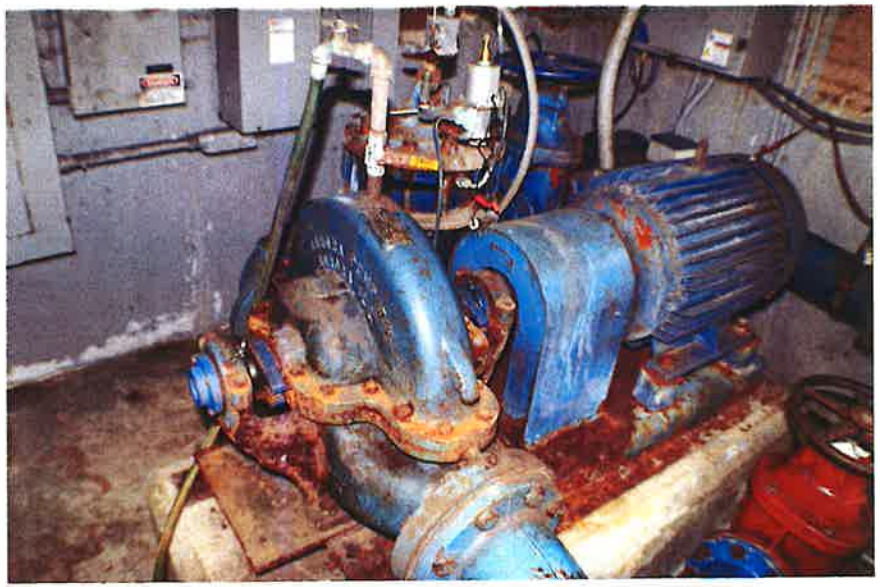
Helendale Booster Pump



Helendale Booster Pump



Helendale Booster Station Pumps Complete Rebuilds with new Seals, Bearings, Impellers



