# **CORRECTIVE ACTION PLAN**

APRIL 27<sup>TH</sup>, 2017

# WASTEWATER TREATMENT PLANT IMPROVEMENTS CAVE SPRINGS, ARKANSAS

**ISSUED FOR REVIEW** 

### PREPARED FOR:

THE CITY OF CAVE SPRINGS 134 N. MAIN STREET CAVE SPRINGS, AR 72718



# Prepared By:

Barret Knutson, E.I.
McClelland Consulting Engineers, Inc.
1810 N. College Avenue
Fayetteville, AR 72703





# CORRECTIVE ACTION PLAN THE CITY OF CAVE SPRINGS WASTEWATER TREATMENT PLANT IMPROVEMENTS

#### Introduction

This Corrective Action Plan (CAP) was prepared by MCE on behalf of the City of Cave Springs' Water and Wastewater Department. The CAP was prepared at the request of the Water Division Enforcement Branch of the Arkansas Department of Environmental Quality (ADEQ) in an incompleteness letter for renewal of No-Discharge Permit 4893-WR-3 in a letter dated March 24<sup>th</sup>, 2017.

### **Purpose**

Over the past 5-years during the permitting cycle of Permit 4893-WR-2, the City of Cave Springs has recorded 22 instances of exceeding their permit limits, 20 of which were for exceedances of Total Suspended Solids (TSS) limits. The City of Cave Springs is committed to complying with environmental laws and regulations and therefore is determined to identify and address their wastewater treatment plant's performance. Exceedances of the permitted concentrations of TSS can be seen in the appendix, *Appendix 1*, at the end of this report.

### Scope

The goal of this analysis was to identify and resolve the issues leading to excess solids accumulation within the system without having to upgrade or retrofit the existing plant. It was assumed that the problems were due to a piece of equipment under performing or an overlooked part of the operation and maintenance protocol. This assumption was based on the fact that the plant has a relatively short operational life. Additionally, the plant was designed to treat much higher wastewater flows while keeping concentrations of permitted pollutants within acceptable ranges. If necessary the plant would undergo some form of upgrading by whatever means necessary, in order to get into compliance with their permit.

### History

With construction finished late in the year of 2006, the City's new wastewater treatment facility was permitted to dispose of its effluent via sub-surface, drip irrigation, discharge. The plant is comprised of two package treatment facilities, which discharge effluent underground beneath the adjacent Creek's Golf Course. Disposal of effluent in this fashion serves a symbiotic benefit to

both the client and the City: the golf course benefits by obtaining irrigation, rich in nutrients, for their grass fairways and rough, and the City benefits by receiving additional removal of permitted pollutants by the grasses and soils, as well as an adjacent discharge for their effluent.

#### Location

The Cave Springs WWTP is located off of Arkansas Highway 112 South of the City. The plant is only accessible by going through the Creeks Golf Course and is located on the far north side of the property.

## **Condition of Existing Facility**

As previously mentioned, the current treatment facility is relatively young, and therefore should have plenty of anticipated operational life remaining. Originally, during the first permitting cycle, only Plant 1 was utilized for treatment and Plant 2 was kept on standby. During the last permitting cycle, only Plant 2 was used for treatment while Plant 1 was kept on standby; this will remain the same for the next permitting under Permit 4893-WR-3. Flows over the past year indicated an Annual Average Flow (AAF) of 40,000 GPD with a peak flow of around 150,000 GPD, with a capacity of 320,000 GPD, it is anticipated that Plant 2 will have ample treatment capacity over the next 5-years, even at peak flow. Although ample capacity is available and the operational life of Plant 2 is relatively young, instances of MMR exceedances of TSS have persisted.

#### **Environmental Resources**

The only environmental resource involved with this plan is the renewal of the City's existing ADEQ No-Discharge Permit.

### **Growth Area and Population**

According to the Northwest Arkansas Regional Planning Committee (NWARPC), from 1990 to 2010, the average annual population increase of Cave Springs was roughly 64 people per year. With continued growth of the Fairway Valley Residential Development, the population is expected to continue to grow at around the same rate over the next decade. Based on these population growth models, the City's current WWTP will have ample treatment capacity over the next permitting cycle.

### **System Operation & Maintenance**

Because there is no new proposed construction or expansion to the existing facility, no new staff is currently needed for plant operations. Maintenance operation will continue based upon manufacturer's recommendations.

### **Case Background**

The existing plant is adequately sized to handle the influent flowrates and loadings received from the sewer system. However, excess TSS accumulation has led to numerous discharge violations over the previous permitting cycle. It was realized by Plant staff that the cartridge filters used in the system were regularly clogging up. This was leading to sludge accumulation in the subsurface irrigation dosing tanks.

After a thorough system investigation, it was determined that the filters were not at fault and were only clogging up due to excess solids carryover. The true cause of the WWTP's accumulation of excess TSS was due to the Waste Activated Sludge (WAS) system pumps. The operators were turning on the pumps everyday and assuming that they were operating correctly, but did not realize that the pumps had become worn and were no longer adequately pumping the sludge. Repairing and replacing the WAS pumps was a simple fix for the treatment plant and did not require any additional system redesign. By replacing the WAS pumps, solids inventories are maintained to provide adequate and efficient operation. By wasting sludge as designed, treatment will improve, and TSS will no longer carryover to the dosing tanks and into the subsurface disposal fields.

#### **Proposed Goals of the Plan**

The issues pertaining to exceedances of permitted TSS concentrations have been identified and corrected. It is predicted that after a period of equilibration, future instances of exceeding permitted TSS concentrations will be prevented. The plant operators and staff have been made aware of what created the problem and how to identify and prevent future instances of this from happening again.

| City of Cave Springs  |   | PIGnナ # 以                  |             | 4893-WR-2                |             |  |  |  |
|---|---|----------------------------|-------------|--------------------------|-------------|--|--|--|
| PERMITTEE ADDRESS   |   | CILITY ADDRESS             |             | AFIN NO.                 |             |  |  |  |
| P.O. Box 36   | 11661 2   | ILLA O A O                 |             | 04-01642                 |             |  |  |  |
| Cave Sorings AR 72718   | 498 Pet   | bble Beach Dr.             |             | O TOTAL                  |             |  |  |  |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR   | WASTEWATER  | EFFLUENT MONITORING PERIOD |             |                          | **          |  |  |  |
| FUTURE USE. SUBMIT LAB ANALYSES WITH THIS   | MM/DD/YYYY  | - MM/DD/YYY                |             |                          |             |  |  |  |
| FORM. FR  | OM 11/01/2016   | J TOL <i>11/30/2016</i>    |             |                          |             |  |  |  |
| TREATED WASTEWATER EFFLUENT SAMPLING  |   |                            |             |                          |             |  |  |  |
| PARAMETER   | PERMIT REQUIREMENT  | SAMPLE MEASUREMENT         | UNITS       | FREQUENCY OF<br>ANALYSIS | SAMPLE TYPE |  |  |  |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT GROSS VALUE  | ******  | 7,4                        | MG/L        | ONCE/<br>MONTH           | GRAB        |  |  |  |
| CBOD, 5-DAY (20 DEG. C)<br>EFFLUENT GROSS VALUE   |   | 6.8                        | MG/L        | ONCE/<br>MONTH           | GRAB        |  |  |  |
| PH<br>EFFLUENT GROSS VALUE  | 6 to 9  | 6-4                        | S.U.        | ONCE/<br>MONTH           | GRAB        |  |  |  |
| SOLIDS, TOTAL SUSPENDED<br>EFFLUENT GROSS VALUE   |   | 15.0                       | MG/L        | ONCE/<br>MONTH           | GRAB        |  |  |  |
| COLIFORM, FECAL GENERAL<br>EFFLUENT GROSS VALUE   |   | 2400                       | N/100 ML    | ONCE/<br>MONTH           | GRAB        |  |  |  |
| NITROGEN, TOTAL KJELDAHL (AS TKN)<br>EFFLUENT GROSS VALUE                                       | ******  | 22.40                      | MG/L        | ONCE/<br>MONTH           | GRAB        |  |  |  |
| NITROGEN, AMMONIA TOTAL (AS NH₃N)<br>EFFLUENT GROSS VALUE                                       |   | 17.1                       | MG/L        | ONCE/<br>MONTH           | GRAB        |  |  |  |
| NITROGEN, NITRATE + NITRITE (AS NO <sub>3</sub> N + NO <sub>2</sub> -N)<br>EFFLUENT GROSS VALUE | *****   | 46,293                     | MG/L        | ONCE/<br>MONTH           | GRAB        |  |  |  |
| PLANT AVAILABLE NITROGEN (AS PAN) CALCULATED VALUE  |   | 65.0                       | MG/L        | ONCE/<br>MONTH           | GRAB        |  |  |  |
| FLOW, THRU CONDUIT OR TREATMENT UNIT<br>EFFLUENT GROSS VALUE                                    | *****   | MONTHLY TOTAL DAILY MAX    | MGD         | ONCE/<br>MONTH           | TOTAL FLOW  |  |  |  |
| NAME/TITLE PRINCIPAL EXECUTIVE OFFICER   I CERTIFY UNDER PENALTY OF LAW TH                      |   | ND AM WITH THE             |             | TELEPHONE                | DATE        |  |  |  |
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| COMMENTS AND EXPLANATION OF VIOLATIONS (Reference al  | l attachments here )  | -                          |             |                          |             |  |  |  |

| PERMITTEE NAME   | FACILITY                         | NAME (IF DIFFERENT)                  |               | PERMIT NO.               |                                  |
|--|----------------------------------|--------------------------------------|---------------|--------------------------|----------------------------------|
| City of Cave Springs   |                                  | ·#2                                  | ]             | 4893-WR-2                | ].                               |
| P.O. Bay 36  |                                  | ILITY ADDRESS                        |               | AFIN NO.                 |                                  |
| Cave socings AR 727/8  | 198 Pe                           | ebble Beach                          |               | 04-01642                 |                                  |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR  |                                  | EFFLUENT MONITORING PERIOD           | 5.795/ar37503 |                          |                                  |
| FUTURE USE. SUBMIT LAB ANALYSES WITH THIS FORM.  | . MM/DD/YYYY                     | · MM/DD/YYY                          | Y             |                          |                                  |
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| PARAMETER  | PERMIT REQUIREMENT               | SAMPLE MEASUREMENT                   | UNITS         | FREQUENCY OF<br>ANALYSIS | SAMPLE TYPE                      |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT<br>GROSS VALUE  | *****                            | 8.7                                  | MG/L          | ONCE/<br>MONTH           | GRAB                             |
| CBOD, 5-DAY (20 DEG. C)<br>EFFLUENT GROSS VALUE  |                                  | 5.4                                  | MG/L          | ONCE/<br>MONTH           | GRAB                             |
| PH<br>EFFLUENT GROSS VALUE   | 6 to 9                           | 6.4                                  | S.U.          | ONCE/<br>MONTH           | GRAB                             |
| SOLIDS, TOTAL SUSPENDED EFFLUENT GROSS VALUE   |                                  | 16.0                                 | MG/L          | ONCE/<br>MONTH           | GRAB                             |
| COLIFORM, FECAL GENERAL<br>EFFLUENT GROSS VALUE  |                                  | 3400                                 | N/100 ML      | ONCE/<br>MONTH           | GRAB                             |
| NITROGEN, TOTAL KJELDAHL (AS TKN)<br>EFFLUENT GROSS VALUE  | ******                           | 22.40                                | MG/L          | ONCE/<br>MONTH           | GRAB                             |
| NITROGEN, AMMONIA TOTAL (AS NH3N) EFFLUENT GROSS VALUE   | ******                           | 17.5                                 | MG/L          | ONCE/<br>MONTH           | GRAB                             |
| NITROGEN, NITRATE + NITRITE (AS NO3N + NO2-N) EFFLUENT GROSS VALUE   | *****                            | 40.67                                | MG/L          | ONCE/<br>MONTH           | GRAB                             |
| PLANT AVAILABLE NITROGEN (AS PAN)<br>CALCULATED VALUE  | ·                                | 59-6                                 | MG/L          | ONCE/<br>MONTH           | GRAB                             |
| FLOW, THRU CONDUIT OR TREATMENT UNIT<br>EFFLUENT GROSS VALUE   | *****                            | MONTHLY TOTAL DAILY MAX              | MGD           | ONCE/<br>MONTH           | TOTAL FLOW                       |
| NAME/TITLE PRINCIPAL EXECUTIVE OFFICER   I CERTIFY UNDER PENALTY OF LAW THAT   | I HAVE PERSONALLY EXAMINED AND   | AM WITH THE                          |               | TELEPHONE                | DATE                             |
| Tony McCuch Information Submitted Herein; and Immediately responsible for obtaining the Secretary Systems of Secre | IG THE INFORMATION, I BELIEVE T  | THE SURMITTED / 6 -                  |               | 479 295-3013             | 09 101 12046                     |
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| COMMENTS AND EXPLANATION OF VIOLATIONS (Reference all att  | achments here)                   |                                      | PAGENT        | COE                      |                                  |
| vaintenance on clarifier and "D" box   | should resolve                   | t TSS issues.                        |               |                          |                                  |

|                        | PERMI | TTEE NAME             |
|------------------------|-------|-----------------------|
| City of                | Cave  | Springs               |
| PERSONAL PROPERTY.     |       | TEE ADDRESS           |
| P.O. Box<br>Cave Sprin | 36 AR | 22718                 |
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| <b>电视心验</b> | FACILITY | NAME (IF DIFFERENT) |
|-------------|----------|---------------------|
|             | Plant    | #2                  |
| ALC: N      | FA       | CILITY ADDRESS      |
| 498         | Pebble   | Beach               |

| PERMIT NO. | 20 |
|------------|----|
| 4893-WR-2  |    |
| AFIN NO.   | Œ. |
| 04-01642   |    |

MAKE ADDITIONAL COPIES OF THIS FORM FOR FUTURE USE. SUBMIT LAB ANALYSES WITH THIS FORM.

