NORTHWEST ARKANSAS
ECONOMIC DEVELOPMENT DISTRICT, INC.
NWAEDD PLAZA
818 Highway 62-65-412 North _ P.O. Box 190
Harrison, Arkansas 72602-0190
(870) 741-5404

May 13, 2011

Ms. Jennifer Harmon, E.I.
NPDES Branch
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118

Dear Ms. Harmon:

Re: Environmental Assessment / Marble Falls Sewer Improvement District Project

Newton County, Arkansas, anticipates receiving grant assistance from the Arkansas Economic Development Commission (AEDC), under the provisions of the Arkansas Community and Economic Development Program (ACEDP), 2008 Disaster Funds, to aid in the rehabilitation and improvement of an existing Wastewater Collection and Treatment System for the Marble Falls Sewer Improvement District #1 (SID). The project is located in the Marble Falls Community of Newton County. Attached for review by your agency are project location maps and project information.

The project area was developed in the 1960's by the now closed Dogpatch U.S.A. Theme Park and turned over to the Marble Falls SID in the mid 1990's.

A construction project along Arkansas Highway 7, currently under way by the AHTD, is relocating some of the SID collection lines in the project area.

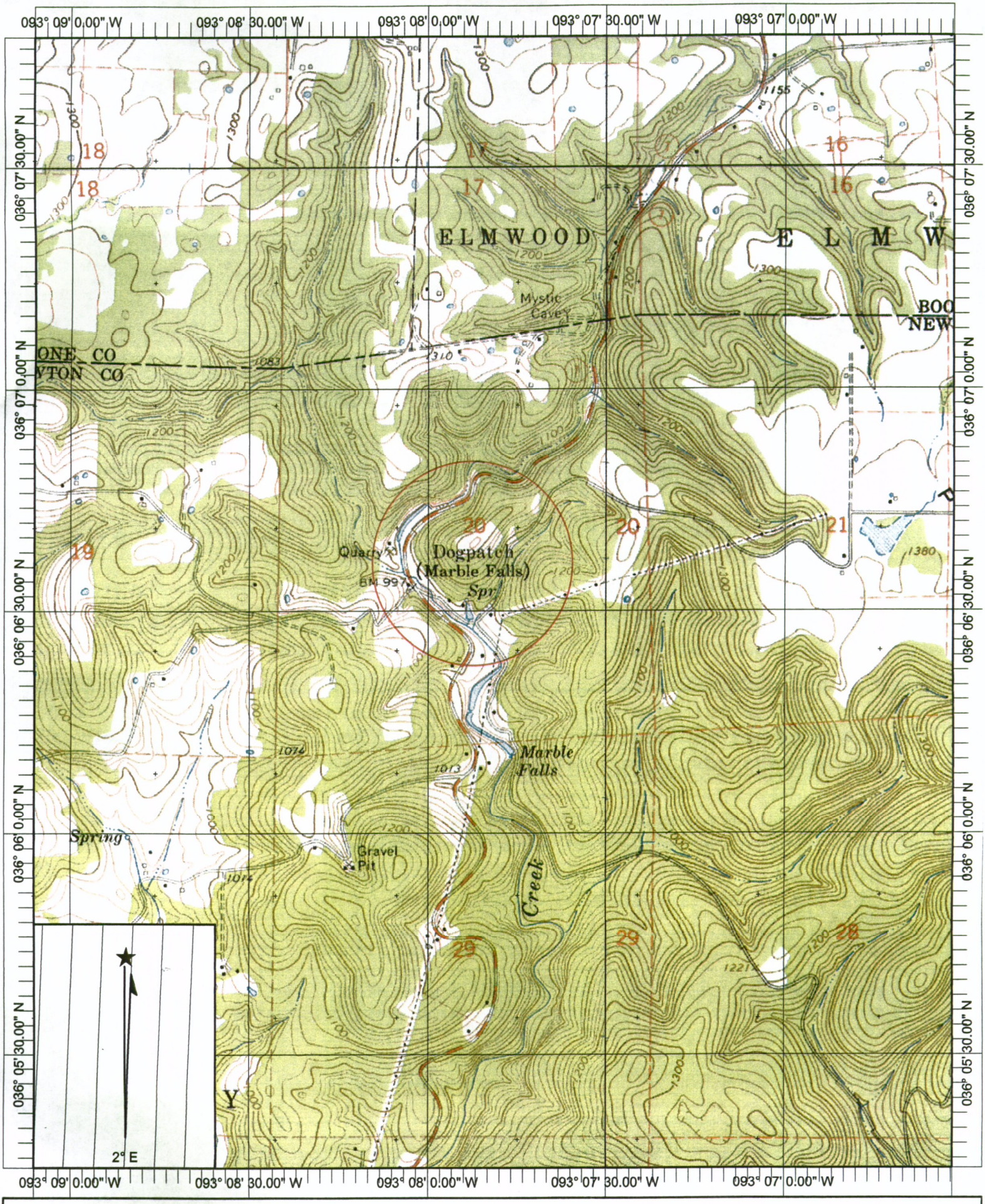
We also understand that a construction site which disturbs five or more acres of total land area must obtain a Storm Water Permit.

Sincerely,

Alan Jay Stallard
Grants Administrator

:ajs:

Attachment

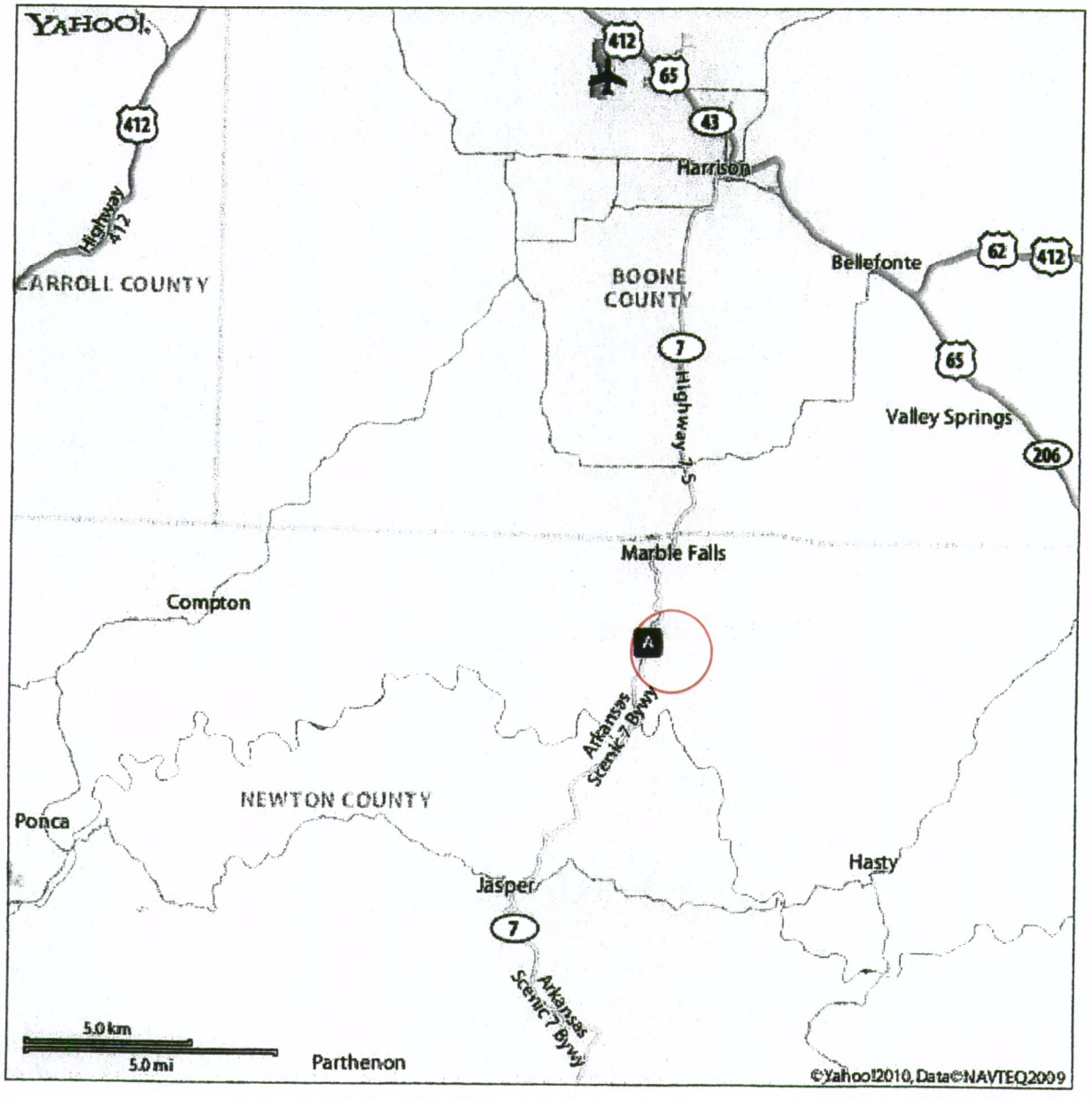


Name: JASPER
Date: 4/14/2011
Scale: 1 inch equals 1666 feet

Location: 036° 06' 31.0" N 093° 07' 48.9" W
Caption: Newton County

Marble Falls SID Project

LOCATION MAP
MARBLE FALLS PROJECT
NEWTON COUNTY
ARKANSAS



PRELIMINARY ENGINEERING REPORT

FOR

WASTEWATER SYSTEM IMPROVEMENTS

TO SERVE THE

MARBLE FALLS SEWER IMPROVEMENT DISTRICT NUMBER ONE

MARBLE FALLS, ARKANSAS

MAY 2010
(REVISED JUNE 2010)

ENGINEERING SERVICES, INC.
1207 SOUTH OLD MISSOURI ROAD • P. O. BOX 282 • SPRINGDALE, ARKANSAS 72765-0282
479-751-8733 • 479-751-8746 (FAX) • WWW.ENGINEERINGSERVICES.COM

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1. GENERAL OVERVIEW

At the direction of the Marble Falls Sewer Improvement District No. 1, Engineering Services, Inc. has prepared this Preliminary Engineering Report for improvements to the existing wastewater collection and treatment systems serving Marble Falls, Arkansas. The report provides a brief history of and general background information about the community of Marble Falls, provides information about the existing wastewater collection and treatment system, evaluates several alternatives for improving the system, and recommends an alternative to be pursued.

Marble Falls, Arkansas, is a small north central Arkansas community located along the east side of Arkansas Highway 7, between the cities of Harrison and Jasper. Marble Falls is located in northern Newton County, near the southern border of Boone County. The Buffalo National River lies to the south of Marble Falls.

The majority of residents and structures that are served by the Marble Falls Sewer Improvement District are located along the Highway 7 Spur, which runs east from Highway 7 up a steep grade to a large paved area which formerly served as the parking lot for Dogpatch U.S.A., a theme park constructed in the 1960's which closed permanently in 1993. Dogpatch U.S.A. played a major role in the history of the community of Marble Falls, which was officially named Dogpatch for a period of time.

There is very little commercial activity in Marble Falls. The community includes a post office, a family recreation center, a restaurant, a hotel, and a conference center, in addition to residential structures, including two apartment buildings. The community receives a moderate level of tourism in summer months. The primary attractions for tourists are the scenic roads which appeal to motorcyclists and recreational activities associated with the Buffalo National River. Many Marble Falls residents travel to nearby Jasper and Harrison for employment.

Residents of Marble Falls purchase their water from Basin Valley Water Association, and sewer service is provided by the Marble Falls Sewer Improvement District Number One (the District).

The existing collection and treatment systems serving Marble Falls were designed in the late 1960's. In recent decades, the system has fallen into disrepair and has been found to be in violation of Arkansas Department of Environmental Quality (ADEQ) and Arkansas Department of Health (ADH) regulations numerous times. Most recently, the District experienced a major failure of their primary lift station. The failure occurred during the ice storm in early 2009, and raw sewage discharged into a nearby stream which flows into a tributary of the Buffalo National

River. For several months, the District hauled sewage from the lift station to a manhole on the gravity line upstream of the treatment facility. However, the vehicle used by the District to haul the wastewater was vandalized, rendering the District unable to haul the sewage any longer, resulting in the sewer discharge.

Following the discharge, the Arkansas Rural Water Association installed a temporary pump at the damaged lift station, which is still in operation. Currently, plans are underway to construct a new lift station east of Highway 7 upstream of the existing failed lift station, at which point the existing lift station will be abandoned.

In response to the lift station failure and ensuing sewage discharge, ADEQ filed a lawsuit (Case No. CV 2010-10-1) to force the District to bring their wastewater system into compliance with permit requirements and state and federal regulations. At a hearing on March 2, 2010, the District was placed under a preliminary injunction consent decree (included in the Appendix) requiring the District to take specific steps to address the sewer system deficiencies:

A) Complete installation of the new lift station, and continue operation of the temporary pump until the new lift station is complete.

B) Retain a Class II licensed operator for the wastewater treatment system.

C) Retain a professional engineer to evaluate the existing wastewater treatment system and recommend a plan of action to address the long term wastewater treatment needs of Marble Falls, with evaluation to be submitted by April 6, 2010.

D) Secure funding for wastewater treatment plant rehabilitation/replacement.

E) Retain a professional engineer to evaluate the existing wastewater collection system and recommend a plan of action to upgrade and/or rehabilitate the system, with the evaluation to be submitted by a date established during a telephone conference hearing on April 9, 2010.

F) Take all reasonable measures to prevent further discharges of untreated effluent and comply with the District's NPDES permit.

Evaluation reports for the collection system and the treatment system have been completed in accordance with the court order. This report includes the information from those documents and has been prepared to provide a comprehensive evaluation of the existing wastewater system, evaluate multiple alternatives to improve the system, and recommend one of the alternatives.

2. PROJECT PLANNING AREA

LOCATION

Marble Falls is located in north central Arkansas along Arkansas State Highway 7 in northern Newton County, near the southern border of Boone County. Marble Falls is approximately seven miles north of the City of Jasper, the county seat for Newton County, and approximately thirteen miles south of the City of Harrison, which is the county seat for Boone County. Mill Creek flows south along Highway 7 through Marble Falls to the Buffalo National River, America's first national river. The Dogpatch amusement park, which ceased operation in 1993, is located in Marble Falls.

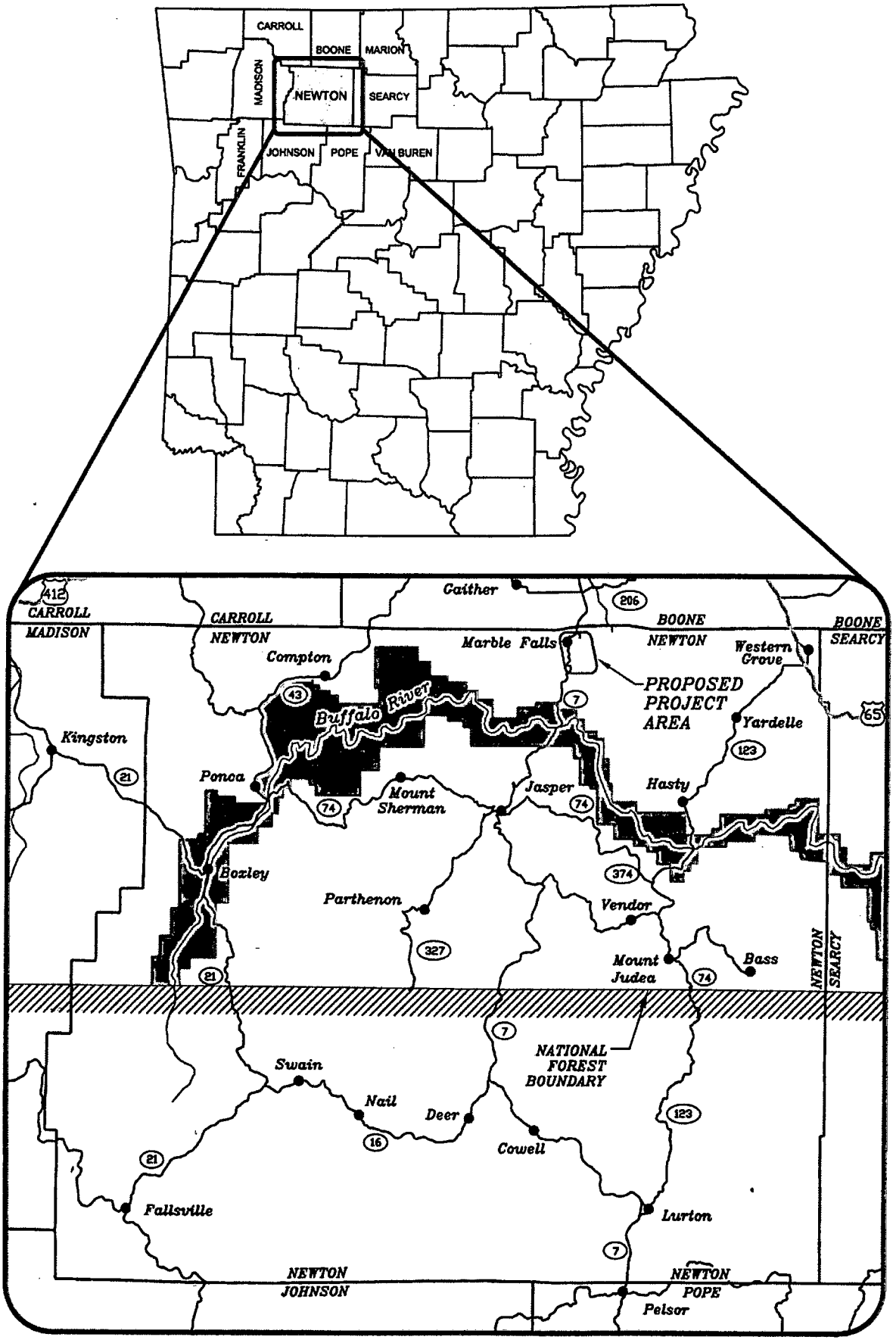
Marble Falls is located at 36°06'46" North latitude and 93°07'30" West longitude. A general location map of the area is included as Figure 2.1.

