ADEQ

A R K A N S A S
Department of Environmental Quality

February 7, 2012

Randy Bradley, Pretreatment Coordinator
City Corporation
Russellville Water and Sewer System
P.O. Box 3186
Russellville, Arkansas 72811-3186

Re: Russellville City Corporation Streamlining Update & TBLL Development
(Permit No. AR0021768, AFIN 58-00105)

Dear Mr. Bradley:

The Department has completed the review of the program update and local limit development document. The recommended and required changes to the program narrative are shown in the enclosures to this correspondence.

After review of the local limit development document, it appears that the City used the same procedure for conventional pollutants (CBOD5, TSS & NH3-N) as the City used for conservative pollutants. Since the wastewater treatment plant is designed to treat conventional pollutants while conservative pollutants pass-through the plant unaltered, the City must use a different approach for conventional pollutants. EPA guidance[1] suggests that Cities use the designed capacity or a documented peak loading to determine maximum loadings for conventional pollutants.

The Department has prepared an Excel spreadsheet which demonstrates the EPA recommended approach for conventional pollutants. The City may accept this development or offer a different development. Based on the Department's development, it appears that local limits are not necessary for either conservative or conventional pollutants. Please be advised, the City may elect to control SIUs with organic loading by requiring BMP (Best Management Practices) instead of numerical limits. The BMP requirement may be incorporated into the SIU permit.

[1] EPA Local Limits Development Guidance; Section 5.3.1 BOD/TSS; page 5-22

Local limit development is a dynamic and continuous process. EPA requires that each POTW with an approved pretreatment program review its local limits at least every five years. Since the City must sample for conservative pollutants quarterly, the City should check the MAHL quarterly. The Department recommends that the City request ADEQ to approve new MAHLs when the City submits its annual report if the MAHLs have changed by 20% or more.

If you have any questions or concerns, please contact the Department at (501) 682-0626 or by email at torrence@adeq.state.ar.us .

Sincerely,

Rufus Torrence,
ADEQ Engineer

Enclosures: RSVL TBLL Whig Creek-Conventionals February 2012
RSVL Proposed Pretreatment Narrative 20120210

RSVL Proposed Pretreatment Narrative 20120210

1.0 **Introduction**

The goal of the U.S. Environmental Protection Agency's (EPA) National Pretreatment Program is to protect municipal treatment plants and the environment from the adverse impact that may occur when hazardous or toxic wastes are discharged into a publicly owned treatment works (POTW). This protection is achieved mainly by regulating nondomestic Users of POTWs that discharge toxic wastes or unusually strong conventional wastes. There are four major problems that can be prevented through a properly operated local Pretreatment Program.

(1) Interference with POTW operations. Since municipal treatment systems are designed primarily to treat domestic wastes, the introduction of nondomestic wastes may affect these systems.

(2) Pass through of pollutants. Even if pollutants do not interfere with the treatment systems, they often pass through POTWs without being removed because the systems are not designed to remove them.

(3). Municipal Sludge contamination. The removal of certain pollutants by the POTW's treatment system is likely to result in contamination of its sludge.

(4) Exposure of POTW workers to chemical hazards. When combined with domestic waste, industrial waste can produce poisonous gases and compounds which may be hazardous to POTW personnel.

EPA first issued regulations for the National Pretreatment Program on June 26, 1978. The General Pretreatment Regulations for Existing and New Sources of pollution (40 CFR 403) require that any POTW with a design flow greater than 5 million gallon per day (mgd) must establish a Pretreatment Program as a condition of its National Pollutant Discharge Elimination System (NPDES) permit.

The General Pretreatment Regulation establishes prohibited discharge standards and categorical pretreatment standards to control pollutant discharges into treatment plants. Prohibited discharge standards apply to all industrial and commercial establishments connected to POTWs. Categorical pretreatment standards apply to industrial and commercial discharges in specific industrial categories determined to be the most significant sources of toxic pollutants.

Prohibited discharge standards protect the POTWs plant and operations by prohibiting the discharge of pollutants that:

(1) Any liquid, solid or gas which creates singly or by interaction with other substances a fire or explosion hazard in the POTW, including, but not limited to, wastestreams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21.

(2) Any wastewater having a pH lower than 5.0 S.U. or greater than 12.0 S.U. or having any other corrosive property capable of causing corrosive structural damage or a hazard to the structures, equipment and personnel of the POTW. In no case shall waters or wastes be discharged at such a flow rate and/or pH which will cause the influent at the POTW to be lower than 6.0 or greater than 9.0.

(3) Any solid or viscous substance in amounts which will cause obstruction to the flow in the POTW or will result in Interference to the POTW.

(4) Any substance or substances, including oxygen demanding pollutants, directly or indirectly discharged at a flow rate or concentration level which will cause Interference, upset, or loss of efficiency at the POTW.

(5) Any wastewater having a temperature which will inhibit biological activity in the POTW resulting in Interference, but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40 degrees C (104 degrees F). Any liquid or vapor having a temperature higher than 54.4 degree C (130 degree F).

(6) Any wastewater containing concentration levels or flow rates of petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through.

(7) Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems.

(8) Any trucked or hauled pollutants, except at discharge points designated by the Control Authority.

(9) Any wastewater containing toxic substances in sufficient quantity, either singularly or by interaction with other substances, to injure or interfere with any wastewater treatment process, constitute a hazard to humans or animals, create a toxic effect in the receiving waters or exceed the limitations set forth in a Categorical Pretreatment Standard. A toxic substance shall include but not be limited to those identified under Section 307(a) of the Act.

(10) Any substance which may cause the POTWs effluent or any other product of the POTW such as residues, sludges, or scums, to be unsuitable for reclamation and reuse or to interfere with the reclamation process. In no case, shall a substance discharged to the

POTW cause the POTW to be in noncompliance with sludge use or State or Federal disposal criteria.

(11) Any substance containing any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established by the Control Authority in compliance with applicable State and Federal regulations.

(12) Any substance which will cause the POTW to violate its NPDES permit or the receiving waters water quality standards.

(13) Any wastewater which may cause a hazard to human health or create a public nuisance.

(14) Storm water, surface water, ground water, artesian well water, roof runoff, sub-surface drainage, swimming pool drainage, condensate, de-ionized water, non-contact cooling water, and unpolluted wastewater, unless specifically authorized by the Control Authority.

(15) Medical Wastes, no discharge of any pharmaceutical medications, prescription or "over the counter", unused or expired.

Each categorical pretreatment standard is published by EPA as a separate regulation. The standard contains limits for pollutants commonly discharged by the specific industrial category. All firms regulated by a particular category are required to comply with these standards, no matter where they are located in the country.

Municipalities must use these national standards, as well as locally developed regulations, to control nondomestic Users discharging to their wastewater collection and treatment systems. The local Pretreatment Program is the legal, technical, and administrative frame work for achieving effective control of such discharges. States participate in the National Pretreatment Program because the Federal pretreatment regulations require all States that administer NPDES programs to develop and administer state pretreatment programs. The State of Arkansas administers the NPDES program through the Arkansas Department of Environmental Quality (ADEQ). ADEQ serves as the approval authority for pretreatment programs and has the responsibility of overseeing and coordination the development of local pretreatment programs, and approving or disapproving local pretreatment program submissions or revisions.

