

*Source Water Assessment* for  
Alpine Woods  
Anchorage, Alaska

A Hydrogeologic Susceptibility and Vulnerability Analysis

---

DRINKING WATER PROTECTION PROGRAM REPORT 168  
PWSID 213598

January 2002

*Source Water Assessment* for  
Alpine Woods  
Anchorage, Alaska

By HEATHER A. HAMMOND

---

DRINKING WATER PROTECTION PROGRAM REPORT 168  
PWSID 213598

## CONTENTS

	Page		Page
Executive Summary	1	Inventory of Potential and Existing	
Introduction	1	Contaminant Sources	4
Description of the Anchorage area, Alaska	1	Ranking of Contaminant Risks	5
Alpine Woods Public Water Sources	3	Vulnerability of Alpine Woods	
Assessment/Protection Area for Alpine Woods		Drinking Water Sources	5
Drinking Water Sources	4	Summary	7
		References Cited	8

## TABLES

TABLE	1. Natural Susceptibility - Susceptibility of the Wellhead and Aquifer to Contamination – Primary Well	5
	2. Natural Susceptibility – Susceptibility of the Wellhead and Aquifer to Contamination – Backup Well	5
	3. Contaminant Risks – Primary Well	6
	4. Contaminant Risks – Backup Well	6
	5. Overall Vulnerability of Alpine Woods Public Drinking Water Sources to Contamination – Primary Well	6
	6. Overall Vulnerability of Alpine Woods Public Drinking Water Sources to Contamination – Backup Well	6

## ILLUSTRATIONS

FIGURE	1. Index map showing the location of Anchorage, Alaska	Page 1
	2. Generalized hydrologic cycle in the Anchorage area	2
	3. Map showing the location of the drinking water sources for Alpine Woods	3

## APPENDICES

APPENDIX	A. Alpine Woods Drinking Water Protection Area (Map 1)	
	B. Contaminant Source Inventory for Alpine Woods – Primary Source (Table 1)	
	Contaminant Source Inventory and Risk Ranking for Alpine Woods – Bacteria and Viruses (Table 2)	
	Contaminant Source Inventory and Risk Ranking for Alpine Woods – Nitrates and/or Nitrites (Table 3)	
	Contaminant Source Inventory and Risk Ranking for Alpine Woods – Volatile organic chemicals (Table 4)	
	Contaminant Source Inventory and Risk Ranking for Alpine Woods – Heavy metals, cyanide and other inorganic chemicals (Table 5)	
	Contaminant Source Inventory and Risk Ranking for Alpine Woods – Synthetic organic chemicals (Table 6)	
	Contaminant Source Inventory and Risk Ranking for Alpine Woods –	

## **APPENDICES (Continued)**

- Other synthetic organic chemicals (Table 7)
- C. Contaminant Source Inventory for Alpine Woods – Backup Source (Table 1)
  - Contaminant Source Inventory and Risk Ranking for Alpine Woods –  
Bacteria and Viruses (Table 2)
  - Contaminant Source Inventory and Risk Ranking for Alpine Woods –  
Nitrates and/or Nitrites (Table 3)
  - Contaminant Source Inventory and Risk Ranking for Alpine Woods –  
Volatile organic chemicals (Table 4)
  - Contaminant Source Inventory and Risk Ranking for Alpine Woods –  
Heavy metals, cyanide and other inorganic chemicals (Table 5)
  - Contaminant Source Inventory and Risk Ranking for Alpine Woods –  
Synthetic organic chemicals (Table 6)
  - Contaminant Source Inventory and Risk Ranking for Alpine Woods –  
Other synthetic organic chemicals (Table 7)
- D. Alpine Woods Drinking Water Protection Area and Potential and  
Existing Contaminant Sources (Map 2 and Map 5)
- E. Vulnerability Analysis for Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Public Drinking Water Source – Primary Well  
(Chart 1 – Chart 14 and Table 1 – Table 6)
- F. Vulnerability Analysis for Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Public Drinking Water Source – Backup Well  
(Chart 1 – Chart 14 and Table 1 – Table 6)

# Source Water Assessment for Alpine Woods Sources of Public Drinking Water, Anchorage, Alaska

## A Hydrogeologic Susceptibility and Vulnerability Analysis

By Heather A. Hammond

### Drinking Water Protection Program Alaska Department of Environmental Conservation

#### EXECUTIVE SUMMARY

The Public Water System for Alpine Woods is a Class A (community) water system consisting of two wells in the Anchorage area. Identified potential and existing contaminant sources for Alpine Woods sources of public drinking water include: residential areas, septic systems, recreation trails, a motor vehicle repair shop, paved and gravel roads, and a public utility easement. These identified potential and existing sources of contamination are considered sources of bacteria and viruses, nitrates and/or nitrites, volatile organic chemicals, heavy metals, synthetic organic chemicals, and other organic chemicals. Overall, Alpine Woods primary drinking water source (hereafter termed “Well #4”) and secondary or backup drinking water source (hereafter termed “Well #3”) each received a vulnerability rating of **Low** for synthetic organic chemicals; and **Medium** for bacteria and viruses, volatile organic chemicals, heavy metals, and other organic chemicals.

#### INTRODUCTION

The purpose of this environmental assessment is to provide public water system owners and/or operators, communities, and local governments with information they can use to preserve the quality of Alaska’s public drinking water supplies. This assessment was completed for the sources of public drinking water serving Alpine Woods. This water system consists of two wells in the Anchorage area (see Figure 1). This assessment, known under the Alaska Drinking Water Protection Program as the *Source Water Assessment*, has combined a review of the natural hydrogeologic sensitivity with potential and existing contaminant risks to arrive at an overall vulnerability of the drinking water sources to contamination. This assessment has been completed as a basis for local voluntary protection efforts and to assist agencies in their efforts to reduce risk to this public drinking water supply.

#### DESCRIPTION OF THE ANCHORAGE AREA, ALASKA

##### Location

Anchorage, located in southcentral Alaska, encompasses 1,698 square miles of land and 264 square miles of water. The area containing a majority of the urban development, commonly referred to as the Anchorage Bowl, encompasses approximately 180 square miles [Partick, Brabets, and Glass, 1989] and envelopes the low lands of the area. This area is bounded on the east by the Chugach Mountains and the north, west, and south by the Knik and Turnagain Arms of Cook Inlet (Figure 1). In recent times, urban development has extended eastward along the flanks of the Chugach Mountains. This area, known locally as the Anchorage Hillside, contains development at elevations exceeding 3,700 feet in elevation above sea level.



Figure 1. Index map showing the location of Anchorage, Alaska

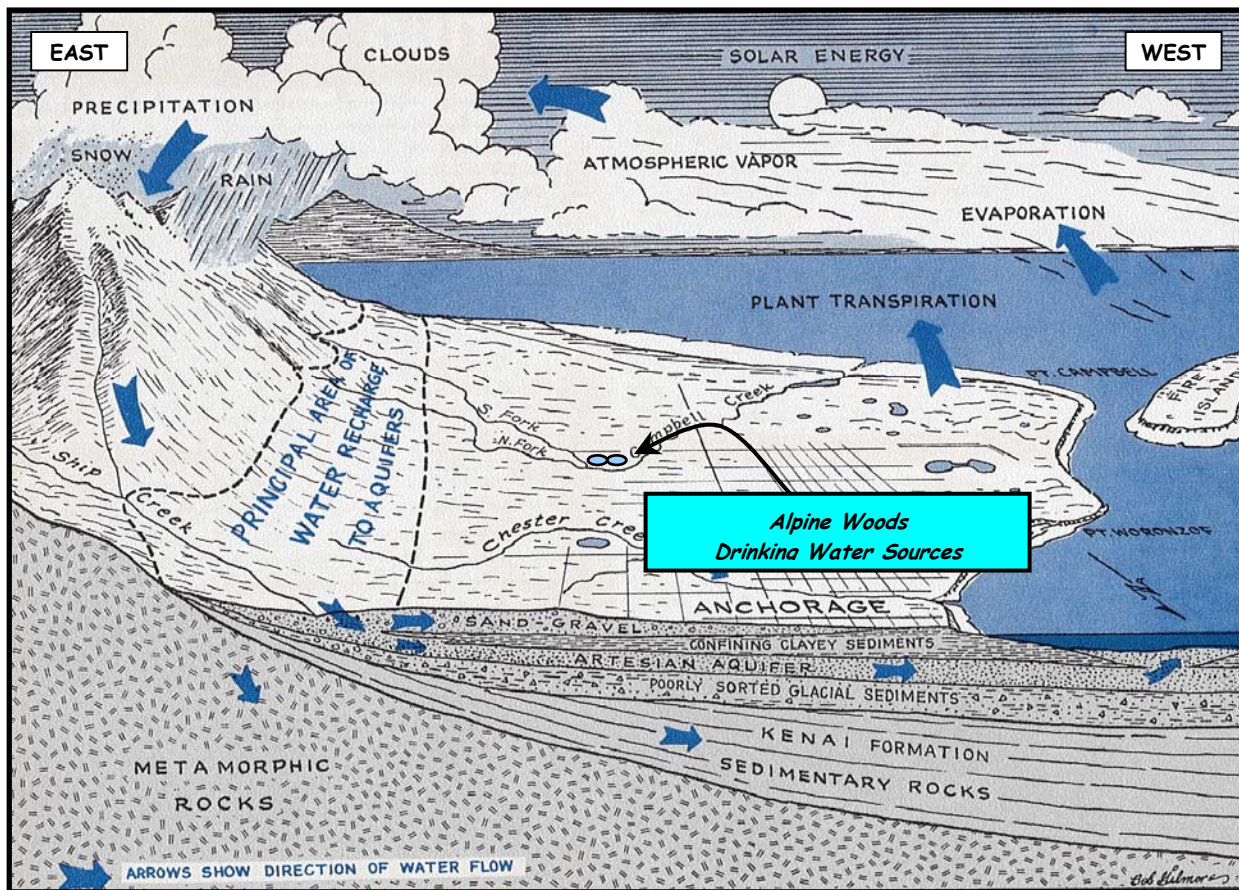


Figure 2. Generalized hydrologic cycle in the Anchorage area [Barnwell, George, Dearborn, Weeks, and Zenone, 1972].

### Climate

The Anchorage area climate is somewhat transitional in that it does not experience large daily and annual temperature fluctuations like those experienced in the interior of Alaska nor does it experience high amounts of precipitation typified by gulf coast regions. Mean annual precipitation at the Anchorage International Airport is approximately 16 inches per year. On average, Anchorage receives a total snow accumulation of 69 inches per year. Precipitation generally increases inland toward the Chugach Mountains where annual precipitation may exceed 160 inches per year [Barnwell, George, Dearborn, Weeks, and Zenone, 1972]. Mean daily temperature ranges from 65° F during July to 8° F in January [Western Regional Climate Center, 2000].

### Physiography and Groundwater Conditions

Surface elevations in the Anchorage area range from sea level at Knik and Turnagain Arms to well over 5,000 feet in the peaks that bound the area. Glacial moraine and outwash deposits primarily mantle the surface of the Anchorage Bowl.

The backbone of the Chugach Mountains is composed primarily of metamorphic marine and volcanic rocks (bedrock). These high peaks that bound Anchorage's east-side are flanked with colluvium or slope deposits. These slope deposits eventually grade into the glacial and stream deposits at lower elevations in the Anchorage Bowl.

In the Anchorage area, two principal groundwater flow systems or aquifers exist (see Figure 2). The upper unconfined aquifer or water-table aquifer is separated from a lower confined aquifer system by layers of silty, clayey glacially derived sediments (confining layer) [Ulery and Updike, 1983]. The lower confined aquifer system consists of a series of hydrologically interconnected layers and lenses of gravel, sand and silt that, collectively, form the confined aquifer. The confining layer ranges from 0 to 270 feet thick throughout the Anchorage area and generally thins with increasing distance from Cook Inlet, thus pinching out at the mountain front [Patrick, Brabets, and Glass, 1989].

Water enters or recharges these two aquifer systems in several different ways. Along the front of the Chugach

Mountains, groundwater seeps from fractures in bedrock into the sediments. At these higher elevations, rain and snowmelt also enters the sediments. This area along the mountain front is considered the principal recharge area for wells in the Anchorage area. Precipitation in the low lands may also percolate directly into the ground. Lastly, aquifers may also be recharged by streams where surface water percolates into surrounding permeable sediments (losing reaches of streams). Groundwater flow in the confined aquifer is generally east to west from the mountain front toward Cook Inlet and Turnagain Arm, except in areas where the direction of flow is influenced by large municipal or industrial production wells. The direction of groundwater flow in the upper unconfined aquifer is more variable due to the influence from surficial topography as well as its close connection with surface water bodies.

### ALPINE WOODS PUBLIC DRINKING WATER SYSTEM

Alpine Woods public water system is a Class A (community) water system, which is owned and operated by Alpine Woods Homeowners Association. The system

consists of two wells, which are located off of Moose Road, Well #4 (NW1/4, NE1/4, NE1/4, SW1/4, Sec. 23 T12 N R3W) and Well #3 (NW1/4, NE1/4, NE1/4, SW1/4, Sec. 23, T12 N R3W) at an elevation of approximately 725 feet above sea level (see Figure 3).

According to the most recent Monitoring Waiver Application (08/21/97) Well #4 sits approximately 50 feet from Little Campbell Creek and is enclosed by a pump house. The well is protected from flooding by a berm that was built up and around Little Campbell Creek to avert flooding from entering source waters along the well casing. Well #3 is located uphill from Well #4 and is within approximately 50 feet of Little Campbell Creek. The well sits within a manhole, surrounded by a concrete containment, and is covered by a steel plate. According to the most recent Sanitary Survey (01/09/2001) both wells are properly equipped by a sanitary seal, which may provide protection against contaminants from entering the source waters at the well casings. Well #4 was installed May 16, 1983, to a total depth of 160 feet below ground



Figure 3. Map showing the location of the drinking water sources for Alpine Woods [Base: USGS Anchorage A8].

surface and completed in a 6" well casing. According to the well log the well was screened from 137 to 154 feet below land surface. Static water level was recorded at 65 feet below land surface at the time of drilling. Well #3 was installed March 11, 1983 to a total depth of 105 feet below land surface and completed in a 5" well casing. According to the well log the well was screened from 94 to 105 feet below land surface. Static water level was recorded at 30 feet below land surface at the time of drilling. According to the well logs, neither well was grouted at the time of drilling. Proper grouting provides added protection against contaminants travelling along the well casing and into source waters.

This system operates year round and serves 200 residents through 54 service connections.

### **ASSESSMENT AND PROTECTION AREA FOR ALPINE WOODS DRINKING WATER SOURCES**

The Drinking Water Protection and Assessment Area that has been established for Alpine Woods sources of drinking water is the area that is most sensitive to contamination. This area has served as a basis for assessing the risk of the drinking water sources to contamination. The zones around the drinking water sources outline the most critical area for the preservation of the quality of the drinking water for this system. For simplicity, this area will be known as your Drinking Water Protection Area and will serve as the focus for voluntary protection efforts.

Conceptually, groundwater enters the aquifer systems along the front range of the Chugach Mountains (Figure 2) and flows toward Cook Inlet. An analytical calculation was used to calculate the size and shape of the area that contributes water to the well. The input parameters describing the attributes of the aquifer in this calculation were adopted from the U.S. Geological Survey [*Patrick, Brabets, and Glass, 1989*]. This analytical calculation was used as a guide as the first step in establishing the protection area for each public drinking water source in Anchorage. Additional methods were further employed to take into account any uncertainties in groundwater flow and aquifer characteristics to arrive at meaningful and conservative protection areas with respect to public health (Please refer to the Guidance Manual for Class A Public Water Systems for additional information).

The Drinking Water Protection Areas established for wells by the Alaska Department of Environmental Conservation are separated into zones. These zones correspond to a time-of-travel. Time-of-travel is the time required for water to move in the saturated zone of the ground from a specific point to the well. The Drinking Water Protection Area for Alpine Woods contains four

zones, Zone A through Zone D (See Map 1 in Appendix A) for each source of drinking water. Zone A corresponds to the area between the wells and the distance equal to ¼ of the distance of the 2-year time-of-travel. Depending on where a contaminant source is located within Zone A, travel time for a contaminant to the wells may be on the order of several days to several hours. Zone A also extends downgradient from the wells to take into account the area of the aquifer that is influenced by pumping of the wells. Zone B corresponds to a time-of-travel of less than two years. Zones C and D correspond to those areas between 5 years and 10 years time-of-travel, respectively.

### **INVENTORY OF POTENTIAL AND EXISTING CONTAMINANT SOURCES**

The Drinking Water Protection Program has completed an inventory of potential and existing sources of contamination within the Drinking Water Protection Area for Alpine Woods. This survey was completed through a search of agency records and other publicly available information. Potential sources of contamination to drinking water supplies cover a wide range of categories and types. Potential drinking water contaminants are found within agricultural, residential, commercial, and industrial areas, but can also occur within areas that have little or no development.

For the basis of this assessment and all Class A public water system assessments, six categories of drinking water contaminants were inventoried. They include:

- Bacteria and viruses;
- Nitrates and/or nitrites;
- Volatile organic chemicals;
- Heavy metals, cyanide, and other inorganic chemicals;
- Synthetic organic chemicals; and
- Other organic chemicals.

Maps 2 through 7 in Appendix D depict the Contaminant Source Inventory for Alpine Woods. Below is a summary of the contaminant sources inventoried within the Drinking Water Protection Area for Alpine Woods sources of public drinking water:

- Residential areas;
- septic systems;
- recreation trails;
- a motor vehicle repair shop;
- paved and gravel roads;
- a public utility easement.



These potential and existing contaminant sources present risk for all six categories of drinking water contaminants for Alpine Woods sources of public drinking water.

### RANKING OF CONTAMINANT RISKS

Potential and existing sources of contamination have been identified, sorted, and ranked according to what type and level of risk they represent. Ranking of contaminant risks for a “potential” or “existing” source of contamination is a function of toxicity and volumes of specific contaminants associated with that source. Contaminant risks are further a function of the number and density of those types of contaminant sources as well as the proximity of those sources to the public drinking water wells.

### VULNERABILITY OF ALPINE WOODS DRINKING WATER SOURCES

Vulnerability of a drinking water source to contamination is a combination of two factors:

- natural susceptibility; and
- contaminant risks.

Each of the six categories of drinking water contaminants have been analyzed and an overall vulnerability score of 0 to 100 ultimately assigned:

$$\begin{array}{r}
 \text{Natural Susceptibility (0 – 50 points)} \\
 + \\
 \text{Contaminant Risks (0 – 50 points)} \\
 = \\
 \text{Vulnerability of the} \\
 \text{Drinking Water Source to Contamination (0 – 100).}
 \end{array}$$

A score for the Natural Susceptibility is achieved by analyzing the properties of the well and the aquifer.

$$\begin{array}{r}
 \text{Susceptibility of the Wellhead (0 – 25 Points)} \\
 + \\
 \text{Susceptibility of the Aquifer (0 – 25 Points)} \\
 = \text{Natural Susceptibility (Susceptibility of the Well)} \\
 \text{(0 – 50 Points)}
 \end{array}$$

Based on the information gathered from well logs, the wells serving Alpine Woods were completed in a confining aquifer. Well #4 is confined by layers gray clay mixed with some sand gravel from 22 to 136 feet

below land surface. Well #3 is confined by layers of clayey gravel and sandy silt from 17 to 70 feet below land surface. These confining layers may provide a protective barrier against the movement of contaminants in the subsurface. However, near the base of the Chugach Mountains, these clay layers tend to be discontinuous and thin toward the mountains. Therefore, contaminants that enter the subsurface near the base of the mountains may enter the confined aquifer uninhibited by the absence of any protective layer.

Combining the susceptibility of the wellhead and the aquifer to contamination leads to a score (0 – 50 points) and rating of overall Susceptibility of the well to contamination (See Appendix E and F). Tables 1 and 2 depict the overall Susceptibility score and rating for the sources of public drinking water serving Alpine Woods.

**Table 1. Natural Susceptibility - Susceptibility of the Wellhead and Aquifer to Contamination – Primary Well**

	Score	Rating
Susceptibility of the Wellhead	5	Low
Susceptibility of the Aquifer	18	High
Natural Susceptibility	23	Medium

**Table 2. Natural Susceptibility - Susceptibility of the Wellhead and Aquifer to Contamination – Backup Well**

	Score	Rating
Susceptibility of the Wellhead	5	Low
Susceptibility of the Aquifer	18	High
Natural Susceptibility	23	Medium

Contaminant risks to a drinking water source depend on the type, number or density, and distribution of contaminant sources. A score (0 – 50 points) and rating of Contaminant Risks (See Appendix E and F) is assigned based on the findings of the Contaminant Source

Inventory (See Appendix B and C - Table 1 – Table 7). This portion of the analysis examines any existing or historical contamination that has been detected at the drinking water sources through routine sampling. It also reviews contamination that has or may have occurred but has not arrived or been detected at the either well. Tables 3 and 4 summarize the Contaminant Risks for each category of drinking water contaminants.

**Table 3. Contaminant Risks – Primary Well**

Contaminant Risks	Score	Rating
Bacteria and Viruses	25	Medium
Nitrates and/or Nitrites	22	Medium
Volatile Organic Chemicals	22	Medium
Heavy Metals, Cyanide, And Other Inorganic Chemicals	22	Medium
Synthetic Organic Chemicals	12	Low
Other Organic Chemicals	22	Medium

**Table 4. Contaminant Risks – Backup Well**

Contaminant Risks	Score	Rating
Bacteria and Viruses	25	Medium
Nitrates and/or Nitrites	22	Medium
Volatile Organic Chemicals	22	Medium
Heavy Metals, Cyanide, And Other Inorganic Chemicals	22	Medium
Synthetic Organic Chemicals	12	Low
Other Organic Chemicals	22	Medium

Appendix E and F contain fourteen charts, which together form the ‘Vulnerability Analysis’ for a Class A public drinking water system. Chart 1 analyzes the ‘Susceptibility of the Wellhead’ to contamination by looking at the construction of the well and its surrounding area. Chart 2 analyzes the ‘Susceptibility of the Aquifer’ to contamination by looking at the naturally occurring attributes of the water source and influences on the groundwater system that might lead to contamination. Chart 3 analyzes ‘Contaminant Risks’ for the drinking water source with respect to bacteria and viruses. The ‘Contaminant Risks’ portion of the analysis considers potential sources of contaminants as well as a review of contamination that has or may have occurred but has not arrived or been detected at the well. Lastly, Chart 4 contains the ‘Vulnerability Analysis for Bacteria and

Viruses’. Charts 5 through 14 contain the Contaminant Risks and Vulnerability Analysis for nitrates and nitrites, volatile organic chemicals, heavy metals, synthetic organic chemicals, and other organic chemicals, respectively.

Vulnerability of the drinking water sources to contamination is the combination of susceptibility of the aquifer and the well with contaminant risks. Tables 5 and 6 contain the overall vulnerability scores (0 – 100) and ratings for each of the six categories of drinking water contaminants (See Appendix E and F). Note: scores are rounded off to the nearest five.

**Table 5. Overall Vulnerability of Alpine Woods Public Drinking Water Source to Contamination by Category – Primary Well**

Category	Score	Rating
Bacteria and Viruses	50	Medium
Nitrates and Nitrites	45	Medium
Volatile Organic Chemicals	45	Medium
Heavy Metals, Cyanide, and Other Inorganic Chemicals	45	Medium
Synthetic Organic Chemicals	35	Low
Other Organic Chemicals	45	Medium

**Table 6. Overall Vulnerability of Alpine Woods Public Drinking Water Source to Contamination by Category – Backup Well**

Category	Score	Rating
Bacteria and Viruses	50	Medium
Nitrates and Nitrites	45	Medium
Volatile Organic Chemicals	45	Medium
Heavy Metals, Cyanide, and Other Inorganic Chemicals	45	Medium
Synthetic Organic Chemicals	35	Low
Other Organic Chemicals	45	Medium

Tables 2 through 7 in Appendix B and C contain the

ranking of potential and existing sources of contamination with respect to bacteria and viruses, nitrates and/or nitrites, heavy metals, synthetic organic chemicals, and other organic chemicals, respectively.

Overall, contaminant risks for bacteria and viruses are medium with the density of residential areas and septic systems driving the increase of contaminant risks. Combining this potential bacteria and viruses contamination risk with the natural susceptibility of the well leads to an overall vulnerability to contamination of Medium.

Other low potential and existing sources of contamination for bacteria and viruses include activities associated with recreation trails, and paved and gravel roads.

Historical sampling data indicates that no nitrates and/or nitrites have been detected in Alpine Woods source waters (See Chart 5 – Contaminant Risks for Nitrates and/or Nitrites in Appendix E and F). Overall, contaminant risks for nitrates and/or nitrites are medium with the density of residential areas and residential septic systems driving the increase of contaminant risks. Combining this potential nitrates and/or nitrites contamination risk with the natural susceptibility of the well leads to an overall vulnerability to contamination of medium.

Other low potential and existing sources of nitrates and/or nitrites contamination include activities associated with recreation trails, and paved and gravel roads.

Overall, contaminant risk for volatile organic chemicals is medium with a motor vehicle repair shop driving the increase of contaminant risks. Combining this potential volatile organic chemical contamination risk with the natural susceptibility of the well leads to an overall vulnerability to contamination of medium.

Other low potential and existing sources of volatile organic chemicals include residential areas, septic systems, activities associated with recreation trails, paved and gravel roads, and a public utility easement corridor.

A natural gas pipeline transverses the Protection Areas for both sources of public drinking water serving Alpine Woods. Natural gas does not pose a threat to drinking water supplies. However, this area is an active public utility easement. This utility easement, though not heavily used represents a very low contamination risk from volatile organic chemicals due to activities along the easement. The public utility easement ranks as a low potential source of contamination due to its proximity to Alpine Woods sources of public drinking water.

It is suspected that homes built on the Hillside of Anchorage before 1980 were heated by oil thus storing heating fuel in underground home-heating fuel tanks. Because underground home-heating fuel tanks are unregulated by ADEC there is no way of ascertaining which properties, within the protection areas of Alpine Woods sources, still have underground home-heating fuel storage tanks in place without conducting a field survey. Underground home-heating fuel storage tanks present a low potential risk of contamination to Alpine Woods sources of public drinking water.

Overall, contaminant risks for heavy metals, cyanide and other inorganic chemicals is medium with a motor vehicle repair shop driving the increase of potential contaminant risks. Combining this potential contaminant risk with the natural susceptibility of the well leads to an overall vulnerability to contamination of medium.

Other low potential sources of contamination for heavy metals, cyanide and other inorganic chemicals include residential areas, septic systems and paved and gravel roads.

Overall, contaminant risks for synthetic organic chemicals is low with residential areas driving the increase of potential contaminant risks. Combining this potential contaminant risk with the natural susceptibility of the well leads to an overall vulnerability to contamination of low.

Other low potential sources of contamination for synthetic organic chemicals include residential areas and septic systems.

Overall, contaminant risks for other organic chemicals is medium with a motor vehicle repair shop driving the increase of potential contaminant risk. Combining this potential contaminant risk with the natural susceptibility of the well leads to an overall vulnerability to contamination of medium.

Other low potential sources of contamination for other organic chemicals include residential areas, and paved and gravel roads.

## SUMMARY

*A Source Water Assessment* has been completed for the sources of public drinking water serving Alpine Woods. The overall vulnerability of Wells #3 and #4 to contamination is **Low** for synthetic organic chemicals and

**Medium** for bacteria and viruses, volatile organic chemicals heavy metals, and other organic chemicals. This assessment of contaminant risks can be used as a foundation for local voluntary protection efforts as well as a basis for the continuous efforts on the part of Alpine Woods to protect public health. It is anticipated that *Source Water Assessments* will be updated every five years to reflect any changes in the vulnerability and/or susceptibility of Alpine Woods public drinking water sources.

