

Pump Stations Evaluation

Gun Plain Charter Township



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Project Description & Background

Gun Plain Charter Township owns and operates the sanitary sewer system within the jurisdictional boundaries of the township. The system is primarily located around Lake Doster but there are also several separate sewer systems in other parts of the Township. All the wastewater collected in the Township's sewer flows to the City of Plainwell and is treated by the City's wastewater treatment system.

It has come to the attention of Township leaders that the reliability of the system is being questioned. The sewer system is getting old and some of the pump stations are showing signs of deterioration. To proactively address the situation before it turns into an emergency repair, the Township commissioned this evaluation to better understand the scale and cost of the needed improvements.

The Township has 14 Pump Stations and 14 Grinder Stations within the existing sewer system.

Before we get into the technical details of this report it is important to clarify some terminology that is used. There are two terms, (Pump Station and Grinder Station) that have been used interchangeably in the record drawings and other documentation. Additionally, some pump station numbers, and their addresses have been skipped or otherwise misrepresented in various other documents. For the purposes of this report, we have defined the infrastructure to be evaluated using the following numbers, and addresses. The infrastructure has also been defined using the following terms and definitions:

Pump Station: Refers to a duplex pumping system that serve multiple homes. There are two pumps within each Pump Station. These may be either non-clog or grinder style pumps.

- Pump Station #1: 381 M-89 at the Silver Creek crossing.
- Pump Station #2: 210 Golf View Drive.
- Pump Station #3: 117 South Lake Doster Drive.
- Pump Station #4: 161 South Lake Doster Drive.
- Pump Station #5: 318 Midlakes Drive.
- Pump Station #6: 150 Parkway Street.
- Pump Station #7: 327 Highland Court.
- Pump Station #8: 307 Blarney Lane.
- Pump Station #9: 374 Shangri-La Circle.
- Pump Station #10: 15070 Doster Road.
- Pump Station #11: 429 Midlakes Drive/26 Drake.
- Pump Station #12: 210 Hestia Drive.
- Pump Station #13: Does Not Exist.
- Pump Station #14: 617 10th Street.
- Pump Station #15: 672 Edwards Street.

Grinder Station: Refers to duplex and a few simplex pumping systems that serve a small number of homes, typically one or two homes. These Grinder Stations use only grinder style pumps. Below is a list of the Grinder Stations, their number, simplex/duplex, and address:

- Grinder Station #1: Does Not Exist
- Grinder Station #2: Duplex, 177 South Lake Doster Drive.
- Grinder Station #3: Duplex, 319 Horseshoe Court.
- Grinder Station #4: Duplex, 311 Horseshoe Court.
- Grinder Station #5: Duplex, 335 Lakeview Lane.
- Grinder Station #6: Simplex, 336 1/2 Horseshoe Court.
- Grinder Station #7: Duplex, 363 Horseshoe Court.
- Grinder Station #8: Duplex, 343 Bavview Lane.
- Grinder Station #9: Simplex, 332 Bayview Lane.
- Grinder Station #10: Duplex, 336 Bayview Lane.
- Grinder Station #11: Duplex, 333 ½ Bayview Lane.
- Grinder Station #12: Duplex, 75 South Lake Doster Drive.
- Grinder Station #13: Duplex, 327 Highland Court.
- Grinder Station #14: Duplex, 347 Highland Court.



Grinder Station #15: Duplex, 353 Highland Court.

Review of Existing Documentation

Record Drawings

The following record drawings were obtained and reviewed as part of this study:

- 1977 Sanitary Drain contracts A & B
 - These drawings include Pump Stations #1 through #8 and in general are the westerly portion of the Lake Doster sewer system. This also includes the pump station and forcemain string that outlets the wastewater to the City of Plainwell's system.
 - o Grinder Stations within this collection system.
- 1980 Sanitary Drain 2
 - These drawings include the gravity flow sewer in Golf View Drive and Country Lake Boulevard
- 1999 Upper Lake Doster II
 - These drawings include pump stations #9 through #12 and in general are the east and north sides of Lake Doster.
 - o Grinder Stations within this collection system.

Notably absent drawings:

- South Fork Drive and Logan Parkway Drawings
 - We understand the sewer system in this section is privately owned and therefore not part of the municipal system, but it still discharges into the municipal system upstream of Pump Station #3.
- The Sewer system connected to Pump stations #14 & #15.

One significant difference between the record drawings and what was actually constructed is the presence of separate valve chambers on Pump Stations #4 through #8. The original design called for separate valve chambers however the original contractors built the valves inside the wetwells instead of constructing separate valve chambers.

Flow Meter Data

Flow meters are installed at Pump Stations #1 (Lake Doster) and #14 (10th Street). Data from these meters was analyzed for the period from December 21, 2022, through November 16, 2023 to calculate the relative influence of infiltration and inflow (I&I). I&I is the amount of clean water that is entering the sewer system that shouldn't be there.

Lake Doster System

During the period analyzed, an average flow of 35,970 gallons per day was measured by the flow meters. The sewer system currently serves 281 Residential Equivalency Units (REU's). With an assumed average of 2.5 people per REU and 50 gallons of wastewater generated by each person. Therefore, the calculations would predict a flow of 35,125 gallons per day. Due to these flow numbers being so close to one another, we can conclude that there is very little I/I within the Lake Doster collection system.

It should also be noted that measured flow during the period from January to March averaged 34,034 gpd while the average flow from June to August was 37,098 gpd. The consistency of the numbers indicates that few homes are vacated during the winter months.



North 10th Street System

Similar to the analysis conducted for Lake Doster system, we noted that the system had an average measured flow of 9,805 gallons per day. With the 42 REU's connected to this system, the average wastewater generation expected should be about 5,250 gallons per day. Given the large gap in these numbers we can assume that about half the flow within this collection system is clean water from I&I.

Field Evaluations

Field evaluation of Pump Stations #1 through #15 as well as Grinder Stations 5, 7, 8, 10, 13 & 14 were performed according to typical industry standards. Evaluation forms for each Station evaluated can be found in Appendix A. The evaluation included pump drawdown tests as well as visual inspections of the piping, control panels and other station components.

Before the evaluations were conducted it was agreed by all parties that because the 14 Grinder Stations are all the same age and in approximately the same condition that it would be most cost efficient to conduct evaluations at only six stations. The six selected included the two that were thought to be in the worst condition, the two that were thought to be in the best condition and then the remaining two were selected at random. In general, the conditions found at the Grinder Stations was what we expected and very similar among the six evaluated. Our recommendations for all 14 grinder stations are based on the interpolation of the findings from the six evaluations conducted.

Station Component Observations

The observations and recommendations made are organized in the section below by component rather than by Station number. The detailed cost estimate in Appendix B is organized by Station number.

Control Panels

Pump Stations #2 through #8 and all 14 Grinder Stations

Many of the existing control panels on the Pump stations as well as Grinder Stations are original to their late 1970's construction. The panels have been maintained over the years and as various individual components failed, they were to replaced as needed. However, the control panels are well beyond their life expectancy and should be replaced. Significant irreplaceable deficiencies include:

- Some of the components in the control panels are no longer available to purchase.
 Alternative products and work arounds have been implemented to keep the stations in operation.
- Many of the control panel supports are attached directly to the pump station lids. The lids have rusted to the point that they can no longer support the control panel and they are now in jeopardy of falling over.
- The location of the control panels relative to the wetwells no longer meets code. Line voltage in the presence of gasses produced by wastewater have the potential for fire and explosion.

Recommendations:

Replace the control panels in their entirety at each station. At Pump Stations #4 through #8 and all 14 Grinder Stations, the control panel support structure is integral to the wetwell cover and hatch. The cover and hatch are also recommended for replacement stated elsewhere in this report.

Pump Stations #9 through #12 and #15

These control panels are also original to their initial construction in about the year 2000. They are showing their age but generally appear to be in good shape. They still have a few years of functional life left within them, and their replacement is not warranted at this time. However, as components within them begin to fail with increasing frequency a decision will need to be made as to whether it is more cost efficient to continue replacing parts or just replace the panel.

Recommendations: No immediate improvements needed.



Stations #1 and #14

The control panels in these stations are relatively new. The Pump Station #1 control panel was replaced recently but the date could not be determined. Pump Station #14's was replaced in 2012. No improvements are recommended to either of these control panels.

Pumps

Pumps are the component in Stations that have the shortest expected life due to the normal wear and tear from their moving parts. The expected life of a pump is generally considered to be 10-15 years. We understand the pumps throughout all the Township's stations are at different points within their expected life. The below recommendations are based on conditions at the time of the evaluations and should be briefly reevaluated if a larger infrastructure improvement project is implemented.

Pump Stations #4 through #8 and all 14 Grinder Stations

We recommend all the pumps in these Stations be replaced. Some of these existing pumps may have some useful life left within them and if so, can be shelved as spare parts. We base this recommendation on other recommendations within the report that include complete replacement of the piping within these stations and the observation that many of the pump guiderails have failed and those that haven't failed yet are about to. Replacing the pumps, guiderails and all the piping at the same time is the appropriate plan of action.

All other Stations

No pump problems are known to exist.

Bypass Connections

Bypass connections are comprised of piping and valve configurations that allow the wastewater to be pumped through a hose to a waiting truck in the case of maintenance needs such as a broken forcemain. They can also be used in the case of a complete failure of a control panel from something like a lightning strike. A portable pump can be used to pump out of the wetwell and into the bypass connection. Bypass connections are now standard for new pump station construction and would likely be required by the State when modifications are made to existing pump stations. The below identifies the bypass connection needs at each of the Pump Stations.

- Pump Station #1: Bypass connection already in place, no improvement needed.
- Pump Station #2: Undetermined because the valve chamber could not be accessed.
 However, the original construction drawings show a bypass connection was originally designed. For the purposes of this report a bypass connection is assumed to exist and is functional.
- Pump Station #3: Undetermined because the valve chamber could not be accessed.
 However, the original construction drawings show a bypass connection was originally
 designed. For the purposes of this report a bypass connection is assumed to exist and is
 functional.
- Pump Stations #4 through #8: As noted above the original design of these stations called for
 valve chambers that contained bypass connections. However, the valve chambers were
 never constructed and therefore the bypass connections do not exist. We recommend adding
 bypass connections to these pump stations.
- Pump station #9: Undetermined because the valve chamber could not be accessed.
 However, the original construction drawings show a bypass connection was originally designed. For the purposes of this report a bypass connection is assumed to exist and is functional.
- Pump station #10: Undetermined because the valve chamber could not be accessed.
 However, the original construction drawings show a bypass connection was originally designed. For the purposes of this report a bypass connection is assumed to exist and is functional.
- Pump Station #11: Bypass connection already in place, no improvement needed.
- Pump Station #12: Bypass connection already in place, no improvement needed.



- Pump Station #14: Bypass connection already in place but should be improved to replace the missing hose quick connect fitting.
- Pump Station #15: Bypass connection already in place, no improvement needed.

Valves and Piping in the Wetwell and Valve Chambers Pump Stations #1 through #3 and #9 through #15

The pipes, valves, guiderails, and other significant components that could be visually accessed from the surface all appear to be functional and in decent shape. They are likely all original to their construction. Valves were not operated due the need for confined space entry to access them. Based on the operator's verbal statements, we understand all valves are operable their replacement is not needed.

The existing paint of each of these piping systems is failing and rust has formed on every pipe and valve. We recommend all exposed piping and valving in the wetwells, valve chambers and the meter chamber be repainted to prolong their longevity.

Pump Stations #4 through #8 and all 14 Grinder Stations

Each of these Stations were constructed using galvanized steel pipe and valves. These piping systems have rusted and have been failing. As they fail, they have been patched with PVC pipe and valving systems. Additionally, the buried forcemain immediately outside of the Stations is also galvanized steel pipe for a few feet before it is connected to the buried PVC forcemain.

Similarly, the pump guiderails were originally constructed of galvanized steel pipe and fittings. They have corroded and many have failed.

We recommend all the piping in these stations be replaced including the buried portion of the forcemain outside of the station with PVC pipe and valves. Guiderails and their connection systems should be replaced with non-corrodible material.

Portable Generator Access

Pump station #1 is the only pump station to have an existing permanent on-site generator. The remaining pump stations rely on the use of portable generators which must be brought to the site and plugged in to maintain pumping operations. Several pump stations are located a significant distance from the roadway requiring either a vehicle to drive across lawns or the generator be hand carried/rolled to the pump station. During the winter when snow is on the ground, this becomes nearly impossible. Additionally, we understand that many of the homes have personal generators to provide power to their homes when utility power is lost. In this situation, the home's water well will continue to operate as the home generates wastewater and send that wastewater to the pump station even if the portable generator at the station has not yet been set up leading to potential overflows. The need to rely on a portable generator makes operations time consuming and expensive. We recommend improvements be made to lessen the operations burden in this regard, which also adds reliability to the system and reduces the chance of a pump station overflow into the lake.

Permanent Generators

We recommend permanent generators be added to pump stations #2 & #3 because both of these stations pump 100% of the flow from Lake Doster just as Pump Station #1 does.

Remote Plugs for Portable Generators

We recommend that Pump Stations 4-15 have generator plugs installed adjacent to edge of the road or within easy vehicle access. As an example, pump station #4 is located 200 feet from S Lake Doster Drive. We recommend a generator plug and accompanying switch gear be installed directly adjacent to the roadway. This would allow a trailer mounted generator to be parked on the road shoulder and plugged into this receptacle to operate the pump station. We recommend:



- PS#4: Add a remote receptacle.
- PS#5: Already adjacent to the road, no change.
- PS#6: Already adjacent to the road, no change.
- PS#7: Add a remote receptacle.
- PS#8: Already adjacent to the road, no change.
- PS#9: Already adjacent to the road, no change.
- PS#10: Already adjacent to the road, no change.
- PS#11: A remote generator receptacle already exists, no change.
- PS#12: Add a remote receptacle.
- PS#14: Already adjacent to the road, no change.
- PS#15: Construct a driveway typical of pump stations so a vehicle can access the existing generator receptacle.

Each of the 14 Grinder Stations serve a small number of homes compared to the Pump Stations identified above. Most of the Grinder Stations are in locations that would also require a generator to be hand carried to its location. However, the volume of wastewater from the grinder stations is relatively small in comparison to the Pump Stations and may not justify the expense of adding a remote generator receptacle. We haven't recommended remote receptacles for the Grinder Stations in this report due to cost concerns, however, if the Township staff, the residents, or the operations staff prefer that they be installed, we fully support that action.

Wetwell Structure Condition

Wetwells are exposed to corrosion inducing gasses throughout their lifetime and often exhibit degradation of their concrete. This section reviews and address deficiencies found through our field investigations. It is noted that our field assessment was limited to what can be seen from the surface, we did not enter the wetwells. Further, portions of the wetwell are under water and not visible, therefore our observations may not identify all deficiencies that exist.

All Grinder Stations

All 14 Grinder Station wetwells are constructed of fiberglass and are therefore not subject to corrosion. The only defects found were at the location where the pump discharge pipe penetrates the fiberglass structure. In some of these situations, the hole through the fiberglass needs to be repaired to provide a full seal. As stated elsewhere in this report, it is our recommendation to replace all the pipes in the Grinder Stations and the hole should be repaired when that work is completed.

Pump Stations #1, #2, #3, #9, #12 and #15

Unless it is further discussed below, the wetwell appears to be in acceptable condition with no major defects noted. As part of the other work recommended in this report, the pump stations will need to be taken out of service for a time. While that is done, we recommend all the wastewater be removed to the wetwell bottom, the structure pressure washed and inspected from the inside using confined space entry equipment. If defects are found after pressure washing or below the normal water surface, they should be repaired at that time. If there are significant defects found, consideration should be given to having the wetwell lined.

Pump Station #4

The concrete has significant cracking near where the gravity pipes enter the wetwell. Based on the width of the cracks, its possible chunks of concrete may fall off into the wetwell bottom. The concrete should be repaired by removing the deficient concrete, using cement mortar to replace the damaged sections, and lining the entire wetwell.

Pump station #5

A section of the concrete wetwell wall appears to be splitting open and chunks of concrete are falling to the bottom. The area in question is between the two discharge pipes as they exit the wetwell appear to be connected to the pipes penetrating the wetwell. The concrete should be repaired by removing the deficient concrete, using cement mortar to replace the damaged sections, and lining the entire wetwell.



Pump station #6

Some of the joints in the precast concrete are deteriorating and pieces are falling off. A joint exists where the two pump discharge pipes exit the wetwell that has significantly deteriorated. The concrete should be repaired by removing the deficient concrete, using cement mortar to replace the damaged sections, and lining the entire wetwell.

Pump station #7

This wetwell has a precast concrete joint with significant root intrusion. The roots are growing through the concrete joint seeking nutrients in the wastewater. The roots should be removed, the crack repaired using cement mortar to replace the damaged section and lining the entire wetwell.

Pump station #8

This wetwell has been lined in the past. The wetwell should still be pressure washed and inspected below the water surface as identified above however no defects were visibly noted other than an unexplained rust stain below one of the precast concrete joints.

Pump station #10

This wetwell has some concrete deterioration at the points where the pipes penetrate the wetwell. The concrete should be repaired by removing the deficient concrete, using cement mortar to replace the damaged sections, and lining the entire wetwell.

Pump station #11

The entire bottom section of this wetwell is deficient. Roots are visible protruding through cracks, signs of significant infiltration are present and concrete spauling humps appear to be present. All these deficiencies should be removed, pressurized grouting applied seal the joints and deficiencies repaired using cement mortar to replace the damaged sections and lining the entire wetwell.

Pump station #14

This wetwell appears to have minor concrete surface degradation from a point that appears to be the groundwater level down to the water surface. The damage appears to be related to water naturally weeping through the concrete and causing the interior surface to degrade. After pressure washing the surface and inspecting, the entire wetwell should be lined.

Valve Chambers

Valve chambers exist on 9 of the 14 Pump Stations, specifically on stations #1-#3 and #9-#15. During our field evaluations we were not able to access the valve chambers at Pump Stations #2, #3, #9, & #10 for various reasons. Access to these valve chambers should be arranged and full inspections made.

Some valve chambers were full of rainwater and others were mostly dry. Wet conditions are not bad for valve chambers in general because the components within them are made to operate in submerged conditions with two exceptions:

Valve Chamber at Pump Station #1

The valve chamber has about 2' of water in it. A drainpipe appears to be present but is set high and cannot fully drain the valve chamber. Besides the pipe and valves in the valve chamber there is also a flow meter. Flow meters are also made to operate in submerged conditions, however, in our experience submerged flow meters can be problematic. We recommend repositioning the drainpipe lower or installing a sump pump in this valve chamber to fully drain the valve chamber and keep the flow meter out of the water. There also appears to be an unused electrical panel on the wall of this valve chamber. This old panel should be removed.



Painting the Pipes

As stated elsewhere in this report, the piping in the valve chamber should be repainted to add increase their longevity. Currently the pipes are underwater and the ductile iron pipes are rusting. If the valve chambers continue to operate in a submerged or partially submerged condition, painting the piping is especially important.

Hatches and access Manhole Covers

Each of the wetwells and valve chambers have access hatches that allow access into them. These hatches deteriorate over time, and some are in need of attention as identified below. In addition to the below, we also recommend safety grates be installed on each of the hatches larger than 36" x 36".

Pump Station #1

Wetwell: Hatch: The hinges are rusted making it difficult to open and its locking hasp is broken. The hatch should be replaced.

Valve Chamber Manhole Cover: No Improvements needed.

Pump Station #2

Wetwell: Hatch: No Improvements needed.

Valve Chamber Manhole Cover: Buried and inaccessible. Removed soil covering cover and dislodge from its frame.

Pump Station #3

Wetwell: Hatch: The hinges and frame are deteriorating. The hatch should be replaced. Valve Chamber Manhole Cover: Manhole cover could not be removed from its frame. Dislodge from its frame, clean the surfaces and make usable again.

Pump stations #4-#8 and all 14 Grinder Stations: The hatches on these stations have all deteriorated and should be replaced with a similar model that acts as a wetwell top and a hatch.

Pump Station #9

Wetwell: Hatch: No Improvements needed.

Valve Chamber Hatch: Could not access. Restore existing hatch to be accessible.

Pump Station #10

Wetwell: Hatch: No Improvements needed.

Valve Chamber Hatch: Could not access. Restore existing hatch to be accessible.

Pump Station #11

Wetwell: Hatch: No Improvements needed. Valve Chamber Hatch: No Improvements needed.

Pump Station #12

Wetwell: Hatch: No Improvements needed.

Valve Chamber Hatch: No Improvements needed.

Pump Station #14

Wetwell: Hatch: No Improvements needed. Valve Chamber Hatch: No Improvements needed. Meter Manhole Cover: No Improvements needed.

Pump Station #15

Wetwell: Hatch: No Improvements needed.

Valve Chamber Hatch: No Improvements needed.



Miscellaneous

Several items of repair were noted that do not fit in any of the specific headings listed above. They are described as follows:

PS#1

- The generator exterior enclosure is showing significant rust spots and should be repainted or replaced.
- Vegetation has grown up and is starting to overtake the generator and control panel.
 Vegetation should be trimmed back significantly and weed killer applied.
- The wetwell vent is rusty and should be repainted.

PS#2

- During our field evaluation, we found pump #1 to be in the "off" position, running it in 'hand' mode it appeared to operate as intended. The display would not allow it to be switched into "auto" mode. This is potentially a display error, or the pumps may not be alternating properly. Either way it is likely that pump #1 is not running in normal operation.
- Vegetation has grown up and is starting to overtake the station. It should be trimmed back and weed killer applied.
- The wetwell vent has a hole rusted through it and its paint is no longer protecting it. The vent should be replaced.

PS#3

- Vegetation has grown up and is starting to overtake the station. It should be trimmed back and weed killer applied.
- The wetwell vent is rusty and should be repainted.

PS#4

Vegetation and homeowner stored equipment (a canoe) make this station difficult to access.
 The vegetation should be removed, and the canoe stored elsewhere.

PS#5

 Vegetation has grown up and is starting to overtake the station. It should be trimmed back and weed killer applied.

PS#6

Pump #2 was not working during our field evaluation.

PS#7

Pump #2 was not working during our field evaluation.

PS#9

- The wetwell vent is rusty and should be repainted.
- Vegetation has grown up and is starting to overtake the station. It should be trimmed back and weed killer applied.

PS#11

- The bottom of the control panel is significantly rusty. The entire panel should be cleaned up and repainted to reduce future corrosion.
- Nearby ground surface slopes towards the station. Grades should be adjusted to direct water away from the station.
- Vegetation has grown up and is starting to overtake the station. It should be trimmed back and weed killer applied.

PS#12

The control panel has a slight lean. Reattach it to the concrete foundation with shims to make it plumb.



 Vegetation has grown up and is starting to overtake the station. It should be trimmed back and weed killer applied.

PS#14

- The concrete surrounding the structure is settling and has weeds growing in the cracks. The weeds should be removed, and herbicide applied to keep the cracks from widening.
- This station should have a paved driveway added off of 10th Street so maintenance vehicles can park off the roadway.

PS#15

- The wetwell vent is rusty and should be repainted.
- Replace the pump lift cables with stainless steel chains.

Permitting

Several permits will be required to build the project and would be needed at various times throughout the project. A brief description of each anticipated permit is discussed below.

Part 41

This permit issued by the State is for the construction of wastewater infrastructure. It would be applied for at the conclusion of design and before bidding. We have found that recent applications for this permit are taking up to 6 months to obtain for to unspecified reasons.