The Pretreatment Program includes the following six general elements.

(1) Industrial Waste Survey: Identification and evaluation of the nondomestic discharges to the treatment system.

(2) Legal Authority: Operate under a legal authority that will enable the local Control Authority to apply and enforce the requirements of the General Pretreatment Regulations and any other State or local rules needed to control nondomestic discharges.

(3) Technical Elements/Local Limits: Characterize discharges to the treatment system and establish local effluent limits to protect the operation of the treatment plant, the quality of the receiving water, and the quality of the sludge.

(4) Compliance Monitoring: Procedures for monitoring the industrial Users to determine compliance and noncompliance.

(5) Procedures: Administrative procedures to implement and operate the pretreatment program.

(6) Resources: Sufficient resources (funds, equipment and personnel) to operate an effective and ongoing program.

This document outlines various pretreatment program requirements and serves as an instrument to carry on an industrial pretreatment program for the City of Russellville. Currently City Corporation is the utility that operates the Russellville Water and Sewer System and is the Control Authority charged with the administration, operation and maintenance of the POTW and enforcement of provision of the Sewer Use Ordinance and the Pretreatment Ordinance. Enforcement provisions are outlined in the Pretreatment Ordinance and Appendix E, the Enforcement Response Plan.

Comment [RT1]: Appendix D

[Insert language here to describe how the City of Dover will implement its pretreatment program]

This document and attached Appendices serves as a total replacement of the previous Approved Pretreatment Program approved and implemented in November 1990 and revised in October 1991.

Refer to the above ordinances for definitions of terms and phrases used in the Pretreatment Program.

1.1 Existing Wastewater Treatment Facilities

The City of Russellville is served by a wastewater treatment facility located along Whig Creek southeast of the Russellville City Limits; refer to Figure 1 – Site Plan. The treatment facility discharges into Whig Creek, a drainage course tributary to the Arkansas River. The Q7 10 year low flow for Whig Creek is zero.

Comment [RT2]: Figure 1 is not included in this narrative. The City must either update and include Figure 1 or delete the reference.

The wastewater treatment facility serves both the City of Russellville and the City of Dover having 2009 census populations of 27,588 and 1,404 respectively.

The Russellville Wastewater Treatment Plant has a design capacity of 7.2 MGD average and 13.0 MDG maximum and at present averages 5.9 MGD. The 2010 minimum monthly average flow to the treatment plant was 4.4 MGD which included a monitored average industrial flow of 1.02 MGD. Refer to figure 2 – Liquids Processing Flow Diagram, the plant consists of Influent mechanical bar screens and an aerated grit basin with high flow to a series of 3 storm water holding basins. The grit basin is followed by three primary clarifier basins, dual above ground trickling filters, intermediate settling basin, dual below ground rock trickling filters. Following these two trickling filters are dual aeration basins, and dual final settling basins, followed by dual chlorine contact basins prior to discharge to Whig Creek. Sludge is treated in aerobic primary and secondary digesters and is dewatered by a Two-meter belt press prior to disposal by land application.

Comment [RT3]: Figure 2 is not included in this narrative. The City must either update and include Figure 2 or delete the reference.

The Control Authority also owns and operates a pretreatment wastewater facility which receives wastewater solely from the ConAgra Frozen Foods processing plant. The pretreatment facility receives and treats maximum flows of approximately 1.08 MGD. The treatment facility consist of two raw water pumps which discharge to two internally rotating feed screens which are followed by two primary clarifiers and a flow equalization (EQ) basin. The EQ basin is followed by a 1.5 MGD Dissolved Air Flotation unit prior to discharge to the City's wastewater collection system.

ConAgra Frozen Foods reimburses the Control Authority the total direct operating, maintenance and replacement cost associated with the operation of the pretreatment plant. ConAgra Frozen Foods is responsible for all capital expenditures associated with improvements necessary to maintain and upgrade the pretreatment facility and is subject to normal sewer use fees associated with discharge to the wastewater collection system.

2.0 Industrial Waste Survey

Section 403.8 (f)(2) of the General Pretreatment Regulations requires the identification and location of all possible Industrial Users (IUs) subject to the Pretreatment Program, and to identify the volume and character of pollutants discharged by these Users. The Industrial Waste Survey (IWS) is used to obtain this information. Four major activates comprise the IWS:

(1) Composition of a master list of potential IUs located in the service area

(2) Survey of each of these industries to collect the necessary information

(3) Conduct follow-up activities, where needed, to obtain complete, up to date and accurate information

(4) Summarization of the data for use in the pretreatment program

To identify IUs discharging to the collection system, the Utility's commercial and industrial sewer user files are consulted. A complete list of current IUs is listed in Appendix F. The list is updated annually to reflect all current IUs.

Small volume discharges, manufacturing operations which do not generate wastewater, direct dischargers (has NPDES and/or state permit) and discharges of sanitary wastewater only are not required to be permitted under this program. Theaters, beauty shops, barber shops, offices, warehouses, retail sales firms, and other similar IUs are also usually eliminated because their discharges typically do not contain the volume or type of significant pollutants that concern the POTW.

Hotels, motels, restaurants, and gas stations are generally not considered Significant Industrial Users if they do not contribute to problems in the collection system or treatment plant.

Once a customer has been identified as a possible SIU, further information is obtained by using the Industrial Waste Survey Questionnaire and Permit Application (Appendix H), telephone calls, and site visits.

3.0 Legal Authority

A successful local Pretreatment Program depends on adequate legal authority at the local level. The legal authorities necessary for the Pretreatment Program are listed in Section 403.8 (f)(1) of the General Pretreatment Regulations. Legal authorities available to the Control Authority through the Pretreatment Ordinance are as follows:

(1) Deny or condition new or increase contributions of pollutants, or changes in the nature of pollutants discharged to the POTW

(2) Require compliance with applicable pretreatment standards and requirements by SIUs

(3) Control, through permit, contract, or other means, the contribution to the POTW by each SIU

(4) Require the development of a compliance schedule by each SIU, and the submission of all notices and self-monitoring reports as necessary to assure compliance

(5) Carry out all inspection, surveillance, and monitoring procedures to determine compliance independent of information supplied by the IU

(6) Obtain remedies for noncompliance by any IU, including the ability to seek injunctive relief, civil or criminal penalties in at least the amount of $1,000.00 a day for each violation, and/or collect liquidated damages

(7) Obtain effective summary relief from industrial waste discharges that endanger public health, the environment, or POTW operations

(8) Comply with the confidentiality requirements and limitations on data restrictions specified in 40 CFR 403.14.

Insert language on Attorney's Statement here.

4.0 Monitoring Program

The overall success of the pretreatment program depends on a comprehensive and properly designed local monitoring program. It is through the monitoring activities that compliance with ordinance requirements are determined, User surcharges confirmed, and data is generated for annual pretreatment program reports and other reports required by EPA and the State. The monitoring program also indentifies the IUs responsible for discharging pollutants which are potentially harmful to the pretreatment plant and/or collection system. 40 CFR 403.8 (f)(2)(v) requires that each SIU be inspected and the SIU's effluent sampled at least once a year. Four types of monitoring are used in the pretreatment program: scheduled, unscheduled, demand/investigative and industrial self-monitoring.