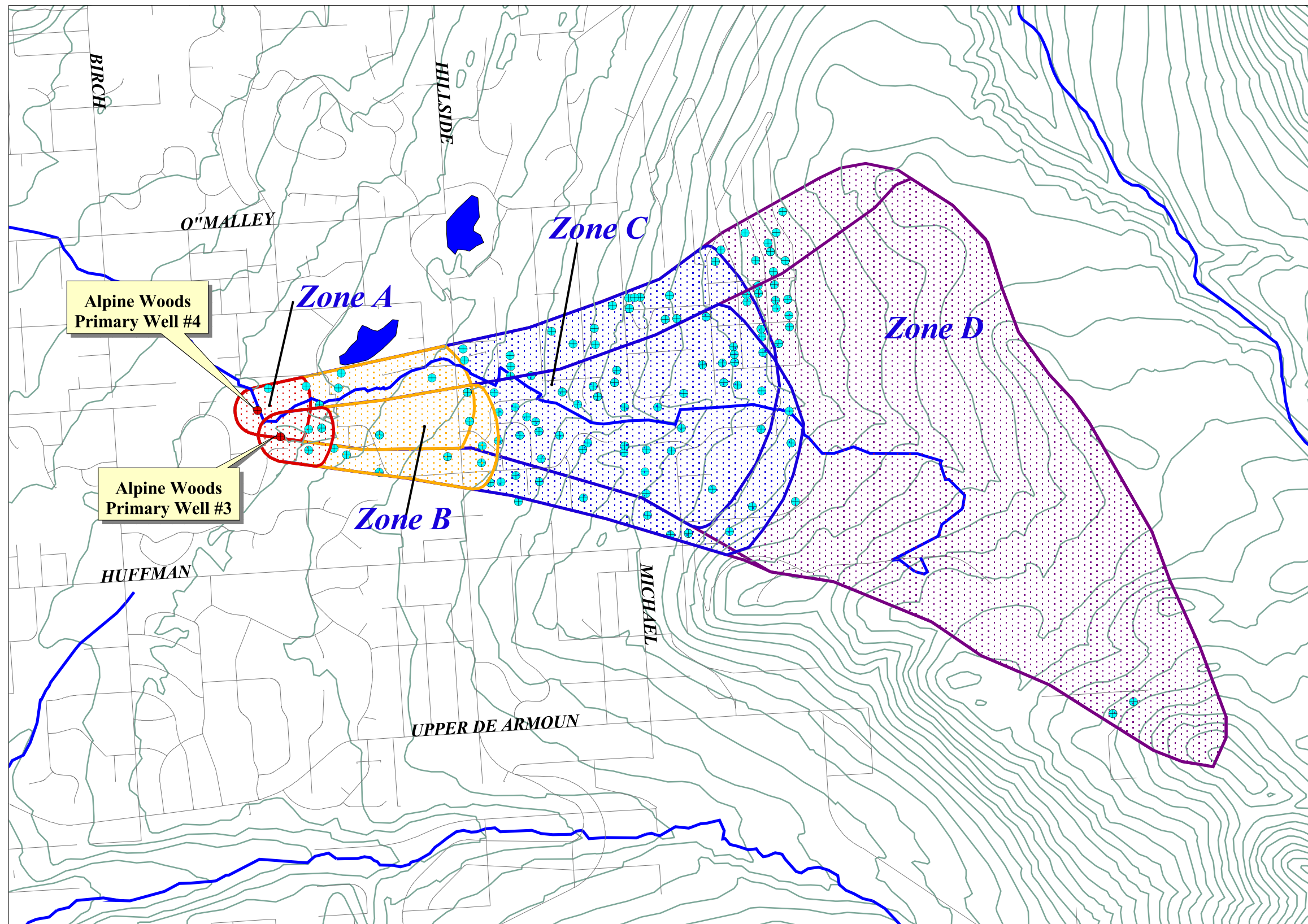
## REFERENCES CITED

- Barnwell, W.W., George, R.S., Dearborn, L.L., Weeks, J.B., and Zenone, C., 1972, Water for Anchorage: an atlas of the water resources of the Anchorage area, Alaska: U.S. Geological Survey Open-File Report, 76 p.
- Patrick, L.D., Brabets, T.P., and Glass, R.L., 1989, Simulation of ground-water flow at Anchorage, Alaska: U.S. Geological Survey Water-Resources Investigations Report 88-4139, 41p.
- Ulery, C.A. and Updike, R.G, 1983, Subsurface structure of the cohesive facies of the Bootlegger Cove Formation, Southwest Anchorage, Alaska: Alaska Division of Geological and Geophysical Surveys Professional Report 84, 5 p.
- Western Regional Climate Center, 2000, August 24, Web extension to the *Western Regional Climate Center* [WWW document]. URL <http://www.wrcc.dri.edu/index.html>

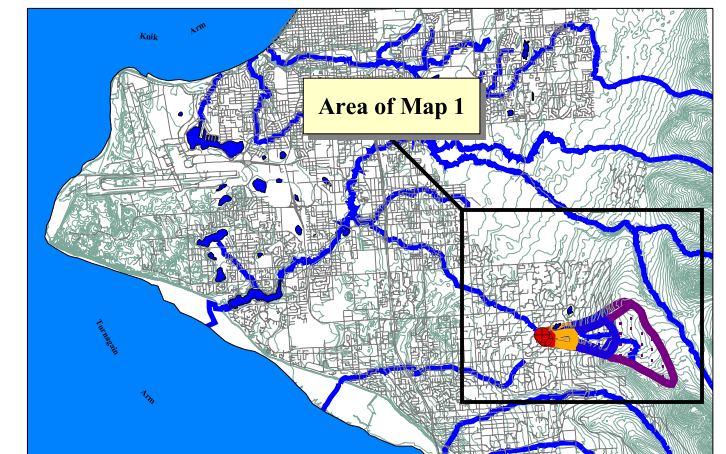
## **APPENDIX A**

### **Alpine Woods Drinking Water Protection Area**

# Drinking Water Protection Area for Alpine Woods Backup Well #3 and Primary Well #4



- Alpine Woods Primary Well #4
- Alpine Woods Backup Well #3
- Zone A Protection Area**
- Several Months Travel Time
- Zone B Protection Area**
- Less Than 2 Years Travel Time
- Zone C Protection Area**
- Less Than 5 Years Travel Time
- Zone D Protection Area**
- Less Than 10 Years Travel Time
- Public Wells
- Anchorage Roads
- MOA Lakes
- Anchorage Streams
- Elevation Contours



5000                      0                      5000 Feet

PWSID 213598

*Map 1*

## **APPENDIX B**

### **Contaminant Source Inventory and Risk Ranking for Alpine Woods Primary Well**



**Table 1**

***Contaminant Source Inventory for  
Alpine Woods Water System (Primary)***

***PWSID 213598.004***

<b><i>Contaminant Source Type</i></b>	<b><i>Contaminant Source ID</i></b>	<b><i>CS ID tag</i></b>	<b><i>Zone</i></b>	<b><i>Location</i></b>	<b><i>Map Number</i></b>	<b><i>Comments</i></b>
Residential Areas	R01	R1-1	A	Residential areas within Zone A	2	Approximately 20 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-1	A	West of well	3	
Septic systems (serves one or more single-family homes)	R02	R2-10	A	Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-11	A	Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-12	A	Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-13	A	Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-14	A	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-2	A	Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-3	A	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-4	A	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-5	A	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-6	A	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-7	A	East of well	3	
Septic systems (serves one or more single-family homes)	R02	R2-8	A	East of well	3	
Septic systems (serves one or more single-family homes)	R02	R2-9	A	Near Samuel Court	3	
Dog walking areas/foot trails	X46	X46-1	A	Trail north of well	2	
Motor /motor vehicle repair shops	C31	C31-1	B	Off of Samuel Court	2	
Residential Areas	R01	R1-2	B	Residential areas within Zone B	2	Approximately 75 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-15	B	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-17	B	Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-18	B	Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-19	B	Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-20	B	Near Moose Road	3	

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-21	B	Along Coughlan Way	3	
Septic systems (serves one or more single-family homes)	R02	R2-22	B	Along Coughlan Way	3	
Septic systems (serves one or more single-family homes)	R02	R2-23	B	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-24	B	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-25	B	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-26	B	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-27	B	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-28	B	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-29	B	Near Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-31	B	Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-32	B	Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-34	B	Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-35	B	Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-36	B	Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-37	B	Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-38	B	Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-39	B	Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-40	B	Along Mountain Lake Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-41	B	Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-42	B	Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-43	B	Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-44	B	Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-45	B	Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-46	B	Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-47	B	Near Rockridge Road	3	

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-48	B	Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-49	B	Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-50	B	Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-51	B	Along Hillside Drive	3	
Highways and roads, paved (cement or asphalt)	X20	X20-1	B	Samuel Court	2	
Highways and roads, paved (cement or asphalt)	X20	X20-2	B	Rockridge Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	B	Coughlan Way	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	B	Westford Lane	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	B	Lake O' The Hills Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Mountain Lake Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Nebesna Drive	2	
Dog walking areas/foot trails	X46	X46-2	B	Trail west of Hillside Drive	2	
Dog walking areas/foot trails	X46	X46-3	B	Trail east of Hillside Drive	2	
Residential Areas	R01	R1-3	C	Residential areas within Zone C	4	Approximately 300 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-52-102	C	Septics within Zone C	4	
Highways and roads, dirt/gravel	X24	X24-9 - 37	C	All roads located within Zone C	4	
Public utility easements/corridors	X42	X42-1	C	Intersecting Zone C	4	
Dog walking areas/foot trails	X46	X46-4	C	Trail along Sultana Street	4	

Table 2

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Bacteria and Viruses*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas within Zone A	2	Approximately 20 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-1	A	Low	2	West of well	3	
Septic systems (serves one or more single-family homes)	R02	R2-2	A	Low	3	Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-3	A	Low	4	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-7	A	Low	5	East of well	3	
Septic systems (serves one or more single-family homes)	R02	R2-8	A	Low	6	East of well	3	
Septic systems (serves one or more single-family homes)	R02	R2-5	A	Low	7	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-9	A	Low	8	Near Samuel Court	3	
Dog walking areas/foot trails	X46	X46-1	A	Low	9	Trail north of well	2	
Residential Areas	R01	R1-2	B	Low	10	Residential areas within Zone B	2	Approximately 75 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-10	A	Low		Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-11	A	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-12	A	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-13	A	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-14	A	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-4	A	Low		Along Rockridge Drive	3	

Table 2 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Bacteria and Viruses*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-6	A	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-15	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-17	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-18	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-19	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-20	B	Low		Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-21	B	Low		Along Coughlan Way	3	
Septic systems (serves one or more single-family homes)	R02	R2-22	B	Low		Along Coughlan Way	3	
Septic systems (serves one or more single-family homes)	R02	R2-23	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-24	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-25	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-26	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-27	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-28	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-29	B	Low		Near Lake O' The Hills Circle	3	

Table 2 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Bacteria and Viruses*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-31	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-32	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-34	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-35	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-36	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-37	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-38	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-39	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-40	B	Low		Along Mountain Lake Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-41	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-42	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-43	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-44	B	Low		Along Hillside Drive	3	

Table 2 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Bacteria and Viruses*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-45	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-46	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-47	B	Low		Near Rockridge Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-48	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-49	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-50	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-51	B	Low		Along Hillside Drive	3	
Highways and roads, paved (cement or asphalt)	X20	X20-1	B	Low		Samuel Court	2	
Highways and roads, paved (cement or asphalt)	X20	X20-2	B	Low		Rockridge Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	B	Low		Coughlan Way	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	B	Low		Westford Lane	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	B	Low		Lake O' The Hills Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Low		Mountain Lake Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Low		Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Low		Nebesna Drive	2	
Dog walking areas/foot trails	X46	X46-2	B	Low		Trail west of Hillside Drive	2	
Dog walking areas/foot trails	X46	X46-3	B	Low		Trail east of Hillside Drive	2	
Residential Areas	R01	R1-3	C	Low		Residential areas within Zone C	4	Approximately 300 acres of residential area.

Table 2 (continued)

Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Bacteria and Viruses

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-52-102	C	Low		Septics within Zone C	4	
Highways and roads, dirt/gravel	X24	X24-9 - 37	C	Low		All roads located within Zone C	4	
Dog walking areas/foot trails	X46	X46-4	C	Low		Trail along Sultana Street	4	



Table 3

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Nitrates/Nitrites*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas within Zone A	2	Approximately 20 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-1	A	Low	2	West of well	3	
Septic systems (serves one or more single-family homes)	R02	R2-2	A	Low	3	Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-3	A	Low	4	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-7	A	Low	5	East of well	3	
Septic systems (serves one or more single-family homes)	R02	R2-8	A	Low	6	East of well	3	
Septic systems (serves one or more single-family homes)	R02	R2-5	A	Low	7	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-9	A	Low	8	Near Samuel Court	3	
Dog walking areas/foot trails	X46	X46-1	A	Low	9	Trail north of well	2	
Residential Areas	R01	R1-2	B	Low	10	Residential areas within Zone B	2	Approximately 75 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-10	A	Low		Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-11	A	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-12	A	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-13	A	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-14	A	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-4	A	Low		Along Rockridge Drive	3	

Table 3 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Nitrates/Nitrites*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-6	A	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-15	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-17	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-18	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-19	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-20	B	Low		Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-21	B	Low		Along Coughlan Way	3	
Septic systems (serves one or more single-family homes)	R02	R2-22	B	Low		Along Coughlan Way	3	
Septic systems (serves one or more single-family homes)	R02	R2-23	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-24	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-25	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-26	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-27	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-28	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-29	B	Low		Near Lake O' The Hills Circle	3	

Table 3 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Nitrates/Nitrites*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-31	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-32	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-34	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-35	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-36	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-37	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-38	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-39	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-40	B	Low		Along Mountain Lake Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-41	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-42	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-43	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-44	B	Low		Along Hillside Drive	3	

Table 3 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Nitrates/Nitrites*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-45	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-46	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-47	B	Low		Near Rockridge Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-48	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-49	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-50	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-51	B	Low		Along Hillside Drive	3	
Highways and roads, paved (cement or asphalt)	X20	X20-1	B	Low		Samuel Court	2	
Highways and roads, paved (cement or asphalt)	X20	X20-2	B	Low		Rockridge Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	B	Low		Coughlan Way	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	B	Low		Westford Lane	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	B	Low		Lake O' The Hills Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Low		Mountain Lake Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Low		Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Low		Nebesna Drive	2	
Dog walking areas/foot trails	X46	X46-2	B	Low		Trail west of Hillside Drive	2	
Dog walking areas/foot trails	X46	X46-3	B	Low		Trail east of Hillside Drive	2	
Residential Areas	R01	R1-3	C	Low		Residential areas within Zone C	4	Approximately 300 acres of residential area.

Table 3 (continued)

Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Nitrates/Nitrites

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-52-102	C	Low		Septics within Zone C	4	
Highways and roads, dirt/gravel	X24	X24-9 - 37	C	Low		All roads located within Zone C	4	
Dog walking areas/foot trails	X46	X46-4	C	Low		Trail along Sultana Street	4	

Table 4

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Volatile Organic Chemicals*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Motor /motor vehicle repair shops	C31	C31-1	B	Medium	1	Off of Samuel Court	2	
Septic systems (serves one or more single-family homes)	R02	R2-1	A	Low	2	West of well	3	
Septic systems (serves one or more single-family homes)	R02	R2-2	A	Low	3	Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-3	A	Low	4	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-7	A	Low	5	East of well	3	
Highways and roads, paved (cement or asphalt)	X20	X20-1	B	Low	6	Samuel Court	2	
Highways and roads, paved (cement or asphalt)	X20	X20-2	B	Low	7	Rockridge Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	B	Low	8	Coughlan Way	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	B	Low	9	Westford Lane	2	
Residential Areas	R01	R1-1	A	Low	10	Residential areas within Zone A	2	Approximately 20 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-10	A	Low		Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-11	A	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-12	A	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-13	A	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-14	A	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-4	A	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-5	A	Low		Along Rockridge Drive	3	

Table 4 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Volatile Organic Chemicals*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-6	A	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-8	A	Low		East of well	3	
Septic systems (serves one or more single-family homes)	R02	R2-9	A	Low		Near Samuel Court	3	
Residential Areas	R01	R1-2	B	Low		Residential areas within Zone B	2	Approximately 75 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-15	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-17	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-18	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-19	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-20	B	Low		Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-21	B	Low		Along Coughlan Way	3	
Septic systems (serves one or more single-family homes)	R02	R2-22	B	Low		Along Coughlan Way	3	
Septic systems (serves one or more single-family homes)	R02	R2-23	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-24	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-25	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-26	B	Low		Along Rockridge Drive	3	

Table 4 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Volatile Organic Chemicals*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-27	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-28	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-29	B	Low		Near Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-31	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-32	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-34	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-35	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-36	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-37	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-38	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-39	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-40	B	Low		Along Mountain Lake Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-41	B	Low		Along Hillside Drive	3	



Table 4 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Volatile Organic Chemicals*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-42	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-43	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-44	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-45	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-46	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-47	B	Low		Near Rockridge Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-48	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-49	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-50	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-51	B	Low		Along Hillside Drive	3	
Highways and roads, paved (cement or asphalt)	X20	X20-5	B	Low		Lake O' The Hills Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Low		Mountain Lake Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Low		Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Low		Nebesna Drive	2	
Residential Areas	R01	R1-3	C	Low		Residential areas within Zone C	4	Approximately 300 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-52-102	C	Low		Septics within Zone C	4	
Highways and roads, dirt/gravel	X24	X24-9 - 37	C	Low		All roads located within Zone C	4	

*Table 4 (continued)*

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Volatile Organic Chemicals*

*PWSID 213598.004*

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Public utility easements/corridors	X42	X42-1	C	Low		Intersecting Zone C	4	

Table 5

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas within Zone A	2	Approximately 20 acres of residential area.
Motor /motor vehicle repair shops	C31	C31-1	B	Medium	2	Off of Samuel Court	2	
Highways and roads, paved (cement or asphalt)	X20	X20-1	B	Low	3	Samuel Court	2	
Highways and roads, paved (cement or asphalt)	X20	X20-2	B	Low	4	Rockridge Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	B	Low	5	Coughlan Way	2	
Septic systems (serves one or more single-family homes)	R02	R2-1	A	Low	6	West of well	3	
Septic systems (serves one or more single-family homes)	R02	R2-2	A	Low	7	Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-3	A	Low	8	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-7	A	Low	9	East of well	3	
Residential Areas	R01	R1-2	B	Low	10	Residential areas within Zone B	2	Approximately 75 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-10	A	Low		Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-11	A	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-12	A	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-13	A	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-14	A	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-4	A	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-5	A	Low		Along Rockridge Drive	3	

Table 5 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-6	A	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-8	A	Low		East of well	3	
Septic systems (serves one or more single-family homes)	R02	R2-9	A	Low		Near Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-15	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-17	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-18	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-19	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-20	B	Low		Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-21	B	Low		Along Coughlan Way	3	
Septic systems (serves one or more single-family homes)	R02	R2-22	B	Low		Along Coughlan Way	3	
Septic systems (serves one or more single-family homes)	R02	R2-23	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-24	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-25	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-26	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-27	B	Low		Along Rockridge Drive	3	

Table 5 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-28	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-29	B	Low		Near Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-31	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-32	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-34	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-35	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-36	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-37	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-38	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-39	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-40	B	Low		Along Mountain Lake Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-41	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-42	B	Low		Along Lake O' The Hills Circle	3	

Table 5 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-43	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-44	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-45	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-46	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-47	B	Low		Near Rockridge Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-48	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-49	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-50	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-51	B	Low		Along Hillside Drive	3	
Highways and roads, paved (cement or asphalt)	X20	X20-4	B	Low		Westford Lane	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	B	Low		Lake O' The Hills Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Low		Mountain Lake Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Low		Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Low		Nebesna Drive	2	
Residential Areas	R01	R1-3	C	Low		Residential areas within Zone C	4	Approximately 300 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-52-102	C	Low		Septics within Zone C	4	
Highways and roads, dirt/gravel	X24	X24-9 - 37	C	Low		All roads located within Zone C	4	

**Table 6**

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Synthetic Organic Chemicals*

**PWSID 213598.004**

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas within Zone A	2	Approximately 20 acres of residential area.
Residential Areas	R01	R1-2	B	Low	2	Residential areas within Zone B	2	Approximately 75 acres of residential area.
Residential Areas	R01	R1-3	C	Low	3	Residential areas within Zone C	4	Approximately 300 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-1	A	Low	4	West of well	3	
Septic systems (serves one or more single-family homes)	R02	R2-2	A	Low	5	Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-3	A	Low	6	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-4	A	Low	7	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-5	A	Low	8	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-6	A	Low	9	Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-7	A	Low	10	East of well	3	
Septic systems (serves one or more single-family homes)	R02	R2-10	A	Low		Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-11	A	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-12	A	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-13	A	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-14	A	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-8	A	Low		East of well	3	

Table 6 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Synthetic Organic Chemicals*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-9	A	Low		Near Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-15	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-17	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-18	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-19	B	Low		Off of Samuel Court	3	
Septic systems (serves one or more single-family homes)	R02	R2-20	B	Low		Near Moose Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-21	B	Low		Along Coughlan Way	3	
Septic systems (serves one or more single-family homes)	R02	R2-22	B	Low		Along Coughlan Way	3	
Septic systems (serves one or more single-family homes)	R02	R2-23	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-24	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-25	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-26	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-27	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-28	B	Low		Along Rockridge Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-29	B	Low		Near Lake O' The Hills Circle	3	



Table 6 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Synthetic Organic Chemicals*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-31	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-32	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-34	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-35	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-36	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-37	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-38	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-39	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-40	B	Low		Along Mountain Lake Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-41	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-42	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-43	B	Low		Along Lake O' The Hills Circle	3	
Septic systems (serves one or more single-family homes)	R02	R2-44	B	Low		Along Hillside Drive	3	

Table 6 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Synthetic Organic Chemicals*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-45	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-46	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-47	B	Low		Near Rockridge Road	3	
Septic systems (serves one or more single-family homes)	R02	R2-48	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-49	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-50	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-51	B	Low		Along Hillside Drive	3	
Septic systems (serves one or more single-family homes)	R02	R2-52-102	C	Low		Septics within Zone C	4	

Table 7

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Primary)  
Sources of Other Organic Chemicals*

PWSID 213598.004

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas within Zone A	2	Approximately 20 acres of residential area.
Residential Areas	R01	R1-2	B	Low	2	Residential areas within Zone B	2	Approximately 75 acres of residential area.
Motor /motor vehicle repair shops	C31	C31-1	B	Medium	3	Off of Samuel Court	2	
Highways and roads, paved (cement or asphalt)	X20	X20-1	B	Low	4	Samuel Court	2	
Highways and roads, paved (cement or asphalt)	X20	X20-2	B	Low	5	Rockridge Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	B	Low	6	Coughlan Way	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	B	Low	7	Westford Lane	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	B	Low	8	Lake O' The Hills Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Low	9	Mountain Lake Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Low	10	Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Low		Nebesna Drive	2	
Residential Areas	R01	R1-3	C	Low		Residential areas within Zone C	4	Approximately 300 acres of residential area.
Highways and roads, dirt/gravel	X24	X24-9 - 37	C	Low		All roads located within Zone C	4	

## **APPENDIX C**

### **Contaminant Source Inventory and Risk Ranking for Alpine Woods Backup Well**

**Table 1**

**Contaminant Source Inventory for  
Alpine Woods Water System (Backup)**

**PWSID 213598.003**

<b>Contaminant Source Type</b>	<b>Contaminant Source ID</b>	<b>CS ID tag</b>	<b>Zone</b>	<b>Location</b>	<b>Map Number</b>	<b>Comments</b>
Residential Areas	R01	R1-1	A	Residential areas within Zone A	5	Approximately 19 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-1	A	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-10	A	Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-11	A	Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-2	A	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-3	A	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-4	A	Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-5	A	Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-6	A	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-7	A	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-8	A	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-9	A	Near Moose Road	6	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Moose Road	5	
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Samuel Court	5	
Motor /motor vehicle repair shops	C31	C31-1	B	Near Samuel Court	6	
Residential Areas	R01	R1-2	B	Residential areas within Zone B	5	Approximately 73 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-12	B	Along Coughlan Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-13	B	Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-14	B	Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-15	B	Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-17	B	Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-18	B	Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-19	B	Along Rockridge Road	6	

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-20	B	Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-21	B	Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-22	B	Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-23	B	Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-24	B	Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-25	B	Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-26	B	Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-27	B	Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-28	B	Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-29	B	Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-31	B	Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-32	B	Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-34	B	Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-35	B	Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-36	B	Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-37	B	Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-38	B	Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-39	B	Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-40	B	Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-41	B	Along Nebesna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-42	B	Along Nebesna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-43	B	Along Nebesna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-44	B	Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-45	B	Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-46	B	Along Alatna Ave.	6	

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-47	B	Along Alatna Ave.	6	
Septic systems (serves one single-family home)	R02	R2-48	B	Off of Nebesna Drive	6	
Highways and roads, paved (cement or asphalt)	X20	X20-10	B	Soldotna Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-11	B	Circle Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-3	B	Rockridge Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-4	B	Westford Lane	5	
Highways and roads, paved (cement or asphalt)	X20	X20-5	B	Rockridge Road	5	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Regina Circle	5	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Hillside Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Alatna Ave.	5	
Highways and roads, paved (cement or asphalt)	X20	X20-9	B	Nebesna Drive	5	
Public utility easements/corridors	X42	X42-1	B	Intersecting Zone B	5	
Dog walking areas/foot trails	X46	X46-1	B	Intersecting Zone B	5	
Dog walking areas/foot trails	X46	X46-2	B	West side of Hillside Drive	5	
Dog walking areas/foot trails	X46	X46-3	B	East side of Hillside Drive	5	
Residential Areas	R01	R1-3	C	Residential areas within Zone C	7	Approximately 280 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-49-214	C	Septics systmes within Zone C	7	
Highways and roads, dirt/gravel	X24	X20-12-33	C	Roads within Zone C	7	
Dog walking areas/foot trails	X46	X46-4	C	Intersecting Zone C	7	
Dog walking areas/foot trails	X46	X46-5	C	Intersecting Zone C	7	

Table 2

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Bacteria and Viruses*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas within Zone A	5	Approximately 19 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-1	A	Low	2	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-2	A	Low	3	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-3	A	Low	4	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-4	A	Low	5	Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-5	A	Low	6	Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-6	A	Low	7	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-7	A	Low	8	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-8	A	Low	9	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-9	A	Low	10	Near Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-10	A	Low		Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-11	A	Low		Along Samuel Court	6	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low		Moose Road	5	
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Low		Samuel Court	5	
Residential Areas	R01	R1-2	B	Low		Residential areas within Zone B	5	Approximately 73 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-12	B	Low		Along Coughlan Way	6	



Table 2 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Bacteria and Viruses*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-13	B	Low		Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-14	B	Low		Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-15	B	Low		Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-17	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-18	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-19	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-20	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-21	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-22	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-23	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-24	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-25	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-26	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-27	B	Low		Along Rockridge Road	6	

Table 2 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Bacteria and Viruses*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-28	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-29	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-31	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-32	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-34	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-35	B	Low		Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-36	B	Low		Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-37	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-38	B	Low		Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-39	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-40	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-41	B	Low		Along Nebesna Drive	6	

Table 2 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Bacteria and Viruses*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-42	B	Low		Along Nebesna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-43	B	Low		Along Nebesna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-44	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-45	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-46	B	Low		Along Alatna Ave.	6	
Septic systems (serves one or more single-family homes)	R02	R2-47	B	Low		Along Alatna Ave.	6	
Septic systems (serves one single-family home)	R02	R2-48	B	Low		Off of Nebesna Drive	6	
Highways and roads, paved (cement or asphalt)	X20	X20-10	B	Low		Soldotna Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-11	B	Low		Circle Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-3	B	Low		Rockridge Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-4	B	Low		Westford Lane	5	
Highways and roads, paved (cement or asphalt)	X20	X20-5	B	Low		Rockridge Road	5	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Low		Regina Circle	5	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Low		Hillside Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Low		Alatna Ave.	5	
Highways and roads, paved (cement or asphalt)	X20	X20-9	B	Low		Nebesna Drive	5	
Dog walking areas/foot trails	X46	X46-1	B	Low		Intersecting Zone B	5	
Dog walking areas/foot trails	X46	X46-2	B	Low		West side of Hillside Drive	5	
Dog walking areas/foot trails	X46	X46-3	B	Low		East side of Hillside Drive	5	

Table 2 (continued)

Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Bacteria and Viruses

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-3	C	Low		Residential areas within Zone C	7	Approximately 280 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-49-214	C	Low		Septics systemes within Zone C	7	
Highways and roads, dirt/gravel	X24	X20-12-33	C	Low		Roads within Zone C	7	
Dog walking areas/foot trails	X46	X46-4	C	Low		Intersecting Zone C	7	
Dog walking areas/foot trails	X46	X46-5	C	Low		Intersecting Zone C	7	

**Table 3**

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Nitrates/Nitrites*

*PWSID 213598.003*

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas within Zone A	5	Approximately 19 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-1	A	Low	2	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-2	A	Low	3	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-3	A	Low	4	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-4	A	Low	5	Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-5	A	Low	6	Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-6	A	Low	7	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-7	A	Low	8	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-8	A	Low	9	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-9	A	Low	10	Near Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-10	A	Low		Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-11	A	Low		Along Samuel Court	6	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low		Moose Road	5	
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Low		Samuel Court	5	
Residential Areas	R01	R1-2	B	Low		Residential areas within Zone B	5	Approximately 73 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-12	B	Low		Along Coughlan Way	6	

Table 3 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Nitrates/Nitrites*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-13	B	Low		Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-14	B	Low		Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-15	B	Low		Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-17	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-18	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-19	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-20	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-21	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-22	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-23	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-24	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-25	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-26	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-27	B	Low		Along Rockridge Road	6	

Table 3 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Nitrates/Nitrites*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-28	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-29	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-31	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-32	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-34	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-35	B	Low		Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-36	B	Low		Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-37	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-38	B	Low		Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-39	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-40	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-41	B	Low		Along Nebesna Drive	6	

Table 3 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Nitrates/Nitrites*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-42	B	Low		Along Nebesna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-43	B	Low		Along Nebesna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-44	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-45	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-46	B	Low		Along Alatna Ave.	6	
Septic systems (serves one or more single-family homes)	R02	R2-47	B	Low		Along Alatna Ave.	6	
Septic systems (serves one single-family home)	R02	R2-48	B	Low		Off of Nebesna Drive	6	
Highways and roads, paved (cement or asphalt)	X20	X20-10	B	Low		Soldotna Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-11	B	Low		Circle Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-3	B	Low		Rockridge Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-4	B	Low		Westford Lane	5	
Highways and roads, paved (cement or asphalt)	X20	X20-5	B	Low		Rockridge Road	5	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Low		Regina Circle	5	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Low		Hillside Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Low		Alatna Ave.	5	
Highways and roads, paved (cement or asphalt)	X20	X20-9	B	Low		Nebesna Drive	5	
Dog walking areas/foot trails	X46	X46-1	B	Low		Intersecting Zone B	5	
Dog walking areas/foot trails	X46	X46-2	B	Low		West side of Hillside Drive	5	
Dog walking areas/foot trails	X46	X46-3	B	Low		East side of Hillside Drive	5	



Table 3 (continued)

Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Nitrates/Nitrites

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-3	C	Low		Residential areas within Zone C	7	Approximately 280 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-49-214	C	Low		Septics systmes within Zone C	7	
Highways and roads, dirt/gravel	X24	X20-12-33	C	Low		Roads within Zone C	7	
Dog walking areas/foot trails	X46	X46-4	C	Low		Intersecting Zone C	7	
Dog walking areas/foot trails	X46	X46-5	C	Low		Intersecting Zone C	7	

Table 4

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Volatile Organic Chemicals*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Motor /motor vehicle repair shops	C31	C31-1	B	Medium	1	Near Samuel Court	6	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low	2	Moose Road	5	
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Low	3	Samuel Court	5	
Highways and roads, paved (cement or asphalt)	X20	X20-3	B	Low	4	Rockridge Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-4	B	Low	5	Westford Lane	5	
Residential Areas	R01	R1-1	A	Low	6	Residential areas within Zone A	5	Approximately 19 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-1	A	Low	7	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-2	A	Low	8	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-3	A	Low	9	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-4	A	Low	10	Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-10	A	Low		Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-11	A	Low		Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-5	A	Low		Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-6	A	Low		Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-7	A	Low		Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-8	A	Low		Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-9	A	Low		Near Moose Road	6	

