

# **BLUEGRASS WATER**

**Utility Operating Company**

A CSWR Managed Utility

## **Wellhead Protection Plan**

for

### **Center Ridge Water District #2**

KY0180509, Calloway County

356 Pineview Drive  
New Concord, KY 42076

WPP Phase I approved on January 24, 2000 & WPP Phase II approved on  
September 4, 2003 by the Kentucky Division of Water

Revisions and recertification to be conducted by water system personnel every five (5) years.  
Revised by Central States Water Resources EH&S personnel on August 20, 2020

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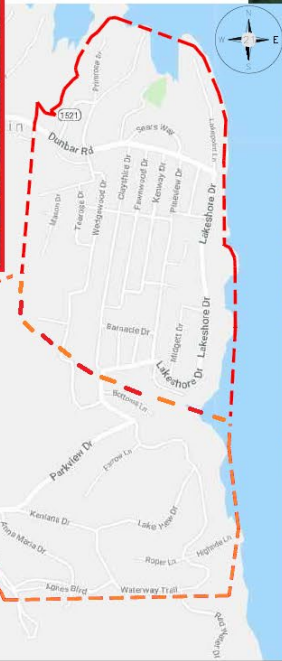
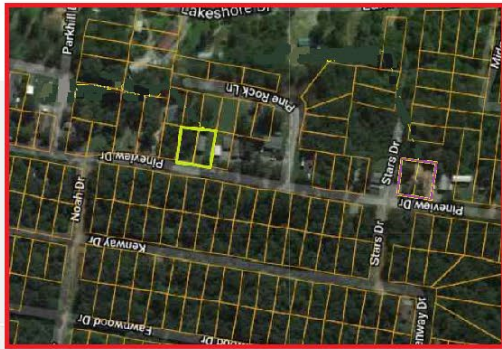
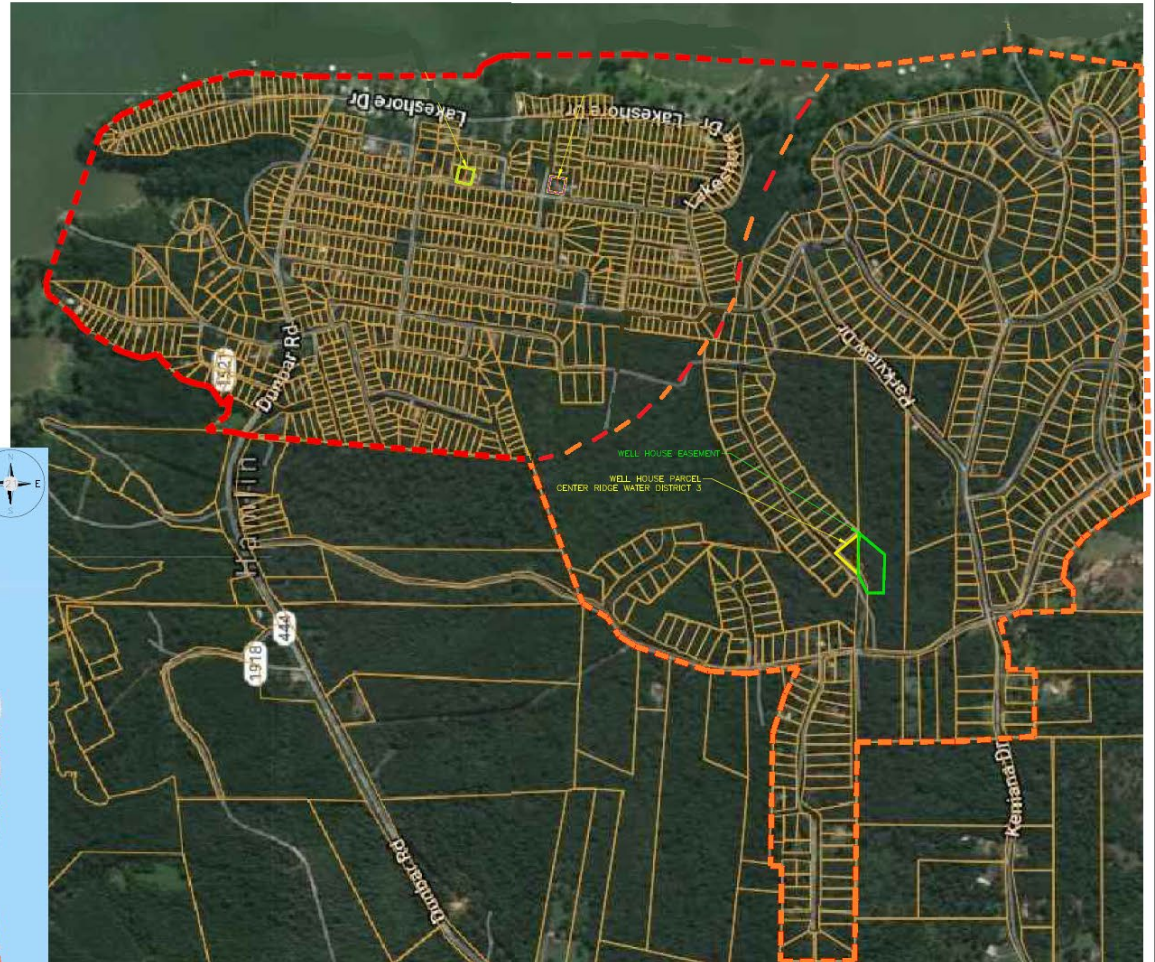
# Attachment 1

## Service Area of Center Ridge Water District #2



### Legend

- CRWD #2 Service area
- Well #1
- Well #2
- CRWD #3 Service area
- Well #1 & #2
- Easement



**Utility Note Disclaimer:**

The utilities shown hereon are depicted based on the original design plans provided by the system manager. 21 Design Group, Inc. performed no field verification of the layout and are unable to determine the exact location at this time. The location represents approximate location only and should not be construed as being 100% accurate. It is shown to provide general layout of the system only and should not be used to interpret encroachments.

-FE	02/04/20
ET	09/04/19
DR	01/1
AE	
HEET	14-E
E	1-E 14-E



**Attachment 2  
June MOR**

**KENTUCKY DIVISION OF WATER  
DRINKING WATER BRANCH**

Revised 05/26/20



**MONTHLY OPERATION REPORT (MOR)--ALL WATER SYSTEMS**

MONTH & YEAR (mm/yyyy) **06/2020**

Indicate one with "X"  
 SURFACE WATER  
 GROUNDWATER  
 PURCHASE/DISTRIBUTE ONLY

PWS ID :	<u>KY0180509</u>	PLANT ID: <u>A</u>	PLANT NAME:	<u>Center Ridge Water System #2</u>
PWS NAME:	<u>Center Ridge Water System #2</u>	PLANT CLASS: <u>I</u>	DIST. CLASS:	<u>I</u>
AGENCY INTEREST (AI):	<u>33825</u>	DATE MAILED:	_____	
SOURCE NAME:	<u>Well</u>	COUNTY:	_____	
OPERATOR(S) RESPONSIBLE / IN-CHARGE		CLASS	CERTIFICATION NUMBER	
WTP SHIFT 1:	<u>Freddie 'Bryan</u>	<u>IV</u>	<u>595</u>	
WTP SHIFT 2:	_____	_____	_____	
WTP SHIFT 3:	_____	_____	_____	
DISTRIBUTION:	<u>Freddie O'Bryan</u>	<u>III</u>	<u>27595</u>	

**THIS REPORT MUST BE RECEIVED BY THE DIVISION OF WATER AND APPLICABLE FIELD OFFICE  
NO LATER THAN 10 DAYS AFTER THE END OF THE MONTH.**

**TREATMENT PLANTS COMPLETE:**

- DESIGN CAPACITY (gpm): \_\_\_\_\_ 35 \_\_\_\_\_
- TYPE OF FILTRATION USED: \_\_\_\_\_
- DESIGN FILTRATION RATE (gpm/sq. ft.): \_\_\_\_\_
- PERCENT BACKWASH WATER USED: \_\_\_\_\_ #VALUE! \_\_\_\_\_
- DATE FLOCCULATION BASIN(S) LAST CLEANED: \_\_\_\_\_
- DATE SETTLING BASIN(S) LAST CLEANED: \_\_\_\_\_

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. See KRS 224.99-010 and 401 KAR 8:020. (Penalties under this statute and regulation may include fines up to \$25,000 per violation or by imprisonment for not more that one year, or both).