WASTEWATER EFFLUENT MONITORING PERIOD

MM/DD/YYY

FROM

O7/01/90/6

TO 07/31/20/6

| PARAMETER  | PERMIT REQUIREMENT   | SAMPLE MEASUREMENT                           | UNITS     | FREQUENCY OF ANALYSIS | SAMPLE TYPE |
|--|--|--|-----------|-----------------------|-------------|
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT<br>GROSS VALUE  | *****  | 8.5  | MG/L      | ONCE/<br>MONTH        | GRAB        |
| CBOD, 5-DAY (20 DEG. C)<br>EFFLUENT GROSS VALUE  |  | 11.6   | MG/L      | ONCE/<br>MONTH        | GRAB        |
| PH<br>EFFLUENT GROSS VALUE   | 6 to 9   | 6.5  | S.U.      | ONCE/<br>MONTH        | GRAB        |
| SOLIDS, TOTAL SUSPENDED<br>EFFLUENT GROSS VALUE  |  | 36.0   | MG/L      | ONCE/<br>MONTH        | GRAB        |
| COLIFORM, FECAL GENERAL<br>EFFLUENT GROSS VALUE  | <del></del>  | 340  | N/100 ML, | ONCE/<br>MONTH        | GRAB        |
| NITROGEN, TOTAL KJELDAHL (AS TKN)<br>EFFLUENT GROSS VALUE  | ******   | 22.40  | MG/L      | ONCE/<br>MONTH        | GRAB        |
| NITROGEN, AMMONIA TOTAL (AS NH₃N)<br>EFFLUENT GROSS VALUE  | * ****** .,  | 16.7   | MG/L      | ONCE/<br>MONTH        | GRAB        |
| NITROGEN, NITRATE + NITRITE (AS NO <sub>3</sub> N + NO <sub>2</sub> -N)<br>EFFLUENT GROSS VALUE  | *****  | 42.6   | MG/L      | ONCE/<br>MONTH        | GRAB        |
| PLANT AVAILABLE NITROGEN (AS PAN)<br>CALCULATED VALUE  |  | 61.0   | MG/L      | ONCE/<br>MONTH        | GRAB        |
| FLOW, THRU CONDUIT OR TREATMENT UNIT<br>EFFLUENT GROSS VALUE   | *****  | MONTHLY TOTAL DAILY MAX                      | MGD .     | ONCE/<br>MONTH        | TOTAL FLOW  |
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| PERMITTEE NAME   |  | NAME (IF DIFFERENT)        |           | PERMIT NO.   |                 |  |
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| PERMITTEE ADDRESS  | Plant  | LITY ADDRESS               |           | 4893-WR-2  |                 |  |
| P.O. Box 36  |  |                            |           | AFIN NO.   |                 |  |
| Cave Sorings, AR, 72718  | 498 Pe.  | bble Beach                 | '         | 01.014 154   | ,               |  |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR  | WASTEWATER 6   | FFLUENT MONITORING PERIOD  |           |  |                 |  |
| FUTURE USE. SUBMIT LAB ANALYSES WITH THIS  | MM/DD/YYYY   | MMOD/YYYY                  |           |  |                 |  |
|  | 02/01/2016   | TO 02/29/201               |           |  |                 |  |
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| PARAMETER  | PERMIT REQUIREMENT   | SAMPLE MEASUREMENT         | UNITS     | FREQUENCY OF<br>ANALYSIS   | SAMPLE TYPE     |  |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT GROSS VALUE   |  | 7.9                        | MG/L      | ONCE/<br>MONTH   | GRAB            |  |
| CBOD, 5-DAY (20 DEG. C)<br>EFFLUENT GROSS VALUE  |  | 8.2                        | MG/L      | ONCE/<br>MONTH   | GRAB            |  |
| PH<br>EFFLUENT GROSS VALUE   | 6 to 9   | 6-3                        | S.U.      | ONCE/<br>MONTH   | GRAB            |  |
| SOLIDS, TOTAL SUSPENDED EFFLUENT GROSS VALUE   |  | 15.5                       | MG/L      | ONCE/<br>MONTH   | GRAB            |  |
| COLIFORM, FECAL GENERAL<br>EFFLUENT GROSS VALUE  |  | 600                        | N/100 ML  | ONCE/<br>MONTH   | GRAB .          |  |
| NITROGEN, TOTAL KJELDAHL (AS TKN)<br>EFFLUENT GROSS VALUE  |  | 52.40                      | MG/L      | ONCE/<br>MONTH   | GRAB            |  |
| NITROGEN, AMMONIA TOTAL (AS NH <sub>3</sub> N) EFFLUENT GROSS VALUE  | ******   | 20.0                       | MG/L      | ONCE/<br>MONTH   | GRAB            |  |
| NITROGEN, NITRATE + NITRITE (AS NO <sub>3</sub> N + NO <sub>2</sub> -N)<br>EFFLUENT GROSS VALUE  | *****  | 35.152                     | MG/L      | ONCE/<br>MONTH   | GRAB            |  |
| PLANT AVAILABLE NITROGEN (AS PAN) CALCULATED VALUE   |  | 30.5                       | MG/L      | ONCE/<br>MONTH   | GRAB            |  |
| FLOW, THRU CONDUIT OR TREATMENT UNIT<br>EFFLUENT GROSS VALUE   | *****  | MONTHLY TOTAL DAILY MAX    | MGD       | ONCE/<br>MONTH   | TOTAL FLOW      |  |
| NAME/TITLE PRINCIPAL EXECUTIVE OFFICER   CERTIFY UNDER PENALTY OF LAW THAT   |  |                            |           | TELEPHONE  | DATE            |  |
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| TYPED OR PRINTED PENALTIES FOR SUBMITTING FALSE INFORMATION PRINTED PR | MATION, INCLUDING THE POSSIBILIT                                 | TY OF FINE AND EXECUTIVE O |           | AREA NUMBER  | MM/DD/YYYY      |  |
| COMMENTS AND EXPLANATION OF VIOLATIONS (Reference all att  | tachments here )   |                            |           |  |                 |  |
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| day before the lab pulled the sample. We will investigate and make sure that is the grablem.   |  |                            |           |  |                 |  |

# ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY MONITORING REPORT FOR DECENTRALIZED WASTEWATER TREATMENT FACILITIES VIA DRIP IRRIGATION

| PERMITTEE NAME                        |
|---------------------------------------|
| City of Cave Springs                  |
| PERMITTEE ADDRESS                     |
| P.O. Box 36<br>Cave Springs AR, 70718 |

MAKE ADDITIONAL COPIES OF THIS FORM FOR FUTURE USE. SUBMIT LAB ANALYSES WITH THIS

|               | FACILITY | NAME (IF  | DIFFERENT) |
|---------------|----------|-----------|------------|
|               | Plant    | #2        |            |
| <b>MARKET</b> | FA       | CILITY AD | DRESS      |
|               | 498      | Pebble    | Beach      |

PERMIT NO. 4893-WK-2 AFIN NO. 04 - 01642

| FORM. FROM  | 12/01/2015   | TO 12/3/18015   |   |  |   |
|---|--|---|---|--|---|
|   | TREATED WASTEWATE  | R EFFLUENT SAMPLING   |   |  |   |
| PARAMETER   | PERMIT REQUIREMENT   | SAMPLE MEASUREMENT  | UNITS   | FREQUENCY OF<br>ANALYSIS                                 | SAMPLE TYPE                                 |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT<br>GROSS VALUE   | *****  | 4.9   | MG/L  | ONCE/<br>MONTH   | GRAB  |
| CBOD, 5-DAY (20 DEG. C)<br>EFFLUENT GROSS VALUE   |  | 5.0   | MG/L  | ONCE/<br>MONTH   | GRAB  |
| PH<br>EFFLUENT GROSS VALUE  | 6 to 9   | 6.5   | S.U.  | ONCE/<br>MONTH   | GRAB  |
| SOLIDS, TOTAL SUSPENDED<br>EFFLUENT GROSS VALUE   |  | 16.0  | MG/L  | ONCE/<br>MONTH   | GRAB  |
| COLIFORM, FECAL GENERAL<br>EFFLUENT GROSS VALUE   |  | 2500  | N/100 ML  | ONCE/<br>MONTH   | GRAB  |
| NITROGEN, TOTAL KJELDAHL (AS TKN)<br>EFFLUENT GROSS VALUE   | *****  | 13.40   | MG/L  | ONCE/<br>MONTH   | GRAB  |
| NITROGEN, AMMONIA TOTAL (AS NH3N) EFFLUENT GROSS VALUE  | *****  | 3.2   | MG/L  | ONCE/<br>MONTH   | GRAB  |
| NITROGEN, NITRATE + NITRITE (AS NO3N + NO2-N) EFFLUENT GROSS VALUE  | *****  | 32.79   | MG/L  | ONCE/<br>MONTH   | GRAB  |
| PLANT AVAILABLE NITROGEN (AS PAN)<br>CALCULATED VALUE   |  | 39.1  | MG/L  | ONCE/<br>MONTH   | GRAB  |
| FLOW, THRU CONDUIT OR TREATMENT UNIT<br>EFFLUENT GROSS VALUE  | *****  | MONTHLY TOTAL DAILY MAX   | MGD   | ONCE/<br>MONTH   | TOTAL FLOW                                  |
| NAME/TITLE PRINCIPAL EXECUTIVE OFFICIER I CERTIFY UNDER PENALTY OF LAW THAT INFORMATION SUBMITTED HEREIN; AND I | HAVE PERSONALLY EXAMINED AN  | D AM WITH THE   |   | TELEPHONE  | DATE  |
| Tony Merworth IMMEDIATELY RESPONSIBLE FOR OBTAININ  | G THE INFORMATION, I BELIEVE THE PROPERTY OF T | THE SUBMITTED SIGNATURE OF  |   | 479 295-3013   | 01/04/2016                                  |
| TYPED OR PRINTED IMPRISONMENT.  | MITON, INCCODING THE POSSIBILIT  | Y OF FINE AND EXECUTIVE O   | FFICER OR                                       | AREA NUMBER  | MM/DD/YYYY                                  |
| Source of this plant's Design ADEQ Form   | HO,000 gal/perda   | on for exceeding Taken on a lot of y, we treated 4/8, over Flows just | T35 limit,<br>I/I dus<br>500 perdas<br>exceeded | we have in<br>ing our last<br>y during this<br>capacity. | rain event or<br>rain event,<br>rain event, |

# ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

# MONTHLY MONITORING REPORT FOR DECENTRALIZED WASTEWATER TREATMENT FACILITIES VIA DRIP IRRIGATION

| City of Caue Springs  PERMITTEE ADDRESS  | FACILITY I   |                                   | PERMIT NO.<br>4893 - ωR-Ω |                       |             |
|--|--|-----------------------------------|---------------------------|-----------------------|-------------|
| P.O. Box 36<br>Cave Springs , AR, 72718  |  | oble Beach                        |                           | AFIN NO.<br>OH-OIGH A |             |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR  |  | FFLUENT MONITORING PERIOD         |                           |                       |             |
| FUTURE USE. SUBMIT LAB ANALYSES WITH THIS FORM. FROM   | 10-01-2015   | TO 10 - 31 - 20                   |                           |                       |             |
|  |  | R EFFLUENT SAMPLING               |                           | 7,                    | <del></del> |
| PARAMETER  | PERMIT REQUIREMENT   | SAMPLE MEASUREMENT                | UNITS                     | FREQUENCY OF ANALYSIS | SAMPLE TYPE |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT GROSS VALUE   | *****  | 7.0                               | MG/L                      | ONCE/<br>MONTH        | GRAB        |
| CBOD, 5-DAY (20 DEG. C)<br>EFFLUENT GROSS VALUE  | <del></del>  | 5.0                               | MG/L                      | ONCE/<br>MONTH        | GRAB        |
| PH<br>EFFLUENT GROSS VALUE   | 6 to 9   | 6.5                               | S.U.                      | ONCE/<br>MONTH        | GRAB        |
| SOLIDS, TOTAL SUSPENDED<br>EFFLUENT GROSS VALUE  |  | 16.0                              | MG/L                      | ONCE/<br>MONTH        | GRAB        |
| COLIFORM, FECAL GENERAL<br>EFFLUENT GROSS VALUE  |  | 4                                 | N/100 ML                  | ONCE/<br>MONTH        | GRAB        |
| NITROGEN, TOTAL KJELDAHL (AS TKN)<br>EFFLUENT GROSS VALUE  | *****  | 20.20                             | MG/L                      | ONCE/<br>MONTH        | GRAB        |
| NITROGEN, AMMONIA TOTAL (AS NH₃N)<br>EFFLUENT GROSS VALUE  | *****  | 13.8                              | MG/L                      | ONCE/<br>MONTH        | GRAB        |
| NITROGEN, NITRATE + NITRITE (AS NO <sub>3</sub> N + NO <sub>2</sub> -N)<br>EFFLUENT GROSS VALUE  | ******   | 45.02                             | MG/L                      | ONCE/<br>MONTH        | GRAB        |
| PLANT AVAILABLE NITROGEN (AS PAN) CALCULATED VALUE   | :  | 60.7                              | MG/L                      | ONCE/<br>MONTH        | GRAB        |
| FLOW, THRU CONDUIT OR TREATMENT UNIT<br>EFFLUENT GROSS VALUE   | ******   | MONTHLY TOTAL DAILY MAX 1.49 .045 | MGD                       | ONCE/<br>MONTH        | TOTAL FLOW  |
| NAME/TITLE PRINCIPAL EXECUTIVE OFFICER   CERTIFY UNDER PENALTY OF LAW THAT   |  |                                   |                           | TELEPHONE             | DATE        |
| Tony Merworth Information Submitted Herein; and water Sewer Severated Information is true, accurate, and colline severate and colline s | IG THE INFORMATION, I BELIEVE<br>MPLETE. I AM AWARE THAT THERE | THE SUBMITTED SIGNATURE O         |                           | 479 295 3013          | 11/02/2015  |
| TYPED OR PRINTED IMPRISONMENT.   |  | AUTHORIZE                         |                           | AREA NUMBER           | MM/DD/YYYY  |
| COMMENTS AND EXPLANATION OF VIOLATIONS (Reference all att  | tachments here) we a   | re exceeding the                  | limits on                 | TSS, WE are           | adjusting   |

| City of Cave Springs   | Plant t                          |                            |                      | 4893-WR-2             | · .          |
|--|----------------------------------|----------------------------|----------------------|-----------------------|--------------|
| P.O. Box 36<br>Cave Springs, AR, 72718   | 1499 1/2                         | 5. Main st                 |                      | 04-01642              | ,            |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR  |                                  | EFFLUENT MONITORING PERIOD |                      |                       |              |
| FUTURE USE. SUBMIT LAB ANALYSES WITH THIS  | MM/DD/YYYY                       | MM/DD/YYY                  |                      |                       |              |
|  | 07/01/2015                       | TO 07/31/2019              |                      |                       |              |
|  | TREATED WASTEWAT                 | REFELUENTISAMPLING         |                      |                       | 41.0         |
| PARAMETER  | PERMIT REQUIREMENT               | SAMPLE MEASUREMENT         | UNITS                | FREQUENCY OF ANALYSIS | SAMPLE TYPE  |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT GROSS VALUE   | ****** .                         | 14.9                       | MG/L                 | ONCE/<br>MONTH        | GRAB         |
| CBOD, 5-DAY (20 DEG. C)<br>EFFLUENT GROSS VALUE  |                                  | 27.0                       | MG/L                 | ONCE/<br>MONTH        | GRAB         |
| PH<br>EFFLUENT GROSS VALUE   | 6 to 9                           | 7.0                        | S.U.                 | ONCE/<br>MONTH        | GRAB         |
| SOLIDS, TOTAL SUSPENDED<br>EFFLUENT GROSS VALUE  |                                  | 28.0                       | MG/L                 | ONCE/<br>MONTH        | GRAB         |
| COLIFORM, FECAL GENERAL EFFLUENT GROSS VALUE   |                                  | 70.0                       | N/100 ML             | ONCE/<br>MONTH        | GRAB         |
| NITROGEN, TOTAL KJELDAHL (AS TKN) EFFLUENT GROSS VALUE   | *****                            | 42.60                      | MG/L                 | ONCE/<br>MONTH        | GRAB         |
| NITROGEN, AMMONIA TOTAL (AS NH₃N)<br>EFFLUENT GROSS VALUE  | ******                           | 41.6                       | MG/L                 | ONCE/<br>MONTH        | GRAB         |
| NITROGEN, NITRATE + NITRITE (AS NO₃N + NO₂-N) EFFLUENT GROSS VALUE   | *****                            | ,469                       | MG/L                 | ONCE/<br>MONTH        | GRAB         |
| PLANT AVAILABLE NITROGEN (AS PAN) CALCULATED VALUE   |                                  | 42.4                       | MG/L                 | ONCE/<br>MONTH        | GRAB         |
| FLOW, THRU CONDUIT OR TREATMENT UNIT<br>EFFLUENT GROSS VALUE   | *****                            | MONTHLY TOTAL DAILY MAX    | MGD                  | ONCE/<br>MONTH        | TOTAL FLOW   |
| NAME/TITLE PRINCIPAL EXECUTIVE OFFICER I CERTIFY UNDER PENALTY OF LAW THAT INFORMATION SUBMITTED HEREIN; AND I                               | I HAVE PERSONALLY EXAMINED AN    | D AM WITH THE              |                      | TELEPHONE             | DATE         |
| IMMEDIATELY RESPONSIBLE FOR OBTAINING  | IC THE INCODMATION I DELICATE    |                            |                      |                       | 1 1          |
| Water Superintend Information is true, accurate, and con   | MPLETE. I AM AWARE THAT THERE A  | ARE SIGNIFICANT            |                      | 479 295-3013          | 08/06/2015   |
| TYPED OR PRINTED IMPRISONMENT.   | WATION, INCLUDING THE PUSSIBILIT | Y OF FINE AND EXECUTIVE O  | FFICER OR<br>D AGENT | AREA<br>CODE NUMBER   | MM/DD/YYYY   |
| COMMENTS AND EXPLANATION OF VIOLATIONS (Reference all att  | achments here) We wi             | ill be shuting this poli   | ant days             | mechan                | 1 42 200 001 |
| COMMENTS AND EXPLANATION OF VIOLATIONS (Reference all att fixed and until we get enough flow to monthly total will not be accurate ADEO Form | this plant, as or due to Mac me  | now we are sendin          | g all was            | ite water to          | plant #2.    |
| ADEO Form  |                                  | Mai Functioning.           |                      |                       |              |

ADEQ Form

|   | TOTAL TOTAL PROPERTY OF THE PR |
|---|--|
| PERMITTEE NAME OF ACADE AND A             | FACILITY NAME (IF DIFFERENT)   |
| City of Cave Serings                      | PANT #/  |
| PERMITTEE ADDRESS WARRENDS                | SECRETARIA DE PACILITY ADDRESS PROPERTOR   |
| Cave Springs Ar 727/8                     | 14991/2 S. Main  |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR   | WASTEWATER EFFLUENT MONITORING PERIOD WE ANALYSE   |
| FUTURE USE. SUBMIT LAB ANALYSES WITH THIS | MM/DDYYYY MM/DDYYYY  |
| FORM.                                     | FROM 06-01-2015 TO 06-30-2015  |

| CONTROL CONTRO | GTREATED WASTEWATI  | R EFFLUENT SAMPLING   | AND THE R.             | Harris Market Barrell                               | PESANT IN AL DIVING                          |
|--|---|---|------------------------|---|--|
| PARAMETER  | PERMIT REQUIREMENT  | SAMPLE MEASUREMENT  | UNITS                  | FREQUENCY OF<br>ANALYSIS                            | SAMPLE TYPE                                  |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT<br>GROSS VALUE  | . ******  | 5.0   | MG/L                   | ONCE/<br>MONTH                                      | GRAB   |
| CBOD, 5-DAY (20 DEG. C)<br>EFFLUENT GROSS VALUE  | ·   | 60  | MG/L                   | ONCE/<br>MONTH                                      | GRAB   |
| PH<br>EFFLUENT GROSS VALUE   | 6 to 9  | 7,2   | S.U.                   | ONCE/<br>MONTH                                      | GRAB   |
| SOLIDS, TOTAL SUSPENDED<br>EFFLUENT GROSS VALUE  | ***************************************   | 20.0  | MG/L                   | ONCE/<br>MONTH                                      | GRAB   |
| COLIFORM, FECAL GENERAL<br>EFFLUENT GROSS VALUE  |   | 1500  | N/100 ML               | ONCE/<br>MONTH                                      | GRAB   |
| NITROGEN, TOTAL KJELDAHL (AS TKN)<br>EFFLUENT GROSS VALUE  | *****   | 26.90   | MG/L                   | ONCE/<br>MONTH                                      | GRAB   |
| NITROGEN, AMMONIA TOTAL (AS NH₃N)<br>EFFLUENT GROSS VALUE  |   | 25,6  | MG/L                   | ONCE/<br>MONTH                                      | GRAB   |
| NITROGEN, NITRATE + NITRITE (AS NO3N + NO2-N) EFFLUENT GROSS VALUE   | ******  | 12.3  | MG/L                   | ONCE/<br>MONTH                                      | GRAB   |
| PLANT AVAILABLE NITROGEN (AS PAN) CALCULATED VALUE   |   | 38.3  | MG/L                   | ONCE/<br>MONTH                                      | GRAB   |
| FLOW, THRU CONDUIT OR TREATMENT UNIT<br>EFFLUENT GROSS VALUE   | ******  | MONTHLY TOTAL DAILY MAX   | MGD                    | ONCE/<br>MONTH                                      | TOTAL FLOW                                   |
| RILK SCYPE.  | HAVE PERSONALLY EXAMINED AN   | D AM WITH THE   | 7                      | TELEPHONE   | DATE   |
| WATER-Sewer Superinterly Information is true, accurate, and or   | NG THE INFORMATION, I BELIEVE<br>IMPLÉTE. I AM AWARE THAT THERE                   | THE SUBMITTED ARE SIGNATURE O   |                        | 479-721-7539  | 07-02-2015                                   |
|  |   |   | OFFICER OR<br>ED AGENT |   |  |
| COMMENTS AND EXPLANATION OF VIOLATIONS (Reference all as AND PUMPOUT SIME SLUGE From DESC TOMIC TO WE ALSO HAD TAMES OVER FLOW ON 6-18-2 STATED USING SEWER PLANT #Z, Sewer ADEQ FORM  | tachments here) OV/TSS<br>Sludge Timk, We Ad<br>US From RAIN A<br>Cr Overflow (or | is still A little High<br>Iso Had Mugmeter Go<br>NO pumps Quit word<br>Itiv mation Number | HOLD HAVE V            | rset the slodge<br>the Firsts day<br>in 180 f June, | Timers or plant<br>sof the month.<br>We ALSD |
| ADEQ Form  |   |   | 11000                  | 13H   |  |