4.1 Scheduled Monitoring

Scheduled monitoring involves the systematic sampling and comprehensive inspection of significant industrial contributors to the POTW system in accordance with a predetermined schedule:

(1) A sampling and analysis monitoring visit by the Control Authority will be scheduled ~~at least once a year~~ for each SIU. Composite samples, and grab samples when required, will be collected and flow rate measurements performed during or flow rate determinations made for the sampling period. Grab samples may be used if representativeness is ensured (i.e., the results can be used for compliance purposes).

(2) An on-site inspection by the Control Authority of each SIU will be scheduled ~~at least once a year~~ to inspect operations to ensure that information on file with the Control Authority is up to date, pretreatment facilities (if any) are being operated properly, and no intentional dilution of wastewater is occurring. A copy of the Industrial Inspection Report Form is located in Appendix J.

Comment [RT4]: The reviewer has struck phrases in the Scheduled Monitoring and Unscheduled Monitoring sections to allow the City the opportunity to satisfy 40 CFR 403.8(f)(2)(v) with either a "scheduled" or "unscheduled" visit. In this case, the City MAY conduct two or more visits per year (scheduled and unscheduled). If the City elects to retain the language as originally shown, then the City MUST conduct at least TWO (2) inspections and sampling visits per year (one scheduled and one unscheduled).

4.2 Unscheduled Monitoring

Comment [RT5]: Ditto

In addition to scheduled monitoring, the Control Authority shall perform a less formal type of compliance monitoring to provide an unannounced check of industrial discharges to the

POTW system. Unscheduled monitoring shall be used to spot-check randomly all SIUs within the collection system. Unannounced visits and sampling shall be used in verifying compliance, particularly for industries that can easily and quickly alter their processes or operations to obtain more favorable results. Unscheduled monitoring shall include:

(1) Sampling and analysis monitoring performed on an unannounced basis, with the SIU at normal operation

(2) ~~At a minimum, one~~ unscheduled sampling and analysis monitoring events ~~per year~~ for each SIU

(3) ~~At a minimum, one~~ unannounced SIU on-site inspections ~~per year~~ of plant operations and pretreatment activities.

4.3 Demand Monitoring or Investigative Monitoring

Demand monitoring shall be conducted in response to a known or suspected violation discovered in a self-monitoring report, routine sampling trip, or by public complaint. Additionally, any discharge of prohibited materials can prompt demand monitoring. Demand monitoring means that when a violation is found, sampling is initiated immediately. Specific occurrences which may prompt demand monitoring at an IU are:

(1) Contribution of explosive or corrosive materials or other prohibited discharges to the sewer

(2) Operating difficulties in the wastewater treatment plant

(3) Violation of Control Authority permit requirements

(4) Violation of pretreatment regulations by an SIU as indicated by SIU self-monitoring or Control Authority monitoring of a IU

4.4 Industrial Self-Monitoring

The Control Authority shall require that each SIU do its own sampling and analysis (self-monitoring) and have the results of this self-monitoring delivered to the Control Authority. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136, and amendments thereto or with other test procedures approved by the EPA Administrator. All categorical and significant noncategorical IUs shall self-monitor as least twice per year and submit a report to the Control Authority describing the nature, concentration, and flow of the pollutants required to be reported by the Control Authority. Self-monitoring parameters and frequency shall be described in each SIUs wastewater permit.

The following factors shall be considered in determining both the self-monitoring and Control Authority monitoring parameters and frequency:

(1) Volume of the industrial discharge

(2) Type and concentrations of pollutants in the discharge

(3) Adequacy of treatment and expected variability of discharge

(4) IU has been known or suspected to cause POTW upsets or operation and maintenance problems

(5) Past history of noncompliance problems with the industry

(6) Type of resources (labor and equipment) available to the Control Authority

(7) Self-monitoring requirements of industries regulated by categorical standards

4.5 Sample Collection and Handling

SIU wastewater discharge flow measurements shall be by water supply meter readings unless the Control Authority requires the SIU to install a Control Authority approved flow monitoring station~~, the SIU install a Control Authority approved flow monitoring station,~~ or the SIU receives approval from the Control Authority to use some alternate means of flow measurement.

Sampling shall be performed in accordance with the techniques prescribed in 40 CFR Part 136, and amendments thereto or with other procedures approved by the EPA Administrator Three types of samples may be utilized:

(1) Grab sample – a single volume of wastewater is obtained and analyzed

(2) Simple composite samples – a timed sequential collection of equal volume grab samples combined in a single reservoir and analyzed.

(3) Flow-proportioned composite samples – collecting incremental samples with volumes proportional to flow and then combined in a single reservoir and analyzed

The following are to be considered in collection of industrial samples:

(1) Samples are to be collected in a location that is easily accessible and provides a well-mixed waste stream. Repetitive samples should always be taken in the same location. Sampling point is to be located where no discharge other than the discharge from the IU (or process) being monitored is present

(2) Composite samples are to be collected during the industry's regular working hours. Ideally, flow-proportioned samples should be taken. At a minimum, a composite samples should consist of equal-volume samples collected at two-hour intervals.

(3) All samples must be properly preserved from the time they are collected until they are analyzed

(4) Accurate records are to be maintained, indicating the time, date, location, type of sample, method of collection and preservation, name of person who collected the sample, and any pertinent comments

(5) The IUs should be encouraged to split scheduled monitoring samples with the Control Authority and have the samples analyzed by an independent laboratory qualified by the Arkansas Department of Environmental Quality. If the results of the two analyses differ, the need for further investigation, sampling, and analysis should be initiated.

4.6 Sample Analysis

All analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136, and amendments thereto or with other test procedures approved by the EPA or ADEQ ~~Administrator~~. All self-monitoring analysis shall be performed by a laboratory of the SIUs choice which has been qualified by the Arkansas Department of Environment Quality to perform the necessary analysis. Analysis of the Control Authority samples shall be by contract commercial laboratory qualified by the Arkansas Department of Environmental Quality and/or the Control Authority's in-house laboratory depending upon the current qualifications and quality assurance and control program of the in-house laboratory.

Comment [RT6]: Allow ADEQ to assist the City.

4.7 Chain-of-Custody Procedures

It is an essential portion of the Pretreatment Program that the Control Authority sampling personnel properly document the methods used to collect the sample, as well as the chain of possession of the sample from collection to analysis. It should be assumed that all data generated from sampling will be used in court. The sampling results will only be admissible in court if the Control Authority personnel can prove that a sample has been properly collected, preserved, analyzed, and has not been tampered with or mishandled.

Refer to Appendix K for chain-of-custody sampling record forms. At a minimum the following record of information will be necessary to adequately address chain-of-custody concerns for each sample collected and ana~~y~~lyzed.