West Helena WWTP

West Helena WWTP

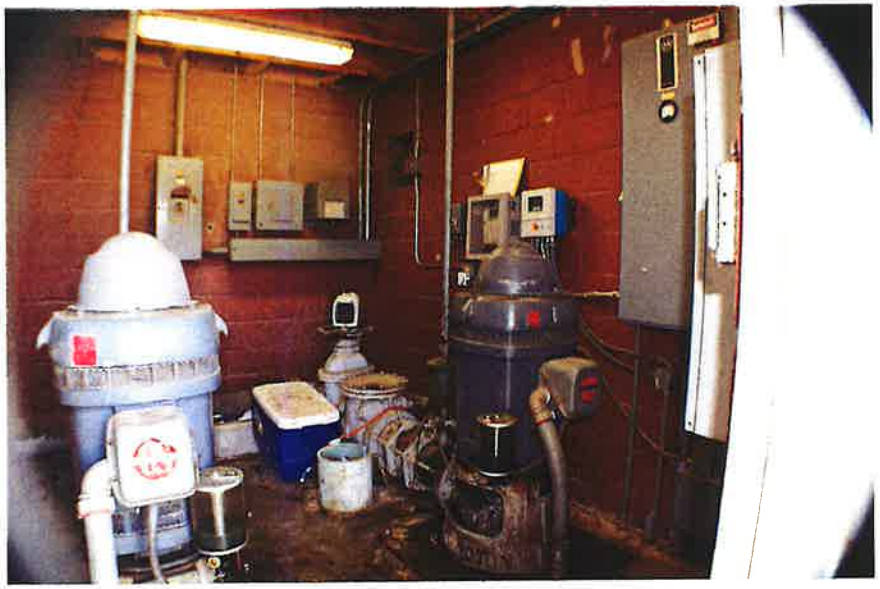
West Helena WWTP

West Helena WWTP

West Helena WWTP

West Helena WWTP Discharge Station

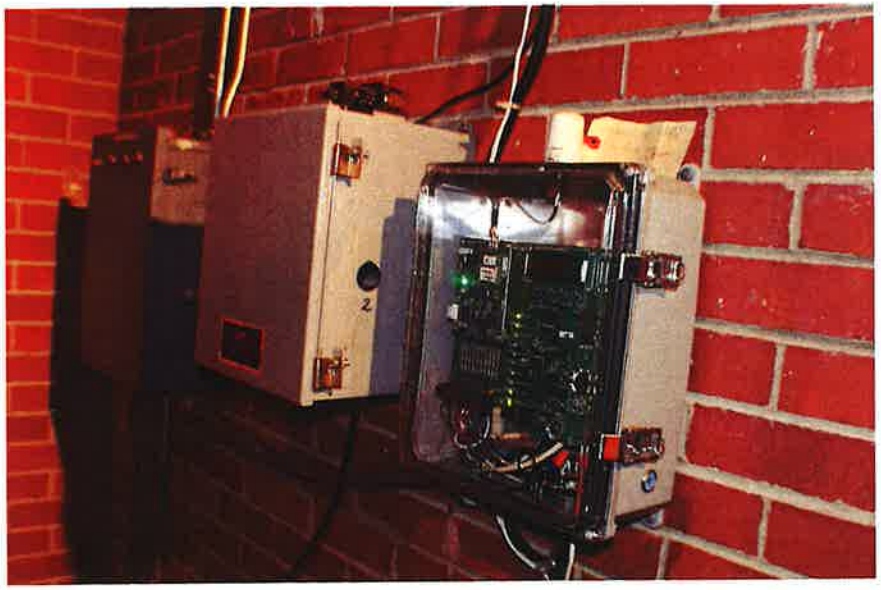
West Helena WWTP Discharge Station

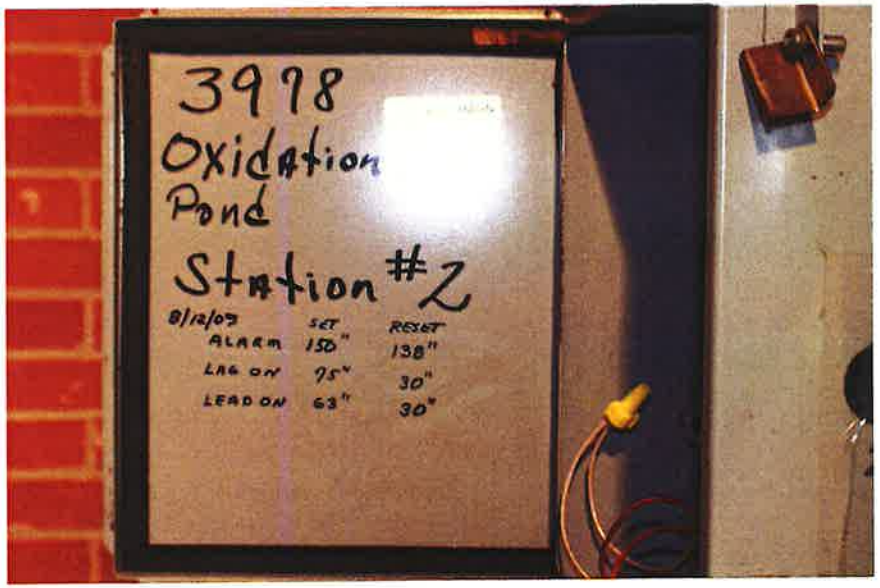


West Helena WWTP Inlet Station

West Helena WWTP Inlet Station

West Helena WWTP Inlet Station



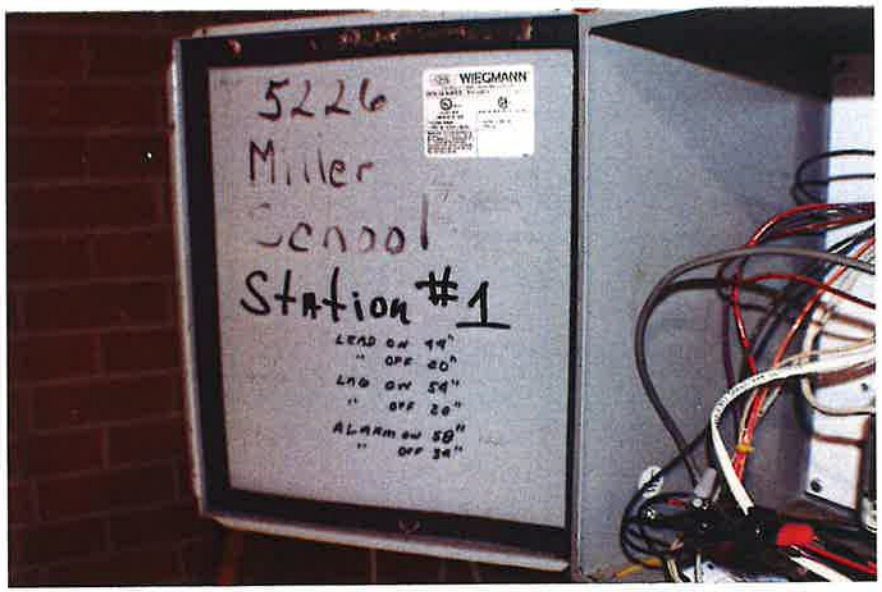


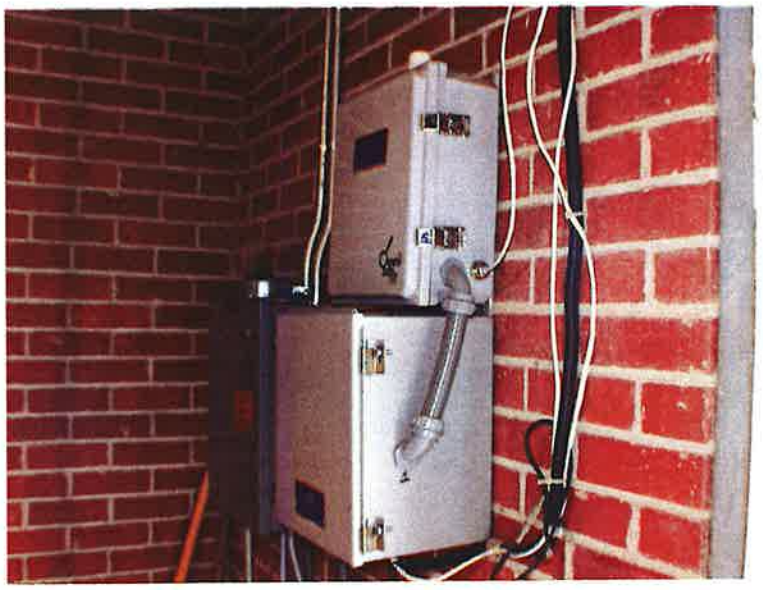
West Helena WWTP Eliza Miller Station

West Helena Hays Grocery & By-Pass Well

West Helena WWTP Eliza Miller Station

West Helena WWTP Eliza Miller Station

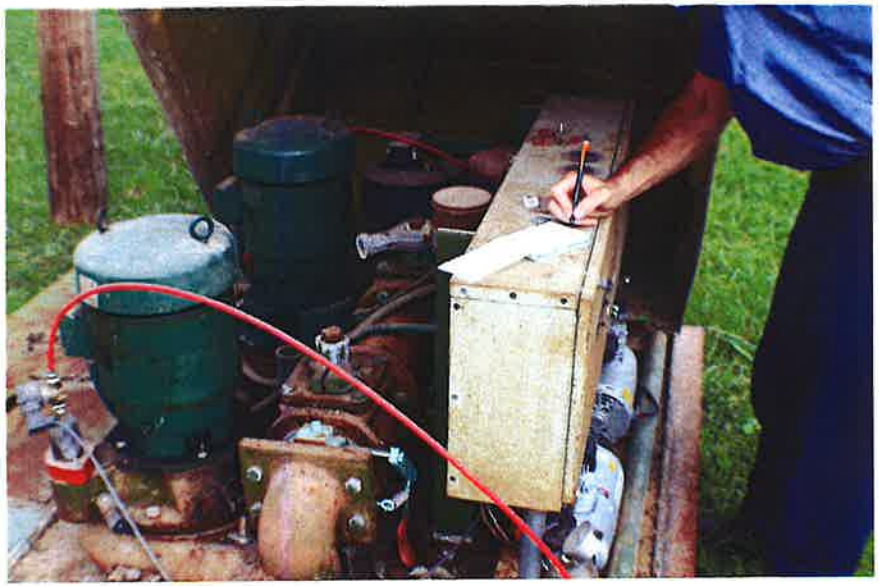




West Helena Airport Road Lift Station

West Helena Dennis Drive

West Helena Southern Hardware



TENCARVA MUNICIPAL

Service Dept
615-727-6214

Field Service Report

3616 Cherry Road
Memphis, TN 38118
Phone (901)794-7570
Fax (901)794-7593
Phone (888)388-6310

Date:	10/12/2016	Job Number:	700141-050
Owner:	Helena Municipal Sewer Department	Warranty Status:	
Location:	Lift Station #1	Completed:	Yes
Customer Contact Name & Phone #:	Michael Alexander		
Bill To:	Helena Municipal Sewer - PO#7771		
Description of Problem:	Pump #2 has a bad mechanical seal		

Pump Serial #	1:		2:		3:		4:	
Suction Pressure	1:		2:		3:		4:	
Discharge Pressure	1:		2:		3:		4:	
Pump Speed	1:		2:		3:		4:	
Running Amps:	1:		2:		3:		4:	

Station S/N:	Project 3206	Line Voltage:	460	Control Voltage:	120
Motor Type:	TEFC	Motor HP:	75	GPM:	TDH:
Pump Model:	T10A3S-B	Pump S/N:			

Field Labor Hours:	8.0	Travel Time Hours:	5.0	Shop Labor Hours:	
Field Labor OT Hours:		Travel Time OT Hours:		Mileage:	

Drive to site, rig up a cable suspension to pull off the suction elbow. Remove the wear plate and impeller. Change out the old mechanical seal. Reinstall the impeller and wear plate. Put suction elbow back on. Fill seal cavity with oil (customer furnished). Back fill pump with water. Re-prime the pump, and place into service. Test ran for proper operation. Watched it pump thru a complete cycle. Closed up the station.

Tim Elkins 2.5 hours travel, 4.0 hours onsite field service.
David Harbin 2.5 hours travel, 4.0 hours onsite field service.

Total time for service is 5.0 hours travel, 8.0 field service

Parts Used - Part #/Part Description/Quantity

1 of #38682-811-20000 suction gasket NC-710
1 of #46513-153 cartridge seal 1-7/8"
1 of field service supplies

Special Instructions or Parts Order Required

Credit card purchase for wire cable and cable clamps for $52.04 at Lowe's

Site Photo

Location:

Comments:

Type Customer Name Here: Michael Alexander

TENCARVA MUNICIPAL

Service Dept
615-727-6214

Field Service Report

3616 Cherry Road
Memphis, TN 38118
Phone (901)794-7570
Fax (901)794-7593
Phone (888)388-6310

Date:	6/22/2017	Job Number:	781218		
Owner:	Helena Municipal Sewer Department			Warranty Status:	
Location:	Station #3			Completed:	Yes
Customer Contact Name & Phone #:	Jack Ross				
Bill To:	Helena Municipal Sewer Department				
Description of Problem:	Station #3 will not pump				

Pump Serial #	1:		2:		3:		4:
Suction Pressure	1:		2:		3:		4:
Discharge Pressure	1:		2:		3:		4:
Pump Speed	1:		2:		3:		4:
Running Amps:	1:		2:		3:		4:

Station S/N:	3	Line Voltage:	230	Control Voltage:	120
Motor Type:		Motor HP:		GPM:	TDH:
Pump Model:		Pump S/N:			

Field Labor Hours:	3.25	Travel Time Hours:	4.0	Shop Labor Hours:	
Field Labor OT Hours:		Travel Time OT Hours:		Mileage:	

Drive to site, start troubleshooting both pumps, pump #1 the back cover was not up, pulled the back cover and checked the impeller, found debris in the bypass port of the pump. The air relief was not working properly, took it off, checked both the inlet and outlet. Found a long trash string in the discharge side (outlet) of the air relief. Cleaned and reassembled. Pump #2 and both #1 was barely moving 50 GPM, discharge was 126, and 10 suction, against the static head on the force main. Customer went and got a discharge hole connected up to the bypass connection on the force main and drained the force main back onto the wet well. After draining restarted the pumps, they started pumping again, about 275 GPM, discharge was 110, suction was 8. Left it that way to see if the pumps would force the rest of the air out of the force main.

Parts Used - Part #/Part Description/Quantity

1 of field service supplies

Special Instructions or Parts Order Required

None

Site Photo

Location:

Comments:

Type Customer Name Here:

TENCARVA MUNICIPAL

Service Dept
615-727-6214

Field Service Report

3616 Cherry Road
Memphis, TN 38118
Phone (901)794-7570
Fax (901)794-7593
Phone (888)388-6310

Date:	6/22/2017	Job Number:	781228-000		
Owner:	Helena Municipal Sewer Department			Warranty Status:	
Location:	Station #7			Completed:	Yes
Customer Contact Name & Phone #:	Jack Ross				
Bill To:	Helena Municipal Sewer Department				
Description of Problem:	Pump station #7 will not pump				

Pump Serial #	1:		2:		3:		4:	
Suction Pressure	1:	102	2:	102	3:		4:	
Discharge Pressure	1:	6	2:	6	3:		4:	
Pump Speed	1:	1900	2:	1900	3:		4:	
Running Amps:	1:		2:		3:		4:	

Station S/N:	7	Line Voltage:	240	Control Voltage:	120		
Motor Type:	TEFC	Motor HP:	15	GPM:	150	TDH:	88
Pump Model:	T3A3S-B	Pump S/N:					

Field Labor Hours:	8.0	Travel Time Hours:	6.5	Shop Labor Hours:	
Field Labor OT Hours:		Travel Time OT Hours:		Mileage:	

6/22/2017 - drive to site, from Station #3, check out pumps #1&#2, pump #1 the mechanical seal is bad and sucking air thru the mechanical seal cavity air vent, this rotating ass moly will have to be pulled and rebuilt. Pump #2 will prime up, but it will not pump, readjusted the impeller clearances, it would not overcome the static head, the impeller and wear plate are worn out. 1.25 hours onsite.
6/23/2017 - drove and met up with Ricky, he brought me parts to change out the impeller and wear plate on pump #2. Drove to job site, pulled out the rotating assembly, removed the old impeller and wear plate, installed new ones, reset the impeller clearances. Re-primed the pump, the pump started pumping and blew out the mechanical seal. Pulled the rotating assemblies from both pumps. 2.5 hours travel, 2.0 hours field service onsite.
6/29/2017 - Drove to site, installed two repaired rotating assemblies, and a wear plate, set the impeller clearances, refilled the pumps, adjusted the air reliefs, started the pumps,