4873-WR-Z

| PERMITTEE NAME ***  | NEW STREET                       | NAME (IF DIFFERENT)        | T PACIFILIES (                             | IA DRIP IRRIGAT |                 |
|---|----------------------------------|----------------------------|--|-----------------|-----------------|
| City of Cauc Springs  | Plant H                          | /                          | 4  | PERMIT NO.      | ]               |
| PERMITTEE ADDRESS & PARCELE   | PERM                             | CILITY ADDRESS             | 爿  | 4893-WR-Z       | ]               |
| Cave Spring S Ar 727/8  |                                  |                            | <u> </u>                                   | AFIN NO.        |                 |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR   | 177712                           | S. Main                    |  | 04-01642        | 1               |
| FUTURE USE. SUBMIT LAB ANALYSES WITH THIS   | MM/DD/YYYY                       | EFFLUENT MONITORING PERIOD | TEDAY                                      |                 |                 |
| FORM. FROM  | 05-01-3015                       | TO AC-3/-                  |  |                 |                 |
| PARAMETER   | ATREATED WASTEWAY                | TO 05-31-5                 | 2015                                       |                 |                 |
| PARAMETER   | THEATED WASTEWAT                 | ER EFFLUENT SAMPLING       | (2) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1 | and the second  |                 |
|   | PERMIT REQUIREMENT               | SAMPLE MEASUREMENT         | UNITS                                      | FREQUENCY OF    | SAMPLE TYPE     |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT GROSS VALUE  |                                  |                            |  | ANALYSIS        | SAMPLE TIPE     |
|   |                                  | 6.7                        | MG/L                                       | ONCE/           | GRAB            |
| CBOD, 5-DAY (20 DEG. C)   |                                  | 10.1                       |  | MONTH           | 0.00            |
| EFFLUENT GROSS VALUE  |                                  | 10.1                       | MG/L                                       | ONCE/           |                 |
| PH  | <del></del>                      | 19.6                       |  | MONTH           | GRAB            |
| EFFLUENT GROSS VALUE  | 6 to 9                           |                            |  | ONCE/           |                 |
|   |                                  | 7.0                        | S.U.                                       | MONTH           | GRAB            |
| SOLIDS, TOTAL SUSPENDED EFFLUENT GROSS VALUE  |                                  |                            | <b>†</b>                                   |                 |                 |
|   |                                  | 28.0                       | MG/L                                       | ONCE/<br>MONTH  | GRAB            |
| COLIFORM, FECAL GENERAL   |                                  |                            |  | MONTH           |                 |
| EFFLUENT GROSS VALUE  |                                  | 2200                       | N/100 ML                                   | ONCE/           | 2242            |
| NITROGEN, TOTAL KJELDAHL (AS TKN)   |                                  | 2000                       |  | MONTH           | GRAB            |
| EFFLUENT GROSS VALUE  | *****                            | 2// 75                     | Mon  | ONCE/           |                 |
| NITROGEN, AMMONIA TOTAL (AS NH3N)   |                                  | 34.70                      | MG/L                                       | MONTH           | GRAB            |
| EFFLUENT GROSS VALUE  |                                  | 20                         |  | Sugar.          |                 |
|   |                                  | 29.5                       | MG/L                                       | ONCE/<br>MONTH  | GRAB            |
| NITROGEN, NITRATE + NITRITE (AS NO <sub>3</sub> N + NO <sub>2</sub> -N)   | *****                            |                            |  | MONTH           |                 |
| EFFLUENT GROSS VALUE  |                                  | 23.53                      | MG/L                                       | ONCE/           | CDAD            |
| PLANT AVAILABLE NITROGEN (AS PAN)   |                                  | 2000                       |  | MONTH           | GRAB            |
| CALCULATED VALUE  |                                  | C111                       | MG/L                                       | ONCE/           |                 |
| FLOW, THRU CONDUIT OR TREATMENT UNIT  |                                  | 54.6                       | , more                                     | MONTH           | GRAB            |
| EFFLUENT GROSS VALUE  | •••••                            | MONTHLY TOTAL DAILY MAX    |  | ONCE/           |                 |
|   |                                  | 1.10 0.07                  | MGD  | MONTH           | TOTAL FLOW      |
| RILK SCHIPE INFORMATION SUBMITTED HEREIN AND B  |                                  | AM WITH THE                |  | TELEPHONE       | 0.175           |
| WATER-Sewer Superinter Conformation is True accurate and con-   | THE INFORMATION, I BELIEVE T     | HE SUBMITTED               | (1.11)                                     | TELEPHONE       | DATE            |
|   |                                  |                            | xuju                                       | 499-721-7539    | N/ n/201        |
| TYPED OR PRINTED PENALTIES FOR SUBMITTING FALSE INFORM IMPRISONMENT.  | ATION, INCLUDING THE POSSIBILITY | OF FINE AND EXECUTIVE O    | FFICER OR                                  | 111 101 1001    | 06-01-2015      |
| COMMENTS AND EXPLANATION OF VIOLATIONS (Reference all atta  Our Sever plant must have gotten Hit I  One master pump. Not sure if this is the pro  getting everything FixED, Had Region  ADEQ Form With All the rain this migh | ichments here \                  | AUTHORIZE                  | D AGENT                                    | CODE NUMBER     | MM/DD/YYYY      |
| Our Sever plant must have gotten Hit  | by lighting ground               | the 27 of May, WE l        | ost one sluc                               | POURD MACA      | 1-4-C A         |
| One master pump. Not sure if this is the on   | ben To Six Hick                  | TES those it was the       | e partiem =                                | מצחות שוקטק     | ard, And        |
| getting everything FixED Had Bonn   | o Ven Com                        | 111                        | ישים ומשושטים                              | BUT BOD, A      | e working on    |
| ADEQ Form With All the Main this  | + los aresory o                  | UT TO GO OUD! PLA          | nt. Still a                                | of Pondon o     | ndrio Evid      |
| The free from this mass   | nt be some of t                  | he problem to the          | rond ne                                    | Revised De      | 2ember 13, 2005 |
|   |                                  |                            |  |                 | Annual La Zines |

| PERMITTEE NAME  | FACILITY NAME (IF DIFFERENT)           |  |                            | PERMIT NO.                    |                  |
|---|--|--|----------------------------|-------------------------------|------------------|
| City of Cauc Secings  | PHort #1                               |  |                            | 4813 WR-Z                     |                  |
| PERMITTEE ADDRESS   |  | ILITY ADDRESS                              |                            | AFIN NO.                      | CEIVE            |
| Caux Springs, Ar 727/8  | 1499 12 3                              | S. Main                                    |                            | 04-016VL                      |                  |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR   | WASTEWATER                             | EFFLUENT MONITORING PERIOD.                |                            | N A                           | MAY 1 3 2015     |
| FUTURE USE. SUBMIT LAB ANALYSES WITH THIS   | WWDDJAAAA                              | MM/DDYYY                                   |                            | 11                            | 10.50            |
| FORM. FROM  | 04-01-2015                             | TO 04-30-20                                | 015                        |                               | -                |
| and the second of the first the second of   | TREATED WASTEWATE                      | R EFFLUENT SAMPLING                        | Marine San Art Berg        | the fact of the second        |                  |
| PARAMETER   | PERMIT REQUIREMENT                     | SAMPLE MEASUREMENT                         | UNITS                      | FREQUENCY OF<br>ANALYSIS      | SAMPLE TYPE      |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT GROSS VALUE  | ******                                 | 6.2  | MG/L                       | ONCE/<br>MONTH                | GRAB             |
| CBOD, 5-DAY (20 DEG. C)<br>EFFLUENT GROSS VALUE   |  | 14.0                                       | MG/L                       | ONCE/<br>MONTH                | GRAB             |
| PH<br>EFFLUENT GROSS VALUE  | 6 to 9                                 | 7.4  | S.U.                       | ONCE/<br>MONTH                | GRAB             |
| SOLIDS, TOTAL SUSPENDED<br>EFFLUENT GROSS VALUE   |  | 17.0                                       | MG/L                       | ONCE/<br>MONTH                | GRAB             |
| COLIFORM, FECAL GENERAL<br>EFFLUENT GROSS VALUE   |  | 5800                                       | N/100 ML                   | ONCE/<br>MONTH                | GRAB             |
| NITROGEN, TOTAL KJELDAHL (AS TKN)<br>EFFLUENT GROSS VALUE                                       |  | 31.40                                      | MG/L                       | ONCE/<br>MONTH                | GRAB             |
| NITROGEN, AMMONIA TOTAL (AS NH <sub>3</sub> N) EFFLUENT GROSS VALUE                             |  | 29.9                                       | MG/L                       | ONCE/<br>MONTH                | GRAB             |
| NITROGEN, NITRATE + NITRITE (AS NO <sub>3</sub> N + NO <sub>7</sub> -N)<br>EFFLUENT GROSS VALUE | *****                                  | 13.83                                      | MG/L                       | ONCE/<br>MONTH                | GRAB             |
| PLANT AVAILABLE NITROGEN (AS PAN) CALCULATED VALUE  |  | 44.2                                       | MG/L                       | ONCE/<br>MONTH                | GRAB             |
| FLOW, THRU CONDUIT OR TREATMENT UNIT<br>EFFLUENT GROSS VALUE                                    | *****                                  | MONTHLY TOTAL DAILY MAX  6.88 0.035        | MGD                        | ONCE/<br>MONTH                | TOTAL FLOW       |
| NAME/TITLE PRINCIPAL EXECUTIVE OFFICER   CERTIFY UNDER PENALTY OF LAW THAT                      | I HAVE PERSONALLY EXAMINED A           |  | 0                          | TELEPHONE                     | DATE             |
| RICK SHYPE INFORMATION SUBMITTED HEREIN; AND  |  |  | aus                        |                               |                  |
| IMMEDIATELY RESPONSIBLE FOR OBTAIN  | ING THE INFORMATION, I BELIEVE         | THE SUBMITTED                              | augo                       | 476-721-7539                  | 105-05-2015      |
| TYPED OR PRINTED PENALTIES FOR SUBMITTING FALSE INFO  | RMATION, INCLUDING THE POSSIBIL        | ITY OF FINE AND EXECUTIVE                  | OF PRINCIPAL<br>OFFICER OR | AREA MINESE                   | MM/DDYYYY        |
| COMMENT.  | attachmente horo                       |  | ZED AGENT                  | CODE                          |                  |
| Not Sure WMYTSS is HigH AS AW, Just H<br>Drip field. Have falled AND Meet with                  | and slug THANKS PUR<br>SAME SAM DUNN & | npal out. We Ave A<br>McClelland consultin | realso Having Engineers    | ing some por<br>sto Fix the p | nding on arbiem. |