Joint Permit

The joint permit is a combination of several permits that are needed and are detailed below.

Part 31: Floodplain

This permit will be needed if any of the proposed work is below the floodplain elevation of the Lake Doster drainage system. As of this writing we do not anticipate the need for a floodplain permit, but it's listed here for sake of clarity.

Part 301: Inland Lakes and Streams

The project is within 500' of open water therefore this permit is necessary.

Allegan County Road Commission

Parts of the project may be within and alongside roads that are under the County jurisdiction. Allegan County Road Commission has a permit system that will need to be followed in order to use their right-of-way.

Allegan County Soil Erosion and Sedimentation Control (SESC)

Allegan County is the authorized agent for SESC associated with construction projects in this area. They will require a permit be issued and will periodically inspect the project site during construction for compliance.

State of Michigan SESC (Notice of Coverage)

The State of Michigan also issues an SESC permit for projects that disturb more than five acres. This permit is usually enforced by the local authorized agent (in this case the County)

Local Trade Permits (Electrical, Plumbing, etc...)

At the time of construction, local trade permits would be issued to the Contractor for construction of the various trades at the pump station and decommissioning the old pump station. These permits often come with regular trade inspections and occupancy permits at project completion.



Cost

Detailed Cost Estimate

A detailed cost estimate is presented in Appendix B. All project costs are in estimated 2023 construction dollars. At the time of this writing, inflation on construction projects is approximately 8% to 10% per year. As this project progresses into funding, design, and construction phases, project leaders should factor estimated inflation into the overall budget based on when the project is scheduled to be constructed.

Potential Funding Sources

Several options for funding a project this size and type are available for consideration. Most of these sources are primarily based on loans but a grant may possible as well. We recommend the Township base future decisions about moving this project to the next phase with the assumption that the project is funded by a loan rather than a grant.

Clean Water State Revolving Fund (CWSRF)

The State of Michigan has a revolving loan program (sometimes with a grant component) to assist communities in financing wastewater projects such as the project considered in this report. These grants monies are <u>highly</u> competitive and most go to communities with the lowest income. The State offers this funding source once a year.

For the last several years all loan money in this program has been allocated to applying communities, likely due to the possible grant attached to the loan. However, this program has for many years had loan money go unused. We anticipate that when the Township is ready to move forward with the project the program will have refreshed and will once again have cash to loan. The loan takes the form of municipal bonds which currently have government subsidized rates of approximately 1.875% with a term ranging from 20 to 40 years.

The application process is quite lengthy and complex. The next application cycle starts in the fall of 2024 with the notice of Intent To Apply (ITA) due November 1, 2024. Followed by a full Project Plan due June 30, 2025. The State will announce which projects they will fund during the Fall of 2025 with construction of those improvements in the 2026, or possibly the 2027, construction season.

United States Department of Agriculture – Rural Development (RD)

The federal government offers funding for projects such as the project considered in this study through RD. Each year Michigan's office of RD gets a grant funding pool that is also *highly* sought after. Additionally, they offer loans from an extensive loan pool. Applications can be submitted at any time of the year, and it will take about 6 months to prepare the application. The loan takes the form of municipal bonds which currently have government subsidized rates of approximately 3.5% with a 40-year term.

Self-Initiated Municipal Bonds

The Township can pursue self-initiated municipal bonds without the hassle of federal and state loan administration bureaucratic paperwork that the CWSRF and RD programs require. However, these bonds would not have government subsidized interest rates. These bonds currently have an interest rate of approximately 4.5% and a have a 20-year term.

Other Funding Sources

From time to time, various state and federal agencies offer funding sources for projects such as the one considered in this report. F&V continually watches for these funding sources and communicates with our client's the kind of projects they want to fund to see if there is a fit.



We would also like to note that there are some other highly competitive funding sources that can be pursued. However, these programs have terms and requirements that make them less favorable than those mentioned above. These programs are better discussed in person.

Schedule

After the funding source is secured, which can be a considerably long process depending on the source, the project would progress through typical project cycles including Design, Client Review, Permitting, Bidding, Construction, and Start-up, estimated duration of each is identified below.

Phase	Duration
Design	3 Months
Client Review	1 Month
Permitting	3 Months*
Bidding	1 Month
Construction	12 Months
Start-Up	1 Months
Total:	21 months (approx. 1.75 years from the beginning of Design Phase)

^{*}F&V has no control over the duration government agencies take to review and permit projects. Actual duration may vary considerably.



Appendix A: Station Evaluation Forms

	Client:	Gun Plain Township)		Date:	10/24/2023		
Lift S	station Number:	LS #1						
Lift S	Station Location:	M-89 (Allegan St)						
Evaluators: Dane		Danell Smith and Er	vanell Smith and Emma McDonald					
Sect	ion 1: General Information							
A.	Year of Construction:		1977					
Sect	ion 2: Wet Well							
A.	Material of wet well walls:		Concrete	Fiberglass	Steel	Other		
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor	
C.	Condition of pump removal g	uides:	Excellent	Good	Fair	Poor	Very Poor	
D.	Condition of pump lift chain:		Excellent	Good	Fair	Poor	Very Poor	
E.	Condition of discharge piping	:	Excellent	Good	Fair	Poor	Very Poor	
F.	Material of wet well top:		Concrete	Fiberglass	Steel	Other	,	
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor	
Н.	Condition of access hatches:		Excellent	Good	, Fair	Poor	Very Poor	
I.	Is wet well vented?		Yes	No			•	
J.	Amount of grease/scum/debi	ris build-up on water s	urface:	None	Minimal	Moderate	Significant	
V	Cross vina (vator loval ataini	ina ahawa nina inwawa				Ves	No	
Κ.	Grease ring/water level staini					Yes	No	
L.	Size of wet well:	8 foot dia.						
M.	Rim to bottom of wet well:	15.8 feet						
N.	Rim to invert:	7.4 feet	tale in difficult to					
0.	Notes:	Wet well access hat	en is difficult to	open and ninges	are rusting.			
Sect	ion 3: Valve Chamber							
			N/A					
Α.	Material of valve chamber wa	all:	N/A Concrete	Fiberglass	Steel	Other		
		all: a. If steel, is cathodic	Concrete		Steel	Other		
		a. If steel, is cathodic	Concrete		Steel Fair	Other Poor	Very Poor	
A.	6	a. If steel, is cathodic vall:	Concrete protection is pro	ovided?	1		Very Poor	
A. B.	Condition of valve chamber w	a. If steel, is cathodic vall: p:	Concrete protection is pro Excellent	ovided? Good	Fair	Poor	Very Poor	
A. B. C.	Condition of valve chamber w	a. If steel, is cathodic vall: p:	Concrete protection is pro Excellent Concrete	ovided? Good Fiberglass	Fair Steel	Poor Other		
A. B. C. D.	Condition of valve chamber w Material of valve chamber to Condition of valve chamber to	a. If steel, is cathodic vall: p:	Concrete protection is pro Excellent Concrete Excellent Excellent	ovided? Good Fiberglass Good Good	Fair Steel Fair Fair	Poor Other Poor Poor	Very Poor	
A. B. C. D.	Condition of valve chamber we Material of valve chamber to Condition of valve chamber to Condition of access hatches:	a. If steel, is cathodic vall: p: op:	Concrete protection is pro Excellent Concrete Excellent Excellent	ovided? Good Fiberglass Good Good	Fair Steel Fair Fair	Poor Other Poor Poor	Very Poor	
A. B. C. D. F.	Condition of valve chamber we Material of valve chamber to Condition of valve chamber to Condition of access hatches:	a. If steel, is cathodic vall: p: op:	Concrete protection is pro Excellent Concrete Excellent Excellent	ovided? Good Fiberglass Good Good	Fair Steel Fair Fair	Poor Other Poor Poor	Very Poor	
A. B. C. D. F.	Condition of valve chamber we material of valve chamber to Condition of valve chamber to Condition of access hatches:	a. If steel, is cathodic vall: p: op:	Concrete protection is pro Excellent Concrete Excellent Excellent	ovided? Good Fiberglass Good Good	Fair Steel Fair Fair	Poor Other Poor Poor	Very Poor	
A. B. C. D. F.	Condition of valve chamber we Material of valve chamber to Condition of valve chamber to Condition of access hatches: Notes:	a. If steel, is cathodic vall: p: op:	Concrete protection is pro Excellent Concrete Excellent Excellent	Good Fiberglass Good Good A couple feet of	Fair Steel Fair Fair water in chami	Poor Other Poor	Very Poor	
A. B. C. D. F. Sect A.	Condition of valve chamber we Material of valve chamber to Condition of valve chamber to Condition of access hatches: Notes: Notes: ion 4: Valves Do check valves exist?	a. If steel, is cathodic vall: p: op: Manhole cover diffi	Concrete protection is pro Excellent Concrete Excellent Excellent	Good Fiberglass Good Good A couple feet of	Fair Steel Fair Fair water in cham	Poor Other Poor	Very Poor	
A. B. C. D. E. F.	Condition of valve chamber we Material of valve chamber to Condition of valve chamber to Condition of access hatches: Notes: ion 4: Valves Do check valves exist? Do shut off valves exist? Does the station have a bypas	a. If steel, is cathodic vall: p: op: Manhole cover diffi	Concrete protection is pro Excellent Concrete Excellent Excellent icult to remove.	Good Fiberglass Good Good A couple feet of Yes Yes	Fair Steel Fair Fair water in cham No	Poor Other Poor	Very Poor	

A.		Pump No. 1	Pump No. 2
	Make	Sulzer	Sulzer

	Model No.	AD3 AFF FE	1-65	AD3 AFF	PET-PE2				
	Run time (hours)	534.9		49	6.4				
	Design point	350 gpm @ 1	10' TDH	350 gpm @	2 110' TDH				
	<u> </u>	<u> </u>		<u> </u>					
	Drawdown Results	485.0 gp	om	428.6	gpm				
					-				
	C		0&M	Record	O&M Staff	Other			
В.	Source of pump information:		Manual	Drawings	(verbal)	Other			
C.	Are pumps noisy or vibrating?			Yes	No	N1 / A			
D.	Swirl in wet well while pump op Does the station have a flow me			Yes	No No	N/A			
E.		eter r If so, type and size o	f motor:	Yes	orter, unknown s	·izo			
	a.	ii so, type and size o	i illeter.	balley Fischer P	orter, unknown s	5126			
Secti	on 6: Electrical								
A.	Service power:	120	208	480 Volts	1 phase	3 phase	1		
В.	Is surge protection provided?		Yes	No		o prince	J		
C.	Seal off fittings provided betwe	en the wet well and		•	ſ	Yes	No		
D.	Are electrical/ control panels lo			•		Yes	No		
	,								
Secti	on 7: Generator								
A.	Is there an on-site generator?		Yes	No					
	a.	Size of on-site gener	ator?	Unknown.					
В.	Transfer Switch:		Automatic	Manual					
C.	Is there a generator receptacle?	?	Yes	No	_				
D.	Fuel Source:		Natural Gas	Propane	Diesel				
E.	Generator Hours:	Unknown.							
F.	Condition of generator and and	illary equip:		Excellent	Good	Fair	Poor	Very Poor	
G.	Notes:	Station has both an	on-site generat	or and generato	or recepticle. Una	ble to run/te	st generator at	time of visit.	
Secti	on 8: Pump and Motor Controls				_				
A.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor		
В.	How many float switches are in	stalled?		Four.					
C.	Other level sensors (ultrasonic,	radar, pressure trans	ducer, bubble	r)	None.				
D.	Pump controls (relay logic, PLC-	based, VFD, propriet	ary controller)		VFD.				
F.	Station alarm:								
	Alarm telemetry (autodialer, ra	dio, cell phone, SCAD	A, none)		Sensaphone, lo	cal.		•	
Secti	on 9: Forcemain		1						
A.	Forcemain material:	Ductile Iron	PVC	Concrete	Cast Iron	Steel	Other		
В.	Forcemain size (in):	4 inch.		•					
.	40.04								
	on 10: Site	ation?		Vac	Ma				
Α.	Positive drainage away from sta	HUON?	1	Yes	No				
В.	Site maintained?	for modinto :		Yes	No No				
C.	Can the site be easily accessed	ior maintenance?		Yes	No				
D.	Is the station locked?			Yes	No				
E.	Noticeable odor issues?			Yes	No				

Control panel is locked but lift station hatch not locked due to broken hasp.

ABS XFP PE1-PE3

ABS XFP PE1-PE3

Model No.

F. Notes:

Lift Station Number: LS #2 Lift Station Location: Country Club Blvd Evaluators: Danell Smith and Emma McDonald Section 1: General Information A. Year of Construction: 1977 Section 2: Wet Well A. Material of wet well walls: Concrete Fiberglass Steel Other B. Condition of pump removal guides: Excellent Good Fair Poor Condition of pump lift chain: Excellent Good Fair Poor B. Condition of wet well top: Concrete Fiberglass Steel Other G. Condition of wet well top: Excellent Good Fair Poor B. Condition of wet well top: Excellent Good Fair Poor Condition of wet well top: Excellent Good Fair Poor B. Condition of wet well top: Excellent Good Fair Poor Condition of wet well top: Excellent Good Fair Poor Condition of wet well top: Excellent Good Fair Poor Condition of wet well top: Excellent Good Fair Poor Condition of access hatches: Excellent Good Fair Poor Condition of wet well: 8 foot dia. M. Rim to bottom of wet well: 8 foot dia. M. Rim to bottom of wet well: 8 foot dia. M. Rim to bottom of wet well: 8 foot dia. M. Rim to bottom of well well: 8.7 feet. N. Rim to lonvert: 9.7 feet. Section 3: Valve Chamber A. Material of valve chamber wall: Concrete Fiberglass Steel Other a. If steel, is cathodic protection is provided? B. Condition of valve chamber wall: Excellent Good Fair Poor Condition of valve chamber top: Concrete Fiberglass Steel Other Condition of valve chamber top: Excellent Good Fair Poor Condition of valve chamber top: Excellent Good Fair Poor Condition of valve chamber top: Excellent Good Fair Poor Condition of valve chamber top: Excellent Good Fair Poor Excellent Good Fair Poor Condition of valve chamber top: Excellent Good Fair Poor Condition of valve chamber top: Excellent Good Fair Poor Condition of valve chamber top: Excel	
Evaluators: Danell Smith and Emma McDonald Section 1: General Information A. Year of Construction: 1977 Section 2: Wet Well A. Material of wet well walls: Concrete Fiberglass Steel Other B. Condition of wet well walls: Excellent Good Fair Poor C. Condition of pump removal guides: Excellent Good Fair Poor D. Condition of pump lift chain: Excellent Good Fair Poor F. Material of wet well top: Concrete Fiberglass Steel Other G. Condition of discharge piping: Excellent Good Fair Poor F. Material of wet well top: Concrete Fiberglass Steel Other G. Condition of access hatches: Excellent Good Fair Poor H. Condition of access hatches: Excellent Good Fair Poor H. Condition of grease/scum/debris build-up on water surface: None Minimal Moderate K. Grease ring/water level staining above pipe invert? Yes L. Size of wet well: 8 foot dia. M. Rim to bottom of wet well: 18.7 feet. N. Rim to invert: 9.7 feet. Section 3: Valve Chamber A. Material of valve chamber wall: Excellent Good Fair Poor C. Material of valve chamber wall: Excellent Good Fair Poor C. Material of valve chamber top: Concrete Fiberglass Steel Other C. Material of valve chamber top: Concrete Fiberglass Steel Other C. Material of valve chamber top: Excellent Good Fair Poor C. Material of valve chamber top: Concrete Fiberglass Steel Other C. Material of valve chamber top: Excellent Good Fair Poor C. Material of valve chamber top: Excellent Good Fair Poor E. Condition of valve chamber top: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor	
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Section 2: Wet Well A. Material of wet well walls:	
Section 2: Wet Well A. Material of wet well walls: B. Condition of per memoval guides: C. Condition of pump removal guides: E. Condition of pump lift chain: E. Condition of jump lift chain: E. Condition of jump lift chain: E. Condition of discharge piping: E. Condition of discharge piping: E. Condition of wet well top: Excellent Good Fair Poor F. Material of wet well top: Excellent Good Fair Poor H. Condition of access hatches: Excellent Good Fair Poor H. Condition of access hatches: Excellent Good Fair Poor H. Condition of access hatches: Excellent Good Fair Poor H. Condition of grease/scum/debris build-up on water surface: None Minimal Moderate K. Grease ring/water level staining above pipe invert? F. Size of wet well: Excellent Good Fair Poor H. Size of wet well: Excellent Good Fair Poor	
Section 2: Wet Well A. Material of wet well walls:	
A. Material of wet well walls: B. Condition of wet well walls: C. Condition of wet well walls: Excellent Good Fair Poor C. Condition of pump removal guides: Excellent Good Fair Poor D. Condition of pump lift chain: Excellent Good Fair Poor E. Condition of discharge piping: Excellent Good Fair Poor F. Material of wet well top: G. Condition of wet well top: G. Condition of access hatches: Excellent Good Fair Poor F. Material of wet well top: Excellent Good Fair Poor H. Condition of access hatches: Excellent Good Fair Poor H. Condition of access hatches: Excellent Good Fair Poor H. Condition of access hatches: Excellent Good Fair Poor H. Condition of wet well top: Excellent Good Fair Poor H. Condition of grease/scum/debris build-up on water surface: None Minimal Moderate K. Grease ring/water level staining above pipe invert? Yes L. Size of wet well: 8 foot dia. M. Rim to bottom of wet well: 18.7 feet. N. Rim to invert: 9.7 feet. Section 3: Valve Chamber A. Material of valve chamber wall: Concrete Fiberglass Steel Other C. Material of valve chamber wall: Excellent Good Fair Poor C. Material of valve chamber top: Concrete Fiberglass Steel Other Condition of valve chamber top: Concrete Fiberglass Steel Other Condition of valve chamber top: Excellent Good Fair Poor C. Material of valve chamber top: Concrete Fiberglass Steel Other Condition of valve chamber top: Excellent Good Fair Poor C. Material of valve chamber top: Excellent Good Fair Poor C. Moterial of valve chamber top: Excellent Good Fair Poor Condition of valve chamber top: Excellent Good Fair Poor Condition of valve chamber top: Excellent Good Fair Poor	
B. Condition of wet well walls: Excellent Good Fair Poor C. Condition of pump removal guides: Excellent Good Fair Poor D. Condition of pump lift chain: Excellent Good Fair Poor E. Condition of discharge piping: Excellent Good Fair Poor F. Material of wet well top: Concrete Fiberglass Steel Other G. Condition of wet well top: Excellent Good Fair Poor H. Condition of access hatches: Excellent Good Fair Poor J. Is wet well vented? Yes No Minimal Moderate W. Grease ring/water level staining above pipe invert? Yes No Minimal Moderate K. Grease ring/water level staining above pipe invert? Yes Size of wet well: 18.7 feet. N. Rim to bottom of wet well: 18.7 feet. Section 3: Valve Chamber A. Material of valve chamber wall: Concrete Fiberglass Steel Other a. If steel, is cathodic protection is provided? B. Condition of valve chamber wall: Excellent Good Fair Poor C. Material of valve chamber top: Concrete Fiberglass Steel Other D. Condition of valve chamber top: Excellent Good Fair Poor Poor Excellent Good Fair Poor Poor Excellent Good Fair Poor Poor Poor Poor Poor Poor Poor Po	
C. Condition of pump removal guides: Excellent Good Fair Poor D. Condition of pump lift chain: Excellent Good Fair Poor E. Condition of discharge piping: Excellent Good Fair Poor F. Material of wet well top: Concrete Fiberglass Steel Other G. Condition of wet well top: Excellent Good Fair Poor H. Condition of access hatches: Excellent Good Fair Poor I. Is wet well vented? Yes No J. Amount of grease/scum/debris build-up on water surface: None Minimal Moderate K. Grease ring/water level staining above pipe invert? Yes L. Size of wet well: 8 foot dia. M. Rim to bottom of wet well: 18.7 feet. N. Rim to invert: 9.7 feet. Section 3: Valve Chamber A. Material of valve chamber wall: Concrete Fiberglass Steel Other a. If steel, is cathodic protection is provided? B. Condition of valve chamber top: Concrete Fiberglass Steel Other C. Material of valve chamber top: Excellent Good Fair Poor D. Condition of valve chamber top: Excellent Good Fair Poor E. Condition of valve chamber top: Excellent Good Fair Poor E. Condition of valve chamber top: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor E. Condition of saccess hatches: Excellent Good Fair Poor	
D. Condition of pump lift chain: Excellent Good Fair Poor E. Condition of discharge piping: Excellent Good Fair Poor F. Material of wet well top: Concrete Fiberglass Steel Other G. Condition of wet well top: Excellent Good Fair Poor H. Condition of access hatches: Excellent Good Fair Poor I. Is wet well vented? Yes No J. Amount of grease/scum/debris build-up on water surface: None Minimal Moderate K. Grease ring/water level staining above pipe invert? L. Size of wet well: 8 foot dia. M. Rim to bottom of wet well: 18.7 feet. N. Rim to invert: 9.7 feet. Section 3: Valve Chamber A. Material of valve chamber wall: Concrete Fiberglass Steel Other a. If steel, is cathodic protection is provided? B. Condition of valve chamber top: Concrete Fiberglass Steel Other C. Material of valve chamber top: Concrete Fiberglass Steel Other D. Condition of valve chamber top: Excellent Good Fair Poor E. Condition of valve chamber top: Excellent Good Fair Poor E. Condition of valve chamber top: Excellent Good Fair Poor E. Condition of valve chamber top: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor	Very Poor
E. Condition of discharge piping: F. Material of wet well top: Concrete Fiberglass Steel Other G. Condition of wet well top: Excellent Good Fair Poor H. Condition of access hatches: Excellent Good Fair Poor I. Is wet well vented? J. Amount of grease/scum/debris build-up on water surface: None Minimal Moderate K. Grease ring/water level staining above pipe invert? L. Size of wet well: Size of wet well: N. Rim to bottom of wet well: N. Rim to invert: Section 3: Valve Chamber A. Material of valve chamber wall: a. If steel, is cathodic protection is provided? B. Condition of valve chamber top: Concrete Fiberglass Steel Other C. Material of valve chamber top: Concrete Fiberglass Steel Other D. Condition of valve chamber top: Excellent Good Fair Poor	Very Poor
F. Material of wet well top: G. Condition of wet well top: Excellent G. Condition of wet well top: Excellent Good Fair Poor H. Condition of access hatches: Is wet well vented? J. Amount of grease/scum/debris build-up on water surface: None Minimal Moderate K. Grease ring/water level staining above pipe invert? L. Size of wet well: Size of wet well: 8 foot dia. M. Rim to bottom of wet well: 18.7 feet. N. Rim to invert: 9.7 feet. Section 3: Valve Chamber A. Material of valve chamber wall: Concrete Good Fair Poor C. Material of valve chamber top: Concrete Fiberglass Steel Other C. Material of valve chamber top: Concrete Fiberglass Steel Other Concrete Concrete Fiberglass Steel Other Conc	Very Poor
G. Condition of wet well top: H. Condition of access hatches: Is wet well vented? J. Amount of grease/scum/debris build-up on water surface: K. Grease ring/water level staining above pipe invert? L. Size of wet well: Rim to bottom of wet well: N. Rim to invert: Section 3: Valve Chamber A. Material of valve chamber wall: Concrete B. Condition of valve chamber wall: Concrete Concrete Concrete Excellent Good Fair Poor Minimal Moderate Yes Yes None Minimal Moderate Yes Concrete Fiberglass Steel Other Concrete Concrete Fiberglass Steel Other Concrete Fiberglass Fiberg	Very Poor
H. Condition of access hatches: Is wet well vented? J. Amount of grease/scum/debris build-up on water surface: None Minimal Moderate K. Grease ring/water level staining above pipe invert? L. Size of wet well: N. Rim to bottom of wet well: N. Rim to invert: 9.7 feet. Section 3: Valve Chamber A. Material of valve chamber wall: Concrete B. Condition of valve chamber wall: Concrete Excellent Good Fair Poor C. Material of valve chamber top: Condition of valve chamber top: Condition of valve chamber top: Excellent Good Fair Poor Condition of valve chamber top: Excellent Good Fair Poor Notes: Valve chamber is buried and inaccessible.	
I. Is wet well vented? J. Amount of grease/scum/debris build-up on water surface: None Minimal Moderate K. Grease ring/water level staining above pipe invert? L. Size of wet well: 8 foot dia. M. Rim to bottom of wet well: 18.7 feet. 9.7 feet. Section 3: Valve Chamber A. Material of valve chamber wall: Concrete Concrete Fiberglass Steel Other a. If steel, is cathodic protection is provided? B. Condition of valve chamber top: Concrete Fiberglass Steel Other Concrete Fiberglass Steel Other Condition of valve chamber top: Concrete Fiberglass Steel Other Concrete Fiberglass Steel Other Condition of valve chamber top: Excellent Good Fair Poor Excellent Good Fair Poor Excellent Good Fair Poor Excellent Good Fair Poor Excellent Condition of access hatches: Excellent Good Fair Poor Excellent Condition of access hatches: Excellent Good Fair Poor	Very Poor
K. Grease ring/water level staining above pipe invert? L. Size of wet well: M. Rim to bottom of wet well: N. Rim to invert: Section 3: Valve Chamber A. Material of valve chamber wall: B. Condition of valve chamber wall: Concrete Excellent Condition of valve chamber top: Condition of valve chamber top: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor Excellent Condition of valve chamber top: Excellent Good Fair Poor Excellent Good Fair Poor	Very Poor
K. Grease ring/water level staining above pipe invert? L. Size of wet well: M. Rim to bottom of wet well: 18.7 feet. N. Rim to invert: 9.7 feet. Section 3: Valve Chamber A. Material of valve chamber wall: a. If steel, is cathodic protection is provided? B. Condition of valve chamber wall: Excellent Good Fair Poor C. Material of valve chamber top: Concrete Fiberglass Steel Other D. Condition of valve chamber top: Excellent Good Fair Poor	
L. Size of wet well: M. Rim to bottom of wet well: N. Rim to invert: 9.7 feet. Section 3: Valve Chamber A. Material of valve chamber wall: B. Condition of valve chamber wall: Concrete Fiberglass Steel Other a. If steel, is cathodic protection is provided? B. Condition of valve chamber wall: Excellent Good Fair Poor C. Material of valve chamber top: Concrete Fiberglass Steel Other D. Condition of valve chamber top: Excellent Good Fair Poor	Significant
M. Rim to bottom of wet well: N. Rim to invert: 9.7 feet. Section 3: Valve Chamber A. Material of valve chamber wall: B. Condition of valve chamber wall: Concrete Fiberglass Steel Other a. If steel, is cathodic protection is provided? B. Condition of valve chamber wall: Excellent Good Fair Poor C. Material of valve chamber top: Concrete Fiberglass Steel Other D. Condition of valve chamber top: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor D. Notes: Valve chamber is buried and inaccessible.	No
N. Rim to invert: 9.7 feet. N/A A. Material of valve chamber wall: Concrete Fiberglass Steel Other a. If steel, is cathodic protection is provided? B. Condition of valve chamber wall: Excellent Good Fair Poor C. Material of valve chamber top: Concrete Fiberglass Steel Other D. Condition of valve chamber top: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor D. Notes: Valve chamber is buried and inaccessible.	
Section 3: Valve Chamber A. Material of valve chamber wall: a. If steel, is cathodic protection is provided? B. Condition of valve chamber wall: Concrete Fiberglass Steel Other C. Material of valve chamber top: Concrete Fiberglass Steel Other D. Condition of valve chamber top: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor D. Notes: Valve chamber is buried and inaccessible.	
A. Material of valve chamber wall: a. If steel, is cathodic protection is provided? B. Condition of valve chamber wall: Excellent Good Fair Poor C. Material of valve chamber top: Concrete Fiberglass Steel Other D. Condition of valve chamber top: Excellent Good Fair Poor Excellent Good Fair Poor Excellent Good Fair Poor D. Notes: Valve chamber is buried and inaccessible.	
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B. Condition of valve chamber wall: Excellent Good Fair Poor C. Material of valve chamber top: Concrete Fiberglass Steel Other D. Condition of valve chamber top: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor D. Notes: Valve chamber is buried and inaccessible.	
C. Material of valve chamber top: Concrete Fiberglass Steel Other D. Condition of valve chamber top: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor D. Notes: Valve chamber is buried and inaccessible.	
D. Condition of valve chamber top: Excellent Good Fair Poor E. Condition of access hatches: Excellent Good Fair Poor D. Notes: Valve chamber is buried and inaccessible.	Very Poor
E. Condition of access hatches: Excellent Good Fair Poor D. Notes: Valve chamber is buried and inaccessible.	
D. Notes: Valve chamber is buried and inaccessible.	Very Poor
	Very Poor
Section 4: Valves	
A. Do check valves exist? Yes No	
B. Do shut off valves exist? Yes No	
C. Does the station have a bypass connection? Yes No	
a. Size of bypass connection:	
b. Material of bypass connection: Ductile Iron PVC Cast Iron	