(1) Name of person collecting the sample

(2) Date and time of sample collection

(3) Location of sample collection

(4) Type of sample collected

(5) Preservation used for each sample

(6) Names and signatures of any person handling the samples, in the field, during transportation, and at the laboratory

5.0 Program Procedures

Section 403.8 (F) (2) of the General Pretreatment Regulations (40 CFR 403) describes the procedures required for an effective ongoing pretreatment program. Specifically the Control Authority must have procedures to:

(1) Identify and locate all possible IUs that might be subject to the Pretreatment Program

(2) Obtain information describing the character and volume of waste discharges by IUs

(3) Notify industrial discharges of any applicable pretreatment standards or other applicable State or Federal Standards or requirements

(4) Review self-monitoring reports and other notices submitted by IUs

(5) Randomly sample and analyze the effluent from IUs

(6) Investigate instances of noncompliance with pretreatment standards and requirements

5.1 Updating Industrial Waste Survey

Since the Control Authority also operates the City owned water treatment and distribution system, identification of new IUs and the updating of the industrial waste survey shall be facilitated by in-house review of water and sewer connection application activities and by review of the commercial and industrial sewer users customer's master files. In addition, the Industrial Waste Survey shall be updated through the following activities:

(1) Permits issued to SIUs shall require notification of changes in industrial processes, wastewater discharges, and/or industrial ownership

(2) Ongoing inspection and monitoring activities

(3) Periodic expiration of permits and subsequent reapplication by permit holders

(4) Annual request for updates of information concerning industrial processes, wastewater discharges, and/or industrial ownership from SIUs.

5.2 Notification of Industrial Users of Applicable Standards and Requirements

The Control Authority is responsible for being up-to-date on all Federal pretreatment standards and applicable requirements under the Clean Water Act and Resource Conservation and Recovery Act. Such standards include Federal Categorical Standards, State standards, local standards and limitations, User charges and surcharges, etc. The Control Authority is also responsible for notifying any IU that may be affected ~~adduced~~ by existing or newly promulgated standards and requirements. The Control Authority pretreatment coordinator shall be responsible to obtain current information on the status of national categorical standards and other applicable standards and regulations. The pretreatment coordinator shall consult the Federal Register, Control Authority Attorney and Engineer, Arkansas State pretreatment coordinator, and EPA Region VI pretreatment coordinator and other State and Federal officials to stay abreast of existing or newly promulgated standard and requirements.

The Control Authority shall use any or all of the following mechanisms to notify IUs of pertinent standards and regulations:

(1) Individual letters to IUs

(2) Permit conditions

(3) Permit modifications

5.3 Self-Monitoring Report Review

A process flow diagram of the Control Authority's typical review process is presented in Appendix L, Self-monitoring and Control Authority laboratory analysis and compliance schedule reports are received from the SIUs and the Control Authority laboratory and entered into the master log, then compared with the User's limits or schedule, and finally referred for noncompliance investigation when necessary. If the SIUs meet their effluent limits and compliance schedules, the reports are placed in the Control Authority files for future reference.

5.4 Investigation of Noncompliance Incidents

Detection of instances of noncompliance with pretreatment requirements shall be by the following means:

(1) Review of industrial self-monitoring reports

(2) Sampling and inspection activities at IUs

(3) Sampling of wastewater treatment plant influent and/or effluent

(4) Evaluation of treatment plant upsets.

5.5 Enforcement

Section 5 of the Pretreatment Ordinance (Appendix B) and the Enforcement Response Plan (Appendix D) outline enforcement actions available to the Control Authority for violations by any User of the POTW of any of the conditions or requirements of the Pretreatment Ordinance, or applicable state and federal laws or regulations or any provisions of a SIUs Wastewater Contribution Permit

6.0 Program Organization, Cost and Revenue Sources

Currently the water and sewer departments for the City of Russellville are owned and operated by City Corporation, Inc. (City Corporation). The operation of the utilities is under the direct control of the Board of City Corporation. The Russellville City Council must approve Board appointments and rate increases proposed by the utility Board. The current organization of City Corporation is shown on the staffing diagram located in Appendix H. The organization chart is updated as needed to reflect the current staffing status of the water and sewer system.

The General Manager of the utilities is responsible for all administrative and management functions including all operation and maintenance responsibilities. Overall goals and objectives of the utilities are established by the Board of City Corporation with assistance from the Board's attorney and consulting engineer. The Administrative Manager, Safety Coordinator/NOC Manager and the Operations Manager report directly to the General Manager. The Administrative Manager is responsible for all day to day accounting, secretarial, meter reading, and office support actives. The Operations Manager is responsible for all activities associated with the construction department, water treatment plant, wastewater treatment plant, pretreatment plant and water distribution and wastewater collection systems. The Pretreatment Coordinator reports to the Operations Manager. The Pretreatment Coordinator has the day to day responsibility of carrying out the pretreatment program, responsible for all laboratory activities, sampling activities, and code enforcement associated with environment activities.

City Corporations operates its pretreatment program by sharing various program tasks among its staff. As stated above, the Pretreatment Coordinator is responsible for the day to day operation of the program and serves as the initial reviewer of permit applications. However, the General Manger is the final reviewer and the permits will be issued under the General Manager's signature. The Pretreatment Coordinator records and filing procedures, review of compliance reports, and initiating noncompliance actions against any IU not complying with its particular wastewater contribution permit. The final decision of enforcement is the decision of the General Manager with the concurrence of the Board of City Corporation.

The positions involved with the pretreatment program and the estimated time spent working solely on the program is as follows:

Position	%
General Manager	5
Contract Engineer	5
Operations Manager	5
Pretreatment Coordinator	75
Senior Lab Analysis	40
Administrative Assistant	25

City Corporation currently has a consulting engineering company and an attorney to assist in the day to day operation and enforcement of the pretreatment program. The utility currently performs enforcement sampling and some of the laboratory analysis (pH) and has a contract laboratory for analysis for all other parameters of IU permits.

The costs associated with the pretreatment program are funded by the City Corporation operating budget. The Pretreatment Ordinance allows the City of Russellville to adopt permit fees and other fees, if necessary, in order to carry out the requirements of the pretreatment program.

6.0 Slug Control Evaluation

(Insert language here or in Section 5 above to describe City Corporation slug control approach)

7. 0 Best Management Practices (BMPs)

(Insert language here or in Section 5 above to describe City Corporation BMP approach)

CALCULATIONS OF ARKANSAS WATER QUALITY-BASED EFFLUENT LIMITATIONS

For an Arkansas River/Stream

(Reserved)

STEP 1: INPUT TWO LETTER CODE FOR ECOREGION (Use Code at Right) — AV

Basin Name — AR River

FACILITY

Permittee	Russellville
NPDES Permit No.	AR0021768
Outfall No. 001 (**Discharge to Whig Creek)**	001
Plant Ave Flow (MGD) (G&G Report Jan 2012)	5.89
SIUs Ave Flow (MGD) from R Bradley email dated 5-13-2008	1.057
Domestic Flow (MGD)	4.83
Plant Design Flow (MGD)	7.30
Plant Design Flow (cfs)	11.28

RECEIVING STREAM

Is this a large river? (see list at right)(enter "1" if yes, "0" if no; make entry as a number)	0
Name of Receiving Stream:	Whig Creek
Waterbody Segment Code No.	3F
Is this a lake or reservoir? (enter '1' if yes, ' 0 ' = no; make entry as a number)	0
Is seasonal critical flow applicable (1=yes, 0=no); see Reg 2 page 1-3 for details.	0
(Reserved) DO NOT INPUT DATA INTO CELL H25, H26 & H27....LEAVE BLANK	?
(Reserved)	?
(Reserved) (Reserved)	?
(Reserved)	(Reserved)
(Reserved)	(Reserved)
(Reserved)	(Reserved)

