



**Greenfield Capital Development**  
D E C E N T R A L I Z E D   W A S T E W A T E R   S Y S T E M S

October 31, 2010

Arkansas Department of Health  
4815 W. Markham Street, Slot 37  
Little Rock, AR 72205

Attention: Division of Engineering

Re: Deer Haven Permit Renewal   ADEQ Permit #   4908-WR-1

The above referenced permitted wastewater treatment system is being transferred and renewed in the name of the current property owner, First Bank of Fort Smith. Please see the enclosed Engineering Report and Location maps for the facility. We would formally request that a representative inspect the facility in accordance with the rules and regulations set forth by the Arkansas Department of Environmental Quality to have the permit renewed for this facility. As the representative for the owner of the facility regarding this renewal, please feel free to contact me with any questions or comments which may arise.

Thank you for your prompt attention to this matter.

Regards

Kathy Bartlett  
Internal Operations Manager

CC: Richard McConnell, P.E. ADEQ  
Charles B Cook, First Bank of Fort Smith

PO Box 9299 Fayetteville AR 72703  
[www.greenfieldcapitaldevelopment.com](http://www.greenfieldcapitaldevelopment.com)  
Office: 479-530-5926

**PROPOSED SEWER IMPROVEMENTS FOR  
DEER HAVEN SUBDIVISION  
AVOCA, BENTON COUNTY, ARKANSAS**



**PRESLEY, BRANNAN, & ASSOC., INC.,  
CONSULTING ENGINEERS  
Charles Presley, P.E. & R.L.S., Steve Brannan, P.E.  
2143 Worth Lane  
Springdale, Arkansas 72764  
Office (479)756-8720  
Fax (479)756-8714**

# **Decentralized Sewer System With Bioclere Treatment and Gravity Collection**

## **Deer Haven Subdivision**

### **Avoca, Benton County, Arkansas**

#### **Engineering Report**

##### **PROJECT DESCRIPTION:**

This sewer system is located west of Avoca, Arkansas in the NW ¼ of Section Fourteen (14) and the NE ¼ of Section Fifteen (15) Township Twenty (20) North, Range Twenty-Nine (29) West, approximately 1.5 miles northeast of Avoca, Arkansas. It will provide wastewater treatment and subsurface disposal for one hundred and twenty-eight (128) homes. The design flow for this project is thirty-three thousand, two hundred eighty (33,280) GPD.

The sewage will gravity flow from each house via a 4" building sewer to a sewer main which will carry it to a lift station located in the lower portion of the subdivision. The lift station will then pump all the combined sewage to the Bioclere Treatment Plant. After this, the relatively clean effluent is settled and pumped into a dripper field for final treatment and disposal.

##### **Design Flow/Sizing Calculations:**

Q design: (128 lots)(260 GPD/lot)	=	33,280 GPD
(2.6 people/home)(100 GPD/person)	=	260 GPD
Dripper Field Loading Rate (see soils report by Rebecca Corbitt)	=	0.385 GPD/ft <sup>2</sup>
Dripper Field Area	$= \frac{33,280}{0.385}$	= 86,442ft <sup>2</sup>
	$\frac{86,442\text{ft}^2}{43,560\text{ft}^2/\text{Ac}}$	= 1.98 Acres
Alternate Area (50% of Primary Area)	$= (86,442\text{ft}^2) (0.50)$	= 43,221ft <sup>2</sup>
	$\frac{43,221\text{ft}^2}{43,560\text{ft}^2/\text{Ac}}$	= 0.99 Acres

Dripper lines are on two (2) foot centers, Emitters are on two (2) foot centers, therefore, each Emitter covers four (4) ft<sup>2</sup>.

$$\text{Total number of Emitters} = \frac{86,442\text{ft}^2}{4\text{ft}^2/\text{Emitter}} = 21,611$$

$$\text{Total length of Dripper Line} = \frac{86,442\text{ft}^2}{2\text{ft}} = 43,221\text{ft. in the Dripper Field}$$

See treatment plant layout sheet #3/4 for more design information.