ENVIRONMENTAL RESOURCES PRESENT

Marble Falls is located in close proximity to the Buffalo National River, and the existing wastewater treatment plant discharges into an unnamed tributary of the Buffalo River. Because of the river's status as a national river, and the large amount of recreational activity which takes place on the Buffalo, protection of this natural resource is of particular concern for this project. The protection of the Buffalo River will be accomplished in two ways. First, the discharge of untreated wastewater by the Marble Falls wastewater system must be eliminated. Second, the treated effluent produced by the treatment system must consistently meet the permit effluent requirements established by the Arkansas Department of Environmental Quality. No construction in or across the Buffalo National River is proposed as part of this project, and no direct impact to the Buffalo River is anticipated to result from the proposed improvements.

The vast majority of construction activities will occur in areas of previous construction. Improvements to the collection system, with the exception of a short section of proposed sewer main, involve rehabilitation of existing infrastructure. The proposed section of sewer main lies along an existing road, and is therefore also in an area of previous construction. The proposed wastewater treatment facility improvements will take place in a small area located near an existing polishing pond, service road, and treatment facility, where previous construction activities have occurred. No conversion of prime or important farmland will result from the proposed improvements.

Figure 2.1 General Location Map of Marble Falls, Arkansas



Karst features, such as springs, losing streams, sinkholes, and caves are common in this region. Although no karst features have been identified in the proposed project areas, in the event one is discovered within three hundred feet of the construction area, all construction activity in the vicinity will halt and the U.S. Fish and Wildlife Service will be notified of the discovery. Construction activities in the area will not resume until authorized by the U.S. Fish and Wildlife Service.

No construction is proposed within or across creeks, streams, or waterways.

No endangered or threatened species are known to be present within the proposed project area. In the event endangered or threatened species are encountered, activity in the area will cease and the U.S. Fish and Wildlife Service will be notified. Construction in the area will not resume until authorized by the U.S. Fish and Wildlife Service.

No significant archaeological sites are known to be present within the proposed project area. In the event sites with archaeological or historical significance are identified which may be impacted by the proposed construction, activities in the area will cease until authorized to resume by the State Historic Preservation Officer.

All construction activities will be completed in accordance with the Best Management Practices as outlined in the Environmental Report for this project.

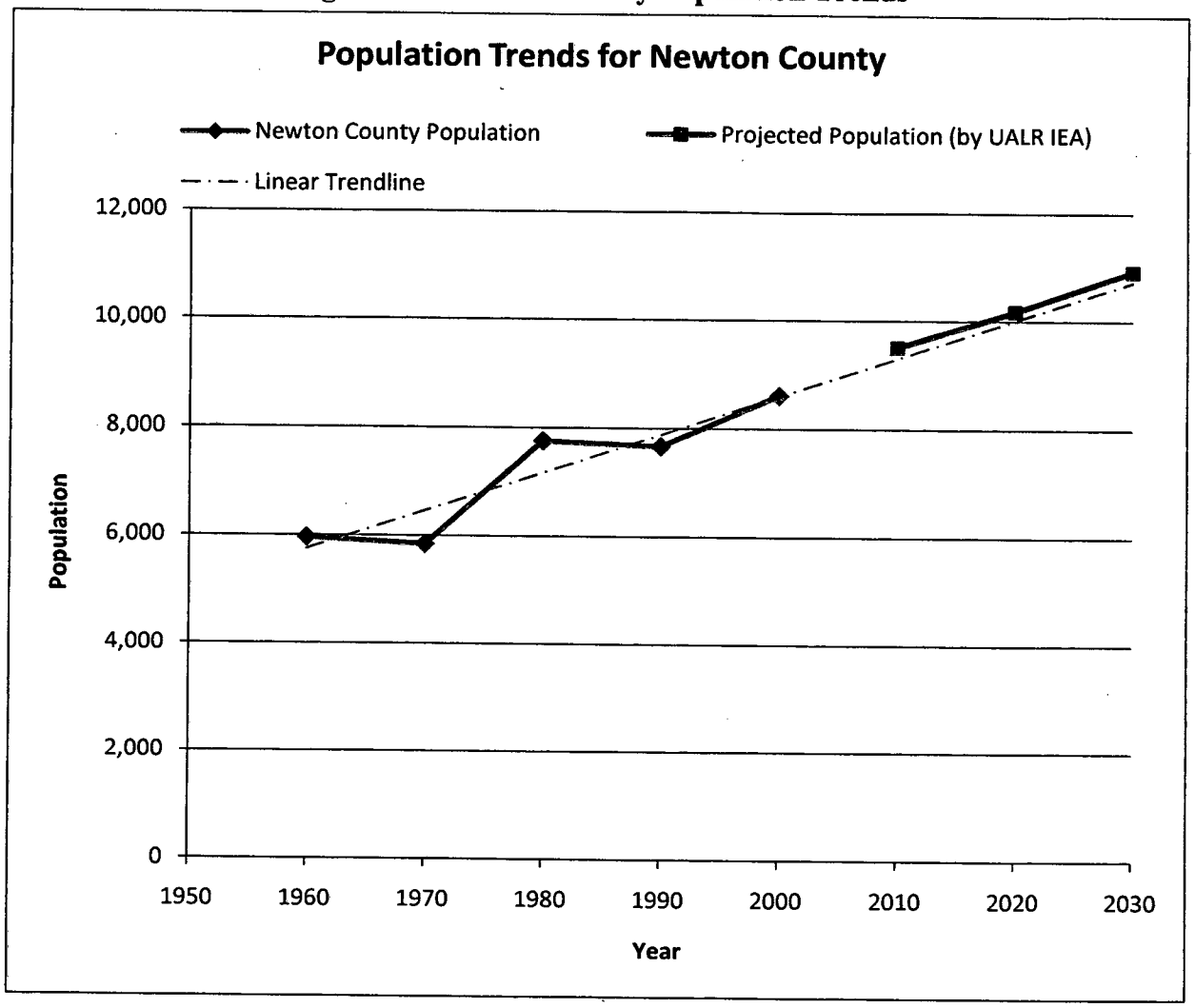
GROWTH AREAS AND POPULATION TRENDS

The U.S. Census Bureau does not collect data for the Community of Marble Falls separate from the data collected for Newton County. Accordingly, much of the statistical information presented in this section pertains to Newton County as a whole. According to the most recent U.S. Census Bureau the population of Newton County was 8,608 persons in 2000 (the latest census information currently available). Figures 2.2 provides historical population levels for Newton County from 1850 through 2000, as well as projected populations through 2030. Figure 2.3 illustrates the changes in the population of Newton County from 1960 through 2000, projected populations through 2030, and a linear trendline based upon population from 1960 through 2000. All projections are by the University of Arkansas at Little Rock Institute for Economic Advancement.

Figure 2.2 Newton County Population Trends

Year	Newton County Population
1900	12,538
1910	10,612
1920	11,199
1930	10,564
1940	10,881
1950	8,685
1960	5,963
1970	5,844
1980	7,756
1990	7,666
2000	8,608
2010 *	9,507
2020 *	10,177
2030 *	10,917

Figure 2.3 Newton County Population Trends



**Projections by University of Arkansas at Little Rock Institute for Economic Advancement*

As illustrated in Figure 2.2, the population of Newton County was over 12,000 in 1900, and stayed above 10,000 through the 1940 census. The population then began a steep decline, dropping to 5,844 in 1970, less than half as many residents as 1900, and the lowest level recorded for the county in the 20th century. The Newton County population rebounded in the last several decades of the last century, but still ended the century with approximately 4,000 less people in 2000 than in 1900.

Figure 2.3 provides a visual illustration of the population changes in Newton County since 1960, as well as the projected population for 2010 through 2030. Figure 2.3 demonstrates the general increase in the county's population during this period, and shows that the population projections from UALR IEA are generally in accordance with the linear growth trend derived from the historical population data. If population growth does continue at the rate present during the last forty years, the population of Newton County will be approximately 10,917 in 2030.

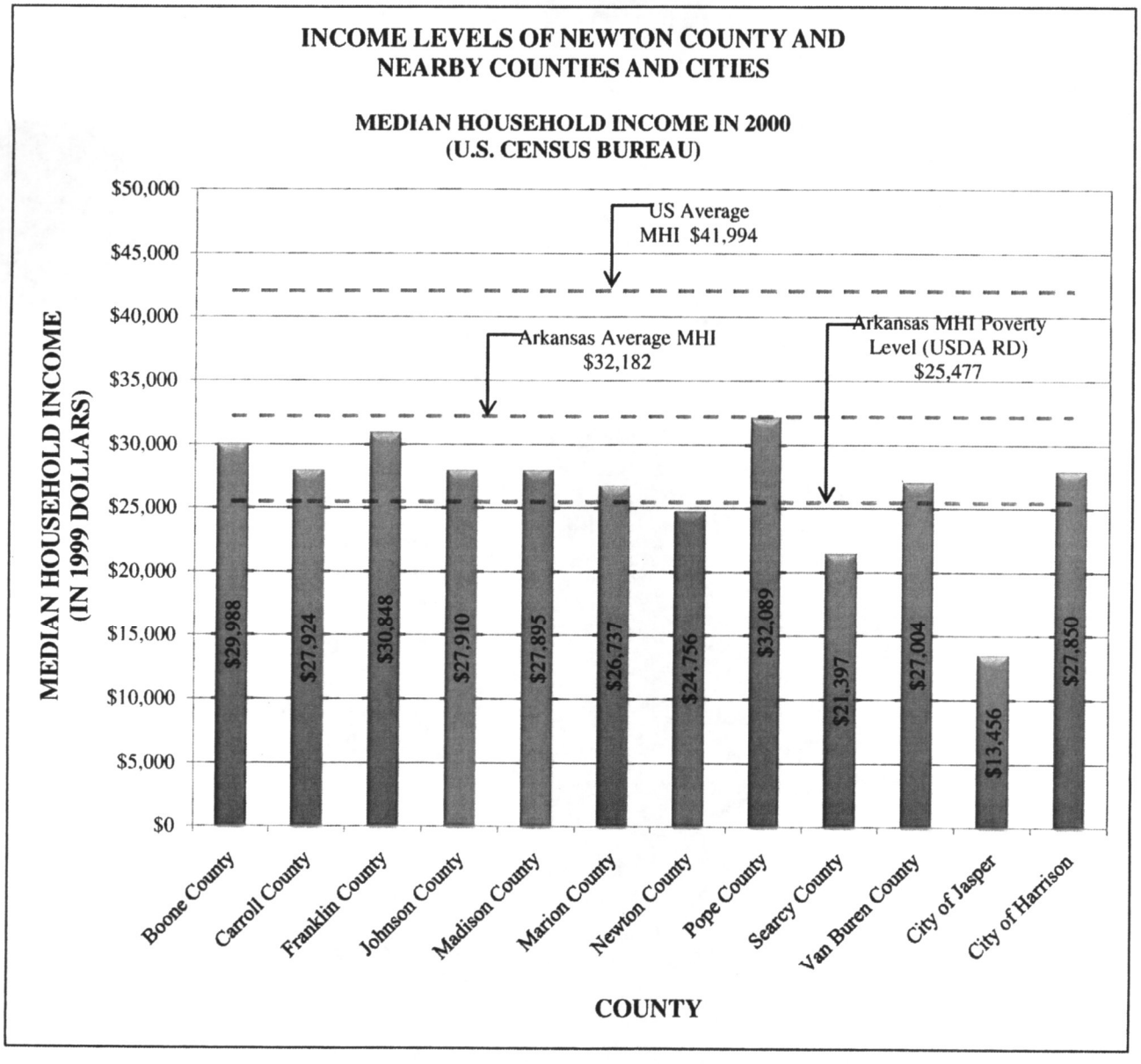
The Community of Marble Falls has not experienced the same significant population growth during the last forty years that Newton County has undergone. The financial difficulties and eventual closure of Dogpatch U.S.A. removed the primary source of commercial opportunities and economic activity in the immediate area. No significant stimuli have been introduced to the area recently which would tend to promote or accelerate population growth, and it is therefore anticipated that the Marble Falls population will continue to remain at or near its current level for the foreseeable future.

INCOME AND ECONOMIC TRENDS

State and federal agencies frequently utilize "Median Household Income" (MHI) data compiled by and obtained from the U.S. Census Bureau to determine the state of the overall economy in an area, and as the basis for determining the eligibility of projects in the area for public funding assistance. In general, the lower a region or city's MHI is compared to that of the state as a whole or compared to the poverty level for the state, the more funding assistance (i.e. higher percentage of project cost funded through grants, or lower interest rates for loans) a project in that area is eligible for.

As indicated by the General Location Map (Figure 2.1), Marble Falls is located in north central Arkansas in Newton County. As with population data, no separate economic or income data are available which are specific to the Community of Marble Falls. Therefore, the majority of statistics provided in this section are for Newton County as a whole. Figure 2.4 includes MHI data for Newton County and nearby cities and counties.

Figure 2.4 MHI of Newton County and Nearby Cities and Counties



The MHI of Newton County is $24, 756. As illustrated in Figure 2.4, this is the second lowest MHI of all of the counties near Newton County. Only Searcy County, with a MHI of only $21,397, has a lower MHI. Of the seventy-five counties in the State of Arkansas, Newton County has the ninth lowest MHI. For reference, Saline County has the highest MHI in the state, at $42,569. The MHI in Newton County is less than sixty percent of that amount. Newton County's MHI is well below $32,182, the average MHI in the state. Unfortunately, Arkansas has the third lowest MHI in the nation, ahead of only West Virginia ($29,696) and Mississippi ($31,330). IN addition to being well below the average MHI across the state and the nation, Newton County's MHI is also below the Arkansas MHI Poverty Level of $25,477.

Use of county-wide statistics in reference to Marble Falls can be potentially misleading. These statistics include economic data for a large area which is not homogenous, and the data therefore is not necessarily representative of any small portion of the county. As an example, the Median Household Income (MHI) for Newton County as a whole is $24,756, while the MHI in the City of Jasper, the county seat, is only $13,456.

Very few commercial opportunities are present in Marble Falls. Businesses in the community include a post office, a hotel, a conference center, and a restaurant. The restaurant and conference center cater primarily to visitors from outside the area attracted by the recreational activities provided by the Buffalo National River and the scenic roads which are popular among motorcyclists, and experience very seasonal revenues as a result. The closure of Dogpatch U.S.A. was an especially harsh blow to the local economy, which was primarily based upon the park and the tourism it attracted. Because there are so few opportunities within Marble Falls, many of the residents commute to the nearby cities of Harrison and Jasper for employment.

Although economic data specific to Marble Falls is not available from the U.S. Census Bureau, it is believed that the MHI for the Community of Marble Falls is less than that of the county as a whole. Within this report, the MHI of Newton County will be utilized for the purposes of funding eligibility, due to the absence of available data specific to the Community of Marble Falls is available.

3. EXISTING FACILITIES

LOCATION

The general location of Newton County, Marble Falls, and the project area are illustrated in Figure 2.1. A diagram of the existing sewer system showing the location of major components is included as Figure 3.2 and a more detailed map of the existing sewer system is included in the Appendix to this document.

HISTORY & CONDITION OF FACILITIES

The existing water and sewer infrastructure serving Marble Falls was designed in the late 1960's to serve the Dogpatch U.S.A. amusement park. The park experienced financial difficulties, ownership of the park changed hands, and the park was the subject of numerous lawsuits. In the early 1990's, the owner of the park at the time, Mr. Melvyn Bell, now deceased, sold the water infrastructure, including a deep well, pumps, and water mains, to the Basin Water District. The residents of Marble Falls were notified that Mr. Bell would no longer operate the sewer system. Shortly thereafter, Mr. Bell lost ownership of the park and associated assets, including the sewer system, through foreclosure proceedings.

Following notification that Mr. Bell intended to discontinue operation of the wastewater system, the residents of Marble Falls, organized as the Residents Association, met and elected to undertake operation of the system themselves. Since that time, residents of the Marble Falls area have operated the system on their own with varying levels of success.

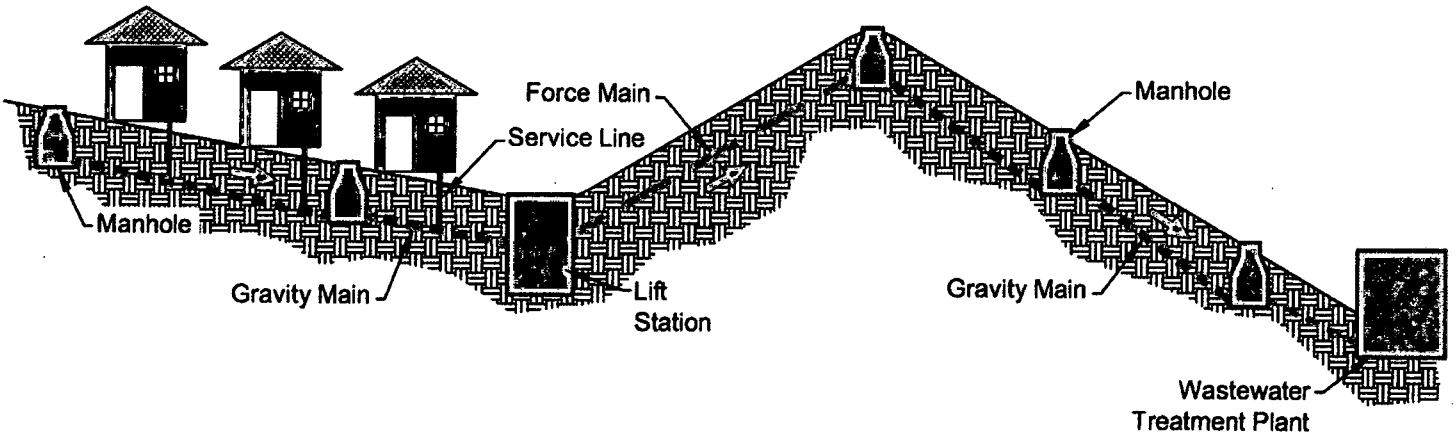
The operation of the system is conducted under the auspices of the Marble Falls Sewer District Number One (the District), which owns and operates the sewer collection and treatment facilities. The District is represented by three commissioners, all of whom reside within Marble Falls. Currently, the commissioners are Mr. Donnie Crain, Ms. Valerie Hunnicutt, who has been a commissioner since the early 1990's, and Mr. Vince Law. Service as a commissioner is voluntary, and is not compensated. Previous commissioners include Mr. Raymond Hefley and Mr. Rex Isbell, who served as the licensed operator for the system for a period of time.