Arkansas River Valley Ecoregion TSS (mg/l)			3.00
Arkansas River Valley Ecoregion Hardness (mg/l)			25.00
Enter 7Q10 (cfs)	(Reserved)		0.00
Long Term Ave / Harmonic Mean Flow (cfs)		(Reserved)	0.00
Using Diffusers (Yes/No)		(Reserved)	No
pH (Avg)			7.00
Percent (%) of 7Q10 for Chronic Criteria			0.67
Percent (%) of 7Q10 for Acute Criteria			0.33
Water Effect Ration (WER)			1.00
EPA Statistical Factor for Data (Not Applicable to these calculations)			N/A
Ave Monthly Limit LTA Multiplier (Ref: page 103 TSD for WQ-Based Toxics Control)			1.55
Max Daily Limit LTA Multiplier (Ref: " " " ")			3.11

Codes & TSS for Ecoregions and Large Rivers

Ouachita Mts. Eco (OM) =	2.0 mg/l	Arkansas (Ft. Smith to Dardanelle Dam	12.0 mg/l
Ozark Highlands Eco (OH) =	2.5 mg/l	Arkansas (Dardanelle Dam to Terry L&	10.5 mg/l
Boston Mts. Eco (BM) =	1.3 mg/l	Arkansas (Terry L&D to L&D No. 5)	8.3 mg/l
Ark River Valley Eco (AV) =	3.0 mg/l	Arkansas (L&D No. 5 to Mouth)	9.0 mg/l
Gulf Coastal Eco (GC) =	5.5 mg/l	White (Above Beaver Lake)	2.5 mg/l
Delta Ecoregion (DL) =	8.0 mg/l	White (Below Bull Shoals to Black Riv)	3.3 mg/l
		White (From Black River to Mouth)	18.5 mg/l
		St. Francis River	18.0 mg/l
		Ouachita (Above Caddo River)	2.0 mg/l
		Ouachita (Below Caddo River)	5.5 mg/l
		Red River	33.0 mg/l

Total Hardness for:

Arkansas River = 125 mg/l	Red River = 211 mg/l
Ouachita River = 28 mg/l	St. Francis River = 103 mg/l
White River = 116 mg/l	
Gulf Coastal = 31 mg/l	Ouachita Mount = 31 mg/l
Ozark Highlands = 148 mg/l	Ark River Valley = 25 mg/l
Boston Mount = 25 mg/l	Delta = 81 mg/l

Large Rivers

Mississippi River, Arkansas River, Red River

White (Below confluence with Black River)

Ouachita (Below confluence with Little Miss. River)

For industrial and federal facility, use the highest monthly average flow for the past 24 months. For POTWs, use the design flow.

#VALUE! => No violation or Not Applicable

CALCULATI(

FACILITY

Permittee
Permit number
Flow (Qe)
Flow (Qe)

RECEIVING STREAM

Receiving Stream Name
7Q10
Long Term Ave
Using Diffusers? (Yes/No)
pH

Total Hardness
TSS
(% of 7Q10 for Chronic)
(% of 7Q10 for Acute)
Upstream Flow (Qb) Chronic
Upstream Flow (Qb) Acute
AML factor
DML/AML

WQ Limits for the

	Cb	WQSa	WLAa	LTAa
Alpha-BHC	0.00	2.00	2.00	1.14
Beta-BHC	0.00	2.00	2.00	1.14
Gamma-BHC	0.00	2.00	2.00	1.14
Delta-BHC	0.00	2.00	2.00	1.14
Pentachlorophenol	0.00	9.07	9.07	5.17
Aldrin	0.00	3.00	3.00	1.71

Chlordane	0.00	2.40	2.40	1.37
4,4'-DDT	0.00	1.10	1.10	0.63
4,4'-DDE	0.00	1.10	1.10	0.63
4,4'-DDD	0.00	1.10	1.10	0.63
Dieldrin	0.00	2.50	2.50	1.43
Alpha-endosulfan	0.00	0.22	0.22	0.13
Beta-endosulfan	0.00	0.22	0.22	0.13
Endosulfan sulfate	0.00	0.22	0.22	0.13
Endrin	0.00	0.18	0.18	0.10
Endrin aldehyde	0.00	0.18	0.18	0.10
Heptachlor	0.00	0.52	0.52	0.30
Heptachlor epoxide	0.00	0.52	0.52	0.30
Toxaphene	0.00	0.73	0.73	0.42
Chlorpyrifos	0.00	0.08	0.08	0.05
Cadmium Total	0.00	3.68	3.68	2.10
Chromium (hex)	0.00	15.71	15.71	8.96
Copper Total	0.00	10.99	10.99	6.26
Lead Total	0.00	62.30	62.30	35.51
Mercury Total	0.00	7.11	7.11	4.05

Nickel Total	0.00	782.33	782.33	445.93
Selenium Total	0.00	20.00	20.00	11.40
Silver Total	0.00	1.06	1.06	0.60
Zinc Total	0.00	96.81	96.81	55.18
Chromium (Tri)	0.00	816.07	816.07	465.16
Cyanide Total	0.00	22.36	22.36	12.75
Beryllium Total	0.00	130.00	130.00	74.10
Arsenic	0.00	592.47	592.47	337.71

ONS OF ARKANSAS WATER QUALITY-BASED EFFLUENT LIMITATIONS

Russellville	
AR0021768	
7.30	MGD
11.28	CFS

Whig Creek	
0.00	CFS
0.00	CFS
No	Yes/No
7.00	S.U.

25.00	mg/l
3.00	mg/l
0.67	
0.33	
0.00	
0.00	
1.55	
3.11	

Russellville

WQSc	WLAc	LTAc	LTAa/LTAc	Aquatic Life AML, ug/l	DML, ug/l
0.0800	0.08	0.06	0.06	0.09	0.18
0.0800	0.08	0.06	0.06	0.09	0.18
0.0800	0.08	0.06	0.06	0.09	0.18
0.0800	0.08	0.06	0.06	0.09	0.18
5.7259	5.73	4.12	4.12	6.39	12.82
##########	##########	##########		1.71	2.65	5.32

0.0043	0.00	0.00	0.00	0.00	0.01
0.0010	0.00	0.00	0.00	0.00	0.00
0.0010	0.00	0.00	0.00	0.00	0.00
0.0010	0.00	0.00	0.00	0.00	0.00
0.0019	0.00	0.00	0.00	0.00	0.00
0.0560	0.06	0.04	0.04	0.06	0.13
0.0560	0.06	0.04	0.04	0.06	0.13
0.0560	0.06	0.04	0.04	0.06	0.13
0.0023	0.00	0.00	0.00	0.00	0.01
0.0023	0.00	0.00	0.00	0.00	0.01
0.0038	0.00	0.00	0.00	0.00	0.01
0.0038	0.00	0.00	0.00	0.00	0.01
0.0002	0.00	0.00	0.00	0.0002	0.00
0.0410	0.04	0.03	0.03	0.05	0.09
1.6500	1.65	1.19	1.19	1.84	3.69
10.5820	10.58	7.62	7.62	11.81	23.70
8.2765	8.28	5.96	5.96	9.24	18.53
2.4279	2.43	1.75	1.75	2.71	5.44
0.0120	0.01	0.01	0.01	0.01	0.03