A.		Pump No. 1	Pump No. 2		
	Make	Pentair Myers	Pentair Myers		
	Model No.	4VH150M4-43	4VH150M4-43		

	Design point	370 gpm @ 7	70' TDH	370 gpm (@ 70 TDH			
	Drawdown Results	376.0 gp	om	391.0	gpm			
B. C. D. E.	Source of pump information: Are pumps noisy or vibrating? Swirl in wet well while pump op Does the station have a flow me		O&M Manual	Record Drawings Yes Yes Yes	O&M Staff (verbal) No No	Other N/A		
Sacti	on 6: Electrical		•					
A. B. C. D.	Service power: Is surge protection provided? Seal off fittings provided betwe Are electrical/ control panels lo				1 phase	3 phase Yes Yes	No No	
Secti	on 7: Generator		_		_			
A.	Is there an on-site generator?		Yes	No	J			
В.	a. Transfer Switch:	Size of on-site gener	rator? Automatic	Manual	1			
C.	Is there a generator receptacle?	,	Yes	No	J			
D.	Fuel Source:		Natural Gas	Propane	Diesel			
E.	Generator Hours:			•				
F.	Condition of generator and anc	illary equip:		Excellent	Good	Fair	Poor	Very Poor
Secti	on 8: Pump and Motor Controls							
A.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor	
В.	How many float switches are in	stalled?		Three.				
C.	Other level sensors (ultrasonic,	radar, pressure trans	- sducer, bubbler)	Probe.			•
D.	Pump controls (relay logic, PLC-	based, VFD, propriet	tary controller)		Relay logic.			
F.	Station alarm:							
	Alarm telemetry (autodialer, ra	dio, cell phone, SCAE	DA, none)		Sensaphone, lo	ocal.		
Secti	on 9: Forcemain		•					
А. В.	Forcemain material: Forcemain size (in):	Ductile Iron 4 inch.	PVC	Concrete	Cast Iron	Steel	Other	
Secti	on 10: Site				_			
A.	Positive drainage away from sta	ation?	[Yes	No			
В.	Site maintained?		[Yes	No			
C.	Can the site be easily accessed	for maintenance?	[Yes	No			
D.	Is the station locked?			Yes	No			
E.	Noticeable odor issues?		Į	Yes	No			
F.	Notes:	Some trees were su	rrounding the si	ite, and thus ma	y affect mainten	ance.		

13426.9

10429.8

General Remarks:

Run time (hours)

Probe display shows pump 1 was off. Running in hand mode pump appeared to perform good. Display would only switch between hand
and off. Possible error with display or pumps are not alternating.

	Client:	Gun Plain Township			Date:	10/23/2023	
Lift S	Station Number:	LS #3					
Lift S	Station Location:	S. Lake Doster Dr					
Eval	uators:	Danell Smith and En	nma McDonald				
Sect	ion 1: General Information						
Α.	Year of Construction:		1977				
Sect	ion 2: Wet Well						
A.	Material of wet well walls:		Concrete	Fiberglass	Steel	Other	
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor
C.	Condition of pump removal g	uides:	Excellent	Good	Fair	Poor	Very Poor
D.	Condition of pump lift chain:		Excellent	Good	Fair	Poor	Very Poor
E.	Condition of discharge piping	:	Excellent	Good	Fair	Poor	Very Poor
F.	Material of wet well top:		Concrete	Fiberglass	Steel	Other	
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor
Н.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
I.	Is wet well vented?		Yes	No			
J.	Amount of grease/scum/deb	ris build-up on water si	urface:	None	Minimal	Moderate	Significant
K.	Grease ring/water level stain	ing above pipe invert?				Yes	No
L.	Size of wet well:	8 foot dia.					
M.	Rim to bottom of wet well:	19.6 feet.					
N.	Rim to invert:	8.6 feet and 12.5 fee	et.				
Sect	ion 3: Valve Chamber		N/A				
A.	Material of valve chamber wa	all:	Concrete	Fiberglass	Steel	Other	
	;	a. If steel, is cathodic p	protection is pro	ovided?			
В.	Condition of valve chamber w	vall:	Excellent	Good	Fair	Poor	Very Poor
C.	Material of valve chamber to	p:	Concrete	Fiberglass	Steel	Other	
D.	Condition of valve chamber to	op:	Excellent	Good	Fair	Poor	Very Poor
E.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
D.	Notes:	Unable to remove n	nanhole cover t	o access.			
	Notes: ion 4: Valves	Unable to remove n	nanhole cover t	o access.			
		Unable to remove n	nanhole cover t	o access. Yes	No		
Sect	ion 4: Valves	Unable to remove n	nanhole cover t		No No		
Sect A.	ion 4: Valves Do check valves exist?		nanhole cover t	Yes			
Sect A. B.	ion 4: Valves Do check valves exist? Do shut off valves exist? Does the station have a bypa:			Yes Yes	No		

A.		Pump No. 1	Pump No. 2
	Make	ABS	ABS
	Model No.		

Gene	eral Remarks:							
E.	Noticeable odor issues?			Yes	No			
D.	Is the station locked?			Yes	No			
C.	Can the site be easily accessed	for maintenance?		Yes	No			
В.	Site maintained?			Yes	No			
A.	Positive drainage away from sta	ation?		Yes	No			
Secti	ion 10: Site				_			
A. B.	Forcemain material: Forcemain size (in):	Ductile Iron 4 inch	PVC	Concrete -	Cast Iron	Steel	Other	
	ion 9: Forcemain	Duskila laan	D) (C	Cam	Continue	Cha - I	O41	
	,,	. ,	,					-
••	Alarm telemetry (autodialer, ra	dio, cell phone, SCAD	A, none)		Sensaphone, lo	ocal.		
F.	Station alarm:	basea, vi b, propriet	ary controller)		nciay logic.			
C. D.	Other level sensors (ultrasonic, Pump controls (relay logic, PLC-	•		-	None. Relay logic.			
В.	How many float switches are in		الطنط ممريات	Five.	Nana			-
Α.	Condition of control panel:	. 11 12	Excellent	Good	Fair	Poor	Very Poor	
	ion 8: Pump and Motor Controls					_		
F.	Condition of generator and anc	mary equip:		Excellent	Good	Fair	Poor	Very Poor
E.	Generator Hours:	illanı aquir:		Eventlant	Cood	Fa:-	Door	Von: Daa:
D.	Fuel Source:		Natural Gas	Propane	Diesel			
C.	Is there a generator receptacle?	?	Yes	No	D: '			
В.	Transfer Switch:	_	Automatic	Manual	J			
		Size of on-site gener						
A.	Is there an on-site generator?		Yes	No	J			
Secti	ion 7: Generator				_			
E.	Notes:	Vent is too close to p	oanel.	_				
D.	Are electrical/ control panels lo	cated within 3' of we	t well hatch o	5' of vent?		Yes	No	
C.	Seal off fittings provided betwe	en the wet well and o	electrical/ con	trol panel?	_ [Yes	No	
В.	Is surge protection provided?		Yes	No] ` `	·	_	
Α.	Service power:	120	208	480 Volts	1 phase	3 phase	1	
Secti	ion 6: Electrical							
	a.	If so, type and size o	f meter:					
E.	Does the station have a flow me			Yes	No	.,		
D.	Swirl in wet well while pump op	perates?		Yes	No	N/A		
В. С.	Are pumps noisy or vibrating?		IVIdIIUdi	Drawings Yes	(verbal) No	Other		
В	Source of pump information:		O&M Manual	Record	O&M Staff	Other		
	Drawdown Results	240.6 gp	m	289.5	gpm			
	Duousdassus Baasilta	240.6		200.0				
	Design point	220 gpm @ 8	זוח כ	220 gpm (@ 85 TDH			

12235.5

220 gpm @ 85' TDH

16086.9

220 gpm @ 85' TDH

Run time (hours)

Design point

	Client:	Gun Plain Townsh	nip		Date:	10/23/2023	
Lift S	tation Number:	LS #4					
Lift S	tation Location:	South Doster Driv	re				
Evalu	uators:	Danell Smith and	Emma McDonald				
Secti	on 1: General Information						
A.	Year of Construction:						
Secti	on 2: Wet Well						
A.	Material of wet well walls:		Concrete	Fiberglass	Steel	Other	
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor
C.	Condition of pump removal g	guides:	Excellent	Good	Fair	Poor	Very Poor
D.	Condition of pump lift chain:		Excellent	Good	Fair	Poor	Very Poor
E.	Condition of discharge piping	g:	Excellent	Good	Fair	Poor	Very Poor
F.	Material of wet well top:		Concrete	Fiberglass	Steel	Other	
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor
Н.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
I.	Is wet well vented?		Yes	No		_	
J.	Amount of grease/scum/deb	ris build-up on wate	r surface:	None	Minimal	Moderate	Significant
K.	Grease ring/water level stain	ing above pipe inver	t?			Yes	No
L.	Size of wet well:	4 foot dia.					
M.	Rim to bottom of wet well:	9.2 feet					
N.	Rim to invert:	5.4 feet					
				•			
Secti	on 3: Valve Chamber		N/A				
A.	Material of valve chamber wa		Concrete	Fiberglass	Steel	Other	
		a. If steel, is cathodi					
В.	Condition of valve chamber v		Excellent	Good	Fair	Poor	Very Poor
C.	Material of valve chamber to	•	Concrete	Fiberglass	Steel	Other	
D.	Condition of valve chamber t	cop:	Excellent	Good	Fair	Poor	Very Poor
E.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
Secti	on 4: Valves						
Α.	Do check valves exist?		ĺ	Yes	No		
В.	Do shut off valves exist?			Yes	No		
		ess connection?	'	Yes	No]	
C.	Does the station have a bypa	iss connection:					
C.	,,	a. Size of bypass cor	nnection:		•	•	

A.		Pump No. 1	Pump No. 2
	Make		
	Model No.		
	Run time (hours)	7781.8	23618.3

	Design point	Unknov	vn	Unkı	nown			
	Drawdown Results	43.2 gp	m	No test p	erformed			
B. C. D. E.	Source of pump information: Are pumps noisy or vibrating? Swirl in wet well while pump of Does the station have a flow me		O&M Manual	Record Drawings Yes Yes Yes	O&M Staff (verbal) No No	Other N/A		
		11 30, type and 3120 0	_					
A. B. C. D.	on 6: Electrical Service power: Is surge protection provided? Seal off fittings provided betwe Are electrical/ control panels lo				1 phase	3 phase Yes Yes	No No	
Section	on 7: Generator							
Α.			Yes	No]			
B. C. D.	a. Transfer Switch: Is there a generator receptacle Fuel Source:	Size of on-site gener	Automatic Yes Natural Gas	Manual No Propane	None Diesel			
E. F. G.	Generator Hours: Condition of generator and and Notes:	illary equip: Generator ancillary	equipment not a	Excellent	Good	Fair	Poor	Very Poor
	on 8: Pump and Motor Controls Condition of control panel: How many float switches are in		Excellent	Good Five.	Fair	Poor	Very Poor	
C.	Other level sensors (ultrasonic,		_		None.			
D. F.	Pump controls (relay logic, PLC- Station alarm:				Relay logic.			
	Alarm telemetry (autodialer, ra				Sensaphone.	6. 1		
A. B.	Forcemain material: Forcemain size (in):	Ductile Iron 1.25 inch	PVC	Concrete	Cast Iron	Steel	Other _	
Section	on 10: Site							
A. B. C. D.	Positive drainage away from sta Site maintained? Can the site be easily accessed Is the station locked? Noticeable odor issues?		(Yes Yes Yes Yes	No No No No			
F.	Notes:	Trees, canoe, etc. m	ake accessibility	to site difficul	t			

General Remarks:

	Client:	Gun Plain Townshi	0		Date:	10/23/2023	
Lift S	Station Number:	LS #5					
	Station Location:	Midlakes Blvd					
Eval	uators:	Danell Smith and E	mma McDonald				
Sect	ion 1: General Information						
	Year of Construction:						
Α.	rear or construction.		-				
Sect A.	ion 2: Wet Well Material of wet well walls:		Concrete	Fiberglass	Steel	Other	
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor
Б. С.	Condition of wet well walls. Condition of pump removal g	ruides:	Excellent	Good	Fair	Poor	Very Poor
D.	Condition of pump lift chain:	,	Excellent	Good	Fair	Poor	Very Poor
Ε.	Condition of discharge piping	r:	Excellent	Good	Fair	Poor	Very Poor
F.	Material of wet well top:	•	Concrete	Fiberglass	Steel	Other	- ,
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor
Н.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
ı.	Is wet well vented?		Yes	No			
J.	Amount of grease/scum/	'debris build-up on wa	ter surface:	None	Minimal	Moderate	Significant
						1	
Κ.	Grease ring/water level stain		•			Yes	No
L.	Size of wet well:	4 foot dia.					
M.	Rim to bottom of wet well:	13.8 feet					
N.	Rim to invert:	11.1 feet					
0.	Notes:	Pump lift chains: o	ne stainless and g	good condition, o	ne coated and	d poor conditio	n.
	ion 3: Valve Chamber						
Sect			N/A				
Sect A.	Material of valve chamber wa	all:	N/A Concrete	Fiberglass	Steel	Other	
		all: a. If steel, is cathodic	Concrete	_	Steel	Other	
		a. If steel, is cathodic	Concrete	_	Steel Fair	Other Poor	Very Poor
A.		a. If steel, is cathodic vall:	Concrete protection is pro	ovided?			Very Poor
A. B.	Condition of valve chamber v	a. If steel, is cathodic vall: p:	Concrete protection is pro Excellent	ovided? Good	Fair	Poor	Very Poor
A. B. C.	Condition of valve chamber v	a. If steel, is cathodic vall: p:	Concrete protection is pro Excellent Concrete	ovided? Good Fiberglass	Fair Steel	Poor Other	
A. B. C. D.	Condition of valve chamber v Material of valve chamber to Condition of valve chamber t Condition of access hatches:	a. If steel, is cathodic vall: p:	Concrete protection is pro Excellent Concrete Excellent	Good Fiberglass Good	Fair Steel Fair	Poor Other Poor	Very Poor
A. B. C. D.	Condition of valve chamber v Material of valve chamber to Condition of valve chamber t	a. If steel, is cathodic vall: p:	Concrete protection is pro Excellent Concrete Excellent	Good Fiberglass Good Good	Fair Steel Fair Fair	Poor Other Poor	Very Poor
A. B. C. D. E.	Condition of valve chamber very Material of valve chamber to Condition of valve chamber to Condition of access hatches:	a. If steel, is cathodic vall: p:	Concrete protection is pro Excellent Concrete Excellent	Good Fiberglass Good Good	Fair Steel Fair Fair	Poor Other Poor	Very Poor
A. B. C. D. E. Sect A.	Condition of valve chamber very Material of valve chamber to Condition of valve chamber to Condition of access hatches: ion 4: Valves Do check valves exist?	a. If steel, is cathodic wall: p: op:	Concrete protection is pro Excellent Concrete Excellent	Good Fiberglass Good Good Yes	Fair Steel Fair Fair No	Poor Other Poor	Very Poor
A. B. C. D. E. Sect A. B.	Condition of valve chamber verified Material of valve chamber to Condition of valve chamber to Condition of access hatches: ion 4: Valves Do check valves exist? Do shut off valves exist? Does the station have a bypa	a. If steel, is cathodic wall: p: op:	Concrete protection is pro Excellent Concrete Excellent Excellent	Good Fiberglass Good Good	Fair Steel Fair Fair	Poor Other Poor	Very Poor

A.		Pump No. 1	Pump No. 2
	Make	Myers	Myers
	Model No.	WG20	WG20

	Run time (hours)	20487	.4	126	22.6			
	Design point	15 gpm @ 5	55' TDH	15 gpm @	9 55' TDH			
	Drawdown Results	23.5 gp	om	No test p	erformed			
			O&M	Record	O&M Staff			
3.	Source of pump information:		Manual	Drawings	(verbal)	Other		
<u>.</u>	Are pumps noisy or vibrating?			Yes	No		-	
).	Swirl in wet well while pump op	erates?	ĺ	Yes	No	N/A		
	Does the station have a flow me		•	Yes	No			
	a.	If so, type and size	of meter:					
_4:	on C. Flootwicel							
	on 6: Electrical	120	240	490 Volts	1 phase	2 nhaca		
۱.	Service power:	120	240	480 Volts	1 phase	3 phase		
3.	Is surge protection provided?	.,	Yes	No	, ر		1	
	Seal off fittings provided between the wet well and electrical/ con Are electrical/ control panels located within 3' of wet well hatch o				ι	Yes	No	1
).	Are electrical/ control panels lo	cated within 3' of w	et well hatch or	5' of vent?		Yes	No	J
cti	on 7: Generator				_			
١.	Is there an on-site generator?		Yes	No	J			
	a.	Size of on-site gene	rator?					
3.	Transfer Switch:		Automatic	Manual	None			
. .	Is there a generator receptacle?	?	Yes	No				
).	Fuel Source:		Natural Gas	Propane	Diesel			
	Generator Hours:							
	Condition of generator and anc	illary equip:		Excellent	Good	Fair	Poor	Very Poor
ctio	on 8: Pump and Motor Controls							
۱.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor	
3.	How many float switches are in	stalled?		Five				
·	Other level sensors (ultrasonic,		•		None			-
).	Pump controls (relay logic, PLC-	•		,	Relay logic			1
:	Station alarm:	24564, 1. 2, p. ope	,					
•	Alarm telemetry (autodialer, ra	dio, cell phone, SCA	DA, none)		Local			_
_4:	on 9: Forcemain							
	Forcemain material:	Ductile Iron	D\/C	Concrete	Cast Iron	C+ool	Other	
۱. 3.	Forcemain size (in):	1.5 inch	PVC	Concrete	Cast Iron	Steel	Other	
c+:-	on 10: Site							
Ctio \.	On 10: Site Positive drainage away from sta	ation?		Yes	No			
۱. ۱.	Site maintained?	ition:	1	Yes	No			
).	Can the site be easily accessed	for maintenance?		Yes	No No			
		ioi mamiendiite!	ļ		†			
).	Is the station locked?			Yes	No No			
	Noticeable odor issues?			Yes	No			