The sewer system includes a wastewater collection system and a wastewater treatment facility, each of which is described in detail in the following pages.

Wastewater Collection System

The Marble Falls sewer collection system is a conventional gravity collection system, as opposed to a STEP or STEG system, and includes gravity collection mains, sanitary sewer manholes, two (2) sewer lift stations, and force mains, all of which are designed to collect the wastewater produced by the District's customers and deliver it to the treatment facility with as little inflow and infiltration or exfiltration as possible. A diagram of a typical conventional collection system is included as Figure 3.1.

Figure 3.1 Typical Gravity Collection System Diagram



The process by which a gravity collection system is generally designed to operate is as follows:

A) Wastewater produced by customers flows by gravity through the building's plumbing to a single sewer service line. Plumbing and the sewer service line are private, and their maintenance and repair is the customer's responsibility.

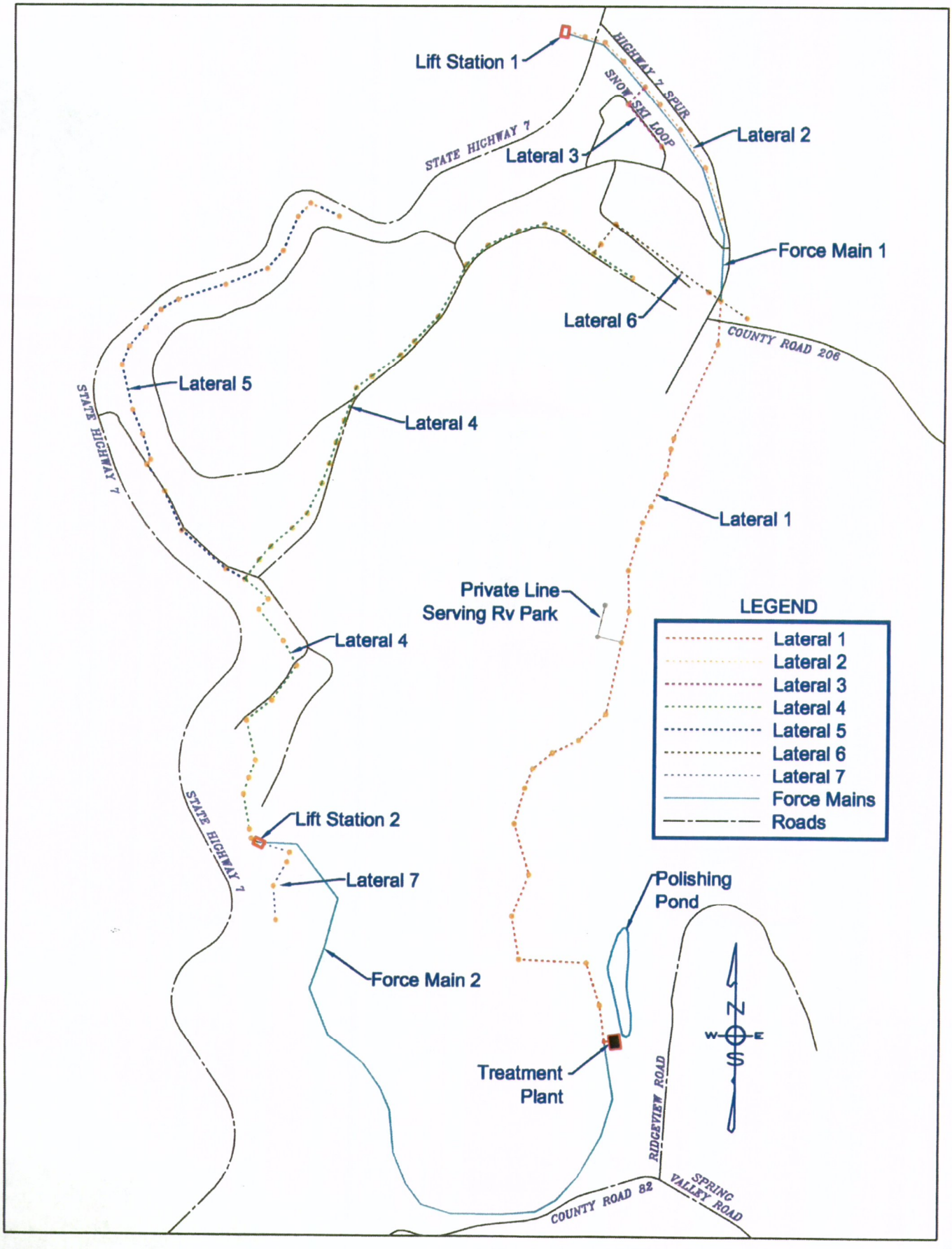
B) Wastewater flows through the sewer service line to a gravity collection main. The gravity collection main typically is owned and maintained by the sewer system, and consists of sections of underground concrete or plastic pipe with manholes located periodically to allow for access and maintenance, as well as to accommodate changes in the direction of the line.

C) Wastewater flows through the gravity collection mains by gravity to either a treatment facility or a sewer lift station. If the gravity main ends at a treatment facility, it begins the treatment process. If the gravity main terminates at a lift station, it is then pumped through a force main.

D) Force mains are designed to allow for the transport of sewage uphill, which is not possible with a gravity collection main. Force mains typically transport sewage under pressure from a lift station to a gravity sewer main manhole uphill of the lift station, where it then flows by gravity to another lift station or a treatment facility.

Each component of the Marble Falls collection system was evaluated to prepare this report. The layout of the existing collection system, including gravity mains, manholes, lift stations, and force mains, is included in Figure 3.2. It should be noted that the plans for the sewer system obtained by Engineering Services, Inc. do not include the location of Force Main 2, and therefore the location of Force Main 2 in Figure 3.2, as well as in the drawings in the Appendix, reflect the probable location of the force main, based on topography, the location of Lift station 2, and the treatment facility.

Figure 3.2 Marble Falls Gravity Collection System Diagram



The District's customers are primarily residential. The District has thirty-one accounts. Of these accounts, twenty-five are residential, and six are commercial. The six commercial accounts include: The Shepherd's Fold Family Recreation Center; The Hub Motel, which has forty-five rooms; The Hub Convention Center, which includes Scooter's Restaurant; the Overlook, which is a twenty-four unit apartment building; another six unit apartment building; and a business which has now closed.

The existing collection system can be divided into two primary sections, based upon which of the two lift stations wastewater flows to. Wastewater produced by customers connected to the first section flows to Lift Station 1, and then reaches the treatment facility via Force Main 1 and Lateral 1. Wastewater produced by customers connected to the second section flows to Lift Station 2, then is pumped to the treatment facility through Force Main 2. The Figure below shows the number and type of customers served by each lift station, as indicated from Basin Valley Water Association water purchase data received from Mr. Gary Guillory of the Community Resource Group. It should be noted that one of the accounts included in Figure 3.3 is not currently active.

Figure 3.3 Number and Type of Customer Served by Each Lift Station

Lift Station 1 (Intersection of Hwy. 7 and Hwy. 7 Spur)	
Type of Customer	No. of Customers
Residential Customers	18
Commercial Customers	3
Total	21

Lift Station 2 (Amusement Park)	
Type of Customer	No. of Customers
Residential Customers	7
Commercial Customers	3
Total	10

Lift Station 1 serves eighteen (18) residential customers and three (3) commercial customers. Commercial customers connected to Lift Station 1 include a twenty-four (24) unit apartment building (The Overlook), a six (6) unit apartment building, and a business which is now closed.

Lift Station 2 serves seven (7) residential customers and three (3) commercial customers. Commercial customers connected to Lift Station 2 include The Hub Convention Center/Scooter's Restaurant, The Hub Motel (45 rooms), and the Shepherd's Ford Family Recreation Center.

Gravity Mains and Sewer Manholes

The Marble Falls collection system includes seven (7) gravity collection lines, which have been designated as Laterals 1 - 7 and vary in length from approximately 420 feet to over 4,800 feet. Manholes are located periodically along the length of each lateral. The length of each lateral and the number of manholes on each is displayed in Figure 3.4.

Figure 3.4 Summary of Gravity Sewer Main Laterals

Lateral	Length (L.F.)	Number of Manholes	Terminal Point
Lateral 1	4,712	22	Treatment Facility
Lateral 2	1,364	7	Lift Station 1 Wetwell
Lateral 3	421	2	Connection to Lateral 2
Lateral 4	4,879	32	Lift Station 2 Wetwell
Lateral 5	3,003	18	Connection to Lateral 4
Lateral 6	1,074	4	Connection to Lateral 4
Lateral 7	573	4	Lift Station 2 Wetwell

The gravity collection mains were constructed of concrete and asbestos concrete pipe, and the collection lines are primarily six inches in diameter. Current regulations governing sewer construction typically require a minimum pipe diameter of eight inches for collection mains.

In order to evaluate the condition of the gravity mains and manholes, smoke testing was performed on March 16, 17, and 18 of this year. The smoke testing was performed by Arkansas Rural Water Association (ARWA) personnel, with a representative of the Marble Falls Sewer District present to provide information regarding the location of system components. In addition, a representative of Engineering Services, Inc. was present to observe the testing.

During smoke testing, ARWA personnel gave identifying numbers to manholes of interest, including all manholes on which smoke testing was performed, as well as manholes which were clogged or showed signs of having previously overflowed. Thirty-seven manholes were given ARWA designations, and their location and number are included in the general layout map of the existing collection system in the Appendix. In addition to the manholes given numbers by ARWA personnel, all manholes within the system were given designations by Engineering Services, Inc. in order to easily identify specific manholes and provide a consistent frame of reference for the project. These designations, as well as the stationing of the collection lines, are also included in the general layout map in the Appendix.

The smoke testing of the Marble Falls collection system was conducted to locate breaks in the gravity mains and damaged manholes. Smoke testing is performed by placing a smoke bomb in an open manhole and placing a fan over the top of the manhole, which forces air and the smoke through the gravity main. The air and smoke will exit the line at any break or opening and will also exit the manholes through any cracks that are present. The smoke from these breaks then seeps through the ground and is visible to the technicians conducting the test, who mark the location of any leaks with paint and collect notes regarding the location, type, and severity of any leaks discovered. In addition to leaks in the collection system, clogged sewer mains were also discovered during the process.

The locations of deficiencies discovered during smoke testing are shown in the Collection System Deficiencies drawing in the Appendix. Damaged manholes, main line leaks, and clogged lines are displayed in red, while service line leaks are displayed in green. Because the service line leaks are the responsibility of the individual private property owner to repair, they are not addressed in detail in this document.

In general, smoke testing was performed along one lateral at a time, and once testing of that lateral was finished, testing of another lateral began. However, some testing of individual manholes occurred out of sequence. Smoke testing began with testing of Lateral 4, beginning at the top of the gravity main and progressing west toward the connection with Lateral 5, then south toward Lift Station 2. The next lateral tested was Lateral 5. Smoke testing of Lateral 5 was performed only for the southern portion of the main (from Manhole 4-L through Manhole 5-G), because the northern portion of Lateral 5 is located within the right-of-way currently being acquired by the Arkansas Highway and Transportation Department for widening of Highway 7. This right-of-way acquisition will result in the abandonment or relocation of the portion of Lateral 5 within the proposed right-of-way. Following the testing of Lateral 5, smoke testing was conducted on Lateral 3, then Lateral 6, and then Lateral 1. Lateral 2 was the final section of the collection system to be tested. Lateral 7 is not included in the original plans for the system, and will be abandoned under all alternatives. Consequently, smoke testing of Lateral 7 was not conducted.

The information obtained from the smoke testing is presented in the following section, by lateral.

Lateral 1: Lateral 1 includes 4,712 linear feet of sewer main and 22 manholes. The first manhole smoke tested (MH 1-V, ARWA MH #1) is the uppermost manhole on this lateral and was the first manhole to be smoke tested. Lateral 6 passes through this manhole, but is sealed closed through the manhole and sewer from Lateral 6 therefore does not enter Lateral 1 at this point.

Force Main 1 terminates at this manhole, and therefore all sewage collected by Lateral 2 and Lateral 3 is delivered to this manhole. From MH 1-V, sewage flows through Lateral 1 in a southerly direction to the wastewater treatment facility. Smoke testing on Manhole 1-V revealed several service line leaks near buildings in the vicinity of the manhole, but no main line breaks.

Smoke testing was also performed on the next manhole downstream from Manhole 1-V, which is MH 1-U (ARWA MH #29), with no main line breaks, manhole leaks, or clogs detected.

Smoke testing was conducted on MH 1-R (ARWA MH #31), and revealed no clogs, leaks, or manhole deficiencies. However, debris on the manhole lid and rim indicated the manhole had previously overflowed, as shown in Figures 3.4 and 3.5. The most likely cause of the overflow is a previous blockage in the section of pipe between MH 1-R and MH 1-Q. In addition, although the line was not clogged at this time, residue at MH 1-T indicated a previous blockage of the sewer main downstream of the manhole.

Figure 3.5 Manhole 1-R (ARWA MH #31)

Figure 3.6 Manhole 1-R (ARWA MH #31)

Smoke testing of MH 1-P (ARWA MH #30) revealed no clogs or leaks of the main line, however, the eastern edge of MH 1-P's rim is damaged. Two of the three manholes immediately downstream from MH 1-P (MH 1-O and MH 1-M) leaked, indicating they are damaged and need rehabilitation. In addition, MH 1-O has a large amount of gravel and debris in the bottom, as indicated in Figure 3.6. The third manhole (MH 1-N) has a root growing into it, according to Mr. Hefley. Due to the multiple damaged manholes, debris, and root intrusion, it is probable that the entire section of sewer main from MH 1-M through 1-P is in need of rehabilitation. These manholes are within a site intended as an RV campsite and there are multiple sewer stubouts for the use of the RV's.

Figure 3.7 Manhole 1-O

Smoke testing of MH 1-L (ARWA MH #32) indicated the manhole was damaged. Smoke was visible coming out of the ground in the area around the manhole during testing. The manhole was clear with signs of recent flow through it.

Smoke testing of MH 1-F (ARWA MH #33) indicated that the sewer line was clear from MH 1-F through MH 1-K. MH 1-F itself was clear with evidence of flow through it. A large amount of smoke was visible in an area approximately fifty feet north of MH 1-F. The smoke was coming from a concrete sewer stubout which was broken at ground level, which also presents an opportunity for inflow. This stubout needs to be repaired and capped or removed, with the connection to the main sewer line sealed closed.

Approximately fifty feet south of MH 1-F the sewer main was broken by excavation to uncover a possible leak. Since the testing, this section of sewer main has been replaced with new pipe to repair the damage.

Smoke testing on MH 1-D (ARWA MH #34) revealed two broken concrete stubouts between MH 1-D and MH 1-E. These stubouts present an opportunity for inflow and should be repaired and capped or removed, with the connection to the main sewer line sealed closed. One of the broken stubouts is shown in Figure 3.8. MH 1-D itself showed evidence of a large sewer overflow, which is illustrated by Figures 3.9 and 3.10. The overflow left a trail of debris down the edges of the manhole and downhill for several feet toward a service road. Due to the evidence of overflow, the section of sewer main below this manhole should be replaced.

Figure 3.8 Broken Concrete Stubout

Figure 3.9 Manhole 1-D (ARWA MH #34)

Figure 3.10 Debris Below Manhole 1-D (ARWA MH #34)

Smoke testing of Manhole 1-B (ARWA MH #35) did not indicate any main line breaks. However, a large amount of sludge in the bottom of the manhole indicated it was frequently holding sewer in the bottom of the manhole. This is likely due to the blockage present below MH 1-A, which caused sewage to back up in the line to MH 1-B.

Manhole 1-A showed evidence of a large amount of overflow, with a debris trail extending downhill toward the treatment plant access road and polishing pond. This is likely due to a blockage in the section of sewer main between MH 1-A and the inlet box near the treatment unit. This blockage was cleared following testing. MH 1-A is shown in Figure 3.11.

Figure 3.11 Manhole 1-A

Lateral 2: Lateral 2 is 1,364 linear feet in length, and contains seven manholes. It terminates at the wetwell of Lift Station 1, which is the lift station damaged by the ice storm of 2009. Lateral 2 runs along the west side of Highway 7 spur and collects sewage from the chalets along Highway 7 Spur and two apartment buildings. Lateral 3 connects to Lateral 2 at Manhole 2-D. Lateral 2 was the final lateral to undergo smoke testing.

Smoke testing was conducted on Manhole 2-G (ARWA MH # 37) which indicated the sewer main was clear from MH 2-G to the lift station. The frequent need to operate the temporary pump at the lift station is further evidence flow through Lateral 2 is not obstructed. No main line breaks in Lateral 2 were observed, although there were multiple service line breaks near the residences connected to this line.