ADEQ Form

| City of Caus Sections  | -  | DANT #  | NAME (IF DIRFERENT)        | 4                  | PERMIT NO.               |               |
|--|--|---|----------------------------|--------------------|--------------------------|---------------|
| PERMITTEE ADDRESS  | <b>=</b>   |   | ILITY ADDRESS              |                    | 4873-WR-Z                | ]             |
| Po. Box 36<br>Cave Springs, Ar 727/8   | 1 '  |   | S. Main                    | 4                  | 04-01642                 |               |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR  | _  |   | EFFLUENT MONITORING PERIOD | 1                  |                          |               |
| FUTURE USE. SUBMIT LAB ANALYSES WITH THIS                                      |  | MM/DD/YYYY  | MM/DD/YYY                  | Y                  |                          |               |
| FORM.  | FROM   | - Carre   | TO 02-28-2                 |                    |                          |               |
|  | · 中国的政治  | TREATED WASTEWATE   | REFELUENT SAMPLING         | STORE THE PARTY OF | A County                 |               |
| PARAMETER  |  | PERMIT REQUIREMENT  | SAMPLE MEASUREMENT         | UNITS              | FREQUENCY OF<br>ANALYSIS | SAMPLE TYPE   |
| PHOSPHOROUS, TOTAL (AS P) GROSS VALUE  | EFFLUENT   | ******  | 5.6                        | MG/L               | ONCE/<br>MONTH           | GRAB          |
| CBOD, 5-DAY (20 DEG. C)<br>EFFLUENT GROSS VALUE                                |  |   | 7:0                        | MG/L               | ONCE/<br>MONTH           | GRAB          |
| PH<br>EFFLUENT GROSS VALUE   |  | 6 to 9  | 7.2                        | S.U.               | ONCE/<br>MONTH           | GRAB          |
| SOLIDS, TOTAL SUSPENDED<br>EFFLUENT GROSS VALUE                                |  |   | 15.0                       | MG/L               | ONCE/<br>MONTH           | GRAB          |
| COLIFORM, FECAL GENERAL<br>EFFLUENT GROSS VALUE                                | :  |   | 844                        | N/100 ML           | ONCE/<br>MONTH           | GRAB          |
| NITROGEN, TOTAL KJELDAHL (AS TKN)<br>EFFLUENT GROSS VALUE                      | 4  | *****   | Z8.80 .                    | MG/L               | ONCE/<br>MONTH           | GRAB          |
| NITROGEN, AMMONIA TOTAL (AS NH3N)<br>EFFLUENT GROSS VALUE                      | -  | *****   | 27.7                       | MG/L               | ONCE/<br>MONTH           | GRAB          |
| NITROGEN, NITRATE + NITRITE (AS NO <sub>3</sub> N + NO<br>EFFLUENT GROSS VALUE | O <sub>2</sub> -N)                               | *****   | 72,D                       | MG/L               | ONCE/<br>MONTH           | GRAB          |
| PLANT AVAILABLE NITROGEN (AS PAN)<br>CALCULATED VALUE                          | i  |   | SO. D                      | MG/L               | ONCE/<br>MONTH           | GRAB          |
| FLOW, THRU CONDUIT OR TREATMENT UNIT<br>EFFLUENT GROSS VALUE                   | i.   | *****   | MONTHLY TOTAL DAILY MAX    | MGD                | ONCE/<br>MONTH           | TOTAL FLOW    |
|  | PENALTY OF LAW THAT I                            | HAVE PERSONALLY EXAMINED AN   | D AM WITH THE              | 7                  | TELEPHONE                | DATE          |
| LU Ater-Sewer Superinter by Information is to                                  | PONSIBLE FOR OBTAINING<br>RUE, ACCURATE, AND CON | BASED ON MY INQUIRY OF THOSE OF THE INFORMATION, I BELIEVE. MPLETE, I AM AWARE THAT THERE A | THE SUBMITTED AND A        | Supe               |                          | 03-05-2015    |
| TYPED OR PRINTED IMPRISONMENT.   |  | THE POSSIBILITY   | TOP FINE AND EXECUTIVE     | OFFICER OR         | AREA                     | MM/DD/YYYY    |
| COMMENTS AND EXPLANATION OF VIOLATIO   | NS (Reference all atta                           | achments here)  | AUTHORIZE                  | ED AGENT           | COOE                     | . WIW(DD/TTTT |
|  |  | ,   |                            |                    |                          |               |

PERMITTEE NAME

| Permittee NAME  CHY OF CAUC SECRES  PERMITTEE ADDRESS  PO. BOX 34  CAUC SPONCES AC 72718                   |                                | Plant H /  | NAME (IF DIFFERENT)                               |           | H873 WR-Z<br>SMAFIN NO.  |             |
|--|--------------------------------|--|---|-----------|--------------------------|-------------|
| MAKE ADDITIONAL COPIES OF THIS FORM FOR<br>FUTURE USE. SUBMIT LAB ANALYSES WITH THIS<br>FORM.              | FROM                           | MM/DDYYYY  61-01-2015  | FFLUENT MONITORING PERIOD (1)  MMDDMM TO 01-31-20 | 2/5       |                          |             |
| 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | Contract of the                | TREATED WASTEWATE  | REFFLUENT SAMPLINGEN                              | 発生なる。     | ALCON .                  |             |
| PARAMETER  |                                | PERMIT REQUIREMENT   | SAMPLE MEASUREMENT .                              | UNITS     | FREQUENCY OF<br>ANALYSIS | SAMPLE TYPE |
| PHOSPHOROUS, TOTAL (AS P) EFFLU<br>GROSS VALUE   | ENT                            | *****  | 5.9   | MG/L      | ONCE/<br>MONTH           | GRAB        |
| CBOD, 5-DAY (20 DEG. C) EFFLUENT GROSS VALUE   |                                |  | 5.D   | MG/L      | ONCE/<br>MONTH           | GRAB        |
| PH<br>EFFLUENT GROSS VALUE   |                                | 6 to 9   | 7.2   | S.U.      | ONCE/<br>MONTH           | GRAB        |
| SOLIDS, TOTAL SUSPENDED<br>EFFLUENT GROSS VALUE  |                                |  | 18.0  | MG/L      | ONCE/<br>MONTH           | GRAB        |
| COLIFORM, FECAL GENERAL<br>EFFLUENT GROSS VALUE  |                                |  | 4100  | N/100 ML  | ONCE/<br>MONTH           | GRAB        |
| NITROGEN, TOTAL KJELDAHL (AS TKN) EFFLUENT GROSS VALUE   |                                | *****  | 24.60   | MG/L      | ONCE/<br>MONTH           | GRAB        |
| NITROGEN, AMMONIA TOTAL (AS NH3N) EFFLUENT GROSS VALUE   |                                |  | 23,6  | MG/L      | ONCE/<br>MONTH           | GRAB        |
| NITROGEN, NITRATE + NITRITE (AS NO <sub>3</sub> N + NO <sub>2</sub> -N) EFFLUENT GROSS VALUE               |                                | ******   | 16.7  | MG/L      | ONCE/<br>MONTH           | GRAB        |
| PLANT AVAILABLE NITROGEN (AS PAN) CALCULATED VALUE   |                                |  | 40.6  | MG/L      | ONCE/<br>MONTH           | GRAB        |
| FLOW, THRU CONDUIT OR TREATMENT UNIT   |                                | *****  | MONTHLY TOTAL DAILY MAX                           | MGD       | ONCE/<br>MONTH           | TOTAL FLOW  |
| NAMERTITLE PRINCIPAL EXECUTIVE OFFICER I CERTIFY UNDER PENALTY   | OF LAW THAT I                  | HAVE PERSONALLY EXAMINED AN  | AM WITH THE                                       | 7         | TELEPHONE                | DATE        |
| WATER-SEWER Superintered Theoremation is True, accu  | FOR OBTAINING<br>RATE, AND COM | ASED ON MY INQUIRY OF THOS<br>THE INFORMATION, I BELIEVE T<br>PLETE. I AM AWARE THAT THERE A | THE SUBMITTED AND A CHARLES SIGNIFICANT           | Signe     |                          | 0202-2015   |
| TYPED OR PRINTED PENALTIES FOR SUBMITTING  | FALSE INFORM                   | ATION, INCLUDING THE POSSIBILIT  | Y OF FINE AND EXECUTIVE O                         | FFICER OR | AREA                     | MM/DD/YYYY  |
| COMMENTS AND EXPLANATION OF VIOLATIONS (Refe<br>Concergant our TSS IS HIGH, WE H<br>Corre of this publish. | arence all atta<br>Ad 130+h    | ichments here)<br>Slvg Tanks pump  | ed out on 1-13-2015.                              | I hope +  | 45 TAKES                 |             |
| ADEQ Form  |                                |  |   |           |                          |             |

| PERMITTEE NAME 250   | FACILITY   | NAME (IF DIFFERENT)                              |                             | PERMIT NO.          | i               |
|--|--|--|-----------------------------|---------------------|-----------------|
| City of Cave Serios  | - Plant #  | /  | 7                           | 4893-WR-Z           |                 |
| P.O. BOX 36  |  | ILITY ADDRESS                                    |                             | AFIN NO.            |                 |
| Cave springs, Ar 727/8   |  | S. Main  |                             | 04-01642            | J               |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR<br>FUTURE USE. SUBMIT LAB ANALYSES WITH THIS   | MM/DD/YYYY   | EFFLUENT MONITORING PERIOD                       |                             |                     |                 |
| FORM.  | FROM 12-01-7014  | TO 72-37-3                                       | 2011                        |                     |                 |
| 2000年1月1日 1月1日 1月1日 1月1日 1日 1   | TREATED WASTEWATE  | R EFFLUENT SAMPLING                              | MARKAN WARRANG              | Section 14.5        |                 |
| PARAMETER  | PERMIT REQUIREMENT   | SAMPLE MEASUREMENT                               | UNITS                       | FREQUENCY OF        | SAMPLE TYPE     |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT GROSS VALUE   | *****  | 6.3  | MG/L                        | ONCE/<br>MONTH      | GRAB            |
| CBOD, 5-DAY (20 DEG. C)<br>EFFLUENT GROSS VALUE  |  | 13.0   | MG/L                        | ONCE/<br>MONTH      | GRAB            |
| PH<br>EFFLUENT GROSS VALUE   | 6 to 9   | 7.1  | S.U.                        | ONCE/<br>MONTH      | GRAB            |
| SOLIDS, TOTAL SUSPENDED EFFLUENT GROSS VALUE   |  | 21.0   | MG/L                        | ONCE/<br>MONTH      | GRAB            |
| COLIFORM, FECAL GENERAL EFFLUENT GROSS VALUE   |  | 6800   | N/100 ML                    | ONCE/<br>MONTH      | GRAB            |
| NITROGEN, TOTAL KJELDAHL (AS TKN) EFFLUENT GROSS VALUE   | *****  | 16.80  | MG/L                        | ONCE/<br>MONTH      | GRAB            |
| NITROGEN, AMMONIA TOTAL (AS NH <sub>3</sub> N) EFFLUENT GROSS VALUE  |  | 12.0   | MG/L                        | ONCE/<br>MONTH      | GRAB            |
| NITROGEN, NITRATE + NITRITE (AS NO <sub>3</sub> N + NO <sub>2</sub> -N)<br>EFFLUENT GROSS VALUE                                    | ******   | 26.80  | MG/L                        | ONCE/<br>MONTH      | GRAB            |
| PLANT AVAILABLE NITROGEN (AS PAN) CALCULATED VALUE   |  | 40.2   | MG/L                        | ONCE/<br>MONTH      | GRAB            |
| FLOW, THRU CONDUIT OR TREATMENT UNIT EFFLUENT GROSS VALUE  NAME/TITLE PRINCIPAL EXECUTIVE OFFICER   I CERTIFY UNDER PENALTY OF LAW |  | MONTHLY TOTAL DAILY MAX  6.86 (9.03.3)           | MGD                         | ONCE/<br>MONTH      | TOTAL FLOW      |
|  | V THAT I HAVE PERSONALLY EXAMINED AND<br>AND BASED ON MY INQUIRY OF THOS | AM WITH THE                                      |                             | TELEPHONE           | DATE            |
|  |  |  | supe                        | 100 721 702         |                 |
| TYPED OR PRINTED  TYPED OR PRINTED   | E INFORMATION, INCLUDING THE POSSIBILIT                                  | Y OF FINE AND EXECUTIVE OF                       |                             | 449-161-1539        | 01-02-2015      |
| COMMENTS AND EXPLANATION OF VIOLATIONS (References   | a all attachments have   | AUTHORIZE  | D AGENT                     | AREA<br>CODE NUMBER | MM/DD/YYYY      |
| COMMENTS AND EXPLANATION OF VIOLATIONS (Reference TSS WENT BACK UP NOT SUR WMY, WE OF TAINIL, I THINK OUT NEXT STEP IS TO          | pumped Close tank Back<br>nave slugt Tanks pum                           | To the Front of plant<br>apped out and Have slug | to SEE How<br>S. Howlad off | much shig wa        | s in bottom     |
| ADEQ Form  |  |  | k                           |                     | cember 13, 2005 |