GEOFLOW WASTEFLOW P/C dripper line has a constant flow rate (0.53 GPH) at all pressures from 10 to 60 psi. The risk of root intrusion in the emitters is eliminated by the installation of GEOFLOW ROOTGUARD within the dripper lines, which protects emitters from vegetative invasion.

GEOFLOW uses turbulent flow "in line" emitters with large flow paths, these have proven to be the most reliable and dependable emitters because of the resistance to blocking. GEOFLOW'S WASTEFLOW has an inner lining impregnated with a bactericide, Ultra Fresh DM-50, to inhibit bacterial growth on the walls of the tube, and in the emitters.

The Benton County Water Authority, District #1, shall own and operate this sewer system. Wayne Allen, the Water District Manager, has a Class #3 operator's license.

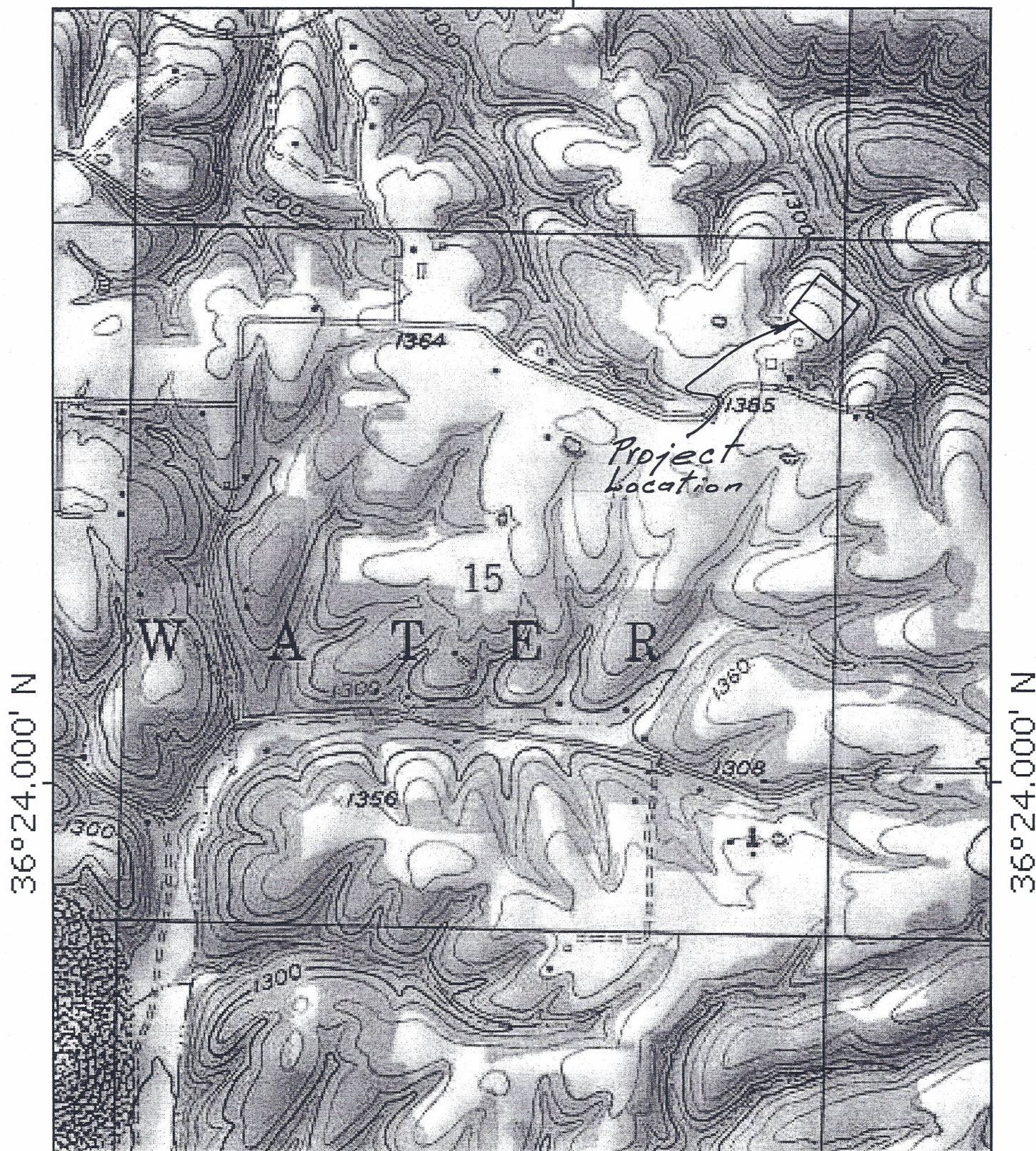
There are no wells within one-quarter (1/4) mile of the treatment plant.



