HARLAN COUNTY

(Harlan County Water Service Area Map)

- Estimated 1999 population of 34,900--52% on public water
- Estimated 2020 population of 33,200--78% on public water
- 220 miles of water lines, with plans for 295 additional miles
- Estimated funding needs for public water 2000-2005--$3,500,000
- Estimated funding needs for public water 2006-2020--$49,800,000

Harlan County had an estimated population of 34,861 (13,532 households) in 1999 with a projected population of 33,163 (14,203 households) in 2020. Public water is provided to about 52 percent of the county's residents. In areas of the county not served by public water, about 83 percent of the households rely on private domestic wells and 17 percent of the households rely on other sources. About 3,650 customers will be added to public water service through new line extensions in 2000-2020.

ESTIMATED COSTS - PROPOSED PROJECTS, 2000-2005

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	Cost in $1000	In $1000	in $1000	in $1000	in $1000	in $1000
HARLAN								-
Black Mtn. W D	36	490	1,900				1,600	3,500
Total	**36**	**490**	**1,900**				**1,600**	**3,500**

ESTIMATED COSTS - PROPOSED PROJECTS, 2006-2020

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	Cost in $1000	in $1000	in $1000	in $1000	in $1000	in $1000
HARLAN								-
Black Mtn. W/D	36	490	1,900				1,600	3,500
Cawood W/D	150	635	7,500				3,000	10,500
Cumberland W/D	27	980	1,500				600	2,100
Everts	2	90	100					100
Green Hills	7	82	400				300	700
Wallins Creek Water	9	750	500				300	800
Harlan	28	130	1,500		20,000	10,000	600	32,100
Total	**259**	**3,157**	**13,400**		**20,000**	**10,000**	**6,400**	**49,800**

PUBLIC WATER SYSTEMS

Harlan County is served by 21 public or semi-public water systems: 15 community -- 5 municipal, Lynch Water Plant, Harlan Municipal Water Works, Benham Water Plant,

WATER SERVICE AREAS
HARLAN COUNTY
Kentucky

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EDUCATION PAYS

KGS

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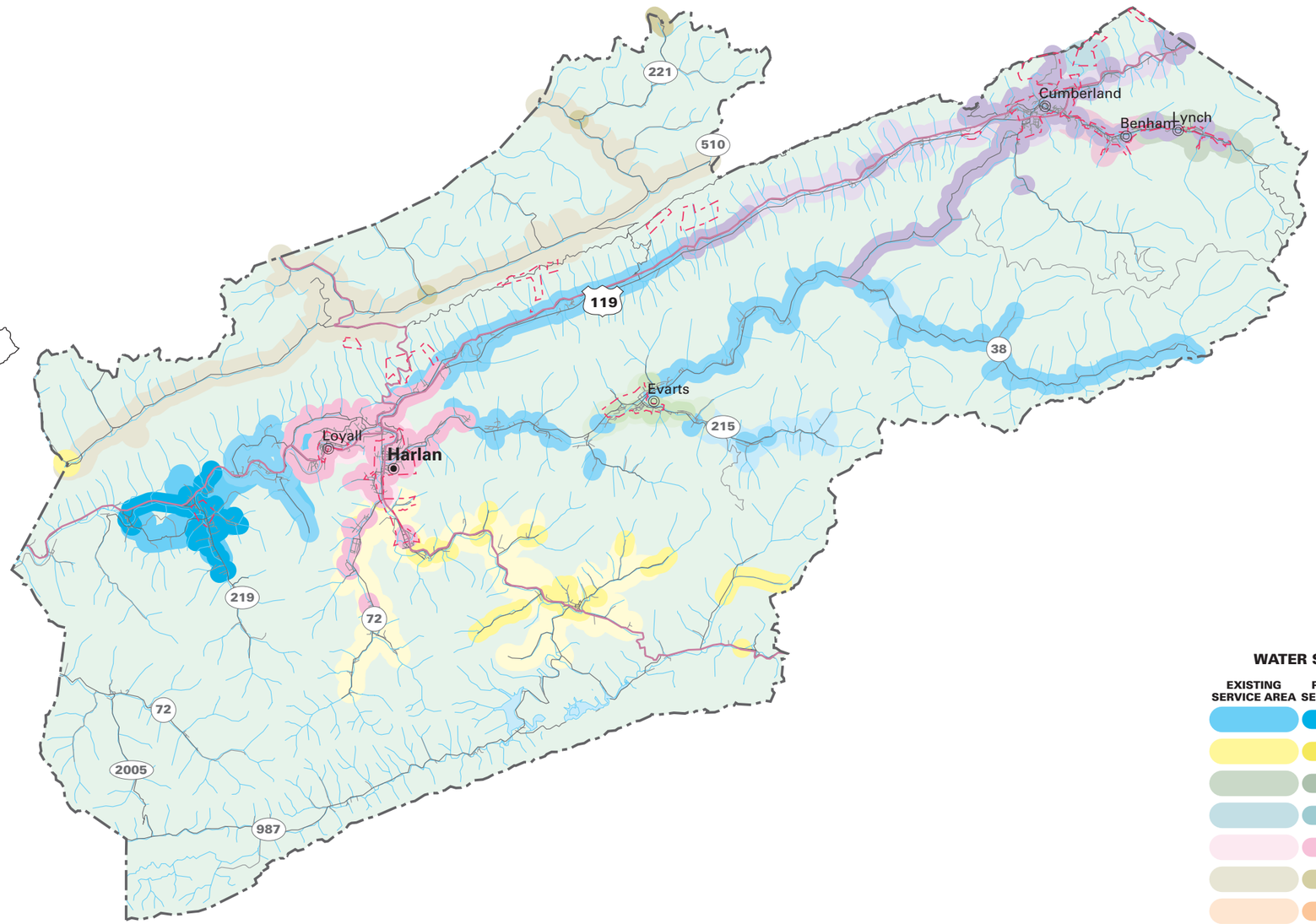

