# Task B.3.7   On-site waste disposal systems and non-onsite disposal system pollution sources.

## B.3.7 On-site Sewage Disposal Systems (using data set 1.1)

On-Site Disposal Summary.

On-site Disposal (example map)

Community Wastewater Disposal (example map)

**Data Set 1.1**
**Loudoun County Groundwater, Well, and Pollution Sources**
Well construction and groundwater information in database (MS Access) with locations in GIS maintained by B&D and Health Department. Source of most data from paper files generated during Health Department well permitting process (e.g., GW2 well construction form). Subset of WellPoll database, which includes well data and pollution sources data. Data on ~18,500 wells dating from 1930 to present, with information of varying quality and completeness including: location (VA state plane coordinates), surface elevation (62% complete), well depth (70%), casing depth (65%), static water level (53%) {but of suspect accuracy}, total yield (60%), depth of primary yield zone (60%), and transmissivity (~250 values).

Also includes groundwater quality data. Water quality data for a limited number of parameters are entered in the database for some wells (~2,100) constructed and tested prior to 2002. Water quality data provided digitally to B&D by National Testing Labs started in 2002 and is available for approximately 2,250 wells. These data are considered level A quality and typically consist of 100 physical/chemical water quality parameters per well for a total of more than 200,000 individual analyses. NTL data linked to the groundwater database by Health Department Permit No.

Also includes data on potential pollution sources – primarily on-site sewage disposal systems (e.g., drainfields) but also other sites such as cemeteries, landfills, chemical storage sites, etc. Currently approximately 15,000 records with site ID numbers and corresponding points in GIS. Data in some of the old records may be obsolete. Currently, data are obtained primarily from the Health Department sewage disposal system permitting process.

**Task B.3.7  On-site waste disposal systems and non-onsite disposal system pollution sources.**

Analysis of On-site disposal systems from Loudoun County Health Dept. data.  This is a detailed analysis of the distribution both spatially and temporally of ten types of permitted on-site disposal systems.  Includes a table with descriptions of the ten permit types.

Also includes a table showing the distribution of non-onsite disposal pollution sources as identified by VDH.  These sources are shown by major watershed and by rock class.

**Analysis of On-Site Disposal systems in Loudoun County. Data from County Dept. of Health. See table at bottom of document for descriptions of Permit Codes.**

Quantile Plot
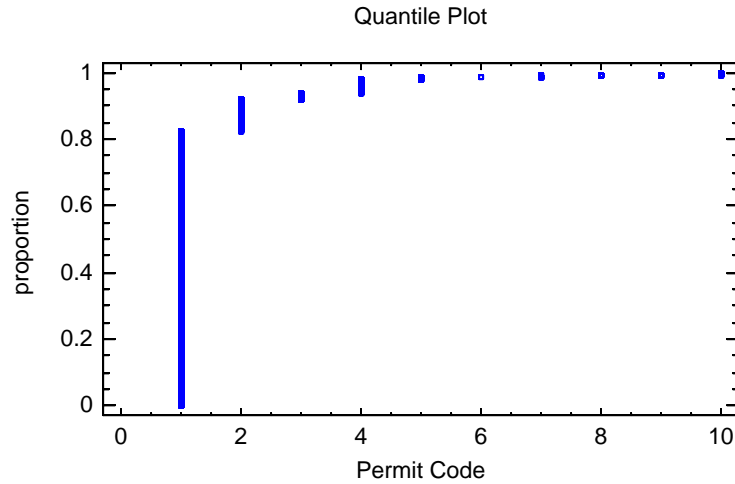


## Tabulation - Permit Code (Year)
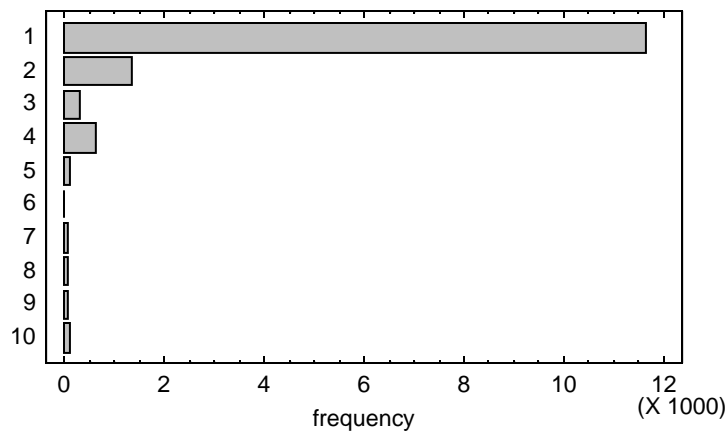Data variable: Permit Code
Selection variable: Year