**X**  
 \_\_\_\_\_  
 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

KENTUCKY DIVISION OF WATER - DRINKING WATER BRANCH  
 WATER TREATMENT PLANT - MONTHLY OPERATING REPORT

PWS ID : KY0180509  
 PLANT ID: A

REPORT MONTH/YEAR: 06/2020  
 PAGE 1 OF 11

**APPLICABLE TO ALL PLANTS**

DAY	RAW WATER TREATED GALLONS	HOURS PLANT OPERATED	COAGULANT		COAGULANT		pH ADJUSTMENT		DISINFECTANT		DISINFECTANT	
			LBS	PPM	LBS	PPM	Pre		Pre		Post	
							LBS	PPM	LBS	PPM	LBS	PPM
1	No meter											
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
TOTAL												
AVERAGE												
MAX												

NUMBER DAYS IN OPERATION 0

KENTUCKY DIVISION OF WATER - DRINKING WATER BRANCH  
 WATER TREATMENT PLANT - MONTHLY OPERATING REPORT

PWS ID : KY0180509  
 PLANT ID: A

**APPLICABLE TO ALL PLANTS**

REPORT MONTH/YEAR: 06/2020

PAGE 3 OF 11

ANALYTICAL RESULTS (mg/L OR PPM UNLESS OTHERWISE SPECIFIED)														
DAY	pH			TOTAL ALKALINITY		TOTAL HARDNESS		CHLORINE RESIDUAL				TURBIDITY (NTU)		
	RAW	TOP OF FILTER	TAP	RAW	TAP	RAW	TAP	TOP OF FILTER		PLANT TAP		RAW	SETTLED WATER	PLANT TAP
								TOTAL	FREE	TOTAL	FREE			
1										0.80				
2										0.72				
3										0.67				
4										0.70				
5										0.76				
6										0.77				
7										0.81				
8										0.50				
9										0.56				
10										0.71	0.64			
11										0.71	0.67			
12										0.54	0.82			
13										0.75	0.81			
14										0.76	0.80			
15										0.71	0.81			
16										0.74	0.59			
17										0.64	0.63			
18										0.76	0.74			
19										0.70	0.65			
20										0.72	0.62			
21										0.67	0.52			
22										0.68	0.52			
23										0.71	0.87			
24										0.75	0.90			
25										0.82	1.01			
26										0.98	0.98			
27										0.99	1.00			
28										0.87	0.85			
29										0.86	0.83			
30										0.81	0.84			
31														
AVERAGE										0.74	0.77			

APPLICABLE TO ALL PLANTS

\*Please answer Y/N question below this chart.

ANALYTICAL RESULTS (mg/L OR PPM UNLESS OTHERWISE SPECIFIED)											
DAY	FLUORIDE		IRON		MANGANESE		PHOSPHATE		Lowest Daily Chlorine Residual Plant Tap On-Line Chlorine Analyzer	RAINFALL INCHES	WATER TEMP. DEGREES F°/C°
	RAW	TAP	RAW	TAP	RAW	TAP	RAW	TAP	Total		
1									0.80		
2									0.72		
3									0.67		
4									0.70		
5									0.76		
6									0.77		
7									0.81		
8									0.50		
9									0.56		
10									0.71		
11									0.71		
12									0.54		
13									0.75		
14									0.76		
15									0.71		
16									0.74		
17									0.64		
18									0.76		
19									0.70		
20									0.72		
21									0.67		
22									0.68		
23									0.71		
24									0.75		
25									0.82		
26									0.98		
27									0.99		
28									0.87		
29									0.86		
30									0.81		
31											
AVERAGE									Monthly Minimum	Total Rainfall	AVG Temp
									0.50		
									Number of readings	30	0.00
									For Free Chlorine, # less than 0.2 mg/L	0	Y
									For Chloramines, # less than 0.5 mg/L		N

Disinfectant Chloramines? (Y/N)

N

PWS ID : KY0180509  
 PLANT ID: A

REPORT MONTH/YEAR: 06/2020

**ALL WATER SYSTEMS**

PAGE 7 OF 11

DAY	DISTRIBUTION SYSTEM OPERATION											
	CHEMICALS ADDED			TEST RESULTS								
	CHLORINE BOOSTER LBS	CHLORINE BOOSTER LBS		TOTAL (T) AND FREE (F) CHLORINE RESIDUAL (ppm)								
				NORTH		SOUTH		EAST		WEST		
			T	F	T	F	T	F	T	F		
1												
2												
3												
4												
5												
6												
7												
8												
9												
10					0.55							
11					0.52							
12					0.53							
13					0.61							
14					0.56							
15					0.45							
16					0.51							
17					0.52							
18					0.64							
19					0.52							
20					0.41							
21					0.51							
22					0.61							
23					0.65							
24					0.63							
25					0.64							
26					1.02							
27					0.60							
28					0.63							
29					0.61							
30					0.52							
31												
AVERAGE			Average		0.58							
TOTAL			Total Minimum									
			Free Minimum		0.41							

Total # Chlorine Samples	0	21	0	0	0	0	0	0	0	0
# Less than 0.2 mg/L/0.5 mg/L	0	0	0	0	0	0	0	0	0	0

Number of Free Residuals	21	Minimum Monthly Free Residual	<b>0.41</b>
Number of Total Residuals	0	Minimum Monthly Total Residual	<b>0.00</b>
Total # Less than 0.2 mg/L			
Total # Less than 0.5 mg/L			

Disinfectant Chloramines? (Y/N)   Y  
 Number of days of operation? 0 N



**KENTUCKY DIVISION OF WATER / DRINKING WATER BRANCH  
MONTHLY OPERATING REPORT (MOR) PLANT SUMMARY FORM**

PWS ID KY0180509

MONITORING PERIOD (MMYYYY) 06/2020

Y **NOTE: COMPLETE ALL APPLICABLE FIELDS!!! NOT ALL OF THE FIELDS ARE PRE-POPULATED FOR YOU!!!**  
N

**PLANT INFORMATION**

**APPLICABLE TO ALL PLANTS**

PLANT ID <u>A</u>	TOTAL WATER TREATED (gallons)	_____
PLANT NAME <u>Center Ridge Water System #2</u>	AVE. DAILY PRODUCTION (gallons)	_____
AGENCY INTEREST <u>0</u>	MAXIMUM PUMPAGE (gallons per day)	_____

**INDIVIDUAL FILTER EFFLUENT TURBIDITY**

**APPLICABLE TO ALL PLANTS WITH FILTRATION**

ANALYTE CODE 0100

Was each filter monitored continuously? (Y/N) \_\_\_\_\_

Were measurements recorded every 15 minutes? (Y/N) \_\_\_\_\_

Was there a failure of the continuous monitoring equipment? (Y/N) \_\_\_\_\_

    If Yes, (1) were individual filter effluent turbidity grab samples collected every four hours of operation? (Y/N) \_\_\_\_\_

    (2) was the continuously monitoring equipment repaired within 5 working days? (Y/N) \_\_\_\_\_

Was individual filter level greater than 1.0 NTU in two consecutive measurements? (Y/N) \_\_\_\_\_

Was individual filter level greater than 0.5 NTU in two consecutive measurements after on line for more than four hours? (Y/N) \_\_\_\_\_

Was individual filter level greater than 1.0 NTU in two consecutive measurements in three consecutive months? (Y/N) \_\_\_\_\_

Was individual filter level greater than 2.0 NTU in two consecutive measurements in two consecutive months? (Y/N) \_\_\_\_\_

**If any of the last 4 boxes are YES, fill out the Individual Filter Turbidity Sheet and submit with the MOR**

**COMBINED FILTER EFFLUENT TURBIDITY**  
**APPLICABLE TO ALL PLANTS WITH FILTRATION**

**ENTRY POINT RESIDUAL DISINFECTANT CONCENTRATION**  
**APPLICABLE TO ALL PLANTS**

ANALYTE CODE <u>0100</u>	ANALYTE CODE <u>0999</u>
Number of hours of plant operation _____ <b>0.0</b>	Number of days of plant operation _____ <b>0</b>
Were samples taken every 4 hours of plant operation? (Y/N) _____ <input type="checkbox"/>	Were samples taken each day of operation? (Y/N) _____ <input checked="" type="checkbox"/>
Number of samples taken _____ <b>0</b>	Number of lowest chlorine samples recorded _____ <b>30</b>
Highest single turbidity reading _____ <b>0.00</b>	Lowest single chlorine reading _____ <b>0.50</b>
For all filtration except slow sand filtration:	If less than required:
Number of samples exceeded 0.1 NTU _____	Was residual restored within 4 hours of plant operation? (Y/N) _____ <input type="checkbox"/>
Number of samples exceeded 0.3 NTU _____	<u>Free Chlorine</u> (for all disinfectants except chloramine):
Number of samples exceeded 1 NTU _____	Number of samples under 0.2 mg/L _____ <b>0</b>
When filtration is slow sand filtration:	<u>Total Chlorine</u> (when disinfectant is Chloramine):
Number of samples exceeded 1 NTU _____	Number of samples under 0.5 mg/L _____
Number of samples exceeded 5 NTU _____	

**CHLORINE DIOXIDE ENTRY POINT MONITORING**  
**APPLICABLE TO PLANTS UTILIZING CHLORINE DIOXIDE**

**CHLORITE ENTRY POINT MONITORING**  
**APPLICABLE TO PLANTS UTILIZING CHLORINE DIOXIDE**

ANALYTE CODE <u>1008</u>	ANALYTE CODE <u>1009</u>
Number of days of plant operation _____ <b>0</b>	Number of days of plant operation _____ <b>0</b>
Were samples taken each day of operation? (Y/N) _____ <input type="checkbox"/>	Were samples taken each day of operation? (Y/N) _____ <input type="checkbox"/>
Number of samples taken _____ <b>0</b>	Number of samples taken _____ <b>0</b>
Highest single chlorine dioxide reading _____ <b>0.00</b>	Highest single chlorite reading _____ <b>0.00</b>
Number of chlorine dioxide samples exceeded 0.8 mg/L _____ <b>0</b>	Number of chlorite samples exceeded 1 mg/L _____ <b>0</b>

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. Violations of 401 KAR Chapter 8 are subject to severe penalties prescribed in KRS 224.99-010, up to \$25,000 fine per day per violation and in some cases a violation may subject the violator to prison.