Table 4 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Volatile Organic Chemicals*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-2	B	Low		Residential areas within Zone B	5	Approximately 73 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-12	B	Low		Along Coughlan Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-13	B	Low		Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-14	B	Low		Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-15	B	Low		Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-17	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-18	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-19	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-20	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-21	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-22	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-23	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-24	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-25	B	Low		Along Rockridge Road	6	

Table 4 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Volatile Organic Chemicals*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-26	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-27	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-28	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-29	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-31	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-32	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-34	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-35	B	Low		Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-36	B	Low		Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-37	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-38	B	Low		Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-39	B	Low		Along Hillside Drive	6	

Table 4 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Volatile Organic Chemicals*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-40	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-41	B	Low		Along Nebesna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-42	B	Low		Along Nebesna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-43	B	Low		Along Nebesna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-44	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-45	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-46	B	Low		Along Alatna Ave.	6	
Septic systems (serves one or more single-family homes)	R02	R2-47	B	Low		Along Alatna Ave.	6	
Septic systems (serves one single-family home)	R02	R2-48	B	Low		Off of Nebesna Drive	6	
Highways and roads, paved (cement or asphalt)	X20	X20-10	B	Low		Soldotna Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-11	B	Low		Circle Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-5	B	Low		Rockridge Road	5	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Low		Regina Circle	5	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Low		Hillside Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Low		Alatna Ave.	5	
Highways and roads, paved (cement or asphalt)	X20	X20-9	B	Low		Nebesna Drive	5	
Public utility easements/corridors	X42	X42-1	B	Low		Intersecting Zone B	5	
Residential Areas	R01	R1-3	C	Low		Residential areas within Zone C	7	Approximately 280 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-49-214	C	Low		Septics systmes within Zone C	7	

Table 4 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Volatile Organic Chemicals*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Highways and roads, dirt/gravel	X24	X20-12-33	C	Low		Roads within Zone C	7	

Table 5

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas within Zone A	5	Approximately 19 acres of residential area.
Motor /motor vehicle repair shops	C31	C31-1	B	Medium	2	Near Samuel Court	6	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low	3	Moose Road	5	
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Low	4	Samuel Court	5	
Septic systems (serves one or more single-family homes)	R02	R2-1	A	Low	5	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-2	A	Low	6	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-3	A	Low	7	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-4	A	Low	8	Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-5	A	Low	9	Along Samuel Court	6	
Residential Areas	R01	R1-2	B	Low	10	Residential areas within Zone B	5	Approximately 73 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-10	A	Low		Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-11	A	Low		Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-6	A	Low		Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-7	A	Low		Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-8	A	Low		Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-9	A	Low		Near Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-12	B	Low		Along Coughlan Way	6	

Table 5 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-13	B	Low		Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-14	B	Low		Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-15	B	Low		Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-17	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-18	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-19	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-20	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-21	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-22	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-23	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-24	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-25	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-26	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-27	B	Low		Along Rockridge Road	6	



Table 5 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-28	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-29	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-31	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-32	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-34	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-35	B	Low		Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-36	B	Low		Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-37	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-38	B	Low		Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-39	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-40	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-41	B	Low		Along Nebesna Drive	6	

Table 5 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-42	B	Low		Along Nebesna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-43	B	Low		Along Nebesna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-44	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-45	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-46	B	Low		Along Alatna Ave.	6	
Septic systems (serves one or more single-family homes)	R02	R2-47	B	Low		Along Alatna Ave.	6	
Septic systems (serves one single-family home)	R02	R2-48	B	Low		Off of Nebesna Drive	6	
Highways and roads, paved (cement or asphalt)	X20	X20-10	B	Low		Soldotna Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-11	B	Low		Circle Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-3	B	Low		Rockridge Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-4	B	Low		Westford Lane	5	
Highways and roads, paved (cement or asphalt)	X20	X20-5	B	Low		Rockridge Road	5	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Low		Regina Circle	5	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Low		Hillside Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Low		Alatna Ave.	5	
Highways and roads, paved (cement or asphalt)	X20	X20-9	B	Low		Nebesna Drive	5	
Residential Areas	R01	R1-3	C	Low		Residential areas within Zone C	7	Approximately 280 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-49-214	C	Low		Septics systmes within Zone C	7	
Highways and roads, dirt/gravel	X24	X20-12-33	C	Low		Roads within Zone C	7	

Table 6

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Synthetic Organic Chemicals*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas within Zone A	5	Approximately 19 acres of residential area.
Residential Areas	R01	R1-2	B	Low	2	Residential areas within Zone B	5	Approximately 73 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-1	A	Low	3	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-2	A	Low	4	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-3	A	Low	5	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-4	A	Low	6	Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-5	A	Low	7	Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-6	A	Low	8	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-7	A	Low	9	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-8	A	Low	10	Along Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-10	A	Low		Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-11	A	Low		Along Samuel Court	6	
Septic systems (serves one or more single-family homes)	R02	R2-9	A	Low		Near Moose Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-12	B	Low		Along Coughlan Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-13	B	Low		Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-14	B	Low		Along Westford Way	6	

Table 6 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Synthetic Organic Chemicals*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-15	B	Low		Along Westford Way	6	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-16	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-17	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-18	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-19	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-20	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-21	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-22	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-23	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-24	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-25	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-26	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-27	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-28	B	Low		Along Rockridge Road	6	
Septic systems (serves one or more single-family homes)	R02	R2-29	B	Low		Along Hillside Drive	6	

Table 6 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Synthetic Organic Chemicals*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-30	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-31	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-32	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-33	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-34	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-35	B	Low		Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-36	B	Low		Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-37	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-38	B	Low		Along Soldotna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-39	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-40	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-41	B	Low		Along Nebesna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-42	B	Low		Along Nebesna Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-43	B	Low		Along Nebesna Drive	6	

Table 6 (continued)

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Synthetic Organic Chemicals*

PWSID 213598.003

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one or more single-family homes)	R02	R2-44	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-45	B	Low		Along Hillside Drive	6	
Septic systems (serves one or more single-family homes)	R02	R2-46	B	Low		Along Alatna Ave.	6	
Septic systems (serves one or more single-family homes)	R02	R2-47	B	Low		Along Alatna Ave.	6	
Septic systems (serves one single-family home)	R02	R2-48	B	Low		Off of Nebesna Drive	6	
Residential Areas	R01	R1-3	C	Low		Residential areas within Zone C	7	Approximately 280 acres of residential area.
Septic systems (serves one or more single-family homes)	R02	R2-49-214	C	Low		Septics systmes within Zone C	7	

Table 7

*Contaminant Source Inventory and Risk Ranking for  
Alpine Woods Water System (Backup)  
Sources of Other Organic Chemicals*

PWSID 213598.003

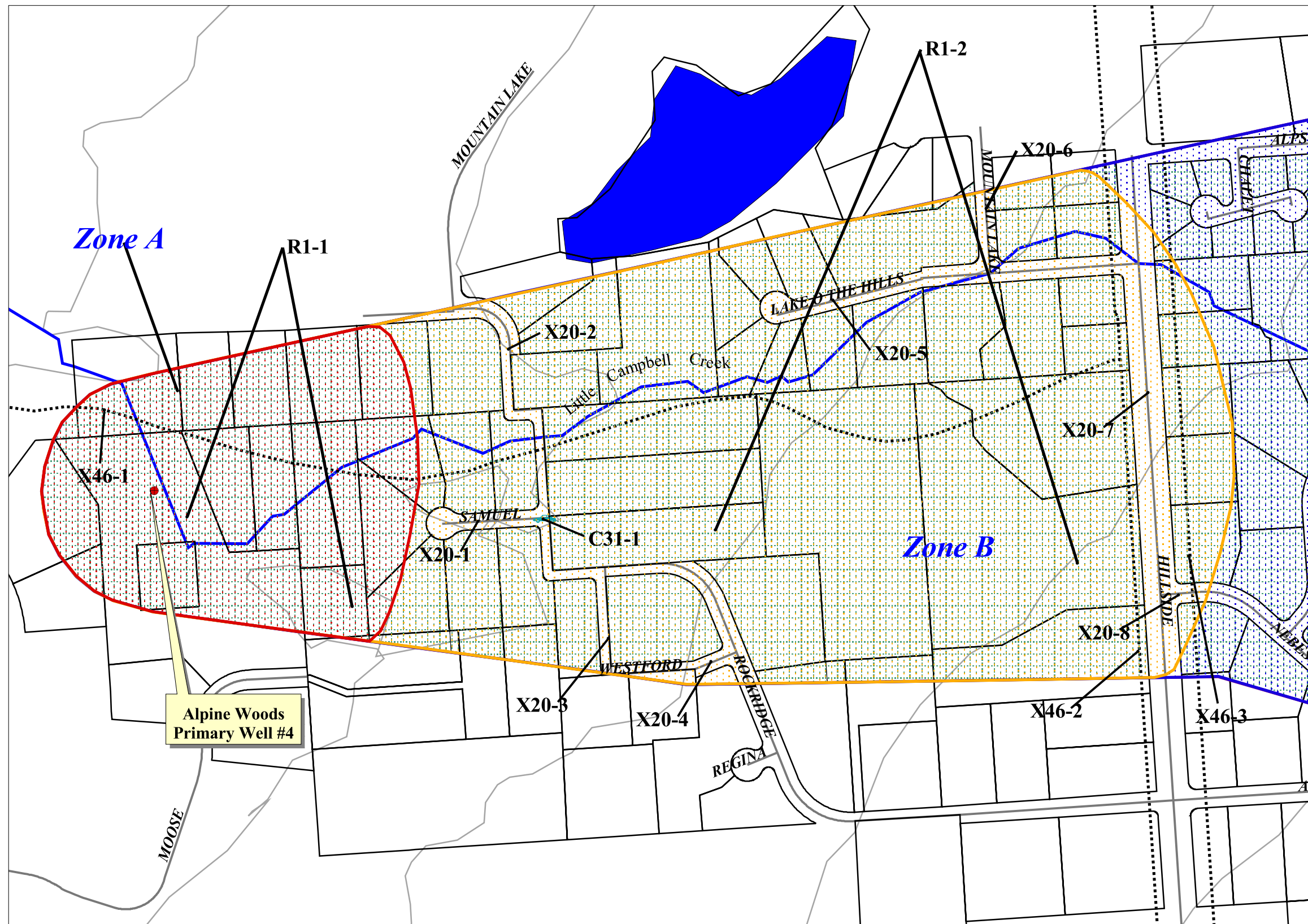
<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas within Zone A	5	Approximately 19 acres of residential area.
Residential Areas	R01	R1-2	B	Low	2	Residential areas within Zone B	5	Approximately 73 acres of residential area.
Motor /motor vehicle repair shops	C31	C31-1	B	Medium	3	Near Samuel Court	6	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low	4	Moose Road	5	
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Low	5	Samuel Court	5	
Highways and roads, paved (cement or asphalt)	X20	X20-3	B	Low	6	Rockridge Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-4	B	Low	7	Westford Lane	5	
Highways and roads, paved (cement or asphalt)	X20	X20-5	B	Low	8	Rockridge Road	5	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Low	9	Regina Circle	5	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Low	10	Hillside Drive	5	
Septic systems (serves one single-family home)	R02	R2-48	B	Low		Off of Nebesna Drive	6	
Highways and roads, paved (cement or asphalt)	X20	X20-10	B	Low		Soldotna Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-11	B	Low		Circle Drive	5	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Low		Alatna Ave.	5	
Highways and roads, paved (cement or asphalt)	X20	X20-9	B	Low		Nebesna Drive	5	
Residential Areas	R01	R1-3	C	Low		Residential areas within Zone C	7	Approximately 280 acres of residential area.
Highways and roads, dirt/gravel	X24	X20-12-33	C	Low		Roads within Zone C	7	

## **APPENDIX D**

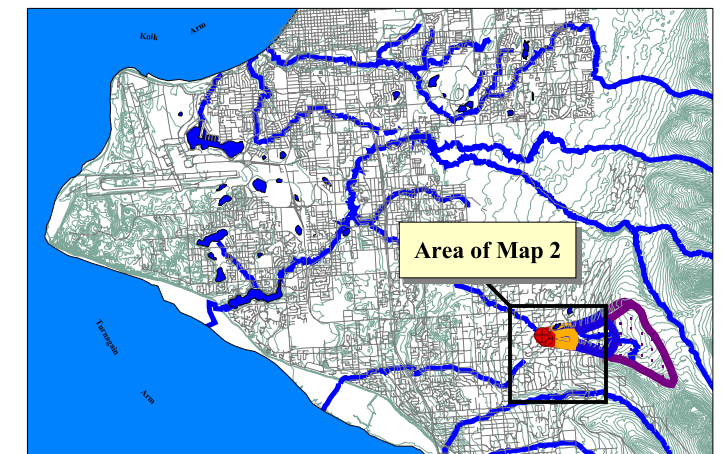
### **Alpine Woods Drinking Water Protection Area and Potential & Existing Contaminant Sources**



# Drinking Water Protection Area for Alpine Woods Primary Well #4 and Potential & Existing Contaminant Sources



- Alpine Woods Primary Well #4
- Zone A Protection Area**
- Several Months Travel Time
- Zone B Protection Area**
- Less Than 2 Years Travel Time
- Zone C Protection Area**
- Less Than 5 Years Travel Time
- Zone D Protection Area**
- Less Than 10 Years Travel Time
- Residential Areas (R1)
- Potential Contaminant Sources**
- Motor/motor vehicle repair shops (C31)
- MOA Land Parcels
- Roads (X20)
- Trails (X46)
- Chugach State Park
- Moa Lakes
- Anchorage Streams
- Elevation Contours

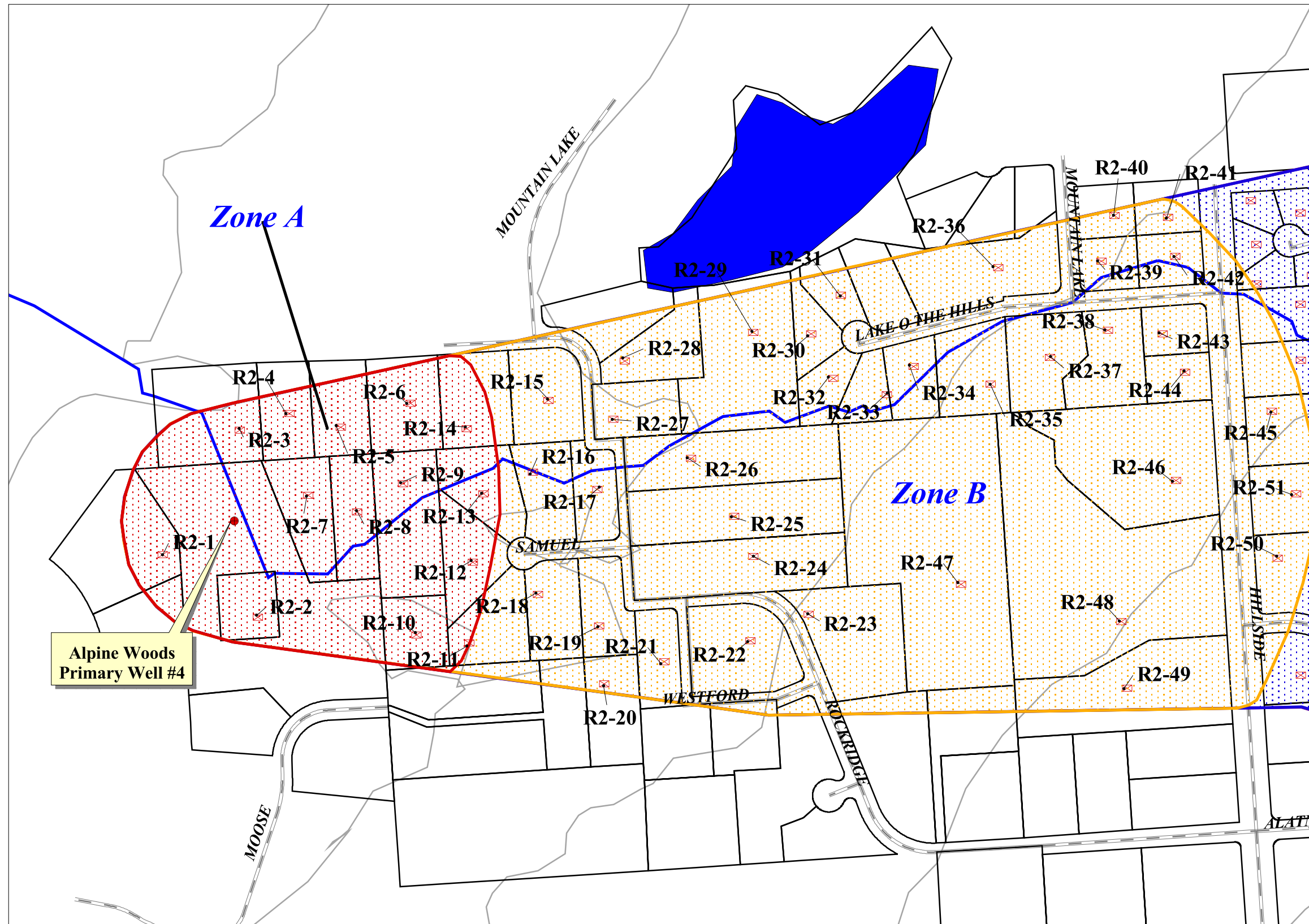


1000 0 1000 Feet

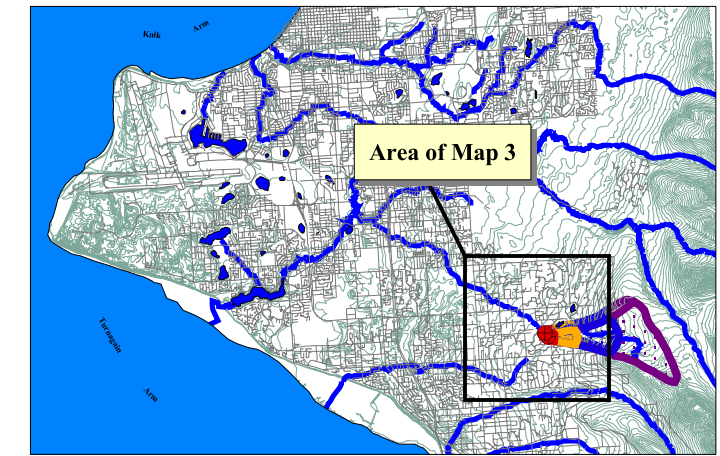
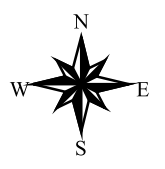
PWSID 213598

*Map 2*

# Drinking Water Protection Area for Alpine Woods Primary Well #4 and Potential & Existing Contaminant Sources



- Alpine Woods Primary Well #4
- Zone A Protection Area
  - ▨ Several Months Travel Time
- Zone B Protection Area
  - ▨ Less Than 2 Years Travel Time
- Zone C Protection Area
  - ▨ Less Than 5 Years Travel Time
- Zone D Protection Area
  - ▨ Less Than 10 Years Travel Time
- ▭ MOA Land Parcels
- ▬ Roads (X20)
- ▣ Septic Systems (R2)
- ▭ MOA Lakes
- ▬ Anchorage Streams
- ▬ Elevation Contours

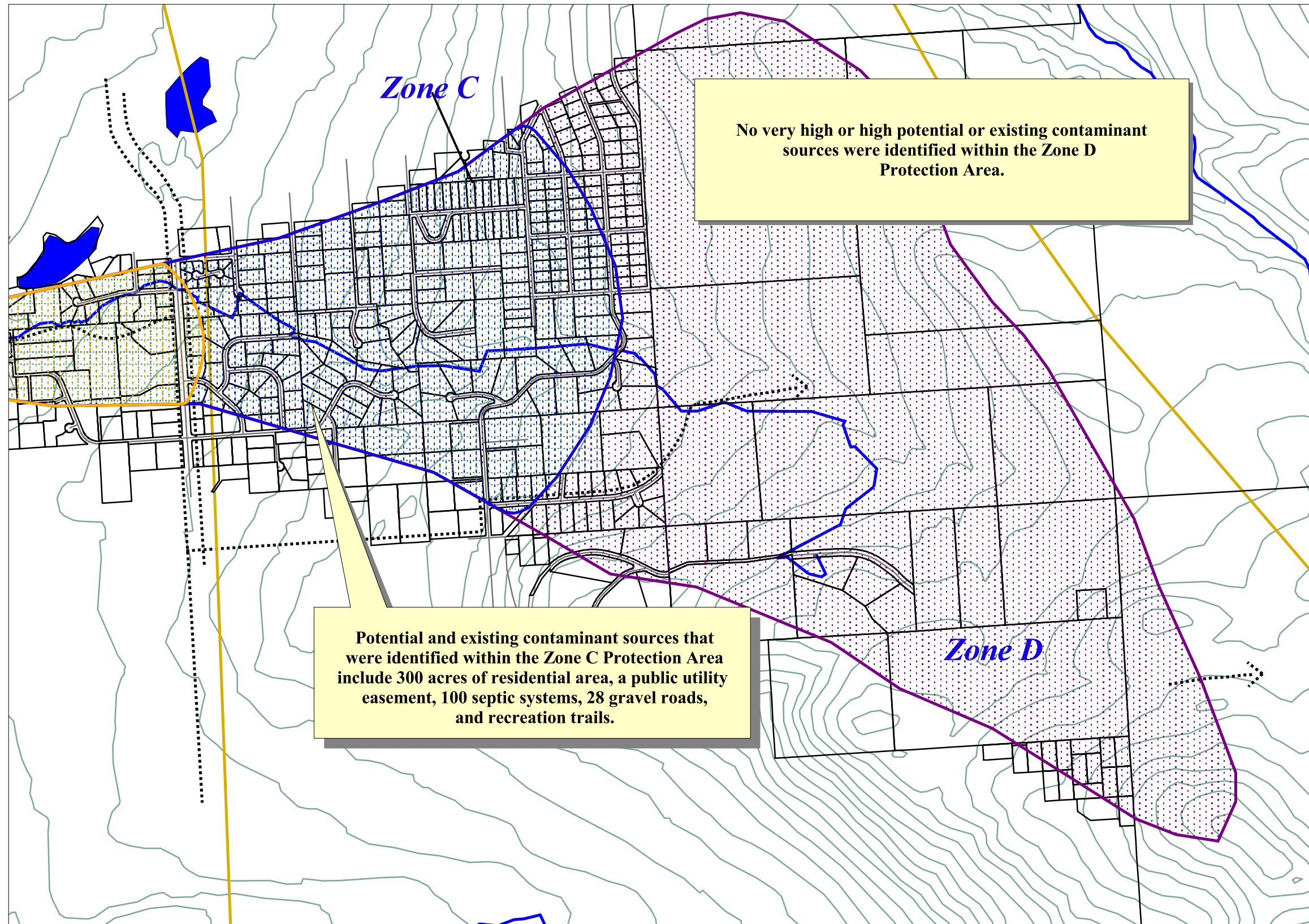


1000 0 1000 Feet

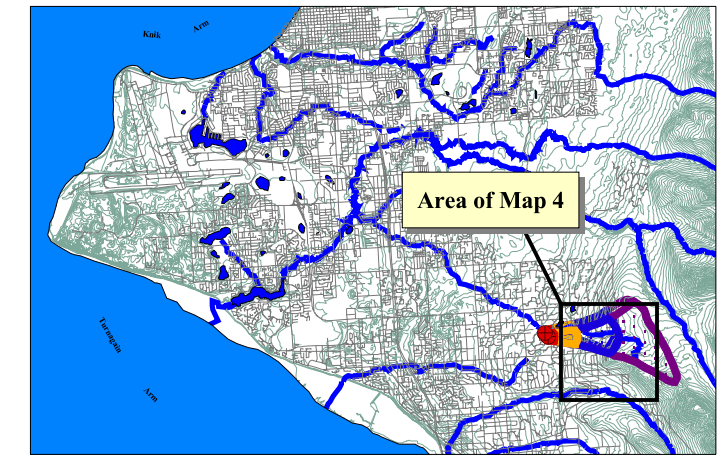
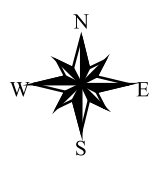
PWSID 213598

*Map 3*

# Drinking Water Protection Area for Alpine Woods Primary Well #4 and Potential & Existing Contaminant Sources



- Alpine Woods Primary Well #4
- Zone A Protection Area**
- Several Months Travel Time
- Zone B Protection Area**
- Less Than 2 Years Travel Time
- Zone C Protection Area**
- Less Than 5 Years Travel Time
- Zone D Protection Area**
- Less Than 10 Years Travel Time
- Residential Areas (R1)
- MOA Land Parcels
- 12" Pipeline (X42)
- Roads (X24)
- Trails (X46)
- Moa Lakes
- Anchorage Streams
- Elevation Contours

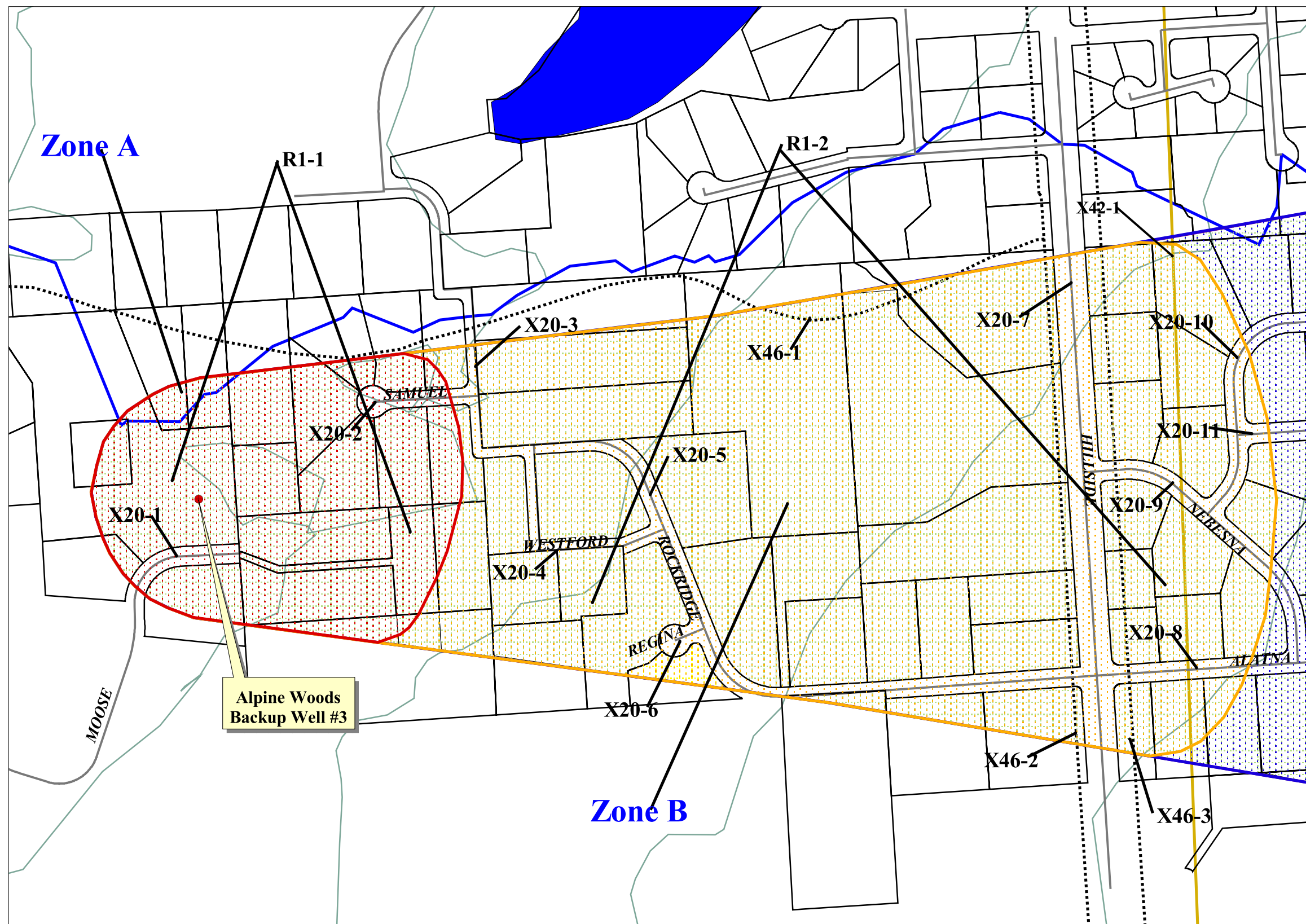


4000 0 4000 Feet

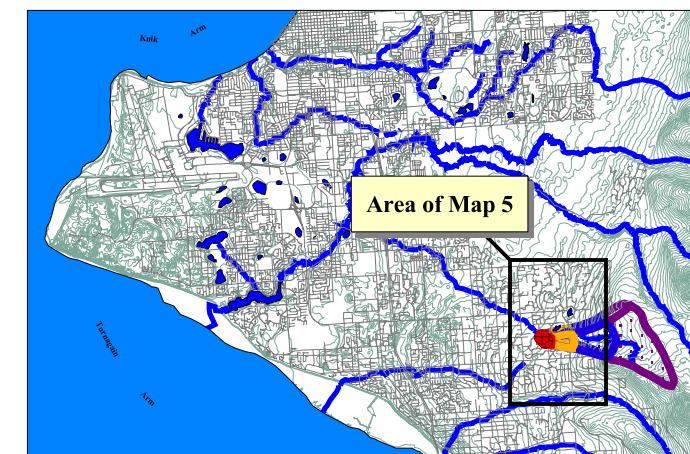
PWSID 213598

*Map 4*

# Drinking Water Protection Area for Alpine Woods Backup Well #3 and Potential & Existing Contaminant Sources



- Alpine Woods Backup Well #3
- Zone A Protection Area**
- Several Months Travel Time
- Zone B Protection Area**
- Less Than 2 Years Travel Time
- Zone C Protection Area**
- Less Than 5 Years Travel Time
- Zone D Protection Area**
- Less Than 10 Years Travel Time
- MOA Land Parcels
- Residential Areas (R1)
- Roads (X20)
- - - Trails (X46)
- 12" Pipeline (X42)
- MOA Lakes
- Anchorage Streams
- Elevation Contours