Number of observations: 14016
Number of unique values: 10

**The StatAdvisor**
This procedure counts the number of times each of the 10 unique values of Permit Code occurs. It then displays tables and graphs of the tabulation.

## Barchart for Permit Code



**Frequency Table for Permit Code**

| Class | Value | Frequency | Relative Frequency | Cumulative Frequency | Cum. Rel. Frequency |
|-------|-------|-----------|--------------------|----------------------|---------------------|
| 1 | 1 | 11581 | 0.8263 | 11581 | 0.8263 |
| 2 | 2 | 1305 | 0.0931 | 12886 | 0.9194 |
| 3 | 3 | 279 | 0.0199 | 13165 | 0.9393 |
| 4 | 4 | 581 | 0.0415 | 13746 | 0.9807 |
| 5 | 5 | 76 | 0.0054 | 13822 | 0.9862 |
| 6 | 6 | 2 | 0.0001 | 13824 | 0.9863 |
| 7 | 7 | 43 | 0.0031 | 13867 | 0.9894 |
| 8 | 8 | 35 | 0.0025 | 13902 | 0.9919 |
| 9 | 9 | 29 | 0.0021 | 13931 | 0.9939 |
| 10 | 10 | 85 | 0.0061 | 14016 | 1.0000 |

**The StatAdvisor**

This table shows the number of times each value of Permit Code occurred, as well as percentages and cumulative statistics.  For example, in 11581 rows of the data file Permit Code equaled 1.  This represents 82.627% of the 14016 values in the file.  The rightmost two columns give cumulative counts and percentages from the top of the table down.

# Crosstabulation - Year by Permit Code

Row variable: Year
Column variable: Permit Code

Number of observations: 14015
Number of rows: 66
Number of columns: 10

**The StatAdvisor**

This procedure constructs a two-way table showing the frequency of occurrence of unique pairs of values for Year and Permit Code. It constructs a 66 by 10 contingency table for the data and displays the results in various ways. Of particular interest are the tests for independence between rows and columns, which you can select from the list of Tabular Options.

**Frequency Table for Year by Permit Code**

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Row Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1939 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
|  | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.01% |
| 1940 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
|  | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.03% |
| 1942 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
|  | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.01% |
| 1943 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
|  | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.01% |
| 1946 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
|  | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.02% |
| 1947 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
|  | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.14% |
| 1948 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
|  | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.19% |
| 1949 | 25 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
|  | 96.15% | 3.85% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.19% |
| 1950 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
|  | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.25% |
| 1951 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
|  | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.34% |
| 1952 | 73 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 |
|  | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.52% |