1 of #11407A-15990 T3 wear plate
1 of #S1748 cover plate o ring
1 of #DM1004S-15991 impeller cap screw
1 of #10278-15030 impeller washer
4 of #13130-17040 shim sets
1 of #11406-11010 T3 impeller
1 of field service supplies

Special Instructions or Parts Order Required

Site Photo

Location:

Comments:

Type Customer Name Here:

TENCARVA MUNICIPAL

Service Dept
615-727-6214

Field Service Report

3616 Cherry Road
Memphis, TN 38118
Phone (901)794-7570
Fax (901)794-7593
Phone (888)388-6310

Date:	6/28/2017	Job Number:	782253-050
Owner:	Helena Municipal Sewer Department	Warranty Status:	
Location:	Memphis shop	Completed:	Yes
Customer Contact Name & Phone #:	Jack Ross		
Bill To:	Helena Municipal Sewer Department-PO#5221		
Description of Problem:	Repair of rotating assembly from Station #7 pump,#2 in shop		

	1:	2:	3:	4:
Pump Serial #				
Suction Pressure				
Discharge Pressure				
Pump Speed		1900		
Running Amps:				

Station S/N:	7	Line Voltage:	230	Control Voltage:	120	
Motor Type:	TEFC	Motor HP:	15	GPM:	150	TDH: 88
Pump Model:	T3A3S-B	Pump S/N:				
Field Labor Hours:		Travel Time Hours:		Shop Labor Hours:	4.5	
Field Labor OT Hours:		Travel Time OT Hours:		Mileage:		

6/28/2017 - Memphis shop Teardown, clean, inspect, writeup quote for repair, 2.0 hours shop.

Memphis shop repair, reassembly, test and paint rotating assembly in the shop, 2.5 hours.

1 of #23252-013 inboard ball bearing
1 of #S1749 outboard ball bearing
1 of #38683-268-18000 bearing cap gasket
3 of #S1352 oil seal
2 of S1748 o ring
1 of #12364A mechanical seal
1 of #11837DA-10010 seal plate
1 of #10959G-20000 seal plate gasket
1 of #11837D-16000 shaft sleeve
4 of #13130-17040 shim sets
1 of #S244 retaining ring
2 of #S1471 sight glass
1 of shop supplies

Special Instructions or Parts Order Required

This repair ticket of for the repair of the rotating assembly n the shop only, it does not include time to remove and reinstall from the pump.

Site Photo

Location:

Comments:

Type Customer Name Here:

TENCARVA MUNICIPAL

Service Dept
615-727-6214

Field Service Report

3616 Cherry Road
Memphis, TN 38118
Phone (901)794-7570
Fax (901)794-7593
Phone (888)388-6310

Date:	6/27/2017	Job Number:	782252-050
Owner:	Helena Municipal Sewer Department	Warranty Status:	
Location:	Memphis shop	Completed:	Yes
Customer Contact Name & Phone #:	Jack Ross		
Bill To:	Helena Municipal Sewer Department- PO#5222		
Description of Problem:	Rebuild rotating assembly in the shop		

Pump Serial #	1:		2:		3:		4:	
Suction Pressure	1:		2:		3:		4:	
Discharge Pressure	1:		2:		3:		4:	
Pump Speed	1:	1900	2:		3:		4:	
Running Amps:	1:		2:		3:		4:	

Station S/N:	7	Line Voltage:	240	Control Voltage:	120
Motor Type:	TEFC	Motor HP:	15	GPM:	150	TDH:	88
Pump Model:	T3A3S-B	Pump S/N:			

Field Labor Hours:		Travel Time Hours:		Shop Labor Hours:	4.5
Field Labor OT Hours:		Travel Time OT Hours:		Mileage:	

6/27/2017 - Teardown, parts washer, inspect, write up for repair quote. 2.0 hours shop.

6/282017 - Repair, reassembly, test and paint rotating assembly, 2.5 hours shop

1 of #23252-013 inboard ball bearing
1 of #S1749 outboard ball bearing
1 of #38683-268-18000 bearing cap gasket
1 of #11406-11010 T3 impeller
1 of #DM1004S-15991 impeller cap,screw
1 of #10278-15030 impeller washer
3 of #S1352 oil seals
2 of #S1748 o rings
1 of #12364A mechanical seal
1 of #11837D-10010 seal plate
1 of #10959G-20000 seal plate gasket
1 of #11876A-16000 shaft sleeve
4 of #13130-17040 shim sets
1 of #S244 retaining ring
2 of #S1471 sight glass
1 of #11407A-15990
1 of shop supplies

Special Instructions or Parts Order Required

This is for the shop repair only, it does not include the pulling of the rotating assembly from the job site, or the reinstallation.

Site Photo

Location:

Comments:

Type Customer Name Here:

TENCARVA MUNICIPAL

Service Dept
615-727-6214

Field Service Report

3616 Cherry Road
Memphis, TN 38118
Phone (901)794-7570
Fax (901)794-7593
Phone (888)388-6310

Date:	1/4/2017	Job Number:	711544		
Owner:	City of Helena			Warranty Status:	N/A
Location:	Pump Station #3			Completed:	Yes
Customer Contact Name & Phone #:	Rowan Construction				
Bill To:	Ricky - Tencarva				
Description of Problem:	Startup of new station				

Pump Serial #	1: 1617180N	2: 1617181N	3:	4:			
Suction Pressure	1: 14.5	2: 14.5	3:	4:			
Discharge Pressure	1: 99	2: 99	3:	4:			
Pump Speed	1: 2310	2: 2313	3:	4:			
Running Amps:	1: 56/59/64	2: 53/56/61	3:	4:			
Station S/N:	Project 3275	Line Voltage:	230	Control Voltage:	120		
Motor Type:	ODP	Motor HP:	30	GPM:	350	TDH:	120
Pump Model:	V3A60-BF	Pump S/N:					
Field Labor Hours:	7.5	Travel Time Hours:	7.5	Shop Labor Hours:			
Field Labor OT Hours:		Travel Time OT Hours:		Mileage:			

1/4/2017 - startup of new pump station in existing brick building, air relief are wrong for this station, I will need to go back later to change them.
Travel 3.5 hours, 4.5 hours onsite.

2/10/2017 - change out the air reliefs from 25# GRP33-07 to 80# GRP-07B's.
Finish collecting startup data after bypass connection was removed and the final piping configuration is in use. Travel 3.5 hours, 2.5 hours onsite.

3/17/2017 - go install lightning arrestor on control panel. 0.5 hours onsite, 0.5 hours travel.

Parts Used - Part #/Part Description/Quantity

2 of GRP-07B's air reliefs

Special Instructions or Parts Order Required

Lightning arrestor furnished by Controlled Systems

Site Photo

Location:

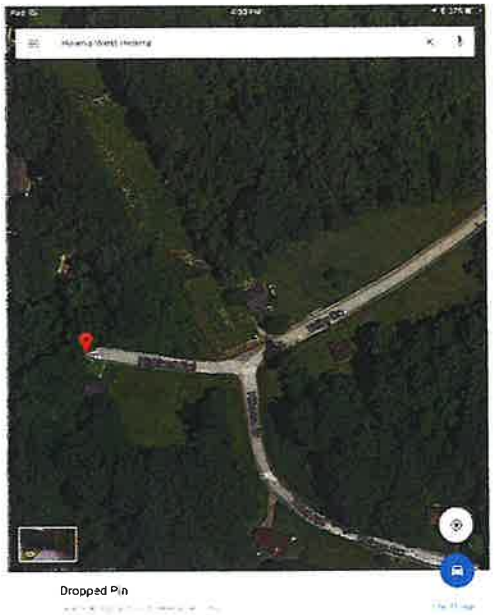


Photo:

Comments:

Type Customer Name Here:

TENCARVA MUNICIPAL

Service Dept
615-727-6214

Field Service Report

3616 Cherry Road
Memphis, TN 38118
Phone (901)794-7570
Fax (901)794-7593
Phone (888)388-6310

Date:	3/20/2015	Job Number:	592773
Owner:	City of West Helena	Warranty Status:	N/A
Location:	Northwest PS(school)&Southwest PS(Lagoon)	Completed:	Yes
Customer Contact Name & Phone #:	Ken Fratise @ 870-338-0230		
Bill To:	City of West Helena		
Description of Problem:	Pump #1 at school is pumping more water than pump #2, lagoon pumps		

	1:	2:	3:	4:
Pump Serial #				
Suction Pressure	18	18		
Discharge Pressure	5	5		
Pump Speed	835	835		
Running Amps:	35/24.9/40.5	32/23/37		

Station S/N:	Project#3035 & Project #3034	Line Voltage:	230	Control Voltage:		
Motor Type:		Motor HP:		GPM:		TDH:
Pump Model:		Pump S/N:				
Field Labor Hours:	5.5	Travel Time Hours:	3.5	Shop Labor Hours:		
Field Labor OT Hours:		Travel Time OT Hours:		Mileage:		

Northwest PS Found pump #2 was turning at 1024 rpm, pump #1 was turning at 835 rpm.When pump #2 was changed to a new higher efficiency motor the FLA is now 42, where it was 46. When this was done the VFD settings were not changed the VFD was running off of the old FLA of 46, so,it was turning the motor faster than planned to make it to the amp set point, therefore it was moving more water than the other pump.
Adjusted VFD so pump was turning 835 rpm.