WATER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		WALLINS WATER SYSTEM
		PINEVILLE WATER SYSTEM
		LYNCH WATER PLANT
		KINGDOM COME STATE PARK
		HARLAN MUNICIPAL WATER WORKS
		GREEN HILLS WATER DISTRICT
		GILLEY HOLLOW WATER SYSTEM
		EVARTS MUNICIPAL WATER PLANT
		CUMBERLAND MUNICIPAL WATER WORKS
		CAWOOD WATER DISTRICT
		BLACK MOUNTAIN UTILITY DISTRICT/LOUELLEN
		BENHAM WATER PLANT

Evarts Municipal Water Plant, and Cumberland Municipal Water Works; 4 water districts, Black Mountain Utility District, Cawood Water District, Green Hills Water District, Wallins Creek Water; 7 private systems; and 5 non-community systems.

BENHAM WATER PLANT

PWSID:	0480028
System Type:	COMMUNITY
Owner Type:	MUNICIPAL
Surface Source:	COAL MINE
Purchase Source:	
Well Source:	
Sells Water to:	
Treatment Plant Capacity (MGD):	0.30
Percent Daily Average Production:	48.00
Total Tank Storage Capacity (gallons):	307,000.00
Total Service Connections:	408.00
Number of Employees:	1.50
Treatment Operator Class:	1D
Distribution Operator Class:	2A
Customer Rate for 1,000 Gallons:	4.61
O/M costs 1997:	Not available
O/M costs per Service Connection:	Not available
Net Revenue 1997:	Not available
Total Water Produced 1997 (gallons):	Not available
Water Sold 1997 (gallons):	Not available
Unaccounted-for Water 1997 (%):	Not available

Benham Water Works gets its water from the Cumberland River. No forecasts were made because this system is considered a small non-growth system. This district currently services 403 households in Harlan County. The water treatment plant has a capacity of 300,000 gallons per day. On an average day the plant produces approximately 130,000 gallons of water. The storage capacity is approximately 307,000 for their 2 water tanks and 130,000 for their clear well. The current charge of $9.82 for the base usage of 2,000 gallons is for residential, commercial, and industrial.

This system is geographically incapable of water service expansion. The city is located in the extreme northeast part of the county. There are mountains to all sides of the system. The City of Cumberland is to the west and the city of Lynch is to the east of the city. Currently there are no new potential customers because everyone that can be serviced with water is served. Interconnecting Benham Water Works to Cumberland Municipal Water System and

the Lynch Water System would be ideal. In case of an emergency the systems would act as a backup for each other.