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| 1953 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.57% |
| 1954 | 94 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 94 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.67% |
| 1955 | 111 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 111 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.79% |
| 1956 | 140 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 141 |
| | 99.29% | 0.71% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.01% |
| 1957 | 142 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 142 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.01% |
| 1958 | 137 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 137 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.98% |
| 1959 | 183 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 183 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.31% |
| 1960 | 178 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 178 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.27% |
| 1961 | 182 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 182 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.30% |
| 1962 | 186 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 187 |
| | 99.47% | 0.00% | 0.00% | 0.00% | 0.53% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.33% |
| 1963 | 168 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 168 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.20% |
| 1964 | 244 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 244 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.74% |
| 1965 | 231 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 232 |
| | 99.57% | 0.00% | 0.00% | 0.00% | 0.43% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.66% |
| 1966 | 240 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 240 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.71% |
| 1967 | 185 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 186 |
| | 99.46% | 0.54% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.33% |
| 1968 | 187 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 189 |
| | 98.94% | 0.53% | 0.00% | 0.00% | 0.53% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.35% |
| 1969 | 207 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 207 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.48% |
| 1970 | 214 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 214 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.53% |
| 1971 | 215 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 215 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.53% |
| 1972 | 309 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 310 |
| | 99.68% | 0.00% | 0.00% | 0.32% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 2.21% |
| 1973 | 323 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 324 |
| | 99.69% | 0.00% | 0.31% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 2.31% |
| 1974 | 301 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 301 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 2.15% |
| 1975 | 182 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 182 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.30% |
| 1976 | 259 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 259 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.85% |
| 1977 | 273 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 275 |
| | 99.27% | 0.36% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.36% | 0.00% | 0.00% | 1.96% |
| 1978 | 262 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 262 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.87% |
| 1979 | 275 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 278 |
| | 98.92% | 0.00% | 0.00% | 0.00% | 1.08% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.98% |
| 1980 | 254 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 254 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.81% |
| 1981 | 240 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 240 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.71% |

| Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1982 | 186 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 186 |
| | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.33% |
| 1983 | 159 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 160 |
| | 99.38% | 0.00% | 0.00% | 0.00% | 0.63% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.14% |
| 1984 | 230 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 231 |
| | 99.57% | 0.00% | 0.00% | 0.00% | 0.43% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.65% |
| 1985 | 290 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 292 |
| | 99.32% | 0.00% | 0.00% | 0.00% | 0.68% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 2.08% |
| 1986 | 382 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 387 |
| | 98.71% | 0.26% | 0.00% | 0.00% | 1.03% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 2.76% |
| 1987 | 395 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 400 |
| | 98.75% | 0.00% | 0.00% | 0.00% | 1.25% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 2.85% |
| 1988 | 459 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 460 |
| | 99.78% | 0.00% | 0.00% | 0.00% | 0.22% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 3.28% |
| 1989 | 388 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 392 |
| | 98.98% | 0.26% | 0.00% | 0.00% | 0.77% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 2.80% |
| 1990 | 191 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 194 |
| | 98.45% | 0.00% | 0.00% | 0.00% | 1.55% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.38% |
| 1991 | 200 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 201 |
| | 99.50% | 0.00% | 0.00% | 0.00% | 0.50% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.43% |
| 1992 | 210 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 215 |
| | 97.67% | 0.00% | 0.00% | 0.00% | 2.33% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.53% |
| 1993 | 204 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 205 |
| | 99.51% | 0.00% | 0.00% | 0.00% | 0.49% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.46% |
| 1994 | 243 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 244 |
| | 99.59% | 0.00% | 0.00% | 0.00% | 0.41% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.74% |
| 1995 | 176 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 177 |
| | 99.44% | 0.00% | 0.00% | 0.00% | 0.56% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.26% |
| 1996 | 126 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 127 |
| | 99.21% | 0.79% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.91% |
| 1997 | 204 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 205 |
| | 99.51% | 0.00% | 0.00% | 0.00% | 0.49% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.46% |
| 1998 | 254 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 255 |
| | 99.61% | 0.00% | 0.00% | 0.39% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 1.82% |
| 1999 | 326 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 328 |
| | 99.39% | 0.30% | 0.00% | 0.30% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 2.34% |
| 2000 | 443 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 447 |
| | 99.11% | 0.45% | 0.00% | 0.45% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 3.19% |
| 2001 | 211 | 67 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 62 | 344 |
| | 61.34% | 19.48% | 0.58% | 0.29% | 0.00% | 0.00% | 0.00% | 0.29% | 0.00% | 18.02% | 2.45% |
| 2002 | 32 | 315 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 23 | 374 |
| | 8.56% | 84.22% | 0.53% | 0.27% | 0.00% | 0.00% | 0.00% | 0.27% | 0.00% | 6.15% | 2.67% |
| 2003 | 3 | 329 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 335 |
| | 0.90% | 98.21% | 0.00% | 0.60% | 0.00% | 0.00% | 0.00% | 0.30% | 0.00% | 0.00% | 2.39% |
| 2004 | 17 | 432 | 10 | 7 | 0 | 0 | 2 | 1 | 0 | 0 | 469 |
| | 3.62% | 92.11% | 2.13% | 1.49% | 0.00% | 0.00% | 0.43% | 0.21% | 0.00% | 0.00% | 3.35% |
| 2005 | 9 | 148 | 263 | 172 | 2 | 0 | 0 | 1 | 2 | 0 | 597 |
| | 1.51% | 24.79% | 44.05% | 28.81% | 0.34% | 0.00% | 0.00% | 0.17% | 0.34% | 0.00% | 4.26% |
| 2006 | 3 | 3 | 1 | 391 | 38 | 2 | 31 | 10 | 7 | 0 | 486 |
| | 0.62% | 0.62% | 0.21% | 80.45% | 7.82% | 0.41% | 6.38% | 2.06% | 1.44% | 0.00% | 3.47% |
| 2007 | 0 | 0 | 0 | 1 | 0 | 0 | 10 | 19 | 20 | 0 | 50 |
| | 0.00% | 0.00% | 0.00% | 2.00% | 0.00% | 0.00% | 20.00% | 38.00% | 40.00% | 0.00% | 0.36% |
| Column Total | 11581 | 1305 | 279 | 580 | 76 | 2 | 43 | 35 | 29 | 85 | 14015 |
| | 82.63% | 9.31% | 1.99% | 4.14% | 0.54% | 0.01% | 0.31% | 0.25% | 0.21% | 0.61% | 100.00% |