Southwest PS - adjusted the impeller clearances by placing shims (0.125")between the rotating assembly and the mounting ring. And reshim the outer ring regularly to get the correct (0.010") impeller to wear plate clearances. Without the shims on the inner ring at the rotating assembly, there would not be anymore adjustments left, and the impeller gap would be too big, therefore it would stop up and clog up too much.

6 of #13130-17040 shim set T3/T4
4 of #13131-17040 T6 shim sets
9 of #13130-3-17040 T3S/T4S shim sets

Special Instructions or Parts Order Required

Site Photo

Location:

Comments:

Re-shim pumps at Southwest Lagoon pump station back to factory specifications, (0.010"-0.015").

Corrected problem with Northwest pump station, (school station).

Type Customer Name Here: Ken Fratise

TENCARVA MUNICIPAL

Service Dept
615-727-6214

Field Service Report

3616 Cherry Road
Memphis, TN 38118
Phone (901)794-7570
Fax (901)794-7593
Phone (888)388-6310

Date:	6/7/2017	Job Number:	777732
Owner:	West Helena Water	Warranty Status:	
Location:	Lagoon Pump Station	Completed:	Yes
Customer Contact Name & Phone #:	Jody Warren (870)816-7500		
Bill To:	West Helena		
Description of Problem:	VFD drive is overheating, and shutting down		

Pump Serial #	1:		2:		3:		4:
Suction Pressure	1:		2:		3:		4:
Discharge Pressure	1:		2:		3:		4:
Pump Speed	1:		2:		3:		4:
Running Amps:	1:		2:		3:		4:

Station S/N:		Line Voltage:		Control Voltage:	
Motor Type:	ODP	Motor HP:	40	GPM:	TDH:
Pump Model:		Pump S/N:			

Field Labor Hours:	1	Travel Time Hours:	4	Shop Labor Hours:	
Field Labor OT Hours:		Travel Time OT Hours:		Mileage:	230

Drive to site, meet with customer, check out drives inside and out, check fans, clean fans and vents. Reassembled drives. Reset drives, test run. Closed up station. Left site.

Parts Used - Part #/Part Description/Quantity

None

Special Instructions or Parts Order Required

None

Site Photo

Location:

Dropped Pin

Photo:

Comments:

Jody Warren

Type Customer Name Here: Jody Warren

TENCARVA MUNICIPAL

Service Dept
615-727-6214

Field Service Report

3616 Cherry Road
Memphis, TN 38118
Phone (901)794-7570
Fax (901)794-7593
Phone (888)388-6310

Date:	8/15/2016	Job Number:	679101-000
Owner:	West Helena Water	Warranty Status:	N/A
Location:	Lagoon Station	Completed:	Yes
Customer Contact Name & Phone #:	Kevin & Jody Warren (870)816-7500		
Bill To:	West Helena Water @ (verbal PO) Kevin		
Description of Problem:	Change out impellers and wear plates on both T10 pumps		

	1:	2:	3:	4:
Pump Serial #				
Suction Pressure				
Discharge Pressure				
Pump Speed				
Running Amps:				

Station S/N:		Line Voltage:		Control Voltage:		
Motor Type:		Motor HP:		GPM:	TDH:	
Pump Model:	T-10A3S-B	Pump S/N:				
Field Labor Hours:	38	Travel Time Hours:	19	Shop Labor Hours:		
Field Labor OT Hours:		Travel Time OT Hours:		Mileage:		

8/15/2016 - Drive to West Helena, start to change out impeller on Pump#1, removed the old continuous impeller and the mechanical seal rotary portion came off with it. Reinstalled the rotary and it leaked, could not get the stationary part of the mechanical seal to come out. Pulled the rotating assembly out of the pump and took it to the Memphis shop to repair. David Harbin & Tim Elkins each 3.0 travel, 9.0 hours onsite.
8/16/2016 - drive back to West Helena, install rotating assembly and finish repairs to pump#1, place it back into operation. David & Tim 3.0 travel, 5.5 hours onsite.
9/21/2016 - drive to West Helena, start work on Pump#2, removed old continuous vane impeller and wear plate, installed new ones. Reassembled the pump, tested for proper operation. Drive back to Memphis. David & Tim 3.5 hours travel, 4.5 hours onsite.
Grand Total hours for Tim Elkins 9.5 hours travel; 19 hours field service .
Grand Total hours for David Harbin 9.5 hours travel; 19 hours field service helper.

2 of #38611-024-1102H T10 continuous vane ADI impeller
2 of #38691-867-1102H T10 continuous vane ADI wear plate
2 of #38682-811-20000 suction head gasket
1 of #46513-153 T10 1-7/8" mechanical seal cartridge
1 of field service supplies

Special Instructions or Parts Order Required

Site Photo

Location:

Comments:

Pump#1-There was stringy fiber behind the impeller, it was also wrapped around the mechanical seal rotary portion of the seal, and inside the mechanical seal spring. When the impeller came off it took the seal with it. This moved the seal and it would not reseal and hold.
Had to replace the mechanical seal. Pump#2 had this material behind it also but the seal did not move with the impeller. It was

Type Customer Name Here:

TENCARVA MUNICIPAL

Service Dept
615-727-6214

Field Service Report

3616 Cherry Road
Memphis, TN 38118
Phone (901)794-7570
Fax (901)794-7593
Phone (888)388-6310

Date:	5/4/2016	Job Number:	683959-050		
Owner:	West Helena Water			Warranty Status:	
Location:	Miller Street pump station			Completed:	Yes
Customer Contact Name & Phone #:	Jodey Warren				
Bill To:	West Helena Water				
Description of Problem:	Change out impellers, and install eradication upgrades				

Pump Serial #	1:		2:		3:		4:
Suction Pressure	1:		2:		3:		4:
Discharge Pressure	1:		2:		3:		4:
Pump Speed	1:		2:		3:		4:
Running Amps:	1:		2:		3:		4:

Station S/N:		Line Voltage:		Control Voltage:	
Motor Type:		Motor HP:		GPM:	TDH:
Pump Model:		Pump S/N:			

Field Labor Hours:	3	Travel Time Hours:	3	Shop Labor Hours:	
Field Labor OT Hours:		Travel Time OT Hours:		Mileage:	

Changed out impellers and converted to eradication back covers on both Super T6 at Miller Street pump station. Adjusted impeller clearances. Changed VFD drive speed settings by customer request.

3 hours travel and 3 hours onsite, Tim Elkins and David Harbin (helper).

2 of #38615-087-11010 impeller T6
2 of S1676 o ring
2 of #25152-453 o ring
8 of #13131-17040 shims
2 of #48275-804 T6 eradication
1 of field service supplies

Special Instructions or Parts Order Required

Site Photo

Location:

Comments:

Type Customer Name Here:

TENCARVA MUNICIPAL

Service Dept
615-727-6214

Southern Sales Company
2929 Kraft Dr.
Nashville, TN 37204

Site:	Helena #5 P1	City of Helena	
Location:	Station #5	Station #5; Pump #1	
Location:	Memphis shop	TMC#785325	
Inspection date:	August 7, 2017	Inspected by:	T. Elkins

Notes: Tear down, cleaning, inspection, and write up for repair in Memphis shop. Rotating assembly pulled by Tim.

Rotating assembly pulled from Pump #1 station #5. The impeller is very bad worn condition. The bearing cavity oil was in extremely poor condition. The mechanical seal cavity oil had a large amount of water mixed in with the oil.

Holes in the impeller.

Metal particles, and sludge in the bearing oil.

Inboard bearing had spun in the bearing housing.
The specifications for the housing fit is 4.9225"
The maximum bearing fit is 4.9245"
The present housing measurement is 4.9280"
The housing is oversized by 0.0035".
If it used as is the new bearing will spin in the bearing housing and will lead to a complete bearing failure, which would cause a complete pump and seal failure.
Option #1 is to have the housing bored out and a sleeve inserted, and rebored to match the bearing fit. Cost $500-$650
Option #2 is to buy a new bearing housing. Cost $1150.

Outboard bearing had spun in the bearing housing.
The specifications for the outboard bearing housing fit is 5.5125".
The maximum bearing fit is 5.5140".
The present housing measurement is 5.5129"

The outboard bearing fit is ok.

Shaft is ok at the bearing fits on outboard bearing.

Shaft is ok at the bearing fit for theminvoard bearing

Bearings show damage from spinning inside the housing from lack of proper Lubrication and excessive heat build up.

Seal plate is ok. The mechanical seal is bad.

Rotating element for the mechanical seal is bad,

Tech: T Elkins

Owner / Contractor:

TENCARVA MUNICIPAL

Service Dept
615-727-6214

Southern Sales Company
2929 Kraft Dr.
Nashville, TN 37204

Site:	Helena #5 P2	City of Helena	
Location:	V6 rotating assembly	Station #5; pump #2	
Location:	Memphis shop	TMC#785321-000	
Inspection date:	August 7, 2017	Inspected by:	T. Elkins

Notes: Tear down, cleaning, inspection, and write up for repair in Memphis shop . A V6 rotating assembly brought in by Tim.

Rotating assembly pulled from pump #2 station #5. The impeller is in very bad worn condition. The bearing cavity oil was in very poor condition. The mechanical seals are leaking, water in the seal cavity oil.

Worn out and holes in the impeller.

Oil in poor condition, metal particles in the oil.

Mechanical seal plate is ok, the mechanical seal is bad.

Inboard bearing had spun in the bearing housing.
The specifications for the housing fit is 4.9225"
The maximum bearing fit is 4.9245"
The present housing measurement is 4.9238".

