

Source Water Assessment Report

for the

Isleta Pueblo/Eastside

Isleta, New Mexico

Source Water Assessment Report for the Isleta Pueblo/Eastside Water Supply System Isleta, New Mexico

May 23, 2001

Introduction

The 1996 amendments to the Safe Drinking Water Act authorizes a Source Water Assessment Program to determine the susceptibility of a public drinking water supply to contamination. Sources of contaminants regulated by the Safe Drinking Water Act (i.e., contaminants with a Maximum Contaminant Level, contaminants regulated under the surface water treatment rule, and the microorganism *cryptosporidium*) are required to be inventoried during the assessment process. The EPA Region 6 Source Water Protection Branch in cooperation with your drinking water system operators has conducted this assessment for your drinking water source.

This one-time only "snap-shot" of the potential for water quality impacts to your source of drinking water is intended to serve as a starting point for you and your water supply system to initiate protection measures that will ensure an adequate quality of drinking water to meet the future needs of your Pueblo.

Background

A complete source water assessment consists of four key elements:

(1) The first step is for assessment areas to be delineated for each of the system's ground water wells or surface water intakes (see Figure 1). These delineations use available hydrogeologic factors for determining the areal extent of ground water sources for wells and the entire watershed drainage area for surface water intakes.

(2) Once the area to be assessed has been determined, a detailed potential contaminant source inventory is conducted within the delineated area. A list of potential contaminant sources and their relative risk to ground water and surface water is presented in Appendix A.

(3) The information gathered during the inventory process is then used to determine the relative susceptibility of the drinking water supply to the contaminant sources inventoried. This susceptibility determination takes into consideration four factors: (a) the physical integrity of the well/intake structure; (b) the characteristics of the hydrologic system around the well/intake; (c) characteristics of the contaminants inventoried; and, (d) the likelihood of those contaminants to reach the source of the drinking water supply. (See the "**Assessment Summary**" section of this report for a summary of your system's susceptibility to contamination.)

(4) The final step in conducting an assessment is for the customers using the ground water or surface water source of drinking water to be informed about the availability of the complete assessment report.

After determining the susceptibility of the ground water and/or surface water sources of the system's drinking water supply, the system's susceptibility is determined by using the arithmetic mean of the source susceptibilities. Systems that purchase their drinking water supplies from another drinking water system will share that system's susceptibility. Table A illustrates how your system's susceptibility was calculated.

Table A - System and Source Susceptibility to Contamination Determination

| Source ID | Source Name | High | Medium | Low |
|---------------------|----------------------|------|--------|-----|
| W0003 | Chical # 3 East Side | | ✓ | |
| W0004 | Lobumtee | ✓ | | |
| System Score | | ✓ | | |

Assessment Summary

Your drinking water supply primary source is ground water. Your sources of drinking water come from the Rio Grande Alluvial aquifer. Based on the four susceptibility factors discussed above, your system was determined to have a HIGH susceptibility to contamination.

Systems with a "High" susceptibility rating are strongly encouraged to implement management controls within the source water assessment area to minimize the threat of these potential sources of contamination. Systems with a "Medium" susceptibility rating should consider implementing control measures that reduce the risk of potential contamination from sources closest to the well/intake. Systems with a "Low" susceptibility determination should initiate a public education and outreach program that focuses on protecting the drinking water resource and informing the public about activities that threaten the quality of your drinking water supply.

Figure 1: Isleta Pueblo/Eastside



This assessment is intended to serve as a tool for you and your water supply system to use as a start to a source water protection program. To get further involved in protecting your source of drinking water, please contact your local water supply system operator to volunteer your time and talent. For additional information about the federal Source Water Assessment Program, please do not hesitate to contact Ken Williams, EPA Region 6 Source Water Protection Program Coordinator at 214.665.7129 or e-mail him at williams.ken@epa.gov.

Water Supply System Name: Isleta Pueblo/Eastside
PWS ID: 063501109

Well Name: Chical # 3 East Side

Well Number: W0003

The well depicted below was completed on an unknown date. The well was drilled to a total depth of 220.0(*) feet and is completed in the Rio Grande Alluvial aquifer between the screened intervals of 170.0(*) and 210.0(*) feet. The Rio Grande Alluvial aquifer is composed of unconsolidated, sand and gravel: buried alluvial valleys, alluvial terraces and the well is currently active. This type of aquifer is rated as having a HIGH susceptibility to contamination.

An inventory of potential sources of contamination (PSOC) within a 1/4 mile (1,320 feet) radius of the well reveals the following contaminant sources and their relative risk to the well:

| Potential Source of Contamination (PSOC) Description | PSOC Risk | Distance From Water Source (ft) | Overall Risk |
|---|------------------|--|---------------------|
| IAW-Inactive Water Well | MED | 743 | MED |
| IAW-Inactive Water Well | MED | 856 | MED |
| AWW-Abandoned/Improperly Constructed Water Well | HIGH | 864 | MED |
| PDP-Promiscuous Dump | MED | 1212 | LOW |

The cumulative risk associated with these PSOCs is LOW.