| PERMITTEE NAME  |   | FACILITY NAME (IF DIFFERENT)               |           | 4873 WR-Z                |                  |
|---|---|--|-----------|--------------------------|------------------|
| PERMITTEE ADDRÉSS   | Phont #/  | LITY ADDRESS                               |           | AFIN NO.                 |                  |
| Do. Box 36  |   |  |           | 04-01642                 |                  |
| Cave Sorras, Ar 72718   | 149912 8  | s. Main                                    |           |                          |                  |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR   |   | FFLUENT MONITORING PERIOD                  |           | MECE                     | IVEN             |
| FUTURE USE. SUBMIT LAB ANALYSES WITH THIS   | MMODAYYY  | MM/DDYYYY                                  |           | 4 SKR                    | 2 10am<br>0 2014 |
| FORM. FF  | ROM 10-01-2014  | TO 10 31-26                                | 14        | NOV 1                    | 0 2014           |
|   | TREATED WASTEWATE   | R EFFLUENT SAMPLING                        |           | 1                        |                  |
| PARAMETER   | PERMIT REQUIREMENT  | SAMPLE MEASUREMENT                         | UNITS     | FREQUÊNCY OF<br>ANALYSIS | SAMPLE TYPE      |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT<br>GROSS VALUE   | *****   | 6.7  | MG/L      | ONCE/<br>MONTH           | GRAB             |
| CBOD, 5-DAY (20 DEG. C)<br>EFFLUENT GROSS VALUE   |   | 6.0  | MG/L      | ONCE/<br>MONTH           | GRAB             |
| PH<br>EFFLUENT GROSS VALUE  | 6 to 9  | 6.1  | S.U.      | ONCE/<br>MONTH           | GRAB             |
| SOLIDS, TOTAL SUSPENDED EFFLUENT GROSS VALUE  |   | 26.0                                       | MG/L      | ONCE/<br>MONTH           | GRAB             |
| COLIFORM, FECAL GENERAL<br>EFFLUENT GROSS VALUE   |   | 800  | N/100 ML  | ONCE/<br>MONTH           | GRAB             |
| NITROGEN, TOTAL KJELDAHL (AS TKN)<br>EFFLUENT GROSS VALUE   | *****   | 11.70                                      | MG/L      | ONCE/<br>MONTH           | GRAB             |
| NITROGEN, AMMONIA TOTAL (AS NH3N)<br>EFFLUENT GROSS VALUE   |   | 8.6  | MG/L      | ONCE/<br>MONTH           | GRAB             |
| NITROGEN, NITRATE + NITRITE (AS NO <sub>3</sub> N + NO <sub>2</sub> -N) EFFLUENT GROSS VALUE                                      |   | 38.568                                     | MG/L      | ONCE/<br>MONTH           | GRAB             |
| PLANT AVAILABLE NITROGEN (AS PAN) CALCULATED VALUE  |   | 47.9                                       | MG/L      | ONCE/<br>MONTH           | GRAB             |
| FLOW, THRU CONDUIT OR TREATMENT UNIT<br>EFFLUENT GROSS VALUE  |   | MONTHLY TOTAL DAILY MAX 0.90 0056          | MGD       | ONCE/<br>MONTH           | TOTAL FLOW       |
|   | THAT I HAVE PERSONALLY EXAMINED AN  | D AM WITH THE                              |           | TELEPHONE                | DATE             |
| WATER SENER SUPERINTER INFORMATION IS TRUE, ACCURATE, AN  | and based on my inquiry of tho<br>itaining the information, I believe<br>id complete. I am aware that there | THE SUBMITTED ARE SIGNIFICANT SIGNATURE OF |           | 479-721-7539             | 11-03-2014       |
| TYPED OR PRINTED IMPRISONMENT   | INFORMATION, INCLUDING THE POSSIBILI  | AUTHORIT                                   | ED ACENT  | AREA NUMBER              | MM/DD/YYYY       |
| COMMENTS AND EXPLANATION OF VIOLATIONS (Reference: TSS HILLY - When they is stalled plant they From DOSE TANK TO the Slug TANK, - | all attachments here)   | cinta dose TANK.                           | We are go | my to remove )           | Wish Line        |
| 755 HIGH-WATER TO the SING TANK   | THON HAVE CLUSE LAND  | K pumped out.                              | ,         |                          | / -              |
| From Vise Park to the   | THE PARE (LOSE PARE   | <i>p y z</i>                               |           |                          | 120              |

## ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY MONITORING REPORT FOR DECENTRALIZED WASTEWATER TREATMENT FACILITIES VIA DRIP IRRIGATION ADEQ PERMIT NO. FACILITY NAME (IF DIFFERENT) PERMITTEE NAME 4873 WR- L OCT 02 2014 City of CAUC SPECIOS DANH #1 PERMITTEE ADDRESS FACILITY ADDRESS AFIN NO. PO. BOX 36 04-01642 149912 S. Main ECEIVE Cave Sorry S, Ar 727/8 MAKE ADDITIONAL COPIES OF THIS FORM FOR WASTEWATER EFFLUENT MONITORING PERIOD FUTURE USE. SUBMIT LAB ANALYSES WITH THIS MM/DD/YYYY MM/DD/YYYY OCT 08 2014 FORM. FROM TREATED WASTEWATER EFFLUENT SAMPLING FREQUENCY OF PERMIT REQUIREMENT SAMPLE MEASUREMENT SAMPLE TYPE PARAMETER UNITS ANALYSIS ONCE/ PHOSPHOROUS, TOTAL (AS P) **EFFLUENT** MG/L GRAB **GROSS VALUE** MONTH CBOD, 5-DAY (20 DEG. C) ONCE/ MG/L GRAB **EFFLUENT GROSS VALUE** MONTH ONCE/ 6 to 9 S.U. GRAB EFFLUENT GROSS VALUE MONTH SOLIDS, TOTAL SUSPENDED ONCE/ MG/L GRAB EFFLUENT GROSS VALUE MONTH COLIFORM, FECAL GENERAL ONCE/ N/100 ML GRAB MONTH EFFLUENT GROSS VALUE NITROGEN, TOTAL KJELDAHL (AS TKN) ONCE/ MG/L GRAB **EFFLUENT GROSS VALUE** MONTH NITROGEN, AMMONIA TOTAL (AS NH<sub>3</sub>N) ONCE/ \*\*\*\*\* MG/L GRAB MONTH EFFLUENT GROSS VALUE NITROGEN, NITRATE + NITRITE (AS NO<sub>3</sub>N + NO<sub>2</sub>-N) ONCE/ \*\*\*\*\* MG/L GRAB MONTH EFFLUENT GROSS VALUE PLANT AVAILABLE NITROGEN (AS PAN) ONCE/ MG/L GRAB CALCULATED VALUE MONTH MONTHLY TOTAL DAILY MAX FLOW, THRU CONDUIT OR TREATMENT UNIT ONCE/ ..... MGD TOTAL FLOW EFFLUENT GROSS VALUE 0.031 MONTH NAME/TITLE PRINCIPAL EXECUTIVE OFFICER CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM WITH THE TELEPHONE DATE FORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS RILK Sayre MEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED 721-7539 IN After-Source Superinterle INTORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT SIGNATURE OF PRINCIPAL PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND EXECUTIVE OFFICER OR TYPED OR PRINTED MM/DD/YYYY COMMENTS AND EXPLANATION OF VIOLATIONS (Reference all attachments here)

it tolls like our TSS is still high how were in contact with company that installed bysten, where tried living they required to do and it is still high, we are now going to have the slung tourks AUTHORIZED AGENT

| City of Caus Secres  | DANT #1                                   | NAME (IF DIFFERENT)                 |  | H873 WR-Z                |             |
|--|---|-------------------------------------|--|--------------------------|-------------|
| Cave Springs Ar 727/8  | 149912 3                                  | S. Main                             | 1  | 04-01642                 |             |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR<br>FUTURE USE. SUBMIT LAB ANALYSES WITH THIS   | WASTEWATER                                | EFFLUENT MONITORING PERIOD          |  |                          |             |
| FORM. FROM   | MMVDDYYYY<br>1 08-01-204                  | TO 08-31-20                         | 14   |                          |             |
| 。<br>一种工作,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种和自然,<br>中国的人种种和自然,<br>中国的人种种和自然,<br>中国的人种种种种和自然,<br>中国的人种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种 | TREATED WASTEWATE                         | REFFLUENT SAMPLING                  | COMMON TO STATE OF ST | etipes as a real         | 35 Page 1   |
| PARAMETER  | PERMIT REQUIREMENT                        | SAMPLE MEASUREMENT                  | UNITS  | FREQUENCY OF<br>ANALYSIS | SAMPLE TYPE |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT GROSS VALUE   | *****                                     | 6.7                                 | MG/L   | ONCE/<br>MONTH           | GRAB        |
| CBOD, 5-DAY (20 DEG. C)<br>EFFLUENT GROSS VALUE  |   | 9.0                                 | MG/L   | ONCE/<br>MONTH           | GRAB        |
| PH<br>EFFLUENT GROSS VALUE   | 6 to 9                                    | 6.0                                 | S.U.   | ONCE/<br>MONTH           | GRAB        |
| SOLIDS, TOTAL SUSPENDED EFFLUENT GROSS VALUE   |   | 18.0                                | MG/L   | ONCE/<br>MONTH           | GRAB        |
| COLIFORM, FECAL GENERAL EFFLUENT GROSS VALUE   |   | 100                                 | N/100 ML   | ONCE/<br>MONTH           | GRAB        |
| NITROGEN, TOTAL KJELDAHL (AS TKN) EFFLUENT GROSS VALUE   | *****                                     | 15.70                               | MG/L   | ONCE/<br>MONTH           | GRAB        |
| NITROGEN, AMMONIA TOTAL (AS NH₃N)<br>EFFLUENT GROSS VALUE  | . *****                                   | 9.5                                 | MG/L   | ONCE/<br>MONTH           | GRAB        |
| NITROGEN, NITRATE + NITRITE (AS NO₃N + NO₂-N) EFFLUENT GROSS VALUE   | ******                                    | 45.386                              | MG/L   | ONCE/<br>MONTH           | GRAB        |
| PLANT AVAILABLE NITROGEN (AS PAN) CALCULATED VALUE   |   | 56.7                                | MG/L   | ONCE/<br>MONTH           | GRAB        |
| FLOW, THRU CONDUIT OR TREATMENT UNIT EFFLUENT GROSS VALUE  | ******                                    | MONTHLY TOTAL DAILY MAX 0,65 0.025  | MGD  | ONCE/<br>MONTH           | TOTAL FLOW  |
| NAME/TITLE PRINCIPAL EXECUTIVE OFFICER   CERTIFY UNDER PENALTY OF LAW THAT   | I HAVE PERSONALLY EXAMINED AN             | AM WITH THE                         |  | TELEPHONE                | DATE        |
| RICK SOLY CE INFORMATION SUBMITTED HEREIN, AND INMEDIATELY RESPONSIBLE FOR OBTAINING HEREIN, AND CONTINUE OF PENALTIES FOR SUBMITTING FALSE INFORMATION IS TRUE, ACCURATE, AND CONTINUE OF PENALTIES FOR SUBMITTING FALSE INFORMATION.   | G THE INFORMATION, I BELIEVE THAT THERE A | THE SUBMITTED A CONTROL SIGNATURE O |  | 479-721-7539             | 08-04-2014  |
| TYPED OR PRINTED IMPRISONMENT.   | MATION, INCLUDING THE POSSIBILIT          | Y OF FINE AND EXECUTIVE O           |  | AREA NUMBER              | MM/DD/YYYY  |
| COMMENTS AND EXPLANATION OF VIOLATIONS (Reference all att  | achments here)                            | - to low HAVE AT                    | usted the  | 1x Place                 |             |

#### ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY MONTHLY MONITORING REPORT FOR DECENTRALIZED WASTEWATER TREATMENT FACILITIES VIA DRIP IRRIGATION PERMITTEE NAME (VALUE ) FACILITY NAME (IF DIFFERENT) AGE, THE