The end of Lateral 2 is a sewer clean out located on a steep slope constructed of masonry and covered with large flat rocks. This clean out should be removed and replaced with a manhole to eliminate inflow and infiltration.

Lateral 3: Lateral 3 is 421 linear feet in length, and contains two manholes. Lateral 3 collects sewage from residences along the west side of Snow Ski Loop. Smoke testing was performed at one manhole on Lateral 3.

Smoke testing of Manhole 3-A (ARWA MH #26) revealed no main line breaks, but there were multiple service line breaks west of Snow Ski Loop. In addition, an apparent stubout approximately twenty feet east of the manhole provides an opportunity for inflow and should be capped or removed and the connection to the main line sealed shut.

Lateral 4: Lateral 4, with a length of 4,879 feet, is the longest lateral in the collection system. There are 32 manholes on Lateral 4, which terminates at the Lift Station 2 wetwell. This lateral collects sewage from the Family Recreation Center and two residential buildings. Lateral 5, which collects sewage from one residential structure, connects to Lateral 4 at Manhole 4-L. Lateral 6, which collects sewage from a hotel, the skating rink, the former ski lodge, a restaurant, and one residential structure, connects to Lateral 4 at Manhole 4-EE.. The majority of the structures connected either directly or indirectly to Lateral 4 are at the northeast end of the line, and could conceivably be served from the other existing mains in the area.

Smoke testing of Manhole 4-EE (ARWA MH #4) indicated that the segment of Lateral 6 between MH 4-EE and MH 6-A (ARWA MH #5) was blocked. Smoke was observed upstream of MH 4-DD (ARWA MH #6), indicating a likely main line break in this area. Manhole 4-CC is broken/cracked and needs to be rehabilitated.

Smoke testing of Manhole 4-AA (ARWA MH #7) revealed a broken PVC cleanout below a residential structure.

Smoke testing of Manhole 4-W (ARWA MH #8) revealed a main line break between MH 4-W and MH 4-X. The leak is at the edge of Manhole 4-W, which likely also needs to be replaced.

Smoke testing of Manhole 4-U (ARWA MH #9) indicated MH 4-U is broken and there is a main line break between MH 4-U and MH 4-V.

Manhole 4-Q (ARWA MH #11) has a broken lid and there was evidence of a large sewer overflow from this manhole, as shown in Figures 3.12 and 3.13. The overflow residue was very long and extended toward a ditch between the sewer main and the access road. Also, Manhole 4-Q was full to within a few inches of the rim with sewage. The likely cause of the overflow is a blockage in the line between MH 4-Q and MH 4-P, because MH 4-P was dry with no evidence of overflow. The blockage was cleared after the overflow was observed. However, the multiple problems with this section of line are concerning and it is recommended that the sewer mains and manholes in this section be rehabilitated.

Figure 3.12 Manhole 4-Q (ARWA MH #11)

Figure 3.13 Overflow Debris Below Manhole 4-Q (ARWA MH #11)

Manhole 4-O is situated at the south edge of a power company right-of-way, which had recently been cleared during smoke testing. The top of the manhole was completely broken, possibly during the clearing process. The manhole is heavily damaged and in need of replacement. In addition, there was evidence the manhole had overflowed and there was a large volume of sewage still in the manhole. The sewage in the manhole likely indicates the section of sewer main downstream of MH 4-O is blocked. The blockage was cleared following the observations. Manhole 4-O is shown in Figures 3.14 and 3.15.

Figure 3.14 Manhole 4-O (ARWA MH #13)

Figure 3.15 Manhole 4-O (ARWA MH #13)

Smoke testing of Manhole 4-N (ARWA MH #14) indicated that MH 4-M (ARWA MH # 15) is damaged and leaking. There was some evidence of a previous overflow, indicating a possible blockage downstream of the manhole. Roots could be seen entering Manhole 4-N from the upstream sewer main, a likely cause of the blockage in that segment, resulting in the overflow observed at MH 4-O. The roots intruding into the manhole are shown in Figure 3.16.

Figure 3.16 Root Intrusion in Manhole 4-N (ARWA MH #14)

Smoke testing at Manhole 4-K (ARWA MH # 17) indicated several areas of leakage around the manhole. Manhole 4-K is located near a stream and smoke was observed leaking through the exposed creek bank, as well as in a broad area around the manhole, especially on the south side of the manhole near a large tree. There was a large amount of gravel in the bottom of this manhole. Smoke testing at MH 4-K also showed that MH 4-L (ARWA MH #16) leaks. From MH 4-K, the sewer main turns and crosses under the stream to MH 4-J, which does not have a lid. No leakage was observed in the sewer main crossing under the stream, but if this line was compromised, it is likely that an extraordinarily large amount of flow would be observed in the manholes downstream of that section of sewer main from infiltration by the stream. No such flows were observed. Smoke near Manhole 4-K is illustrated in Figure 3.17.

Figure 3.17 Smoke Escaping Near Manhole 4-K (ARWA MH #17)

Manhole 4-H (ARWA MH #19) had a blockage of the downstream line, but ARWA personnel were able to clear the blockage prior to smoke testing the manhole. This manhole has a broken collar and the lid is loose. Smoke testing of MH 4-H (ARWA MH #19) showed that MH 4-G (ARWA MH #20) leaks. Multiple service line leaks near the Dogpatch USA structures in the area were noted, which should be corrected by the property owner.

Smoke testing of Manhole 4-G (ARWA MH #20) confirmed the leakage between the manhole and the edge of the pond it is adjacent to. From this manhole, Lateral 4 flows south across a large pond. The pipe through the pond is visible from the pond bank.

The next manhole downstream of MH 4-G is MH 4-F, which was located but could not be opened despite efforts from multiple parties. The suspected locations of MH's 4-D, 4-C, and 4-B were determined utilizing the original plans for the collection system as well as magnetic locators. However, these manholes are covered by asphalt and could not be opened or smoke tested.

When Manhole 4-A (ARWA MH #36) was initially located, it was full of sewage and could not be smoke tested. However, once the lift station pumped the wet well down, the manhole was dry and smoke testing was performed. Smoke testing at this manhole revealed a sewer lateral not included on the original plans, which runs south from Manhole 4-A to a manhole adjacent to a bridge across the stream. This manhole is severely damaged. From this manhole, a series of mechanical joints directs the lateral line to the edge of the bridge, to which it is attached. There are two additional manholes on the opposite side of the stream. The purpose of these manholes is apparently to serve a portion of the amusement park, which no longer operates. Therefore, detailed analysis of these lines, designated as Lateral 7, was not conducted. It is recommended that Lateral 7 be sealed off from the rest of the system to avoid any possible inflow and infiltration it may contribute.

Lateral 5: Lateral 5 is 3,003 linear feet in length, with eighteen manholes. The northern portion of Lateral 5 runs roughly parallel and nearly adjacent to Highway 7. The southern portion is slightly further away from Highway 7 and runs along a service road for the amusement park and along the eastern edge of a stream. Lateral 5 terminates at a connection to Lateral 4 at Manhole 4-L. Lateral 5 collects sewage from one residential structure. This structure, along with the northern portion of Lateral 5, is within the future right-of-way of Highway 7, which is being widened by the Arkansas Highway and Transportation Department. Because that portion of Lateral 5 will therefore be abandoned or relocated, determination of its condition is not vital and smoke testing of that portion was not performed.

Manhole 5-A (ARWA MH #21) was mostly full of sewage and unable to be smoke tested. The sewage within the manhole indicates a likely blockage of the line between MH 5-A and MH 4-L.

Manhole 5-B (ARWA MH #22) is located partially beneath the edge of the service road between the road and the stream. This manhole also had sewage standing in it. This could indicate a blockage between MH 5-A and 5-B or could have resulted from sewage backing up due to the blockage downstream of MH 5-A.

Smoke testing of Manhole 5-C (ARWA MH #23) indicated a number of deficiencies. There is a major line break upstream of MH 5-E (ARWA MH #24). There is also a main line break between MH 5-F (ARWA MH #25) and MH 5-G. This break is located within a power company right-of-way, on a steep slope, and the sewer main is exposed to the surface and the break in the line is visible.

The portion of Lateral 5 upstream of Manhole 5-G is within the future Highway 7 right-of-way and smoke testing was not conducted on this portion of the sewer main.

Lateral 6: Lateral 6 connects to Lateral 4 at Manhole 4-EE (ARWA MH #4). This lateral collects sewage from a former ski lodge, a skating rink, a restaurant, and a hotel. Lateral 6 is 1,074 linear feet and has four manholes. In addition, Lateral 4 passes through Manhole 1-V (ARWA MH #1) but is closed as it passes through the manhole, preventing comingling of sewage from Lateral 6 with that of Lateral 1.

Smoke testing of Manhole 6-C (ARWA MH # 27) indicated the sewer main was clear from Manhole 6-B (ARWA MH #28) through MH 6-D (ARWA MH #2). A large leak was noted between MH 6-C and MH 6-B, near the northwest corner of the family recreation center. It is unclear if this is a manhole (use of magnetic locators tends to discount this theory) or a service line break (the presence of a service line here is puzzling, as the family recreation center is connected directly to Lateral 4). It is unlikely that the leak is a main line break, as the main line runs approximately thirty-five feet north of this point. It is recommended that the leak area be excavated to determine the exact nature of the source.

Smoke testing of Manhole 6-B revealed several service line leaks, including a large leak under the stone wall at the south end of the hotel and a service line leak southwest of MH 6-B where no structure is currently located. Smoke testing revealed leakage around MH 6-A, indicating a main line break and leakage at the manhole. An apparent service line break between the northwest corner of the hotel and Lateral 6 was observed, which is most likely a break in the service line from the hotel to Lateral 6.

Smoke testing performed at Manhole 4-EE (ARWA MH #4) during testing of Lateral 4 indicated the presence of a blockage between MH 4-EE and MH 6-A.

Lateral 7: As discussed in the section regarding Lateral 4, Lateral 7 was discovered during smoke testing of Manhole 4-A. Lateral 7 is not included in the original plan of the collection system, and it is recommended that the lateral be sealed off from the rest of the system to eliminate potential inflow and infiltration. Smoke testing of this lateral was not conducted.

Lift Stations

The Marble Falls sewer system includes two lift stations. Lift Station 1 (also known as the Big Lift Station) is located on the west side of Arkansas Highway 7, near the intersection of Highway 7 and Highway 7 Spur, at the north end of the sewer system. Lift Station 2 is located within the Dogpatch U.S.A. amusement park, near the south end of the sewer system.

Lift Station 1: Lift Station 1 handles sewage collected by Lateral 2 and Lateral 3, which the majority of the residential structures are connected to. Lift Station 1 was damaged during the ice storm of 2009 and was rendered inoperable. The resulting sewage discharge ultimately led to the ADEQ lawsuit which concluded with the preliminary injunction the District is now working to comply with.

Sewage from Lift Station 1 is pumped through Force Main 1 along Highway 7 Spur parallel to Lateral 2 to Manhole 1-V, from where it flows by gravity to the treatment facility. Lift Station 1 was designed for much higher average flows than what the system currently generates, with pumps several times larger than what are required to meet the District's needs.

Lift Station 1 has a wetwell/drywell configuration, with the pumps located below ground in a separate chamber from the raw sewage. When the pumps were disabled by the ice storm, the drywell filled with sewage, damaging the pumps beyond repair. Since that time, a temporary pump has been installed by the Arkansas Rural Water Association at the lift station, which pumps sewage out of the wetwell and through the force main.

Vern Nelson, P.E., with Nelson Engineering in Harrison, Arkansas has designed a lift station which will be constructed on the east side of Highway 7 on Lateral 2. This project is currently undergoing the approval process. Once the construction of the new lift station is completed, Lift Station 1 will be removed and the sections of Lateral 2 and Force Main 1 between the new lift station and Lift Station 1 will be abandoned.

Lift Station 1 and the temporary pump installed by ARWA are shown in Figure 3.18.

Figure 3.18 Lift Station 1 and ARWA-Installed Temporary Pump

Lift Station 2: Lift Station 2 is located at the end of Lateral 4, within the Dogpatch U.S.A. amusement park. Lift Station 2 pumps sewage collected by Laterals 4, 5, and 6.

Lift Station 2 is a Smith & Loveless lift station, Serial No. 07-5431, built in March of 1969. Like Lift Station 1, Lift Station 2 is designed with a wetwell/drywell configuration. The control system is designed to operate the pumps on timers or through a float system. The float system, however, only has one float, which leads to the pumps turning on and off frequently if operated off the floats rather than by the timer.

The lift station has ventilation fans in the drywell, which run constantly in order to reduce the buildup of flammable and toxic gases in the drywell, which could ignite when the pumps switch on. Access to the pumps and drywell by unauthorized individuals is prevented through use of a locked access cover to prevent vandalism and theft.

When the pumps run, it takes only two to three minutes for the contents of the wetwell to be emptied, a result of the lift station being designed to handle much larger flows than those currently being produced by the District.

Rehabilitation of the lift station would include new control and electrical systems, preferably with SCADA (telemetry) upgrades to provide an alert in the event the Lift Station components were to malfunction. However, because Lift Station 2 is currently operational, rehabilitation of the rest of the system is considered a higher priority at this time.

Lift Station 2 is shown in Figures 3.19 - 3.21.

Figure 3.19 Lift Station 2

Figure 3.20 Lift Station 2 Wetwell Prior to Pumping

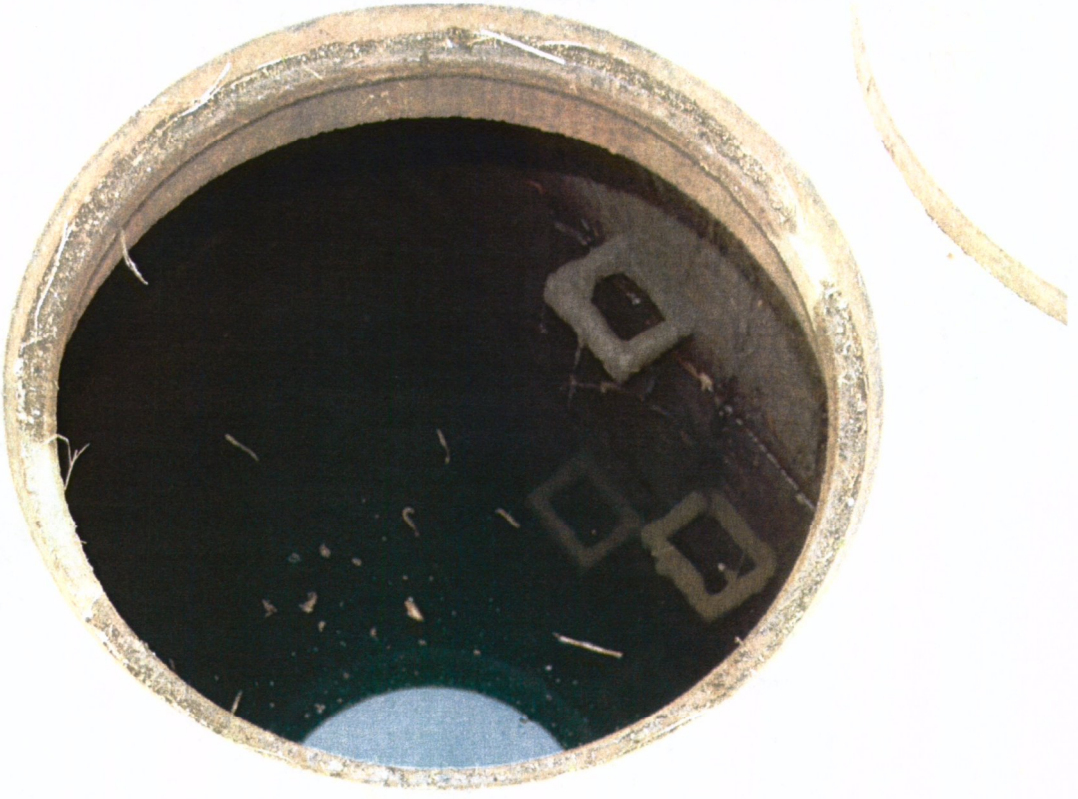
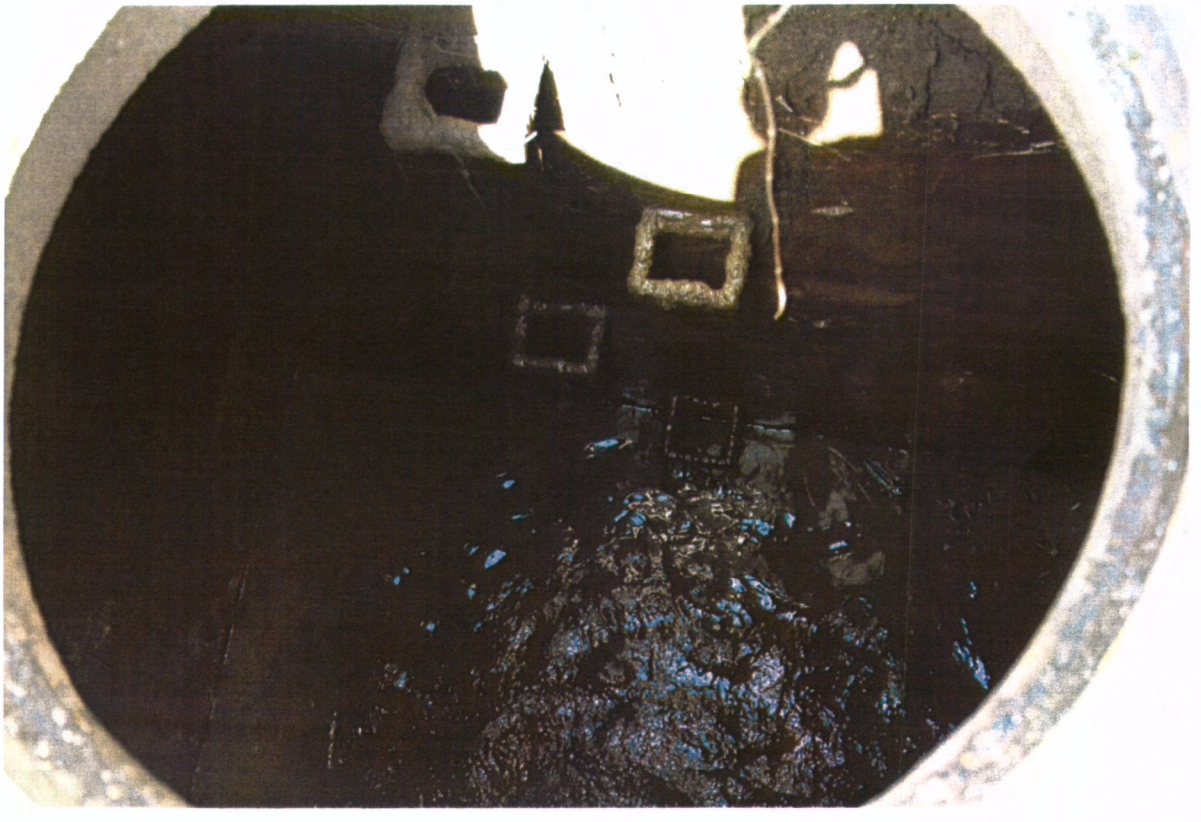


Figure 3.21 Lift Station 2 Wetwell During Pumping



Force Mains

The Marble Falls sewer collection system includes two force mains. Force Main 1 connects Lift Station 1 to the upper end of Lateral 1. Force Main 2 connects Lift Station 2 to the inlet box at the wastewater treatment facility.