**LOCATION MAP**  
**(PEA RIDGE, ARK. – MO. QUAD MAP)**

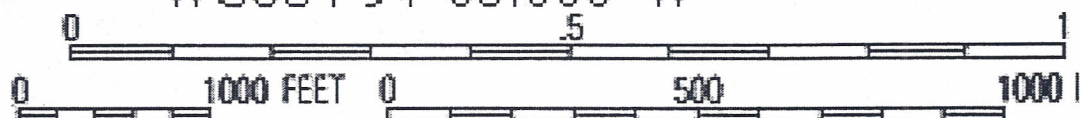


WGS84 94°03.000' W



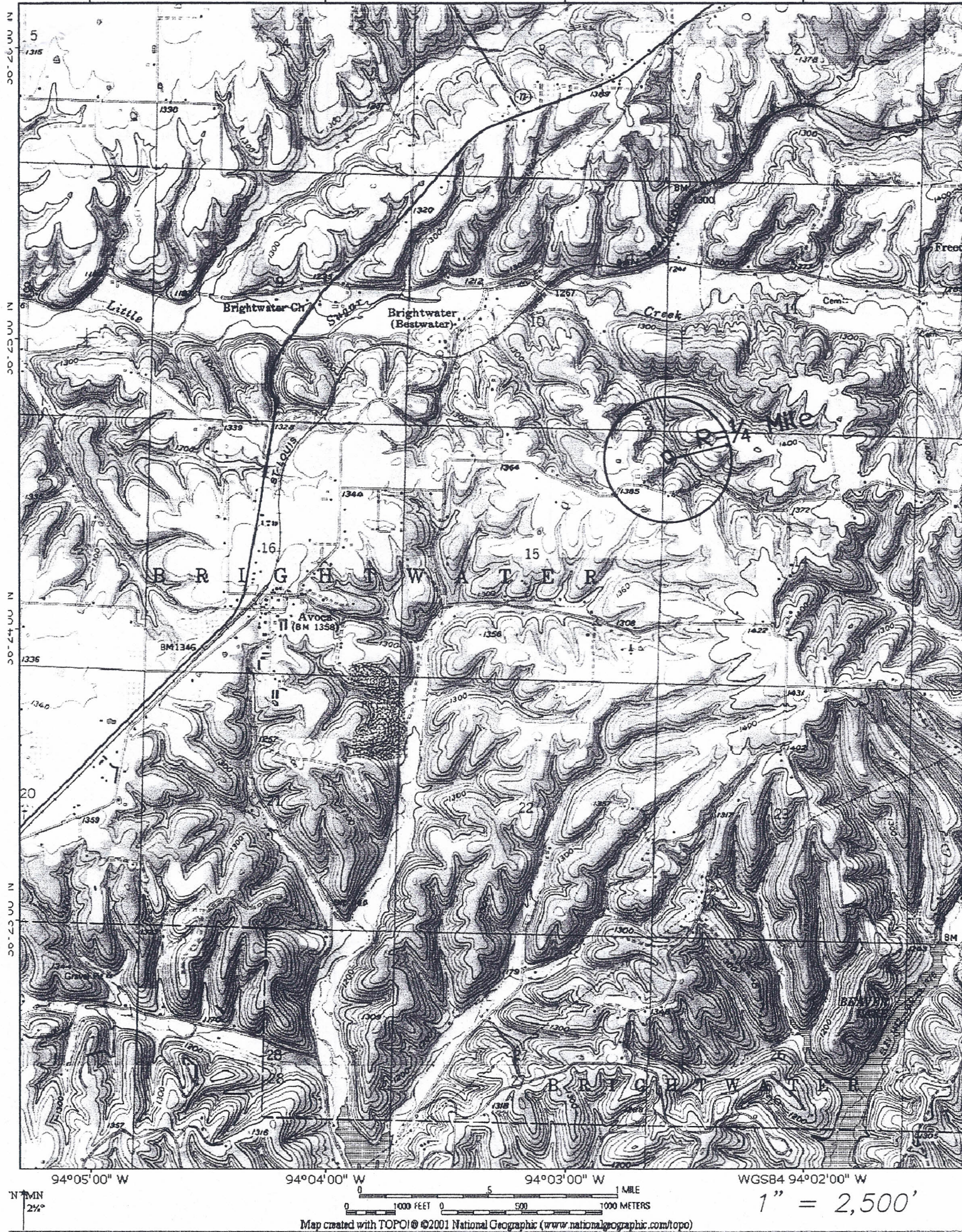
TN \* MN  
2½°

WGS84 94°03.000' W



Map created with TOPO!® ©2001 National Geographic ([www.nationalgeog](http://www.nationalgeog))





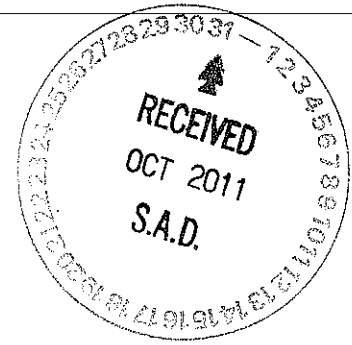


# ADEQ

ARKANSAS  
Department of Environmental Quality

October 31, 2011

Charles B. Cook  
Deer Haven Subdivision  
P. O. Box 7  
Fort Smith, AR 72902



Re: Permit No.: 4908-WR-1; AFIN: 04-01681

Dear Mr. Cook:

The application for a no-discharge permit was received on October 17, 2011, with further information received on October 20, 2011. In accordance with Department policy, your application has been reviewed and determined to be incomplete due to the following deficiency:

1. Applicants must notify the Arkansas Department of Health and Human Services (ADHHS) Division of Engineering that a permit application has been submitted to the Department of Environmental Quality. This notice must include a complete set of maps (as described in Part III.3.e.) indicating the location of the facility and all land application sites and a description (type, size, etc.) of the operation. The notice should be mailed to:

Arkansas Department of Health  
Engineering Division, Slot # 37  
4815 West Markham Avenue  
Little Rock, AR 72205

A copy of the letter transmitting the above documents to the Arkansas Department of Health and Human Services must be submitted to the Department with your application.