PERMIT NO. /

Revised December 13, 2005 and the first state of the

| City of Cave Springs   | DANT # 1  |                                     | 7  | 4873-WR-Z                | 1              |
|--|---|-------------------------------------|--|--------------------------|----------------|
| PERMITTEE ADDRESS WEEK TO A  | FAC   | ILITY ADDRESS                       | ā ·  | TO AFIN NO.              | i              |
| Cave Spring S, Ar 727/8  | 149912 3  | S. Main                             | 1  | 04-01642                 |                |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR  |   | EFFLUENT MONITORING PERIOD          | \$14.500 TW.                                 |                          |                |
| FUTURE USE. SUBMIT LAB ANALYSES WITH THIS  | MM/DD/YYYY  | MM/DD/YYY                           | Υ,   |                          |                |
| FORM. FROM   |   | TO 07-31-2010                       |  |                          |                |
| 。  | TREATED WASTEWATE   | REFFLUENT SAMPLING                  | <b>3000000000000000000000000000000000000</b> | は後令をいけれていない。             | Section in the |
| PARAMETER  | PERMIT REQUIREMENT  | SAMPLE MEASUREMENT                  | UNITS  | FREQUENCY OF<br>ANALYSIS | SAMPLE TYPE    |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT GROSS VALUE   | ******  | 7.6                                 | MG/L   | ONCE/<br>MONTH           | GRAB           |
| CBOD, 5-DAY (20 DEG. C) EFFLUENT GROSS VALUE   |   | 10.0                                | MG/L   | ONCE/<br>MONTH           | GRAB           |
| PH EFFLUENT GROSS VALUE  | 6 to 9  | 6.4                                 | · S.U.                                       | ONCE/<br>MONTH           | GRAB           |
| SOLIDS, TOTAL SUSPENDED EFFLUENT GROSS VALUE   |   | 32.0                                | MG/L   | ONCE/<br>MONTH           | GRAB           |
| COLIFORM, FECAL GENERAL<br>EFFLUENT GROSS VALUE  |   | 164                                 | N/100 ML                                     | ONCE/<br>MONTH           | GRAB           |
| NITROGEN, TOTAL KJELDAHL (AS TKN) EFFLUENT GROSS VALUE   | ******  | 14.60                               | I MG/L                                       | ONCE/<br>MONTH           | GRAB           |
| NITROGEN, AMMONIA TOTAL (AS NH <sub>3</sub> N) EFFLUENT GROSS VALUE  |   | 11.2                                | ) MG/L                                       | ONCE/<br>MONTH           | GRAB           |
| NITROGEN, NITRATE + NITRITE (AS NO₃N + NO₂-N) EFFLUENT GROSS VALUE   | ******  | 33.635                              | MG/L   | ONCE/<br>MONTH           | GRAB           |
| PLANT AVAILABLE NITROGEN (AS PAN) CALCULATED VALUE   |   | 45.8                                | MG/L   | ONCE/<br>MONTH           | GRAB           |
| FLOW, THRU CONDUIT OR TREATMENT UNIT EFFLUENT GROSS VALUE  | *****   | MONTHLY TOTAL DAILY MAX 0.632 0.024 | MGD  | ONCE/<br>MONTH           | TOTAL FLOW     |
| NAME/TITLE PRINCIPAL EXECUTIVE OFFICIAL I CERTIFY UNDER PENALTY OF LAW THAT  | I HAVE PERSONALLY EXAMINED AN                                     | D AM WITH THE                       |  | TELEPHONE                | DATE           |
| RILK SOLYTE INFORMATION SUBMITTED HEREIN; AND IMMEDIATELY RESPONSIBLE FOR OBTAINING WHEN SOLVEY SUBMITTED HEREIN; AND CO | NG THE INFORMATION, I BELIEVE THE MPLETE. I AM AWARE THAT THERE A | THE SUBMITTED AND A CHAPTURE OF     | Septe  | 479-721-7539             | 08-01-2014     |
| TYPED OR PRINTED IMPRISONMENT.   | MATION, INCLUDING THE POSSIBILIT                                  | Y OF FINE AND EXECUTIVE O           | OFFICER OR                                   | AREA NUMBER              | MM/DD/YYYY     |
| COMMENTS AND EXPLANATION OF VIOLATIONS (Reference all at   | tachments here)   | AUTHORIZE                           | / /D   | CODE                     |                |
| TSS-Lymits we high this Musity W   | e found that th   | le slose pumps had                  | Been wi                                      | por                      |                |
| Turned off.  |   |                                     |  |                          |                |

ADEQ Form

| PERMITTEE NAME > R. A.C.   | FACILITY.                        | NAME (IF DIFFERENT)         | <b>a</b> .   | PERMIT NO.               | 1                             |
|--|----------------------------------|-----------------------------|--|--------------------------|-------------------------------|
| City of Cave Springs   | Plant #                          |                             | 1  | 4873-WR-Z                | ·                             |
| PERMITTEE ADDRESS POR COME   | CARLES THAT FAC                  | ILITY ADDRESS               | នី   | WAFIN NO.                | i                             |
| Cave Springs Ar 727/8  | 149912 3                         | S. Main                     | 1  | 04-01642                 |                               |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR  |                                  | EFFLUENT MONITORING PERIODS | E STATE OF THE STA |                          |                               |
| FUTURE USE. SUBMIT LAB ANALYSES WITH THIS  | MM/DDYYYY                        | MM/DD/YY                    |  |                          |                               |
| FORM. FROM   | 1 3-01-2014                      | TO 3-31-20                  | 14   |                          |                               |
| - プランス・アイトンでは、日本の日本の大学の大学の大学の大学の   | TREATED WASTEWATE                | REFELUENT SAMPLING          | CA LINE IN THE   | <b>特别的</b> 是是我们是这一种      | The sales of the sales of the |
| PARAMETER  | PERMIT REQUIREMENT               | SAMPLE MEASUREMENT          | UNITS  | FREQUENCY OF<br>ANALYSIS | SAMPLE TYPE                   |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT GROSS VALUE   | ******                           | 5.2                         | MG/L   | ONCE/<br>MONTH           | GRAB                          |
| CBOD, 5-DAY (20 DEG. C) EFFLUENT GROSS VALUE   |                                  | 11.0                        | MG/L   | ONCE/<br>MONTH           | GRAB                          |
| PH<br>EFFLUENT GROSS VALUE   | 6 to 9                           | 7.3                         | S.U.   | ONCE/<br>MONTH           | GRAB                          |
| SOLIDS, TOTAL SUSPENDED EFFLUENT GROSS VALUE   |                                  | 22.0                        | MG/L   | ONCE/<br>MONTH           | GRAB                          |
| COLIFORM, FECAL GENERAL EFFLUENT GROSS VALUE   |                                  | 8100                        | N/100 ML   | ONCE/<br>MONTH           | GRAB                          |
| NITROGEN, TOTAL KJELDAHL (AS TKN) EFFLUENT GROSS VALUE   | *****                            | 30,20                       | MG/L   | ONCE/<br>MONTH           | GRAB                          |
| NITROGEN, AMMONIA TOTAL (AS NH <sub>3</sub> N) EFFLUENT GROSS VALUE  | *****                            | 0.3                         | MG/L   | ONCE/<br>MONTH           | GRAB                          |
| NITROGEN, NITRATE + NITRITE (AS NO <sub>3</sub> N + NO <sub>2</sub> -N) EFFLUENT GROSS VALUE   | *****                            | 22.19                       | MG/L   | ONCE/<br>MONTH           | GRAB                          |
| PLANT AVAILABLE NITROGEN (AS PAN) CALCULATED VALUE   |                                  | 31.5                        | MG/L   | ONCE/<br>MONTH           | GRAB                          |
| FLOW, THRU CONDUIT OR TREATMENT UNIT EFFLUENT GROSS VALUE  | *****                            | MONTHLY TOTAL DAILY MAX     | MGD  | ONCE/<br>MONTH           | TOTAL FLOW                    |
| NAME/TITLE PRINCIPAL EXECUTIVE OFFICER   CERTIFY UNDER PENALTY OF LAW THAT   | I HAVE PERSONALLY EXAMINED AN    | D AM WITH THE               |  | TELEPHONE                | DATE                          |
| RICK SCHIPE INFORMATION SUBMITTED HEREIN, AND IMMEDIATELY RESPONSIBLE FOR OBTAINING AFTER SUPERINFORMATION IS TRUE, ACCURATE, AND COMPANY THE SCHOOL OF THE SUBMITTED AFTER SU | NO THE INCORNATION A RELEDIC     | THE OLD WOODS 125 11 /      | Sayre  | 479-721-7539             | ,                             |
| TYPED OR PRINTED PENALTIES FOR SUBMITTING FALSE INFOR  | MATION, INCLUDING THE POSSIBILIT | Y OF FINE AND EXECUTIVE (   | OFFICER OR   | 4000                     |                               |
| COMMENTS AND EXPLANATION OF VIOLATIONS (Paferance of at  | tachments here                   | AUTHORIZE                   |  | CODE NUMBER              | MM/DD/YYYY                    |
| Total Suspended Solids, we a little  | High this mont                   | n, We had just clear        | ned the F.   | Hers At                  |                               |
| the cower plants. THIS might be 4  | he cause of the 1                | 4:1 h readings.             | •  |                          |                               |

Revised December 13, 2005

ADEQ Form

| PERMITTEE NAME OF THE PARTY OF  |  | NAME (IF DIFFERENT)           |           | PERMIT NO.                    |                         |
|--|--|-------------------------------|-----------|-------------------------------|-------------------------|
| City of Cave Spring S  | plant # 1  | ILITY ADDRESS                 | 1         | 4883-WEZ                      |                         |
| 00.B0x36   |  |                               | 4         | 04-0164Z                      |                         |
| P.O. BOX34 Case Spings AL 77718  | 1499 1/z S   |                               |           | 7 51075                       | •                       |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR  | WASTEWATER   | EFFLUENT MONITORING PERIOD    | 國際的學習     |                               |                         |
| FUTURE USE. SUBMIT LAB ANALYSES WITH THIS FROM. FROM   | MM/007777<br>08-0/-20/3  | TO 68-31-2                    |           |                               |                         |
| HILLY A THEORY IN THE PROPERTY AND THE PARTY |  |                               |           | Participant Care to Area sur- | Market and the state of |
|  |  |                               |           | FREQUENCY OF                  |                         |
| PARAMETER  | PERMIT REQUIREMENT   | SAMPLE MEASUREMENT            | UNITS     | ANALYSIS                      | SAMPLE TYPE             |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT GROSS VALUE   | ******   | 4.7                           | MG/L      | ONCE/<br>MONTH                | GRAB                    |
| CBOD, 5-DAY (20 DEG. C)<br>EFFLUENT GROSS VALUE  |  | 2.0                           | MG/L      | ONCE/<br>MONTH                | GRAB                    |
| PH<br>EFFLUENT GROSS VALUE   | 6 to 9   | 6.7                           | S.U.      | ONCE/<br>MONTH                | GRAB                    |
| SOLIDS, TOTAL SUSPENDED<br>EFFLUENT GROSS VALUE  |  | ZZ. O                         | MG/L      | ONCE/<br>MONTH                | GRAB                    |
| COLIFORM, FECAL GENERAL<br>EFFLUENT GROSS VALUE  |  | 210                           | N/100 ML  | ONCE/<br>MONTH                | GRAB                    |
| NITROGEN, TOTAL KJELDAHL (AS TKN)<br>EFFLUENT GROSS VALUE  | ******   | 10.10                         | MG/L      | ONCE/<br>MONTH                | GRAB                    |
| NITROGEN, AMMONIA TOTAL (AS NH3N)<br>EFFLUENT GROSS VALUE  | ******   | 5.7                           | MG/L      | ONCE/<br>MONTH                | GRAB                    |
| NITROGEN, NITRATE + NITRITE (AS NO <sub>3</sub> N + NO <sub>2</sub> -N)<br>EFFLUENT GROSS VALUE  | *****  | 22,917                        | MG/L      | ONCE/<br>MONTH                | GRAB                    |
| PLANT AVAILABLE NITROGEN (AS PAN) CALCULATED VALUE   |  | 29.9                          | MG/L      | ONCE/<br>MONTH                | GRAB                    |
| FLOW, THRU CONDUIT OR TREATMENT UNIT<br>EFFLUENT GROSS VALUE   | ******   | MONTHLY TOTAL DAILY MAX 0.065 | MGD       | ONCE/<br>MONTH                | TOTAL FLOW              |
| NAME TITLE PRINCIPAL EXECUTIVE OFFICER   CERTIFY UNDER PENALTY OF LAW THAT   |  |                               | 0         | TELEPHONE                     | DATE                    |
| W41-er Sever Superinted Commation is these accurate, and co  | NG THE INFORMATION, I BELIEVE<br>MPLETE. I AM AWARE THAT THERE A | THE SUBMITTED JULY A          |           | 479 7217539                   | 09-04-2013              |
| TYPED OR PRINTED IMPRISONMENT.   | ME POSSIBLE  | AUTHORIZE                     | ED ACENT  | AREA NUMBER                   | MM/DD/YYYY              |
| COMMENTS AND EXPLANATION OF VIOLATIONS (Reference all at<br>Looks like Total Suspended Solids Exceed<br>and but by lighting and Chused A Down Ou   | tachments here)<br>5 Permittimits. T<br>Age it Alsova            | His might be because          | 00 08-08- | Zol3our Seu                   | ier plant               |