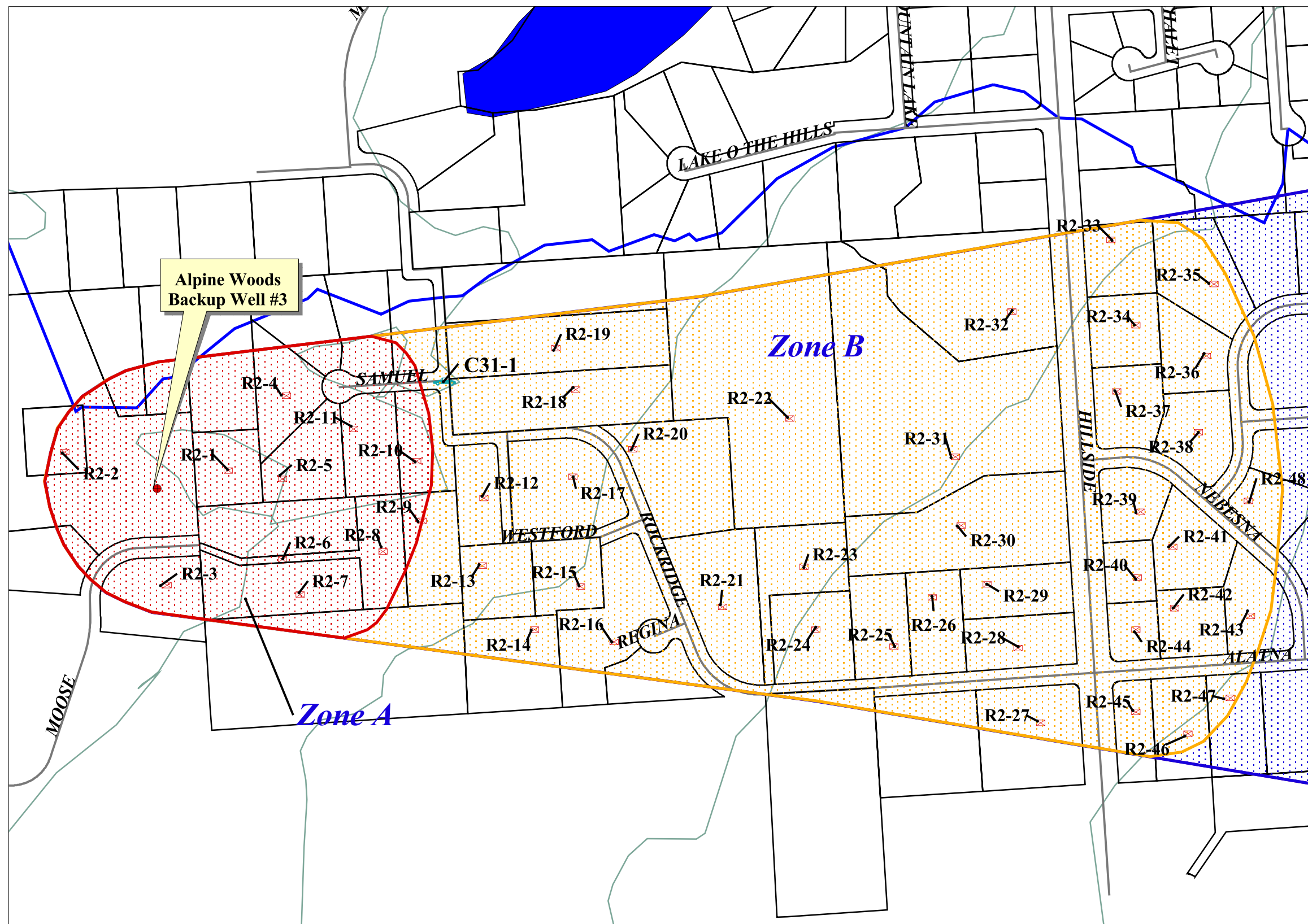


1000 0 1000 Feet

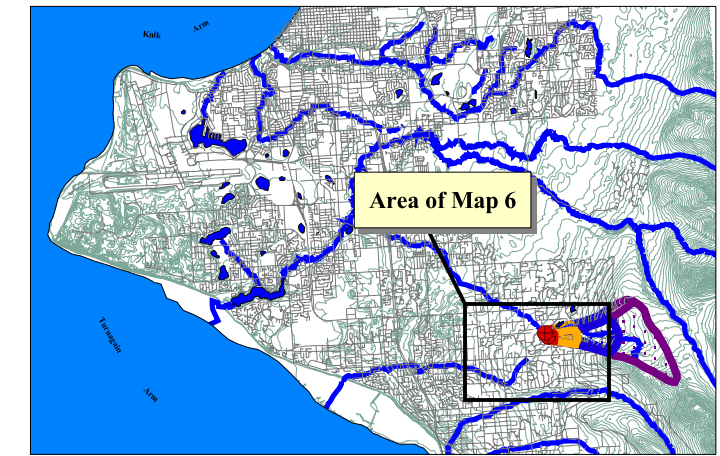
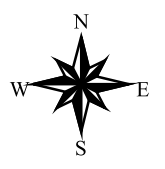
PWSID 213598

*Map 5*

# Drinking Water Protection Area for Alpine Woods Backup Well #3 and Potential & Existing Contaminant Sources



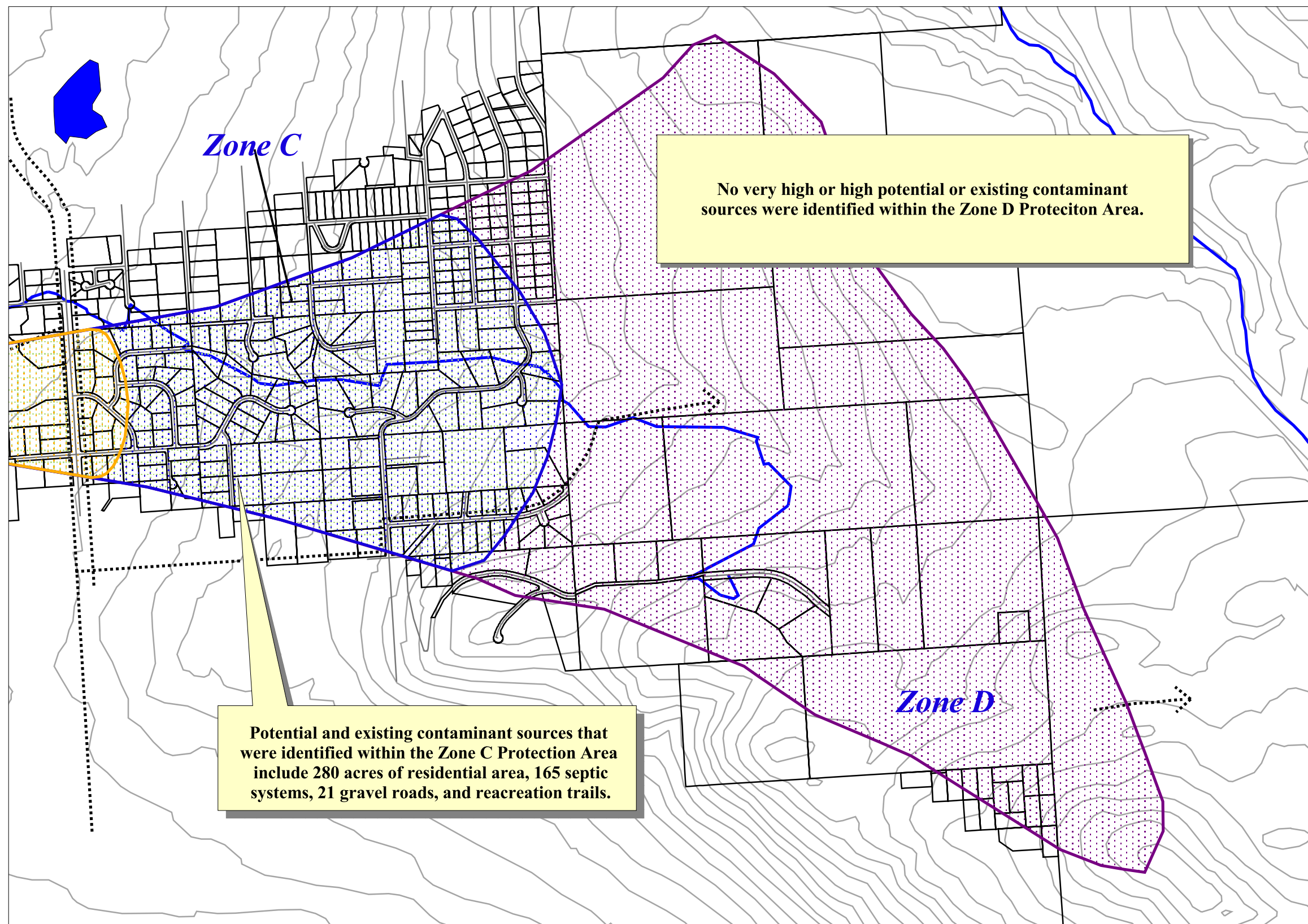
- Alpine Woods Backup Well #3
- Zone A Protection Area
  - Several Months Travel Time
- Zone B Protection Area
  - Less Than 2 Years Travel Time
- Zone C Protection Area
  - Less Than 5 Years Travel Time
- Zone D Protection Area
  - Less Than 10 Years Travel Time
- MOA Land Parcels
- Potential Contaminant Sources
  - 🚗 Motor/motor vehicle repair shops (C31)
  - 🏠 Septic Systems (R2)
  - 🛣️ Roads (X20)
  - 🌊 MOA Lakes
  - 🌊 Anchorage Streams
  - 🏞️ Elevation Contours



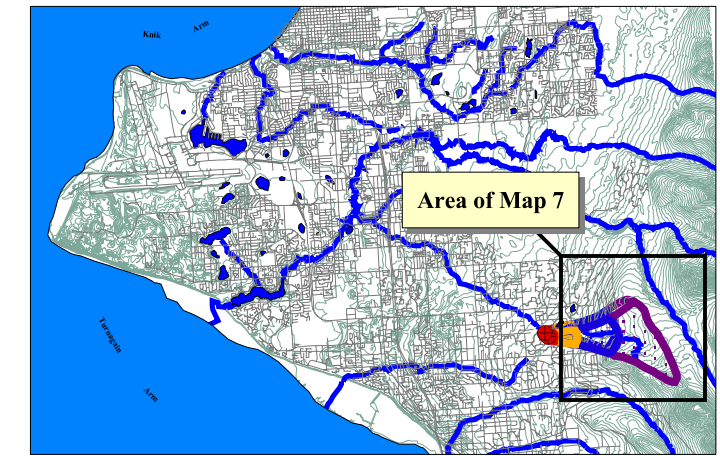
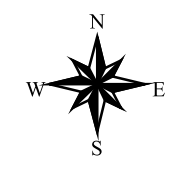
PWSID 213598

*Map 6*

# Drinking Water Protection Area for Alpine Woods Backup Well #3 and Potential & Existing Contaminant Sources



- Alpine Woods Backup Well #3
- Zone A Protection Area**
- Several Months Travel Time
- Zone B Protection Area**
- Less Than 2 Years Travel Time
- Zone C Protection Area**
- Less Than 5 Years Travel Time
- Zone D Protection Area**
- Less Than 10 Years Travel Time
- MOA Land Parcels
- Residential Areas (R1)
- Roads (X20)
- - Trails (X46)
- MOA Lakes
- Anchorage Streams
- Elevation Contours



4000 0 4000 Feet

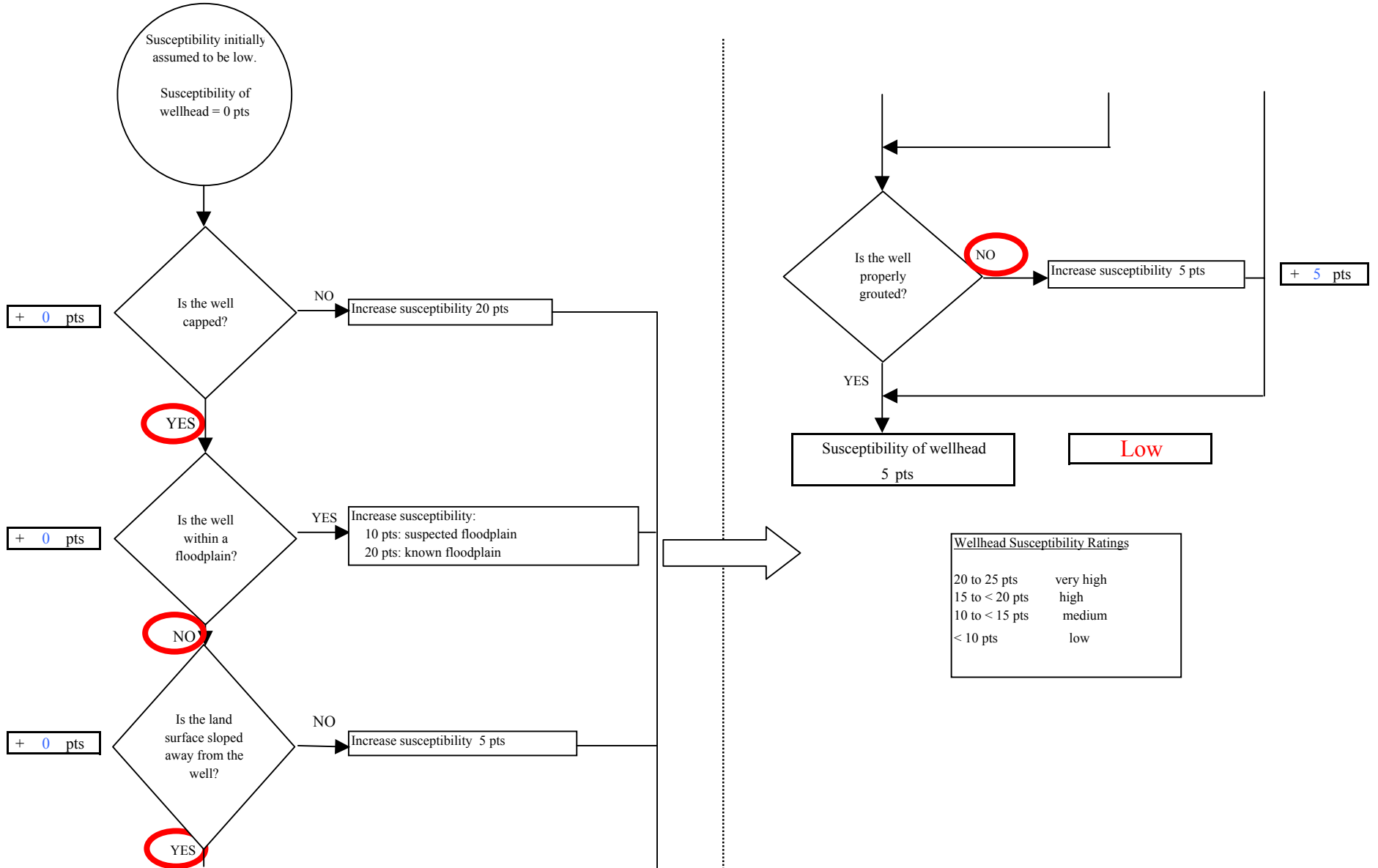
PWSID 213598

*Map 7*

## **APPENDIX E**

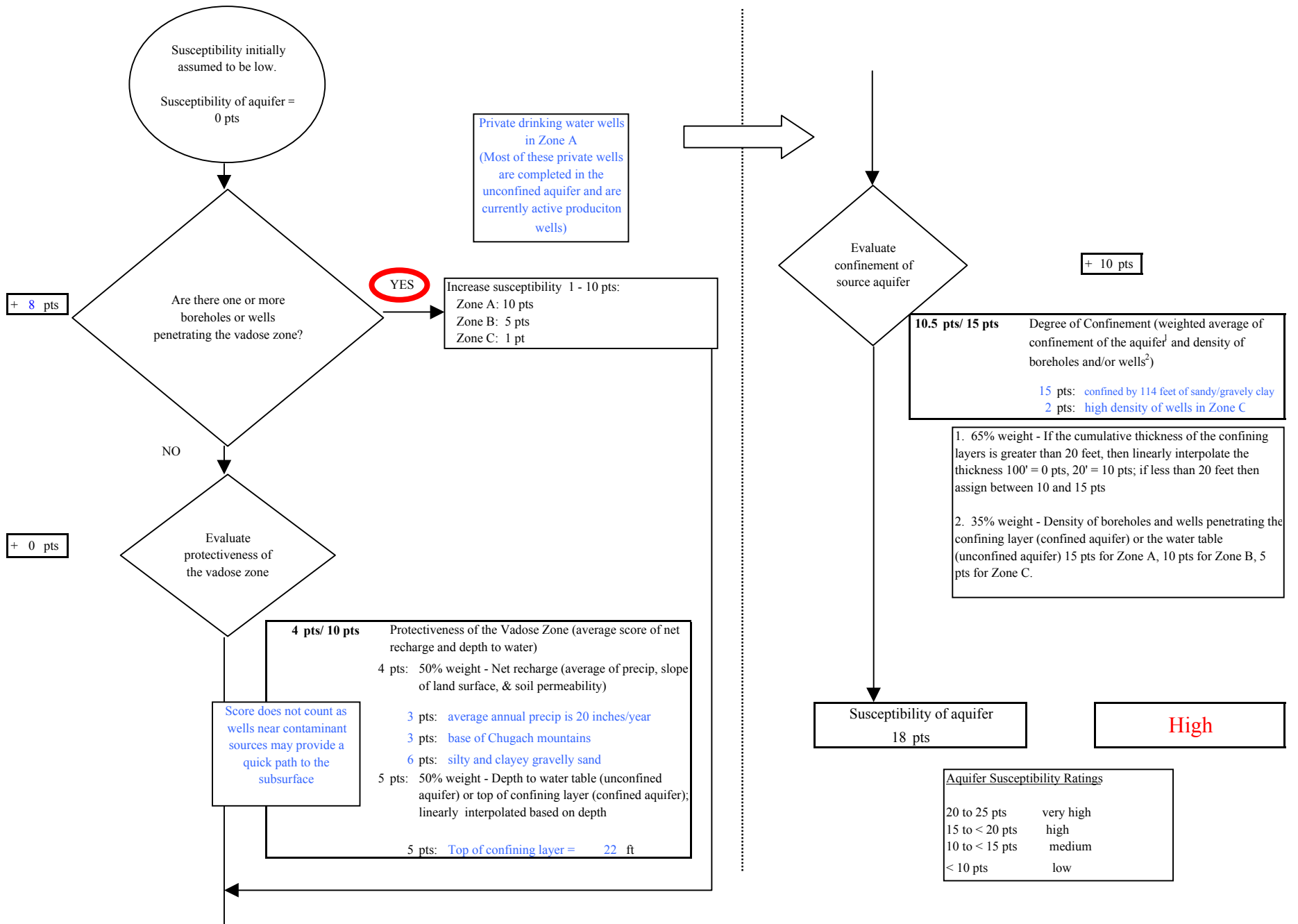
### **Vulnerability Analysis for Alpine Woods Primary Well**

**Chart 1. Susceptibility of the wellhead - Alpine Woods Primary Well**

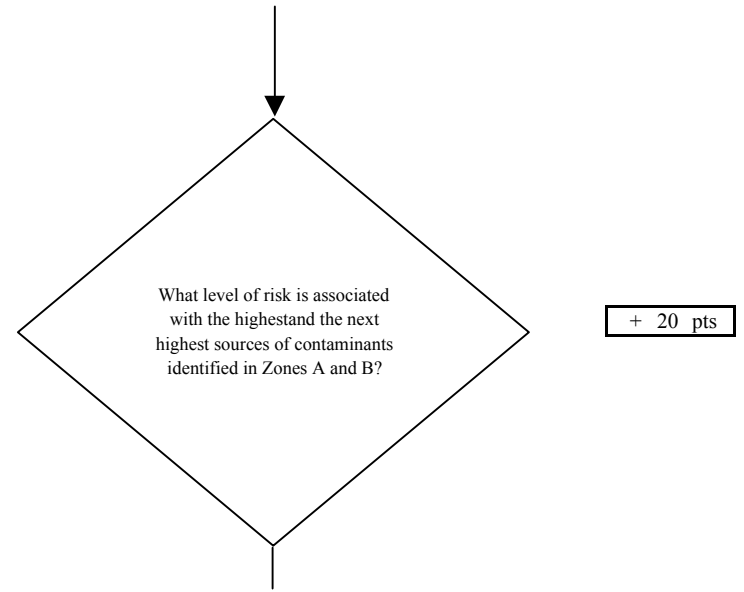
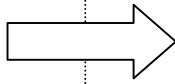
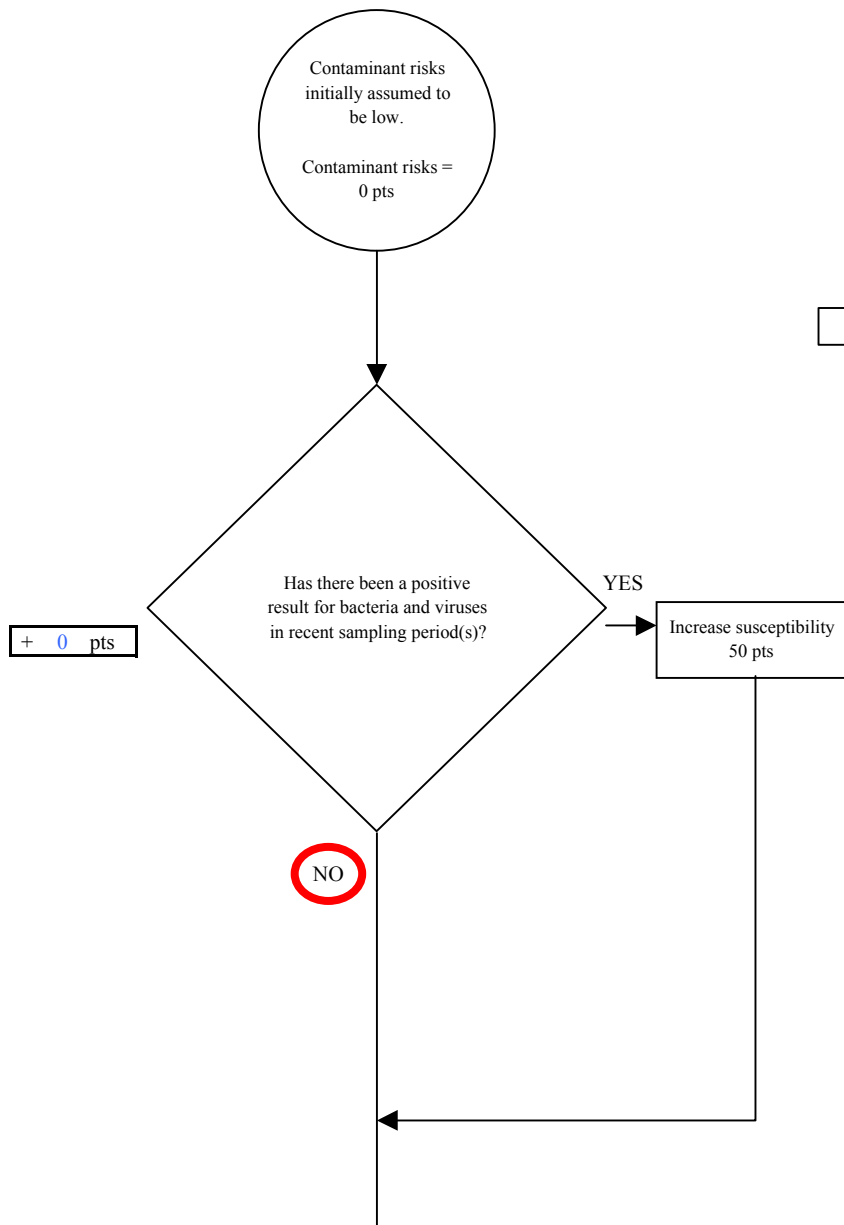




**Chart 2. Susceptibility of the aquifer - Alpine Woods Primary Well**



**Chart 3. Contaminant risks for Alpine Woods Primary Well - Bacteria & Viruses**



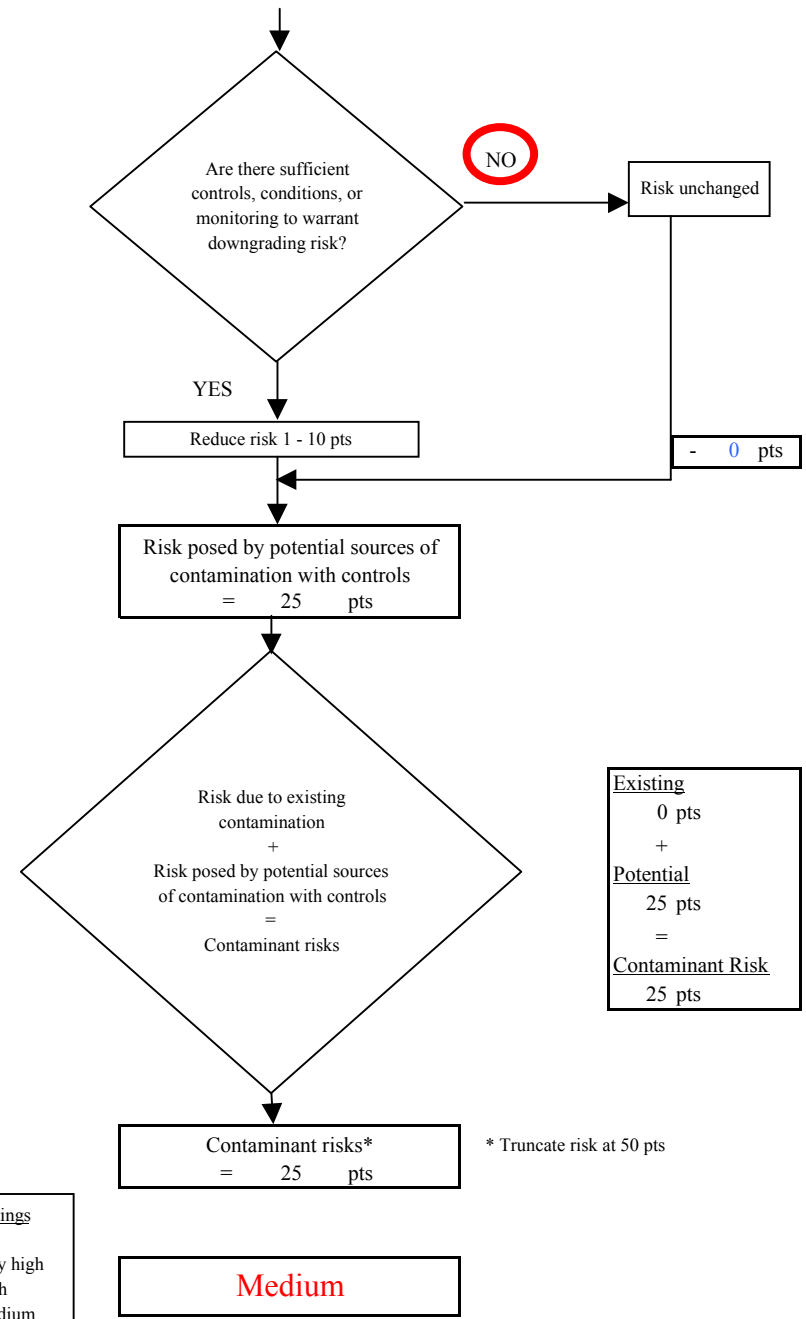
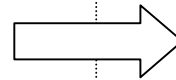
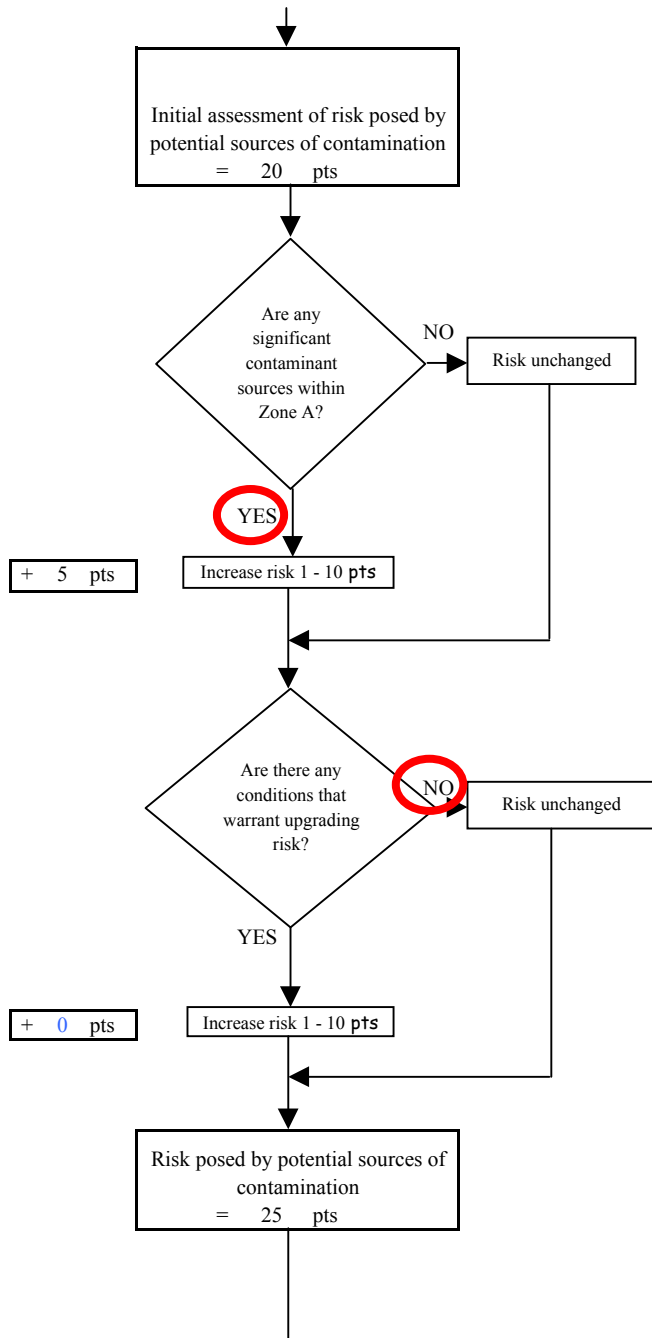
Risk Rankings for Contaminant Sources Identified in Zones A and B			
	Zone A	Zone B	Total
Very High(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	0	0
Low(s)	16	8	24