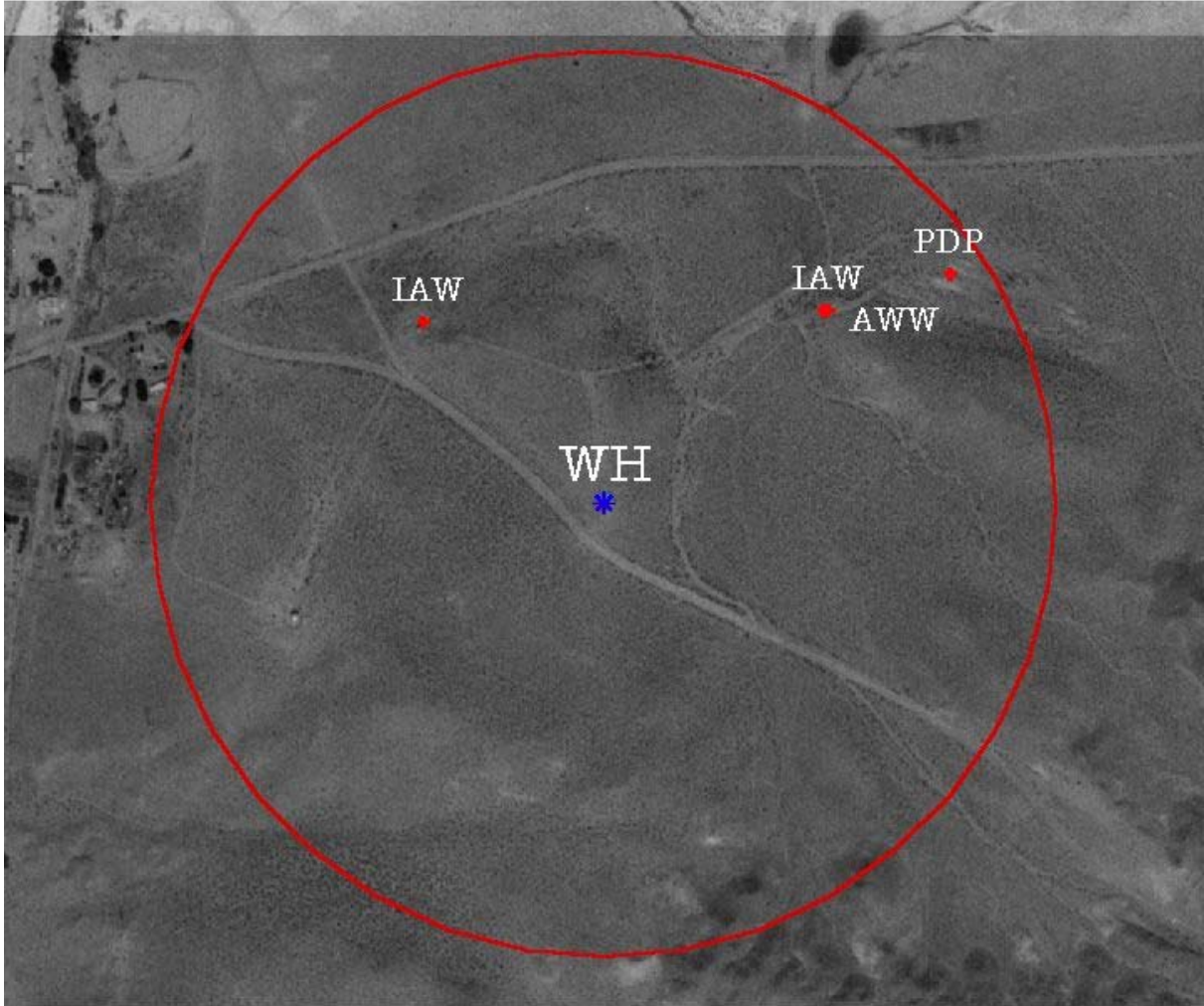
The overall risk posed by a particular PSOC is based on the type of PSOC (1=low, 2-medium, 3=high), and the risk due to the proximity of the PSOC to the water source. The distance factor is considered high (3) if the PSOC is within 810 feet, medium (2) if from 811 feet to 1070 feet, and low (1) if from 1070 feet to 1320 feet. These two components (type and distance) are summed to give the overall risk posed by the individual PSOC (low=2, 3; medium=4, 5; high=6). To determine the cumulative risk to the water source posed by all of the PSOCs, the overall risk from each source is summed and a scale is applied. If the sum is 0 to 20, the risk is low; a sum of 21 to 40 yields a medium risk; and a sum greater than 40 represents a high risk of contamination of the water source.

| Source Integrity Parameter | Assessment |
|---|-------------------|
| 1. Is the top of the screened interval within 100 feet of ground level? | No |
| 2. Is the casing exposed to surface water runoff? | Yes |
| 3. Is the well site subject to flooding? | No |
| 4. Is the upper termination of the well located outside a secured area? | No |
| 5. Is the upper termination of the well located in a pit? | No |

Based on the questions above, the Source Integrity Susceptibility Score is MEDIUM.