	Client:	Gun Plain Township			-	10/23/2023	
Lift S	Station Number:	LS #6					
	Station Location:	Parkway Drive					
Eval	uators:	Danell Smith and E	mma McDonald				
Sect	ion 1: General Information						
	Year of Construction:						
А.	real of Constituction.						
Sect A.	ion 2: Wet Well Material of wet well walls:		Concrete	Fiberglass	Steel	Other	
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor
Б. С.	Condition of pump removal g	uides:	Excellent	Good	Fair	Poor	Very Poor
D.	Condition of pump lift chain:		Excellent	Good	J ran Fair	Poor	Very Poor
Б. Е.	Condition of discharge piping	:	Excellent	Good) Fair	Poor	Very Poor
F.	Material of wet well top:	•	Concrete	Fiberglass	Steel	Other	,
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor
Н.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
I.	Is wet well vented?		Yes	No	•	•	•
						1	
J.	Amount of grease/scum/debr	ris build-up on water s	surface:	None	Minimal	Moderate	Significant
	Amount of grease/scum/debr	ris build-up on water s	surface:	None	Minimal	Moderate	Significant
	Amount of grease/scum/debr	·		None	Minimal	Moderate Yes	Significant No
J.	<u>-</u>	·		None	Minimal	,	
J. K.	Grease ring/water level staini	ing above pipe invert?		None	Minimal	,	
J. K. L.	Grease ring/water level staini Size of wet well:	4 foot dia. 11.2 feet 9.2 feet)			,	
J. K. L. M.	Grease ring/water level staini Size of wet well: Rim to bottom of wet well:	ing above pipe invert: 4 foot dia. 11.2 feet)			,	
J. K. L. M. N.	Grease ring/water level staini Size of wet well: Rim to bottom of wet well: Rim to invert: Notes:	4 foot dia. 11.2 feet 9.2 feet	through a hole i			,	
J. K. L. M. N. O.	Grease ring/water level staini Size of wet well: Rim to bottom of wet well: Rim to invert: Notes: ion 3: Valve Chamber	4 foot dia. 11.2 feet 9.2 feet Wet well is vented	through a hole in	n the top of the o	cover.	Yes	
J. K. L. M. N.	Grease ring/water level staini Size of wet well: Rim to bottom of wet well: Rim to invert: Notes: ion 3: Valve Chamber Material of valve chamber wa	4 foot dia. 11.2 feet 9.2 feet Wet well is vented	through a hole in N/A Concrete	n the top of the o		,	
J. K. L. M. O. Sect	Grease ring/water level staini Size of wet well: Rim to bottom of wet well: Rim to invert: Notes: ion 3: Valve Chamber Material of valve chamber wa	4 foot dia. 11.2 feet 9.2 feet Wet well is vented	through a hole in N/A Concrete protection is pro	n the top of the o Fiberglass ovided?	cover. Steel	Yes	No
J. K. L. M. O. Sect A. B.	Grease ring/water level staini Size of wet well: Rim to bottom of wet well: Rim to invert: Notes: ion 3: Valve Chamber Material of valve chamber wa	4 foot dia. 11.2 feet 9.2 feet Wet well is vented a. If steel, is cathodic vall:	through a hole in N/A Concrete protection is protected.	n the top of the o Fiberglass ovided? Good	Steel	Yes Other	
J. K. L. M. O. Sect A. C.	Grease ring/water level staini Size of wet well: Rim to bottom of wet well: Rim to invert: Notes: ion 3: Valve Chamber Material of valve chamber water was a condition of valve chamber was a condition of valve chamber was a condition of valve chamber to part of the condition of valve chamber to part of walve chamber wa	4 foot dia. 11.2 feet 9.2 feet Wet well is vented all: a. If steel, is cathodic vall: p:	through a hole in N/A Concrete protection is pro Excellent Concrete	Fiberglass ovided? Good Fiberglass	Steel Fair Steel	Other Poor Other	No Very Poor
J. K. L. M. N. O. Sect A. B. C. D.	Grease ring/water level staini Size of wet well: Rim to bottom of wet well: Rim to invert: Notes: ion 3: Valve Chamber Material of valve chamber wa Condition of valve chamber to Condition of valve chamber to	4 foot dia. 11.2 feet 9.2 feet Wet well is vented all: a. If steel, is cathodic vall: p:	N/A Concrete protection is pro Excellent Concrete Excellent	Fiberglass ovided? Good Fiberglass Good	Steel Fair Steel Fair	Other Poor Other Poor	No Very Poor Very Poor
J. K. L. M. O. Sect A. C.	Grease ring/water level staini Size of wet well: Rim to bottom of wet well: Rim to invert: Notes: ion 3: Valve Chamber Material of valve chamber water was a condition of valve chamber was a condition of valve chamber was a condition of valve chamber to part of the condition of valve chamber to part of walve chamber wa	4 foot dia. 11.2 feet 9.2 feet Wet well is vented all: a. If steel, is cathodic vall: p:	through a hole in N/A Concrete protection is pro Excellent Concrete	Fiberglass ovided? Good Fiberglass	Steel Fair Steel	Other Poor Other	No Very Poor
J. K. L. M. O. Sect A. B. C. D. E.	Grease ring/water level staini Size of wet well: Rim to bottom of wet well: Rim to invert: Notes: ion 3: Valve Chamber Material of valve chamber wa Condition of valve chamber to Condition of valve chamber to	4 foot dia. 11.2 feet 9.2 feet Wet well is vented all: a. If steel, is cathodic vall: p:	N/A Concrete protection is pro Excellent Concrete Excellent	Fiberglass ovided? Good Fiberglass Good	Steel Fair Steel Fair	Other Poor Other Poor	No Very Poor Very Poor
J. K. L. M. O. Sect A. B. C. D. E.	Grease ring/water level staini Size of wet well: Rim to bottom of wet well: Rim to invert: Notes: ion 3: Valve Chamber Material of valve chamber water and of valve chamber to Condition of access hatches:	4 foot dia. 11.2 feet 9.2 feet Wet well is vented all: a. If steel, is cathodic vall: p:	N/A Concrete protection is pro Excellent Concrete Excellent	Fiberglass ovided? Good Fiberglass Good	Steel Fair Steel Fair	Other Poor Other Poor	No Very Poor Very Poor
J. K. L. M. N. O. Sect A. B. C. D. E.	Grease ring/water level staini Size of wet well: Rim to bottom of wet well: Rim to invert: Notes: ion 3: Valve Chamber Material of valve chamber wa Condition of valve chamber to Condition of valve chamber to Condition of access hatches: ion 4: Valves	4 foot dia. 11.2 feet 9.2 feet Wet well is vented all: a. If steel, is cathodic vall: p:	N/A Concrete protection is pro Excellent Concrete Excellent	Fiberglass ovided? Good Fiberglass Good Good	Steel Fair Steel Fair Fair Fair	Other Poor Other Poor	No Very Poor Very Poor
J. K. L. M. N. O. Sect A. E. Sect	Grease ring/water level staini Size of wet well: Rim to bottom of wet well: Rim to invert: Notes: ion 3: Valve Chamber Material of valve chamber wa Condition of valve chamber to Condition of valve chamber to Condition of access hatches: ion 4: Valves Do check valves exist?	4 foot dia. 11.2 feet 9.2 feet Wet well is vented all: a. If steel, is cathodic vall: p:	N/A Concrete protection is pro Excellent Concrete Excellent	Fiberglass ovided? Good Fiberglass Good Good	Steel Fair Steel Fair Fair No	Other Poor Other Poor	No Very Poor Very Poor
J. K. L. M. O. Sect A. B. C. D. E. Sect A. B.	Grease ring/water level staini Size of wet well: Rim to bottom of wet well: Rim to invert: Notes: ion 3: Valve Chamber Material of valve chamber water wate	4 foot dia. 11.2 feet 9.2 feet Wet well is vented all: a. If steel, is cathodic vall: p:	N/A Concrete protection is pro Excellent Concrete Excellent Excellent Excellent	Fiberglass ovided? Good Fiberglass Good Good Yes Yes	Steel Fair Steel Fair Fair No	Other Poor Other Poor	No Very Poor Very Poor

A.		Pump No. 1	Pump No. 2
	Make	Myers	Myers
	Model No.	WG20	WG20

	Run time (nours)	13863.	.3	1040	J5.8			
	Design point	14 gpm @ 5	5' TDH	14 gpm @	55' TDH			
	Drawdown Results	7.52 gp	m	No test pe	erformed			
					001101 11			
В.	Source of pump information:		O&M Manual	Record Drawings	O&M Staff (verbal)	Other		
C.	Are pumps noisy or vibrating?		Manaai	Yes	No	Other		
D.	Swirl in wet well while pump or	nerates?		Yes	No	N/A		
Ε.	Does the station have a flow me			Yes	No	,		
		If so, type and size o	of meter:		ــــــــــــــــــــــــــــــــــــــ			
F.	Notes:	Pump two not work	-	form drawdown	test.			
	,	•						
Section	on 6: Electrical							
A.	Service power:	120	240	480 Volts	1 phase	3 phase		
В.	Is surge protection provided?		Yes	No				
C.	Seal off fittings provided betwe	en the wet well and	electrical/ conti	rol panel?	T (Yes	No	
D.	Are electrical/ control panels lo	cated within 3' of we	et well hatch or	5' of vent?	_	Yes	No	
Section	on 7: Generator		_		_			
A.	Is there an on-site generator?		Yes	No]			
	a.	Size of on-site gene	rator?					
В.	Transfer Switch:		Automatic	Manual	None			
C.	Is there a generator receptacle?	?	Yes	No				
D.	Fuel Source:		Natural Gas	Propane	Diesel			
E.	Generator Hours:							
F.	Condition of generator and and	illary equip:		Excellent	Good	Fair	Poor	Very Poor
Section	on 8: Pump and Motor Controls							
Α.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor	
В.	How many float switches are in	stalled?		Five			,	
C.	Other level sensors (ultrasonic,				None			
D.	Pump controls (relay logic, PLC-	•		,	Relay logic			
F.	Station alarm:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	, ,				-	
	Alarm telemetry (autodialer, ra	dio, cell phone, SCAI	DA, none)		Local			
Section	on 9: Forcemain							
A.	Forcemain material:	Ductile Iron	PVC	Concrete	Cast Iron	Steel	Other .	
В.	Forcemain size (in):	3 inch						
Section	on 10: Site							
A.	Positive drainage away from sta	ation?	ſ	Yes	No			
В.	Site maintained?		Ì	Yes	No			
C.	Can the site be easily accessed	for maintenance?	Ì	Yes	No			
D.	Is the station locked?		ŀ	Yes	No			
Ε.	Noticeable odor issues?		'	Yes	No			

General Remarks:

155 Parkway lateral backs up quickly if water level backs up into gravity. Per Rico, no backflow preventor on line.					
					

	Client:	Gun Plain Towns	snip		Date:	10/23/2023	
Lift S	Station Number:	LS #7					
	itation Location:	Highland Drive					
Eval	uators:		d Emma McDonald				
Sect	ion 1: General Information						
A.	Year of Construction:						
	ion 2: Wet Well						
A.	Material of wet well walls:		Concrete	Fiberglass	Steel	Other 1	
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor
C.	Condition of pump removal g	uides:	Excellent	Good	Fair	Poor	Very Poor
D.	Condition of pump lift chain:		Excellent	Good	Fair	Poor	Very Poor
E.	Condition of discharge piping	:	Excellent	Good	Fair	Poor	Very Poor
F.	Material of wet well top:		Concrete	Fiberglass	Steel	Other	
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor
Н.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
I.	Is wet well vented?		Yes	No			
J.	Amount of grease/scum/debr	is build-up on wat	er surface:	None	Minimal	Moderate	Significant
K.	Grease ring/water level staini	ng above pipe inve	ert?			Yes	No
L.	Size of wet well:	4 foot dia.					
M.	Rim to bottom of wet well:	18.0 feet					
N.	Rim to invert:	14 feet, 5.4 feet	, 2.6 feet				
Ο.	Notes:		wet well walls; one	stainless pump	lift chain, othe	r chain not sta	inless
				•	•		
Sect	ion 3: Valve Chamber		N/A				
A.	Material of valve chamber wa	ill:	Concrete	Fiberglass	Steel	Other	
	ā	a. If steel, is catho	dic protection is pro	ovided?			
В.	Condition of valve chamber w	all:	Excellent	Good	Fair	Poor	Very Poor
C.	Material of valve chamber to	o:	Concrete	Fiberglass	Steel	Other	
D.	Condition of valve chamber to	op:	Excellent	Good	Fair	Poor	Very Poor
E.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
Sect	ion 4: Valves				1		
A.	Do check valves exist?			Yes	No		
	Do shut off valves exist?		Į	Yes	No	1	
В.				Yes	No		
В. С.	Does the station have a bypas			res	140	•	
	6	ss connection? a. Size of bypass co b. Material of bypa	-	res		•	

A.		Pump No. 1	Pump No. 2
	Make	Myers	Myers
	Model No.	WG20	WG20

	Run time (hours)	1685	4.1	2038	86.6			
	Design point	28 gpm @	57' TDH	28 gpm @	9 57' TDH			
	Drawdown Results	9.4 g	pm	No testing	performed			
			O&M	Record	O&M Staff			
В.	Source of pump information:		Manual	Drawings	(verbal)	Other		
C.	Are pumps noisy or vibrating?	1		Yes	No			
D.	Swirl in wet well while pump	operates?		Yes	No	N/A		
E.	Does the station have a flow r	neter?		Yes	No			
	a	. If so, type and size	of meter:					
F.	Notes:	Pump #2 not work	ting.					
Secti	on 6: Electrical							
A.	Service power:	120	240	480 Volts	1 phase	3 phase		
В.	Is surge protection provided?	120	Yes	No	I pilase	5 phase		
В. С.	Seal off fittings provided betw	veen the wet well an			ר ר	Yes	No	
D.	Are electrical/ control panels			-	ļ ,	Yes	No	
	, , , , , , , , , , , , , , , , , , , ,							
Secti	on 7: Generator		,		_			
A.	Is there an on-site generator?		Yes	No	J			
	a	. Size of on-site gen	erator?					
В.	Transfer Switch:		Automatic	Manual	None			
C.	Is there a generator receptacl	e?	Yes	No				
D.	Fuel Source:		Natural Gas	Propane	Diesel			
	• • •							
E.	Generator Hours:						1	
F.	Condition of generator and ar			Excellent	Good	Fair	Poor	Very P
		ncillary equip: The location of th	e generator rece		L		ı	Very P
F. G.	Condition of generator and ar	The location of th	e generator rece		L		ı	Very Po
F. G.	Condition of generator and ar Notes:	The location of th	e generator rece		L		ı	Very P
F. G. Secti	Condition of generator and ar Notes: on 8: Pump and Motor Control	The location of th		otacle is by the I	ake, making it di	fficult to acce	ss.	Very Po
F. G. Secti A.	Condition of generator and ar Notes: on 8: Pump and Motor Control Condition of control panel:	The location of the state of th	Excellent	otacle is by the l Good Five	ake, making it di	fficult to acce	ss.	Very Po
F. G. Secti A. B.	Condition of generator and ar Notes: on 8: Pump and Motor Control Condition of control panel: How many float switches are	The location of the state of th	Excellent insducer, bubbler	otacle is by the l Good Five	ake, making it di	fficult to acce	ss.	Very Po
F. G. Section A. B. C.	Condition of generator and ar Notes: on 8: Pump and Motor Control Condition of control panel: How many float switches are of Other level sensors (ultrasonic	The location of the state of th	Excellent insducer, bubbler	otacle is by the l Good Five	ake, making it di Fair	fficult to acce	ss.	Very Po
F. G. Section A. B. C. D.	Condition of generator and ar Notes: on 8: Pump and Motor Control Condition of control panel: How many float switches are in Other level sensors (ultrasonic Pump controls (relay logic, PLi	The location of the state of th	Excellent insducer, bubbler etary controller)	otacle is by the l Good Five	ake, making it di Fair	fficult to acce	ss.	Very Po
F. G. Section A. B. C. D. F.	Condition of generator and ar Notes: on 8: Pump and Motor Control Condition of control panel: How many float switches are in Other level sensors (ultrasonic Pump controls (relay logic, PLG Station alarm:	The location of the state of th	Excellent insducer, bubbler etary controller)	otacle is by the l Good Five	Fair None Relay logic	fficult to acce	ss.	Very P
F. G. Section A. B. C. D. F.	Condition of generator and ar Notes: on 8: Pump and Motor Control Condition of control panel: How many float switches are is Other level sensors (ultrasonic Pump controls (relay logic, PLO Station alarm: Alarm telemetry (autodialer, re	The location of the state of th	Excellent insducer, bubbler etary controller)	otacle is by the l Good Five	Fair None Relay logic	fficult to acce	ss.	Very Po
F. G. Secti A. B. C. D. F.	Condition of generator and ar Notes: on 8: Pump and Motor Control Condition of control panel: How many float switches are in Other level sensors (ultrasonic Pump controls (relay logic, PLI Station alarm: Alarm telemetry (autodialer, roon 9: Forcemain	The location of the state of the stalled? c, radar, pressure trace. C-based, VFD, propries adio, cell phone, SCA	Excellent insducer, bubbler etary controller) ADA, none)	Good Five	Fair None Relay logic Local	Poor	Very Poor	Very Po
F. G. Sectil A. B. C. D. F. Sectil A.	Condition of generator and ar Notes: on 8: Pump and Motor Control Condition of control panel: How many float switches are of the Control of	The location of the state of th	Excellent insducer, bubbler etary controller) ADA, none)	Good Five	Fair None Relay logic Local	Poor	Very Poor	Very Po
F. G. Secti A. B. C. F. Secti A. B. C.	Condition of generator and ar Notes: on 8: Pump and Motor Control Condition of control panel: How many float switches are in Other level sensors (ultrasonic Pump controls (relay logic, PLI Station alarm: Alarm telemetry (autodialer, ron 9: Forcemain Forcemain material: Forcemain size (in): Notes:	The location of the state of the stalled? c, radar, pressure trace. C-based, VFD, proprint adio, cell phone, SCA. Ductile Iron 1.25 inch	Excellent insducer, bubbler etary controller) ADA, none)	Good Five	Fair None Relay logic Local	Poor	Very Poor	Very P
F. G. Secti A. B. C. D. F. Secti A. B. C. Secti	Condition of generator and ar Notes: on 8: Pump and Motor Control Condition of control panel: How many float switches are in Other level sensors (ultrasonic Pump controls (relay logic, PLOS Station alarm: Alarm telemetry (autodialer, in on 9: Forcemain Forcemain material: Forcemain size (in): Notes:	The location of the state of the stalled? c, radar, pressure trace. C-based, VFD, proprioradio, cell phone, SCA Ductile Iron 1.25 inch Galvanized steel	Excellent insducer, bubbler etary controller) ADA, none)	Good Five Concrete	Fair None Relay logic Local Cast Iron	Poor	Very Poor	Very Po
F. G. Secti A. B. C. D. F. Secti A. B. C. Secti A. A.	Condition of generator and ar Notes: on 8: Pump and Motor Control Condition of control panel: How many float switches are of Other level sensors (ultrasonic Pump controls (relay logic, PLOS Station alarm: Alarm telemetry (autodialer, roon 9: Forcemain Forcemain material: Forcemain size (in): Notes: on 10: Site Positive drainage away from size	The location of the state of the stalled? c, radar, pressure trace. C-based, VFD, proprioradio, cell phone, SCA Ductile Iron 1.25 inch Galvanized steel	Excellent insducer, bubbler etary controller) ADA, none)	Good Five Concrete	Fair None Relay logic Local Cast Iron	Poor	Very Poor	Very Po
F. G. Secti A. B. C. D. F. Secti A. B. C. Secti	Condition of generator and ar Notes: on 8: Pump and Motor Control Condition of control panel: How many float switches are in Other level sensors (ultrasonic Pump controls (relay logic, PLOS Station alarm: Alarm telemetry (autodialer, in on 9: Forcemain Forcemain material: Forcemain size (in): Notes:	The location of the state of th	Excellent insducer, bubbler etary controller) ADA, none)	Good Five Concrete	Fair None Relay logic Local Cast Iron	Poor	Very Poor	Very Po

	Client:	Gun Plain Townsh	ip		Date:	10/23/2023	
Lift !	station Number:	LS #8					
Lift S	station Location:	Blarney Lane					
Eval	uators:	Danell Smith and I	Emma McDonald				
Sect	ion 1: General Information						
A.	Year of Construction:						
			-				
Sect	ion 2: Wet Well						
Α.	Material of wet well walls:		Concrete	Fiberglass	Steel	Other	
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor
C.	Condition of pump removal g	uides:	Excellent	Good	Fair	Poor	Very Poor
D.	Condition of pump lift chain:		Excellent	Good	Fair	Poor	Very Poor
E.	Condition of discharge piping	:	Excellent	Good	Fair	Poor	Very Poor
F.	Material of wet well top:		Concrete	Fiberglass	Steel	Other	•
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor
Н.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
ı.	Is wet well vented?		Yes	No		- -	
J.	Amount of grease/scum/debr	ris build-up on water	surface:	None	Minimal	Moderate	Significant
K.	Grease ring/water level staini	ing above pipe invert	?			Yes	No
L.	Size of wet well:	4 foot dia.				·	
M.	Rim to bottom of wet well:	14.5 feet	-		-		
N.	Rim to invert:	8.1 feet, 10.3 feet					
Sect	ion 3: Valve Chamber		N/A				
A.	Material of valve chamber wa	all:	Concrete	Fiberglass	Steel	Other	
,		a. If steel, is cathodic		_	3,000	Cirici	
В.	Condition of valve chamber w		Excellent	Good	Fair	Poor	Very Poor
C.	Material of valve chamber to		Concrete	Fiberglass	Steel	Other	,
D.	Condition of valve chamber to	•	Excellent	Good	Fair	Poor	Very Poor
E.	Condition of access hatches:	•	Excellent	Good	Fair	Poor	Very Poor
c	ion 4. Volum						
	ion 4: Valves		ſ	Ve-) _{N-}		
Α.	Do check valves exist? Do shut off valves exist?		}	Yes	No No		
В.		ss connection?	ι	Yes	No No	1	
C	Does the station have a bypas	33 CONTRECTIONS		Yes	No	J	
C.		Size of hypass can	nection:				
C.		a. Size of bypass conb. Material of bypass	-	Ductile Iron	- PVC	Cast Iron	Other