Cell contents:
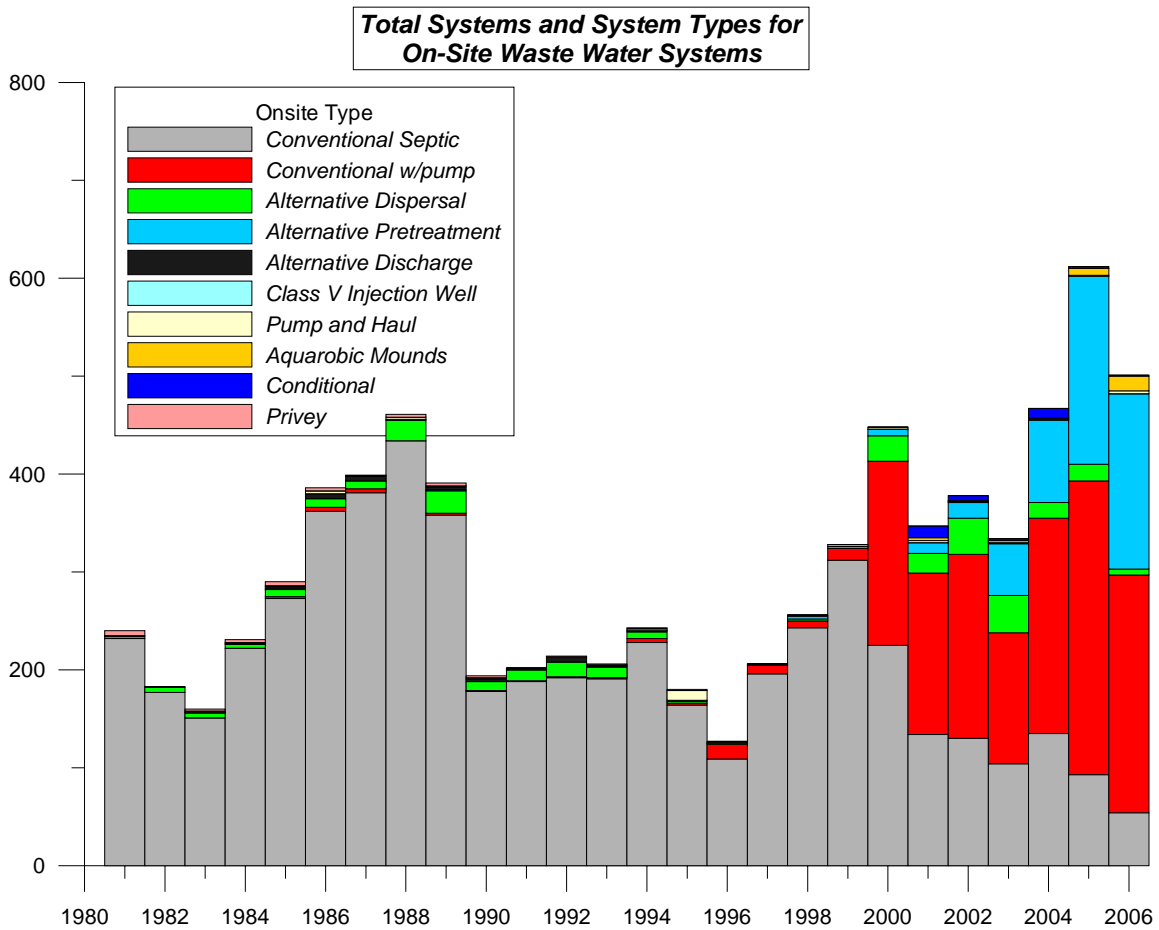  Observed frequency
  Percentage of row