BLACK MOUNTAIN UTILITY DISTRICT/LOUELLEN

PWSID: 0480498
System Type: ..... COMMUNITY
Owner Type: ..... WATER DISTRICT
Surface Source:
Purchase Source:
Well Source:
Sells Water to:
Treatment Plant Capacity (MGD): 0.14
Percent Daily Average Production: 24.00
Total Tank Storage Capacity (gallons): 310,000.00
Total Service Connections: 1,074.00
Number of Employees: 6.00
Treatment Operator Class: 1D
Distribution Operator Class: 2A
Customer Rate for 1,000 Gallons: 6.48
O/M costs 1997: 259,679.62
O/M costs per Service Connection: 189.69
Net Revenue 1997: 97,522.22
Total Water Produced 1997 (gallons): 11,597,000.00
Water Sold 1997 (gallons): 68,409,160.00
Unaccounted-for Water 1997 (%): 16.63

Black Mountain Utility District acquires water from nearby wells and mines, and according to the Harlan County Water Supply Plan this is an adequate source for future water needs. This District has reached an agreement to purchase 140,000 gallons of water per day from Harlan Municipal Water Works. The system currently serves 1,045 residential, 4 commercial, 1 industrial and 1 institutional customers. The system has the current capacity 144,000 gallons per day. On an average day the plant produces 31,000 gallons of water per day. The total storage capacity of the plant is 310,000 gallons of water in their 4 water tanks and 7,000 gallons for their clear well.

Black Mountain is coordinating their planning for water plant expansions with the City of Harlan. Should Harlan fail to expand, Black Mountain will develop needed capacity to meet growth.

CAWOOD WATER DISTRICT

PWSID: 0480565
System Type: ..... COMMUNITY
Owner Type: ..... WATER DISTRICT

Surface Source:..... MARTIN FORK OF THE CUMBERLAND RIVER
Purchase Source:
Well Source:
Sells Water to:
Treatment Plant Capacity (MGD):..... 0.50
Percent Daily Average Production:..... 65.00
Total Tank Storage Capacity (gallons): 400,000.00
Total Service Connections: 801.00
Number of Employees:..... 4.00
Treatment Operator Class: 2D
Distribution Operator Class:.....2A
Customer Rate for 1,000 Gallons:..... 6.31
O/M costs 1997:..... 152,660.44
O/M costs per Service Connection: 200.34
Net Revenue 1997:..... 22,607.42
Total Water Produced 1997 (gallons):..... 54,732,855.00
Water Sold 1997 (gallons):..... 37,759,718.00
Unaccounted-for Water 1997 (%): 25.02

Cawood Water District acquires water from nearby Martins Fork Lake, and according to the Harlan County Water Supply Plan this is a very adequate source for future needs. The system currently serves 881 residential, 8 commercial and 1 industrial. The system has the current capacity of 500,000 gallons per day. On an average day the plant produces 150,370 gallons of water per day. The total storage capacity of the plant is 400,000 gallons of water in their 3 water tanks and 75,000 gallons for their clear well.

CUMBERLAND MUNICIPAL WATER WORKS

PWSID:..... 0480092
System Type:.....COMMUNITY
Owner Type:.....MUNICIPAL
Surface Source:..... POOR FORK
Purchase Source:
Well Source:
Sells Water to:
Treatment Plant Capacity (MGD):..... 1.00
Percent Daily Average Production:..... 36.00
Total Tank Storage Capacity (gallons): 1,375,000.00
Total Service Connections: 1,157.00
Number of Employees:..... 4.00
Treatment Operator Class: 2D
Distribution Operator Class:.....3A
Customer Rate for 1,000 Gallons:..... 5.13
O/M costs 1997:.....Not available
O/M costs per Service Connection: .....Not available
Net Revenue 1997:.....Not available
Total Water Produced 1997 (gallons):.....Not available
Water Sold 1997 (gallons):.....Not available
Unaccounted-for Water 1997 (%): .....Not available

Cumberland Municipal Water System acquires water from the Poor Fork of the Cumberland River and according to the Harlan County Water supply Plan this is an adequate source of water for future needs. The system currently serves 1,157 residential customers. The system has the current capacity of 1,000,000 gallons per day. On an average day the plant produces 550,000 gallons of water per day. The total storage capacity of the plant is 1,375,000 gallons of water in their 6 water tanks and 550,000 gallons for their clear well. The current purchase price for the base usage of water is $10.25 for 1,000 gallons.