Force Main 1: Force main one lies parallel to Lateral 2 and Highway 7 Spur along the west side of Highway 7 Spur and runs from Lift Station 1 to the end of Lateral 1. Currently, a temporary pump has been installed by the Arkansas Rural Water Association at Lift Station 1 to bypass the Lift Station 1 pump system. The temporary pump draws sewage from the Lift Station 1 wetwell and pumps it through Force Main 1 to Manhole 1-V.

Once the new lift station is complete, it will be connected to Force Main 1 and the portion of Force Main 1 between the new lift station and Lift Station 1 will be abandoned. There are no known deficiencies regarding Force Main 1.

Force Main 2: Force Main 2 connects Lift Station 2 to the inlet box at the treatment facility. The force main is not shown in the original collection plans obtained by Engineering Services, Inc., but a probable location for Force Main 2 has been indicated in the drawings in the Appendix based on the topography of the area and the location of Lift Station 2 and the treatment facility.

Because the entirety of the force main is located below ground, no detailed evaluation of the force main or exact location could be determined using the methods available for the preparation of this report. However, by situating an observer at the concrete inlet box west of the treatment unit during operation of pumps at lift station 2, it was determined that none of the effluent being pumped actually reached the treatment site. It is suspected that the effluent is leaking from one or more locations along the length of the force main. The location of the leak(s) was unable to be determined. The release of untreated wastewater through one or more leaks along the length of Force Main 2 is unacceptable, and if Lift Station 2 is to remain in operation, repair or replacement of Force Main 2 will be required. A previous leak in Force Main 2 was previously located and repaired by the District. Due to the age of the force main and the history of previous leakage, it is anticipated that locating and repairing the existing leak(s) will only be a temporary solution, and development of additional leaks in the near future is highly likely. For this reason, if Lift Station 2 is to remain in operation, replacement of the entire force main is recommended.

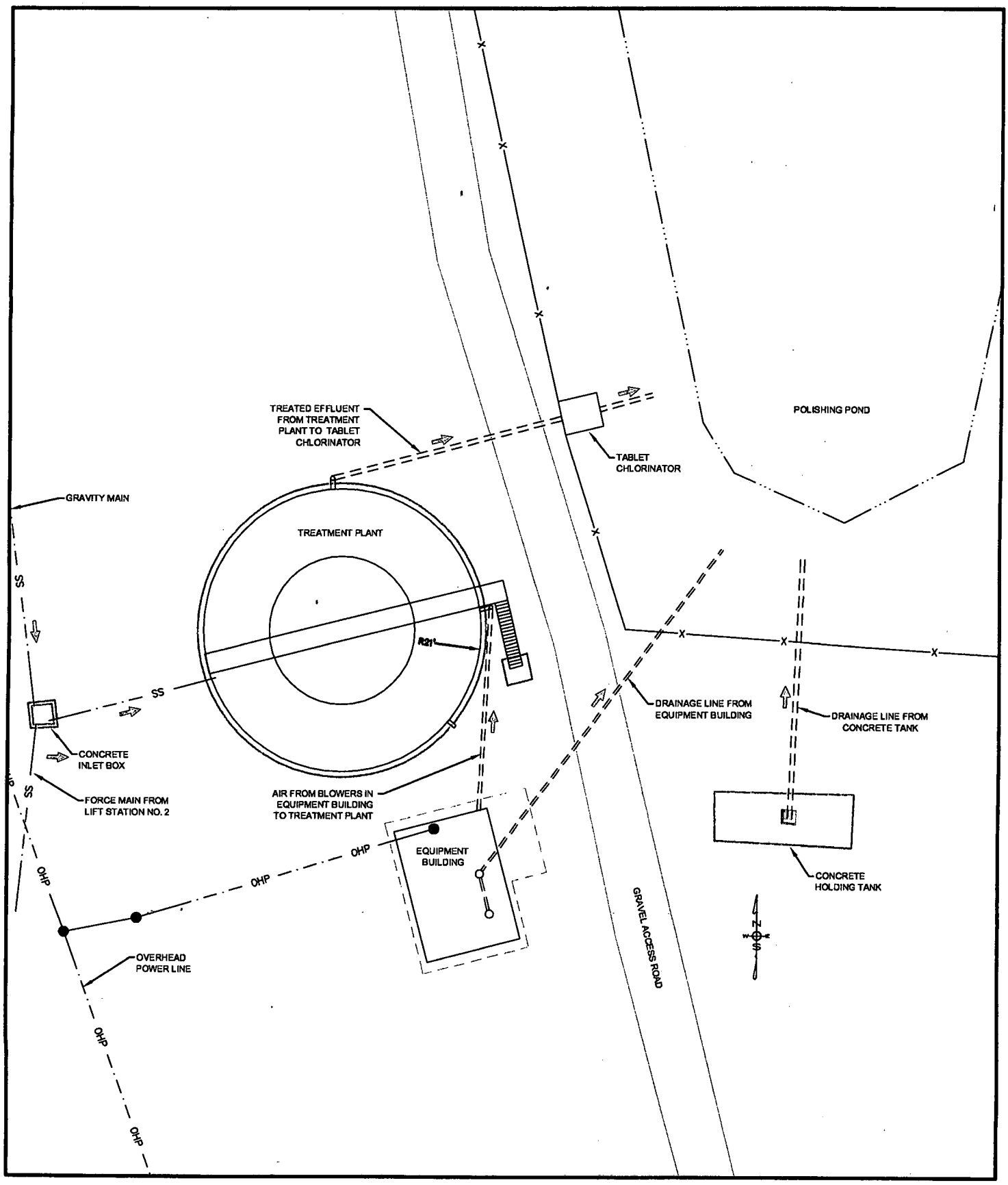
Wastewater Treatment Plant

The existing sewer treatment plant is an Oxygair treatment plant designed by Blaylock, Threet, and Associates of Little Rock, Arkansas, and was manufactured and installed by Smith and Loveless, Inc. of Lenexa, Kansas. A report from June 23, 2003 prepared by Nelson Engineering of Little Rock states that plans and specifications for the treatment plant and stabilization pond were submitted for approval to the Arkansas Department of Pollution Control and Ecology in February of 1969. The treatment plant is located north of County Road 82, approximately 2,500 feet east of Highway 7, and approximately 225 feet west of Ridgeview Road.

During the evaluation of the wastewater system, partial sets of plans for the development of the area have been compiled which provide locations of the wastewater system components. However, efforts to locate detailed plans of the wastewater treatment facility itself have been unsuccessful to date. Figure 3.22 illustrates the general layout of the major treatment facility components, based upon survey data of the site collected by Engineering Services, Inc.

The wastewater treatment facility consists of an above ground aeration chamber along with the clarifier centered in the middle of the tank, an equipment building, tablet chlorinator, a concrete holding tank (sludge), and a polishing pond. Untreated sanitary sewage enters the treatment unit from an inlet box to the west. The wastewater flows by gravity to a comminutor located on top of the aeration chamber then into the aeration chamber. Air is forced into the aeration chamber by blower units located in the equipment building, which also houses the control panels and instruments which operate the facility. The secondary treatment zone includes clarification. After clarification, the partially treated effluent flows from the "Oxygair" treatment unit through a tablet chlorinator station (not a part of the original design) at the southwest edge of the polishing pond, and then into discharges into the pond. An outlet pipe and weir structure at the north end of the polishing pond (not shown in Figure 3.22) were designed to control the rate of flow out of the pond. From the outlet structure, the system was designed to discharge treated effluent flows through a chlorination station (part of original treatment system design) and then discharge into an unnamed creek to the west of the treatment facility. This creek flows into Mill Creek, a tributary of the Buffalo National River.

Figure 3.22 General Layout of Treatment Facility Components



Existing Equipment Building

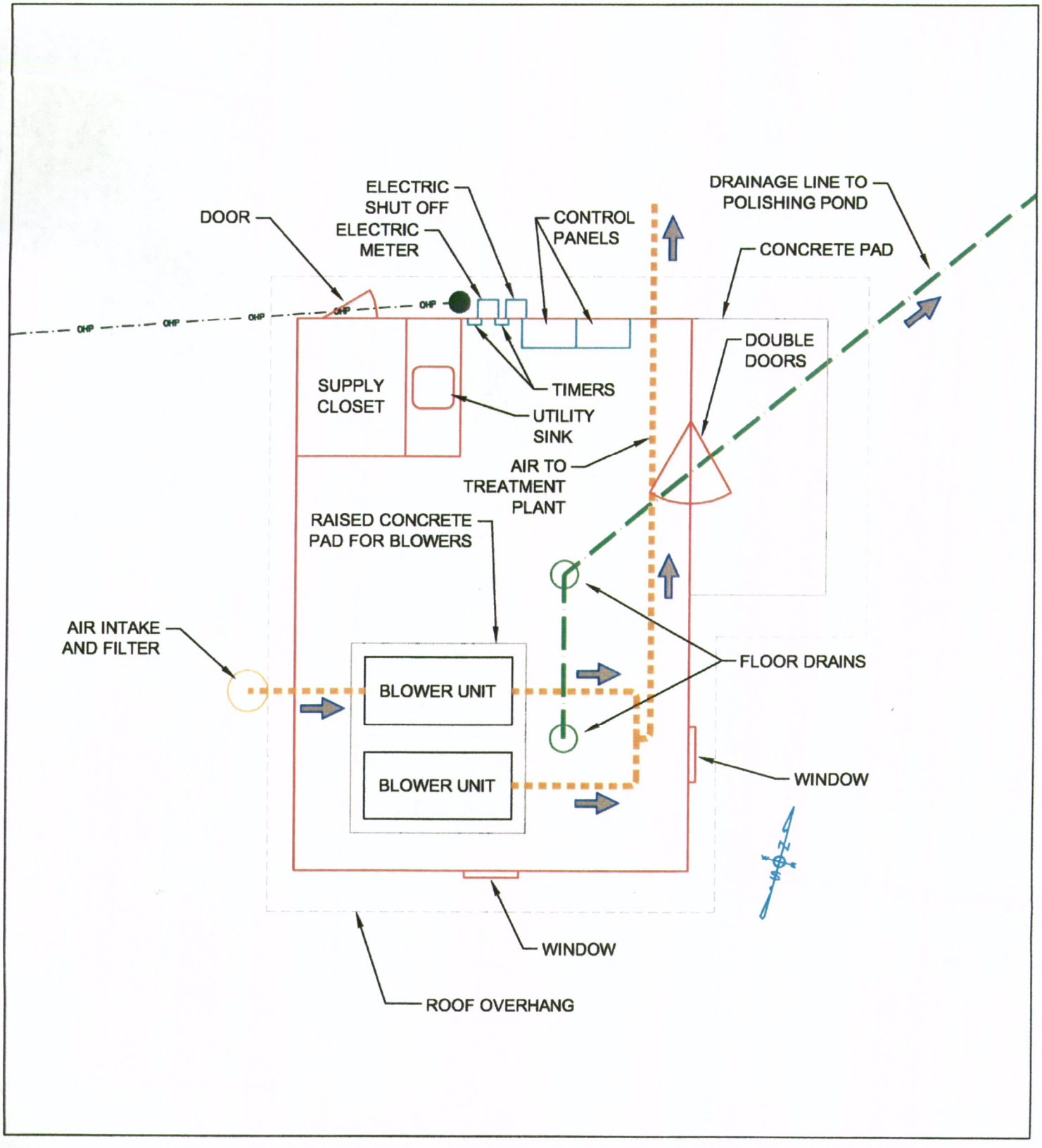
The equipment building is approximately 14' 6" by 20' 0", and houses the blower units and control panels which are used to operate the system. The exterior of the treatment building is shown in Figure 3.23. A diagram of the equipment building is provided as Figure 3.24.

Figure 3.23 Equipment Building Photo

The equipment building is divided into two rooms. The main room, accessed via the main entryway on the east side of the building, houses the equipment and controls which operate the facility. There is also a small supply closet at the northwest corner of the building, which is accessed by a separate exterior door on the north side of the building.

The blower units are situated inside the equipment building, in the southwest corner of the main room. The blowers are located on parallel raised steel shelves which are mounted on top of a raised concrete pad, approximately six inches in height above the rest of the concrete floor. The northern blower unit appears to be the original unit designed for the treatment system. The southern unit is much smaller and appears to be a replacement for the original unit. No representatives of Engineering Services, Inc. witnessed the blowers operate, but Mr. Hefley indicated they were functional.

Figure 3.24 Equipment Building Diagram



Air to the northern blower unit comes from an air filter/intake situated on the exterior of the equipment building's western wall, with an air intake line traveling from the intake/filter through the wall to the blower unit. An information plate on the blower's housing indicates it was manufactured by a company named Roots in Connersville, Indiana. The blower is categorized is a Size 88 RCA-Type blower with Serial No. 31464. The blower is powered by a twenty horsepower electric motor located between the blower and the wall on the steel shelf. The plate on the motor indicates it was manufactured by U.S. Motors, and provides the following specifications: Unimount 125, Model No. A939A, 20 horsepower, 3 phase, 60 hertz, 64.0/32.0 amps, 1,765 revolutions per minute, 256T frame, UT type, TE Enclosure, ID No. Z014313R187F.

The southern unit has no intake line to draw air from outside the building, but instead appears to draw air from inside the main room of the equipment building through a 2 inch diameter PVC pipe. The western equipment building wall has been patched where the air intake line to the original southern unit passed through the wall. The electric motor and blower are combined into a single mechanism on this unit, and piping has been added to connect the new unit to the existing air piping.

Figure 3.25 Northern Blower (Green) / Southern Blower (Blue)

The equipment building also houses the control panels and timers for the treatment system. The control panels are located on the interior of the northern wall. This places them in close proximity to the electric meter and electric shut off valve, which are located on the exterior of the northern wall. Photos of the control panels are included as Figures 3.26-3.32.