Outboard bearing had spun in the bearing housing.
The specifications for the outboard bearing housing fit is 5.5125".
The maximum bearing fit is 5.5140".
The present housing measurement is 5.5134".

The outboard bearing fit is ok by 0.0006"; and inboard bearing fit is ok by 0.0007".

Inboard bearing had spun in the bearing housing

Outboard bearing had spun in the bearing housing.

Bearings had spun in the bearing housing.

Outboard bearing shaft fit is ok.

Inboard bearing fit is ok, the outer bearing race had started to spin in the housing.

Tech: T Elkins

Owner / Contractor:

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	11/8/2012
ARRIVAL TIME:	8:15 AM

CUSTOMER:	City of West Helena	CONTACT:	Ken Fratise
		OUR ORDER NO: 394337-050	CUST. ORDER NO:

MANF.	MODEL	RUNNING HOURS	LOADED HOURS	UNIT S/N
Smith & Loveless				

DESCRIPTION OF WORK PERFORMED

Problem - Needs Impellers changed out.

Action - Replaced impellers, impeller bolts, and impeller washers, on both pumps.

Tested pumps for proper operation, found pumps rotation was backwards. Swapped out the wiring at L1 & L3.

Parts and Materials Used

1 of 60D21 (CW) impeller

1 of 60D42 (CCW) impeller

2 of 60A12 impeller bolts

2 of 60A20 Impeller washers

2 of 60A26 Volute gaskets.

1 of field service supplies.

RECOMMENDATIONS:

LABOR HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
2.5 hours (TIM)			3	168
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
2.5 hours (Steve)				

SERVICEMAN'S SIGNATURE:	CUSTOMER'S SIGNATURE
Timothy Elkins	

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	6/1/2011
ARRIVAL TIME:	2:00 PM

CUSTOMER: City of Helena		CONTACT: Terry Mc Ginister	
Lift Station #5		OUR ORDER NO:	CUST. ORDER NO: Cust P.O. # 8321

MANF.	MODEL	RUNNING HOURS	LOADED HOURS	UNIT S/N
Gorman Rupp	V6A60-B	Pump #1 - 3606.36	Pump #2 - 5546.17	

DESCRIPTION OF WORK PERFORMED

Problem - Pump #1 and #2 had water in seal cavity.

Found - Water in both pump seal cavities, and the bearing oils needed changing very badly.

Action - Pump #1 - S/N # 1384338N - Changed the oil in the seal cavity, and in the bearing cavity.

Action - Pump #2 - S/N # 1331559 - changed the oil in the bearing cavity, and in the bearing cavity.

No oil used - used customer furnished oil.

RECOMMENDATIONS: Check oil levels and oil condition in one week to see if the oil level drops or changes color, or milky.

indicates a bad mechanical seal if it leaks or changes.

LABOR HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
1.5			1.5	90
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES

SERVICEMAN'S SIGNATURE: **Timothy Elkins**	CUSTOMER'S SIGNATURE

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE: 6/28/2011

ARRIVAL TIME: 8:00 AM

CUSTOMER:	CONTACT:	
City of Helena	Terry McGinister	
	OUR ORDER NO:	CUST. ORDER NO:

MANF.	MODEL	RUNNING HOURS	LOADED HOURS	UNIT S/N
Gorman Rupp	V6A60-B			

DESCRIPTION OF WORK PERFORMED

Problem - Both pumps have bad mechanical seals and are leaking water.

Work Preformed - Shut off electrical power to pump #2, closed discharge valve, drained pump, removed motor belt guard, belts and pump sheave. Removed back cover, and impeller. Pulled the front bearing cap and shaft out of the rotating assembly. Checked the shaft and bearings for damage, removed the old shaft sleeve and o-ring. Cleaned the shaft and bearings. Knocked out the old stationary seat from the mechanical seal, and cleaned the seal plate. Reinstall the shaft into the rotating assembly. Installed the new mechanical seal into the seal plate, set the back impeller clearances and installed the old impeller. Flushed out the bearing and seal cavities with fresh 30 weight oil. Installed drain plugs and filled with fresh oil in both cavities. Reset the impeller to wear plate clearances, had to move the back cover 0.065" to get the clearances set properly. Reinstalled belts, sheaves and guards. Refilled pump with water and opened the discharge back. Reprimed the pump and checked for proper operation.

Preform the same work on pump #1 with the exception of moving the impeller/wear plate clearances 0.055".

Parts Used -

2 of 46513-155 Mechanical Seals.

Returned other parts check out back to shop stock.

RECOMMENDATIONS: Pumps ran dry due to the level controls being inside a different bay than the suction piping, and the high temperature sensor wired back in as manual reset only. Moved control sensor back into same bay as suction piping, or have somebody install a low water level float safety shutoff to keep the pumps from running dry and unprimed.

LABOR HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
6			3	150
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
6	Martin from CS		3	

SERVICEMAN'S SIGNATURE:	CUSTOMER'S SIGNATURE
Timothy Elkins	

TENCARVA MACHINERY COMPANY

FIELD SERVICE REPORT
3616 Cherry Road
Memphis, TN 38118
Phone 888-388-6310
Fax 901-794-7593

Owner:	City of Helena		Date of Service: 9/24/2014
Location:			Job #:
Completed:	No	Warranty Status:	
Customer Contact: (Name & Phone #)			
Bill To: Ricky			
Description of Problem: Run test of Helena T10 pumps			

Pump Serial No.:	1)	2)	3)	4)
Suction Pressure:	1)	2)	3)	4)
Discharge Pressure:	1)	2)	3)	4)
Pump Speed:	1)	2)	3)	4)
Running Amps:	1)	2)	3)	4)

Station S/N:	Line Voltage: 460	Control Voltage: 120/24
Motor Type: TEFC	Motor HP: 75	GPM:
Pump Model: T-10A3S/B	Controls: SCADA, PLC, Transducer	TDH:
Total Time on Job: 8 hours	Total Travel Time: 3 hours	Total Mileage: 150

Parts Used (Part # / Part Description / Qty.)

No parts or materials used

Notes:

Pump run test results:
#1 - One pump only @ 1150 RPM – 59' discharge/14' suction = 73' TDH with 1525 GPM with wet well level at 4.0' from bottom.
#2 – Two pumps@1450 RPM, – 111' discharge/13' suction = 124' TDH with 0 GPM on flow meter, wet well depth 4.5'.
#3 – Two pumps@1150 RPM – 74' discharge/15' suction = 89' TDH with 1700 GPM on flow meter, wet well depth 4.0'.
#4 – Two pumps@1250 RPM – 89' discharge/15' suction = 104' TDH with 1770 GPM on flow meter, wet well depth 4.2'.
#5 – Two pumps@1300 RPM, 56 Hertz, 86 amps –106' discharge/14' suction=120'TDH with 2050 GPM on flow meter, wet well5.0'
#6 – One pump@1325RPM, 55 Hertz, 86 amps – 1800 GPM.

Conditions as left after testing one pump only: 1150 RPM@46 Hertz, 62 amps, 1485 GPM. Running in automatic start lead pump at 7.0'; Stop lead pump level 4.0'. Watched pumps alternate both pumps.

Title:	Signatures:	Date:
TMC Service	Tim Elkins	9/24/2014
Owner Representative		

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	1/5/2012
ARRIVAL TIME:	8:30 AM

STOMER:	City of West Helena	CONTACT:	Ken Fratise
	Water Plant	OUR ORDER NO:	CUST. ORDER NO:

MANF.	MODEL	RUNNING HOURS	LOADED HOURS	UNIT S/N
ABB	100 HP Soft Start	4306 hours	1146 starts	

DESCRIPTION OF WORK PERFORMED

Problem - motor will not run trips out the overload.

Found - No problem with the unit at this time.

Action - Troubleshot and analysied the previous fault codes in the ABB soft start, found two motor overload protection faults at the same the pressure main was broken and the water tank level was below normal and still falling, I believe the low water tank level is what caused the pump motor to trip out on overload due to the pump/motor unit did not have enough pressure resistance of the water tank level was too low. Causing the motor too run too high of a amp reading the normal amp reading is 98 to 100 amps, and the motor overload rating is 117 amps. Therefore the pump was trying to pump too much and over amp or overloaded due to low tank level or low water pressure, or lack of resistance at the tank. Once the water tank levels reached the correct operation range the pump ran fine.

If this problem happens again, Example the water main breaks and the tank level is falling, and the pump is overloading due to lack of water pressure, resistance or low water tank level after cleaning, create a false head condition by partially closing the pump discharge valve to simulate a high head condition till the low water level situation is fixed.

If you have any questions or problems please contact me or Ricky Pollan, we will be happy to help.

RECOMMENDATIONS:

LABOR HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
1.5			3	160
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES

RVICEMAN'S SIGNATURE: **Timothy Elkins**	CUSTOMER'S SIGNATURE

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	6/1/2011
ARRIVAL TIME:	11:45 AM

CUSTOMER: City of West Helena			CONTACT: Ken Fratise	
Northwest pump Station - Project #3035			OUR ORDER NO:	CUST. ORDER NO:
MANF. Gorman Rupp	MODEL T6A3 S/B	RUNNING HOURS	LOADED HOURS	UNIT S/N Project 3035

DESCRIPTION OF WORK PERFORMED

Problem - Both pumps are hard to start, trash is causing both pumps to drag and trip out.

Action - Changed the Starting Boost Torque on both pumps.