	<b>LOW</b> 10 pts	<b>MEDIUM</b> 20 pts	<b>HIGH</b> 30 pts	<b>VERY HIGH</b> 40 pts
<b>LOW</b>	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
<b>MEDIUM</b>	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
<b>HIGH</b>	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
<b>VERY HIGH</b>	----	----	----	≥ 1 source + 10 pts

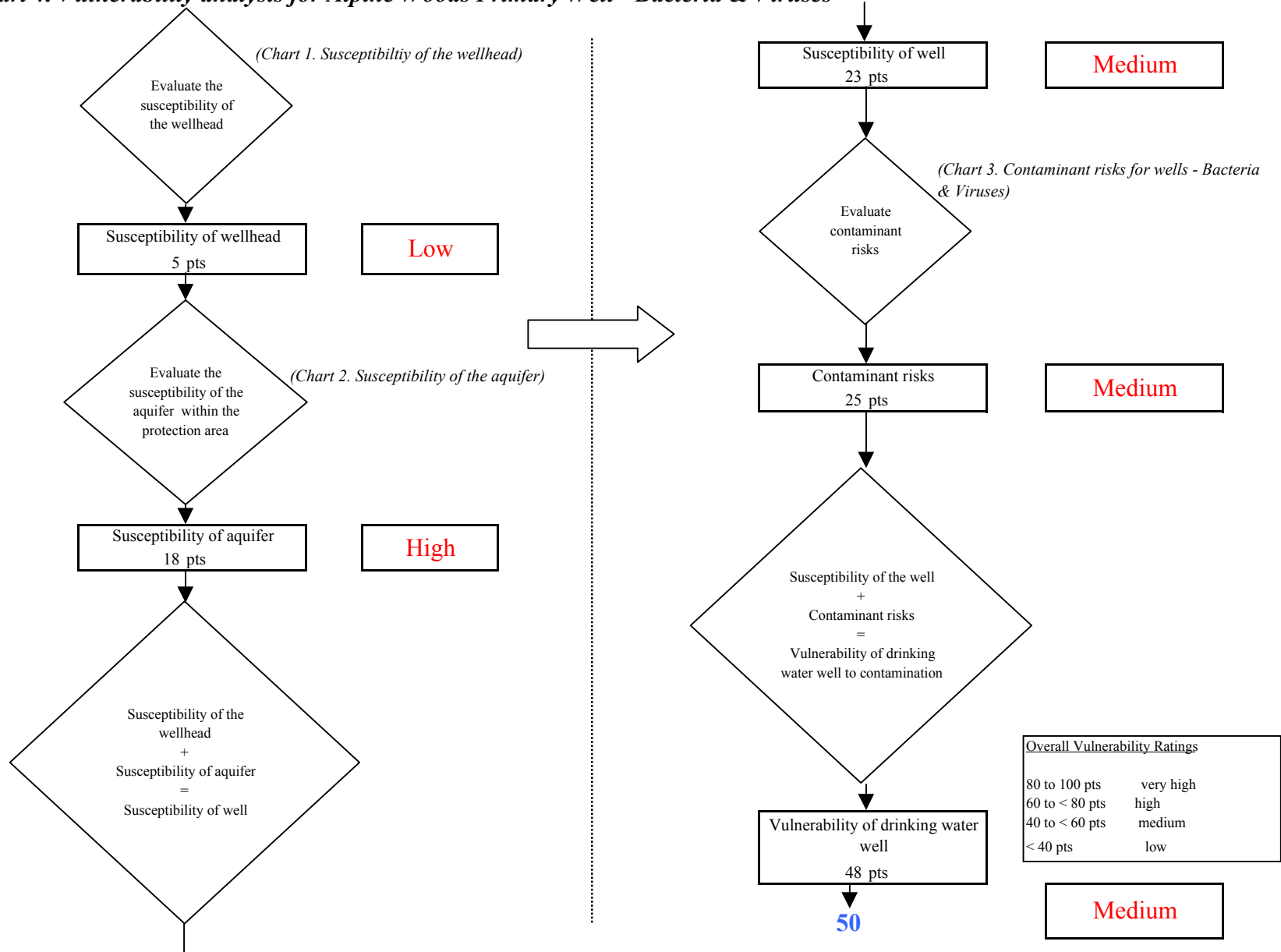
Matrix Score 20

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.

**Chart 3. Contaminant risks for Alpine Woods Primary Well - Bacteria & Viruses**



**Chart 4. Vulnerability analysis for Alpine Woods Primary Well - Bacteria & Viruses**



**Chart 5. Contaminant risks for Alpine Woods Primary Well - Nitrates and Nitrites**

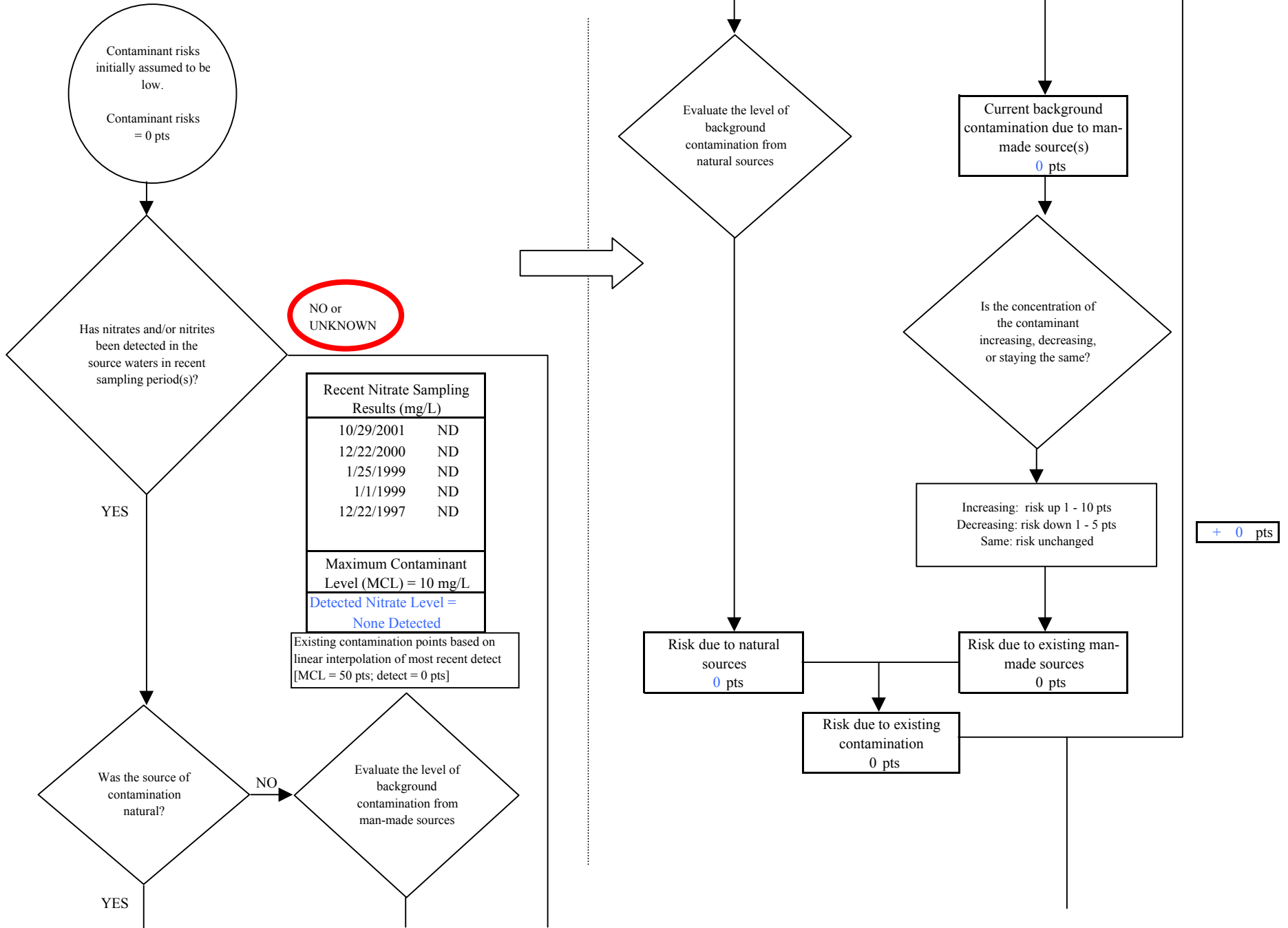
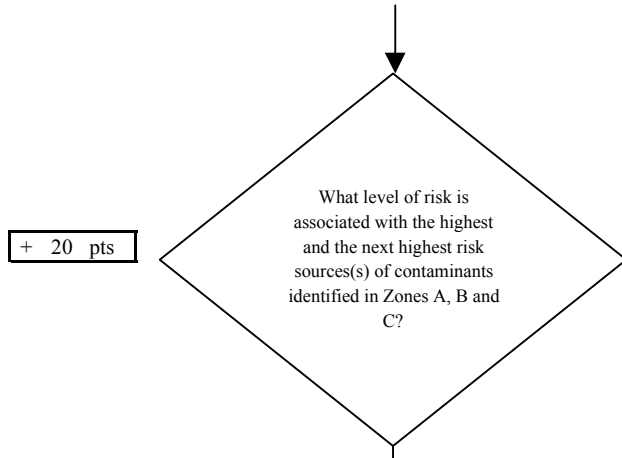


Chart 5. Contaminant risks for Alpine Woods Primary Well - Nitrates and Nitrites

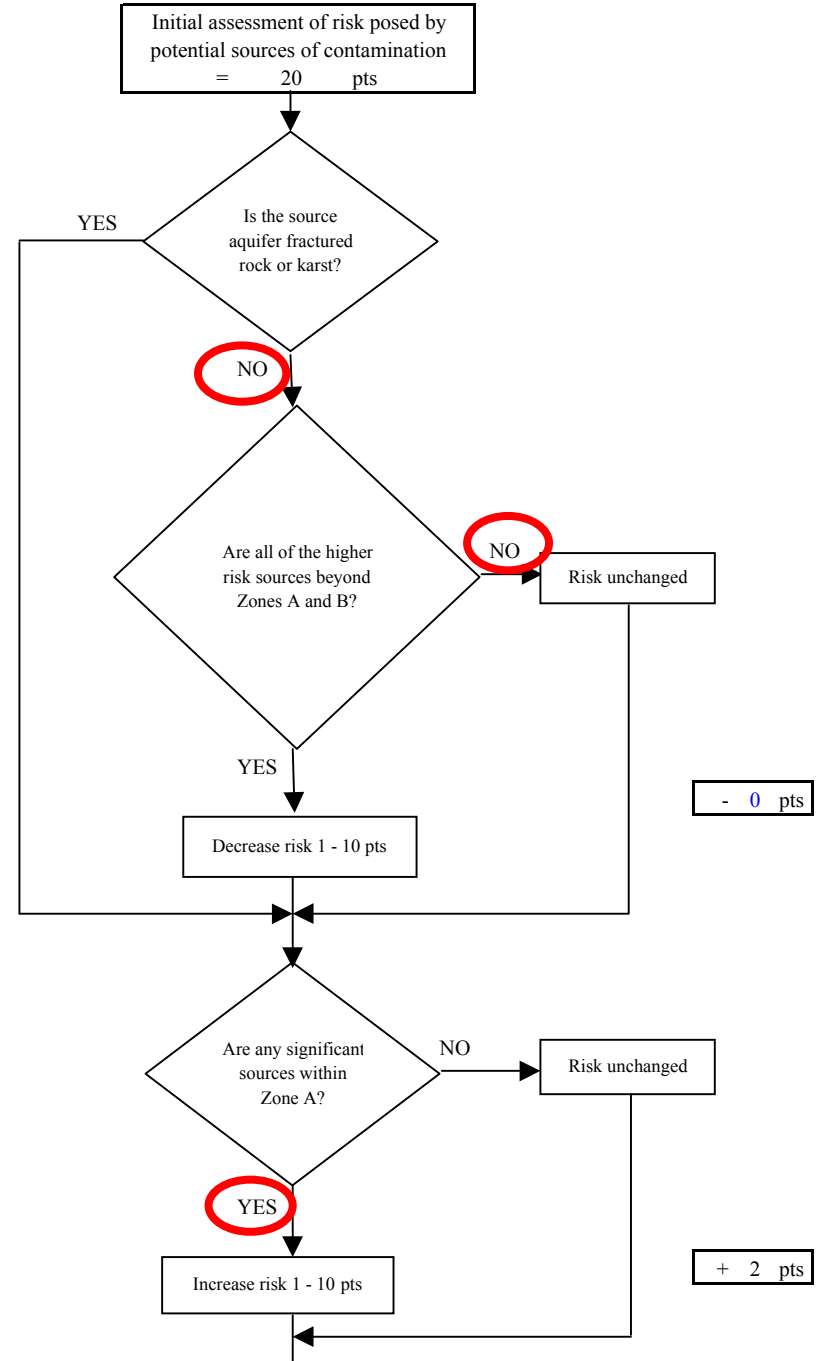
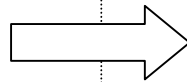


Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	0	0
Low(s)	2	20	22

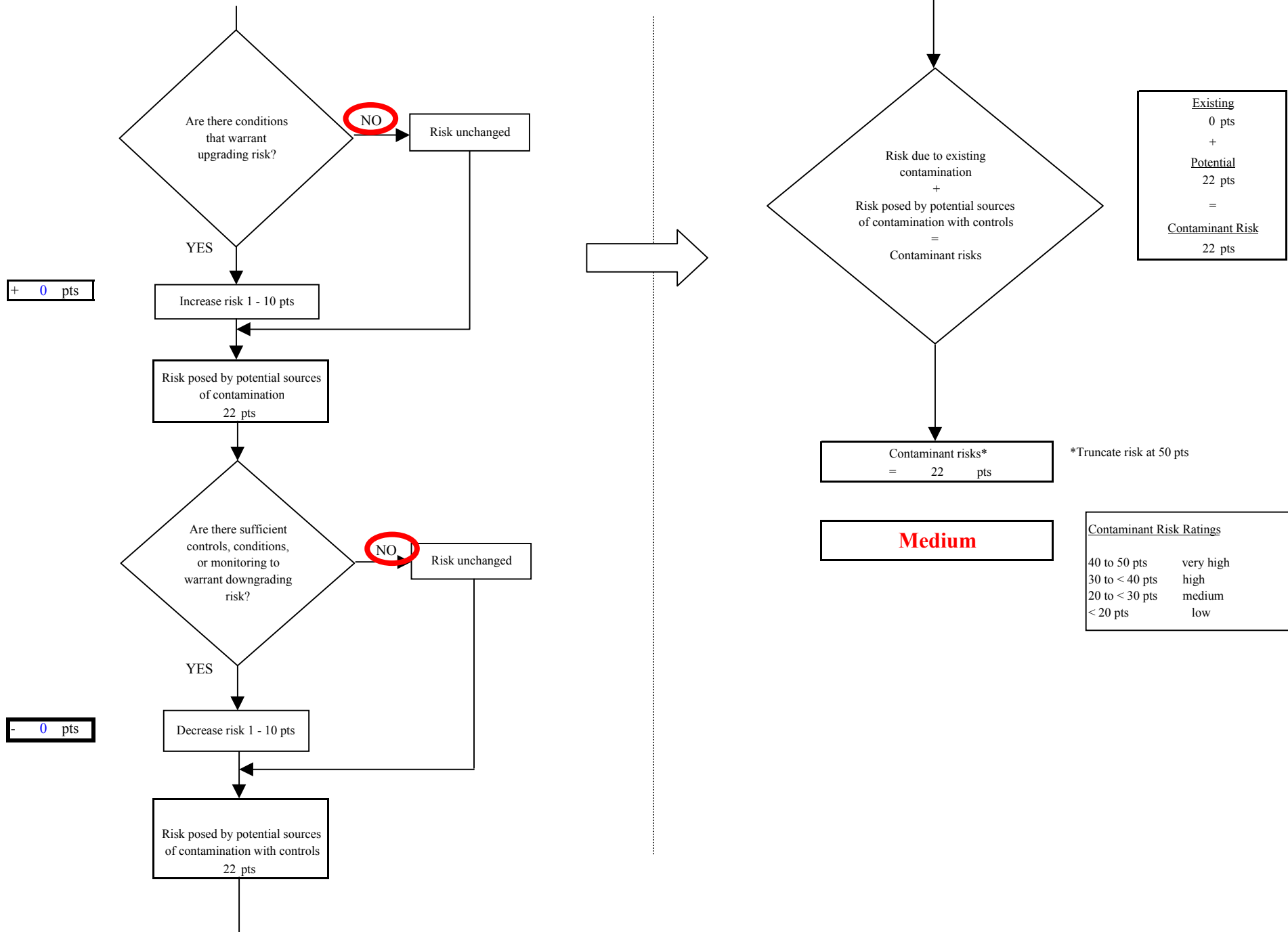
	LOW 10 pts	MEDIUM 20 pts	HIGH 30 pts	VERY HIGH 40 pts
LOW	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
MEDIUM	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
HIGH	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
VERY HIGH	----	----	----	≥ 1 source + 10 pts

Matrix Score      20

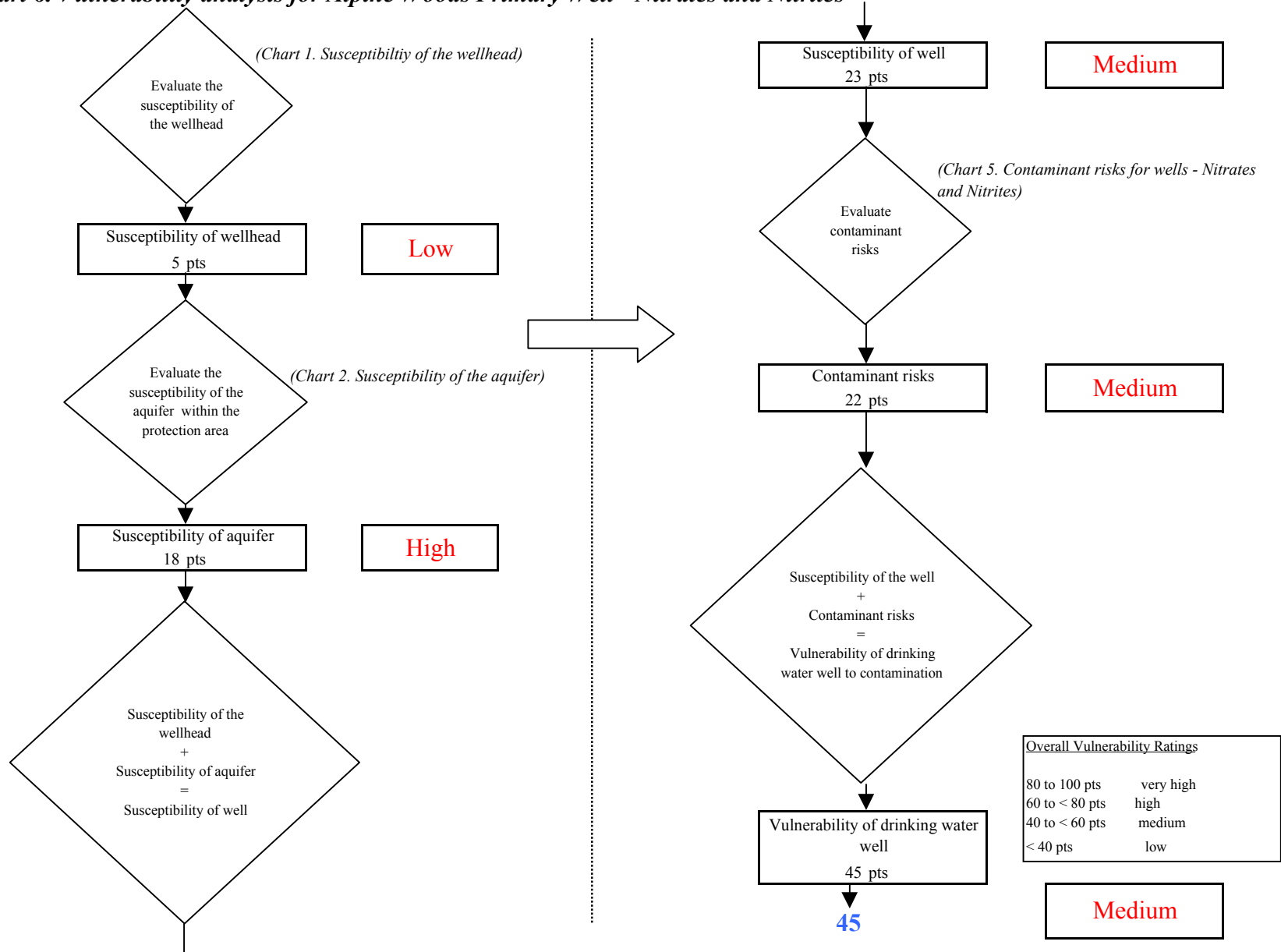
Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.



**Chart 5. Contaminant risks for Alpine Woods Primary Well - Nitrates and Nitrites**

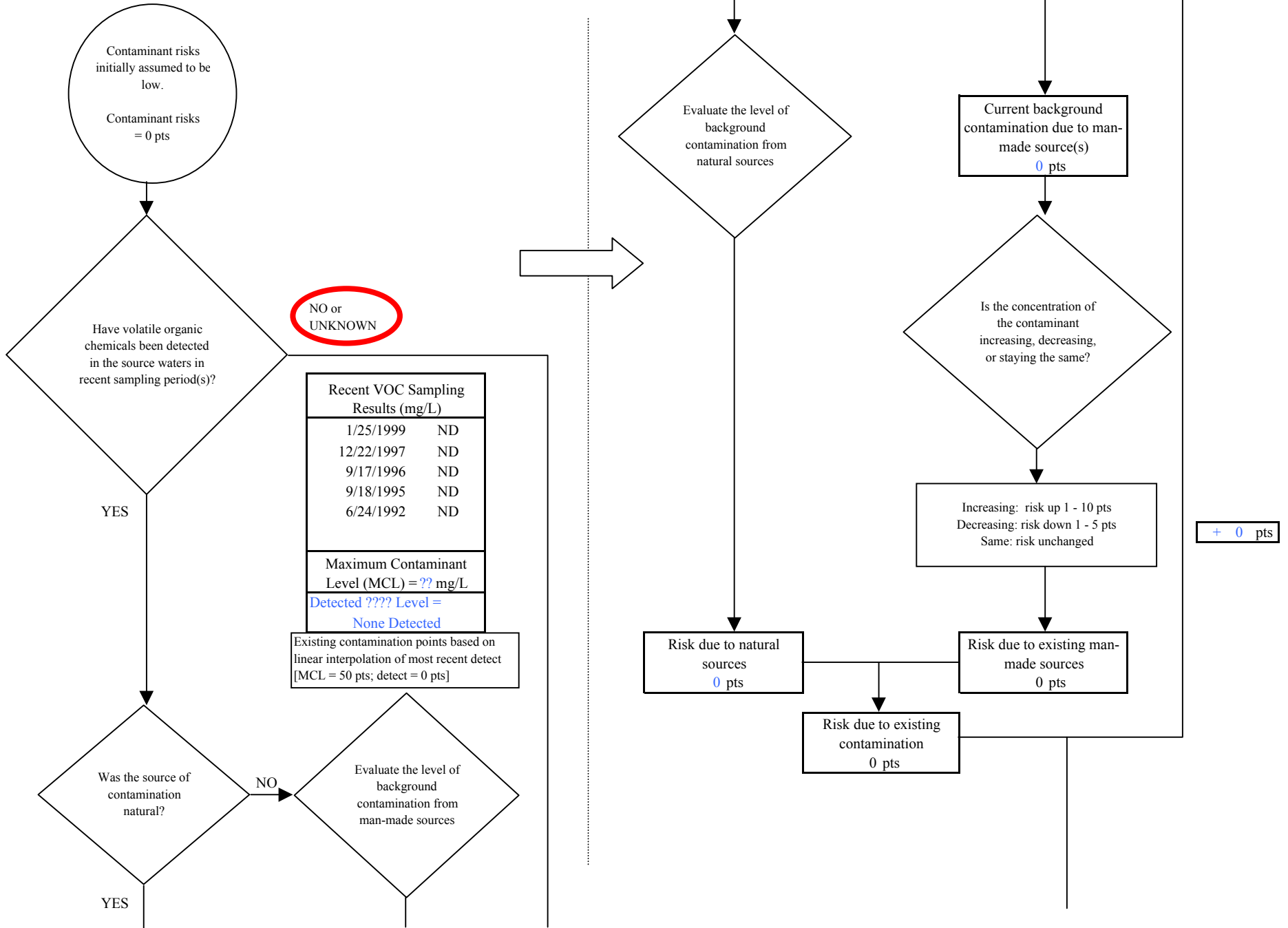


**Chart 6. Vulnerability analysis for Alpine Woods Primary Well - Nitrates and Nitrites**

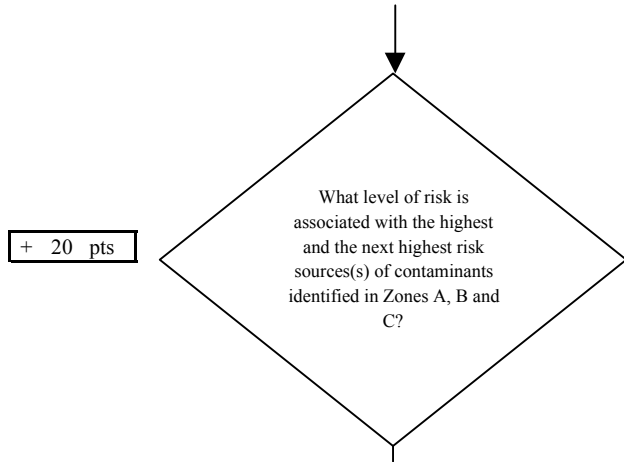




**Chart 7. Contaminant risks for Alpine Woods Primary Well - Volatile Organic Chemicals**



**Chart 7. Contaminant risks for Alpine Woods Primary Well - Volatile Organic Chemicals**

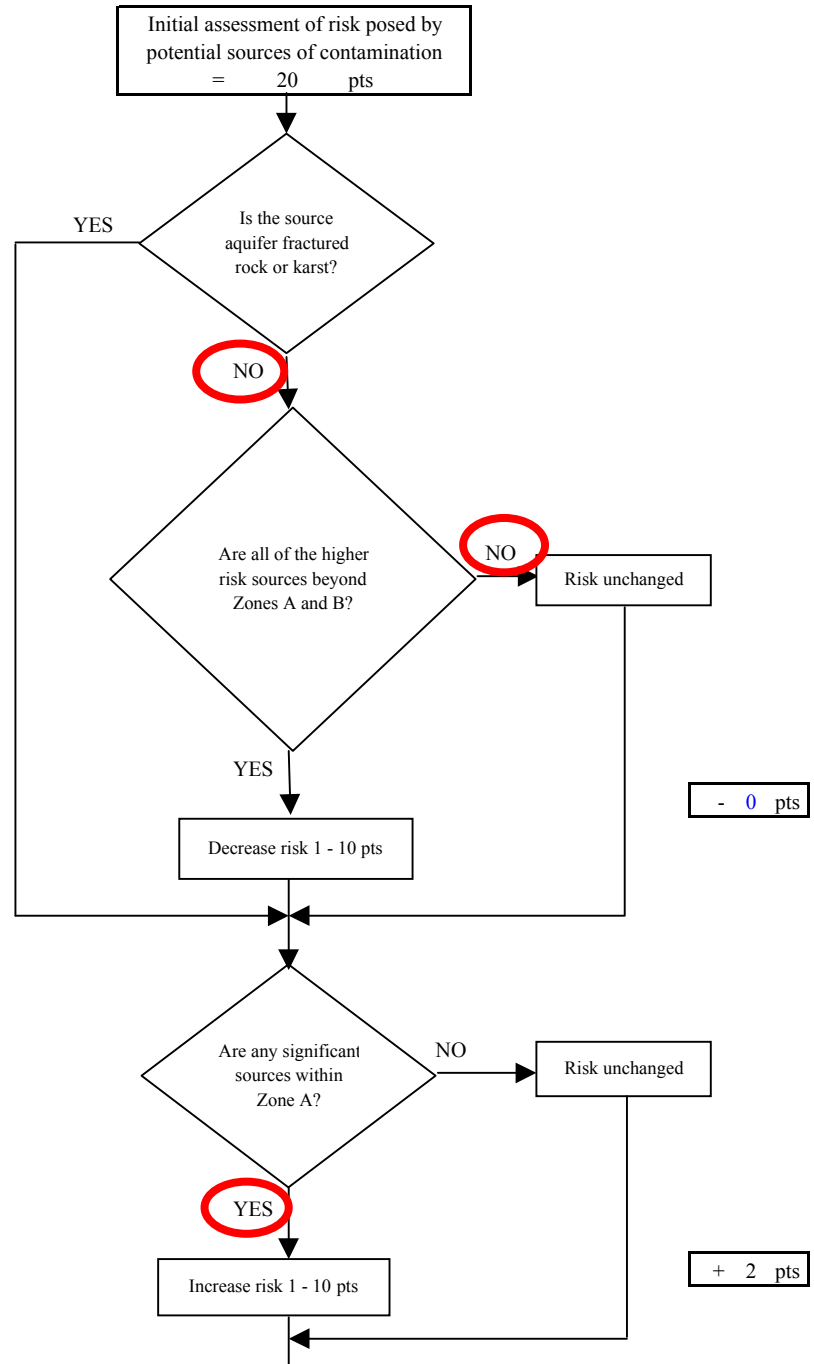
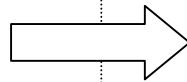


Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	1	1
Low(s)	2	5	7

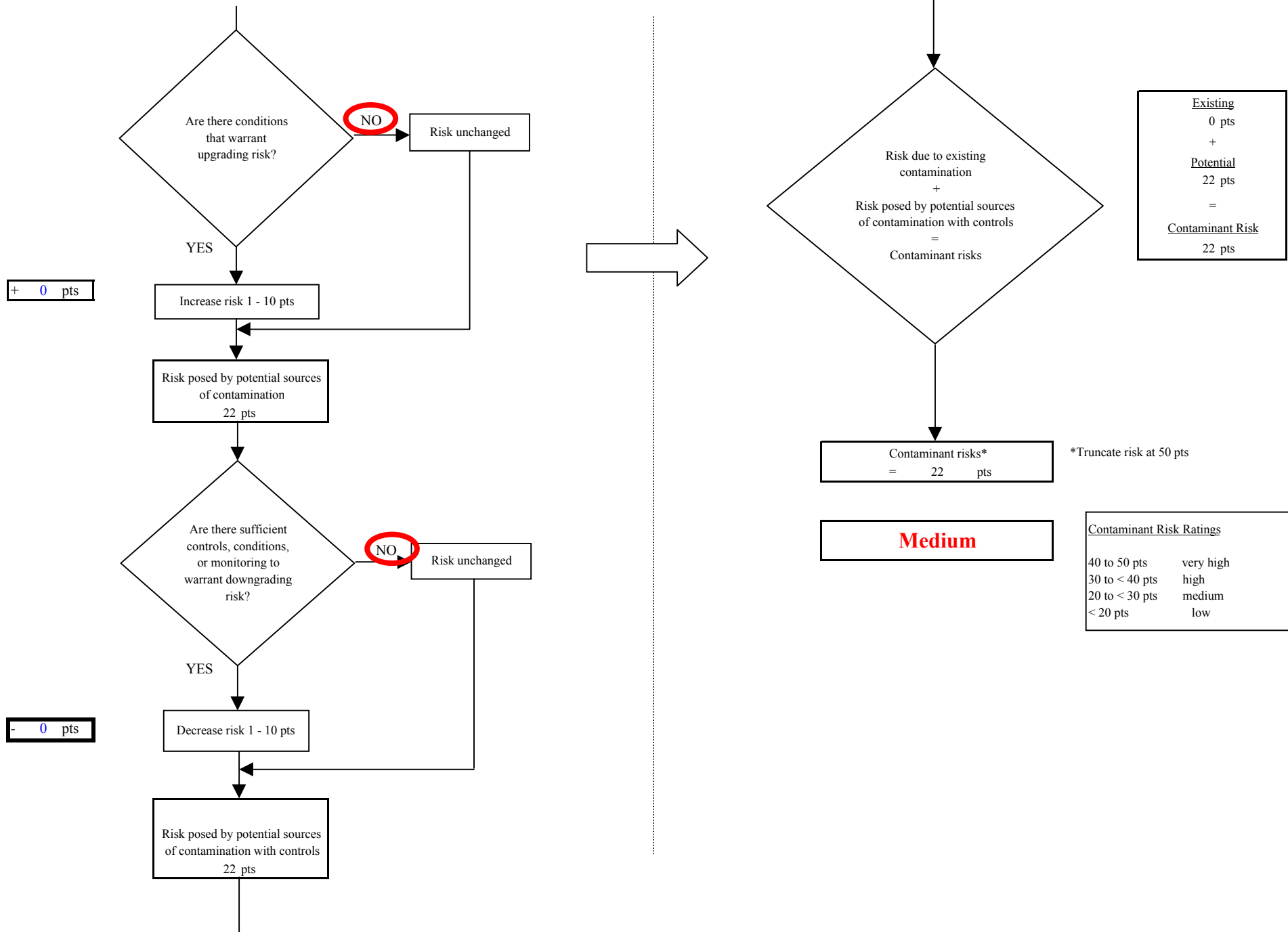
	LOW 10 pts	<b>MEDIUM 20 pts</b>	HIGH 30 pts	VERY HIGH 40 pts
<b>LOW</b>	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
<b>MEDIUM</b>	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
<b>HIGH</b>	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
<b>VERY HIGH</b>	----	----	----	≥ 1 source + 10 pts

Matrix Score      20

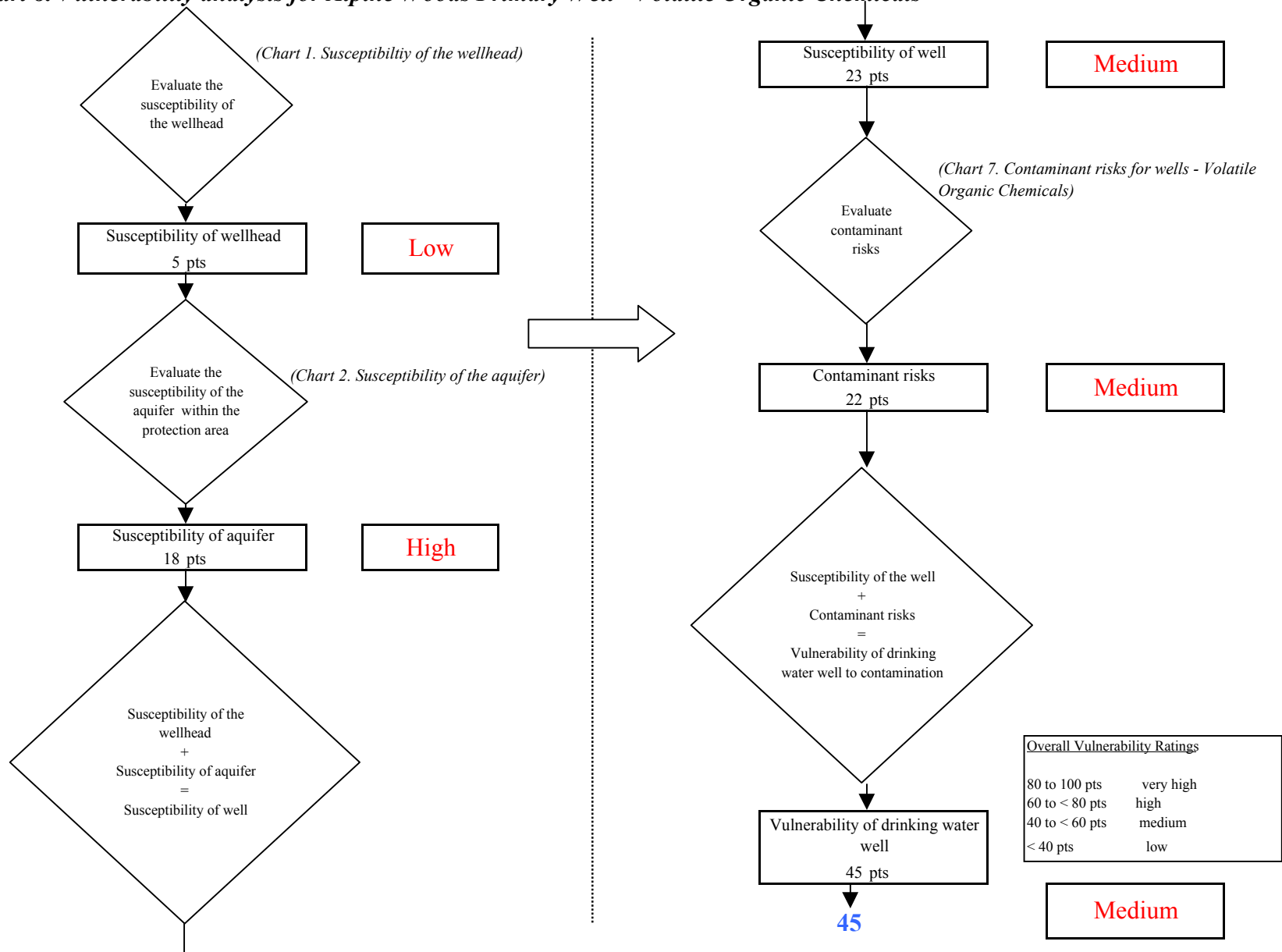
Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.



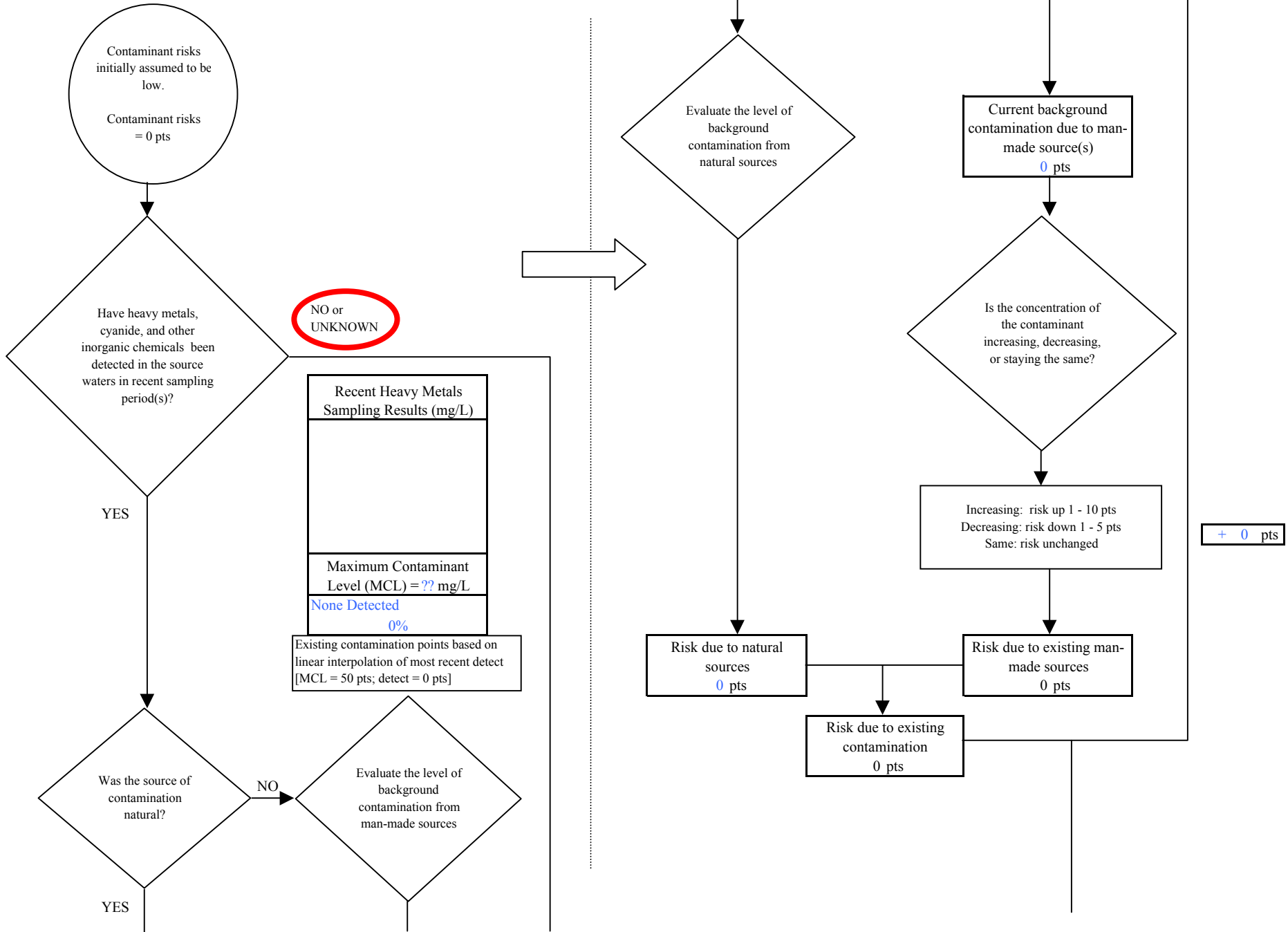
**Chart 7. Contaminant risks for Alpine Woods Primary Well - Volatile Organic Chemicals**



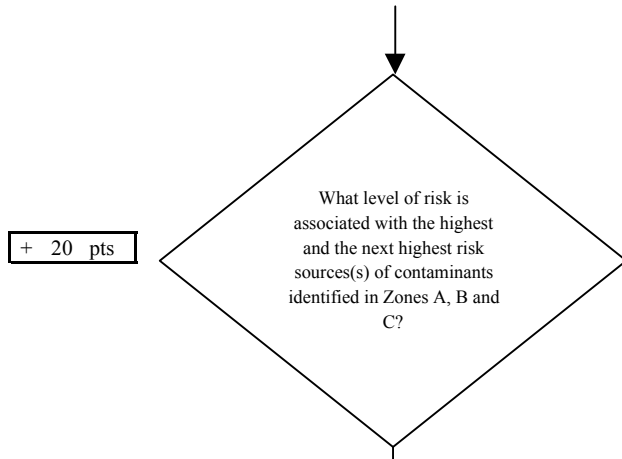
**Chart 8. Vulnerability analysis for Alpine Woods Primary Well - Volatile Organic Chemicals**



**Chart 9. Contaminant risks for Alpine Woods Primary Well - Heavy Metals, Cyanide and Other Inorganic Chemicals**



**Chart 9. Contaminant risks for Alpine Woods Primary Well - Heavy Metals, Cyanide and Other Inorganic Chemicals**



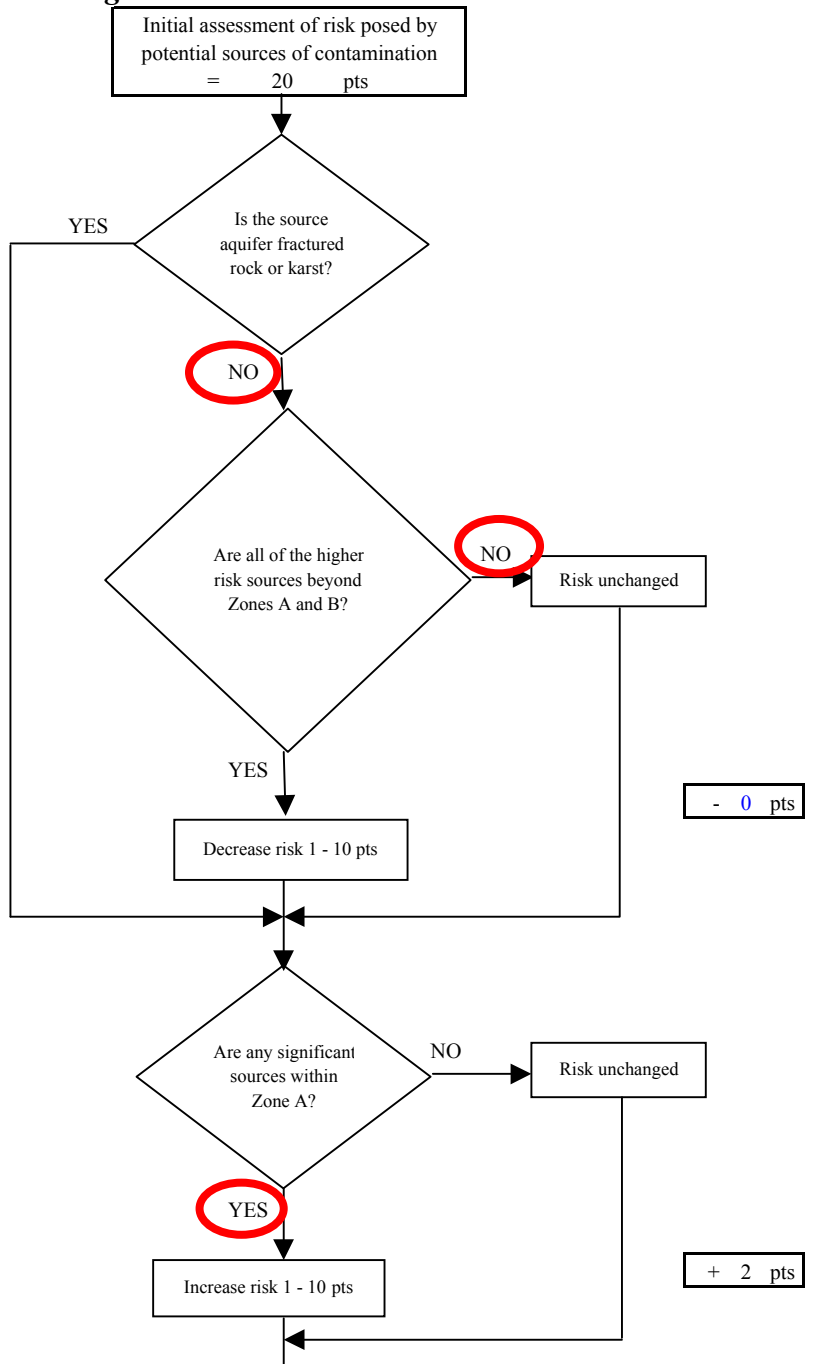
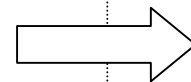
+ 20 pts

Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	1	1
Low(s)	2	4	6

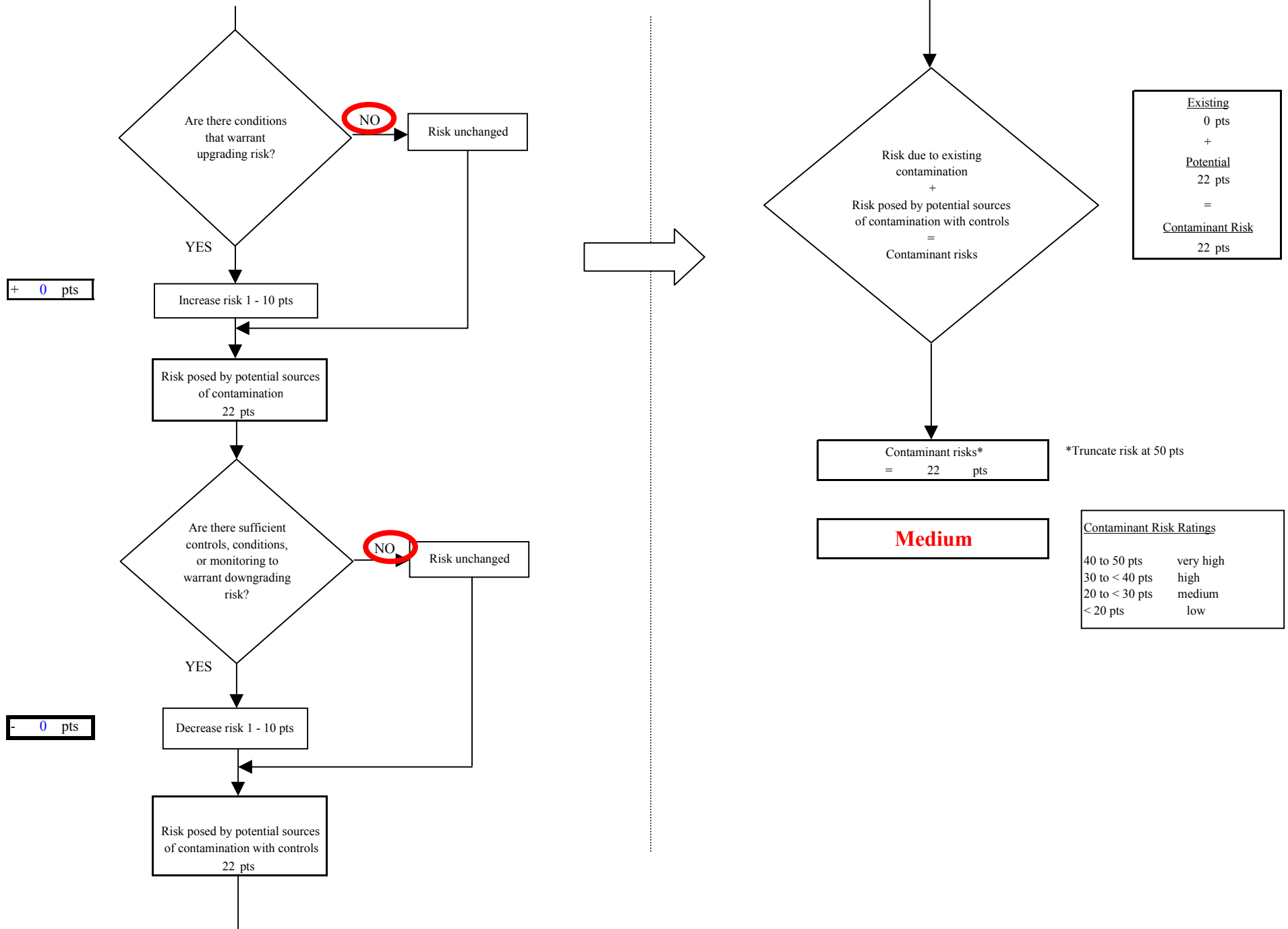
	LOW 10 pts	MEDIUM 20 pts	HIGH 30 pts	VERY HIGH 40 pts
LOW	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
MEDIUM	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
HIGH	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
VERY HIGH	----	----	----	≥ 1 source + 10 pts

Matrix Score 20

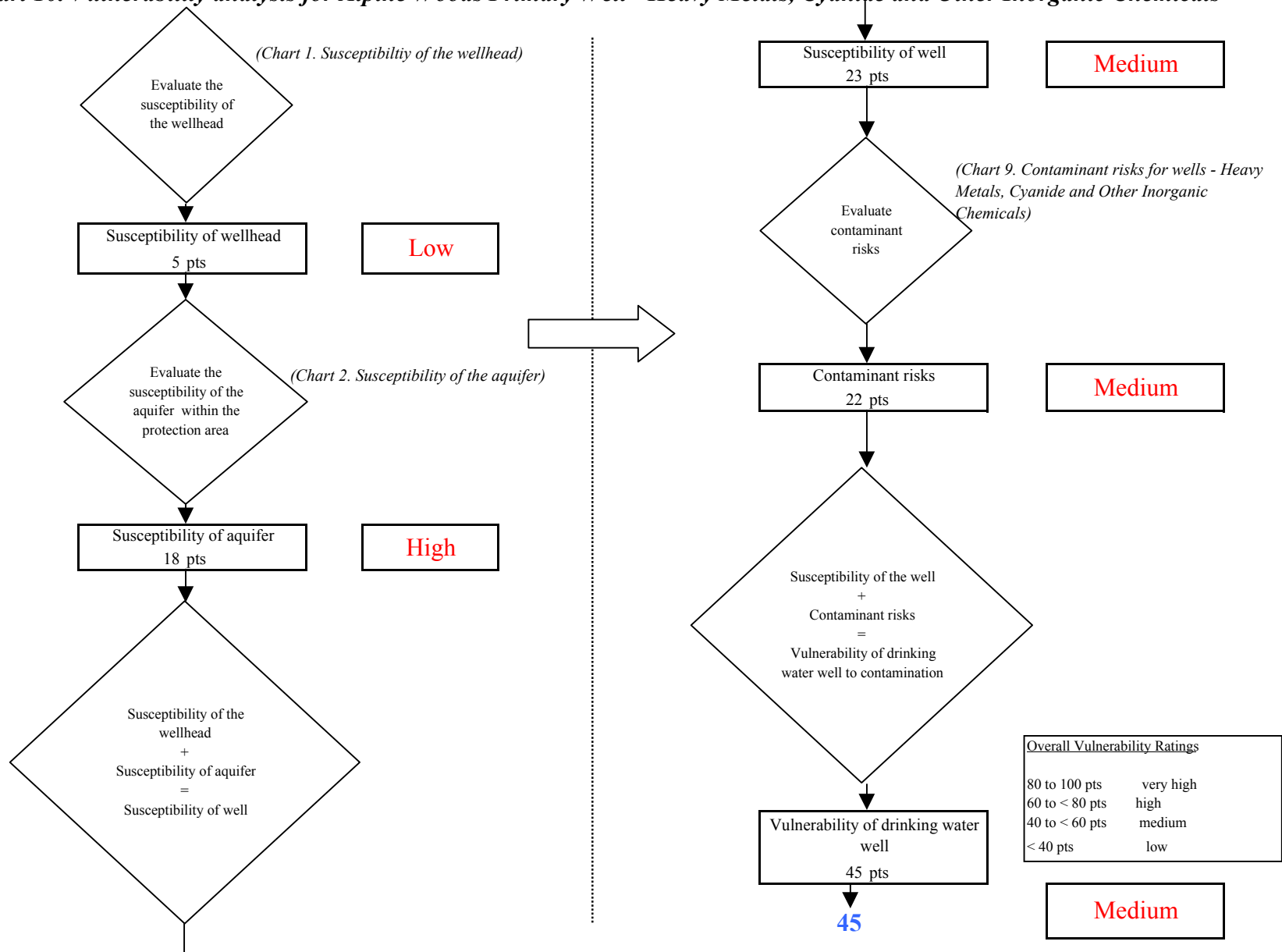
Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.



**Chart 9. Contaminant risks for Alpine Woods Primary Well - Heavy Metals, Cyanide and Other Inorganic Chemicals**

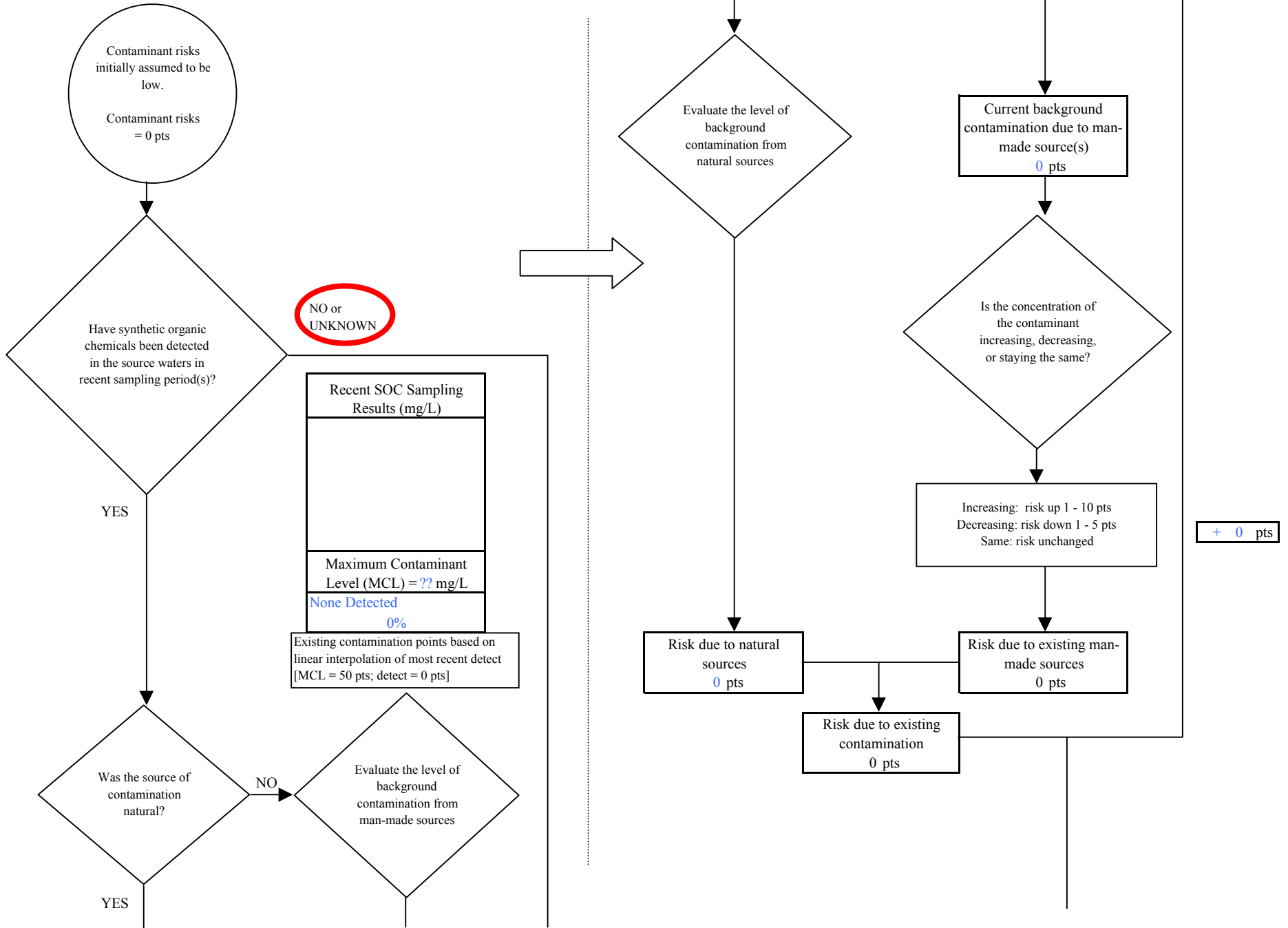


**Chart 10. Vulnerability analysis for Alpine Woods Primary Well - Heavy Metals, Cyanide and Other Inorganic Chemicals**

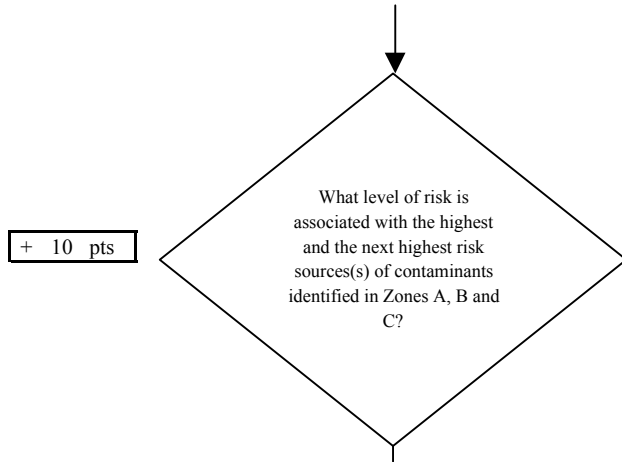




**Chart 11. Contaminant risks for Alpine Woods Primary Well - Synthetic Organic Chemicals**



**Chart 11. Contaminant risks for Alpine Woods Primary Well - Synthetic Organic Chemicals**

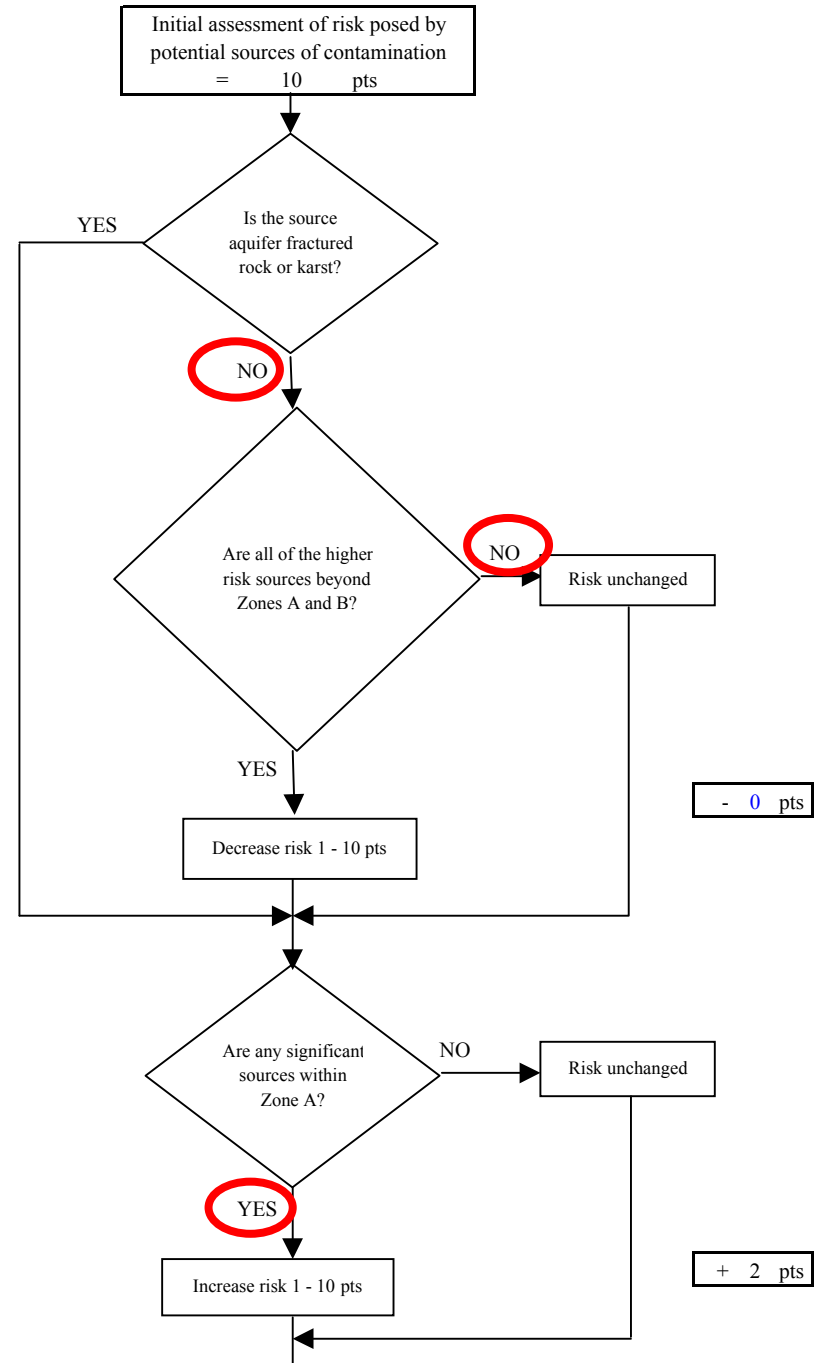
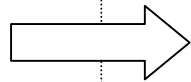


Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	0	0
Low(s)	2	3	5

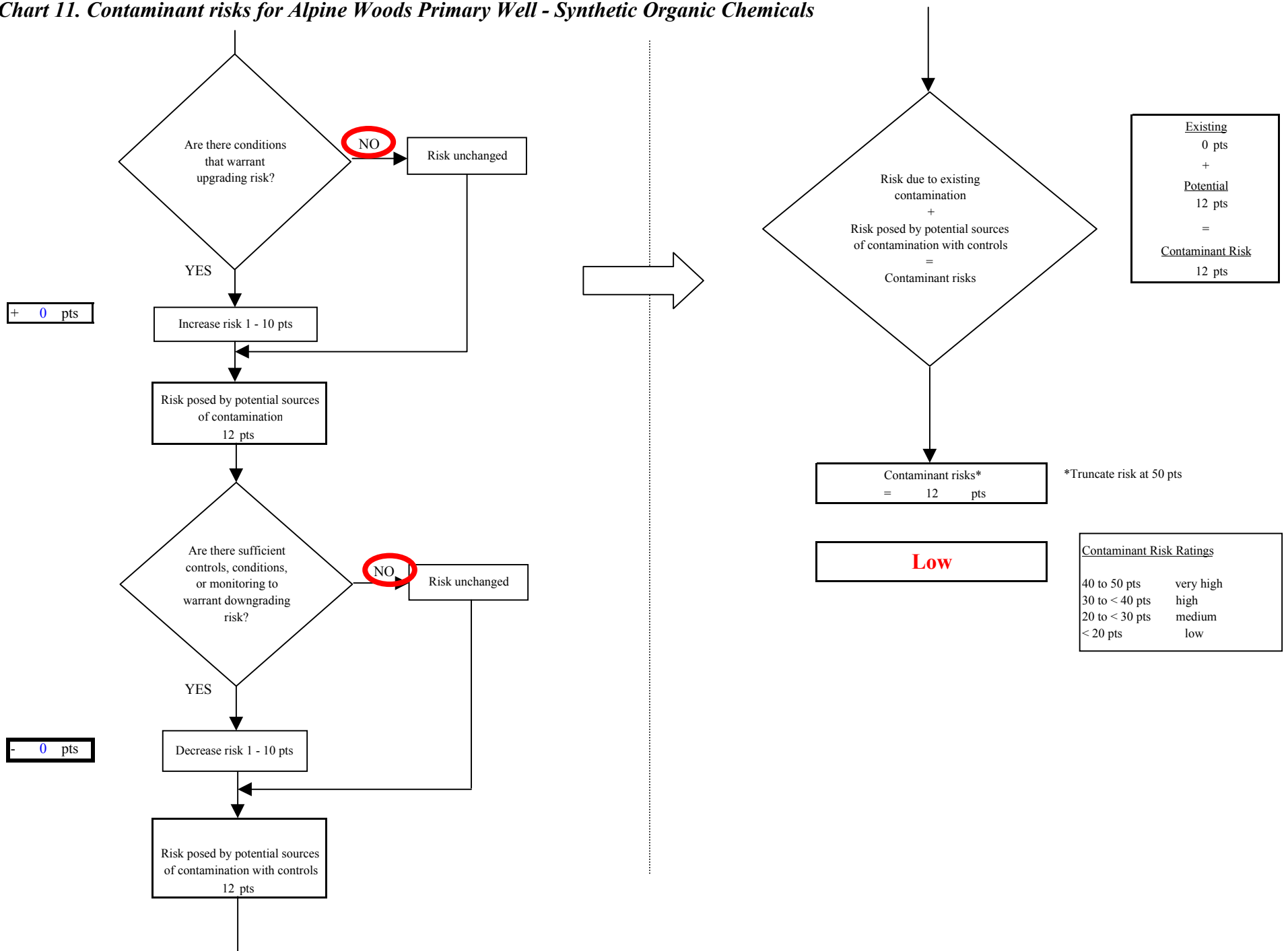
	<b>LOW</b> 10 pts	<b>MEDIUM</b> 20 pts	<b>HIGH</b> 30 pts	<b>VERY HIGH</b> 40 pts
<b>LOW</b>	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
<b>MEDIUM</b>	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
<b>HIGH</b>	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
<b>VERY HIGH</b>	----	----	----	≥ 1 source + 10 pts

Matrix Score      10

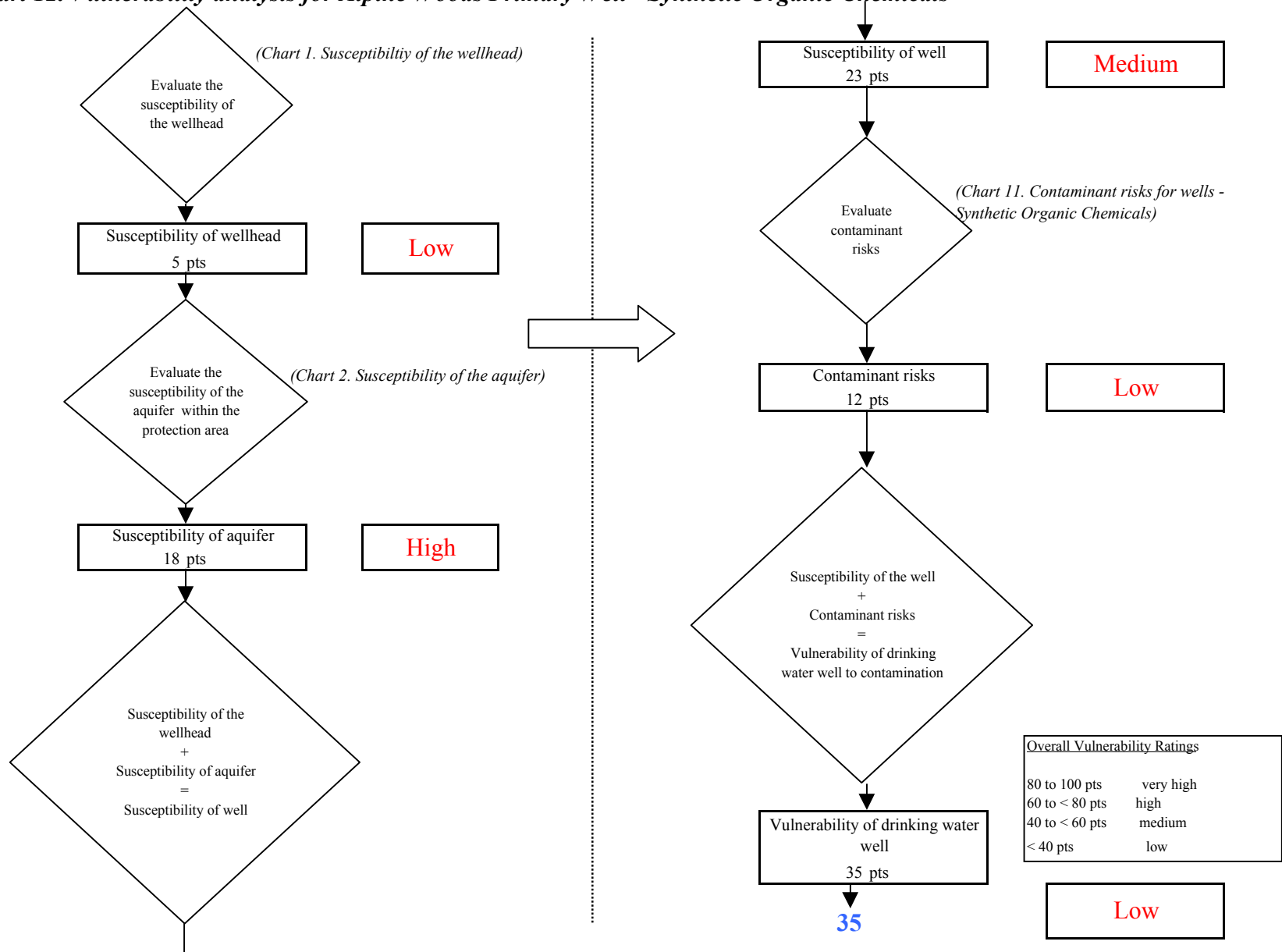
Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.



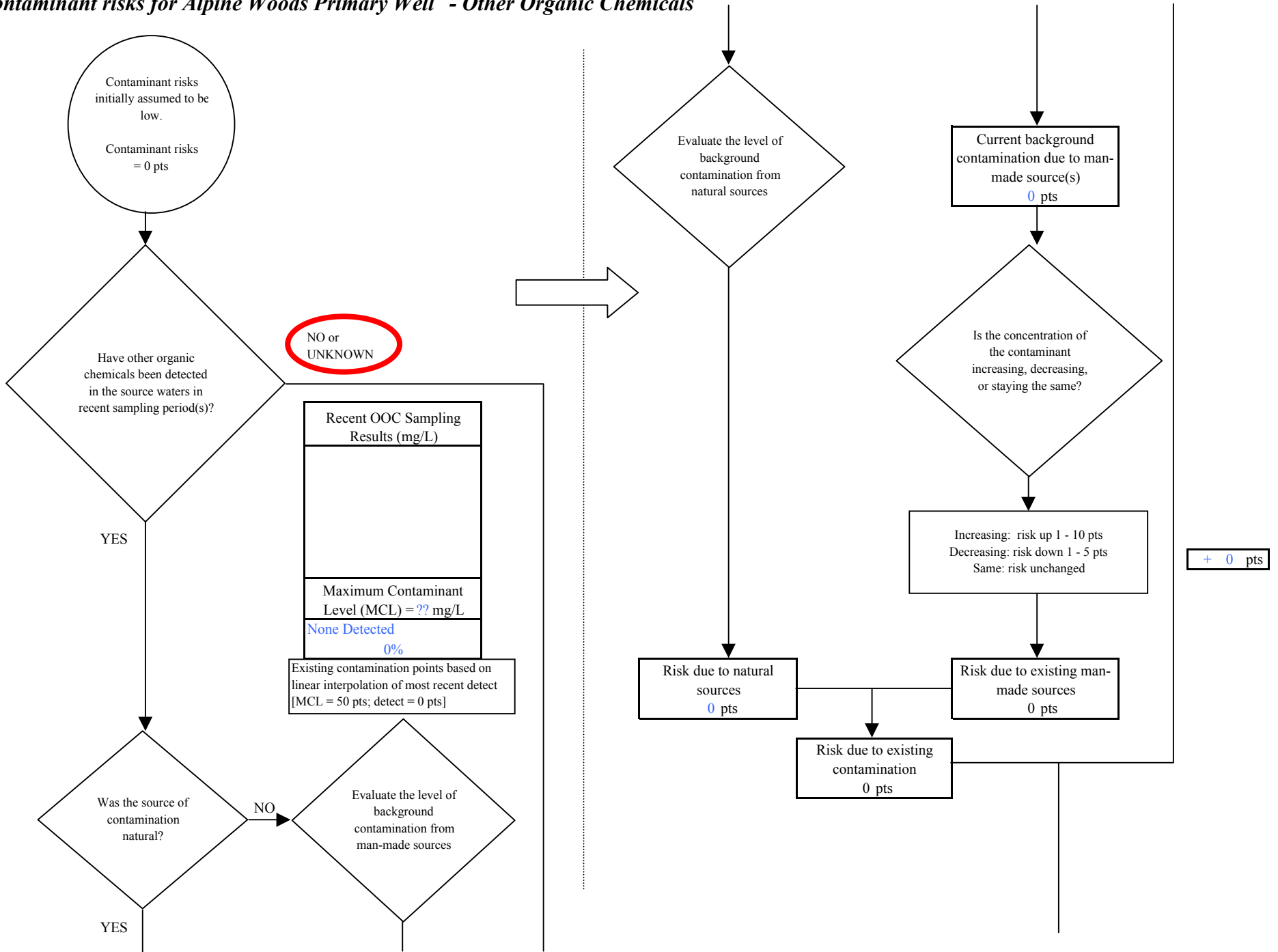
**Chart 11. Contaminant risks for Alpine Woods Primary Well - Synthetic Organic Chemicals**



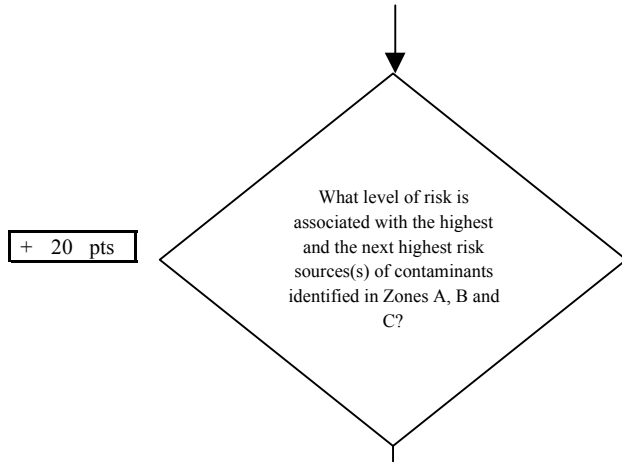
**Chart 12. Vulnerability analysis for Alpine Woods Primary Well - Synthetic Organic Chemicals**



**Chart 13. Contaminant risks for Alpine Woods Primary Well - Other Organic Chemicals**



**Chart 13. Contaminant risks for Alpine Woods Primary Well - Other Organic Chemicals**

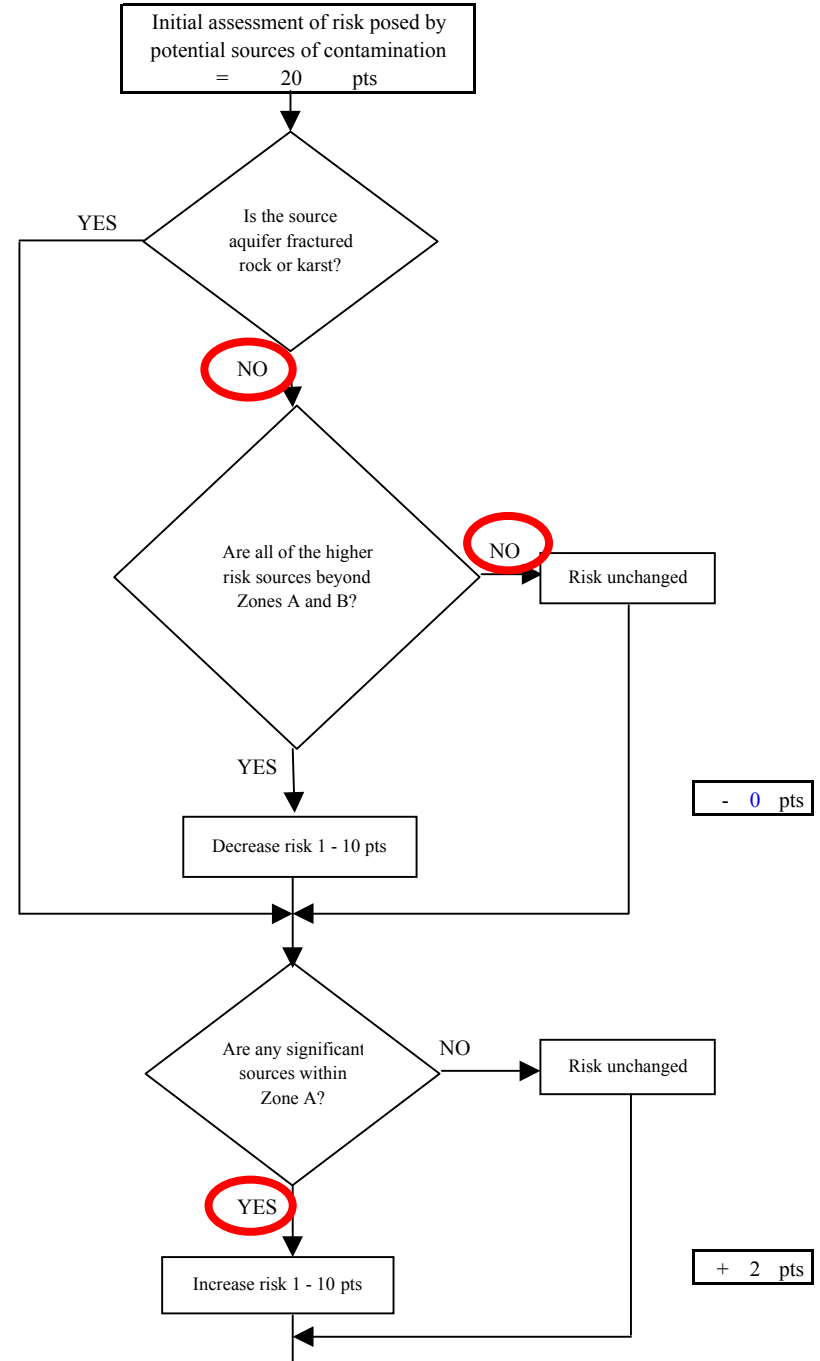
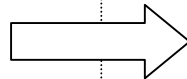


Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	1	1
Low(s)	1	4	5

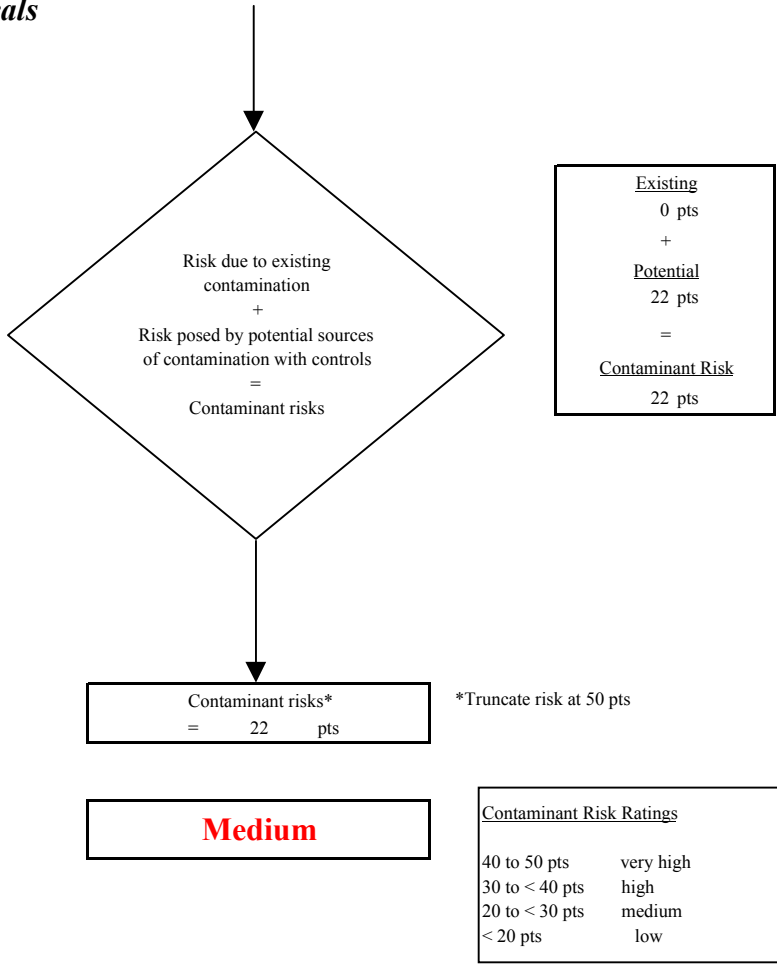
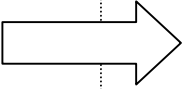
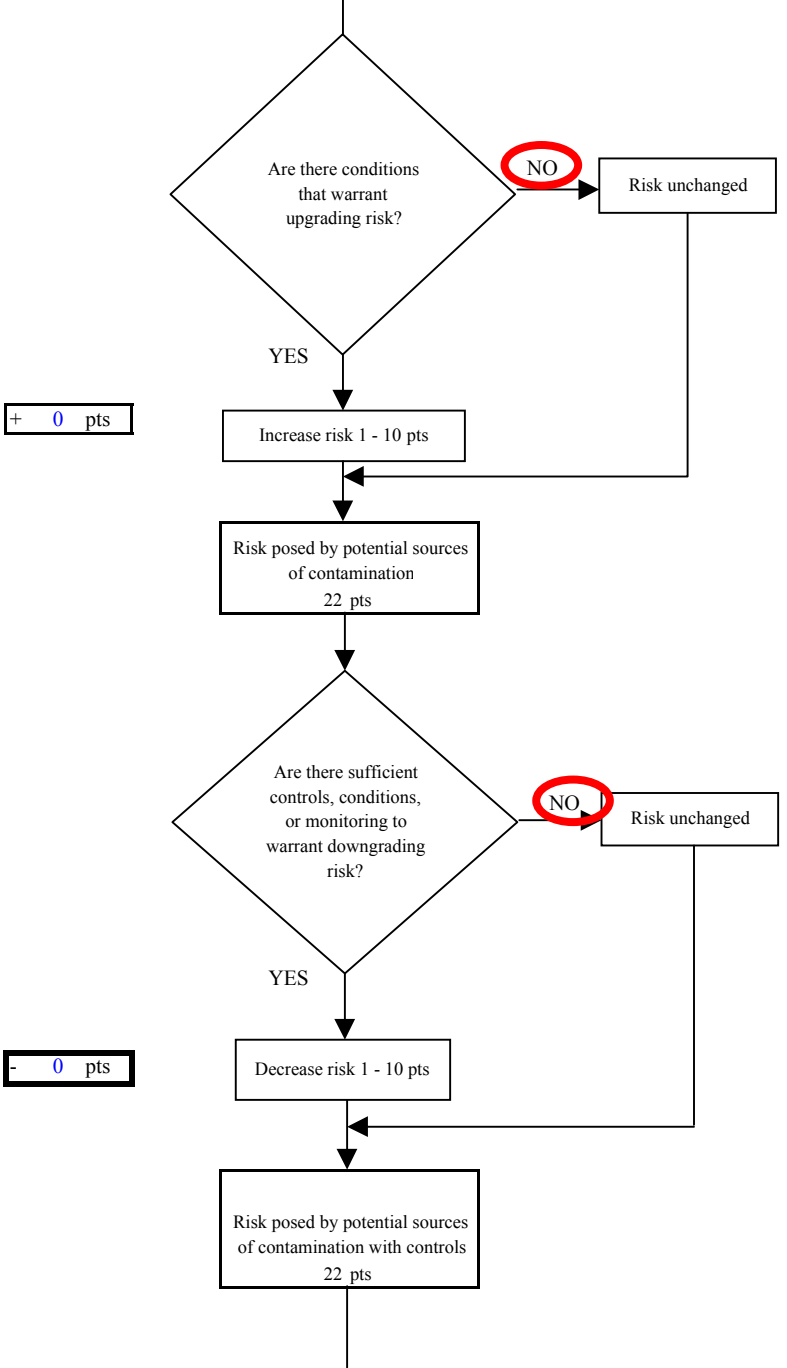
	LOW 10 pts	<b>MEDIUM 20 pts</b>	HIGH 30 pts	VERY HIGH 40 pts
<b>LOW</b>	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
<b>MEDIUM</b>	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
<b>HIGH</b>	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
<b>VERY HIGH</b>	----	----	----	≥ 1 source + 10 pts

Matrix Score      20

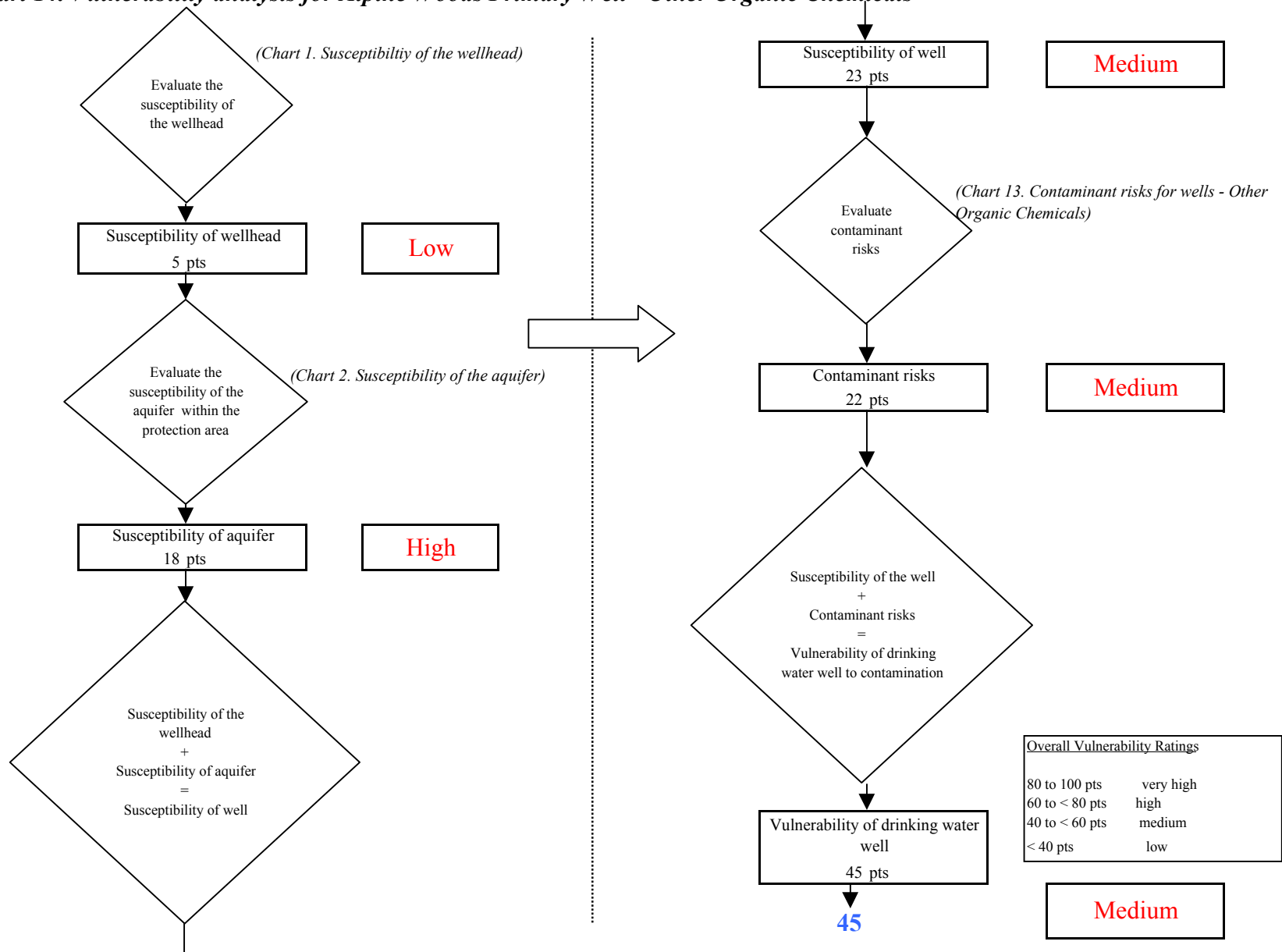
Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.