**X**  
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT



# KENTUCKY WELL INSPECTION FORM

<p><b>(1) AKGWA NUMBER</b> <span style="font-size: 2em; margin-left: 20px;">0004-9095</span></p>		<p><b>Attach Well Record</b></p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p style="font-size: 1.5em; margin: 0;">0004-9095</p> </div>											
<p><b>(2) OWNER/FACILITY INFORMATION</b>                  Well Owner's Name: <u>Marty Fultrell</u>  <span style="font-size: 0.8em; margin-left: 20px;">Cool Water Works</span>                  Mailing Address: <u>405 South Fourth Street</u>                  City: <u>MURRAY</u> State: <u>KY</u> Zip: <u>42071</u>                  Well Address (if different) <u>400 PINEVIEW DRIVE</u>                  City: <u>HAMLIN</u> State: <u>KY</u> Zip: _____                  Phone: <u>(502) 753-7668</u></p>		<p><b>(3) WELL RECORD LABEL LOCATION:</b>  <input type="checkbox"/> well casing    <input type="checkbox"/> pressure tank    <input type="checkbox"/> water pipe  <input checked="" type="checkbox"/> well cap    <input type="checkbox"/> electric box    <input type="checkbox"/> not labeled  <input type="checkbox"/> pump    <input type="checkbox"/> other</p>											
<p><b>(4) WELL LOCATION</b></p>	<p>USGS Quadrangle Name: <u>HAMLIN</u>                  Latitude: <u>36° 35' 33"</u>                  County: <u>Callaway</u>                  Longitude: <u>88° 04' 07.5"</u></p>	<p><b>(5) PHYSIOGRAPHIC OR HYDROLOGIC REGION</b>  <input type="checkbox"/> Blue Grass    <input type="checkbox"/> Ohio River Alluvium  <input type="checkbox"/> E. Coal Field    <input type="checkbox"/> W. Coal Field  <input type="checkbox"/> Miss. Plateau    <input checked="" type="checkbox"/> Jackson Purchase <i>Miss. Embayment</i></p>											
<p><b>(6) DRILLER INFORMATION</b>                  Who Constructed Well? _____ ( ) unknown                  Address: _____                  City: _____ State: _____ Zip: _____                  Date Well Completed: _____ ( ) unknown  <small>Month Day Year</small></p>		<p><b>(13) WELL USE (check all that apply)</b>  <input type="checkbox"/> domestic    <input type="checkbox"/> livestock    <input type="checkbox"/> not used  <input checked="" type="checkbox"/> public    <input type="checkbox"/> irrigation    <input type="checkbox"/> abandoned  <input type="checkbox"/> industrial    <input type="checkbox"/> monitoring  <input type="checkbox"/> other                  PWSID# <u>0180509</u>                  Water Withdrawal Permit # _____</p>	<p><b>(18) ELEVATION</b>                  500 ft. AMSL                  From ( ) ground surface                        ( ) top of casing                  By <input checked="" type="checkbox"/> map                        ( ) survey                        ( ) report                        ( ) GPS</p>										
<p><b>(7) GENERAL</b>                  Type of Construction:  <input checked="" type="checkbox"/> drilled/augered  <input type="checkbox"/> excavate &amp; backfill  <input type="checkbox"/> hand dug/blasted                  Depth of Well: _____ ft.  <input type="checkbox"/> measured  <input type="checkbox"/> reported  <input checked="" type="checkbox"/> unknown                  Static Water Level, ft. below surface:  <input type="checkbox"/> measured  <input type="checkbox"/> reported  <input type="checkbox"/> not measured  <input checked="" type="checkbox"/> can't be measured                  Well Yield:  <input type="checkbox"/> gpm ( ) gph ( ) gpd  <input type="checkbox"/> measured  <input type="checkbox"/> estimated  <input checked="" type="checkbox"/> unknown</p>	<p><b>(9) WELLHEAD</b>                  Is Well Located in a Pit?  <input type="checkbox"/> yes ( ) no ( ) unknown                  Wellhead (casing top):  <input checked="" type="checkbox"/> well cap    <input type="checkbox"/> sanitary seal  <input type="checkbox"/> flush mount    <input type="checkbox"/> locking cap  <input type="checkbox"/> open    <input type="checkbox"/> unknown                  Casing Above Ground Level?  <input checked="" type="checkbox"/> yes ( ) no ( ) unknown                     inches above ground.                  Discharge Pipe Below Surface?  <input type="checkbox"/> yes ( ) no ( ) unknown                  Pitless Adapter Used?  <input type="checkbox"/> yes ( ) no ( ) unknown</p>	<p><b>(14) WELL SERVICE</b>                  Number of People Served: <u>409</u>                  Number of Service Connections: <u>124</u>                  Any Quantity Problems? ( ) yes ( ) no                  Any Quality Problems? ( ) yes ( ) no                  If "yes", describe in COMMENTS section, below.</p>											
<p><b>(8) SURFACE ANNULAR MATERIAL:</b>  <input type="checkbox"/> clay    <input type="checkbox"/> drill cuttings  <input type="checkbox"/> cement    <input checked="" type="checkbox"/> unknown  <input type="checkbox"/> open    <input type="checkbox"/> sand ( ) gravel  <input type="checkbox"/> concrete pad</p>		<p><b>(10) PUMP DETAILS</b>                  Date Installed: _____  <small>unknown Month Day Year</small>                  Pump Type:  <input type="checkbox"/> submersible    <input type="checkbox"/> bailer  <input type="checkbox"/> turbine ( ) jet ( ) hand pump  <input type="checkbox"/> none ( ) other ( ) unknown                  Intake Level: _____ ft. below surface                  Electric Connection:  <input type="checkbox"/> 2 wire ( ) 3 wire ( ) unknown</p>	<p><b>(15) COMPLIANCE TO STANDARDS</b>                  Construction in Compliance with KY Standards?  <input type="checkbox"/> yes ( ) no ( ) unknown ( ) pre-law                  If "no", describe in COMMENTS section, below.</p>										
<p><b>(11) WELL CONSTRUCTION DETAILS</b></p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: 0.8em;"> <thead> <tr> <th>Feet Below Surface From</th> <th>To</th> <th>Casing Inside Dia. (in.)</th> <th>Casing Type</th> <th>Casing Wall Thickness (in.)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td><u>PVC</u></td> <td> </td> </tr> </tbody> </table>		Feet Below Surface From	To	Casing Inside Dia. (in.)	Casing Type	Casing Wall Thickness (in.)				<u>PVC</u>		<p><b>(16) RELATIVE LOCATION</b>  <input type="checkbox"/> upgradient    <input type="checkbox"/> sidegradient ( ) unknown  <input type="checkbox"/> downgradient ( ) varying ( ) N/A</p>	
Feet Below Surface From	To	Casing Inside Dia. (in.)	Casing Type	Casing Wall Thickness (in.)									
			<u>PVC</u>										
<p><b>(12) SKETCH MAP OF VICINITY</b></p>		<p><b>(17) INSPECTION INFORMATION</b>                  Date of Inspection: <u>12/17/97</u>  <small>Month Day Year</small>                  Water Quality Sample Taken: ( ) yes ( ) no                  Reason for Inspection:  <input type="checkbox"/> general survey  <input type="checkbox"/> specific complaint investigation  <input type="checkbox"/> spill or incident response  <input type="checkbox"/> contamination site investigation  <input type="checkbox"/> enforcement  <input type="checkbox"/> general water quality analysis  <input type="checkbox"/> ambient groundwater monitoring  <input checked="" type="checkbox"/> other <u>wellhead protection program</u>                  Program Name and Facility ID#: _____                  Alternate Well ID#: _____</p>											
<p><b>(21) COMMENTS:</b> <u>w/ Jan Devers</u>  <u>0.3 mi from Pineview Rd</u>  <u>0.8 mi from 444 on 444</u></p>		<p><b>(20) OPTIONAL USE</b>                  Will Owner Allow State Access?  <input checked="" type="checkbox"/> yes ( ) no ( ) unknown                  Extent of Monitoring Allowed:  <input type="checkbox"/> collect sample  <input type="checkbox"/> measure SWL  <input type="checkbox"/> pump well  <input type="checkbox"/> complete access  <input checked="" type="checkbox"/> notification required  <input type="checkbox"/> other (describe below)                  Monitoring Feasibility: _____</p>											
<p><b>(22) INSPECTOR IDENTIFICATION</b>                  Name: <u>ELLISON ERNIE A</u>  <small>LAST FIRST MI</small> Inspector ID# _____                  Agency: <input checked="" type="checkbox"/> DOW ( ) DWM ( ) CHR ( ) KGS ( ) other                  Signature of Inspector: _____ Date: <u>12/17/97</u></p>													



# KENTUCKY WATER WELL INSPECTION FORM

(1) AROWA NUMBER:

0 0 0 6 - 4 3 9 9 - [ ] [ ]

0006-4399

(2) GENERAL INFORMATION:

Well Owner's Name: Center Ridge Water District #2  
 Mailing Address: 69 Marguerite Blvd  
 City: New Concord State: KY Zip: 42076  
 Phone: 270-293-6228

(3) WELL RECORD LABEL LOCATION:

No Permit  Well Casing  Other

(4) WELL LOCATION:

USGS Quadrangle Name: Hamlin  
 County: Calloway  
 Elevation: h  map  altimeter  other  
 Latitude: 36.594170 Longitude: 88.068312  
 Physiographic or Hydrologic Region:  
 Blue Grass  Ohio River Alluvium  E. Coal Field  
 High Plateau  Jackson Purchase  W. Coal Field