Information to satisfy the deficiency must be received by the Department no later than **November 30, 2011**, before processing of your application can begin. Failure to submit the required information will result in your application being returned.

Upon receipt of the information requested, your application will be determined to be complete, and processing of your application will begin.

Thank you for your cooperation in this matter. If there are any questions concerning this submittal, please contact Colby Ungerank of my staff at (501) 682-0047 or by email at [ungerank@adeq.state.ar.us](mailto:ungerank@adeq.state.ar.us).

Sincerely,

Richard McConnell, P.E.  
Engineer Supervisor  
No-Discharge Section, Water Division

RM:ad

**From:** [Ungerank, Ralph](#)  
**To:** [Deardoff, Amy](#)  
**Subject:** FW: Permit No 4908-WR-1  
**Date:** Wednesday, November 02, 2011 8:28:00 AM  
**Attachments:** [ADH Deer Haven.pdf](#)  
[20111031082638.pdf](#)  
[Deer Haven ADH Renewal Request.pdf](#)

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## Part of the application

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**From:** Kathy Bartlett [mailto:kathy@aquatechsys.com]  
**Sent:** Monday, October 31, 2011 3:39 PM  
**To:** Ungerank, Ralph  
**Subject:** Permit No 4908-WR-1

Colby

Please see the attached for your reference. Let me know if there is anything further your department needs at this time regarding this matter

Regards  
Kathy Bartlett  
Internal Operations Manager  
Greenfield Capital Development  
[www.greenfieldcapitaldevelopment.com](http://www.greenfieldcapitaldevelopment.com)