**The StatAdvisor**

This table shows how often the 66 values of Year occur together with each of the 10 values of Permit Code. The first number in each cell of the table is the count or frequency. The second number shows that cell's percentage of the row in which it falls. For example, there were 2 times when Year equaled 1939 and Permit Code equaled 1. This represents 100.0% of the 2 times when Year equaled 1939.

| tbl_OnSite_Permit_type | |
|---|---|
| **OnSite_State_Permit_type** | **Permit_type_description** |
| 1. Conventional (Septic with Gravity) | Septic tank with traditional gravity fed drainfield. |
| 2. Conventional (Pump) | Traditional septic tank with above grade drainfield, pump required. |
| 3. Alternative Dispersal System Only | Non-traditional dispersals, such as drip irrigation, mounds, peat, etc… |
| 4. Alternative Pretreatment System | Pre-treatment units required prior to dispersal. |
| 5. Alternative Dischargeing | Discharges to sewage treatment plants. Tracking numbers will be "PSTP". |
| 6. Commercial/Class 5 Well | Systems permitted by state as Class 5 injection wells. |
| 7. Pump & Haul | No dispersal system. Tank is pumped. |
| 8. Experimental | Aquarobic Mounds |
| 9. Conditional | Conditions placed on system, such as water conservation devices. |
| 10. Privey | No dispersal. |
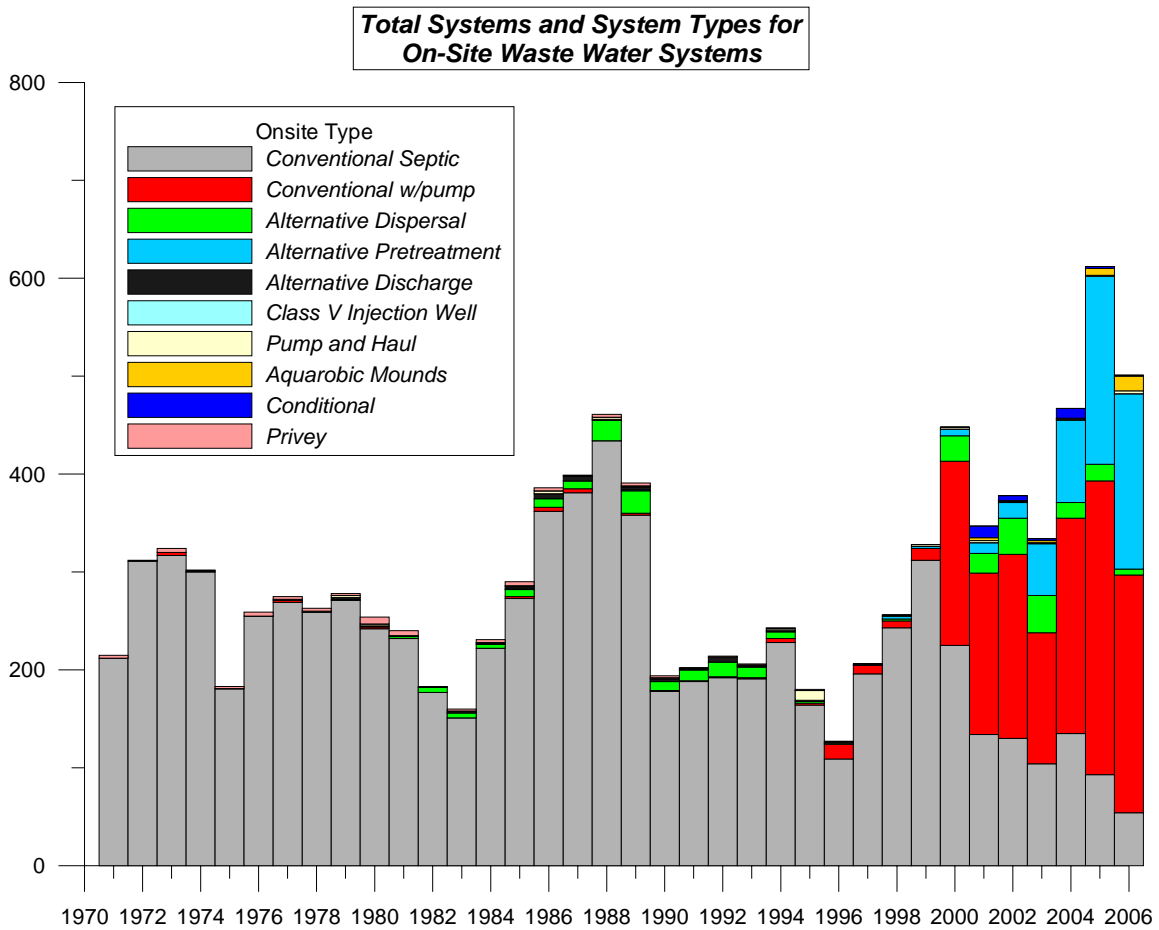
## Total Systems and System Types for On-Site Waste Water Systems