(7) WELL USE:

domestic  public  irrigation  
 industrial  livestock  monitoring  
 unused  other  
 PWSID #: KY0180509 (Plant B)  
 Water Withdrawal Permit #:

(10) TYPE OF TREATMENT SYSTEM:

none  
 water softener  
 zinc violet  
 chlorination  
 aeration  
 charcoal filter  
 sand filter  
 iron inhibitor  
 other

(5) WELL CHARACTERISTICS:

Is this a hand dug well?  yes  no  unknown  
 Was a constructed well?  yes  no  unknown  
 Address:  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Date well was completed: \_\_\_\_\_  
 Total depth: 168 ft.  measured  reported  unknown  
 Does the casing extend above the ground?  yes  no  unknown  

Casing Type(s)	Inside Diameter (in)	Feet Below Surface From	To	Casing Well Thickness
1 PVC	4"			
2				
3				
4				

(8) WELL SERVICE:

Number of people served: 392  
 Number of service connections: 132  
 Any quantity problems?  yes  no  
 Any quality problems?  yes  no  
 Describe:

(9) COMPLIANCE TO STANDARDS:

Is this well in compliance with state water well construction standards?  yes  no  unknown  
 If no, describe deficiencies:

Is a treatment bypass available?  yes  no

Describe water quality problem requiring treatment: Regulatory requirement

(11) INSPECTION INFORMATION:

Date of inspection: 4 11 13 Check one:  original inspection  re-inspection  
 Was a water quality sample taken as part of this inspection?  yes  no  
 Reason for inspection (check all that are applicable):  
 general water quality analysis requested  
 specific complaint investigation  
 general survey  
 ambient groundwater monitoring  
 other Routine Inspection  
 Permit-Program Name:

Other ID #:

Well inventory #:

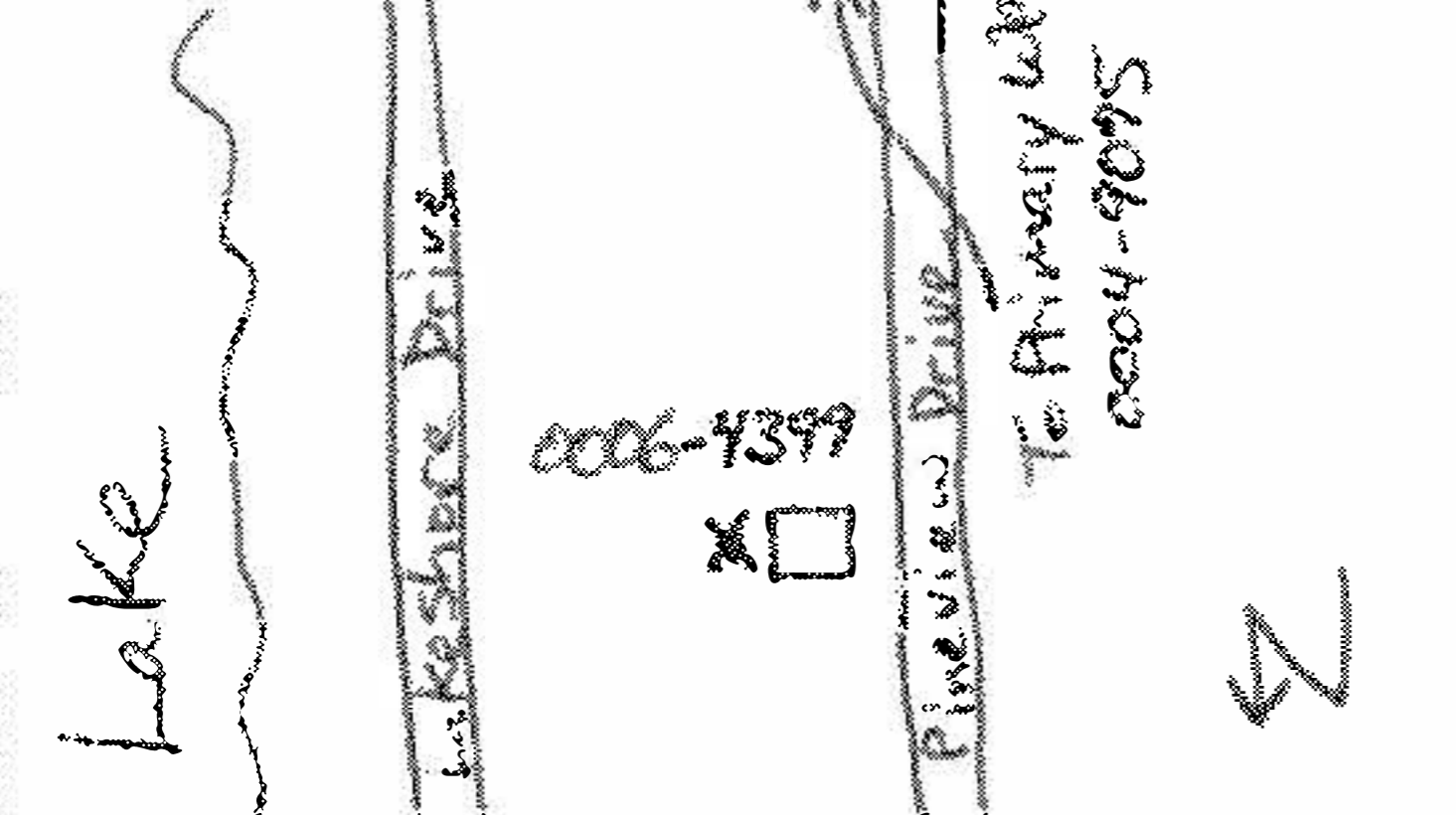
(12) OPTIONAL USE:

Will well owner allow state monitoring?  yes  no  unknown  
 Extent of monitoring allowed:  collect sample  measure static water level  
 pump well  remove well cap  other  
 Monitoring feasibility: Good

(13) COMMENTS:

This PWS well is for back up plant B and has not been used in recent years.

(6) SKETCH MAP:



(14) INSPECTOR IDENTIFICATION:

Name: Topolski Rob ID #: 886  
 Agency:  CWR  DOW  DWM  RGS  SOAP  
 Signature of Inspector: Rob Topolski  
 Date: 4 11 13 Number of Attached pages: 2 of 2

## **Attachment 4**

### **WHPP Drinking Water Planning Team**

Leader:

Jay Favor, CSWR – Director Environmental Health & Safety  
Oversees all facility operations for Bluegrass Water UOC. Directs team to carry out operation tasks.

Team:

Ali Alexander, CSWR – Environmental Compliance Officer  
Oversees facility compliance with State and Federal Regulations/Statutes.

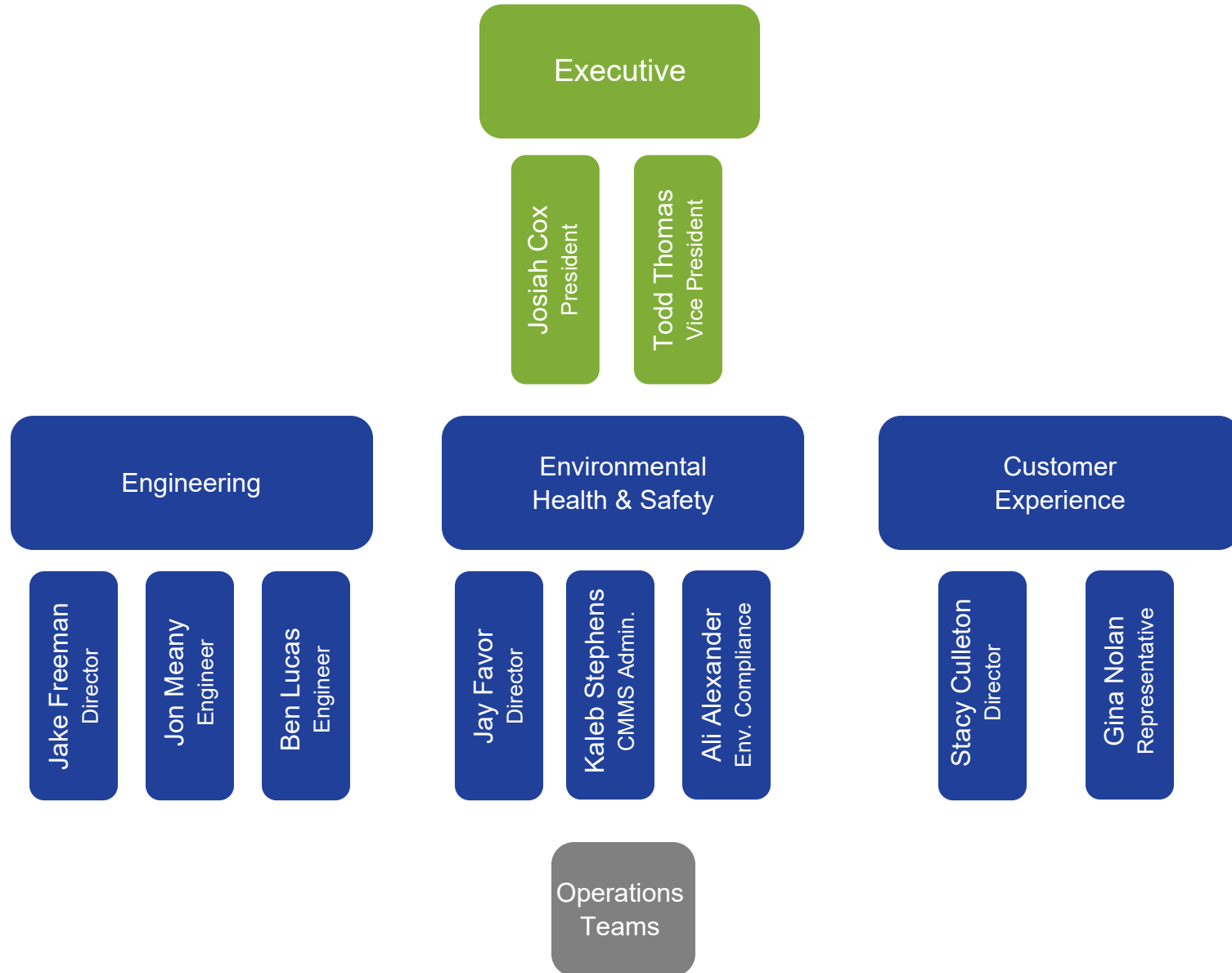
Stacy Culleton, CSWR – Director Customer Experience  
Oversees communications between operators and customers.