Figure 3.26 Control Panel Photo

Figure 3.27 Control Panel Photo

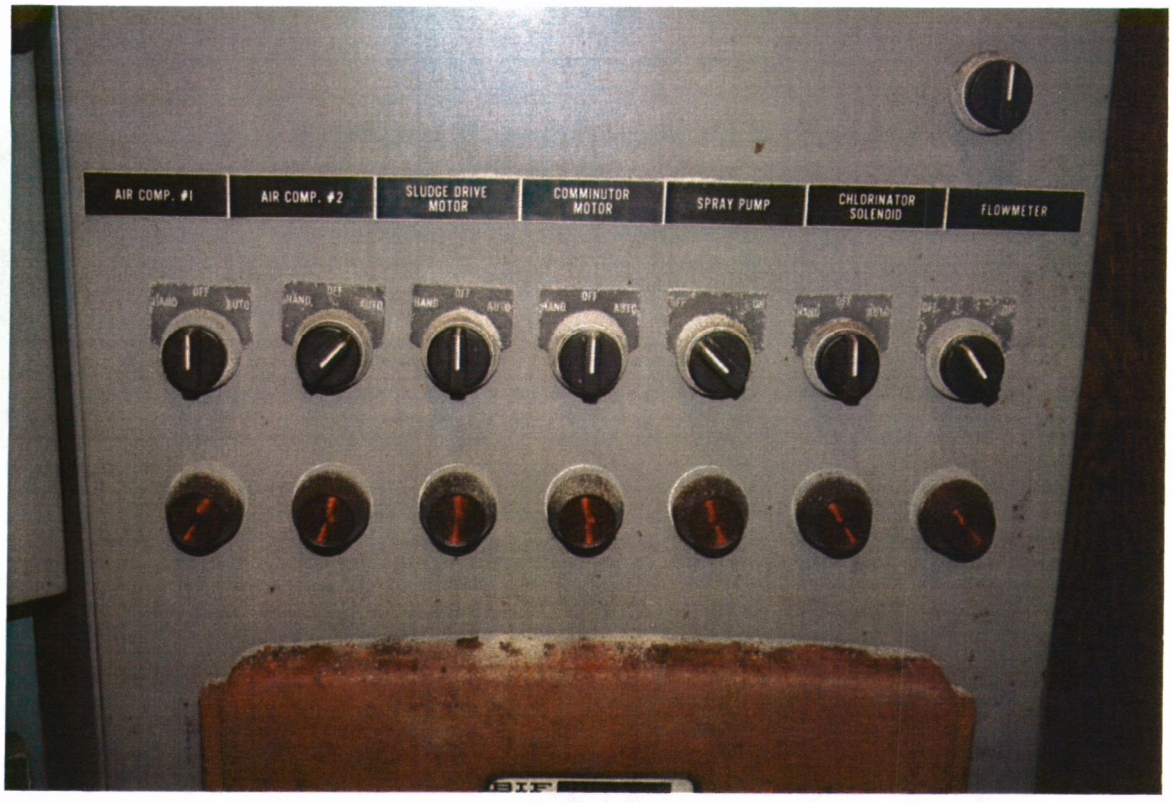


Figure 3.28 Control Panel Photo (Timers)

Figure 3.29 Control Panel Photo

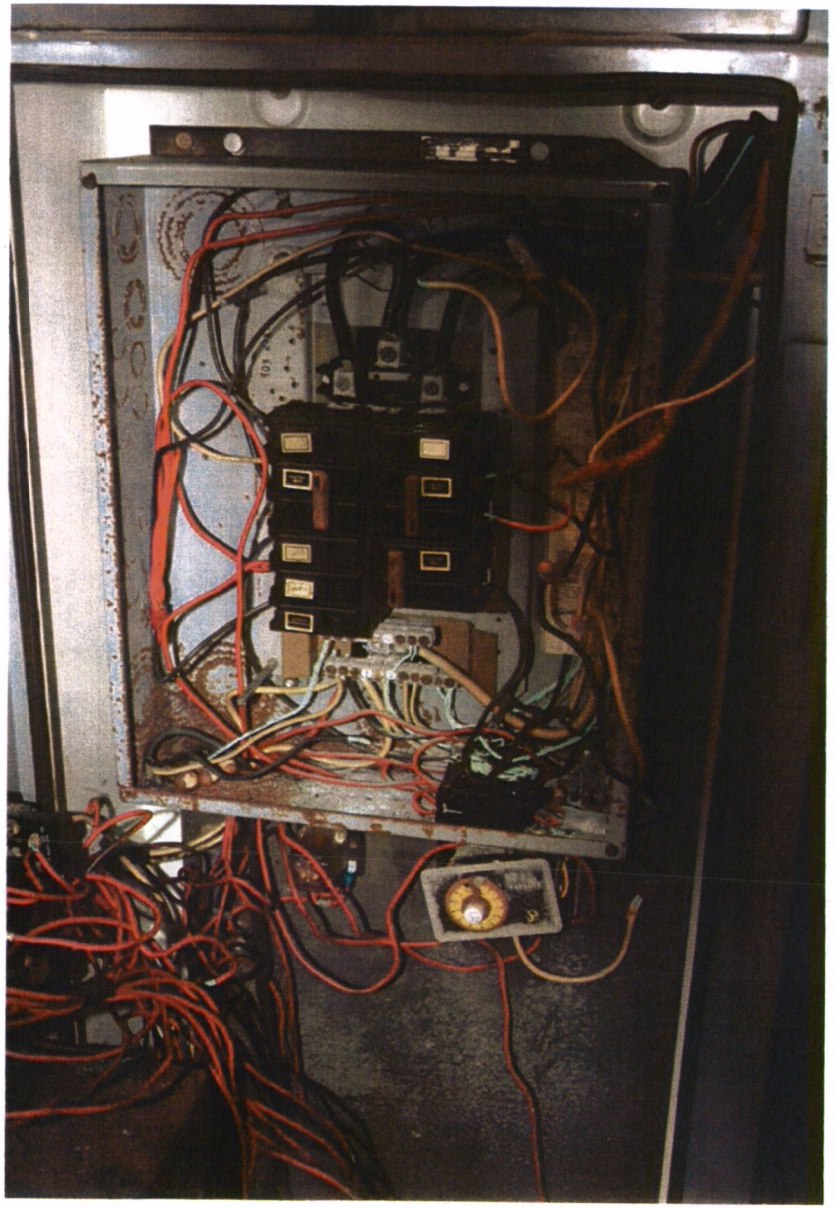


Figure 3.30 Control Panel Photo

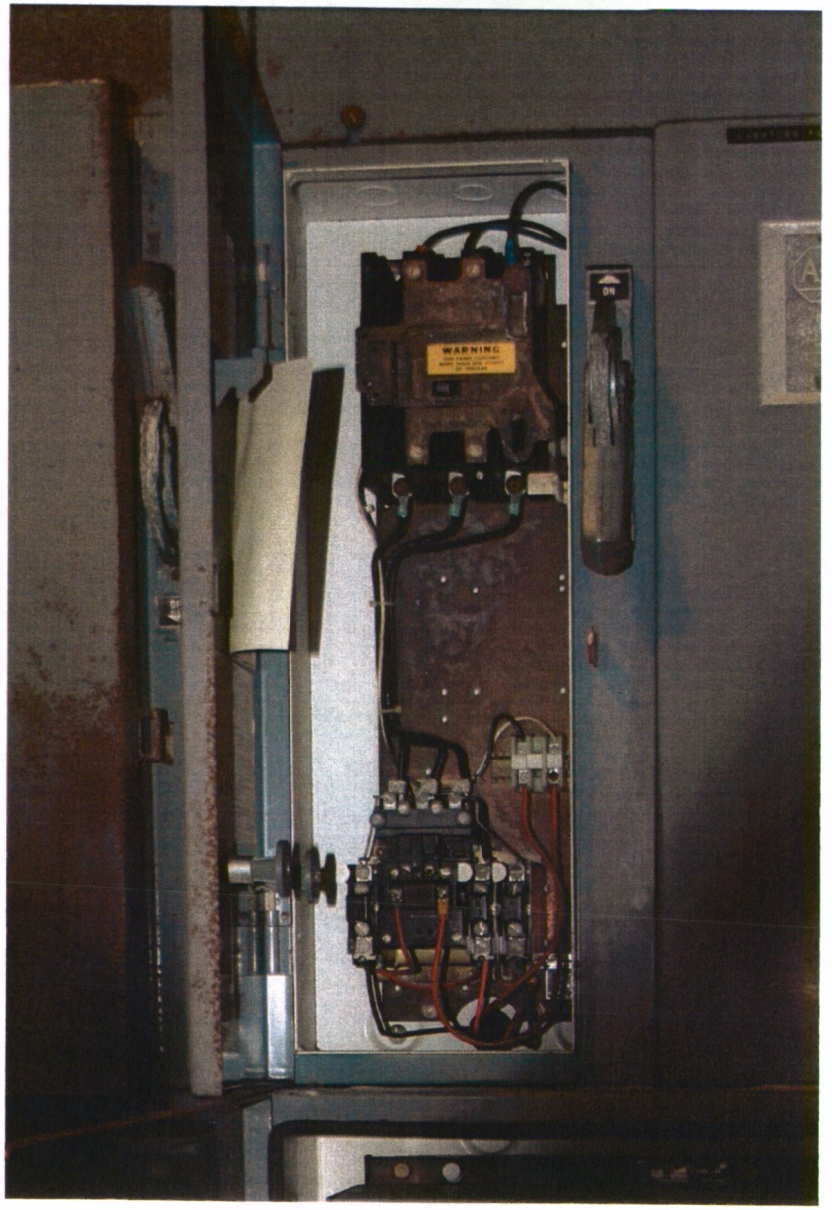


Figure 3.31 Control Panel Photo

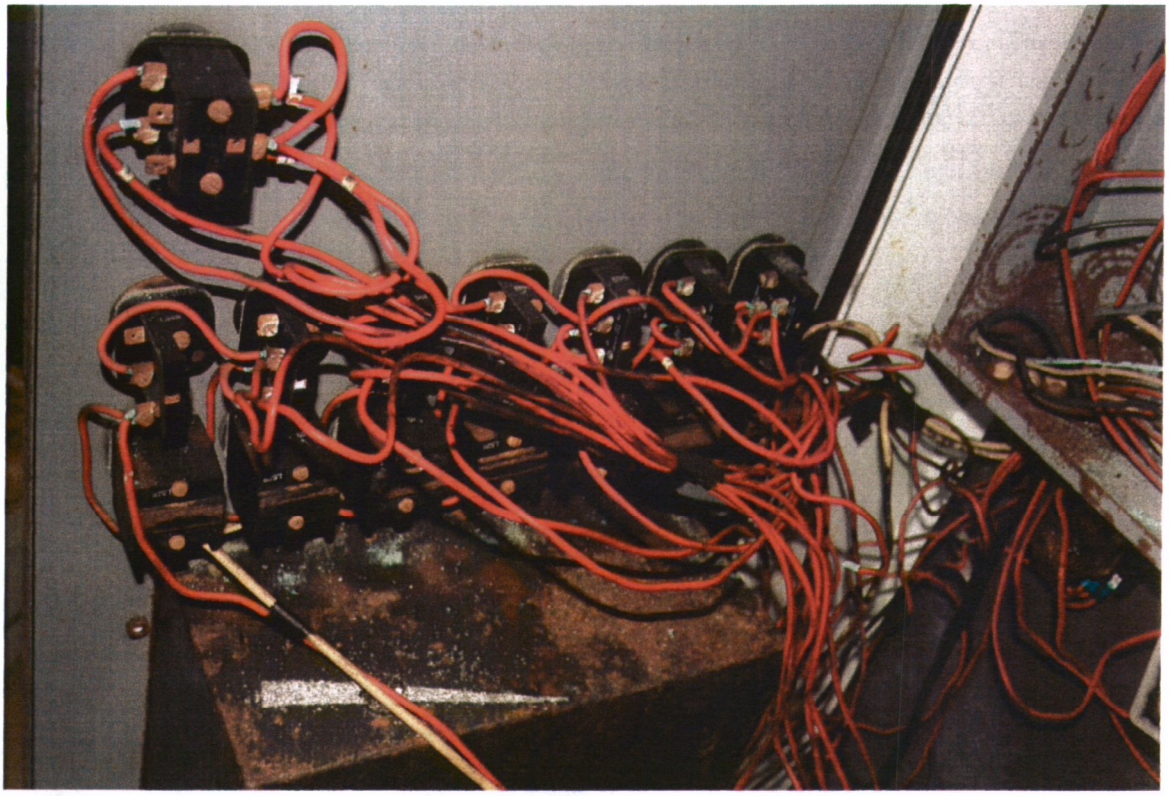
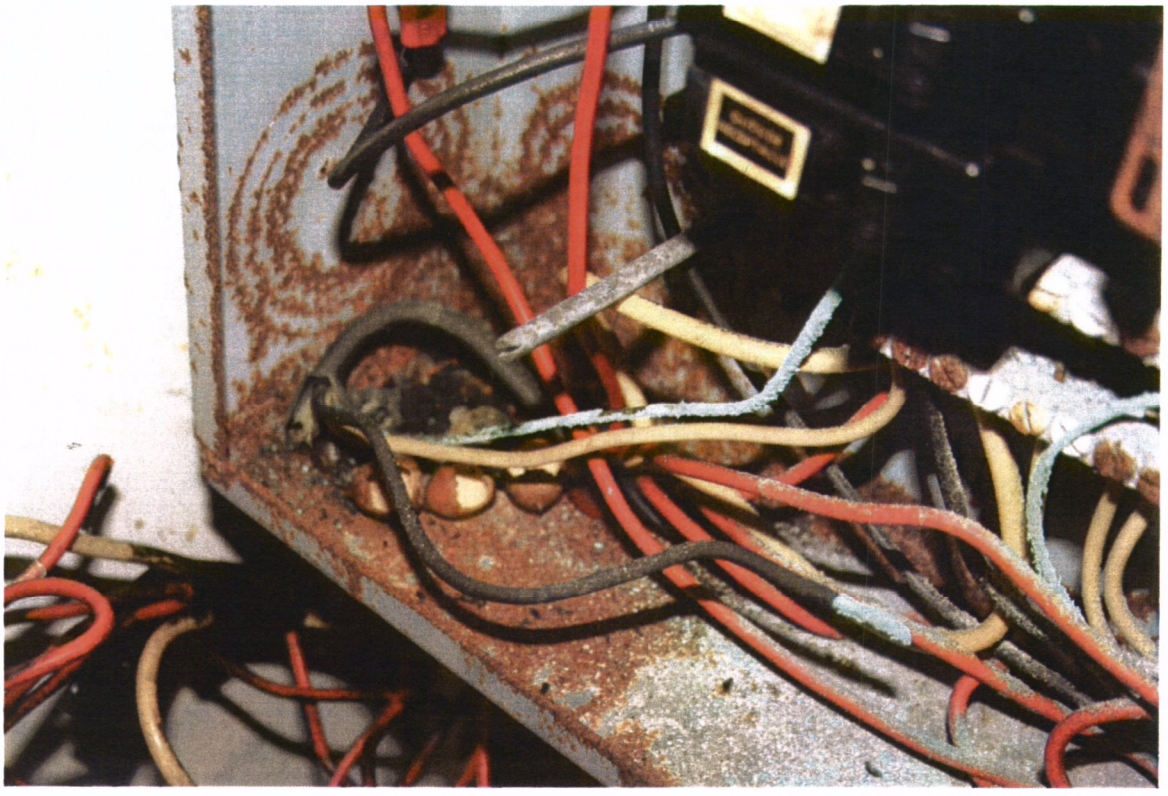


Figure 3.32 Control Panel Photo



In addition to the blower units and electrical / control panels, there are several other items located in the equipment building which should be noted. There is a small heater mounted to the western wall of the building, near the blower units. A small ventilation fan is mounted in the corner of the window in the southern wall of the building. There is a utility sink with cabinets and counterspace mounted to the main room side of the east supply closet wall. There are two drains in the concrete floor located near the blower units which, along with the drainage from the sink, flow directly to the polishing pond.

Figure 3.33 Utility Sink and Cabinet Photo

Deficiencies with Existing Equipment Building

The existing service building is approximately 40 years old and is in poor condition overall. Shown below are items that we considered deficient.

General Building / Laboratory / Access

- The building needs to be cleaned, debris removed from the floor, floor and walls painted, rotten wood replaced along with general repair inside and outside the building. Also, mice and other rodents appear to be damaging supplies on the ground.
- Water was not available for testing at the sink, nor was water available on a faucet in the old chlorine room. It is imperative that water be available for wash down, laboratory testing, and for sanitary purposes.
- There was no laboratory testing equipment visible inside the building. Laboratory testing equipment is required in order to properly operate and maintain a wastewater treatment system.
- Only one blower appeared to be rated for the cfm required. It is important for proper treatment that there be two (2) blowers properly rated for the treatment process.
- Access to the existing building or treatment process was not protected with a security fence and gates. It is critical that security fencing and gates be provided.

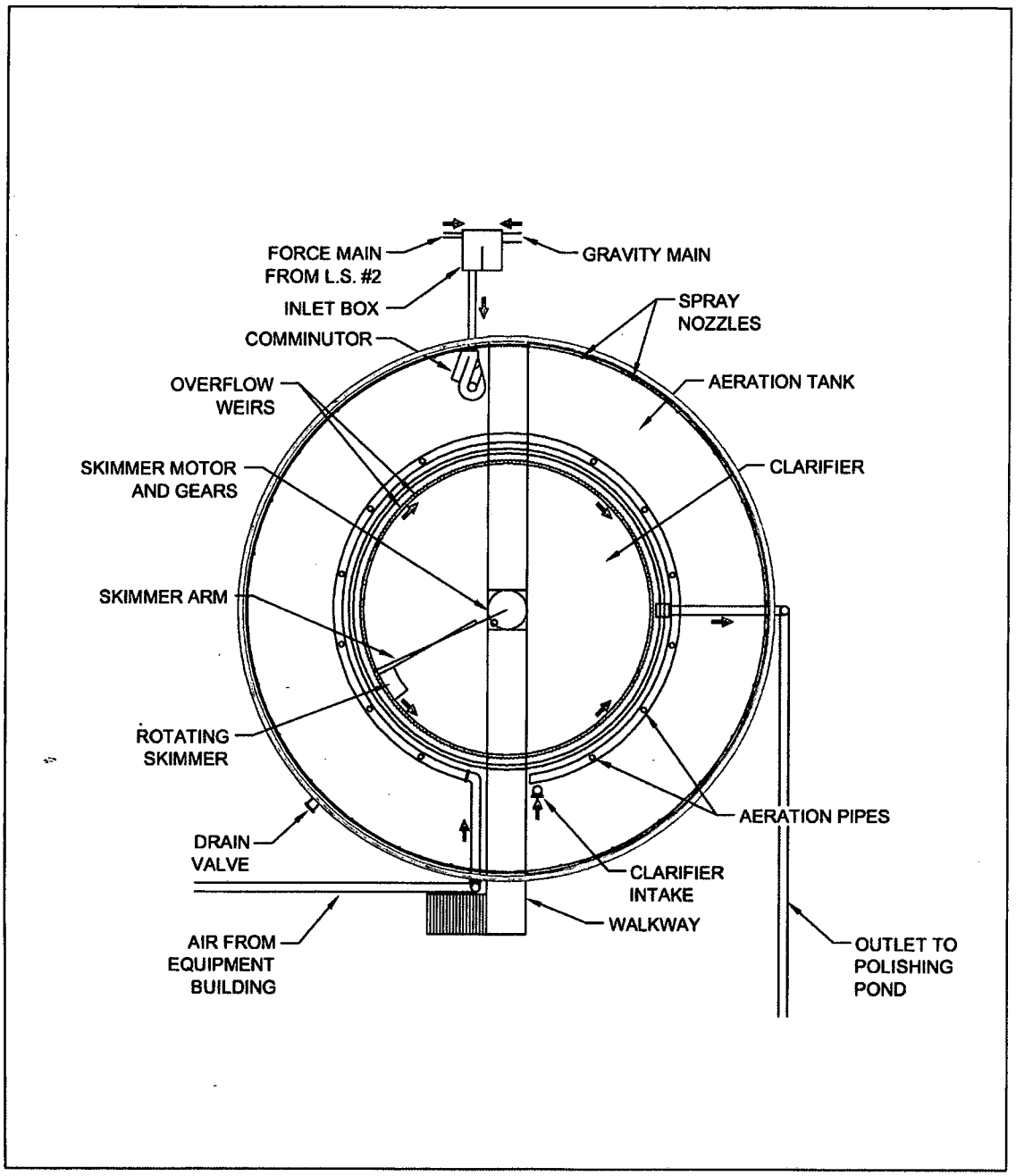
Electrical / Control System

- The electrical and control system appear to be original from 1970. As noted on the photographs there are areas of severe corrosion. The electrical and control system are in serious need of replacement and could pose a problem with failure of equipment or even a fire danger.
- Rodents were storing acorns in the control panel. Before replacement of electrical or controls, it is important to eliminate the intrusion of rodents.
- All controls were not functioning at the time of our site visit. It is important that the controls be functioning properly.