Low numbers in 1995-1996 due to limited input of electronic data. Data exists as paper records, to be entered later.

## Total Systems and System Types for On-Site Waste Water Systems



**Onsite Type**
- *Conventional Septic*
- *Conventional w/pump*
- *Alternative Dispersal*
- *Alternative Pretreatment*
- *Alternative Discharge*
- *Class V Injection Well*
- *Pump and Haul*
- *Aquarobic Mounds*
- *Conditional*
- *Privey*

Low numbers in 1995-1996 due to limited input of electronic data. Data exists as paper records, to be entered later.

**Summary of Non-Onsite Disposal Systems Pollution Sources**

| Source Type | Total | # | Watershed | # | Rock Class |
|---|---|---|---|---|---|
| PSBD<br>Building<br>(mostly barns) | 33 | 2 | Broad Run | 16 | Igneous |
| | | 10 | Catoctin Creek | 7 | Igneous extrusive |
| | | 1 | Clarks Run | 6 | Igneous intrusive |
| | | 2 | Direct to Potomac | 3 | Metasedimentary |
| | | 6 | Dutchman Creek | 1 | Sedimentary |
| | | 3 | North Fork Catoctin Creek | | |
| | | 9 | Piney Run | | |
| PCEM<br>Cemetaries | 163 | 11 | Beaverdam Creek | 59 | Igneous |
| | | 25 | Broad Run | 13 | Igneous extrusive |
| | | 7 | Bull Run | 16 | Igneous intrusive |
| | | 7 | Catoctin Creek | 9 | Metasedimentary |
| | | 3 | Clarks Run | 66 | Sedimentary |
| | | 11 | Cub Run | | |
| | | 6 | Direct to Potomac | | |
| | | 3 | Dutchman Creek | | |
| | | 2 | Limestone Branch | | |
| | | 38 | Lower Goose Creek | | |
| | | 7 | North Fork Catoctin Creek | | |
| | | 10 | North Fork Goose Creek | | |
| | | 4 | Piney Run | | |
| | | 8 | South Fork Catoctin Creek | | |
| | | 21 | Upper Goose Creek | | |
| PSCS<br>Chemical Storage<br>(Mostly UST's) | 499 | 54 | Beaverdam Creek | 205 | Igneous |
| | | 64 | Broad Run | 48 | Igneous extrusive |
| | | 9 | Bull Run | 69 | Igneous intrusive |
| | | 54 | Catoctin Creek | 17 | Metasedimentary |
| | | 6 | Clarks Run | 129 | Sedimentary |
| | | 21 | Cub Run | | |
| | | 49 | Direct to Potomac | | |
| | | 20 | Dutchman Creek | | |
| | | 19 | Dutchman Creek | | |
| | | 18 | Limestone Branch | | |
| | | 63 | Lower Goose Creek | | |
| | | 14 | North Fork Catoctin Creek | | |
| | | 33 | North Fork Goose Creek | | |
| | | 8 | Piney Run | | |
| | | 22 | South Fork Catoctin Creek | | |
| | | 6 | Sugarland Run | | |
| | | 39 | Upper Goose Creek | | |