MM/DD/YYYY

| PERMITTEE NAME TO A STATE OF THE |
|---|
| City of Cave Springs  |
| PERMITTEE ADDRESS   |
| P.D.BOX36   |
| Cave Springs ar 72718   |
| MAKE ADDITIONAL COPIES OF THIS FORM FOR   |
| FUTURE USE. SUBMIT LAB ANALYSES WITH THIS   |

| 2.00 | FACI       | LITY NAM | E (IF DIFF | ERENT) |   |
|------|------------|----------|------------|--------|---|
|      | DIAnt      | #/       |            |        |   |
| 200  | Later Live | FACILITY | Y ADDRES   | SPANN  | - |
|      | 14991      | 28.1     | MAin       | )      |   |

MM/DD/YYYY

PENPERMIT NO. 15% 4893-WR-Z

| FORM. FRO  |  | то                                    |  |                          |             |  |  |  |  |  |
|--|--|---------------------------------------|--|--------------------------|-------------|--|--|--|--|--|
| TREATED.WASTEWATER EFFLUENT SAMPLING WASTEWATER EFFLUENT SAMPLING  |  |                                       |  |                          |             |  |  |  |  |  |
| PARAMETER  | PERMIT REQUIREMENT                     | SAMPLE MEASUREMENT                    | UNITS                                    | FREQUENCY OF<br>ANALYSIS | SAMPLE TYPE |  |  |  |  |  |
| PHOSPHOROUS, TOTAL (AS P) EFFLUENT GROSS VALUE   | *****                                  | 3.6                                   | MG/L                                     | ONCE/<br>MONTH           | GRAB        |  |  |  |  |  |
| CBOD, 5-DAY (20 DEG. C)<br>EFFLUENT GROSS VALUE  |  | 2.0                                   | MG/L                                     | ONCE/<br>MONTH           | GRAB        |  |  |  |  |  |
| PH<br>EFFLUENT GROSS VALUE   | 6 to 9                                 | 9.9                                   | S.U.                                     | ONCE/<br>MONTH           | GRAB        |  |  |  |  |  |
| SOLIDS, TOTAL SUSPENDED<br>EFFLUENT GROSS VALUE  |  | 18.D                                  | MG/L                                     | ONCE/<br>MONTH           | GRAB        |  |  |  |  |  |
| COLIFORM, FECAL GENERAL<br>EFFLUENT GROSS VALUE  |  | 26                                    | N/100 ML                                 | ONCE/<br>MONTH           | GRAB        |  |  |  |  |  |
| NITROGEN, TOTAL KJELDAHL (AS TKN)<br>EFFLUENT GROSS VALUE  | ******                                 | 11.20                                 | MG/L                                     | ONCE/<br>MONTH           | GRAB        |  |  |  |  |  |
| NITROGEN, AMMONIA TOTAL (AS NH₃N)<br>EFFLUENT GROSS VALUE  | ******                                 | 7.4                                   | MG/L                                     | ONCE/<br>MONTH           | GRAB .      |  |  |  |  |  |
| NITROGEN, NITRATE + NITRITE (AS NO <sub>3</sub> N + NO <sub>2</sub> -N)<br>EFFLUENT GROSS VALUE  | *****                                  | 37.79                                 | MG/L                                     | ONCE/<br>MONTH           | GRAB        |  |  |  |  |  |
| PLANT AVAILABLE NITROGEN (AS PAN) CALCULATED VALUE   |  | 46.3                                  | MG/L                                     | ONCE/<br>MONTH           | GRAB        |  |  |  |  |  |
| FLOW, THRU CONDUIT OR TREATMENT UNIT<br>EFFLUENT GROSS VALUE   | ******                                 | MONTHLY TOTAL DAILY MAX               | MGD                                      | ONCE/<br>MONTH           | TOTAL FLOW  |  |  |  |  |  |
| NAME/TITLE PRINCIPAL EXECUTIVE OFFICER I CERTIFY UNDER PENALTY OF LAW THAT   | 0                                      | TELEPHONE                             | DATE                                     |                          |             |  |  |  |  |  |
| Rick A Sourc Information Submitted Herein; and Immediately Responsible for Obtain Water Superstandent Information is true, accurate, and co    | OUNL<br>F PRINCIPAL                    | 479 7217589                           | 09-05-2012                               |                          |             |  |  |  |  |  |
| TYPED OR PRINTED PENALTIES FOR SUBMITTING FALSE INFO   |  | AUTUODITE                             | EXECUTIVE OFFICER OR<br>AUTHORIZED AGENT |                          | MM/DD/YYYY  |  |  |  |  |  |
| COMMENTS AND EXPLANATION OF VIOLATIONS (Reference all as We new St. Il working con How much Social as we just cleaned Filters at the plant, It | n to add toget P.h<br>n's might be why | .where we NEDIX.<br>TSS was high this | Should Be I<br>Month.                    | better wext m            | ionth.      |  |  |  |  |  |

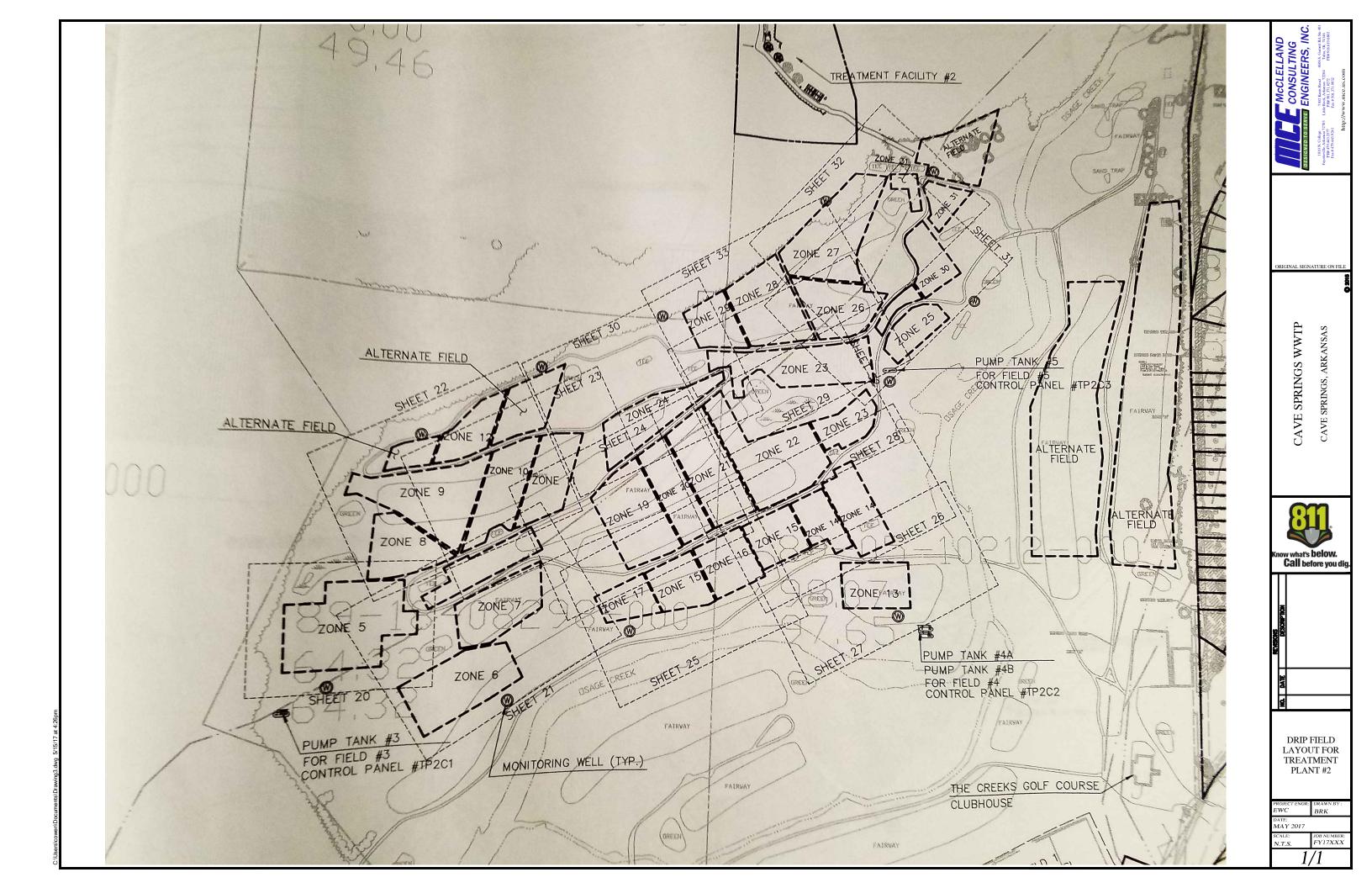
As agreed upon by McClelland Consulting Engineers (MCE) and Jamal Solaimanian of the ADEQ, Treatment Plant #1 will not be utilized during this permitting cycle. When Treatment Plant 1 is needed for further treatment purposes, The City of Cave Springs and MCE will consult with the ADEQ on requirements needed to implement the plant into future permits.

The City of Cave Springs, Arkansas has a municipal wastewater treatment plant which disposes its effluent via a subsurface discharge drip irrigation system located on an adjacent, privately owned golf course, The Creeks. There are five effluent disposal fields on the Creeks golf course which are intended to discharge effluent from the city of Cave Springs' two separate package wastewater treatment facilities into an underground drip system located on the Creek's Golf Course. Final construction of the plants was completed in 2006, connecting two dripfields to Treatment Plant 1 (TP1) and three dripfields to Treatment Plant 2 (TP2).

Originally only TP1, with a capacity of 92,000 gallons per day (GPD), was used for the city's sewage treatment needs and this was sufficient capacity to handle the city's waste treatment needs. However, since that time, TP1 has been taken out of service and TP2 serves as the only treatment facility for the city. TP2 has a much larger capacity of 320,000 GPD and is fully capable of handling waste flows, even at times of peak flow. With the current population growth projections, it has been determined that TP2 will be sufficient for the handling of the city's wastewater flows for the next permitting cycle, 4893-WR-3. TP1 will be kept on standby for future treatment needs and permitting cycles.

In accordance with the existing no discharge permit, 4893-WR-2, waste must be applied at a rate that provides a quantity of PAN that is equal or less than the nitrogen uptake rate of the cover crop. Cover crops on the golf course consist of the following three grasses, Bermuda, Fescue, and Rye. Waste is applied at a rate that complies with the guidelines set by the ADEQ based on the uptake of each cover crop. Bermuda grass was used as the cover crop for the course's fairway's and rough and therefore encompasses the vast majority of the dripfields. Rye and Fescue grasses are naturally occurring grasses which can be found in 'out of bounds' areas not developed by the golf course.

A monitoring well which lies in an intermediate elevation point on the course, within zone 8, can be used to assess the depth to groundwater level. In the previous permit 4893-WR-2, it is required that the depth to groundwater be at least 5-feet, in order to allow for proper treatment of Fecal Coliform. The most recent depth to groundwater measurement was taken in early May of 2017, where the depth to ground water was measured at 66-inches from the level of the soil. It should be noted that this measurement was taken only days after a significant flooding event when water table levels were high, and the depth to groundwater was still several inches clear of the permitted depth.









From: Barret Knutson

To: McWilliams, Katherine

Cc: Water Permit Application

Subject: RE: Permit 4893-WR-3; Response to Insufficiencies

**Date:** Monday, May 15, 2017 6:56:51 PM

Attachments: <u>image002.png</u> image004.png

image004.png Full Plan Signed.pdf

WMP Response to Insufficient Comments.pdf

#### Dear Katherine,

Attached to This email are two PDF documents which address the Deficiencies as outlined in the incompleteness letter dated March 24<sup>th</sup>, 2017:

- 1) Corrective Action Plan Addressing MMR violations associated with Total Suspended Solids.
- 2) Response to Comments Made on the Waste Management Plan
  - a. The majority of the information requested had to do with operation of Plant 1. As discussed in our meeting last month, we have no intentions to implement Plant 1 during this permitting cycle but it will be kept on standby until further notice.
  - b. As MCE did not do the design of this plant, the original WMP and the subsequent calculations were kept with the CEI cover page and project number.

Please contact me at your earliest possible convenience if you have any questions or concerns.

### Barret Knutson, El Project Engineer



1810 N. College Ave. | Fayetteville, AR 72703 P.O. Box 1229 | Fayetteville, AR 72202 479.443.2377 office | 479.443.9241 fax

### bknutson@mce.us.com

#### www.mce.us.com