EVARTS MUNICIPAL WATER PLANT

PWSID: 0480125
System Type: ..... COMMUNITY
Owner Type: ..... MUNICIPAL
Surface Source: ..... MINE
Purchase Source:
Well Source:
Sells Water to: ..... BLACK MOUNTAIN UTILITY DISTRICT/KENVIR
Treatment Plant Capacity (MGD): 0.75
Percent Daily Average Production: 35.00
Total Tank Storage Capacity (gallons): 150,000.00
Total Service Connections: 619.00
Number of Employees: 2.00
Treatment Operator Class: 2D
Distribution Operator Class: 3A
Customer Rate for 1,000 Gallons: 5.10
O/M costs 1997: ..... Not available
O/M costs per Service Connection: ..... Not available
Net Revenue 1997: ..... Not available
Total Water Produced 1997 (gallons): ..... Not available
Water Sold 1997 (gallons): ..... Not available
Unaccounted-for Water 1997 (%): ..... Not available

Evarts Municipal Water Works acquires water from 3 nearby wells, 1 mine and the Clover Fork River. The system currently serves 556 residential, 50 commercial and 3 institutional customers. The system has the current capacity of 750,000 gallons per day. On an average day the plant produces 165,000 gallons of water. The total storage capacity of the plant is 150,000 gallons of water in their 1 water tank. The current purchase price for the base usage of water is $9.70 for 2,000 gallons inside the city limits and $10.70 outside the city limits.

GREEN HILLS WATER DISTRICT

PWSID: 0480341
System Type: ..... COMMUNITY
Owner Type: ..... WATER DISTRICT

Surface Source: ..... GOLD SPRING
Purchase Source: ..... PINEVILLE UTILITY COMMISSION
Well Source:
Sells Water to:
Treatment Plant Capacity (MGD): 0.86
Percent Daily Average Production: 43.00
Total Tank Storage Capacity (gallons): 100,000.00
Total Service Connections: 210.00
Number of Employees: 2.00
Treatment Operator Class: 1D
Distribution Operator Class: 2A
Customer Rate for 1,000 Gallons: 6.64
O/M costs 1997: 50,683.00
O/M costs per Service Connection: 240.20
Net Revenue 1997: 12,469.00
Total Water Produced 1997 (gallons): 15,881,000.00
Water Sold 1997 (gallons): 9,779,000.00
Unaccounted-for Water 1997 (%): 14.16

A trade agreement between Green Hills Water District and the Pineville Water System allows Green Hills the extra water it needs in order to serve more customers. The system currently serves 203 residential, 4 commercial and 3 institutional customers. The system has the current capacity of 86,400 gallons per day. On an average day the plant produces 43,507 gallons of water. The total storage capacity of the plant is 314,500 gallons of water in their 5 water tanks and 44,500 for their clear well.

HARLAN MUNICIPAL WATER WORKS

PWSID: 0480178
System Type: ..... COMMUNITY
Owner Type: ..... MUNICIPAL
Surface Source: ..... POOR FOLK RIVER
Purchase Source:
Well Source:
Sells Water to: ..... BLACK MOUNTAIN UTILITY DISTRICT/KENVIR
Treatment Plant Capacity (MGD): 2.00
Percent Daily Average Production: 51.00
Total Tank Storage Capacity (gallons): 1,310,000.00
Total Service Connections: 2,200.00
Number of Employees: 14.00
Treatment Operator Class: 2D
Distribution Operator Class: 3A
Customer Rate for 1,000 Gallons: 4.43
O/M costs 1997: ..... Not available
O/M costs per Service Connection: ..... Not available
Net Revenue 1997: ..... Not available
Total Water Produced 1997 (gallons): ..... Not available
Water Sold 1997 (gallons): ..... Not available
Unaccounted-for Water 1997 (%): ..... Not available

Harlan Municipal acquires water from the Poor Fork of the Cumberland River, and according to the Harlan County Water Supply Plan this is an adequate source for future needs. This system currently serves 1,118 residential, 369 commercial 2 industrial, and 13 institutional customers. The system has the current capacity of 2 million gallons per day. On an average day the plant produces 1.1 million gallons of water. The total storage capacity of the plant is 1,310,500 gallons of water in their 4 water tanks and 175,700 for their clear well. The current purchase price for the base usage of water is $8.85 for 2,000 gallons.