Existing Wastewater Treatment Plant

The Marble Falls treatment plant is an Oxygair treatment plant designed by Smith and Loveless of Lenexa Kansas. The treatment plant is contained within an above ground cylindrical steel tank located just north of the equipment building. The tank is mounted on a concrete pad and is approximately sixteen and one half feet tall, and has a radius of approximately twenty feet. Given these dimensions, the total volume of the tank, if completely full, would be approximately 155,000 gallons. The estimated maximum fluid depth in the tank is fifteen feet, and the volume of the fluid in the tank at this level is approximately 141,000 gallons. A diagram of the treatment plant is included as Figure 3.34.

Figure 3.34 Treatment Plant Diagram



Two separate sewage mains from the collection system merge at the concrete inlet box, located on a shelf at approximately the same height as the top of the treatment plant. One line is the force main from Lift Station Number Two, which is located within the old "Dogpatch" amusement park. The other line is a gravity main which enters the inlet box from the north. From the inlet box, the raw sewage travels through an aerial gravity line to a comminutor mounted at the top edge of the tank wall near the end of the catwalk. The comminutor is designed to reduce the size of any solids, using a screen and a grinding unit. The comminutor was manufactured in England by James & Attwood, Ltd. for Smith and Loveless, and is Model No. 10RCC3687, Serial No. 41-0229 02-0477. The comminutor is powered by a 3 phase, 60 Hertz, 230/460 volt, 2.0/1.0 amp, 1800/45 revolutions per minute, 0.5 horsepower electric motor mounted to the top of the comminutor. The motor was manufactured by Smith and Loveless, type SOPD-38, Product No. 0005C-1BAC-0010, Serial No. 224857A-1. The screen for the comminutor is ripped, and most of it is missing. Debris visible in the comminutor channel leading to the grinder unit indicated that no significant flow had entered the grinder unit in some time. The electrical box for the comminutor is mounted to the catwalk railing. Photos of the comminutor are included as Figures 3.35 and 3.36, and a photo of the comminutor electrical box is included as Figure 3.37.

Figure 3.35 Comminutor

Figure 3.36 Comminutor

Figure 3.37 Comminutor Electrical Box

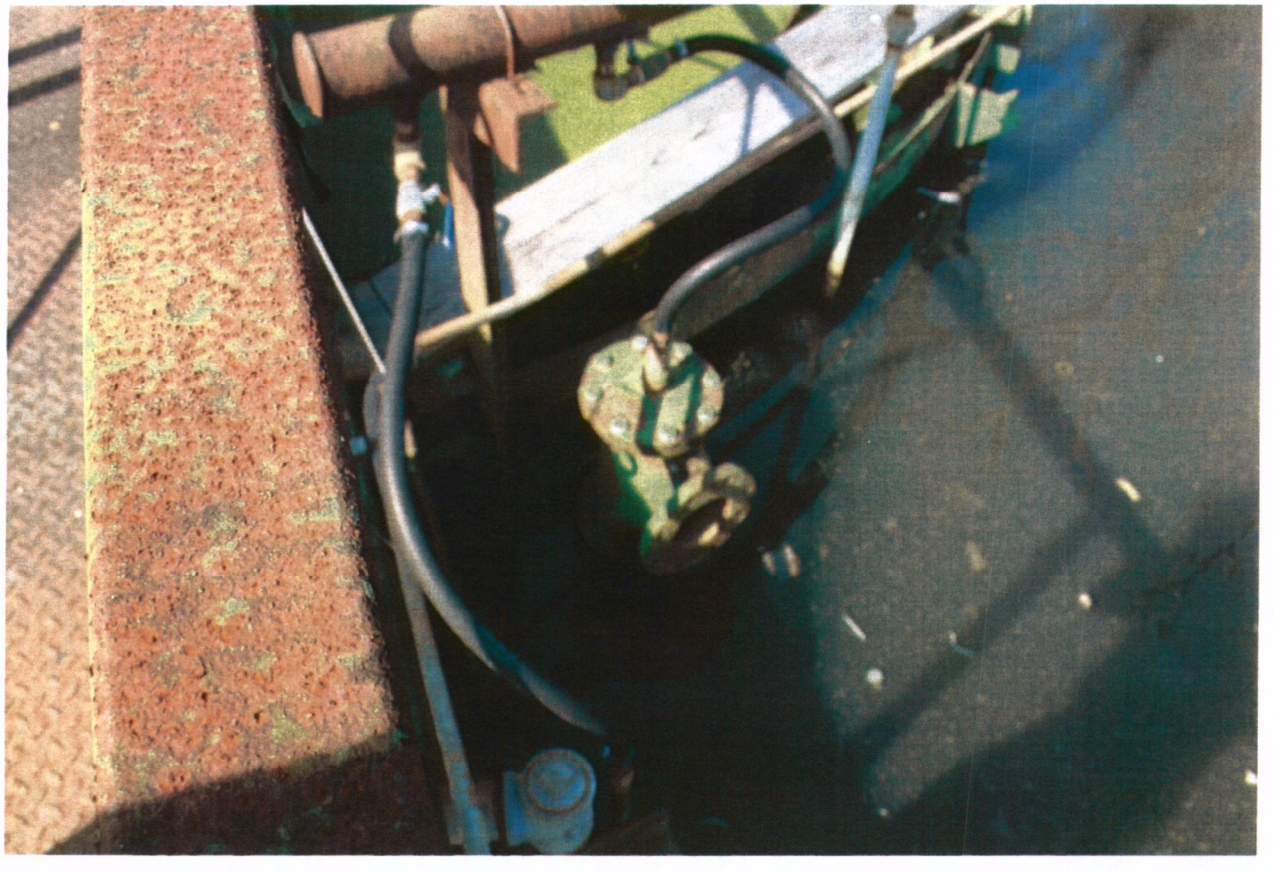
From the Comminutor, the sewage flows into the outer chamber of the treatment unit, the aeration chamber. As shown in Figure 3.38, the aeration chamber is supplied air via steel tubing around its inner edge, which and carries the air from the blowers in the equipment shed. Smaller aeration piping extends vertically down into the tank at regular intervals from the main air line, providing a method of diffused aeration from the bottom of the chamber. The Nelson Engineering report indicates that, at the time the report was prepared, the aeration system was operated by timer, and ran five times per day. A water pipe mounted around the outer rim of the aeration chamber has spray nozzles at regular intervals used for spraying the surface of the fluid within in order to reduce foaming. The photo included as Figure 3.38 shows the spray nozzles, the piping supplying effluent to the spray nozzles, the main aeration line, as well as the vertical air lines extending below the surface of the wastewater. The electrical box for the spray pump is also visible near the main aeration line in this photo.

Figure 3.38 Aeration Piping and Spray Nozzles

There was a large volume of wastewater in both the aeration chamber and the clarifier chamber during the evaluation of the plant. The presence of wastewater in the tank prevented direct observation of components below the surface. In addition, a thick layer of bright green algae is present at the surface of the clarifier chamber. All exposed metal surfaces exhibited evidence of extreme corrosion. The existing paint is chipped, cracked, and peeling, and there are large areas where no paint remains at all.

The sludge airlift is located near the inner wall of the aeration chamber near the catwalk, and allows sludge to be recirculated from the bottom of the clarifier to the aeration chamber. A photo of the sludge airlift is included as Figure 3.39.

Figure 3.39 Sludge Airlift



A skimmer arm is present at the surface of the clarifier chamber. The arm runs from a chain-driven gear at the center of the clarifier chamber under the middle of the catwalk to a steel rim near the exterior of the chamber. A wheel at the end of the arm rolls along the steel rim, allowing the skimmer arm to rotate smoothly around the chamber. An electric motor which protrudes from an access lid at the center of the catwalk provides the power to move the skimmer arm. A photo of the skimmer arm is included as Figure 3.40, in which the electric motor can also be seen.

Figure 3.40 Skimmer Arm

The electric motor turns a chain and gear which are located below the raised area visible at the middle of the catwalk. During the observations of the treatment unit, the chain was broken, making the skimmer arm inoperable. The chain has since been fixed and the skimmer arm is now functional.

Figure 3.41 Skimmer Arm Motor, Chain, and Gear

In addition to driving the skimmer arm, the motor, gear, and chain in Figure 3.41 also drive a scraper at the bottom of the clarifier which are designed to push the sludge at the bottom of the tank to a hopper at the base of the tank. The condition of the scraper mechanism is unknown due to the presence of effluent in the clarifier chamber during the evaluation.

Effluent exits the clarifier chamber through a circular overflow weir structure which is located near the outer wall of the clarifier chamber. The effluent, when the fluid level is high enough, flows through the overflow weir structures into a channel behind the weirs, and into an effluent pipe located on the north side of the tank. From there, the outlet pipe leads to a chlorination station at the western edge of the polishing pond.

From the "Oxygair" treatment unit, the effluent travels through an outlet pipe to a chlorine contact chamber at the western edge of the polishing pond. A tablet chlorinator is located at the contact chamber, which is located inside an expanded metal enclosure. This component was not a part of the original treatment plant design, but was added in order to comply with Consent Administrative Order LIS No. 03-AFIN 51-0011. A letter received on July 2, 2003 indicates that the chlorine contact chamber had already been constructed as of that date. The chlorinator does

not appear to be functional in its current state.

Figure 3.42 Tablet Chlorinator and Chlorine Contact Chamber

From the tablet chlorine contact tank, the treated effluent flows into the polishing pond. The polishing pond is located to the east of the treatment plant, and has an area of approximately 1.40 acres. Effluent enters the pond from the chlorine contact tank near the pond's southwest corner, and the pond was designed to allow the effluent to leave the pond through an outflow structure at the north end of the pond. The polishing pond was evaluated for leaks and compliance with Ten States Standards by Laverne M. Nelson, P.E., of Nelson Engineering in Little Rock in 2001 in response to concerns that it could be leaking. At that time, Mr. Nelson concluded that the pond was constructed with and lined with clay, and allowed little, if any, leakage. Mr. Nelson concluded that any loss of water from the pond could be attributed to evaporation and transpiration due to a large amount of vegetation present along the banks of the pond. Mr. Nelson's report also determined that the only actions needed to bring the pond into compliance with Ten States Standards included installation of a pond level gauge, fencing around the pond, and signs along the fencing. Mr. Nelson noted that, due to the amount of flow the system experienced, it was not likely the treated effluent level would reach an elevation high enough to lead to discharge through the pond's outflow structure. It is noted in Consent Administrative Order LIS No. 03-AFIN 51-0011 that, at that time, there had been no reported discharge since

May 31, 1994, and instructed the District to begin providing water samples at the "Plant effluent discharge point prior to entering the pond" until the pond level was high enough to once again allow for obtaining samples at the pond outflow.

Currently, there is some water present in the bottom of the pond, but the water level is well below what would be required for it to flow through the outflow structure. The polishing pond is shown in Figures 3.43 and 3.44.

Figure 3.43 Polishing Pond

Figure 3.44 Polishing Pond

The design of the plant intended for water to leave the pond from an outflow structure at the north end of the pond. The outflow structure includes a weir structure to regulate the flow of water out of the pond.

Once the water exits the pond through the outflow structure, a pipe carries it to a chlorine contact chamber (the system's original chlorine contact chamber). From the chlorine contact chamber, the water flows by gravity into the receiving stream.

It is also important to note that a concrete sludge holding tank is located east of the equipment building and south of the polishing pond. The tank is approximately 8' by 20', with a steel access grate in the middle. The depth of the tank could not be determined, as it is full to within approximately 12" of the top of the tank with what appears to be dried sludge. An outlet pipe from the holding tank, the end of which is visible above the top of the dried sludge, leads to the south edge of the polishing pond.

Deficiencies with Existing Wastewater Treatment Plant

The existing "Oxygair" wastewater treatment plant is approximately 40 years old and is in poor condition overall and in dire need of replacement and/or rehabilitation. Shown below are items that we considered deficient.

Concrete Inlet Box / Comminutor

- The inlet box was not equipped with any bar screening. It is recommended that bar screening be provided to eliminate large objects from entering new or old facilities.
- The comminutor was not operational and appears that it has not operated in some time. The screen to the comminutor was also ripped and most of the screen was missing.
- Electrical equipment associated with the comminutor is inoperable.

Aeration Chamber / Clarifier Unit

- Only one blower appeared to be sized appropriately for the aeration unit. A minimum of two (2) blowers are required.
- Electrical equipment and controls for aeration and clarification will require replacement or significant rehabilitation. There was not a method of "Alarming" the operator in the event of an electrical failure.
- The exterior of the tank and interior of the tank along with air piping and water piping has severe corrosion and is in need of cleaning, sandblasting and painting.
- It is likely that the diffusers will need to be replaced to allow for equal distribution of air into the aeration chamber. All exposed air piping should also be sandblasted and repainted.
- The solids within the existing treatment unit were old with little to no activity of biomass
- We were unable to witness the spray nozzles operate. They did not appear to be operable. All exposed water piping should also be sandblasted and repainted.
- The clarifier skimmer arm was unable to operate since the chain was broken. It is our opinion that the entire clarifier unit would need to be re-constructed from new materials. Rehabilitation of the existing clarifier equipment would be expensive, labor intensive, and create lengthy delays in the operation of the treatment unit.
- The presence of algae and duckweed in the clarifier is evidence that the system has not been operating and/or operating effectively for some time.
- The outlet weirs of the clarifier need to be cleaned free from algae and leveled to provide for even distribution of effluent over the weirs. There was also a hole in the scum trough.
- Overall, the "Oxygair" treatment system is old, some items inoperable, and all items in need of intensive rehabilitation that would be very costly. It should also be noted that the existing "Oxygair" system may not be designed to treat wastewater to today's standards.

Chlorinator / Polishing Pond / Flow Measurement

- The chlorinator did not appear to be operational, as mud was smashed on top of the motor. Since flow was not occurring, we were unable to determine the operation of the tablet chlorinator.
- The polishing pond has vegetation that is growing on the inside of the levee of the pond.
- There was no method of measuring discharge from the wastewater treatment facility, since no flow ever exits the pond.
- Currently, there is no method of providing dissolved oxygen to the effluent. This will be required with any modification of treatment processes.

Sludge Holding Tank

- The sludge holding tank (8' x 20') has been full of dried sludge for some time. The sludge should be removed and disposed of in accordance with State laws.

Security Fencing / Alarms

- There was not security fencing or access gates in place to limit the access to the wastewater treatment plant. The access to the wastewater treatment facility should be limited to authorized personnel only.
- The wastewater treatment system should include alarms in the event of a treatment component failure. The alarm system should be capable of notifying the operator and commissioner's in the event of a failure.

FINANCIAL STATUS OF EXISTING FACILITIES

The infrastructure of many water and wastewater entities in Arkansas was constructed using financial assistance from state and/or federal agencies such as the Arkansas Natural Resources Commission or the United States Department of Agriculture Rural Development. As a condition of receiving the public funding assistance, such entities are required to prepare and annuals audits which are subject to review by the funding agencies. The Marble Falls Sewer Improvement District, however, has no existing debt obligations. Consequently, no audits of the District's finances have been prepared in recent years. In the place of audits, the system has furnished monthly financial data for 2008 and 2009, including expenses and revenue. This information is included in Appendix B.

Existing Sewer Rates

Sewer rates are based upon a customer's volume of water consumption, which is measured by the Basin Valley Water Association. In order to increase revenue for the proposed lift station, the District imposed a rate increase in February of 2010, the first increase in four years. The new rate schedule, which became effective immediately in February, is included as Figure 3.45.

Figure 3.45 Sewer Rate Schedule

Base Cost:	$27.50 (Includes no Usage)
Usage:	$3.70 / 1,000 Gallons (Not Pro-Rated)

The new rate schedule consists of two elements. The first, the base cost, is a minimum charge for each customer of $27.50, and represents the minimum monthly bill for sewer service. The second element of the rate schedule is a usage charge of $3.70 per 1,000 gallons, which is not pro-rated. This means that if one customer uses 4,200 gallons of water, and another customer uses 4,700 gallons of water in a month, they will both have the same bill of $46.00 ($27.50 base cost plus usage charge of $3.70 for 0-1,000 gallons, $3.70 for 1,000-2,000 gallons, $3.70 for 2,000-3,000 gallons, and $3.70 for 3,000-4,000 gallons). The new rate schedule increased the average monthly sewer bill from $24.00 per month to $42.30 per month, based upon water usage of 4,000 gallons per month. This is a high average bill for sewer service, and is significantly higher than many Arkansans pay for water and sewer service combined. Due to the low MHI in the area, and the high average sewer bill under the current rate structure, increasing rates further to pay for the proposed improvements is not recommended, as it is not likely the residents can afford to pay more than they currently do for sewer service.