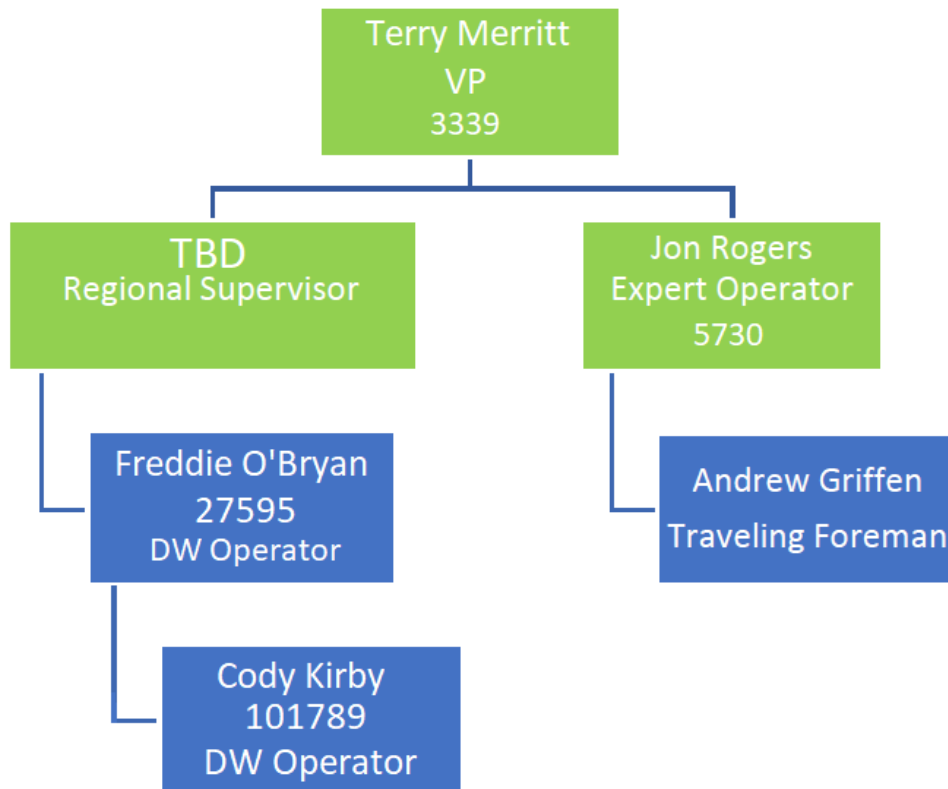
Gina Nolan, CSWR – Customer Experience Representative  
Carries out customer communication.

Terry Merritt, Midwest Water Operations – Vice President  
Oversees all facility operators and directs staff to carry out daily operation tasks.

Freddie O’Bryan, Midwest – Operator (Primary)  
Oversees facility operations.

Cody Kirby, Midwest – Operator (Back-up)  
Oversees facility operations.





## **Attachment 5**

### **WHPA Delineation Information**

There was no pump testing or slug testing done to determine aquifer characteristics. Well construction records were absent. The information available was not sufficient to run a groundwater modeling program.

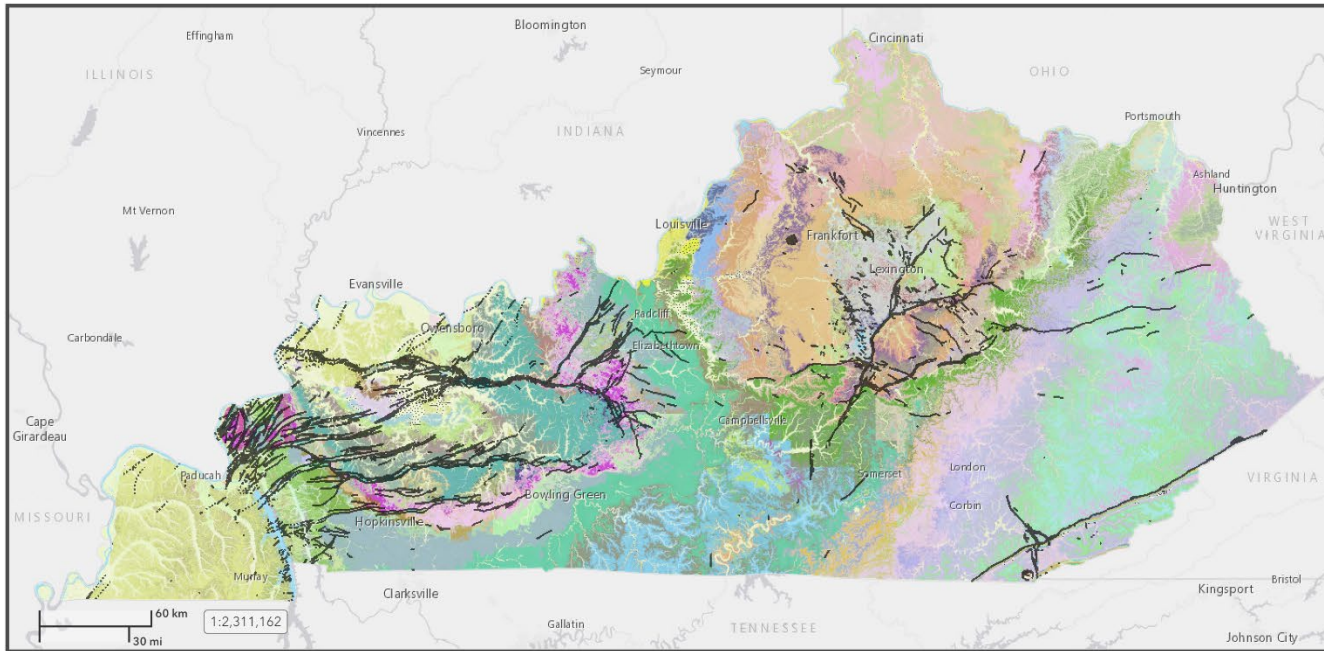
Center Ridge Water District #2 (previously named Cool Water Works) is situated directly over a northeast-southwest trending fault system.

Due to the nature of the fault system, it was decided that an arbitrary fixed radius method could not be used. Therefore, a conservative delineation was employed which encompasses the entire fault system in the WHPA zone 1. WHPA zones 2 and 3 were determined to be the hydrologic boundary of the watershed where the Cool Water Works well is located, as seen on the delineation map (Attachment #6).

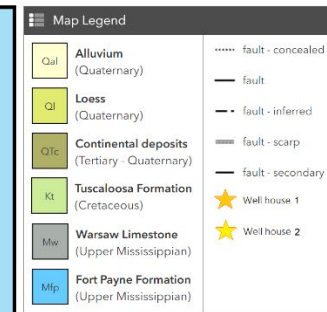
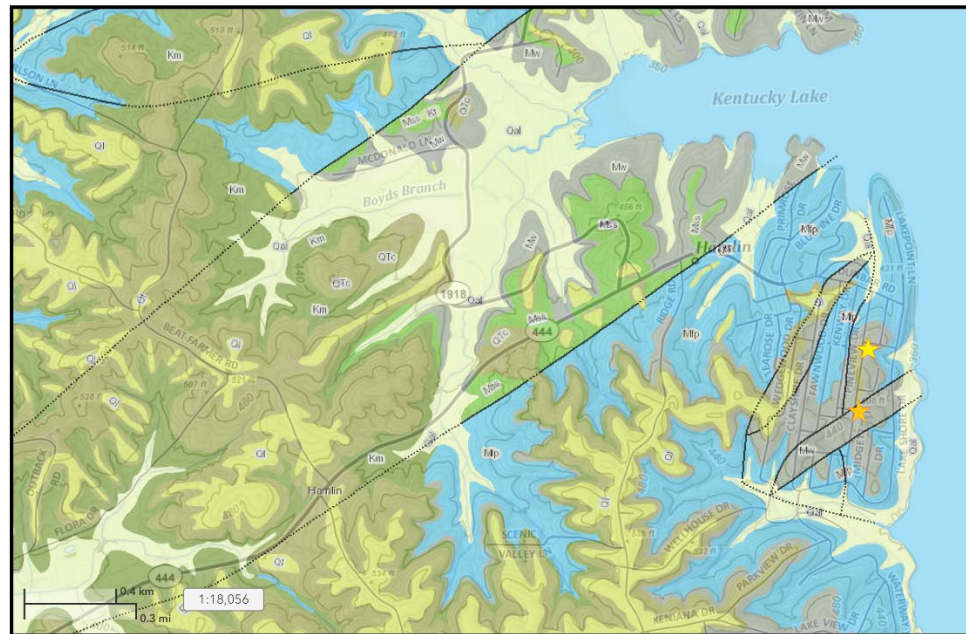
Unfortunately, this type of delineation of the WHPA is not the most accurate method to use in determining protection areas. However, due to the limited information available, the type of aquifer in use, and the cost of obtaining data, the conservative delineation is the best available method for determining the wellhead protection area.