LYNCH WATER PLANT

PWSID: 0480262
System Type: ..... COMMUNITY
Owner Type: ..... MUNICIPAL
Surface Source: ..... BIG LOONEY CREEK
Purchase Source:
Well Source:
Sells Water to:
Treatment Plant Capacity (MGD): 1.20
Percent Daily Average Production: 34.00
Total Tank Storage Capacity (gallons): 500,000.00
Total Service Connections: 450.00
Number of Employees: 10.00
Treatment Operator Class: 2D
Distribution Operator Class: 3A
Customer Rate for 1,000 Gallons: 10.54
O/M costs 1997: ..... Not available
O/M costs per Service Connection: ..... Not available
Net Revenue 1997: ..... Not available
Total Water Produced 1997 (gallons): ..... Not available
Water Sold 1997 (gallons): ..... Not available
Unaccounted-for Water 1997 (%): ..... Not available

Lynch Water System, in the extreme northeastern part of the county acquires water from Big Looney Creek. This system currently serves 437 residential, six commercial, and seven institutional customers. The system has the current capacity of 1.2 million gallons per day. The total storage capacity of the plant is 550,000 gallons of water in their 2 water tanks and 92,000 for their clear well. The current purchase price for the base usage of water is $21.08 for 2,000 gallons.

WALLINS WATER SYSTEM

PWSID: 0480572
System Type: ..... COMMUNITY
Owner Type: ..... WATER DISTRICT

Surface Source:
Purchase Source: ..... HARLAN MUNICIPAL WATER WORKS
Well Source:
Sells Water to:
Treatment Plant Capacity (MGD):..... 0.432
Percent Daily Average Production:..... 26.00
Total Tank Storage Capacity (gallons): 200,000.00
Total Service Connections: 437.00
Number of Employees:..... 2.00
Treatment Operator Class: 1D
Distribution Operator Class:.....2A
Customer Rate for 1,000 Gallons:..... 7.96
O/M costs 1997:.....Not available
O/M costs per Service Connection: .....Not available
Net Revenue 1997: .....Not available
Total Water Produced 1997 (gallons):.....Not available
Water Sold 1997 (gallons):.....Not available
Unaccounted-for Water 1997 (%): .....Not available

Wallins Creek Water acquires water from three wells and purchases water from Harlan Municipal Water Works. This system currently serves 366 residential and seven institutional customers. This system has a trade agreement with Harlan Municipal Water Works customers are serviced a master meter owned by Harlan Municipal Water Works. The system has the current capacity of 432,000 gallons per day. On an average day the plant produces 20,000 gallons of water. The current purchase price for the base usage of water is $15.92 for 2,000 gallons.

GILLEY HOLLOW WATER SYSTEM

PWSID: 0483472
System Type:.....COMMUNITY
Owner Type: ..... PRIVATE
Surface Source:
Purchase Source: .....CITY OF CUMBERLAND
Well Source:
Sells Water to:
Treatment Plant Capacity (MGD):..... 0.00
Percent Daily Average Production:..... 0.00
Total Tank Storage Capacity (gallons): 5,000.00
Total Service Connections: 25.00
Number of Employees:..... 0.00
Treatment Operator Class: 1D
Distribution Operator Class:
Customer Rate for 1,000 Gallons:.....Not available
O/M costs 1997:.....Not available
O/M costs per Service Connection: .....Not available
Net Revenue 1997: .....Not available
Total Water Produced 1997 (gallons):.....Not available
Water Sold 1997 (gallons):.....Not available
Unaccounted-for Water 1997 (%): .....Not available

OTHER SYSTEMS

BLUE DIAMOND CAMP WATER SYSTEM

Blue Diamond Camp Water System is located in Harlan County. The system serves a population of 36 and has 11 service connections. The community system has treatment capacity of 9,000 gallons per day and the water source is wells.

BRADSHAW'S MOBILE HOME PARK

Bradshaw's Mobile Home Park is located in Harlan County. The system serves a population of 36 and has 11 service connections. The private, community system has treatment capacity of 5,000 gallons per day and the water source is wells.