A.		Pump No. 1	Pump No. 2					
	Make	Myers	Myers					
	Model No.	WG20	WG20					

	,							
	Design point	15 gpm @ 7	0' TDH	15 gpm @ 70' TDH				
	Drawdown Results	No testing pe	rtormed	16.0	gpm			
			O&M	Record	O&M Staff			
В.	Source of pump information:		Manual	Drawings	(verbal)	Other		
C.	Are pumps noisy or vibrating?			Yes	No			_
D.	Swirl in wet well while pump on	perates?		Yes	No	N/A		
E.	Does the station have a flow m			Yes	No			
		If so, type and size of	of meter:					
							,	
Secti	on 6: Electrical							
A.	Service power:	120	240	480 Volts	1 phase	3 phase		
В.	Is surge protection provided?		Yes	No	T			
C.	Seal off fittings provided between	en the wet well and	electrical/ cont	rol panel?	⁻ [Yes	No	
D.	Are electrical/ control panels lo	cated within 3' of we	et well hatch or	5' of vent?		Yes	No	
					-		•	
Secti	on 7: Generator				_			
A.	Is there an on-site generator?		Yes	No]			
	a.	Size of on-site gene	rator?					
В.	Transfer Switch:		Automatic	Manual	None			
C.	Is there a generator receptacle	?	Yes	No				
D.	Fuel Source:		Natural Gas	Propane	Diesel			
E.	Generator Hours:							
F.	Condition of generator and and	illary equip:		Excellent	Good	Fair	Poor	Very Poor
Secti	on 8: Pump and Motor Controls					ı		
A.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor	
В.	How many float switches are in	stalled?		Five				
C.	Other level sensors (ultrasonic,				None			
D.	Pump controls (relay logic, PLC-	-based, VFD, proprie	tary controller)		Relay logic			
F.	Station alarm:							
	Alarm telemetry (autodialer, ra	dio, cell phone, SCAI	DA, none)		Local			
	on 9: Forcemain	5	D) (C		[6	l	
Α.	Forcemain material:	Ductile Iron	PVC	Concrete	Cast Iron	Steel	Other	
В.	Forcemain size (in):	1.25 inch		•				
C.	Notes:	Galvanized steel.			_			
Secti	on 10: Site							
	on 10: Site Positive drainage away from sta	ation?		Voc	No			
A. B.	Site maintained?	auon:	ĺ	Yes Yes	No			
Б. С.	Can the site be easily accessed	for maintenance?		Yes	No No			
D.	Is the station locked?	ioi mamtenance!		Yes	No No			
E.	Noticeable odor issues?			Yes	No			
۲.				103				

15833.9

11104.4

General Remarks:

Run time (hours)

	Client:	Gun Plain Townsh	nip		Date:	10/23/2023	
Lift S	tation Number:	LS #9					
Lift S	tation Location:	Shangri-La Circle					
Evalu	uators:	Danell Smith and	Emma McDonald				
Secti	ion 1: General Information						
A.	Year of Construction:						
Secti	on 2: Wet Well						
A.	Material of wet well walls:		Concrete	Fiberglass	Steel	Other	
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor
C.	Condition of pump removal	guides:	Excellent	Good	Fair	Poor	Very Poor
D.	Condition of pump lift chain	:	Excellent	Good	Fair	Poor	Very Poor
E.	Condition of discharge pipin	g:	Excellent	Good	Fair	Poor	Very Poor
F.	Material of wet well top:		Concrete	Fiberglass	Steel	Other	
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor
Н.	Condition of access hatches:	:	Excellent	Good	Fair	Poor	Very Poor
ı.	Is wet well vented?		Yes	No			
J.	Amount of grease/scum/del	oris build-up on water	r surface:	None	Minimal	Moderate	Significant
K.	Grease ring/water level stair	ning above pipe inver	t?			Yes	No
L.	Size of wet well:	7 foot dia.					
M.	Rim to bottom of wet well:	20.7 feet					
N.	Rim to invert:	13 feet and 13 fee	et				
Secti	ion 3: Valve Chamber		N/A				
A.	Material of valve chamber w	vall:	Concrete	Fiberglass	Steel	Other	
		a. If steel, is cathodi	c protection is pro	ovided?			
В.	Condition of valve chamber	wall:	Excellent	Good	Fair	Poor	Very Poor
C.	Material of valve chamber to	op:	Concrete	Fiberglass	Steel	Other	
D.	Condition of valve chamber	top:	Excellent	Good	Fair	Poor	Very Poor
E.	Condition of access hatches	:	Excellent	Good	Fair	Poor	Very Poor
F.	Notes:	Unable to unlock	to assess.		-		
Secti	ion 4: Valves						
A.	Do check valves exist?			Yes	No		
В.	Do shut off valves exist?			Yes	No		
C.	Does the station have a bypa	ass connection?		Yes	No		
		a. Size of bypass cor	nnection:		_		
		b. Material of bypas	s connection:	Ductile Iron	PVC	Cast Iron	Other

A.		Pump No. 1	Pump No. 2		
	Make	Flygt	Flygt		
	Model No.	3140.090-6103	3140.090-6103		

	Kull tille (llouis)	4030.0		430	3.1			
	Design point	200 gpm @ 76	6' TDH	200 gpm @ 76' TDH				
	Drawdown Results	230.3 gpr	n	230.3 gpm				
		_						
			0&M	Record	O&M Staff			
В.	Source of pump information:	l	Manual	Drawings	(verbal)	Other		
C.	Are pumps noisy or vibrating?			Yes	No			
D.	Swirl in wet well while pump or			Yes	No	N/A		
E.	Does the station have a flow m			Yes	No			
	a.	If so, type and size of	meter:					
Secti	on 6: Electrical		i		, i		1	
A.	Service power:	120	240	480 Volts	1 phase	3 phase	J	
В.	Is surge protection provided?	Į	Yes	No			1	
C.	Seal off fittings provided between				l	Yes	No	1
D.	Are electrical/ control panels lo	cated within 3' of wet	well hatch or	5' of vent?		Yes	No	
Secti	on 7: Generator		1		٦			
A.	Is there an on-site generator?		Yes	No	J			
	a.	Size of on-site genera	itor?		_			
В.	Transfer Switch:		Automatic	Manual	4			
C.	Is there a generator receptacle	?	Yes	No	J			
D.	Fuel Source:		Natural Gas	Propane	Diesel			
E.	Generator Hours:							
F.	Condition of generator and and	illary equip:		Excellent	Good	Fair	Poor	Very Poor
Secti	on 8: Pump and Motor Controls							
A.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor	
В.	How many float switches are in	stalled?	,	Five				
C.	Other level sensors (ultrasonic,	radar, pressure transc	ducer, bubbler	r)	None		1	
D.	Pump controls (relay logic, PLC-	based, VFD, proprieta	ry controller)		Relay logic			
F.	Station alarm:							
	Alarm telemetry (autodialer, ra	dio, cell phone, SCAD	A, none)		Sensaphone, lo	ocal		
G.	Notes:	Control panel concre	te pad as settl	ed.	_			
Secti	on 9: Forcemain							
A.	Forcemain material:	Ductile Iron	PVC	Concrete	Cast Iron	Steel	Other	
В.	Forcemain size (in):	4 inch						
Secti	on 10: Site							
A.	Positive drainage away from sta	ation?		Yes	No			
В.	Site maintained?		1	Yes	No			
С.	Can the site be easily accessed	for maintenance?		Yes	No			
D.	Is the station locked?	ioi manitenance:		Yes	No No			
Б. Е.	Noticeable odor issues?			Yes	No			
Е.	Noticeable outl 155065!			162	INU			

4983.1

4698.8

General Remarks:

Run time (hours)

	Client:	Gun Plain Township			Date:	10/23/2023	
Lift S	tation Number:	LS #10					
	tation Location:	Doster Road					
Evalu	iators:	Danell Smith and En	nma McDonald				
	on 1: General Information						
A.	Year of Construction:						
Secti	on 2: Wet Well						
Α.	Material of wet well walls:		Concrete	Fiberglass	Steel	Other	
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor
C.	Condition of pump removal g	guides:	Excellent	Good	Fair	Poor	Very Poor
D.	Condition of pump lift chain:		Excellent	Good	Fair	Poor	Very Poor
E.	Condition of discharge piping	g:	Excellent	Good	Fair	Poor	Very Poor
F.	Material of wet well top:		Concrete	Fiberglass	Steel	Other	
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor
Н.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
I.	Is wet well vented?		Yes	No		•	
J.	Amount of grease/scum/deb	ris build-up on water s	urface:	None	Minimal	Moderate	Significant
K.	Grease ring/water level stain	ing above pipe invert?				Yes	No
L.	Size of wet well:	7 foot dia.					
M.	Rim to bottom of wet well:	27.0 feet					
N.	Rim to invert:	10.7 feet and 19.4 f	eet				
Ο.	Notes:	Top two sections of	wet well walls	are in fair conditi	on.		
Soct:	on 3: Valve Chamber		N/A				
A.	on 3: valve chamber Material of valve chamber wa	all·	Concrete	Fiberglass	Steel	Other	
۸.		an. a. If steel, is cathodic p		_	Jieei	Other	
В.	Condition of valve chamber v	•	Excellent	Good	Fair	Poor	Very Poor
С.	Material of valve chamber to		Concrete	Fiberglass	Steel	Other	, . 001
D.	Condition of valve chamber t		Excellent	Good	Fair	Poor	Very Poor
Ε.	Condition of access hatches:	•	Excellent	Good	Fair	Poor	Very Poor
F.		Unable to unlock to					•
					-		
Secti	on 4: Valves						
A.	Do check valves exist?			Yes	No		
В.	Do shut off valves exist?			Yes	No		
C.	Does the station have a bypa			Yes	No		
		a. Size of bypass conne					2
		 b. Material of bypass of 	connection:	Ductile Iron	PVC	Cast Iron	Other

A.		Pump No. 1	Pump No. 2		
	Make	Flygt	Flygt		

	Model No.	CP-31	40	CP-3	1140			
	Run time (hours)	3888		407				
	name (noars)							
	Design point	165 gpm @	96' TDH	165 gpm (165 gpm @ 96' TDH			
	Drawdown Results	178.5 g	pm	172.7	gpm			
					_			
_			O&M	Record	O&M Staff	0.1		
В.	Source of pump information:		Manual	Drawings	(verbal)	Other		
C.	Are pumps noisy or vibrating?			Yes	No			
D.	Swirl in wet well while pump or			Yes	No	N/A		
E.	Does the station have a flow m			Yes	No			
	a.	If so, type and size	of meter:		-			
Secti	on 6: Electrical							
Α.	Service power:	120	208	480 Volts	1 phase	3 phase	1	
В.	Is surge protection provided?	120	Yes	No		o priase	,	
C.	Seal off fittings provided betwe	en the wet well and			Г	Yes	No	
D.	Are electrical/ control panels lo				ŀ	Yes	No No	
D.	Are electrically control pariets to	cated within 5 of w	et well flateli of	J of vent:	L	163	, 110	
Secti	on 7: Generator							
A.	Is there an on-site generator?		Yes	No	7			
	a.	Size of on-site gene	erator?		_			
В.	Transfer Switch:		Automatic	Manual				
C.	Is there a generator receptacle	?	Yes	No	-			
D.	Fuel Source:		Natural Gas	Propane	Diesel			
E.	Generator Hours:							
F.	Condition of generator and and	illary equip:		Excellent	Good	Fair	Poor	Very Poor
Secti	on 8: Pump and Motor Controls				_			
A.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor	
В.	How many float switches are in	stalled?	_	Five	_			_
C.	Other level sensors (ultrasonic,	radar, pressure trar	nsducer, bubbler)	None			
D.	Pump controls (relay logic, PLC-	based, VFD, proprie	etary controller)		Relay logic			
F.	Station alarm:							
	Alarm telemetry (autodialer, ra	dio, cell phone, SCA	DA, none)		Sensaphone, lo	cal		_
G.	Notes:	The control panel is	s on uneven grou	und and is slight	ly tilted.		-	
Secti	on 9: Forcemain							
A.	Forcemain material:	Ductile Iron	PVC	Concrete	Cast Iron	Steel	Other	
В.	Forcemain size (in):	4 inch		301101313	0000	0.00.	0	
-								
_	on 10: Site	ation 2		V	N.			
Α.	Positive drainage away from sta	IUON?	ſ	Yes	No			
В.	Site maintained?		l	Yes	No			
C.	Can the site be easily accessed	ror maintenance?	ſ	Yes	No			
D.	Is the station locked?		l	Yes	No			
Ε.	Noticeable odor issues?	The cost of the	ta. t	Yes	No No			
F.	Notes:	The entrance to the	in no gravel, dif	ricult to traverse.				

	Client:	Gun Plain Townsh	ip		Date:	10/24/2023	
Lift S	tation Number:	LS #11					
Lift S	tation Location:	Midlakes Drive					
Evalu	uators:	Danell Smith and	Emma McDonald				
Secti	on 1: General Information						
A.	Year of Construction:		-				
Secti	on 2: Wet Well						
A.	Material of wet well walls:		Concrete	Fiberglass	Steel	Other	
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor
C.	Condition of pump removal g	uides:	Excellent	Good	Fair	Poor	Very Poor
D.	Condition of pump lift chain:		Excellent	Good	Fair	Poor	Very Poor
E.	Condition of discharge piping	:	Excellent	Good	Fair	Poor	Very Poor
F.	Material of wet well top:		Concrete	Fiberglass	Steel	Other	
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor
Н.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
l.	Is wet well vented?		Yes	No		-	
J.	Amount of grease/scum/debr	is build-up on water	surface:	None	Minimal	Moderate	Significant
K.	Grease ring/water level staini	ng above pipe invert	t?			Yes	No
L.	Size of wet well:	6 foot dia.					
M.	Rim to bottom of wet well:	12.1 feet					
N.	Rim to invert:	5.5 feet and 5.5 fe	eet				
Secti	on 3: Valve Chamber		N/A				
A.	Material of valve chamber wa	II:	Concrete	Fiberglass	Steel	Other	
	ā	a. If steel, is cathodic					
В.	Condition of valve chamber w		Excellent	Good	Fair	Poor	Very Poor
C.	Material of valve chamber to		Concrete	Fiberglass	Steel	Other	•
D.	Condition of valve chamber to		Excellent	Good	Fair	Poor	Very Poor
E.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
			'		•		•
Secti	on 4: Valves						
A.	Do check valves exist?			Yes	No		
В.	Do shut off valves exist?			Yes	No		
C.	Does the station have a bypas	ss connection?		Yes	No		
	ā	a. Size of bypass con	nection:	4 inch			
	k	o. Material of bypass	s connection:	Ductile Iron	PVC	Cast Iron	Other
D.	Notes:	Valve chamber wa	as full of water. W	ater was pumpe	d out for obse	vation.	

A.		Pump No. 1	Pump No. 2
	Make	Flygt	Flygt
	Model No.	CP-3127	CP-3127

	Run time (hours)	3310.1	<u> </u>	597	78.3			
	Design point	125 gpm @ 5	9' TDH	125 gpm (@ 59' TDH			
	Drawdown Results	143.8 gp	om	133.2	2 gpm			
B. C.	Source of pump information: Are pumps noisy or vibrating?		O&M Manual	Record Drawings Yes	O&M Staff (verbal)	Other		
D.	Swirl in wet well while pump or			Yes	No	N/A		
E.	Does the station have a flow mo	eter r If so, type and size o	f meter:	Yes	No			
	ŭ.	ii so, type and size o	· meter.					
Secti	ion 6: Electrical						_	
A.	Service power:	120	208	480 Volts	1 phase	3 phase]	
В.	Is surge protection provided?		Yes	No	_		-	
C.	Seal off fittings provided betwe	en the wet well and	electrical/ cont	rol panel?	Ļ	Yes	No	
D.	Are electrical/ control panels lo	cated within 3' of we	t well hatch or	5' of vent?	l	Yes	No	
Secti	ion 7: Generator							
	Is there an on-site generator?		Yes	No	7			
	· ·	Size of on-site gener			_			
В.	Transfer Switch:	G	Automatic	Manual	1			
C.	Is there a generator receptacle	?	Yes	No	_			
D.	Fuel Source:		Natural Gas	Propane	Diesel			
E.	Generator Hours:							
F.	Condition of generator and and	illary equip:		Excellent	Good	Fair	Poor	Very Poor
G.	Notes:	Generator receptacl maintenance difficul		ansfer switch ne	ear panel, much fo	urther away	from the road, o	causing
Secti	ion 8: Pump and Motor Controls							
A.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor	
В.	How many float switches are in	stalled?		Five				
C.	Other level sensors (ultrasonic,	radar, pressure trans	sducer, bubble	r)	None			
D.	Pump controls (relay logic, PLC-	-based, VFD, propriet	ary controller)		Relay logic			
F.	Station alarm:							
	Alarm telemetry (autodialer, ra	dio, cell phone, SCAD	A, none)		Sensaphone, lo	ocal		
G.	Notes:	Bottom of control pa	anel is rusted.		_			
Socti	on 9: Forcemain							
A.	Forcemain material:	Ductile Iron	PVC	Concrete	Cast Iron	Steel	Other	
В.	Forcemain size (in):	4 inch	J IVC	Concrete	Cast II OII	Steel	Other	
٠.	, o. cea 5.2e (,.			•				
Secti	on 10: Site							
A.	Positive drainage away from sta	ation?		Yes	No			
В.	Site maintained?			Yes	No			
C.	Can the site be easily accessed	for maintenance?		Yes	No			
D.	Is the station locked?			Yes	No			

F. Notes:	Drainage slopes towards site, brush over valve chamber and far away from road, making maintenance difficult.	
General Remarks:		

	Client:	Gun Plain Township	ı		Date:	10/23/2023		
Lift S	tation Number:	LS #12						
Lift S	tation Location:	Hestia Street						
Evalı	uators:	Danell Smith and Er	ell Smith and Emma McDonald					
Secti	on 1: General Information							
A.	Year of Construction:							
Secti	on 2: Wet Well							
A.	Material of wet well walls:		Concrete	Fiberglass	Steel	Other		
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor	
C.	Condition of pump removal g	uides:	Excellent	Good	Fair	Poor	Very Poor	
D.	Condition of pump lift chain:		Excellent	Good	Fair	Poor	Very Poor	
E.	Condition of discharge piping	:	Excellent	Good	Fair	Poor	Very Poor	
F.	Material of wet well top:		Concrete	Fiberglass	Steel	Other		
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor	
Н.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor	
l.	Is wet well vented?		Yes	No		_		
J.	Amount of grease/scum/deb	ris build-up on water s	urface:	None	Minimal	Moderate	Significant	
K.	Grease ring/water level stain	ing above pipe invert?				Yes	No	
L.	Size of wet well:	6 foot dia.					•	
M.	Rim to bottom of wet well:	13.8 feet						
N.	Rim to invert:	5.1 feet						
Secti	on 3: Valve Chamber		N/A	1				
Secti A.	Material of valve chamber wa		Concrete	Fiberglass	Steel	Other		
	Material of valve chamber wa	a. If steel, is cathodic	Concrete protection is pro	ovided?	1	Other		
A. B.	Material of valve chamber was	a. If steel, is cathodic vall:	Concrete protection is pro Excellent	ovided? Good	Fair	Poor	Very Poor	
А. В. С.	Material of valve chamber was Condition of valve chamber was Material of valve chamber to	a. If steel, is cathodic vall: p:	Concrete protection is pro Excellent Concrete	ovided? Good Fiberglass	Fair Steel	Poor Other		
A. B. C.	Material of valve chamber was Condition of valve chamber to Condition of valve chamber to	a. If steel, is cathodic vall: p:	Concrete protection is pro Excellent Concrete Excellent	Good Fiberglass Good	Fair Steel Fair	Poor Other Poor	Very Poor	
А. В. С.	Material of valve chamber was Condition of valve chamber was Material of valve chamber to	a. If steel, is cathodic vall: p:	Concrete protection is pro Excellent Concrete	ovided? Good Fiberglass	Fair Steel	Poor Other		
A. B. C. D.	Material of valve chamber was Condition of valve chamber to Condition of valve chamber to	a. If steel, is cathodic vall: p:	Concrete protection is pro Excellent Concrete Excellent	Good Fiberglass Good	Fair Steel Fair	Poor Other Poor	Very Poor	
A. B. C. D.	Material of valve chamber was Condition of valve chamber v Material of valve chamber to Condition of valve chamber t Condition of access hatches:	a. If steel, is cathodic vall: p:	Concrete protection is pro Excellent Concrete Excellent	Good Fiberglass Good	Fair Steel Fair	Poor Other Poor	Very Poor	
A. B. C. D. E.	Material of valve chamber was Condition of valve chamber v Material of valve chamber to Condition of valve chamber t Condition of access hatches:	a. If steel, is cathodic vall: p:	Concrete protection is pro Excellent Concrete Excellent	Good Fiberglass Good Good	Fair Steel Fair Fair	Poor Other Poor	Very Poor	
A. B. C. D. E. Secti	Material of valve chamber was Condition of valve chamber v Material of valve chamber to Condition of valve chamber to Condition of access hatches: on 4: Valves Do check valves exist?	a. If steel, is cathodic vall: p: op:	Concrete protection is pro Excellent Concrete Excellent	Good Fiberglass Good Good Yes	Fair Steel Fair Fair	Poor Other Poor	Very Poor	
A. B. C. D. E. Secti A. B.	Material of valve chamber was Condition of valve chamber to Material of valve chamber to Condition of valve chamber to Condition of access hatches: on 4: Valves Do check valves exist? Do shut off valves exist? Does the station have a bypa	a. If steel, is cathodic vall: p: op:	Concrete protection is pro Excellent Concrete Excellent Excellent	Good Fiberglass Good Good Yes Yes	Fair Steel Fair Fair No	Poor Other Poor	Very Poor	

A.		Pump No. 1	Pump No. 2
	Make	Flygt	Flygt
	Model No.	CP-3127	CP-3127
	Run time (hours)	6001.3	3523.8

	Design point	110 gpm @ 7	1' TDH	110 gpm (@ 71' TDH			
	Drawdown Results	110 gpr	n	No test po	erformed			
					7			
D	Course of numn informations		O&M Manual	Record	O&M Staff	Other		
В.	Source of pump information: Are pumps noisy or vibrating?		ivialiuai	Drawings Yes	(verbal)	Other		
C.	Swirl in wet well while pump or	oratos?			No	NI/A		
D.				Yes	No	N/A		
E.	Does the station have a flow mo		f	Yes	No			
_		If so, type and size of	-	#2		F 420 0		
F.	Notes:	Run time hours on p	ump #1 wnen <u>t</u>	oump #2 was pu	1100 011 8/23/23:	5429.9.		
Section	on 6: Electrical							
A.	Service power:	120	240	480 Volts	1 phase	3 phase		
В.	Is surge protection provided?		Yes	No			_	
C.	Seal off fittings provided betwe	en the wet well and e	electrical/ conti	rol panel?		Yes	No	
D.	Are electrical/ control panels lo	cated within 3' of we	t well hatch or	5' of vent?		Yes	No	
Casti	on 7. Concretor							
	on 7: Generator		Yes	No	ר			
A.	Is there an on-site generator?	Size of on-site genera	•	INU	J			
D	Transfer Switch:	Size of on-site genera	ſ	Manual	1			
В.			Automatic	Manual	J			
C.	Is there a generator receptacle	f	Yes	No	Diagal			
D.	Fuel Source:		Natural Gas	Propane	Diesel			
E.	Generator Hours:	illany aquiny		Evenllont	Cood	Fair	Door	Vary Door
F.	Condition of generator and anc	mary equip:		Excellent	Good	Fair	Poor	Very Poor
Sectio	on 8: Pump and Motor Controls							
Α.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor	
В.	How many float switches are in	stalled?	ZXCCIICIIC	Five			70.7.00.	
C.	Other level sensors (ultrasonic,		- ducer, bubbler		None			
D.	Pump controls (relay logic, PLC-	•		,		g to three nh	ase, relay logic	
F.	Station alarm:	2000a, 1. 2, p. op c.	a.		112 00111010111	8 to till co p.i.		
	Alarm telemetry (autodialer, ra	dio cell nhone SCAD	A none)		Sensaphone			
G.		Control panel leaning			- зепзарноне			
Ο.		Control parter rearming	B 0B					
Section	on 9: Forcemain							
A.	Forcemain material:	Ductile Iron	PVC	Concrete	Cast Iron	Steel	Other	
В.	Forcemain size (in):	4 inch					·	
Section	on 10: Site							
A.	Positive drainage away from sta	ation?		Yes	No			
В.	Site maintained?			Yes	No			
C.	Can the site be easily accessed	for maintenance?		Yes	No			
D.	Is the station locked?			Yes	No			
E.	Noticeable odor issues?			Yes	No			

General Remarks:

Steep hill leading up to lift station makes maintenance difficult.						