®
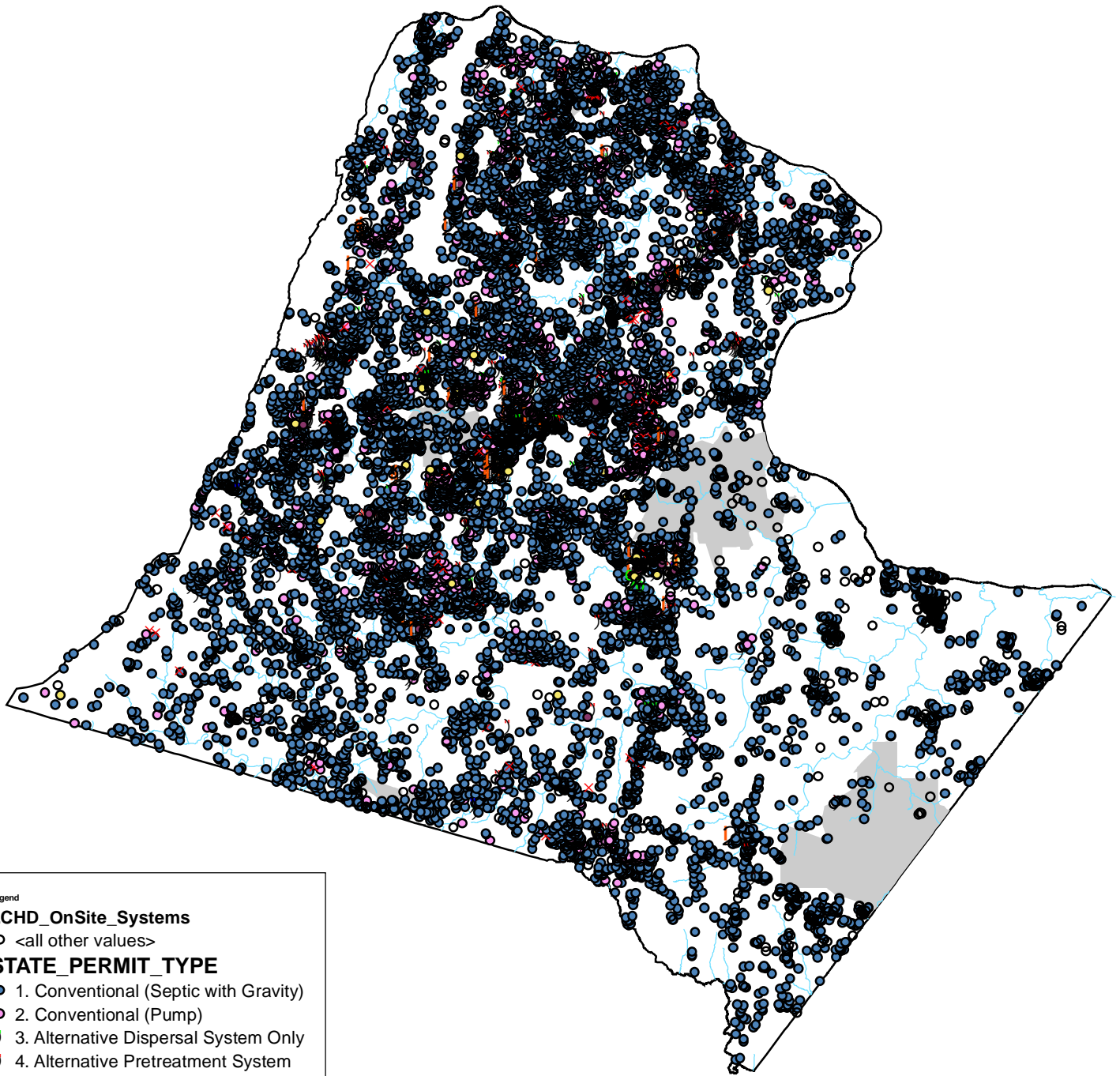
**Legend**

**LCHD_OnSite_Systems**
- ○ <all other values>

## STATE_PERMIT_TYPE
- ● 1. Conventional (Septic with Gravity)
- ● 2. Conventional (Pump)
- ⟩ 3. Alternative Dispersal System Only
- ⟩ 4. Alternative Pretreatment System
- ⟩ 5. Alternative Dischargeing
- ● 6. Commercial/Class 5 Well
- ● 7. Pump & Haul
- ● 8. Experimental
- ● 9. Conditional
- × 10. Privey
- ● 14. Unofficial
- ● 16. Other

0  1  2    4    6    8
                              Miles

**Alternate Wastewater
Disposal**

From Health Dept July 17, 2007

Loudoun County, Building & Development

Alternate Wastewater Disposal

Map showing Loudoun County wastewater disposal facilities with the following labels:

- Lovettsville Town Wastewater T
- VICA
- One Stop Trailer Park
- Hiway Mobile Home Community
- Lucketts Elementary School
- Waterford Sewage Treatment Pla
- Purcellville Town Water Treatm
- Raspberry Falls Sewage Treatme
- Mountain View Elementary Schoo
- North Spring Behavioral Health
- CREATIVE URETHANES INCORPORATED
- VALLEY DISCOUNT FUEL CO
- BASHAM SIMMS WASTEWATER FACILITY
- Round Hill Town Wastewater Tre
- Basham Simms Wastewater Facili
- BARBER & ROSS COMPANY
- LEESBURG WATER POLLUTION
- SUPREME CONCRETE BLOCK INCORPORATED