SAYLORS TRAILER PARK

Saylors Trailer Park is located in Harlan County. The system serves a population of 35 and has 11 service connections. The private, community system has treatment capacity of 2,500 gallons per day and the water source is wells.

KENTENIA TRAILER PARK

Kentenia Trailer Park is located in Harlan County. The system serves a population of 75 and has 23 service connections. The private, community system has treatment capacity of 10,000 gallons per day and the water source is wells.

PINE MOUNTAIN TRAILER PARK

Pine Mountain Trailer Park #2 is located in Harlan County. The system serves a population of 29 and has 7 service connections. The private, community system has treatment capacity of 15,000 gallons per day and the water source is wells.

WATTS CREEK TRAILER COURT

Watts Creek Trailer Court is located in Harlan County. The system serves a population of 38 and has 12 service connections. The private, community system has treatment capacity of 6,000 gallons per day and the water source is wells.

TURNER WATER SYSTEM

Turner Water System is located in Harlan County. The system serves a population of 200 and has 60 service connections. The private, community system has treatment capacity of 25,000 gallons per day and the water source is a mine.

VERDA ELEMENTARY SCHOOL

Verda Elementary School is located in Harlan County. The system serves a population of 315 and has 2 service connections. The local, non-transient, non-community system has treatment capacity of 25,000 gallons per day and the water source is wells.

KINGDOM COME STATE PARK

PWSID: 0482399
System Type: ..... TRANSIENT NON COMMUNITY
Owner Type: ..... STATE
Surface Source: ..... PARK LAKE
Purchase Source:
Well Source:
Sells Water to:
Treatment Plant Capacity (MGD): 0.03
Percent Daily Average Production: 24.00
Total Tank Storage Capacity (gallons): 25,000.00
Total Service Connections: 8.00
Number of Employees: 1.00
Treatment Operator Class:
Distribution Operator Class: 1AD
Customer Rate for 1,000 Gallons: ..... Not available
O/M costs 1997: ..... Not available
O/M costs per Service Connection: ..... Not available
Net Revenue 1997: ..... Not available
Total Water Produced 1997 (gallons): ..... Not available
Water Sold 1997 (gallons): ..... Not available
Unaccounted-for Water 1997 (%): ..... Not available

Kingdom Come State Park is located in Harlan County. The system serves a population of 35 and has 8 service connections. The state, transient, non-community system has treatment capacity of 28,800 gallons per day and storage capacity of 25,000 gallons. The water source is wells.

AGES KCEOC HEADSTART

Ages KCEOC Headstart is located in Harlan County. The system serves a population of 155 and has 1 service connection. The local, non-transient, non-community system has treatment capacity of 14,400 gallons per day and the water source is wells.

PINE MOUNTAIN SETTLEMENT SCHOOL

Pine Mountain Settlement School is located in Harlan County. The system serves a population of 45 and has 13 service connections. The local, non-transient, non-community system has treatment capacity of 35,000 gallons per day and the water source is springs.

MARTINS FORK REC WATER SYSTEM

Martins Fork Rec Water System is located in Harlan County. The system serves a population of 110 and has 11 service connections. The private, transient, non-community system has treatment capacity of 432,000 gallons per day. The water source is Martins Fork Lake.

PRIVATE DOMESTIC SYSTEMS

About 17,000 people in Harlan County rely on private domestic water supplies: 14,000 on wells, and 3,000 on other sources.

Most wells drilled in valley bottoms are adequate for a domestic supply. About three-quarters of the wells drilled on hillsides and one-third of the well drilled on hilltops are adequate for a domestic water supply. Wells drilled 200 feet or more below the level of the principal valley bottoms may yield enough water for small municipal or industrial supplies. Probably few wells in this county drilled less than 300 feet below the level of the principal valley bottoms will yield salty water except in the small northwestern corner of the county north of Pine Mountain. North of Pine Mountain salty water can be found in the range of 200 feet below the principal valley bottoms. Wells drilled in the Pine Mountain area that reach limestone, may yield as much as several hundred gallons per minute.

Ground water obtained from most drilled wells in this area is soft but contains noticeable amounts of iron, except north of Pine Mountain where the water in moderately hard.

Some of the most productive springs in Eastern Kentucky are found along Pine Mountain in Harlan County. Limestone springs can yield more than 50 gpm but generally yield less than 10 gpm.