	Client:	Gun Plain Townshi	р		Date:	10/24/2023	
Lift S	tation Number:	LS #14					
Lift S	tation Location:	Highway A-45					
Eval	uators:	Danell Smith and E	mma McDonald				
Soct	on 1: General Information						
A.	Year of Construction:						
Α.	real of Construction.						
Sect	on 2: Wet Well			•			
A.	Material of wet well walls:		Concrete	Fiberglass	Steel	Other	•
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor
C.	Condition of pump removal g	guides:	Excellent	Good	Fair	Poor	Very Poor
D.	Condition of pump lift chain:		Excellent	Good	Fair	Poor	Very Poor
E.	Condition of discharge piping	:	Excellent	Good	Fair	Poor	Very Poor
F.	Material of wet well top:		Concrete	Fiberglass	Steel	Other	
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor
Н.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
l.	Is wet well vented?		Yes	No			
J.	Amount of grease/scum/deb	ris build-up on water	surface:	None	Minimal	Moderate	Significant
K.	Grease ring/water level stain	ing above pipe invert	?			Yes	No
L.	Size of wet well:	6 foot dia.					
M.	Rim to bottom of wet well:	16.7 feet					
N.	Rim to invert:	10.0 feet and 8.8 fe	eet				
Sect	on 3: Valve Chamber		N/A				
A.	Material of valve chamber wa	all:	Concrete	Fiberglass	Steel	Other	
	;	a. If steel, is cathodic	protection is pro	ovided?			
В.	Condition of valve chamber v	vall:	Excellent	Good	Fair	Poor	Very Poor
C.	Material of valve chamber to	p:	Concrete	Fiberglass	Steel	Other	
D.	Condition of valve chamber t	op:	Excellent	Good	Fair	Poor	Very Poor
E.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
Secti	on 4: Valves						
Α.	Do check valves exist?			Yes	No		
В.	Do shut off valves exist?			Yes	No		
C.	Does the station have a bypa	ss connection?		Yes	No		
٠.	•••		nection:	4 inch			
		a. Size of pynass conr					
		a. Size of bypass conrb. Material of bypass		Ductile Iron	PVC	Cast Iron	Other

A.		Pump No. 1	Pump No. 2
	Make	Liberty	Liberty
	Model No.	LSG200/LSGX200	LSG200/LSGX200

	Run time (hours)	2172.2	2	132	4.2			
	Design point	Linknov		Unkn				
	Design point	Unknov	WII	Ulikii	IOWII			
	Drawdown Results	61.3 gp	om	71.9	gpm			
				•				
D	Course of numn informations		O&M	Record	O&M Staff	Othor		
В.	Source of pump information:		Manual	Drawings	(verbal)	Other .		
C.	Are pumps noisy or vibrating?	noratos?		Yes	No No	N/A		
D.	Swirl in wet well while pump op Does the station have a flow me			Yes	 	IN/A		
E.			of motor	Yes	No			
r		If so, type and size of		Rosemont, size	unknown.			
F.	Notes:	Flow meter reading						
		Flow meter reading	rullip 2. 75 gpi	11				
Section	on 6: Electrical							
A.	Service power:	120	240	480 Volts	1 phase	3 phase		
В.	Is surge protection provided?	120	Yes	No	I phase	3 pridac		
C.	Seal off fittings provided between	en the wet well and			ſ	Yes	No	
D.	Are electrical/ control panels lo				ŀ	Yes	No	
D.	Are electrically control panels to	cated within 5 of we	et wen naten or	5 of vent:	·	163	NO	
Section	on 7: Generator							
A.	Is there an on-site generator?		Yes	No	7			
,		Size of on-site gener		110	_			
В.	Transfer Switch:	ole of on one gener	Automatic	Manual	None			
C.	Is there a generator receptacle	?	Yes	No	1			
D.	Fuel Source:		Natural Gas	Propane	الـ Diesel			
Ε.	Generator Hours:		ratural Gas	Порине	2.000.			
F.	Condition of generator and and	:illary equip:		Excellent	Good	Fair	Poor	Very Poor
	container or generator and and	a. y equ.p.		_xcccc	2004			,
Section	on 8: Pump and Motor Controls							
A.	Condition of control panel:		Excellent	Good	T Fair	Poor	Very Poor	
В.	How many float switches are in	stalled?		Four	_		,	
C.	Other level sensors (ultrasonic,		sducer, bubble	r)	None			•
D.	Pump controls (relay logic, PLC-			•	Relay logic			
F.	Station alarm:							
	Alarm telemetry (autodialer, ra	dio, cell phone, SCAI	DA, none)		Sensaphone, lo	ocal		
	, ,		. ,		•			•
Section	on 9: Forcemain							
A.	Forcemain material:	Ductile Iron	PVC	Concrete	Cast Iron	Steel	Other	
В.	Forcemain size (in):	2 inch		•				
C.	Notes:	Forcemain changes	to 4 inch ductil	e iron in valve ch	namber.			
Section	on 10: Site				_			
A.	Positive drainage away from sta	ation?		Yes	No			
В.	Site maintained?			Yes	No			
C.	Can the site be easily accessed	for maintenance?		Yes	No			
D.	Is the station locked?			Yes	No			
E.	Noticeable odor issues?			Yes	No			

General Remarks:	
Concrete around structures is sinking.	

	Client:	Gun Plain Township			Date:	10/24/2023	
Lift S	station Number:	LS #15					
Lift S	station Location:	Edward Dr					
Eval	uators:	Danell Smith and En	nma McDonald				
٠	ion 1: General Information						
	Year of Construction:						
A.	Year of Construction:						
	ion 2: Wet Well			l <u>-</u>	o. 1	0.1	
Α.	Material of wet well walls:		Concrete	Fiberglass	Steel 1	Other	=
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor
С.	Condition of pump removal g	uides:	Excellent	Good	Fair	Poor	Very Poor
D.	Condition of pump lift chain:		Excellent	Good	Fair	Poor	Very Poor
Ε.	Condition of discharge piping	:	Excellent	Good	Fair	Poor	Very Poor
F.	Material of wet well top:		Concrete	Fiberglass	Steel Lein	Other	Vom: D
G.	Condition of wet well top: Condition of access hatches:		Excellent Excellent	Good	Fair Fair	Poor	Very Poor
Н.				Good	Fair	Poor	Very Poor
l.	Is wet well vented? Amount of grease/scum/debi	ris huild-un on water si	Yes Yes	No None	Minimal	Moderate	Significant
J.	Amount of grease/scum/debi	ns bullu-up on water st	arrace.	None	Willilliai	Moderate	Significant
K.	Grease ring/water level staini	ing above pipe invert?				Yes	No
L.	Size of wet well:	5 foot dia.				•	
M.	Rim to bottom of wet well:	17.3 feet					
N.	Rim to invert:	12.6 feet			,		
Ο.	Notes:	Pump lift chains are	cables, not cha	Pump lift chains are cables, not chains.			
0.	Notes:	Pump lift chains are	cables, not cha	iins.	-		
	Notes: ion 3: Valve Chamber	Pump lift chains are	cables, not cha	iins.			
	ion 3: Valve Chamber		· · · · · · · · · · · · · · · · · · ·	Fiberglass	Steel	Other	
Sect	ion 3: Valve Chamber Material of valve chamber wa		N/A Concrete	Fiberglass	Steel	Other _	
Sect	ion 3: Valve Chamber Material of valve chamber wa	all: a. If steel, is cathodic p	N/A Concrete	Fiberglass	Steel Fair	Other _	Very Poor
Sect A.	ion 3: Valve Chamber Material of valve chamber wa	all: a. If steel, is cathodic p	N/A Concrete	Fiberglass ovided?	1	-	Very Poor
Sect A. B.	ion 3: Valve Chamber Material of valve chamber wa a Condition of valve chamber w	all: a. If steel, is cathodic p vall: p:	N/A Concrete protection is pro	Fiberglass ovided? Good	Fair	Poor	Very Poor
Sect A. B. C.	ion 3: Valve Chamber Material of valve chamber wa Condition of valve chamber wa Material of valve chamber to	all: a. If steel, is cathodic p vall: p:	N/A Concrete protection is pro Excellent Concrete	Fiberglass ovided? Good Fiberglass	Fair Steel	Poor Other	
Sect A. B. C. D. E.	ion 3: Valve Chamber Material of valve chamber wa Condition of valve chamber to Condition of valve chamber to Condition of valve chamber to Condition of access hatches:	all: a. If steel, is cathodic p vall: p:	N/A Concrete protection is pro Excellent Concrete Excellent	Fiberglass ovided? Good Fiberglass Good	Fair Steel Fair	Poor Other Poor	Very Poor
Sect A. B. C. D. E.	ion 3: Valve Chamber Material of valve chamber wa Condition of valve chamber wa Material of valve chamber to Condition of valve chamber to Condition of access hatches:	all: a. If steel, is cathodic p vall: p:	N/A Concrete protection is pro Excellent Concrete Excellent	Fiberglass ovided? Good Fiberglass Good Good	Fair Steel Fair Fair	Poor Other Poor	Very Poor
A. B. C. D. E. Sect	ion 3: Valve Chamber Material of valve chamber wa Condition of valve chamber w Material of valve chamber to Condition of valve chamber to Condition of access hatches: ion 4: Valves Do check valves exist?	all: a. If steel, is cathodic p vall: p:	N/A Concrete protection is pro Excellent Concrete Excellent	Fiberglass ovided? Good Fiberglass Good Good Yes	Fair Steel Fair Fair	Poor Other Poor	Very Poor
A. B. C. D. E. Sect A. B.	ion 3: Valve Chamber Material of valve chamber wa Condition of valve chamber to Condition of valve chamber to Condition of valve chamber to Condition of access hatches: ion 4: Valves Do check valves exist?	all: a. If steel, is cathodic p vall: p: op:	N/A Concrete protection is pro Excellent Concrete Excellent	Fiberglass ovided? Good Fiberglass Good Good Yes Yes	Fair Steel Fair Fair No	Poor Other Poor	Very Poor
A. B. C. D. E. Sect	ion 3: Valve Chamber Material of valve chamber wa Condition of valve chamber to Condition of valve chamber to Condition of access hatches: ion 4: Valves Do check valves exist? Does the station have a bypas	all: a. If steel, is cathodic p vall: p: op:	N/A Concrete protection is pro Excellent Concrete Excellent Excellent	Fiberglass ovided? Good Fiberglass Good Good Yes Yes Yes	Fair Steel Fair Fair	Poor Other Poor	Very Poor
A. B. C. D. E. Sect A. B.	ion 3: Valve Chamber Material of valve chamber wa Condition of valve chamber wa Material of valve chamber to Condition of valve chamber to Condition of access hatches: ion 4: Valves Do check valves exist? Do shut off valves exist? Does the station have a bypas	all: a. If steel, is cathodic p vall: p: op:	N/A Concrete Protection is pro Excellent Concrete Excellent Excellent Excellent	Fiberglass ovided? Good Fiberglass Good Good Yes Yes	Fair Steel Fair Fair No	Poor Other Poor	Very Poor

A.		Pump No. 1	Pump No. 2
	Make	Myers	Myers
	Model No.		

	Run time (hours)	8762.6	j	822	26.2			
	Design point	Unknow	vn	Unkr	nown			
	Drawdown Results	57.3 gp	m	54.3	gpm			
				•	,			
			O&M	Record	O&M Staff			
В.	Source of pump information:		Manual	Drawings	(verbal)	Other		
C.	Are pumps noisy or vibrating?			Yes	No			
D.	Swirl in wet well while pump or	perates?		Yes	No	N/A		
E.	Does the station have a flow me	eter?		Yes	No			
	a.	If so, type and size o	f meter:					
Secti	on 6: Electrical			_				
A.	Service power:	120	240	480 Volts	1 phase	3 phase		
В.	Is surge protection provided?		Yes	No				
C.	Seal off fittings provided betwe	en the wet well and	electrical/ cont	rol panel?	Γ	Yes	No	
D.	Are electrical/ control panels lo				_	Yes	No]
Socti	on 7: Generator							
	Is there an on-site generator?		Voc	No	٦			
A.	· ·	C:fit	Yes	INO	J			
_		Size of on-site gener		Manage				
В.	Transfer Switch:		Automatic	Manual	J			
C.	Is there a generator receptacle	?	Yes	No				
D.	Fuel Source:		Natural Gas	Propane	Diesel			
E.	Generator Hours:							
F.	Condition of generator and and	illary equip:		Excellent	Good	Fair	Poor	Very Poor
Secti	on 8: Pump and Motor Controls				_			
A.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor	
В.	How many float switches are in	stalled?		Three				-
C.	Other level sensors (ultrasonic,	radar, pressure trans	ducer, bubble	r)	Probe			
D.	Pump controls (relay logic, PLC-	based, VFD, propriet	ary controller)		Relay logic			
F.	Station alarm:							
	Alarm telemetry (autodialer, ra	dio, cell phone, SCAD	A, none)		Sensaphone, lo	cal		
Secti	on 9: Forcemain							
A.	Forcemain material:	Ductile Iron	PVC	Concrete	Cast Iron	Steel	Other	
В.	Forcemain size (in):	4 inch	•					
Secti	on 10: Site							
A.	Positive drainage away from sta	ation?		Yes	No			
В.	Site maintained?			Yes	No No			
Б. С.	Can the site be easily accessed	for maintenance?		Yes	No No			
	Is the station locked?	ioi manitenante:						
D.				Yes	No			
E.	Noticeable odor issues?			Yes	No			
Gene	eral Remarks:							

	Client:	Gun Plain Towns	ship		Date:	10/24/2023	
Lift S	itation Number:	GS #5					
	station Location:	Lakeview Lane					
	uators:	-	d Emma McDonald				,
	-						
Sect	ion 1: General Information						
A.	Year of Construction:						
	ion 2: Wet Well		Congreta	Fiborglass	Ctool	Othor	
Α.	Material of wet well walls:		Concrete	Fiberglass	Steel	Other	Vary Door
В.	Condition of wet well walls:	idaa.	Excellent	Good	Fair	Poor	Very Poor
C.	Condition of pump removal g	guides:	Excellent	Good	Fair	Poor	Very Poor
D.	Condition of pump lift chain:		Excellent	Good	Fair	Poor	Very Poor
Ε.	Condition of discharge piping	;	Excellent	Good	Fair	Poor	Very Poor
F.	Material of wet well top:		Concrete	Fiberglass	Steel	Other	\/o=- D==-
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor
н.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
I.	Is wet well vented?	ric build up on wate	Yes	No	N 411I	1	C:::::
J.	Amount of grease/scum/deb	ris bulla-up on wate	er surrace:	None	Minimal	Moderate	Significant
K.	Grease ring/water level stain	ing above pipe inve	rt?			Yes	No
L.	Size of wet well:	3 foot dia.					
M.	Rim to bottom of wet well:	9.3 feet					
N.	Rim to invert:	4.5 feet and 3.7	feet				
0.	Notes:		and lift chains were	recently replace	ed; access hatc	h has new hin	ges but lock is
		broken.					
		-					
Sect	ion 3: Valve Chamber		N/A				
A.	Material of valve chamber wa	all:	Concrete	Fiberglass	Steel	Other	
		a. If steel, is cathod	dic protection is pro	vided?			
						Door	Very Poor
В.	Condition of valve chamber v	vall:	Excellent	Good	Fair	Poor	•
В. С.	Condition of valve chamber v Material of valve chamber to		Excellent Concrete	Good Fiberglass	Fair Steel	Other	
		p:					Very Poor
C. D.	Material of valve chamber to	p:	Concrete	Fiberglass	Steel	Other	Very Poor Very Poor
C. D.	Material of valve chamber to Condition of valve chamber t	p:	Concrete Excellent	Fiberglass Good	Steel Fair	Other Poor	
C. D. E.	Material of valve chamber to Condition of valve chamber t	p:	Concrete Excellent	Fiberglass Good	Steel Fair	Other Poor	
C. D. E.	Material of valve chamber to Condition of valve chamber t Condition of access hatches:	p:	Concrete Excellent	Fiberglass Good	Steel Fair	Other Poor	
C. D. E.	Material of valve chamber to Condition of valve chamber to Condition of access hatches: ion 4: Valves	p:	Concrete Excellent	Fiberglass Good Good	Steel Fair Fair	Other Poor	
C. D. E. Sect A.	Material of valve chamber to Condition of valve chamber t Condition of access hatches: ion 4: Valves Do check valves exist?	p: op:	Concrete Excellent	Fiberglass Good Good Yes	Steel Fair Fair No	Other Poor	
C. D. E. Sect A. B.	Material of valve chamber to Condition of valve chamber to Condition of access hatches: ion 4: Valves Do check valves exist? Do shut off valves exist? Does the station have a bypa	p: op:	Concrete Excellent Excellent	Fiberglass Good Good Yes	Steel Fair Fair No No	Other Poor	

A.		Pump No. 1	Pump No. 2
	Make		

	Model No.							
	Run time (hours)	11452		6695.6				
	Design point	Unknow	/n	Unknown				
	Drawdown Results	No test perfo	ormed	14.8	gpm			
			0014	Doored	OR M Stoff			
В.	Source of pump information:		O&M Manual	Record Drawings	O&M Staff (verbal)	Other		
C.	Are pumps noisy or vibrating?		Widirda	Yes	No	Other		
D.	Swirl in wet well while pump o	nerates?		Yes	No	N/A		
E.	Does the station have a flow m			Yes	No	NyA		
		If so, type and size o	f meter:	163				
	u .	55, 1, pe and 5.20 0	-					
Section	on 6: Electrical							
Α.	Service power:	120	240	480 Volts	1 phase	3 phase		
В.	Is surge protection provided?		Yes	No				
C.	Seal off fittings provided between	een the wet well and			٦ (Yes	l No	
D.	Are electrical/ control panels lo				Ť	Yes	No	
	, , , , , , , , , , , , , , , , , , , ,						1	
Section	on 7: Generator							
A.	Is there an on-site generator?		Yes	No	7			
	_	Size of on-site gener	ator?		_			
В.	Transfer Switch:	· ·	Automatic	Manual	None			
C.	Is there a generator receptacle	?	Yes	No				
D.	Fuel Source:		Natural Gas	Propane	Diesel			
E.	Generator Hours:			•				
F.	Condition of generator and and	cillary equip:		Excellent	Good	Fair	Poor	Very Poor
Section	on 8: Pump and Motor Controls	;						
A.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor	
В.	How many float switches are in	nstalled?		Five				
C.	Other level sensors (ultrasonic,	, radar, pressure trans	sducer, bubbler	.)	None			-
D.	Pump controls (relay logic, PLC	-based, VFD, propriet	ary controller)		Relay logic			
F.	Station alarm:							
	Alarm telemetry (autodialer, ra	idio, cell phone, SCAD	OA, none)		Local			_
Section	on 9: Forcemain							
A.	Forcemain material:	Ductile Iron	PVC	Concrete	Cast Iron	Steel	Other	HDPE
В.	Forcemain size (in):	1.25 inch						
C.	Notes:	HDPE appears to be	1 inch dia.					
Section	on 10: Site							
A.	Positive drainage away from st	ation?		Yes	No			
В.	Site maintained?		ļ	Yes	No			
C.	Can the site be easily accessed	for maintenance?	Į	Yes	No			
D.	Is the station locked?			Yes	No			
E.	Noticeable odor issues?			Yes	No			
F.	Notes:	Wet well is not locke	ed, but utility bo	ox is locked.				

General Remarks:

Discharge penetration through wall appears to be leaking.

Categorized by Perceptive as one of the better condition grinder stations.

	Client:	Gun Plain Township			Date:	10/24/2023	
Lift S	tation Number:	GS #7					
	tation Location:	Bayview Lane					
Evalu	uators:	Danell Smith and Em	nma McDonald				
Secti	on 1: General Information						
A.	Year of Construction:						
Secti	on 2: Wet Well				1		
A.	Material of wet well walls:		Concrete	Fiberglass	Steel	Other 1	
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor
C.	Condition of pump removal g	uides:	Excellent	Good	Fair	Poor 1	Very Poor
D.	Condition of pump lift chain:		Excellent	Good	Fair	Poor	Very Poor
E.	Condition of discharge piping	:	Excellent	Good	Fair	Poor	Very Poor
F.	Material of wet well top:		Concrete	Fiberglass	Steel	Other	
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor
Н.	Condition of access hatches:		Excellent	Good	Fair I	Poor	Very Poor
I.	Is wet well vented?		Yes	No		1	
J.	Amount of grease/scum/debi	is build-up on water st	игтасе:	None	Minimal	Moderate	Significant
K.	Grease ring/water level staini	ng above pipe invert?				Yes	No
L.	Size of wet well:	3 foot dia.				'	
M.	Rim to bottom of wet well:	7.2 feet					
N.	Rim to invert:	3.7 feet and 4.1 feet	t				
0.	Notes:	Pump removal guide	es are rusted o	ver; one pump lift	chain was rep	laced recently	with stainless
		steel chain; wet wel	I top and acces	s hatches are rust	ed over.		
				•			
Secti	on 3: Valve Chamber		N/A	J			
A.	Material of valve chamber wa		Concrete	Fiberglass	Steel	Other	
		a. If steel, is cathodic p	protection is pro	ovided?			
В.	Condition of valve chamber w	ıall:	Excellent	Good	Fair	Poor	Very Poor
C.	Material of valve chamber to	•	Concrete	Fiberglass	Steel	Other	
D.	Condition of valve chamber to	op:	Excellent	Good	Fair	Poor	Very Poor
Ε.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
Secti	on 4: Valves						
A.	Do check valves exist?			Yes	No		
В.	Do shut off valves exist?			Yes	No		
C.	Does the station have a bypas	ss connection?		Yes	No	1	
٥.	• •	a. Size of bypass conne	ection:	. 55		J	
		 o. Material of bypass c 		Ductile Iron	PVC	Cast Iron	Other
D.	Notes:	Shutoff valves are ru					2
				-			
Secti	on 5: Equipment						
A.		Pump No	o. 1	Pump N	No. 2]	

	Make							
	Model No.							
	Run time (hours)	11078	.5	1969	5.7			
	Design point	Unknov	wn	Unkno	own			
	Drawdown Results	13.8 gr	om [No test pe	rformed			
			O&M	Record	O&M Staff			
В.	Source of pump information:		Manual	Drawings	(verbal)	Other		
C.	Are pumps noisy or vibrating?			Yes	No			
D.	Swirl in wet well while pump o	perates?	ſ	Yes	No	N/A		
E.	Does the station have a flow m		•	Yes	No			
	a.	If so, type and size	of meter:					
F.	Notes:	Only pump one swi	-	ating.			,	
			, ,		-			
Secti	on 6: Electrical							
A.	Service power:	120	240	480 Volts	1 phase	3 phase		
В.	Is surge protection provided?		Yes	No				
C.	Seal off fittings provided between	en the wet well and	electrical/ contr	ol panel?	ĺ	Yes	No	
D.	Are electrical/ control panels lo			-	Ì	Yes	No	
					-		•	
Secti	on 7: Generator							
A.	Is there an on-site generator?		Yes	No	1			
	a.	Size of on-site gene	rator?		•			
В.	Transfer Switch:		Automatic	Manual	None			
C.	Is there a generator receptacle	?	Yes	No				
D.	Fuel Source:		Natural Gas	Propane	Diesel			
E.	Generator Hours:							
F.	Condition of generator and and	:illary equip:		Excellent	Good	Fair	Poor	Very Poor
Secti	on 8: Pump and Motor Controls							
A.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor	
В.	How many float switches are in	stalled?		Five				
C.	Other level sensors (ultrasonic,	radar, pressure tran	sducer, bubbler)	None			•
D.	Pump controls (relay logic, PLC	-based, VFD, proprie	tary controller)		Relay logic		,	
F.	Station alarm:						,	
	Alarm telemetry (autodialer, ra	dio, cell phone, SCA	DA, none)		Local			_
G.	Notes:	Control panel is slig	htly unstable/wo	obbles.	-		'	
Secti	on 9: Forcemain				-		1	
A.	Forcemain material:	Ductile Iron	PVC	Concrete	Cast Iron	Steel	Other	
В.	Forcemain size (in):	1.25 inch						
C.	Notes:	Galvanized steel.						
c ·	an 10. Sita							
	on 10: Site	ntion?		Vaa	N ₀			
Α.	Positive drainage away from st	auon:	ſ	Yes	No No			
В.	Site maintained?	for maintenance?	ι	Yes	No No			
C.	Can the site be easily accessed	ioi maintenance?		Yes	No			

D.	Is the station locked?	Yes	No
E.	Noticeable odor issues?	Yes	No

|--|

	one in not easily accessione due to distance non-rodu.	
General Remarks:		
Catagorized by Dercentive	as and of the moderate condition grinder stations	
categorized by Perceptive	as one of the moderate condition grinder stations.	