# Kentucky Geology



# Center Ridge Water District #2 Geology






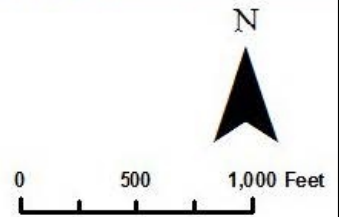


Attachment 6  
Delineation Map



**Center Ridge #2 WHPA**

-  WHP Area 1
-  WHP Area 2 & 3
-  PWS well

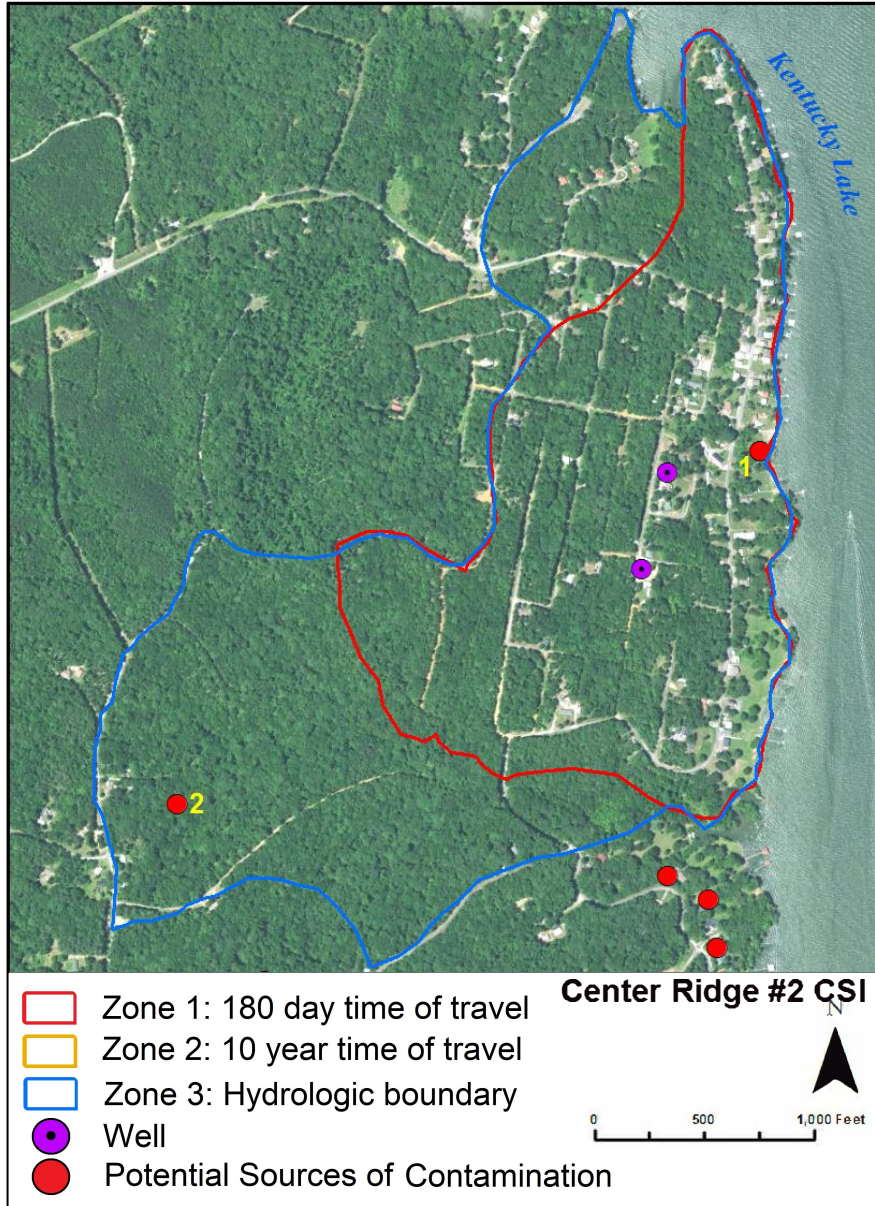




## Attachment 7 Contaminant Source Inventory Summary & Map

Center Ridge Water District #2 withdraws water from the fractured limestone of the Fort Payne Formation. The surrounding area is primarily rural in nature. The susceptibility analysis suggests the aquifer's susceptibility to contamination to be a medium risk. This is influenced by the nature of the aquifer, which has a medium sensitivity value, as well as the number of potential contaminates located in the protection area. The wellhead protection area delineation was completed by the Kentucky Division of Water and approved in 2000.

A total of 124 potential sources of contamination are located within the entire wellhead protection area. All of potential contaminant sources are classified as medium risk. These would include 97 septic tanks located within WHPA-1, and 27 septic tanks in WHPA-2. Therefore, since the majority of potential contaminant sources possess a medium risk, the aquifer has been determined to have a medium risk.



Contaminant Source Inventory and Susceptibility Analysis for Center Ridge Water District 2										
Contaminant Source ID #	Contaminant Source/Land Use	Address	Quantity	WHPA	Proximity Ranking	Contaminant Value	Hydrologic Sensitivity	Numeric Rating	Susceptibility Ranking	
1	Septic Systems	Center Ridge #2, Lakeshore Dr, Hamlin, KY	97	1	3	2	4	16	High	
2	Septic Systems	Center Ridge #2, Lakeshore Dr, Hamlin, KY	27	3	1	2	4	12	Medium	
<b>Susceptibility Ranking Totals:</b>							<b>High</b>	<b>Med</b>	<b>Low</b>	
							124	97	27	0

## **Attachment 8**

### **Previous Management Strategy and Newly Proposed Management Strategies**

The purpose behind managing a wellhead protection area is to minimize the impact of land uses that threaten the quality and quantity of the public's drinking water supply. The underlying theme is simply to prevent pollution. Preventing pollution is the key to keeping groundwater supplies safe and to protect public health. Once a drinking water supply becomes contaminated, the community is faced with the difficult and costly task of installing additional treatment facilities or locating an alternate source.

Virtually all man-made land use activities have the potential to degrade groundwater quality. There are numerous factors that control the impact of land uses upon groundwater. The two most prominent factors are the geology of the area and the type of land use. The geology controls the direction and rate that a contaminant can travel, whereas the land use dictates the quantity and toxicity of the contaminant. This means that a particular land use in a less sensitive geologic setting may never significantly impact groundwater quality, but the same land use in a geologically sensitive setting can render groundwater unusable for human consumption. This is why a management plan must be tailored to each public water system.

The overall strategy of the management plan is to minimize the impact of the threats identified in the contaminant source inventory through regulatory and/or non-regulatory means.

#### Management Strategies

The Center Ridge Water District #2 possesses no jurisdictional or regulatory authority; therefore, it will work within the framework of existing regulations to protect its groundwater. The District will write a groundwater protection plan to address the operation of a groundwater supply well and septic tanks.

As a public water supply, the District serves a community population of residential homes. Therefore, an intensive public education initiative will not be beneficial as the population is continually changing. The groundwater protection plan will serve as the primary management tool utilized by Center Ridge Water District #2.

## Attachment 9 WHPP Contingency and Planning

### Emergency Response Phone List

Local Emergency Response	Phone Number
Operator: <b>Freddie O'Bryan</b>	(270) 331-8482
Ambulance District: <b>Murray-Calloway Co. EMS</b>	(270) 753-9333
Fire Department: <b>Fire-Rescue</b>	(270) 753-4112
Kentucky State Fire Marshall	(502) 573-0382
Sheriff's Department: <b>Calloway</b>	(270) 753-3151
State Highway Patrol: <b>KSP Post 1</b>	(270) 856-3721

Kentucky DOW: <b>Frankfort</b>	(502) 564-3410
Kentucky DOW RO: <b>Paducah</b>	(270) 898-8468
Kentucky Environmental Response Team	(502) 564-2380
24-hr Emergency Response Line	(800) 928-2380
County Health Department: <b>Calloway</b>	(270) 753-3381
Kentucky Public Service Commission	(502) 564-3940

Bluegrass Water UOC Customer Service	(866) 752-8982
Jay Favor	(314) 380-8525
Ali Alexander	(314) 380-8533
Stacy Culleton	(314) 380-8546
Gina Nolan	(314) 380-8544

### Procedures for Public Notification:

In the event of a water system emergency that would threaten the health or life of the public, use the following procedure. Provide Jay Favor, Ali Alexander, Stacy Culleton, and Gina Nolan a summary of the issue including time of onset, if the KyDOW was notified, and if the County Health Department was notified. Stacy & Gina will draft public notification and directions for customers which will be provided to customers on the Bluegrass Water UOC website, facebook, by email, and/or by direct handout via the operator. Stacy & Gina will coordinate with Ali to communicate with appropriate regulatory authority as needed. If additional notification is needed use the local newspaper as directed.

### Potential Future Problems:

The most common scenario that could threaten the water supply is bacteriological and/or chemical contamination from a leaking septic system.