86.8843	86.88	62.56	62.56	96.96	194.55
5.0000	5.00	3.60	3.60	5.58	11.20
##########	##########	##########	0.60	0.93	1.87
88.4005	88.40	63.65	55.18	85.53	171.61
264.7242	264.72	190.60	190.60	295.43	592.77
5.2000	5.20	3.74	3.74	5.80	11.64
5.3000	5.30	3.82	3.82	5.91	11.87
312.6924	312.69	225.14	225.14	348.96	700.18

		Human Health	
WQSb	WLAb	AML, ug/l	DML, ug/l
0.04	0.04	0.04	0.12

0.01	0.01	0.01	0.02
0.00	0.00	0.00	0.00
0.0063	0.0063	0.0063	0.02

4.0000	4.0000	4.0000

Russellville ***Maximum Allowable Headworks Loading***

Pollutant	% Rem[7]	Water Quality mg/l	Water Quality[1] lbs/day	Sludge mg/kg	Sludge[3] lbs/day	Inhibition[2] mg/l	Inhibition[4] lbs/day	MAHL lbs/day	MAHC mg/l	Domestic lbs/day	Allocation for %SF lbs/day[5]	MAIL[6] lbs/day	Max Inf Exceeded MAHC	Max Effluent vs WQS(mg/l)
122 Table III														
Antimony	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Arsenic	49	0.3490	33.61	75	0.35	0.10	4.91	0.35	0.0071	0.01	0.26	**0.25**	No	No
Beryllium	50	0.0059	0.58	0	0.00	0.10	4.91	0.58	0.0118	0.01	0.44	**0.43**	No	No
Cadmium Total	67	0.0018	0.27	85	0.29	1.00	49.12	0.27	0.0056	0.01	0.21	**0.20**	No	No
Chromium Total	82	0.2954	80.62	3000	8.32	1.00	49.12	8.32	0.1694	0.01	6.24	**6.23**	0.170	No
Copper Total	81	0.0092	2.36	4300	12.12	1.00	49.12	2.36	0.0479	1.38	1.77	**0.39**	0.220	0.036
Lead Total	89	0.0027	1.21	840	2.15	1.00	49.12	1.21	0.0246	0.05	0.91	**0.85**	0.040	No
Mercury Total	97	0.00001	0.02	57	0.13	0.10	4.91	0.02	0.0004	0.01	0.02	**0.01**	0.004	0.000032
Nickel Total	53	0.0970	10.13	420	1.80	1.00	49.12	1.80	0.0367	0.16	1.35	**1.19**	No	No
Selenium Total	50	0.0056	0.55	100	0.46	0.20	9.82	0.46	0.0093	0.10	0.34	**0.24**	No	No
Silver Total	91	0.0009	0.51	0	0.00	0.25	12.28	0.51	0.0104	0.04	0.38	**0.34**	0.023	No
Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Zinc Total	79	0.0855	20.01	7500	21.60	0.80	39.30	20.01	0.4073	8.77	15.01	**6.23**	0.800	0.115
Cyanide Total	69	0.0058	0.92	0	0.00	0.10	4.91	0.92	0.0187	0.20	0.69	**0.49**	No	0.013
Phenols								?		?				
503 Table I														
Molybdenum	50	0.0000	0.00	75	0.34	0.20	9.82	0.34	0.0069	0.16	0.26	**0.09**	0.022	0.046
PCBs								?		?				
NPDES Permit														
CBOD5							Note 8: ==>	13418.66	Note 9: ==>	4746.40	10064.00	**5317.60**		
TSS							Note 10 ==>	15962.51	Note 9: ==>	5584.00	11971.88	**6387.88**		
NH3-N							Note 11 ==>	980.71	Note 11 ==>	307.90	735.53	**427.63**		
TP								?		?				
TK								?		?				

Dry tons/day of sludge 1.14 Saftey Factor 0.25

Notes:

1. lbs/day = mg/l * 8.34 * average flow / (1-%Rem)
2. Page 3-44 of EPA 833B87202 Be est @ 0.10 mg/l and Zinc Level from 04-19-2005 Inf analysis
3. lbs/day = (dry tons/day * 0.002 * critria(mg/kg))/ % Rem; Dry Tons/Day taken from Audit report dated 12-16-03, page 3
4. lbs/day = mg/l * Flow * 8.34
5. lbs/day = (1 - SF) * MAHL
6. MAIL = Maximum allowable industrial loading = Allocation for % SF - Domestic
7. Removal Efficiencies from G&G January 2012 Report.
8. The Department elected to use the actual current performance for CBOD removal as shown in Garver & Garver January 2012 report. Referring to page CBOD Rem1, in January 2011 the plant average 325.5 mg/l CBOD while the average disc conc was only 5.0 mg/l. According to the EPA ICIS, the average flow equaled 4.989 MGD in January 2011. Therefore, the MAHL for CBOD equals 325.5 X 4.989 X 8.34 = 13,418.66 lbs/day. This is less than the G&G 1996 Plant Design of 18,974 lbs/day with 6.5 mgd and 350 mg/l BOD as shown in section 3.0 on page 4. Because of the age of the plant, the Department elected to use the current actual performance (CBOD = 13418.66 lbs/day and NH3-N = 980.71 lbs/day). The BOD for January 2011 was approx 325.5 + 23.57 or 349.07 The estimated BOD January 2011 (349.07 mg/l) was approximatly equal to the design BOD of 350 mg/l.
   References: Russellville City Corporation Technically Based Local Limits (Prepared by Garver LLC; January 2012)
   City Corporation Russellville, Arkansas Master Plan for Wastewater Treatment June 1996 (Prepared by Garver & Garver)
9. Since the 2012 G&G report has domestic CBOD concentrations for only the month of December 2011, the Department elected to use the Ten States Standard BOD rate of 0.17 lb/day per capita (BOD is always equal to or greater than CBOD). The 2010 population of Batesville was

27, 920; therefore, the domestic load is 0.17 X 27920 = 4746.4 lbs/day. The TSS domestic rate is 0.20 lb/day per capita.
Reference: Recommend Standards for Wastewater Facilities 2004 Edition (Ten States Standards); Section 11.253.a

10. The Department elected to use the actual current performance for TSS removal as shown in Garver & Garver January 2012 report. Referring to page TSS Rem1, in November 2010 the plant average 414.1 mg/l TSS while the average disc conc was only 11.9 mg/l.
11. The Department elected to use the actual current performance for NH3 removal as shown in Garver & Garver January 2012 report. Referring to page Nitrogen Rem1, in January 2011 the plant average 23.57 mg/l NH3 while the average disc conc was only 1.94 mg/l. The average domestic concentration of 7.4 mg/l NH3 is shown on page Domestic 1.