RECOMMENDATIONS:

LABOR HOURS REG. 1	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS 1.75	TRAVEL MILES 90
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES

SERVICEMAN'S SIGNATURE: **Timothy Elkins**	CUSTOMER'S SIGNATURE

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE: 8/30/2011

ARRIVAL TIME: 10:00 AM

CUSTOMER: West Helena	CONTACT: Ken Fratise	
Miller & Lagoon Lift Station Preventative Maintenance	OUR ORDER NO:	CUST. ORDER NO:

MANF.	MODEL	RUNNING HOURS	LOADED HOURS	UNIT S/N
Gorman Rupp				

DESCRIPTION OF WORK PERFORMED

Miller School Lift Station preventative maintenance changed oil in both cavities, checked belt tighteness, adjusted impeller wear plate clearances, removed 0.010" shims. Pump #1 - 3433.82 hours; Pump #2 - 3206.19 hours. These are T-6A3 S/B's.

Lagoon Lift Station preventative maintenance changed oil in both cavities on both pumps, checked belt tightness, and adjusted the impeller/wear plate clearances on both pumps, removed 0.030" on both pumps.

Pump #1 - 3356.03 hours; Pump #2 - 3377.21 hours. These are T10A3 S/B's.

There is 0.030" adjustment left on pump #1; and 0.060" adjustment left on pump #2.

Parts and Materials Used

15 quarts of 30 # SAE non detergent motor oil

field service supplies

RECOMMENDATIONS:

LABOR HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
4			3	160
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES

SERVICEMAN'S SIGNATURE: **Timothy Elkins**

CUSTOMER'S SIGNATURE

TENCARVA MACHINERY COMPANY

FIELD SERVICE REPORT
3616 Cherry Road
Memphis, TN 38118
Phone 888-388-6310
Fax 901-794-7593

Owner:	City of West Helena		Date of Service: 4/9/2014
Location:	Miller Street and Lagoon Stations		Job #: 516615-000
Completed:	Yes – 4/30/2014	Warranty Status:	N/A
Customer Contact: (Name & Phone #)	Ken Fratize		
Bill To: City of West Helena			
Description of Problem: Adjust wear plate clearances of 2 lift stations			

Pump Serial No.:	1) 1418925 before	2) pump #2 before	1) 1418925 after	2) pump #2 after
Suction Pressure:	1) 17	2) 16.5	3) 17	4) 17.0
Discharge Pressure:	1) 10	2) 9.0	3) 10	4) 10.0
Pump Speed:	1) VFD variable	2) VFD Variable	3) VFD Variable	4) VFD variable
Running Amps:	1) 21/14/25	2)25.2/18.3/29.4	3) 21.7/14.8/25.4	4) 25.7/19.3/30.3

Station S/N: multiple	Line Voltage: 230	Control Voltage: 120
Motor Type:	Motor HP:	GPM: 350
Pump Model: T6A3S-B;T10A3S-B	Controls: floats	TDH: 45
Total Time on Job: 6.0	Total Travel Time: 3.0	Total Mileage: 168

Parts Used (Part # / Part Description / Qty.)

6 of #13130-3 17040 shim set

6 of #48261-056 shim set with handles

Notes:

Miller Street lift station - Tested pumps before starting adjustment of pump clearances. Pump #1 was adjusted 0.040"; Pump #2 was Adjusted 0.045". Collected data after adjustments.

Lagoon Lift Station – Adjusted pump #2 = 0.110". Pump #1 – Adjusted pump #1 = 0.090".

Title:	Signatures:	Date:
TMC Service	Tim Elkins	
Owner Representative		

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	1/5/2012
ARRIVAL TIME:	8:30 AM

CUSTOMER:	City of West Helena	CONTACT:	Ken Fratise
	Water Plant	OUR ORDER NO:	CUST. ORDER NO:

MANF.	MODEL	RUNNING HOURS	LOADED HOURS	UNIT S/N
ABB	100 HP Soft Start	4306 hours	1146 starts	

DESCRIPTION OF WORK PERFORMED

Problem - motor will not run trips out the overload.

Found - No problem with the unit at this time.

Action - Troubleshot and analysied the previous fault codes in the ABB soft start, found two motor overload protection faults at the same the pressure main was broken and the water tank level was below normal and still falling, I believe the low water tank level is what caused the pump motor to trip out on overload due to the pump/motor unit did not have enough pressure resistance of the water tank level was too low. Causing the motor too run too high of a amp reading the normal amp reading is 98 to 100 amps, and the motor overload rating is 117 amps. Therefore the pump was trying to pump too much and over amp or overloaded due to low tank level or low water pressure, or lack of resistance at the tank. Once the water tank levels reached the correct operation range the pump ran fine.

If this problem happens again, Example the water main breaks and the tank level is falling, and the pump is overloading due to lack of water pressure, resistance or low water tank level after cleaning, create a false head condition by partially closing the pump discharge valve to simulate a high head condition till the low water level situation is fixed.

If you have any questions or problems please contact me or Ricky Pollan, we will be happy to help.

RECOMMENDATIONS:

LABOR HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
1.5			3	160
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES

SERVICEMAN'S SIGNATURE:	CUSTOMER'S SIGNATURE
Timothy Elkins	

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	11/8/2012
ARRIVAL TIME:	8:15 AM

CUSTOMER: City of West Helena			CONTACT: Ken Fratise	
		OUR ORDER NO: 394337-050	CUST. ORDER NO:	
MANF.: Smith & Loveless	MODEL	RUNNING HOURS	LOADED HOURS	UNIT S/N

DESCRIPTION OF WORK PERFORMED

Problem - Needs Impellers changed out.

Action - Replaced impellers, impeller bolts, and impeller washers, on both pumps.

Tested pumps for proper operation, found pumps rotation was backwards. Swapped out the wiring at L1 & L3.

Parts and Materials Used

1 of 60D21 (CW) impeller

1 of 60D42 (CCW) impeller

2 of 60A12 impeller bolts

of 60A20 Impeller washers

2 of 60A26 Volute gaskets.

1 of field service supplies.

RECOMMENDATIONS:

LABOR HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
2.5 hours (TIM)			3	168
ASSISTANT'S HOURS REG. 2.5 hours (Steve)	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES

SERVICEMAN'S SIGNATURE: **Timothy Elkins**	CUSTOMER'S SIGNATURE

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	6/1/2011
ARRIVAL TIME.	2:00 PM

TOMER:	City of Helena	CONTACT:	Terry Mc Ginister
Lift Station #5		OUR ORDER NO:	CUST. ORDER NO: Cust P.O. # 8321

MANF.	MODEL	RUNNING HOURS	LOADED HOURS	UNIT S/N
Gorman Rupp	V6A60-B	Pump #1 - 3606.36	Pump #2 - 5546.17	

DESCRIPTION OF WORK PERFORMED

Problem - Pump #1 and #2 had water in seal cavity.

Found - Water in both pump seal cavities, and the bearing oils needed changing very badly.

Action - Pump #1 - S/N # 1384338N - Changed the oil in the seal cavity, and in the bearing cavity.

Action - Pump #2 - S/N # 1331559 - changed the oil in the bearing cavity, and in the bearing cavity.

No oil used - used customer furnished oil.

RECOMMENDATIONS: Check oil levels and oil condition in one week to see if the oil level drops or changes color, or milky.

indicates a bad mechanical seal if it leaks or changes.

LABOR HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
1.5			1.5	90
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES

ICEMAN'S SIGNATURE: **Timothy Elkins**	CUSTOMER'S SIGNATURE

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	6/28/2011
ARRIVAL TIME:	8:00 AM

CUSTOMER: City of Helena		CONTACT: Terry McGinister	
		OUR ORDER NO:	CUST. ORDER NO:

MANF.	MODEL	RUNNING HOURS	LOADED HOURS	UNIT S/N
Gorman Rupp	V6A60-B			

DESCRIPTION OF WORK PERFORMED

Problem - Both pumps have bad mechanical seals and are leaking water.

Work Preformed - Shut off electrical power to pump #2, closed discharge valve, drained pump, removed motor belt guard, belts and pump sheave. Removed back cover, and impeller. Pulled the front bearing cap and shaft out of the rotating assembly. Checked the shaft and bearings for damage, removed the old shaft sleeve and o-ring. Cleaned the shaft and bearings. Knocked out the old stationary seat from the mechanical seal, and cleaned the seal plate. Reinstall the shaft into the rotating assembly. Installed the new mechanical seal into the seal plate, set the back impeller clearances and installed the old impeller. Flushed out the bearing and seal cavities with fresh 30 weight oil. Installed drain plugs and filled with fresh oil in both cavities. Reset the impeller to wear plate clearances, had to move the back cover 0.065" to get the clearances set properly. Reinstalled belts, sheaves and guards. Refilled pump with water and opened the discharge back. Reprimed the pump and checked for proper operation.

Preform the same work on pump #1 with the exception of moving the impeller/wear plate clearances 0.055".

Parts Used -

2 of 46513-155 Mechanical Seals.

Returned other parts check out back to shop stock.

RECOMMENDATIONS: Pumps ran dry due to the level controls being inside a different bay than the suction piping, and the high temperature sensor wired back in as manual reset only. Moved control sensor back into same bay as suction piping, or have somebody install a low water level float safety shutoff to keep the pumps from running dry and unprimed.