### Alternative Water Supply (Short and Long Term):

Bacteriological contamination is mitigated by disinfecting the water system. If there were indicators of bacteriological contamination in the drinking water the facility would be placed on a boil water advisory until the problem is eliminated. If chemical contamination (such as nitrate/nitrite) is discovered in the water the facility would be placed on a do not drink advisory until the source of contamination was discovered and eliminated. If a long-term solution is needed, the facility would add centralized/localized treatment to eliminate the issue. As needed, water could be hauled in for use during these events.

### Schedule for Update and Review:

The Wellhead Protection Plan will be reviewed regularly and updated every five years as required by regulation.

**Attachment 10  
Public Education Material**



**Energy and Environment Cabinet**

**Generic Groundwater Protection Plan:  
Residential Septic Systems**

## **HOMEOWNER'S SEPTIC SYSTEM GUIDE AND RECORD KEEPING FOLDER**

The purpose of 401 KAR 5:037 and this groundwater protection plan is to prevent groundwater pollution. Understanding how your septic system works and following good operation and maintenance practices are the keys to preventing groundwater pollution.

This folder provides you with that information. By carefully reading it and following the guidelines, you will not only protect groundwater, but also should receive many years of trouble-free service from your system.

Keeping records will enable you to better protect and maintain your septic system. In case you sell your house, your records will show a prospective buyer that your system has been properly maintained.

### **FOR YOUR RECORDS**

1. Maintenance Log: Date, what was done and reason for the maintenance (Example: measure sludge and scum layers, pump the tank).
2. Inspection Log: Date, what you observed upon walking over the septic system (Example: any unpleasant odors, soggy soil, lush green grass over the lateral lines, surfacing wastewater).
3. Site Drawing: Show accurately the layout of the system on your lot. Include exact distances of each portion of the system from at least two (2) fixed reference points (corner of house, garage, large trees, property line markers).
4. Any permits or receipts.
5. Residential Address \_\_\_\_\_

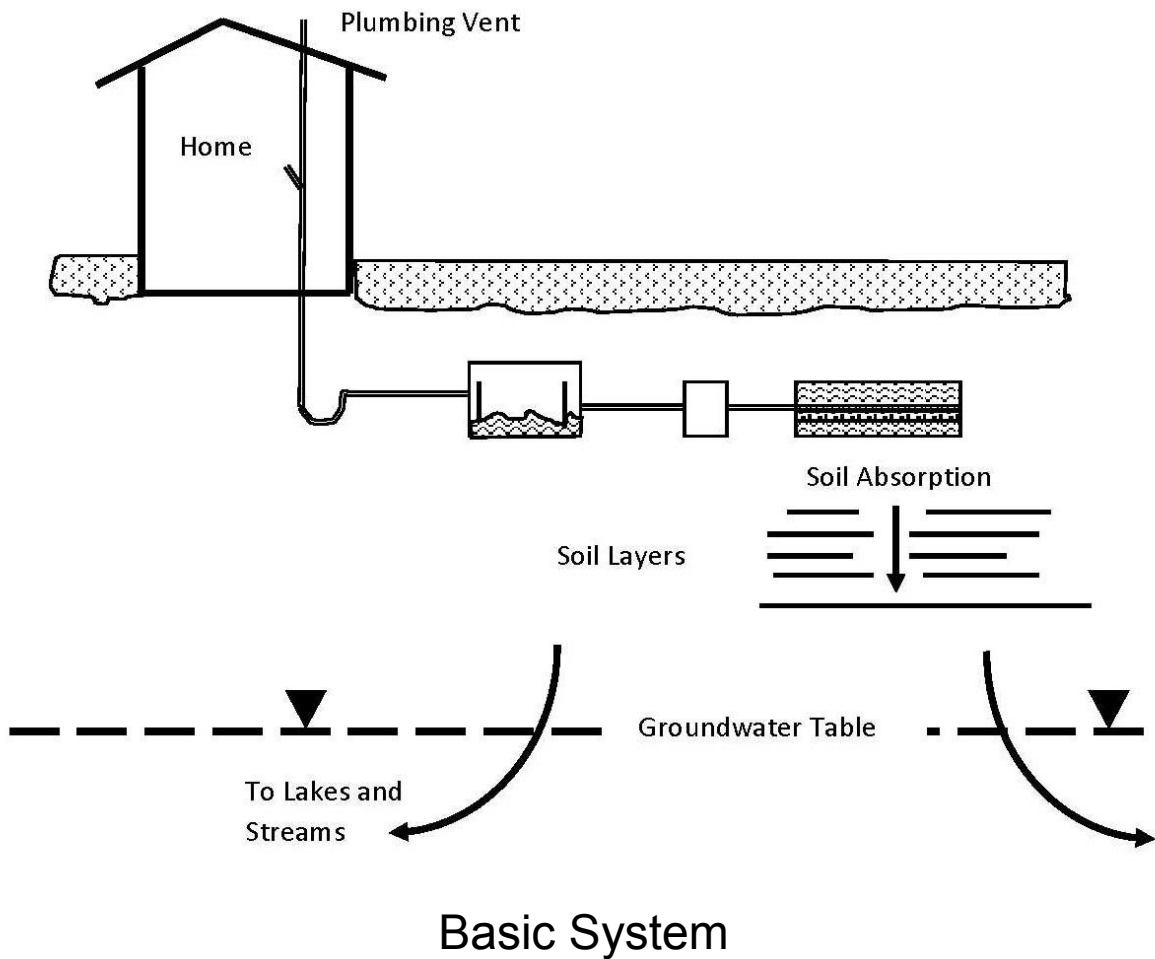






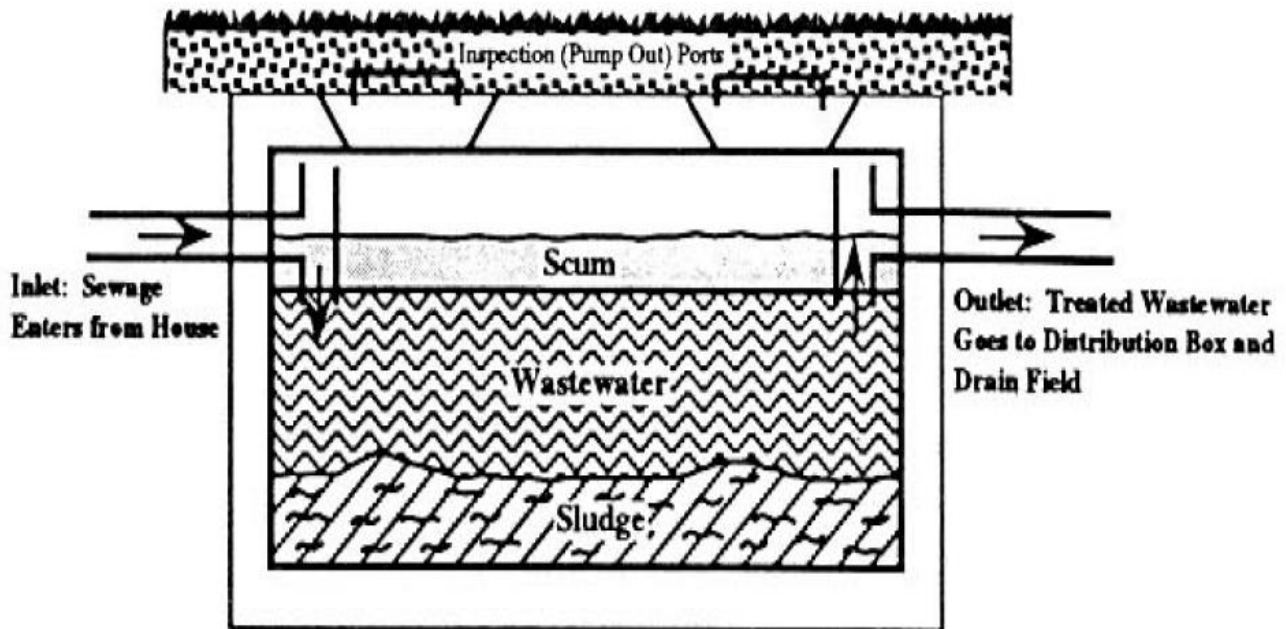
# SYSTEM DESCRIPTION

A septic system uses natural processes to treat and dispose of the wastewater in your home. It typically consists of a septic tank and a drainfield (also called a leachfield, lateral field, or subsurface soil absorption beds/trenches). The system accepts both "blackwater" (toilet wastes) and "greywater" (wastes from the kitchen sink, bath tub/showers, and laundry). Water that should not be discharged to the system includes water from foundation or footing drains, roof gutters, and other "clear" water.