Based on the character of the hydrogeologic factors around the setting; the nature of these potential contaminant sources, and their proximity to the well; and the physical integrity of the well; this well has been determined to have a MEDIUM susceptibility to contamination.

Water Source: Chical # 3 East Side [W0003]



(*) Estimated value based on Best Professional Judgement.

Water Supply System Name: Isleta Pueblo/Eastside
PWS ID: 063501109

Well Name: Lobumtee

Well Number: W0004

The well depicted below was completed on an unknown date. The well was drilled to a total depth of 220.0(*) feet and is completed in the Rio Grande Alluvial aquifer between the screened intervals of 170.0(*) and 210.0(*) feet. The Rio Grande Alluvial aquifer is composed of unconsolidated, sand and gravel: buried alluvial valleys, alluvial terraces and the well is currently active. This type of aquifer is rated as having a HIGH susceptibility to contamination.

An inventory of potential sources of contamination (PSOC) within a 1/4 mile (1,320 feet) radius of the well reveals the following contaminant sources and their relative risk to the well:

| Potential Source of Contamination (PSOC) Description | PSOC Risk | Distance From Water Source (ft) | Overall Risk |
|---|------------------|--|---------------------|
| SET-Single Family Septic System | MED | 282 | MED |
| AWW-Abandoned/Improperly Constructed Water Well | HIGH | 394 | HIGH |
| SET-Single Family Septic System | MED | 428 | MED |
| SET-Single Family Septic System | MED | 499 | MED |
| AFL-Animal Feeding Area / Pens - Low Risk | LOW | 553 | MED |
| SET-Single Family Septic System | MED | 629 | MED |
| SET-Single Family Septic System | MED | 632 | MED |
| SET-Single Family Septic System | MED | 649 | MED |
| SET-Single Family Septic System | MED | 651 | MED |
| SET-Single Family Septic System | MED | 686 | MED |
| SET-Single Family Septic System | MED | 753 | MED |
| SHW-State/Federal Highway | MED | 768 | MED |
| AFL-Animal Feeding Area / Pens - Low Risk | LOW | 788 | MED |
| DWW-Domestic Water Well | MED | 799 | MED |
| SET-Single Family Septic System | MED | 827 | MED |
| SET-Single Family Septic System | MED | 847 | MED |
| PGR-Paved/Gravel Local Road | LOW | 848 | LOW |
| SET-Single Family Septic System | MED | 871 | MED |
| AFL-Animal Feeding Area / Pens - Low Risk | LOW | 888 | LOW |
| SET-Single Family Septic System | MED | 941 | MED |
| CPD-Cesspool - domestic | HIGH | 1011 | MED |
| SET-Single Family Septic System | MED | 1071 | LOW |
| DWW-Domestic Water Well | MED | 1089 | LOW |
| JKY-Junk Yard (domestic) | MED | 1093 | LOW |
| SET-Single Family Septic System | MED | 1110 | LOW |

| Potential Source of Contamination (PSOC) Description | PSOC Risk | Distance From Water Source (ft) | Overall Risk |
|--|-----------|---------------------------------|--------------|
| SET-Single Family Septic System | MED | 1150 | LOW |
| SET-Single Family Septic System | MED | 1150 | LOW |
| SET-Single Family Septic System | MED | 1153 | LOW |
| SET-Single Family Septic System | MED | 1240 | LOW |

The cumulative risk associated with these PSOCs is HIGH.

The overall risk posed by a particular PSOC is based on the type of PSOC (1=low, 2=medium, 3=high), and the risk due to the proximity of the PSOC to the water source. The distance factor is considered high (3) if the PSOC is within 810 feet, medium (2) if from 811 feet to 1070 feet, and low (1) if from 1070 feet to 1320 feet. These two components (type and distance) are summed to give the overall risk posed by the individual PSOC (low=2, 3; medium=4, 5; high=6). To determine the cumulative risk to the water source posed by all of the PSOCs, the overall risk from each source is summed and a scale is applied. If the sum is 0 to 20, the risk is low; a sum of 20 to 40 yields a medium risk; and a sum greater than 40 represents a high risk of contamination of the water source.

| Source Integrity Parameter | Assessment |
|---|------------|
| 1. Is the top of the screened interval within 100 feet of ground level? | No |
| 2. Is the casing exposed to surface water runoff? | Yes |
| 3. Is the well site subject to flooding? | No |
| 4. Is the upper termination of the well located outside a secured area? | No |
| 5. Is the upper termination of the well located in a pit? | No |

Based on the questions above, the Source Integrity Susceptibility Score is MEDIUM.

Based on the character of the hydrogeologic factors around the setting; the nature of these potential contaminant sources, and their proximity to the well; and the physical integrity of the well; this well has been determined to have a HIGH susceptibility to contamination.

(*) Estimated value based on Best Professional Judgement.

Water Source: Lobumtee [W0004]