LABOR HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
6			3	150
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
6	Martin from CS		3	

SERVICEMAN'S SIGNATURE:	CUSTOMER'S SIGNATURE
Timothy Elkins	

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	6/1/2011
ARRIVAL TIME:	11:45 AM

CUSTOMER: City of West Helena			CONTACT: Ken Fratise	
Northwest pump Station - Project #3035			OUR ORDER NO:	CUST. ORDER NO:
MANF. Gorman Rupp	MODEL T6A3 S/B	RUNNING HOURS	LOADED HOURS	UNIT S/N Project 3035

DESCRIPTION OF WORK PERFORMED

Problem - Both pumps are hard to start, trash is causing both pumps to drag and trip out.

Action - Changed the Starting Boost Torque on both pumps.

RECOMMENDATIONS.

LABOR HOURS REG. 1	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS 1.75	TRAVEL MILES 90
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES

SERVICEMAN'S SIGNATURE: **Timothy Elkins**	CUSTOMER'S SIGNATURE

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	8/30/2011
ARRIVAL TIME:	10:00 AM

TOMER: West Helena		CONTACT: Ken Fratise		
Miller & Lagoon Lift Station Preventative Maintenance		OUR ORDER NO:	CUST. ORDER NO:	
MANF. Gorman Rupp	MODEL	RUNNING HOURS	LOADED HOURS	UNIT S/N

DESCRIPTION OF WORK PERFORMED

Miller School Lift Station preventative maintenance changed oil in both cavities, checked belt tighteness, adjusted impeller wear plate clearances, removed 0.010" shims. Pump #1 - 3433.82 hours; Pump #2 - 3206.19 hours. These are T-6A3 S/B's.

Lagoon Lift Station preventative maintenance changed oil in both cavities on both pumps, checked belt tightness, and adjusted the impeller/wear plate clearances on both pumps, removed 0.030" on both pumps.

Pump #1 - 3356.03 hours; Pump #2 - 3377.21 hours. These are T10A3 S/B's.

There is 0.030" adjustment left on pump #1; and 0.060" adjustment left on pump #2.

Parts and Materials Used

15 quarts of 30 # SAE non detergent motor oil

field service supplies

RECOMMENDATIONS:

LABOR HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
4			3	160
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES

RVICEMAN'S SIGNATURE: **Timothy Elkins**	CUSTOMER'S SIGNATURE

TENCARVA MACHINERY COMPANY

FIELD SERVICE REPORT
3616 Cherry Road
Memphis, TN 38118
Phone 888-388-6310
Fax 901-794-7593

Owner:	City of West Helena		Date of Service: 4/9/2014
Location:	Miller Street and Lagoon Stations		Job #: 516615-000
Completed:	Yes – 4/30/2014	Warranty Status:	N/A
Customer Contact: (Name & Phone #)	Ken Fratize		
Bill To: City of West Helena			
Description of Problem: Adjust wear plate clearances of 2 lift stations			

Pump Serial No.:	1) 1418925 before	2) pump #2 before	1) 1418925 after	2) pump #2 after
Suction Pressure:	1) 17	2) 16.5	3) 17	4) 17.0
Discharge Pressure:	1) 10	2) 9.0	3) 10	4) 10.0
Pump Speed:	1) VFD variable	2) VFD Variable	3) VFD Variable	4) VFD variable
Running Amps:	1) 21/14/25	2)25.2/18.3/29.4	3) 21.7/14.8/25.4	4) 25.7/19.3/30.3

Station S/N: multiple	Line Voltage: 230	Control Voltage: 120
Motor Type:	Motor HP:	GPM: 350
Pump Model: T6A3S-B;T10A3S-B	Controls: floats	TDH: 45
Total Time on Job: 6.0	Total Travel Time: 3.0	Total Mileage: 168

Parts Used (Part # / Part Description / Qty.)

6 of #13130-3 17040 shim set

6 of #48261-056 shim set with handles

Notes:

Miller Street lift station - Tested pumps before starting adjustment of pump clearances. Pump #1was adjusted 0.040"; Pump #2 was Adjusted 0.045". Collected data after adjustments.

Lagoon Lift Station – Adjusted pump #2 = 0.110". Pump #1 – Adjusted pump #1 = 0.090".

Title:	Signatures:	Date:
TMC Service	Tim Elkins	
Owner Representative		

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	6/1/2011
ARRIVAL TIME:	11:45 AM

CUSTOMER: City of West Helena		CONTACT: Ken Fratise		
Northwest pump Station - Project #3035		OUR ORDER NO:	CUST. ORDER NO:	
MANF. Gorman Rupp	MODEL T6A3 S/B	RUNNING HOURS	LOADED HOURS	UNIT S/N Project 3035

DESCRIPTION OF WORK PERFORMED

Problem - Both pumps are hard to start, trash is causing both pumps to drag and trip out.

Action - Changed the Starting Boost Torque on both pumps.

RECOMMENDATIONS:

LABOR HOURS REG. 1	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS 1.75	TRAVEL MILES 90
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES

SERVICEMAN'S SIGNATURE: **Timothy Elkins**	CUSTOMER'S SIGNATURE

TENCARVA MACHINERY COMPANY

FIELD SERVICE REPORT
3616 Cherry Road
Memphis, TN 38118
Phone 888-388-6310
Fax 901-794-7593

Owner:	City of Helena		Date of Service: 9/24/2014
Location:			Job #:
Completed:	No	Warranty Status:	
Customer Contact: (Name & Phone #)			
Bill To: Ricky			
Description of Problem: Run test of Helena T10 pumps			

Pump Serial No.:	1)	2)	3)	4)
Suction Pressure:	1)	2)	3)	4)
Discharge Pressure:	1)	2)	3)	4)
Pump Speed:	1)	2)	3)	4)
Running Amps:	1)	2)	3)	4)

Station S/N:	Line Voltage: 460	Control Voltage: 120/24
Motor Type: TEFC	Motor HP: 75	GPM:
Pump Model: T-10A3S/B	Controls: SCADA, PLC, Transducer	TDH:
Total Time on Job: 8 hours	Total Travel Time: 3 hours	Total Mileage: 150

Parts Used (Part # / Part Description / Qty.)

No parts or materials used

Notes:

Pump run test results:
#1 - One pump only @ 1150 RPM – 59' discharge/14' suction = 73' TDH with 1525 GPM with wet well level at 4.0' from bottom.
#2 – Two pumps@1450 RPM, – 111' discharge/13' suction = 124' TDH with 0 GPM on flow meter, wet well depth 4.5'.
#3 – Two pumps@1150 RPM – 74' discharge/15' suction = 89' TDH with 1700 GPM on flow meter, wet well depth 4.0'.
#4 – Two pumps@1250 RPM – 89' discharge/15' suction = 104' TDH with 1770 GPM on flow meter, wet well depth 4.2'.
#5 – Two pumps@1300 RPM, 56 Hertz, 86 amps –106' discharge/14' suction=120'TDH with 2050 GPM on flow meter, wet well5.0'
#6 – One pump@1325RPM, 55 Hertz, 86 amps – 1800 GPM.

Conditions as left after testing one pump only: 1150 RPM@46 Hertz, 62 amps, 1485 GPM. Running in automatic start lead pump at 7.0'; Stop lead pump level 4.0'. Watched pumps alternate both pumps.

Title:	Signatures:	Date:
TMC Service	Tim Elkins	9/24/2014
Owner Representative		

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	11/8/2012
ARRIVAL TIME:	8:15 AM

STOMER: City of West Helena	CONTACT: Ken Fratise	
	OUR ORDER NO: 394337-050	CUST. ORDER NO:

MANF.	MODEL	RUNNING HOURS	LOADED HOURS	UNIT S/N
Smith & Loveless				

DESCRIPTION OF WORK PERFORMED

Problem - Needs Impellers changed out.

Action - Replaced impellers, impeller bolts, and impeller washers, on both pumps.

Tested pumps for proper operation, found pumps rotation was backwards. Swapped out the wiring at L1 & L3.

Parts and Materials Used

1 of 60D21 (CW) impeller

1 of 60D42 (CCW) impeller

2 of 60A12 impeller bolts

of 60A20 Impeller washers

2 of 60A26 Volute gaskets.

1 of field service supplies.

RECOMMENDATIONS:

LABOR HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
2.5 hours (TIM)			3	168
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
2.5 hours (Steve)				

ERVICEMAN'S SIGNATURE:	CUSTOMER'S SIGNATURE
Timothy Elkins	

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	1/5/2012
ARRIVAL TIME:	8:30 AM

CUSTOMER: City of West Helena		CONTACT: Ken Fratise		
Water Plant		OUR ORDER NO:	CUST. ORDER NO:	
MANF. ABB	MODEL 100 HP Soft Start	RUNNING HOURS 4306 hours	LOADED HOURS 1146 starts	UNIT S/N

DESCRIPTION OF WORK PERFORMED

Problem - motor will not run trips out the overload.

Found - No problem with the unit at this time.

Action - Troubleshot and analysied the previous fault codes in the ABB soft start, found two motor overload protection faults at the same the pressure main was broken and the water tank level was below normal and still falling, I believe the low water tank level is what caused the pump motor to trip out on overload due to the pump/motor unit did not have enough pressure resistance of the water tank level was too low. Causing the motor too run too high of a amp reading the normal amp reading is 98 to 100 amps, and the motor overload rating is 117 amps. Therefore the pump was trying to pump too much and over amp or overloaded due to low tank level or low water pressure, or lack of resistance at the tank. Once the water tank levels reached the correct operation range the pump ran fine.