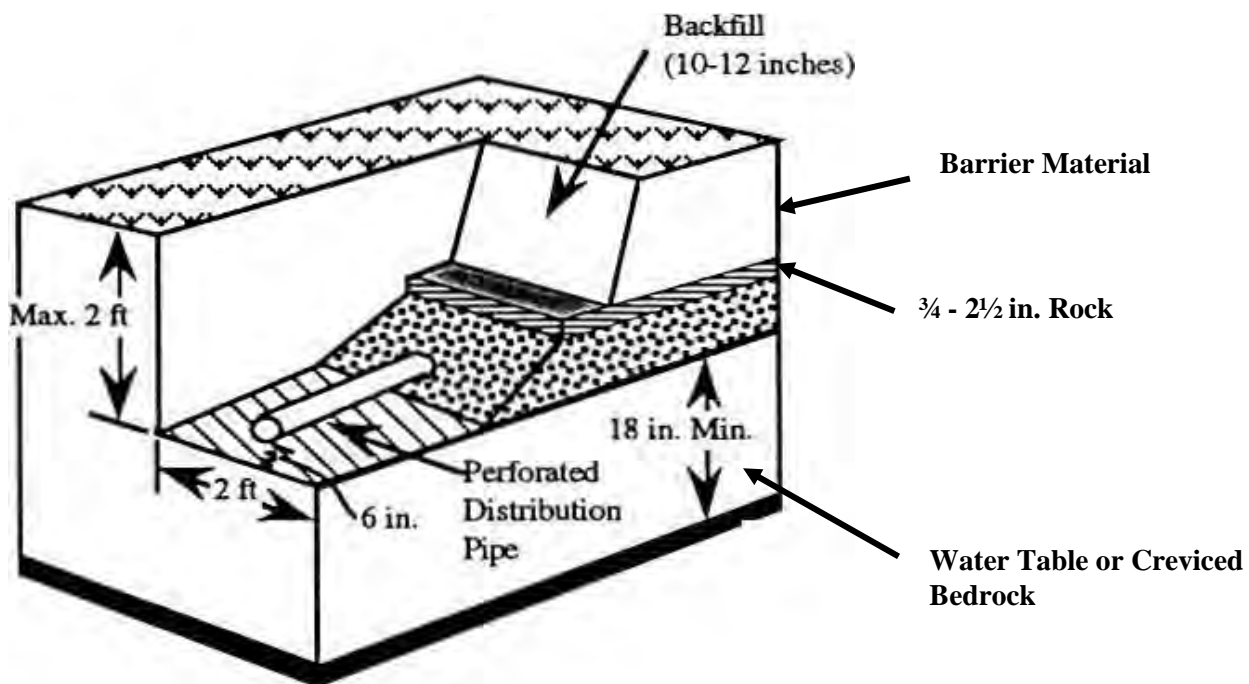
# SEPTIC TANK

The septic tank provides the first step in treatment by separating the solids from the liquids. The wastewater is retained in the tank for 24 hours or more. During this time the heavier solids settle the bottom to form a sludge layer while the lighter solids float to the top to form a scum layer. Bacteria break down the solids, producing carbon dioxide, hydrogen sulfide, and other gases in the process. These gases are vented through the plumbing vent on your house roof. Since the bacteria reduce only about 40 percent of the sludge and scum volume, the tank must be pumped regularly (approximately every three to five years) to remove the accumulated solids. If the tank fills with sludge and scum, the solids will overflow into the drainfield and quickly clog the soil, resulting in system failure.



# THE DRAINFIELD

The drainfield provides the final treatment of the wastewater and disposes of it through groundwater recharge. The typical drainfield is composed of trenches or beds which are shallow, level excavations installed one to one and a half feet above the groundwater table. Each trench contains a perforated distribution pipe through which wastewater drains into the gravel. The water is stored in the gravel until it can seep into unsaturated soil underlying and adjacent to the trench. As the wastewater moves slowly through the gravel and soil, many of the disease-causing bacteria and viruses are filtered out, or adsorbed and held by the soil particles until they die. Where soils do not permit a drainfield to adequately treat septic tank effluent, an additional or alternative treatment system must be used in conjunction with the drainfield. Alternative systems primarily used in Kentucky are constructed wetlands and sewage lagoons. These alternative systems have their own operation and maintenance guidelines. If you would like information about these guidelines, contact the Groundwater Section.

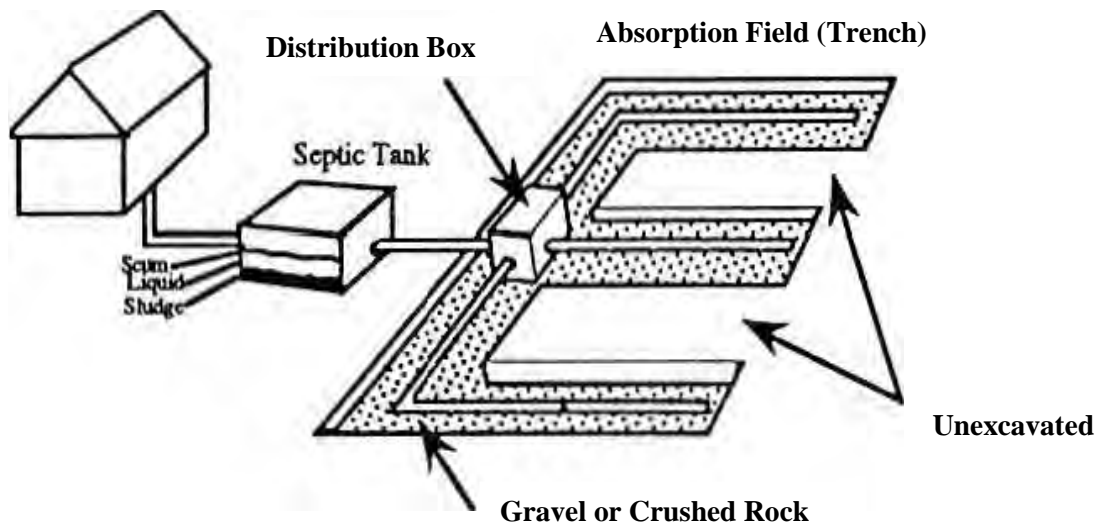


Conventional Rock Drainfield Trench Cross-Section

# TAKING CARE OF YOUR SYSTEM

Your septic system represents a significant investment worth protecting. The old "An ounce of prevention is worth a pound of cure" is so true when it comes to the care of your septic system. If you follow the operation and maintenance guidelines below, your system will function better and last longer, and you will avoid the nightmare and se of a failed system. Most important, your a will not be polluting groundwater.

## Conventional Septic System



### DO

- Conserve water to reduce the amount of wastewater that must be treated and disposed.
- Repair any leaking faucets and toilets.
- Discharge only biodegradable wastes into system.
- Divert down spouts and other surface water away from your drainfield.
- Keep your septic tank cover accessible for tank inspections and pumping
- Have your septic tank pumped regularly and checked for leaks and cracks.
- Call a professional when you have problems
- Compost your garbage or put in trash.

### DON'T

- Use a garbage grinder.
- Flush sanitary napkins, tampons, disposable diapers, condoms and other non-biodegradable products into your system.
- Dump solvents, oils, paints, thinners, disinfectants, pesticides or poisons down the drain. These materials can disrupt the treatment process and contaminate the groundwater.
- Dig in your drainfield or build anything over it.
- Plant anything over the drainfield except grass
- Drive over you drainfield or compact the soil in any way.

If you have any questions or need additional information, contact:

The **Groundwater Protection Program Coordinator**

**Kentucky Energy and Environment Cabinet  
Kentucky Division of Water  
Watershed Management Branch  
Groundwater Section  
300 Sower Boulevard, 3<sup>rd</sup> floor  
Frankfort, KY 40601  
(502) 564-3410**

**Groundwater Protection Plan Regulation 401 KAR 5:037**

<http://water.ky.gov/groundwater/Pages/GroundwaterProtection.aspx>

**Kentucky Cabinet for Health and Family Services  
Department of Public Health  
Environmental Management Branch  
275 E. Main St.  
Frankfort, Ky. 40621  
(502) 564-4856**

**Onsite Regulations 902 KAR 10:085**

**Septic Tank Servicing Regulation 902 KAR 10:170**

<http://chfs.ky.gov/dph/info/phps/enviromgmt.htm>

***Homeowner's Manual Onsite Sewage Disposal Systems***

<http://chfs.ky.gov/NR/rdonlyres/CA014E47-2256-444D-8FE4-84C9FF456C8E/0/onsitesewagemanual.pdf>

**Check List  
for  
Evaluating Your Septic System**

- 1.** Find and mark the location of the septic system, you should map this information in the space provided in your Groundwater Protection Plan: "Homeowner's Septic System Guide and Record Keeping Folder."
- 2.** When was the septic tank last pumped?  
\_\_\_\_\_
- 3.** If the tank was last pumped over three years ago, or if you have recently moved into the house and don't know when the tank was last pumped, contact a septic tank pumper. Have him service the tank and check the baffles.
- 4.** Do toilets flush slowly and does water drain slowly from sinks and tubs, or does either "gurgle"?  
Yes  No
- 5.** Is there any standing water, soggy ground, or smelly liquid in or near the drainfield?  
Yes  No
- 6.** Does the ground slope toward the septic system?  
Yes  No
- 7.** Are your septic tank and drainfield less than 100 feet from a lake, stream, or pond?  
Yes  No
- 8.** Are water-loving trees such as willows, sycamores, birches, or water maples growing within 10 feet of the septic tank?  
Yes  No
- 9.** Are there any areas over the septic tank or drainfield where people have frequently driven their cars or trucks?  
Yes  No
- 10.** Have any additions been made to the house since the present septic system was installed?  
Yes  No
- 11.** Do you have dripping faucets or a toilet that runs continuously or gradually loses water from its tank?  
Yes  No
- 12.** Do you put cigarette butts, coffee grounds, cooking fats, disposable diapers, facial tissue, wet-strength towels, or other non-biodegradable materials into your septic tank?  
Yes  No

If you have answered YES to one or more of questions 4 - 12, the septic system may not be functioning correctly. Call your local health department, or seek other professional help. Should repair of the system be necessary, be sure to engage the services of a professional who has a groundwater protection plan on file.