- Goose Creek Industrial Park WW
- US Federal Emergency Managemen
- US Federal Emergency Managemen
- Goose Creek Water Treatment Pl
- BROAD RUN WATER RECLAMATION
- MESSIER SERVICE AMERICA INC AUTOMATA INC
- LCSA - Saint Louis Community
- Foxcroft School
- ELECTRONIC INSTRUMENTATION AND TECHNOLOGY INCORPORATED
- GLEN RESEARCH CORP
- Notre Dame Academy
- MEDSURG INDUSTRIES INC
- Middleburg Wastewater Treatmen
- Aldie Wastewater Treatment Pla
- CARDINAL CONCRETE - STERLING PLANT
- MWAA - WASHINGTON DULLES INTERNATIONAL A
- MWAA - Washington Dulles Inter
- Areola Elementary School
- Adaptive Concrete Solutions
- Loudoun Composting

**Legend**

- ! EPA_PCS_Wastewater_Disposal_Facilities
- " EPA_GEODATA_SHAPEFILE_JULY_2007_Loudoun_Only

**WE_ID_CODE**
- ! PSTP

**WE_ID_CODE**
- ! PSSW

**WE_ID_CODE**
- ! PCEM

**WE_ID_CODE**
- ! PCEM

**Pollute_src_nonOnsite**

**WE_ID_CODE**
- Cemetaries (PCEM)
- Buildings, such as barns and feedlots (PSBD)
- Chemical Storage (PSCS)
- majroad

0  1  2  4  6  8  Miles

Username: DWARD    Computer: DWARD-50987C
Printed: Jul 20, 2007
Document: O:\project\wrmp\Alternate_Wastewater_Disposal\Alternate_Wastewater_Disposal_July_18_2007_Map01.mxd

**Alternate Wastewater Disposal**

From Health Dept July 17, 2007

Loudoun County, Building & Development