Revenue

As indicated by the financial information provided in Appendix B, the District received $7,688.45 in revenue in 2008, an average of $640.70 per month. In 2009, the District received $6,310.68 in revenue, an average of $525.89 per month. However, due to the recent rate change, it is anticipated the District will receive substantially higher revenues in the future.

With thirty-one current customers, the base cost of $27.50 per month should result in monthly revenue of $852.50, and annual revenue of $10,230. Therefore, the base cost charge by itself is anticipated to bring more revenue to the District in the future than it collected in total revenue under the previous rate structure in 2008 or 2009.

To determine the amount of revenue the District is likely to receive from usage charges, it is necessary to first establish the average consumption level per user. The District's customers used 2,990,610 gallons of water in 2009, and 2,661,780 gallons in 2008, a total of 5,652,390 gallons during a twenty-four month period, with an average monthly usage of 235,516 gallons. With thirty-one customers, this results in an average monthly usage rate of approximately 7,600 gallons per customer per month. In order to be conservative, throughout this document 7,000 gallons per month will be utilized as the average monthly level of water consumption.

Under the new rate structure, based on an average usage of 7,000 gallons per month, the average monthly water bill would be $25.90. With thirty-one customers, usage charges are anticipated to result in monthly revenue of $802.90, or $9,634 per year.

Total anticipated annual revenue for the District, including both base cost and usage charges, should therefore be approximately $19,864 ($10,230 plus $9,634), or $1,655 per month under the new rate structure assuming an average usage of 7,000 gallons per month per customer.

Operation and Maintenance Expenses

Operation and maintenance expenses totaled $4,051.70 in 2008, an average of $337.64 per month. In 2009, operation and maintenance expenses totaled $8,500.97, or $708.41 per month.

Existing Debt Obligations

The District does not currently have any outstanding debt obligations, or make any monthly debt service or debt service reserve payments.

4. NEED FOR PROJECT

HEALTH, SANITATION, AND SECURITY

As described in Section Three of this document, in early 2009 a lift station failed, which eventually resulted in the discharge of untreated wastewater into a stream which eventually flows into the Buffalo National River. A portable pump has been installed by the Arkansas Rural Water Association at this lift station as a temporary solution until a permanent solution can be found.

The existing collection system is aged, and is subject to frequent clogging and overflows, as detailed in Section Three of this document. The system was designed in the late 1960's, and the manholes and pipes have generally reached the end of their useful life. Many of the manholes and gravity mains are broken, providing numerous opportunities for inflow and infiltration as well as the discharge of untreated wastewater.

Lift Station 2 is operational, but Force Main 2 is no longer serviceable, as evidenced by the fact that sewage pumped from Lift Station 2 does not reach the treatment facility. This indicates a large volume of untreated wastewater is being released into the soil at an unknown location each time Lift Station 2 operates.

Each of these items represents a threat to the health and welfare of the residents of the Marble Falls area, including not only the residents of Marble Falls, but those who live in the surrounding areas and utilize wells as sources of drinking and bathing water. In addition, the current collection system presents an imminent threat to the natural resources in the area, most notably the Buffalo National River which is located just south of Marble Falls.

The existing treatment plant is not believed to be capable of producing treated effluent which meets the current effluent NPDES permit requirements established by ADEQ. This treatment facility discharges into an unnamed tributary of the Buffalo National River, which receives heavy recreational use, especially during the summer months.

In addition to the threat to the health of the river and the organisms within it, as well as the threat to those who use the river for recreation, if the water in the Buffalo River were to be contaminated by the Marble Falls wastewater system, and be declared unsafe for recreational activities, it would significantly threaten the economic health of the area, which is based in part on these activities. The current situation is untenable and in need of correction as quickly as possible.

SYSTEM OPERATION AND MAINTENANCE

Because of the failure of Lift Station 1, a temporary pump is currently being utilized in its place. This temporary pump requires daily maintenance and oversight, and represents only a temporary solution to the problem. A permanent solution, the construction of a new lift station, is needed.

The existing collection system routinely clogs and overflows, and technicians must be called in frequently to clear the lines. The age and condition of the collection system leads to frequent repairs and frequent need for servicing. In order to reduce the operation and maintenance expenses, it is necessary to rehabilitate the existing collection system.

The current collection system is extremely large in relation to the number of customers it serves. The majority of customers are tightly grouped near Highway 7 Spur, and can be served with only a relatively small portion of the existing system. By eliminating obsolete and unnecessary portions of the system, operation and maintenance expenses can be reduced. In addition, such an approach would reduce the number of potential sources of contamination through sewer discharges.

The existing treatment plant is aged, and multiple components are not functional, as outlined in Section 3 of this report. The existing treatment plant, if not replaced, will be difficult and complicated to operate. Because this type of system is no longer manufactured, replacement parts for the system are difficult to find, and expensive when available. Most replacement parts, when needed, will have to be fabricated especially for the unit. This will increase the time and expense required for repairs which, due to the system's age, will likely become more and more frequent as time passes.

GROWTH

The promotion of economic and population growth in the area is not a goal of this project. The proposed project is designed to correct serious existing deficiencies in the current system to protect the residents and natural resources in the area, as well as to ensure the residents of Marble Falls have continued sewer service in years to come.

The District is currently under a Preliminary Injunction requiring that the wastewater system be brought into compliance with state and federal wastewater regulations. In the event the proposed project is not undertaken, it is possible the District will be required to permanently cease operations. In the event this were to occur, because there is insufficient available land for septic systems, the current residents will likely have no recourse but to relocate to another area.

5. ALTERNATIVES CONSIDERED

The proposed improvements to the existing Marble Falls wastewater system have been divided into two primary categories: improvements to the collection system, and improvements to the treatment system. Multiple alternatives have been identified and evaluated for each category, and include the following:

1. Collection System: Engineering Services, Inc. has identified four alternatives available to the District to address the issues presented by the existing wastewater collection system:

- Alternative 1-A: Replace Deficient Line Utilizing Pipe Bursting
- Alternative 1-B: Replace Deficient Line Utilizing Conventional Trenching
- Alternative 1-C: Discontinue Use of Laterals 4 - 6 and Construct New Sewer Extension
- Alternative 1-D: Do Nothing

2. Treatment System: Engineering Services, Inc. has also identified four alternatives available to the District to address the issues presented by the existing wastewater collection system:

- Alternative 2-A: Install a Membrane Biological Reactor Treatment System
- Alternative 2-B: Install an Media Filter Treatment System
- Alternative 2-C: Rehabilitate Existing Treatment System
- Alternative 2-D: Do Nothing

Wastewater Collection System

In addition to the alternatives outlined below, ESI also considered the possibility of constructing septic systems for each customer served by the Marble Falls wastewater system was investigated as an alternative. This solution could potentially provide service to the existing Marble Falls residents at a significantly lower cost than the proposed alternatives for rehabilitation of the District's existing wastewater system. However, the customers are located in close proximity to one other with no available land for construction of individual septic systems. Because of the dense grouping of customers and the geography in the area, construction of septic systems for each customer is not possible and is not included as an alternative.

Summary of Alternatives

Alternative 1-A: Under this alternative, all deficient manholes will be rehabilitated, and all deficient pipe sections will be replaced utilizing pipe bursting. This alternative includes rehabilitation of Force Main 2. The only sections of the collection system to be abandoned under this alternative will be Lateral 7 and the portions of Lateral 2 and Force Main 2 between the new lift station and Lift Station 1.

Alternative 1-B: Under this alternative, all deficient manholes will be rehabilitated, and all deficient pipe sections will be replaced utilizing conventional construction techniques (trenching). This alternative also includes rehabilitation of Force Main 2. The only sections of the collection system to be abandoned under this alternative will be Lateral 7 and the portions of Lateral 2 and Force Main 2 between the new lift station and Lift Station 1.

Alternative 1-C: Under this alternative, the District will discontinue use of a majority of sewer main and manholes included in Laterals 4 – 6. Use of Lift Station 2 and Force Main 2 will also be discontinued. A new sewer extension will be constructed to connect the majority of existing structures currently connected to Laterals 4 – 6 to Laterals 2 and 3. Also, septic systems will be installed to serve two remote residential structures which are located away from the majority of customers and which will no longer have access to the collection system once use of Lateral 4 is discontinued.

Alternative 1-D: Under this alternative, no improvements or modifications will be made to the existing collection system, with the exception of construction of the new lift station on Lateral 2.

Note: Construction of the proposed new lift station on Lateral 2 upstream of the existing Lift Station 1 is included in all four alternatives. Design and approvals for this proposed lift station are being completed by Vern Nelson, P.E., of Nelson Engineering in Harrison, Arkansas. Following installation of the new lift station, the portions of Lateral 2 and Force Main 1 between the new lift station and Lift Station 1 will be abandoned, as will Lift Station 1 itself. A new two inch force main will be pulled through the existing six inch force main from the new lift station to Manhole 1-V and will be utilized in place of Force Main 1. Information from Nelson Engineering regarding the new lift station, including an engineer's estimate of probable costs and a drawing of the proposed improvements, is included in the Appendix. A summary of anticipated costs associated with the proposed lift station are included in the Cost Estimate for Alternative D.

Note: The rehabilitation of the collection system under Alternatives 1-A and 1-B will include replacement and repair of the most problematic sections of the collection system. However, the entire system is approximately forty years old and is reaching the end of its useful life. The Engineer is concerned that the components which are not rehabilitated during the course of this project will continue to deteriorate rapidly and will shortly be in as poor condition as the sections of gravity main and manholes which are designated for replacement, eliminating much of the benefit of the proposed rehabilitation under these alternatives.

IN THE CIRCUIT COURT OF NEWTON COUNTY, ARKANSAS

ARKANSAS DEPARTMENT OF
ENVIRONMENTAL QUALITY

PLAINTIFF

V.

Case No. CV 2010-10-1

MARBLE FALLS WATER, SEWER and SOLID
WASTE SUBURBAN IMPROVEMENT
DISTRICT NO. 1, BASIN VALLEY
WATER ASSOCIATION

DEFENDANTS

PRELIMINARY INJUNCTION CONSENT DECREE

On the 2nd day of March, 2010, this matter came for consideration by the Court. An agreement was reached by the parties and the Injunctive Terms of the agreement were read into the record; the Plaintiff Arkansas Department of Environmental Quality, hereinafter referred to as "the ADEQ," the Marble Falls Water, Sewer and Solid Waste Suburban Improvement District No. 1, hereinafter referred to as "the SID" or "Defendant SID" and hereby state:

WHEREAS, ARK. CODE ANN. §§ 8-4-201, et seq., otherwise known as the Arkansas Water and Air Pollution Act, and Arkansas Pollution Control and Ecology Commission (PC&E) Regulation 2 which governs Water Quality Standards and PC &E Regulation 6 governs National Pollutant Discharge Elimination System ("NPDES") permits established by 33 U.S.C. 1251 et seq.; and

WHEREAS, the Defendant SID upon inspection by the ADEQ was found to not be in compliance with the NPDES permit issued to the Defendant SID by the ADEQ; and

WHEREAS, ADEQ alleges that the Defendant SID's waste water treatment plant was not functioning and was allowing untreated effluent to enter waters of the state; and

WHEREAS, ADEQ alleges that the Defendant SID failed to correct the problem prior to this lawsuit being filed; and

WHEREAS, upon inspections by the ADEQ it was found that untreated effluent had been discharged into the waters of the state from the waste water treatment plant of the Defendant SID; and

WHEREAS, the Defendant SID's failure to fix the inoperable lift station at the waste water treatment plant for over a year resulted in repeated discharges over the past year into Mill Creek; and

WHEREAS, Mill Creek is a tributary of the Buffalo National River that contains a unique ecosystem and provides abundant recreational opportunities; and

WHEREAS, in its Complaint for Permanent Injunctive Relief and Civil Penalties, ADEQ seeks both a permanent injunction and civil penalties against the Defendant SID; and

WHEREAS, ADEQ, and the Defendant SID recognize that this Consent Decree has been negotiated by the parties in good faith and the implementation of this Consent Decree will ensure said Defendant SID's compliance with the applicable laws, and this Consent Decree is fair, reasonable, and in the public interest; and

WHEREAS, the parties recognize that this Consent Decree is not dispositive of all the issues in this litigation, and the remaining issues as set forth in this Decree will be decided at a later date.

NOW, THEREFORE, with the consent of the parties to the Consent Decree, it is hereby ORDERED, ADJUDGED, and DECREED:

I. GENERAL PROVISIONS

1. Scope of Consent Decree. The provisions of this Consent Decree are entered pursuant to the authority of the ADEQ, and are applicable to the Defendant SID, and all of its successors, assigns, agents, servants or employees, and those persons in active concert or participation with them, who receive actual notice of this Consent Decree by personal service or otherwise, whether acting directly or through any entity, corporation, subsidiary, division, affiliate or other device, unless specified otherwise.

2. Preservation of Law Enforcement Action. Nothing herein precludes the State from enforcing the provisions of this Decree, nor from pursuing any law enforcement action with respect to the acts or practices of the Defendant SID not covered by the terms of this Decree or with respect to any acts or practices the Defendant SID may engage in after the entry of this Decree.

3. Compliance with and Application of State Law. Nothing herein relieves the Defendant SID of its duty to comply with applicable laws of the State of Arkansas or regulations of ADEQ nor constitutes authorization by the ADEQ for the Defendant SID to engage in acts and practices prohibited by such laws. This Decree shall be governed by Arkansas law.

4. Non-Approval of Conduct. Nothing herein constitutes approval by the ADEQ of the Defendant SID's past, current or future environmental conduct. The Defendant SID shall not make any representation to the contrary.

5. Preservation of Private Claims. Nothing herein shall be construed as a waiver of any private rights, causes of action, or remedies of any person not a party to this Decree against the Defendant SID with respect to the acts and practices covered by this Decree.

6. Civil Penalties. The Parties to this Decree agree that the amount of Civil Penalties will be reserved. The ADEQ reserves the right then set a hearing for the purpose of assessing civil penalties against the Defendant SID at a later date, if such a hearing is deemed necessary.

7. Jurisdiction. The Court shall retain jurisdiction in this matter to resolve any disputes and for the purpose of enforcing the terms of this Decree.

8. Contempt. The Defendant SID acknowledges that a failure to adhere to any of the provisions of this Decree can be punishable, and could result, in the Defendant SID being held in **CONTEMPT OF COURT**. If determined by the Court to be in contempt of this order, the Court will avail itself of any method available under the Arkansas Rules of Civil Procedure to secure Defendant SID's compliance with this Decree.

9. Review. Any party may request a review hearing by this Court.

10. Reporting. The Defendant SID will submit all reports and information necessary to comply with the injunctive terms of this Decree to:

Steve Drown
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72116

11. Conference. A follow-up phone conference with Judge Womack is set for April 9, 2010 at 3:00. This call will be to update the Court on the situation and to set dates for some provisions of this agreement.

II. DEFINITIONS

12. Definitions. The following definitions shall be used in interpreting the terms of this Consent Decree. Any other necessary definitions can be found in Arkansas Pollution Control and Ecology Commission Regulation Nos. 2, 3 or 6.

A. **"Effective Date"** means March 2, 2010.

III. INJUNCTIVE TERMS

13. Defendant SID will complete the installation of the new lift station as proposed to the ADEQ in the plan prepared by Nelson Engineering on January 21, 2010. Until such time that the new lift station is installed and operating Defendant SID will continue to operate the temporary pump system currently in place.

14. By April 1, 2010, the Defendant SID will retain a class 2 licensed waste water treatment operator that can provide adequate operation and maintenance of the waste water treatment system.

15. The Defendant SID will retain the services of a Professional Engineer to perform a diagnostics of waste water treatment plant system to determine the current condition of the system. This diagnostics should determine the feasibility of continuing to operate the current waste water treatment plant or develop other reasonable solutions or

options to address the long-term treatment needs of Marble Falls. This diagnostic should contain all costs associated with either; 1) upgrading and rehabilitating the existing waste water treatment system, or 2) installing a new system. This diagnostics will be completed and a plan of action developed by April 6, 2010.

16. At the completion of the diagnostics study, the Defendant SID will secure the necessary funding to either rehabilitate and repair the existing waste water treatment system or construct and install a new waste water treatment system based upon the findings of the diagnostics.

17. The Defendant SID shall retain the services of a Professional Engineer to perform a diagnostics of the waste water collection system, including a determination of the integrity of the lines (e.g., camera monitoring, smoke testing or equivalent). This diagnostics shall contain all costs associated with upgrading and or rehabilitating the existing collection system. A date for compliance with paragraph seventeen (17) will be determined at the April 9, 2010, telephone conference hearing.

18. The Defendant SID will take all reasonable measures to ensure that no further untreated effluent reaches the waters of the State and that the Defendant SID is in compliance with all other conditions of its NPDES Permit (Permit No. AR0034088) issued to it by ADEQ.

19. The Defendant SID consents to the jurisdiction of the Court and consents to the entry of this Consent Decree.

20. The entry of this Decree is in the best interest of the environment, and of the State of Arkansas.

IT IS SO ORDERED this ____ day of March, 2010.

Circuit Judge Shawn Womack

APPROVED:

TERESA MARKS
ARKANSAS DEPARTMENT OF
ENVIRONMENTAL QUALITY
8001 National Drive
Little Rock, AR 72209

By _____
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Assistant Attorney General

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By _____
Jason Robb

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By _____
Donnie Crain

Commissioner Marble Falls Water, Sewer, and Solid Waste Suburban Improvement District No. 1

NORTHWEST ARKANSAS ECONOMIC DEVELOPMENT DISTRICT, INC.
P. O. Box 190
Harrison, AR 72602-0190

TO:

MS. JENNIFER HARMON, E.I.
NPDES BRANCH
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