If this problem happens again, Example the water main breaks and the tank level is falling, and the pump is overloading due to lack of water pressure, resistance or low water tank level after cleaning, create a false head condition by partially closing the pump discharge valve to simulate a high head condition till the low water level situation is fixed.

If you have any questions or problems please contact me or Ricky Pollan, we will be happy to help.

RECOMMENDATIONS

LABOR HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
1.5			3	160
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES

SERVICEMAN'S SIGNATURE: **Timothy Elkins**	CUSTOMER'S SIGNATURE

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	8/30/2011
ARRIVAL TIME:	10:00 AM

TOMER: West Helena		CONTACT: Ken Fratise		
Miller & Lagoon Lift Station Preventative Maintenance		OUR ORDER NO:	CUST. ORDER NO:	
MANF.	MODEL	RUNNING HOURS	LOADED HOURS	UNIT S/N
Gorman Rupp				

DESCRIPTION OF WORK PERFORMED

Miller School Lift Station preventative maintenance changed oil in both cavities, checked belt tightness, adjusted impeller wear plate clearances, removed 0.010" shims. Pump #1 - 3433.82 hours; Pump #2 - 3206.19 hours. These are T-6A3 S/B's.

Lagoon Lift Station preventative maintenance changed oil in both cavities on both pumps, checked belt tightness, and adjusted the impeller/wear plate clearances on both pumps, removed 0.030" on both pumps.

Pump #1 - 3356.03 hours; Pump #2 - 3377.21 hours. These are T10A3 S/B's.

There is 0.030" adjustment left on pump #1; and 0.060" adjustment left on pump #2.

Parts and Materials Used

15 quarts of 30 # SAE non detergent motor oil

field service supplies

RECOMMENDATIONS:

LABOR HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
4			3	160
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES

SERVICEMAN'S SIGNATURE: Timothy Elkins	CUSTOMER'S SIGNATURE

TENCARVA MACHINERY COMPANY

FIELD SERVICE REPORT
3616 Cherry Road
Memphis, TN 38118
Phone 888-388-6310
Fax 901-794-7593

Owner:	City of West Helena		Date of Service: 4/9/2014
Location:	Miller Street and Lagoon Stations		Job #: 516615-000
Completed:	Yes – 4/30/2014	Warranty Status:	N/A
Customer Contact: (Name & Phone #)	Ken Fratize		
Bill To: City of West Helena			
Description of Problem: Adjust wear plate clearances of 2 lift stations			

Pump Serial No.:	1) 1418925 before	2) pump #2 before	1) 1418925 after	2) pump #2 after
Suction Pressure:	1) 17	2) 16.5	3) 17	4) 17.0
Discharge Pressure:	1) 10	2) 9.0	3) 10	4) 10.0
Pump Speed:	1) VFD variable	2) VFD Variable	3) VFD Variable	4) VFD variable
Running Amps:	1) 21/14/25	2)25.2/18.3/29.4	3) 21.7/14.8/25.4	4) 25.7/19.3/30.3

Station S/N: multiple	Line Voltage: 230	Control Voltage: 120
Motor Type:	Motor HP:	GPM: 350
Pump Model: T6A3S-B;T10A3S-B	Controls: floats	TDH: 45
Total Time on Job: 6.0	Total Travel Time: 3.0	Total Mileage: 168

Parts Used (Part # / Part Description / Qty.)

6 of #13130-3 17040 shim set

6 of #48261-056 shim set with handles

Notes:

Miller Street lift station - Tested pumps before starting adjustment of pump clearances. Pump #1was adjusted 0.040"; Pump #2 was Adjusted 0.045". Collected data after adjustments.

Lagoon Lift Station – Adjusted pump #2 = 0.110". Pump #1 – Adjusted pump #1 = 0.090".

Title:	Signatures:	Date:
TMC Service	Tim Elkins	
Owner Representative		

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	6/1/2011
ARRIVAL TIME:	2:00 PM

CUSTOMER:	City of Helena	CONTACT:	Terry Mc Ginister
Lift Station #5		OUR ORDER NO:	CUST. ORDER NO: Cust P.O. # 8321

MANF.	MODEL	RUNNING HOURS	LOADED HOURS	UNIT S/N
Gorman Rupp	V6A60-B	Pump #1 - 3606.36	Pump #2 - 5546.17	

DESCRIPTION OF WORK PERFORMED

Problem - Pump #1 and #2 had water in seal cavity.

Found - Water in both pump seal cavities, and the bearing oils needed changing very badly.

Action - Pump #1 - S/N # 1384338N - Changed the oil in the seal cavity, and in the bearing cavity.

Action - Pump #2 - S/N # 1331559 - changed the oil in the bearing cavity, and in the bearing cavity.

No oil used - used customer furnished oil.

RECOMMENDATIONS: Check oil levels and oil condition in one week to see if the oil level drops or changes color, or milky.

indicates a bad mechanical seal if it leaks or changes.

LABOR HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
1.5			1.5	90
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES

SERVICEMAN'S SIGNATURE:	CUSTOMER'S SIGNATURE
Timothy Elkins	

TENCARVA MACHINERY COMPANY
SERVICEMAN'S REPORT

DATE:	6/28/2011
ARRIVAL TIME:	8:00 AM

TOMER:	City of Helena	CONTACT:	Terry McGinister
		OUR ORDER NO:	CUST. ORDER NO:

MANF.	MODEL	RUNNING HOURS	LOADED HOURS	UNIT S/N
Gorman Rupp	V6A60-B			

DESCRIPTION OF WORK PERFORMED

Problem - Both pumps have bad mechanical seals and are leaking water.

Work Preformed - Shut off electrical power to pump #2, closed discharge valve, drained pump, removed motor belt guard, belts and pump sheave. Removed back cover, and impeller. Pulled the front bearing cap and shaft out of the rotating assembly. Checked the shaft and bearings for damage, removed the old shaft sleeve and o-ring. Cleaned the shaft and bearings. Knocked out the old stationary seat from the mechanical seal, and cleaned the seal plate. Reinstall the shaft into the rotating assembly. Installed the new mechanical seal into the seal plate, set the back impeller clearances and installed the old impeller. Flushed out the bearing and seal cavities with fresh 30 weight oil. Installed drain plugs and filled with fresh oil in both cavities. Reset the impeller to wear plate clearances, had to move the back cover 0.065" to get the clearances set properly. Reinstalled belts, sheaves and guards. Refilled pump with water and opened the discharge back. Reprimed the pump and checked for proper operation.

Preform the same work on pump #1 with the exception of moving the impeller/wear plate clearances 0.055".

Parts Used -

2 of 46513-155 Mechanical Seals.

Returned other parts check out back to shop stock.

RECOMMENDATIONS: Pumps ran dry due to the level controls being inside a different bay than the suction piping, and the high temperature sensor wired back in as manual reset only. Moved control sensor back into same bay as suction piping, or have somebody install a low water level float safety shutoff to keep the pumps from running dry and unprimed.

LABOR HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
6			3	150
ASSISTANT'S HOURS REG.	LABOR HOURS O.T.	LABOR HOURS HOLIDAY	TRAVEL HOURS	TRAVEL MILES
6	Martin from CS		3	

VICEMAN'S SIGNATURE:	CUSTOMER'S SIGNATURE
Timothy Elkins	

TENCARVA MACHINERY COMPANY

FIELD SERVICE REPORT
3616 Cherry Road
Memphis, TN 38118
Phone 888-388-6310
Fax 901-794-7593

Owner:	City of Helena		Date of Service: 9/24/2014
Location:			Job #:
Completed:	No	Warranty Status:	
Customer Contact: (Name & Phone #)			
Bill To: Ricky			
Description of Problem: Run test of Helena T10 pumps			

Pump Serial No.:	1)	2)	3)	4)
Suction Pressure:	1)	2)	3)	4)
Discharge Pressure:	1)	2)	3)	4)
Pump Speed:	1)	2)	3)	4)
Running Amps:	1)	2)	3)	4)

Station S/N:	Line Voltage: 460	Control Voltage: 120/24
Motor Type: TEFC	Motor HP: 75	GPM:
Pump Model: T-10A3S/B	Controls: SCADA, PLC, Transducer	TDH:
Total Time on Job: 8 hours	Total Travel Time: 3 hours	Total Mileage: 150

Parts Used (Part # / Part Description / Qty.)

No parts or materials used

Notes:

Pump run test results:
#1 - One pump only @ 1150 RPM – 59' discharge/14' suction = 73' TDH with 1525 GPM with wet well level at 4.0' from bottom.
#2 – Two pumps@1450 RPM, – 111' discharge/13' suction = 124' TDH with 0 GPM on flow meter, wet well depth 4.5'.
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#4 – Two pumps@1250 RPM – 89' discharge/15' suction = 104' TDH with 1770 GPM on flow meter, wet well depth 4.2'.
#5 – Two pumps@1300 RPM, 56 Hertz, 86 amps –106' discharge/14' suction=120'TDH with 2050 GPM on flow meter, wet well5.0'
#6 – One pump@1325RPM, 55 Hertz, 86 amps – 1800 GPM.

Conditions as left after testing one pump only: 1150 RPM@46 Hertz, 62 amps, 1485 GPM. Running in automatic start lead pump at 7.0'; Stop lead pump level 4.0'. Watched pumps alternate both pumps.

Title:	Signatures:	Date:
TMC Service	Tim Elkins	9/24/2014
Owner Representative		