	Client:	Gun Plain Township			Date:	10/24/2023	
Lift S	tation Number:	GS #8					
	tation Location:	Bayview Lane					
Evalu	uators:	Danell Smith and	Emma McDonald				
		-					
Secti	on 1: General Information						
A.	Year of Construction:						
	on 2: Wet Well		Concrete	Fiborglass	C+ool	Othor	
А.	Material of wet well walls:		Concrete	Fiberglass	Steel	Other	Vory Boos
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor
C.	Condition of pump removal g		Excellent	Good	Fair	Poor	Very Poor
D.	Condition of pump lift chain:		Excellent	Good	Fair	Poor	Very Poor
E.	Condition of discharge piping	3.	Excellent	Good	Fair	Poor Other	Very Poor
F.	Material of wet well top:		Concrete Excellent	Fiberglass	Steel	Other	Vory Boos
G.	Condition of wet well top: Condition of access hatches:		Excellent	Good Good	Fair Fair	Poor Poor	Very Poor Very Poor
Н.	Is wet well vented?				rdii 	F001	J very Poor
I. J.	Amount of grease/scum/deb	ris huild-un on water	Yes surface:	No None	Minimal	Moderate	Significant
J.	, and direction brease, searing dep	Sana ap on water	Januac.	None	l iviiiililai	woutlate	Jigiiiillaiil
K.	Grease ring/water level stain	ing above pipe invert	t?			Yes	No
L.	Size of wet well:	3 foot dia.					
M.	Rim to bottom of wet well:	5 feet					
N.	Rim to invert:	3.4 feet and 2.7 fe	eet				
Ο.	Notes:	Pump lift chains a	re slightly rusted	and hinge on acce	ess hatch is bro	oken.	
				1			
Secti	on 3: Valve Chamber		N/A	J			
A.	Material of valve chamber wa		Concrete	Fiberglass	Steel	Other	
		a. If steel, is cathodic		ovided?			
В.	Condition of valve chamber v		Excellent	Good	Fair	Poor	Very Poor
C.	Material of valve chamber to	•	Concrete	Fiberglass	Steel	Other	
D.	Condition of valve chamber t	•	Excellent	Good	Fair	Poor	Very Poor
E.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
Secti	on 4: Valves						
A.	Do check valves exist?			Yes	No		
В.	Do shut off valves exist?			Yes	No		
C.	Does the station have a bypa	iss connection?		Yes	No]	
		a. Size of bypass con	nection:	(•	
		b. Material of bypas		Ductile Iron	PVC	Cast Iron	Other
		D. IVIALEITAI OI DYDAS	3 COMMECTION.				

A.		Pump No. 1	Pump No. 2
	Make		

	Model No.							
	Run time (hours)	6334.	6	101	85.6			
	Design point	Unknov	wn	Unkr	nown			
	Drawdown Results	16.9 gr	om	No test p	erformed			
В.	Source of pump information:		O&M Manual	Record Drawings	O&M Staff (verbal)	Other		
Б. С.	Are pumps noisy or vibrating?		iviariuai	Yes	No	Other		
D.	Swirl in wet well while pump o	nerates?	1	Yes	No	N/A		
Б. Е.	Does the station have a flow m		'	Yes	No	N/A		
		If so, type and size	of meter:	103	140			
	u.	ii so, type and size						
Section	on 6: Electrical							
Α.	Service power:	120	240	480 Volts	1 phase	3 phase		
В.	Is surge protection provided?		Yes	No	T			
C.	Seal off fittings provided between	een the wet well and	electrical/ cont	rol panel?		Yes	No	
D.	Are electrical/ control panels lo			•		Yes	No	
					•	·		
Section	on 7: Generator							
A.	Is there an on-site generator?		Yes	No]			
	a.	Size of on-site gene	rator?					
В.	Transfer Switch:		Automatic	Manual	None			
C.	Is there a generator receptacle	?	Yes	No				
D.	Fuel Source:		Natural Gas	Propane	Diesel			
E.	Generator Hours:				_			
F.	Condition of generator and an	cillary equip:		Excellent	Good	Fair	Poor	Very Poor
G.	Notes:	Generator ancillary a steep drop off fro			g that there is			
					_			
Section	on 8: Pump and Motor Controls	;						
A.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor	
В.	How many float switches are in	nstalled?		Five				
C.	Other level sensors (ultrasonic	, radar, pressure trar	isducer, bubbler	.)	None			
D.	Pump controls (relay logic, PLC	-based, VFD, proprie	tary controller)		Relay logic			
F.	Station alarm:							
	Alarm telemetry (autodialer, ra	adio, cell phone, SCA	DA, none)		Local			
Section	on 9: Forcemain							
A.	Forcemain material:	Ductile Iron	PVC	Concrete	Cast Iron	Steel	Other	
В.	Forcemain size (in):	1.25 inch			•		,	
C.	Notes:	Galvanized steel.						
Section	on 10: Site							
A.	Positive drainage away from st	ation?		Yes	No			
В.	Site maintained?			Yes	No			
C.	Can the site be easily accessed	for maintenance?		Yes	No			
D.	Is the station locked?		Į	Yes	No			

Ε.	Noticeable odor issues?	Yes	5	No	_	
F.	Notes:	Site is on a large hill. Homeowner poured a coaround wet well, making accessibility difficult		e ring in place	_	
Gene	eral Remarks:					
Cate	gorized by Perceptive as one of	the worst condition grinder stations.				
		-				

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	Client:	Gun Plain Township	ı		Date:	10/24/2023	
Lift S	tation Number:	GS #10					
Lift S	tation Location:	Bayview Lane					
Evalı	ators:	Danell Smith and Er	nma McDonald	I			
Socti	on 1: General Information						
A.	Year of Construction:						
Secti	on 2: Wet Well						
A.	Material of wet well walls:		Concrete	Fiberglass	Steel	Other	
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor
C.	Condition of pump removal g	uides:	Excellent	Good	Fair	Poor	Very Poor
D.	Condition of pump lift chain:		Excellent	Good	Fair	Poor	Very Poor
E.	Condition of discharge piping	:	Excellent	Good	Fair	Poor	Very Poor
F.	Material of wet well top:		Concrete	Fiberglass	Steel	Other	•
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor
Н.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
l.	Is wet well vented?		Yes	No]		
J.	Amount of grease/scum/debr	is build-up on water s	urface:	None	Minimal	Moderate	Significant
K.	Grease ring/water level staini	ng above pipe invert?				Yes	No
L.	Size of wet well:	3 foot dia.					
L. M.	Size of wet well: Rim to bottom of wet well:	3 foot dia. 6 feet					
			t				
M.	Rim to bottom of wet well:	6 feet		ertical section of p	oump removal	guides were re	eplaced,
M. N.	Rim to bottom of wet well: Rim to invert:	6 feet 3.6 feet and 3.2 fee Roots around invert	of wet well; ven is rusted ove	r; pump lift chain	is newer and s	stainless steel;	
M. N.	Rim to bottom of wet well: Rim to invert:	6 feet 3.6 feet and 3.2 fee Roots around invert	of wet well; ven is rusted ove	r; pump lift chain	is newer and s	stainless steel;	
M. N.	Rim to bottom of wet well: Rim to invert:	6 feet 3.6 feet and 3.2 fee Roots around invert	of wet well; ven is rusted ove	r; pump lift chain	is newer and s	stainless steel;	
M. N. O.	Rim to bottom of wet well: Rim to invert:	6 feet 3.6 feet and 3.2 fee Roots around invert	of wet well; ven is rusted ove	r; pump lift chain	is newer and s	stainless steel;	
M. N. O.	Rim to bottom of wet well: Rim to invert: Notes:	6 feet 3.6 feet and 3.2 fee Roots around invert however, top sectic and access hatches	of wet well; von is rusted ove are rusting ove	r; pump lift chain	is newer and s	stainless steel;	
M. N. O.	Rim to bottom of wet well: Rim to invert: Notes: on 3: Valve Chamber Material of valve chamber wa	6 feet 3.6 feet and 3.2 fee Roots around invert however, top sectic and access hatches	of wet well; von is rusted over are rusting over N/A	r; pump lift chain er; access hatch ha Fiberglass	is newer and s	stainless steel; ge.	
M. N. O.	Rim to bottom of wet well: Rim to invert: Notes: on 3: Valve Chamber Material of valve chamber wa	6 feet 3.6 feet and 3.2 fee Roots around invert however, top section and access hatches all: a. If steel, is cathodic parts	of wet well; von is rusted over are rusting over N/A	r; pump lift chain er; access hatch ha Fiberglass	is newer and s	stainless steel; ge.	
M. N. O. Secti A.	Rim to bottom of wet well: Rim to invert: Notes: on 3: Valve Chamber Material of valve chamber wa	6 feet 3.6 feet and 3.2 fee Roots around invert however, top section and access hatches all: a. If steel, is cathodic parall:	N/A Concrete	r; pump lift chain rr; access hatch ha Fiberglass ovided?	is newer and s	stainless steel; ige. Other	wet well top
M. N. O. Secti A.	Rim to bottom of wet well: Rim to invert: Notes: on 3: Valve Chamber Material of valve chamber wa Condition of valve chamber w	6 feet 3.6 feet and 3.2 fee Roots around invert however, top section and access hatches all: a. If steel, is cathodic positions.	N/A Concrete crotection is pr Excellent	r; pump lift chain r; access hatch ha Fiberglass ovided? Good	is newer and sas a broken hin Steel Fair	otainless steel; ige. Other	wet well top
M. N. O. Secti A. B. C.	Rim to bottom of wet well: Rim to invert: Notes: on 3: Valve Chamber Material of valve chamber wa Condition of valve chamber w Material of valve chamber to	6 feet 3.6 feet and 3.2 fee Roots around invert however, top section and access hatches all: a. If steel, is cathodic positions.	N/A Concrete crotection is pr Excellent Concrete	r; pump lift chain rr; access hatch ha Fiberglass ovided? Good Fiberglass	s newer and s as a broken hin Steel Fair Steel	Other Other	Wet well top Very Poor
M. N. O. Sectil A. B. C. D. E.	Rim to bottom of wet well: Rim to invert: Notes: On 3: Valve Chamber Material of valve chamber wa Condition of valve chamber to	6 feet 3.6 feet and 3.2 fee Roots around invert however, top section and access hatches all: a. If steel, is cathodic positions.	N/A Concrete protection is pr Excellent Concrete Excellent	r; pump lift chain er; access hatch ha Fiberglass ovided? Good Fiberglass Good	s newer and ses a broken hin Steel Fair Steel Fair Fair	Other Poor Other Poor	Very Poor Very Poor
M. N. O. Secti	Rim to bottom of wet well: Rim to invert: Notes: on 3: Valve Chamber Material of valve chamber wa Condition of valve chamber to Condition of valve chamber to Condition of valve chamber to Condition of access hatches:	6 feet 3.6 feet and 3.2 fee Roots around invert however, top section and access hatches all: a. If steel, is cathodic positions.	N/A Concrete protection is pr Excellent Concrete Excellent	r; pump lift chain r; access hatch ha Fiberglass ovided? Good Fiberglass Good Good	Steel Fair Steel Fair Fair Fair	Other Poor Other Poor	Very Poor Very Poor
M. N. O. Secti A. E. Secti A.	Rim to bottom of wet well: Rim to invert: Notes: On 3: Valve Chamber Material of valve chamber wa Condition of valve chamber to Condition of valve chamber to Condition of access hatches: On 4: Valves Do check valves exist?	6 feet 3.6 feet and 3.2 fee Roots around invert however, top section and access hatches all: a. If steel, is cathodic positions.	N/A Concrete protection is pr Excellent Concrete Excellent	r; pump lift chain er; access hatch ha Fiberglass ovided? Good Fiberglass Good Good	Steel Fair Steel Fair No	Other Poor Other Poor	Very Poor Very Poor
M. N. O. Secti A. B. C. D. E. Secti A. B. B.	Rim to bottom of wet well: Rim to invert: Notes: On 3: Valve Chamber Material of valve chamber wa Condition of valve chamber to Condition of valve chamber to Condition of access hatches: On 4: Valves Do check valves exist?	6 feet 3.6 feet and 3.2 fee Roots around invert however, top section and access hatches all: a. If steel, is cathodic parall: b: c: c: c: c: c: c: c: c: c	N/A Concrete protection is pr Excellent Concrete Excellent	r; pump lift chain r; access hatch ha Fiberglass ovided? Good Fiberglass Good Good Yes Yes	Steel Fair Steel Fair No	Other Poor Other Poor	Very Poor Very Poor
M. N. O. Secti A. E. Secti A.	Rim to bottom of wet well: Rim to invert: Notes: On 3: Valve Chamber Material of valve chamber was Condition of valve chamber to Condition of valve chamber to Condition of valve chamber to Condition of access hatches: On 4: Valves Do check valves exist? Does the station have a bypas	6 feet 3.6 feet and 3.2 fee Roots around invert however, top section and access hatches all: a. If steel, is cathodic possible. by: cop:	N/A Concrete crotection is pr Excellent Concrete Excellent Excellent	r; pump lift chain er; access hatch ha Fiberglass ovided? Good Fiberglass Good Good	Steel Fair Steel Fair No	Other Poor Other Poor	Very Poor Very Poor
M. N. O. Secti A. B. C. D. E. Secti A. B. B.	Rim to bottom of wet well: Rim to invert: Notes: On 3: Valve Chamber Material of valve chamber wa Condition of valve chamber to Condition of valve chamber to Condition of access hatches: On 4: Valves Do check valves exist? Does the station have a bypas	6 feet 3.6 feet and 3.2 fee Roots around invert however, top section and access hatches all: a. If steel, is cathodic parall: b: c: c: c: c: c: c: c: c: c	N/A Concrete crotection is pr Excellent Excellent Excellent	r; pump lift chain r; access hatch ha Fiberglass ovided? Good Fiberglass Good Good Yes Yes	Steel Fair Steel Fair No	Other Poor Other Poor	Very Poor Very Poor

Secti	on 5: Equipment							
A.		Pump N	No. 1	Pump	No. 2			
	Make							
	Model No.							
	Run time (hours)	1454	8	135	587			
	Design point	Unkno	wyn	Unkn	ıown			
	Design point	Onkilo	70011	OTIKI	OWIT			
	Drawdown Results	No test per	rformed	22.7	gpm			
			O&M	Record	O&M Staff			
В.	Source of pump information:		Manual	Drawings	(verbal)	Other		
C.	Are pumps noisy or vibrating?			Yes	No			
D.	Swirl in wet well while pump o	nerates?	1	Yes	No	N/A		
Ε.	Does the station have a flow m			Yes	No	NA		
۲.		. If so, type and size	of meter:	163	INO			
F.	Notes:			noration				
١.	Notes.	Both pumps have s	swiring during of	peration.	_			
Secti	on 6: Electrical							
A.	Service power:	120	240	480 Volts	1 phase	3 phase		
В.	Is surge protection provided?		Yes	No				
C.	Seal off fittings provided between	een the wet well and	י d electrical/ cont	rol panel?	- 1	Yes	No	
D.	Are electrical/ control panels le					Yes	No	
	, , , , , , , , , , , , , , , , , , , ,				'		•	
Secti	on 7: Generator				_			
A.	Is there an on-site generator?		Yes	No]			
	a.	. Size of on-site gene	erator?					
В.	Transfer Switch:		Automatic	Manual	None			
C.	Is there a generator receptacle	<u>:</u> ?	Yes	No				
D.	Fuel Source:		Natural Gas	Propane	Diesel			
E.	Generator Hours:							
F.	Condition of generator and an	cillary equip:		Excellent	Good	Fair	Poor	Very Poor
G.	Notes:	Generator ancillary	y equipment not	easily accessible	<u> </u>			
Secti	on 8: Pump and Motor Controls	s						
A.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor	
В.	How many float switches are in	nstalled?		Five				
C.	Other level sensors (ultrasonic	, radar, pressure tra	nsducer, bubbler	-)	None			
D.	Pump controls (relay logic, PLC	-based, VFD, proprie	etary controller)		Relay logic			
F.	Station alarm:							
	Alarm telemetry (autodialer, ra	adio, cell phone, SCA	ADA, none)		Local			
G.	Notes:	Control panel is wo	obbly.					•
_	on 9: Forcemain			l _			1	
Α.	Forcemain material:	Ductile Iron	PVC	Concrete	Cast Iron	Steel	Other	
В.	Forcemain size (in):	1.25 inch						
C.	Notes:	90 degree bend is p	pvc; forcemain is	galvanized stee	l			

A.	Positive drainage away from s	tation?	Yes	No
В.	Site maintained?		Yes	No
C.	Can the site be easily accessed	for maintenance?	Yes	No
D.	Is the station locked?		Yes	No
E.	Noticeable odor issues?		Yes	No
F.	Notes:	Site is overgrown with plants; not e hill; control panel is locked but hatc	•	ue to steep

General Remarks:

Categorized by Perceptive as one of the worst condition grinder stations.