Russellville REMOVAL EFFICIENCIES

Influent

Date	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc	Chromium	Cyanide	Arsenic	Molydenu	Beryllium
01/19/05	0.0000	0.0340	0.0000	0.0005	0.0000	0.0000	0.0000	0.1200	0.0150	0.0000	0.0000	0.0060	0.0000
04/19/05	0.0000	0.1200	0.0000	0.0019	0.0170	0.0025	0.0140	0.8000	0.0450	0.0000	0.0000	0.0220	0.0000
08/09/05	0.0000	0.2200	0.0000	0.0008	0.0260	0.0000	0.0230	0.5300	0.0610	0.0000	0.0000	0.0220	0.0000
08/22/05	0.0000	0.0400	0.0000	0.0002	0.0140	0.0000	0.0000	0.3700	0.0630	0.0000	0.0000	0.0140	0.0000
08/23/05	0.0000	0.0390	0.0000	0.0000	0.0000	0.0000	0.0000	0.2800	0.0097	0.0000	0.0000	0.0210	0.0000
08/24/05	0.0000	0.0480	0.0000	0.0006	0.0000	0.0000	0.0000	0.3400	0.0098	0.0000	0.0000	0.0190	0.0000
08/25/05	0.0000	0.0420	0.0000	0.0003	0.0000	0.0000	0.0091	0.4100	0.0098	0.0000	0.0000	0.0210	0.0000
08/26/05	0.0000	0.0450	0.0000	0.0003	0.0160	0.0000	0.0000	0.3300	0.0560	0.0000	0.0000	0.0190	0.0000
08/29/05	0.0000	0.0470	0.0000	0.0000	0.0000	0.0000	0.0000	0.4200	0.0000	0.0000	0.0000	0.0130	0.0000
10/06/05	0.0000	0.0540	0.0000	0.0000	0.0110	0.0000	0.0077	0.2800	0.0110	0.0000	0.0000	0.0160	0.0000
02/01/06	0.0000	0.0360	0.0000	0.0003	0.0000	0.0000	0.0000	0.1300	0.0100	0.0170	0.0000	0.0190	0.0000
05/08/06	0.0000	0.0260	0.0000	0.0000	0.0000	0.0000	0.0000	0.1100	0.0000	0.0000	0.0000	0.0000	0.0000
07/12/06	0.0000	0.0380	0.0000	0.0020	0.0000	0.0000	0.0000	0.1500	0.0092	0.0000	0.0000	0.0000	0.0000
10/09/06	0.0000	0.0400	0.0000	0.0000	0.0000	0.0000	0.0000	0.2200	0.0000	0.0000	0.0000	0.0150	0.0000
10/16/06				0.0000									
01/25/07	0.0000	0.0380	0.0000	0.0000	0.0000	0.0000	0.0000	0.3300	0.0270	0.0000	0.0000	0.0000	0.0000
04/04/07	0.0000	0.0530	0.0000	0.0002	0.0013	0.0000	0.0000	0.2200	0.0350	0.0000	0.0000	0.0010	0.0000
08/01/07	0.0000	0.0870	0.0400	0.0013	0.0110	0.0000	0.0140	0.3400	0.0330	0.0100	0.0000	0.0110	0.0000
12/06/07	0.0000	0.0790	0.0000	0.0000	0.0000	0.0000	0.0000	0.2500	0.0160	0.0000	0.0000	0.0000	0.0000
01/25/08								0.1400					
01/30/08	0.0000	0.0390	0.0023		0.0120	0.0000	0.0070	0.1600	0.0160	0.0000	0.0000	0.0120	0.0000
07/15/08	0.0000	0.0580	0.0038	0.0000	0.0350	0.0000	0.0063	0.1500	0.1700	0.0000	0.0012		0.0000
10/15/08	0.0000	0.0730	0.0059	0.0038	0.0230	0.0000	0.0042	0.0000	0.0350	0.0000	0.0017	0.0020	0.0000
11/03/08	0.0050	0.0035					0.0042		0.0035	0.0100	0.0017		0.0050
01/14/09	0.0000	0.0028	0.0023	0.0000	0.0074	0.0000	0.0032	0.1100	0.0010	0.0000	0.0000	0.0000	0.0000
04/06/09	0.0000	0.0560	0.0052		0.0090	0.0000	0.0000	0.1900	0.0000	0.0000	0.0055	0.0080	0.0000
07/21/09	0.0000	0.0470	0.0061	0.0000	0.0130	0.0000	0.0031	0.2400	0.0310	0.0000	0.0022	0.0000	0.0000
10/01/09		0.0400						0.1500					
10/21/09	0.0000	0.0180	0.0016	0.0002	0.0060	0.0000	0.0049	0.0800	0.0000	0.0000	0.0001	0.0000	0.0000
11/02/09		0.0170						0.0580					
12/02/09		0.0270						0.1000					
01/04/10		0.0410						0.1000					
02/11/10		0.0096						0.0490					
02/17/10	0.0000	0.0160			0.0042		0.0011		0.0000	0.0000	0.0000		0.0000
02/18/10			0.0013			0.0000		0.0530				0.0000	
03/04/10		0.0000						0.0440					
04/13/10		0.0220						0.0950					
05/05/10	0.0000	0.0190	0.0014	0.0000	0.0063	0.0000	0.0007	0.0680	0.0120	0.0000	0.0006	0.0000	0.0000
06/07/10		0.0360						0.1400					
07/13/10		0.0300						0.1100					
08/03/10		0.1100						0.1900					

Detection Level (DL)	0.0005	0.0005	0.0005	0.000005	0.0005	0.0050	0.0005	0.0200	0.0100	0.0100	0.0005	0.0100	0.0005
Average	0.00018	0.04608	0.00259	0.00049	0.00786	0.00009	0.00366	0.20676	0.02425	0.00132	0.00046	0.00927	0.00018
Maximum	0.0050	0.2200	0.0400	0.0038	0.0350	0.0025	0.0230	0.8000	0.1700	0.0170	0.0055	0.0220	0.0050
All Concs > DL (Yes/No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes

Effluent

Date	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc	Chromium	Cyanide	Arsenic	Molydenu	Beryllium
January-06		0.0260						0.0845					
February-06	0.0000	0.0071	0.0000		0.0000	0.0000	0.0000	0.0380	0.0000	0.0000	0.0000	0.0180	0.0000
March-06		0.0068						0.0540					
April-06		0.0000						0.0400					
May-06	0.0000	0.0000	0.0000		0.0100	0.0000	0.0000	0.0370	0.0000	0.0000	0.0000	0.0000	0.0000
June-06		0.0000						0.0370					
July-06	0.0000	0.0140	0.0000		0.0000	0.0000	0.0000	0.0440	0.0000	0.0000	0.0000	0.0460	0.0000
August-06		0.0120						0.0380					
September-06		0.0120						0.0360					
October-06	0.0000	0.0115	0.0000		0.0000	0.0000	0.0000	0.0465	0.0000	0.0120	0.0000	0.0150	0.0000
November-06		0.0130						0.0440					
December-06		0.0082						0.0290					
January-07	0.0000	0.0220	0.0000		0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
February-07		0.0110						0.0590					
March-07		0.0120						0.0510					
April-07	0.0000	0.0084	0.0000		0.0010	0.0000	0.0000	0.0495	0.0000	0.0000	0.0000	0.0000	0.0000
May-07		0.0110						0.0760					
June-07		0.0097						0.0350					
July-07		0.0150						0.0330					
August-07	0.0000	0.0140	0.0000		0.0000	0.0000	0.0000	0.0460	0.0000	0.0000	0.0000	0.0000	0.0000
September-07		0.0000						0.0420					
October-07		0.0100						0.0610					
November-07		0.0072						0.0430					
December-07	0.0000	0.0015	0.0000		0.0000	0.0000	0.0000	0.0048	0.0000	0.0130	0.0000	0.0000	0.0000
January-08	0.0000	0.0130	0.0000		0.0000	0.0000	0.0000	0.0798	0.0000	0.0000	0.0000	0.0000	0.0000
February-08		0.0094						0.0480					
March-08		0.0082						0.0390					
April-08													
May-08													
June-08													
July-08	0.0000	0.0140	0.0010	0.0000047	0.0140	0.0000	0.0009	0.0370	0.0000	0.0000	0.0009		0.0000
August-08		0.0000						0.0230					
September-08		0.0074						0.0310					
October-08	0.0000	0.0092	0.0000	0.0000083	0.0090	0.0000	0.0000	0.0400	0.0000	0.0000	0.0012	0.0130	0.0000
November-08		0.0092						0.0330					
December-08		0.0080						0.0320					
January-09	0.0000	0.0005	0.0008	0.0000280	0.0072	0.0000	0.0008	0.0415	0.0000		0.0000	0.0000	0.0000
February-09		0.0072						0.0330					
March-09		0.0085						0.0500					
April-09		0.0355		0.0000320				0.1150					
May-09		0.0060						0.0310					
June-09		0.0061						0.0300					
July-09		0.0137						0.0315					

August-09		0.0092						0.0330					
September-09		0.0089						0.0330					
October-09		0.0084		0.0000140				0.0320					
November-09		0.0000						0.0240					
December-09		0.0062						0.0270					
January-10		0.0088						0.0460					
February-10		0.0085		0.0000250				0.0415					
March-10		0.0090						0.0580					
April-10		0.0000						0.0360					
May-10		0.0052		0.0000000				0.0240					
June-10		0.0000						0.0410					
July-10		0.0104						0.0390					
August-10		0.0086						0.0370					
September-10		0.0078		0.0000065				0.0450					

Detection Level	0.0005	0.0005	0.0005	0.000005	0.0005	0.0050	0.0005	0.0200	0.0100	0.0100	0.0005	0.0100	0.0005
Average	0.00000	0.00888	0.00015	0.00001	0.00343	0.00000	0.00014	0.04226	0.00000	0.00227	0.00018	0.00836	0.00000
Maximum	0.0000	0.0355	0.0010	0.0000	0.0140	0.0000	0.0009	0.1150	0.0000	0.0130	0.0012	0.0460	0.0000
All Concs > DL (Yes/No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
% Rem													
	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc	Chromium	Cyanide	Arsenic	Molydenu	Beryllium
Average	100	81	94	97	56	100	96	80	100	-72	62	10	100
EPA % REM	67	86	61	60	42	50	75	79	82	69	45	50	50

Domestic Calculations fo Russellville

Pollutants	EPA, P3-59* mg/l	Avg Reported mg/l	Loading lbs/day	
Cadmium Total	0.0030	0.00025	0.01	See Note 1 below
Copper Total	0.0607	0.03421	1.38	See Note 2 below
Lead Total	0.0490	0.00134	0.05	See Note 1 below
Mercury Total	0.0003	0.00025	0.0102	See Note 1 below
Nickel Total	0.0210	0.00399	0.16	See Note 1 below
Selenium Total	-	0.00250	0.10	See Note 1 below
Silver Total	0.0050	0.00105	0.04	See Note 1 below
Zinc Total	0.1750	0.21764	8.77	See Note 2 below
Chromium Total	0.0500	0.00531	0.01	See Note 3 below.
Cyanide Total	0.0410	0.00500	0.20	See Note 1 below
Arsenic	0.0030	0.00025	0.01	See Note 1 below
Molybdenum	##########	0.00400	0.16	See Note 5 below
Beryllium	999999.00	0.00025	0.01	See Note 4 below

Date	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc	Chromium	Cyanide	Arsenic	Molydenum	Beryllium
July 6, 2005		0.058						0.290	0.0035				
July 6, 2005		0.029						0.180	0.0035				
July 8, 2005		0.029						0.140	0.0035				
July 8, 2005		0.049						0.420	0.0035				
July 13, 2005		0.051						0.110	0.0110				
June 30, 2005		0.047						0.700	0.0035				
June 30, 2005		0.066						0.840	0.0320				
January 15, 2009		0.016			0.0025		0.00210	0.052	0.0043				
January 15, 2009		0.034	0.0030	0.00056	0.0062		0.00290	0.042	0.0091		0.00025		
December 1, 2011	0.00	0.021	0.0016	0.00025	0.0043		0.00091	0.070	0.000		0.00025		
December 2, 2011	0.00	0.023	0.0015	0.00041	0.0038		0.00067	0.072	0.000		0.00110		
December 20, 2011	0.00	0.023	0.00079	0.00010	0.0038		0.00025	0.050	0.000		0.00087		
December 21, 2011	0.00	0.016	0.00057	0.00010	0.0039		0.00025	0.041	0.000		0.00150		
December 22, 2011	0.00	0.017	0.00058	0.00010	0.0034		0.00025	0.040	0.000				
Detection Level (DL)	0.0005	0.0005	0.0005	0.000005	0.0005	0.0050	0.0005	0.0200	0.0100	0.0100	0.0005	0.0100	0.0005
Average	0.00000	0.03421	0.00134	0.00025	0.00399	#DIV/0!	0.00105	0.21764	0.00531	#DIV/0!	0.00079	#DIV/0!	#DIV/0!
Maximum	0.0000	0.0660	0.0030	0.0006	0.0062	0.0000	0.0029	0.8400	0.0320	0.0000	0.0015	0.0000	0.0000
All Concs > DL (Yes/No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes

*EPA Page 3-59 of 833-B87-202

Note 1: Value used equals one/half the Method Detection Level reported on the EEG lab analyses
Note 2: Average value from lab analyses of Env Enterprises Group (EEG) Anaylis Control # 91565,91564,91612,91613,91773,91403&91405 dated June & July 2005
Note 3: For Chromium used one/half the EEG MDL except for the two analysis where Cr was detected.
Note 4: For Berylium used one/half EPA MQL (0.0005/2 = 0.00025 mg/l)
Note 5: For Molydendum used one/half the MDL; the 0.014 mg/l value showed on the July 13, 2005 EEG lab analysis is considered an "outlier".

Effluent Flows provided by Randy Bradley 9-30-2010

Year	Average Flow MGD
2006	5.125
2007	5.426
2008	6.367
2009	6.387
2010	6.416
Average	5.94

Annual Sludge Volumes provided by Randy Bradley 9-30-2010
Taken from each respective Annual Sludge Report

	Sludge Applied (dry metric tons)
2005	442.6
2006	387.9
2007	493.5
2008	363.0
2009	389.0

415.20