Lift Station Number: Evaluators: Danell Smith and Emma McDonald Section 1: General Information A. Year of Construction: B. Condition of wet well walls: C. Condition of pump removal guides: E. Condition of pump lift chain: E. Condition of opump lift chain: E. Condition of opump lift chain: E. Condition of wet well top: C. Condition of wet well top: E. Condition of wet well top: E. Condition of wet well top: C. Condition of wet well top: E. Condition of wet well top: C. Concrete Fiberglass Steel Other Poor Very Poo
Evaluators: Danell Smith and Emma McDonald Section 1: General Information A. Year of Construction: Section 2: Wet Well A. Material of wet well walls: Concrete B. Condition of wet well walls: Excellent Good Fair Poor Very Poor D. Condition of pump removal guides: Excellent Good Fair Poor Very Poor D. Condition of pump lift chain: Excellent Good Fair Poor Very Poor D. Condition of discharge piping: Excellent Good Fair Poor Very Poor D. Condition of discharge piping: Excellent Good Fair Poor Very Poor D. Condition of wet well top: Concrete Fiberglass Steel Other G. Condition of wet well top: Excellent Good Fair Poor Very Poor D. Condition of wet well top: Excellent Good Fair Poor Very Poor D. Concrete Fiberglass Steel Other G. Condition of wet well top: Excellent Good Fair Poor Very Poor D. Concrete Fiberglass Steel Other G. Condition of grease/scum/debris build-up on water surface: None Minimal Moderate Significan M. Rim to bottom of wet well: 3 foot dia. K. Grease ring/water level staining above pipe invert? Yes No L. Size of wet well: 3 foot dia. M. Rim to bottom of wet well: 3.8 feet and 3.4 feet One pump removal guide is missing, one is rusted over; access hatch is rusted over and has a hole in the top.
Section 1: General Information A. Year of Construction: Section 2: Wet Well A. Material of wet well walls: B. Condition of wet well walls: C. Condition of pump removal guides: C. Condition of pump lift chain: E. Condition of pump lift chain: E. Condition of fump removal guides: Excellent Good Fair Poor Very Poor E. Condition of discharge piping: Excellent Good Fair Poor Very Poor E. Condition of wet well top: C. Condition of wet well top: C. Condition of wet well top: C. Condition of wet well top: Excellent Good Fair Poor Very Poor E
Section 2: Wet Well A. Material of wet well walls:
Section 2: Wet Well A. Material of wet well walls:
Section 2: Wet Well A. Material of wet well walls:
A. Material of wet well walls: B. Condition of wet well walls: C. Condition of pump removal guides: Excellent Good Fair Poor Very Poor C. Condition of pump lift chain: Excellent Good Fair Poor Very Poor D. Condition of discharge piping: Excellent Good Fair Poor Very Poor E. Condition of discharge piping: Excellent Good Fair Poor Very Poor F. Material of wet well top: Concrete Fiberglass Steel Other G. Condition of wet well top: Excellent Good Fair Poor Very Poor Very Poor H. Condition of access hatches: Excellent Good Fair Poor Very Poor Very Poor I. Is wet well vented? Yes No J. Amount of grease/scum/debris build-up on water surface: None Minimal Moderate Significan K. Grease ring/water level staining above pipe invert? L. Size of wet well: 3 foot dia. M. Rim to bottom of wet well: 3.8 feet and 3.4 feet One pump removal guide is missing, one is rusted over; access hatch is rusted over and has a hole in the top.
A. Material of wet well walls: B. Condition of wet well walls: C. Condition of pump removal guides: Excellent Good Fair Poor Very Poor Very Poor D. Condition of pump lift chain: Excellent Good Fair Foor Very Poor E. Condition of discharge piping: Excellent Good Fair Foor Very Poor E. Condition of discharge piping: Excellent Good Fair Foor Very Poor F. Material of wet well top: Concrete Fiberglass Steel Other G. Condition of wet well top: Excellent Good Fair Foor Very Poor Very Poor H. Condition of access hatches: Excellent Good Fair Foor Very Poor Very Poor Very Poor No H. Condition of access hatches: Excellent Good Fair Foor Very Poor Very Poor Very Poor No H. Condition of access hatches: Excellent Good Fair Foor Very Poor Very Poor Very Poor No H. Condition of access hatches: Excellent Good Fair Poor Very Poor Very Poor Very Poor No No Minimal Moderate Significan K. Grease ring/water level staining above pipe invert? L. Size of wet well: 3 foot dia. M. Rim to bottom of wet well: 3 foot dia. M. Rim to invert: One pump removal guide is missing, one is rusted over; access hatch is rusted over and has a hole in the top.
A. Material of wet well walls: B. Condition of wet well walls: C. Condition of pump removal guides: Excellent Good Fair Poor Very Poor C. Condition of pump lift chain: Excellent Good Fair Poor Very Poor D. Condition of discharge piping: Excellent Good Fair Poor Very Poor E. Condition of discharge piping: Excellent Good Fair Poor Very Poor F. Material of wet well top: Concrete Fiberglass Steel Other G. Condition of wet well top: Excellent Good Fair Poor Very Poor Very Poor H. Condition of access hatches: Excellent Good Fair Poor Very Poor Very Poor I. Is wet well vented? Yes No J. Amount of grease/scum/debris build-up on water surface: None Minimal Moderate Significan K. Grease ring/water level staining above pipe invert? L. Size of wet well: 3 foot dia. M. Rim to bottom of wet well: 3.8 feet and 3.4 feet One pump removal guide is missing, one is rusted over; access hatch is rusted over and has a hole in the top.
B. Condition of wet well walls: C. Condition of pump removal guides: Excellent Good Fair Poor Very Poor Very Poor C. Condition of pump removal guides: Excellent Good Fair Foor Very Poor Very Poor Very Poor E. Condition of discharge piping: Excellent Good Fair Foor Very Poor Very Poor F. Material of wet well top: Concrete Fiberglass Steel Other G. Condition of wet well top: Excellent Good Fair Foor Very Poor Very Poor F. Material of wet well top: Excellent Good Fair Foor Very Poor Very Poor F. Material of wet well top: Excellent Good Fair Foor Very Poor Very Poor Nore Minimal Moderate Significan K. Grease ring/water level staining above pipe invert? L. Size of wet well: 3 foot dia. M. Rim to bottom of wet well: 3.8 feet and 3.4 feet One pump removal guide is missing, one is rusted over; access hatch is rusted over and has a hole in the top.
D. Condition of pump lift chain: Excellent Good Fair Poor Very Poor E. Condition of discharge piping: Excellent Good Fair Poor Very Poor F. Material of wet well top: Concrete Fiberglass Steel Other G. Condition of wet well top: Excellent Good Fair Poor Very Poor H. Condition of access hatches: Excellent Good Fair Poor Very Poor I. Is wet well vented? J. Amount of grease/scum/debris build-up on water surface: None Minimal Moderate Significan K. Grease ring/water level staining above pipe invert? Ves No L. Size of wet well: 3 foot dia. M. Rim to bottom of wet well: 3.8 feet and 3.4 feet One pump removal guide is missing, one is rusted over; access hatch is rusted over and has a hole in the top.
E. Condition of discharge piping: F. Material of wet well top: Concrete Concrete Fiberglass Steel Other Condition of wet well top: Excellent Good Fair Poor Very Pool Food Food Fair Food F
E. Condition of discharge piping: F. Material of wet well top: Concrete Concrete Fiberglass Steel Other Condition of wet well top: Excellent Good Fair Poor Very Pool Food Food Fair Food F
F. Material of wet well top: G. Condition of wet well top: Excellent Good Fair Poor Very Poor Food Food Fair Foor Food F
G. Condition of wet well top: H. Condition of access hatches: Is wet well vented? J. Amount of grease/scum/debris build-up on water surface: K. Grease ring/water level staining above pipe invert? L. Size of wet well: Rim to bottom of wet well: N. Rim to invert: One pump removal guide is missing, one is rusted over; access hatch is rusted over and has a hole in the top.
H. Condition of access hatches: Is wet well vented? J. Amount of grease/scum/debris build-up on water surface: None Minimal Moderate Significan K. Grease ring/water level staining above pipe invert? L. Size of wet well: 3 foot dia. M. Rim to bottom of wet well: 6.1 feet N. Rim to invert: 3.8 feet and 3.4 feet One pump removal guide is missing, one is rusted over; access hatch is rusted over and has a hole in the top.
J. Amount of grease/scum/debris build-up on water surface: None Minimal Moderate Significan K. Grease ring/water level staining above pipe invert? Yes No L. Size of wet well: 3 foot dia. M. Rim to bottom of wet well: 6.1 feet N. Rim to invert: 3.8 feet and 3.4 feet One pump removal guide is missing, one is rusted over; access hatch is rusted over and has a hole in the top.
K. Grease ring/water level staining above pipe invert? L. Size of wet well: 3 foot dia. M. Rim to bottom of wet well: 6.1 feet N. Rim to invert: One pump removal guide is missing, one is rusted over; access hatch is rusted over and has a hole in the top.
L. Size of wet well: M. Rim to bottom of wet well: N. Rim to invert: O. Notes: One pump removal guide is missing, one is rusted over; access hatch is rusted over and has a hole in the top.
L. Size of wet well: M. Rim to bottom of wet well: N. Rim to invert: O. Notes: One pump removal guide is missing, one is rusted over; access hatch is rusted over and has a hole in the top.
M. Rim to bottom of wet well: N. Rim to invert: O. Notes: 6.1 feet One pump removal guide is missing, one is rusted over; access hatch is rusted over and has a hole in the top.
N. Rim to invert: O. Notes: 3.8 feet and 3.4 feet One pump removal guide is missing, one is rusted over; access hatch is rusted over and has a hole in the top.
O. Notes: One pump removal guide is missing, one is rusted over; access hatch is rusted over and has a hole in the top.
hole in the top.
Section 3: Valve Chamber
A. Material of valve chamber wall: Concrete Fiberglass Steel Other
a. If steel, is cathodic protection is provided?
B. Condition of valve chamber wall: Excellent Good Fair Poor Very Poor
C. Material of valve chamber top: Concrete Fiberglass Steel Other
D. Condition of valve chamber top: Excellent Good Fair Poor Very Pool
E. Condition of access hatches: Excellent Good Fair Poor Very Pool
Section 4: Valves
A. Do check valves exist? Yes No
B. Do shut off valves exist? Yes No
C. Does the station have a bypass connection? Yes No
a. Size of bypass connection:
b. Material of bypass connection: Ductile Iron PVC Cast Iron Other
Section 5: Equipment

Pump No. 2

Pump No. 1

Make

	Model No.							
	Run time (hours)	18078	3.8	215	50.7			
	Design point	Unkno	wn	Unkr	nown			
	Drawdown Results	20.1 g _l	om	No test p	erformed			
			0014	Darand	00045+-#			
В.	Source of pump information:		O&M Manual	Record Drawings	O&M Staff (verbal)	Other		
С.	Are pumps noisy or vibrating?		Marida	Yes	No	other .		
D.	Swirl in wet well while pump o	perates?	1	Yes	No	N/A		
Ε.	Does the station have a flow m		'	Yes	No	,		
		If so, type and size	of meter:					
F.	Notes:	Some swirling on p						
Secti	on 6: Electrical							
A.	Service power:	120	240	480 Volts	1 phase	3 phase		
В.	Is surge protection provided?		Yes	No	J.			
C.	Seal off fittings provided between	een the wet well and	l electrical/ cont	rol panel?		Yes	No	
D.	Are electrical/ control panels lo	ocated within 3' of w	et well hatch or	5' of vent?		Yes	No	
Secti	on 7: Generator				_			
A.	Is there an on-site generator?		Yes	No	J			
	a.	Size of on-site gene	erator?					
В.	Transfer Switch:		Automatic	Manual	None			
C.	Is there a generator receptacle	?	Yes	No				
D.	Fuel Source:		Natural Gas	Propane	Diesel			
E.	Generator Hours:							
F.	Condition of generator and and	cillary equip:		Excellent	Good	Fair	Poor	Very Poor
Secti	on 8: Pump and Motor Controls	i						
Α.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor	
В.	How many float switches are in	nstalled?		Five	•			
C.	Other level sensors (ultrasonic	, radar, pressure trar	nsducer, bubbler)	None	'		-
D.	Pump controls (relay logic, PLC			•	Relay logic			
F.	Station alarm:							
	Alarm telemetry (autodialer, ra	adio, cell phone, SCA	DA, none)		Local			
G.	Notes:	Control panel wobb						-
Costi	on Ot Forsomoin							
_	on 9: Forcemain Forcemain material:	Ductile Iron	PVC	Concrete	Cast Iron	Steel	Other	
А.	Forcemain size (in):	1.25 inch	PVC	Concrete	Cast IIOII	Steel	Other	
В.	Notes:							
C.	INULES.	Galvanized steel.						
Secti	on 10: Site							
A.	Positive drainage away from st	ation?		Yes	No			
В.	Site maintained?			Yes	No			
C.	Can the site be easily accessed	for maintenance?		Yes	No			
D.	Is the station locked?		Į	Yes	No			

F. Notes: The site is surrounded by trees and bushes, making it difficult to maintain. Site is far from the road, making it difficult to access. General Remarks: Large trees and bushes surrounding site. Roots are surrounding one of the inverts. Categorized by Perceptive as one of the worst condition grinder stations. Photographs Assessment form showing name of lift station Site Wet well top Valve vault top Electric service meter Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve wault hatch door & frame Valve vault valves Bypass connection Bypass valve	E.	Noticeable odor issues?		Yes	No
General Remarks: Large trees and bushes surrounding site. Roots are surrounding one of the inverts. Categorized by Perceptive as one of the worst condition grinder stations. Photographs Assessment form showing name of lift station Site Wet well top Valve vault top Electric service meter Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault valves Bypass connection	F.	Notes:			
Large trees and bushes surrounding site. Roots are surrounding one of the inverts. Categorized by Perceptive as one of the worst condition grinder stations. Photographs Assessment form showing name of lift station Site Wet well top Valve vault top Electric service meter Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well interior Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault valves Bypass connection			maintain. Site is far from the r	oad, making it difficu	It to access.
Large trees and bushes surrounding site. Roots are surrounding one of the inverts. Categorized by Perceptive as one of the worst condition grinder stations. Photographs Assessment form showing name of lift station Site Wet well top Valve vault top Electric service meter Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well interior Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault valves Bypass connection					
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Photographs Assessment form showing name of lift station Site Wet well top Valve vault top Electric service meter Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection					
Photographs Assessment form showing name of lift station Site Wet well top Valve vault top Electric service meter Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection					
Assessment form showing name of lift station Site Wet well top Valve vault top Electric service meter Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection	Cate	gorized by Perceptive as one	of the worst condition grinder stat	ions.	
Assessment form showing name of lift station Site Wet well top Valve vault top Electric service meter Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection					
Assessment form showing name of lift station Site Wet well top Valve vault top Electric service meter Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection					
Assessment form showing name of lift station Site Wet well top Valve vault top Electric service meter Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection					
Site Wet well top Valve vault top Electric service meter Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection	Phot	7	6116		
Wet well top Valve vault top Electric service meter Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection			name of lift station		
Electric service meter Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection		_			
Electric service meter Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection		7			
Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection					
Transfer switch Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection		Electric service meter			
Disconnect switch Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection		- 			
Permanent generator Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection		┪			
Control panel exterior Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection					
Control panel interior - backplane Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection					
Control panel interior - face of door Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection		7	kolane		
Seal off fittings (conduits to wet well) Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection		7			
Wet well hatch door & frame Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection		1			
Pump guide rails Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection			,		
Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection		Wet well hatch door & fram	ne		
Wet well interior Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection					
Pump nameplate Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection		1			
Pump & motor Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection		i			
Pump discharge piping Valve vault hatch door & frame Valve vault valves Bypass connection					
Valve vault hatch door & frame Valve vault valves Bypass connection					
Valve vault valves Bypass connection		-	ame		
Bypass connection		╡			
		Bypass valve			

	Client:	Gun Plain Township			Date:	10/24/2023	
Lift S	station Number:	GS #14					
Lift S	itation Location:	Highland Court					
Evalu	uators:	Danell Smith and E	mma McDonald				
Secti	ion 1: General Information						
A.	Year of Construction:						
Socti	ion 2: Wet Well						
A.	Material of wet well walls:		Concrete	Fiberglass	Steel	Other	
В.	Condition of wet well walls:		Excellent	Good	Fair	Poor	Very Poor
C.	Condition of pump removal g	uides:	Excellent	Good	Fair	Poor	Very Poor
D.	Condition of pump lift chain:		Excellent	Good	Fair	Poor	Very Poor
E.	Condition of discharge piping	:	Excellent	Good	Fair	Poor	Very Poor
F.	Material of wet well top:		Concrete	Fiberglass	Steel	Other	
G.	Condition of wet well top:		Excellent	Good	Fair	Poor	Very Poor
Н.	Condition of access hatches:		Excellent	Good	Fair	Poor	Very Poor
I.	Is wet well vented?		Yes	No			
J.	Amount of grease/scum/debi	ris build-up on water s	surface:	None	Minimal	Moderate	Significant
K.	Grease ring/water level stain	ing above nine invert)			Yes	No
L.	Size of wet well:	3 foot dia.				103	110
М.	Rim to bottom of wet well:	6.3 feet					
N.	Rim to invert:	2.4 feet and 3.3 fee	 et				
0.	Notes:	Pump removal guid		ver; one pump lift	chain was rep	olaced with sta	nless steel,
		one not and in poo	r condition; acce	ess hatch is compl	letely broken (off.	
Socti	ion 3: Valve Chamber		N/A				
A.	Material of valve chamber wa	all:	N/A Concrete	 Fiberglass	Steel	Other	
۸.		an. a. If steel, is cathodic		_	Jieei	Other	
В.	Condition of valve chamber w	·	Excellent	Good	 Fair	Poor	Very Poor
C.	Material of valve chamber to		Concrete	Fiberglass	Steel	Other	,
D.	Condition of valve chamber to		Excellent	Good	Fair	Poor	Very Poor
E.	Condition of access hatches:	•	Excellent	Good	Fair	Poor	Very Poor
Secti	ion 4: Valves		ı		1		
A.	Do check valves exist?			Yes	No		
В.	Do shut off valves exist?			Yes	No	٦	
C.	Does the station have a bypa			Yes	No	J	
		a. Size of bypass conr		Duetile I	D) (C	Cart I	Oth :
	ŀ	b. Material of bypass	connection:	Ductile Iron	PVC	Cast Iron	Other
Secti	ion 5: Equipment						
Jecu	on J. Equipment			-		_	

Pump No. 1

Pump No. 2

	Make							
	Model No.							
	Run time (hours)	1553	0.5	634	6347.8			
	Design point	Unkno	own	Unkr	nown			
	Drawdown Results	No test pe	rformed	14.8	gpm			
_			0&M	Record	O&M Staff	0.1		
В.	Source of pump information:		Manual	Drawings	(verbal)	Other _		
C.	Are pumps noisy or vibrating?	. 2		Yes	No			
D.	Swirl in wet well while pump of			Yes	No	N/A		
E.	Does the station have a flow n			Yes	No			
	a	. If so, type and size	of meter:		,			
Socti	on 6: Electrical							
A.	Service power:	120	240	480 Volts	1 phase	3 phase		
В.	Is surge protection provided?	120	Yes	No	1 pilase	5 phase		
Б. С.	Seal off fittings provided betw	oon the wet well an			_	Yes	No	
D.	Are electrical/ control panels I					Yes	No	
υ.	Are electrically control panels i	ocated within 3 of V	wet well flatell of .	o or vent:	•	163	NO	
Section	on 7: Generator							
Α.	Is there an on-site generator?		Yes	No	7			
		. Size of on-site gen			_			
В.	Transfer Switch:	. Gize of our dite gen	Automatic	Manual	None			
C.	Is there a generator receptacle	25	Yes	No	110			
D.	Fuel Source:	••	Natural Gas	Propane	ات Diesel			
Ε.	Generator Hours:		Tracarar Gas		2.000.			
F.	Condition of generator and an	cillary equip:		Excellent	Good	Fair	Poor	Very Poor
G.	Notes:	Generator ancillar	v equipment not (
			7	,	-			
Section	on 8: Pump and Motor Control	s						
A.	Condition of control panel:		Excellent	Good	Fair	Poor	Very Poor	
В.	How many float switches are i	nstalled?		Five	•			
C.					None			
D.					Relay logic			
F.	Station alarm:							
	Alarm telemetry (autodialer, radio, cell phone, SCADA, none)				Local			_
Section	on 9: Forcemain							
A.	Forcemain material:	Ductile Iron	PVC	Concrete	Cast Iron	Steel	Other	
В.	Forcemain size (in):	1.25 inch						
C.	Notes:	Galvanized steel.						
Section	on 10: Site							
A.	Positive drainage away from st	tation?		Yes	No			
В.	Site maintained?			Yes	No			
C.	Can the site be easily accessed	I for maintenance?		Yes	No			
D.	Is the station locked?			Yes	No			

F. Notes:	Trees surrounding wet well; site is far from road, making accessibility difficult; wet well hatch has broken lock, however, cabinet is locked.	· -
General Remarks:		
Categorized by Perceptive as one o	f the worst condition grinder stations.	

Yes

E. Noticeable odor issues?

No

Appendix B: Detailed Cost Estimate

Gun Plain Charter Township

Engineer's Estimate of Project Costs**

Pump Station Evaluation



Project: 862370 Date: 12.21.23 By: SMB

		ESTIMATED			
WORK DESCRIPTION			AMOUNT		
	<u> </u>				
Pump Station #1					
Paint Piping in the Wetwell and Valve Chamber		\$	20,000		
Pressure Wash & Inspect Wetwell		\$	3,000		
Improve Valve Chamber Drain		\$	5,000		
New Wetwell Hatch		\$	7,000		
Add Hatch Safety Grate on the Wetwell Hatch		\$	6,000		
Repaint/Replace the Generator Enclosure		\$	6,000		
Repaint the Wetwell Vent		\$	1,000		
	Subtotal:	\$	48,000		
Pump Station #2					
Paint Piping in the Wetwell and Valve Chamber		\$	20,000		
Add a Permanent Portable Generator		\$	60,000		
Pressure Wash & Inspect Wetwell		\$	3,000		
Replace the Wetwell Vent		\$	2,000		
Add Hatch Safety Grate on the Wetwell Hatch		\$	6,000		
	Subtotal:	\$	91,000		
Pump Station #3					
Paint Piping in the Wetwell and Valve Chamber		\$	20,000		
Add a Permanent Portable Generator		\$	60,000		
Pressure Wash & Inspect Wetwell		\$	3,000		
Repaint the Wetwell Vent		\$	1,000		
Add Hatch Safety Grate on the Wetwell Hatch		\$	6,000		
	Subtotal:	\$	90,000		
Dump Station #4					
Pump Station #4 Pipes & Valves to Ex. PVC Forcemain		\$	20.000		
		\$	30,000		
Pumps & Guiderails			25,000		
Control Panel		\$	30,000		
Bypass Connection		\$	6,000		
Add a Remote Portable Generator Receptacle		\$	10,000		

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		ESTIMATED	
WORK DESCRIPTION		AMOUNT	
Pressure Wash & Inspect Wetwell		\$ 3,000	
Repair Wetwell Surface Defects and Line Entire Wetwell		\$ 25,000	
New Wetwell Hatch		\$ 7,000	
	Subtotal:	\$ 136,000	
Pump Station #5			
Pipes & Valves to Ex. PVC Forcemain		\$ 30,000	
Pumps & Guiderails		\$ 25,000	
Control Panel		\$ 30,000	
Bypass Connection		\$ 6,000	
Pressure Wash & Inspect Wetwell		\$ 3,000	
Repair Wetwell Surface Defects and Line Entire Wetwell		\$ 25,000	
New Wetwell Hatch		\$ 7,000	
	Subtotal:	\$ 126,000	
Pump Station #6			
Pipes & Valves to Ex. PVC Forcemain		\$ 30,000	
Pumps & Guiderails		\$ 25,000	
Control Panel		\$ 30,000	
Bypass Connection		\$ 6,000	
Pressure Wash & Inspect Wetwell		\$ 3,000	
Repair Wetwell Surface Defects and Line Entire Wetwell		\$ 25,000	
New Wetwell Hatch		\$ 7,000	
	Subtotal:	\$ 126,000	
		,	
Pump Station #7			
Pipes & Valves to Ex. PVC Forcemain		\$ 30,000	
Pumps & Guiderails		\$ 25,000	
Control Panel		\$ 30,000	
Bypass Connection		\$ 6,000	
Add a Remote Portable Generator Receptacle		\$ 10,000	
Pressure Wash & Inspect Wetwell		\$ 3,000	
Repair Wetwell Surface Defects and Line Entire Wetwell		\$ 25,000	
New Wetwell Hatch		\$ 7,000	
	Subtotal:	\$ 136,000	
		,	
Pump Station #8			
Pipes & Valves to Ex. PVC Forcemain		\$ 30,000	
Pumps & Guiderails		\$ 25,000	
Control Panel		\$ 30,000	
Bypass Connection		\$ 6,000	
Pressure Wash & Inspect Wetwell		\$ 3,000	
New Wetwell Hatch		\$ 7,000	
	Subtotal:	\$ 101,000	
	Capital.	+ 101,000	
Pump Station #9			
Paint Piping in the Wetwell and Valve Chamber		\$ 20,000	

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		ESTIMATED	
WORK DESCRIPTION		Α	MOUNT
Pressure Wash & Inspect Wetwell		\$	3,000
Repaint the Wetwell Vent		\$	1,000
Add Hatch Safety Grates on the Wetwell and Valve Chamber		\$	12,000
	Subtotal:	\$	36,000
Pump Station #10			
Paint Piping in the Wetwell and Valve Chamber		\$	20,000
Pressure Wash & Inspect Wetwell		\$	3,000
Repair Wetwell Surface Defects and Line Entire Wetwell		\$	25,000
Add Hatch Safety Grates on the Wetwell and Valve Chamber		\$	12,000
	Subtotal:	\$	60,000
Pump Station #11			
Paint Piping in the Wetwell and Valve Chamber		\$	20,000
Pressure Wash & Inspect Wetwell		\$	3,000
Repair Wetwell Surface Defects and Line Entire Wetwell		\$	25,000
Repaint the Control Cabinet		\$	3,000
Adjust Grading/Drainage		\$	4,000
Add Hatch Safety Grates on the Wetwell and Valve Chamber		\$	12,000
	Subtotal:	\$	67,000
Pump Station #12			
Paint Piping in the Wetwell and Valve Chamber		\$	20,000
Add a Remote Portable Generator Receptacle		\$	10,000
Pressure Wash & Inspect Wetwell		\$	3,000
Reattach the Control Panel Plumb		\$	2,000
Add Hatch Safety Grates on the Wetwell and Valve Chamber		\$	12,000
	Subtotal:	\$	47,000
Pump Station #14			
Paint Piping in the Wetwell and Valve Chamber		\$	20,000
Repair Bypass Connection		\$	1,000
Pressure Wash & Inspect Wetwell		\$	3,000
Repair Wetwell Surface Defects and Line Entire Wetwell		\$	25,000
Add a Driveway		\$	10,000
Add Hatch Safety Grates on the Wetwell and Valve Chamber		\$	12,000
	Subtotal:	\$	71,000
Pump Station #15			
Paint Piping in the Wetwell and Valve Chamber		\$	20,000
Pressure Wash & Inspect Wetwell		\$	3,000
Repaint the Wetwell Vent		\$	1,000
Replace the Pump Lift Cables with Chains		\$	2,000
Add Hatch Safety Grates on the Wetwell and Valve Chamber		\$	12,000
	Subtotal:	\$	38,000

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			ESTIMATED
WORK DESCRIPTION			AMOUNT
Each Grinder Station			
Pipes & Valves to Ex. PVC Forcemain	\$	30,000	
Pump(s) & Guiderails	\$	25,000	
Control Panel	\$	30,000	
Pressure Wash & Inspect Wetwell	\$	3,000	
New Wetwell Hatch	\$	5,000	
Sutotal Each Grinder Station:	\$	93,000	
Subtotal for All 14 Grinder Stations:		\$ 1,302,000	
Total Estimated Construction Cost:			\$ 2,475,000
Design & Construction Engineering (~18%):			\$450,000
Project Contingencies (~20%):			\$500,000
Total Estimated Project Cost (Rounded):			\$ 3,400,000

^{**}The Design Professional has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing. Bid prices may vary significantly based on these factors and market conditions at time of bid.

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