**Chart 13. Contaminant risks for Alpine Woods Primary Well - Other Organic Chemicals**



**Chart 14. Vulnerability analysis for Alpine Woods Primary Well - Other Organic Chemicals**

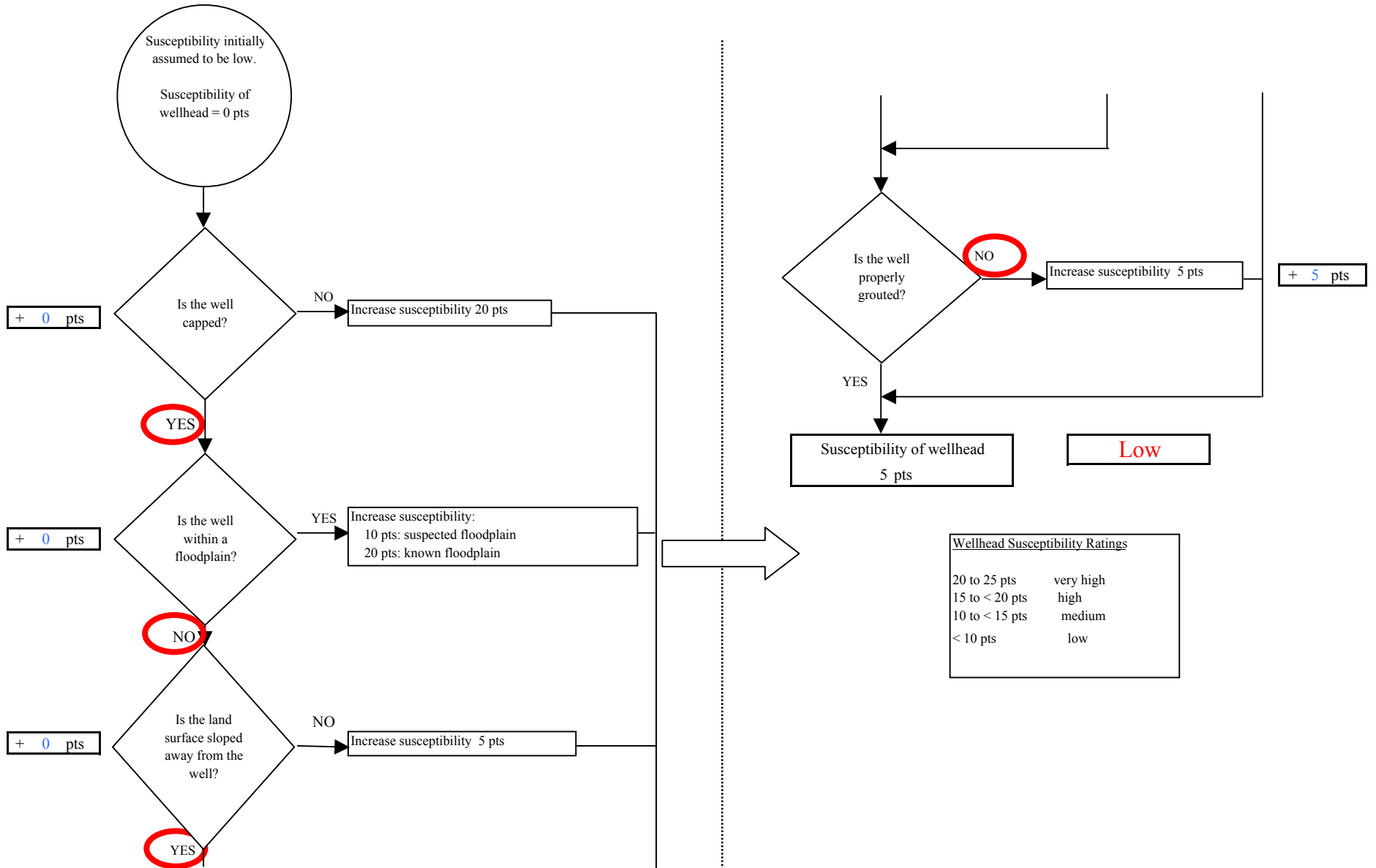




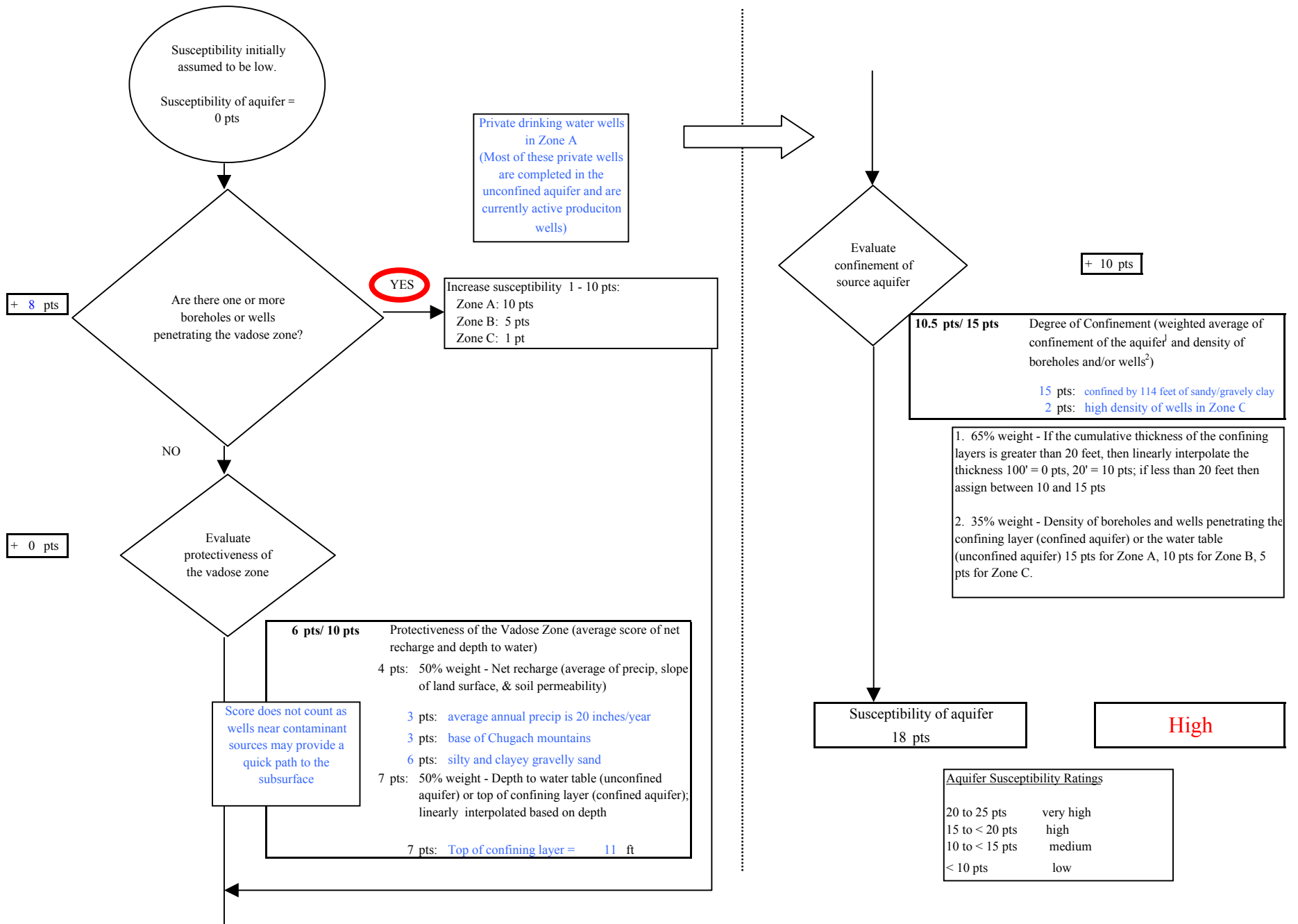
## **APPENDIX F**

### **Vulnerability Analysis for Alpine Woods Backup Well**

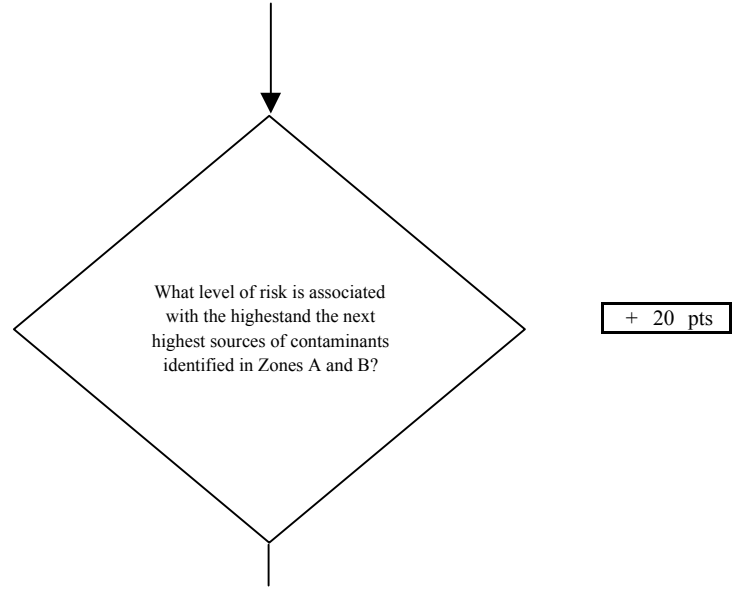
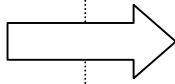
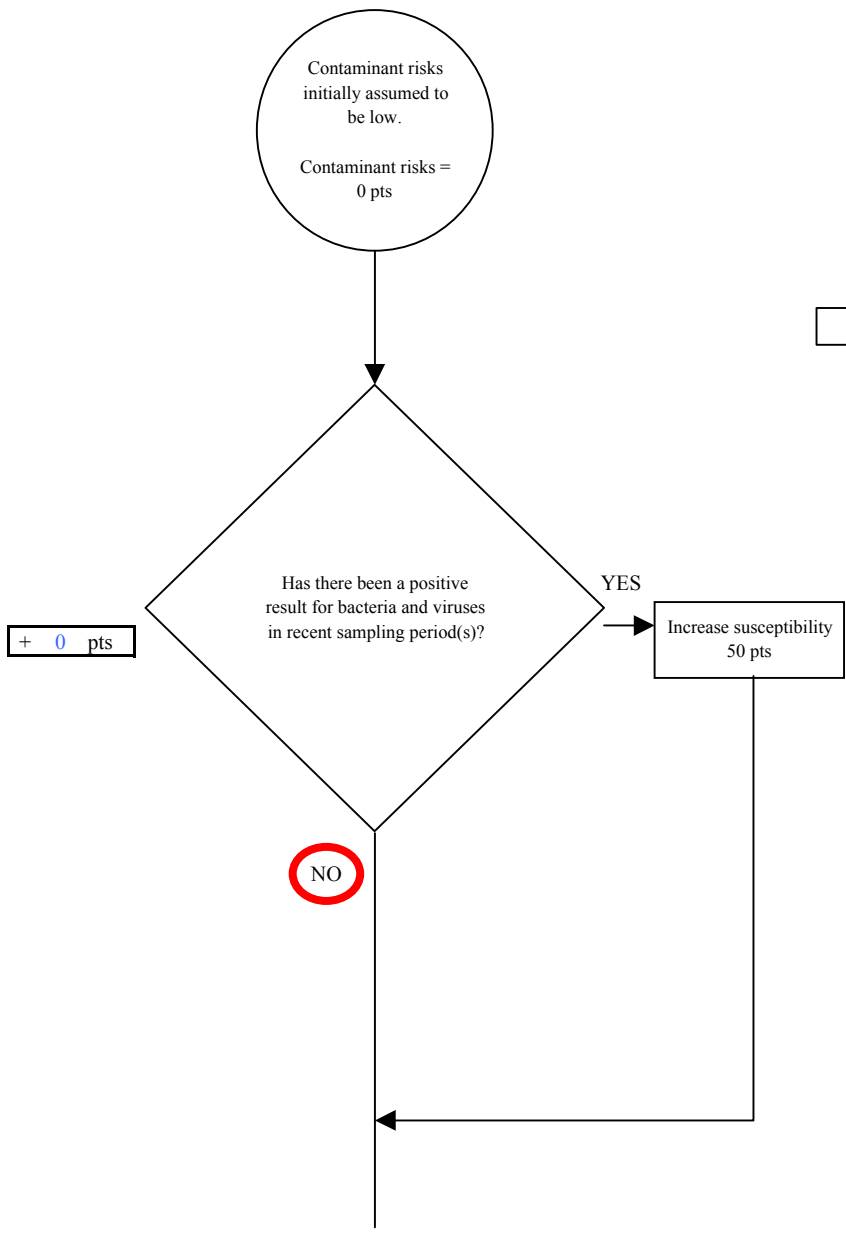
**Chart 1. Susceptibility of the wellhead - Alpine Woods Backup Well**



**Chart 2. Susceptibility of the aquifer - Alpine Woods Backup Well**



**Chart 3. Contaminant risks for Alpine Woods Backup Well - Bacteria & Viruses**



**Risk Rankings for Contaminant Sources Identified in Zones A and B**

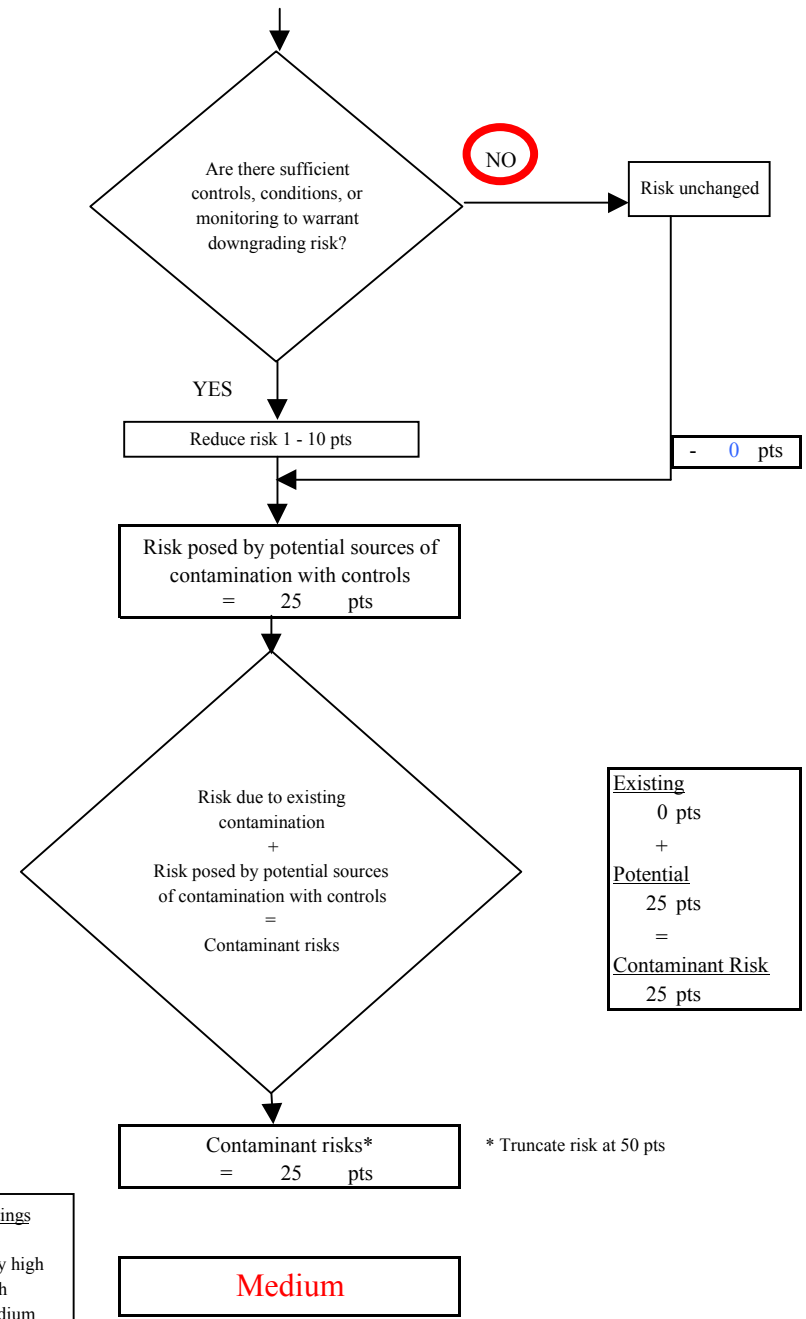
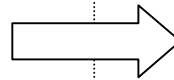
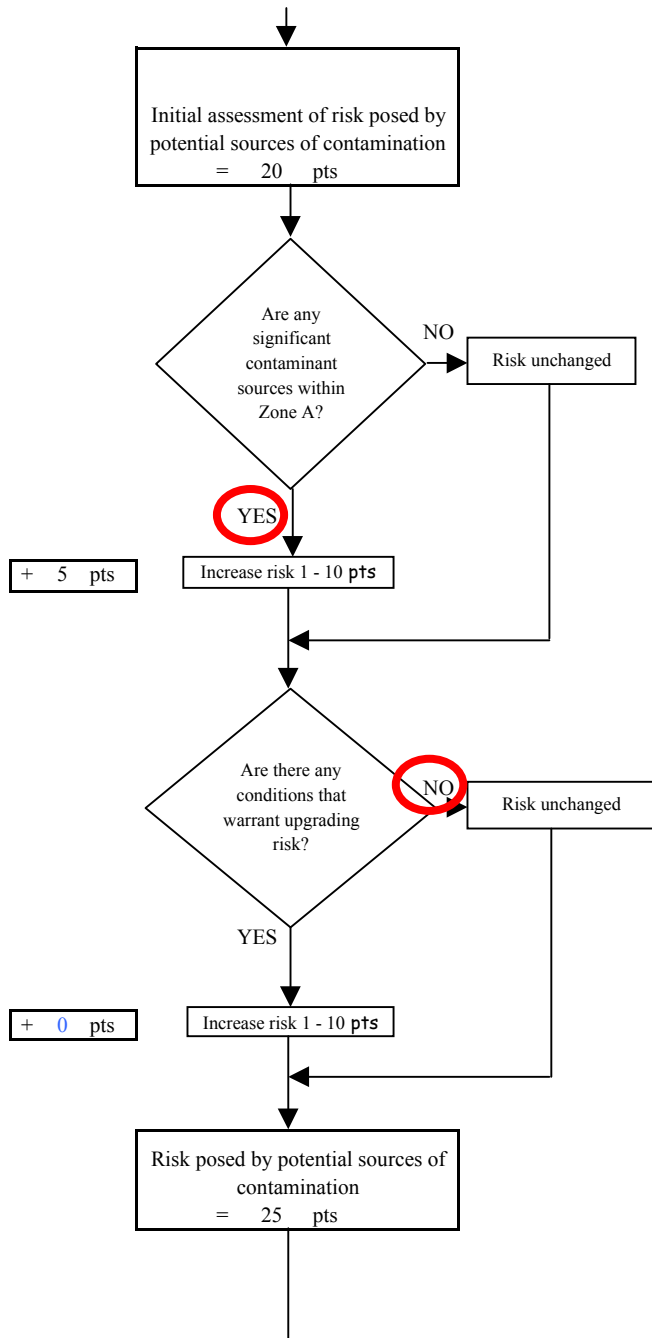
	Zone A	Zone B	Total
Very High(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	0	0
Low(s)	16	8	24

	<b>LOW</b> 10 pts	<b>MEDIUM</b> 20 pts	<b>HIGH</b> 30 pts	<b>VERY HIGH</b> 40 pts
<b>LOW</b>	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
<b>MEDIUM</b>	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
<b>HIGH</b>	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
<b>VERY HIGH</b>	----	----	----	≥ 1 source + 10 pts

Matrix Score 20

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.

**Chart 3. Contaminant risks for Alpine Woods Backup Well - Bacteria & Viruses**

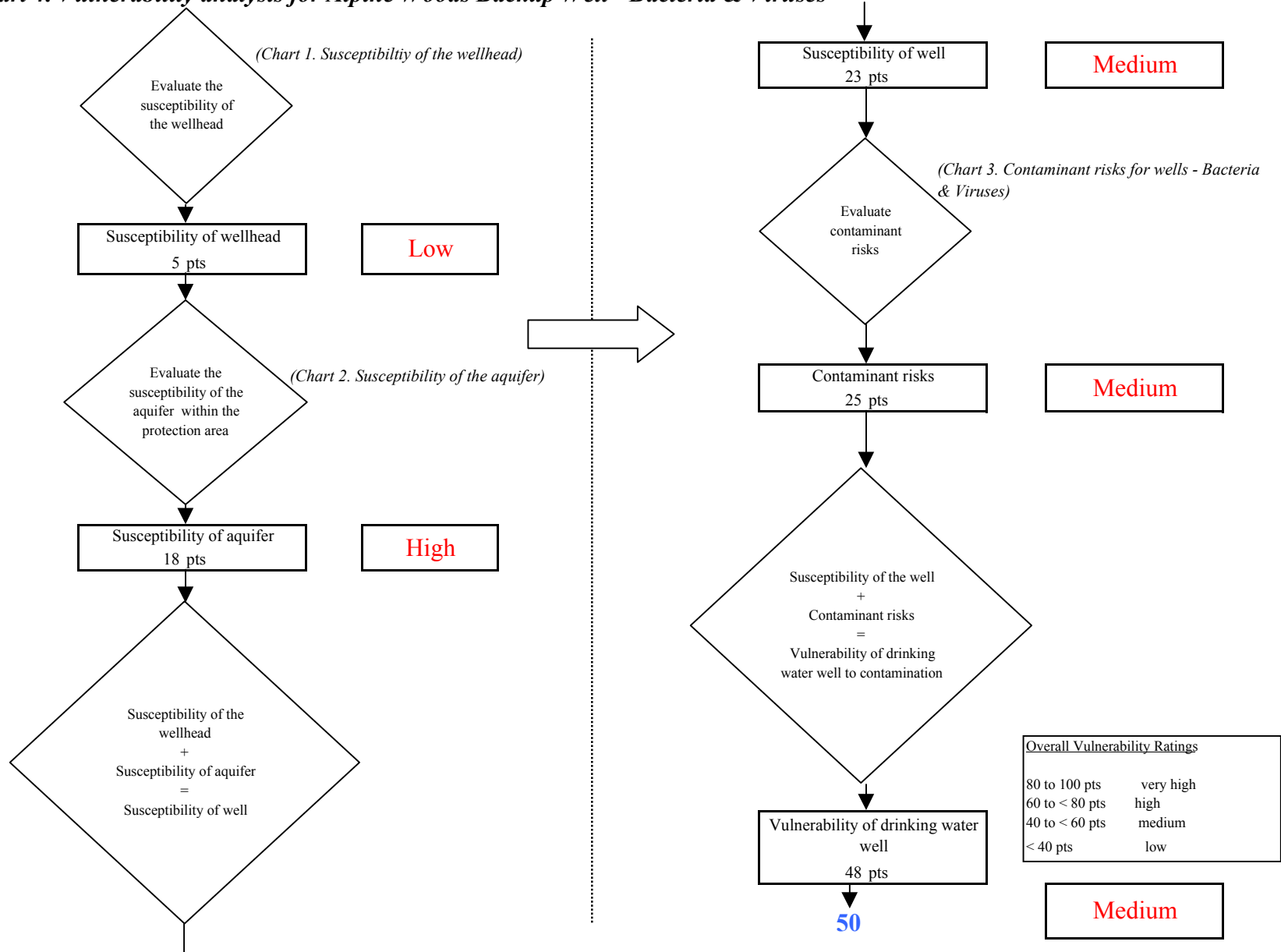


Existing	0 pts
+	
Potential	25 pts
=	
Contaminant Risk	25 pts

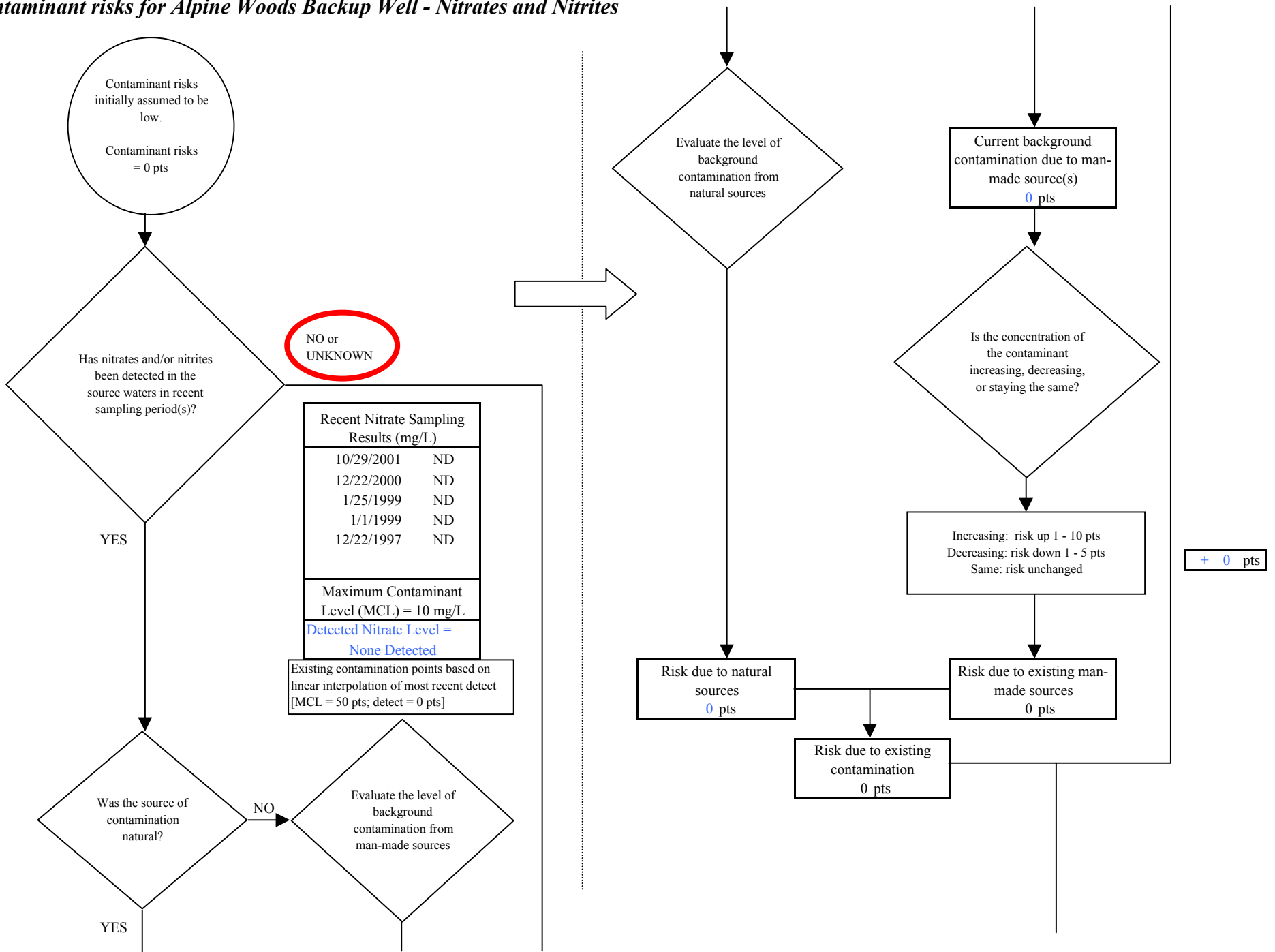
Contaminant Risk Ratings	
40 to 50 pts	very high
30 to < 40 pts	high
20 to < 30 pts	medium
< 20 pts	low

\* Truncate risk at 50 pts

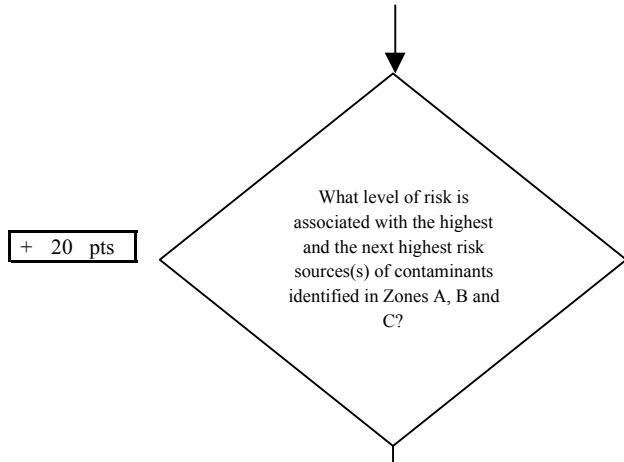
**Chart 4. Vulnerability analysis for Alpine Woods Backup Well - Bacteria & Viruses**



**Chart 5. Contaminant risks for Alpine Woods Backup Well - Nitrates and Nitrites**



**Chart 5. Contaminant risks for Alpine Woods Backup Well - Nitrates and Nitrites**

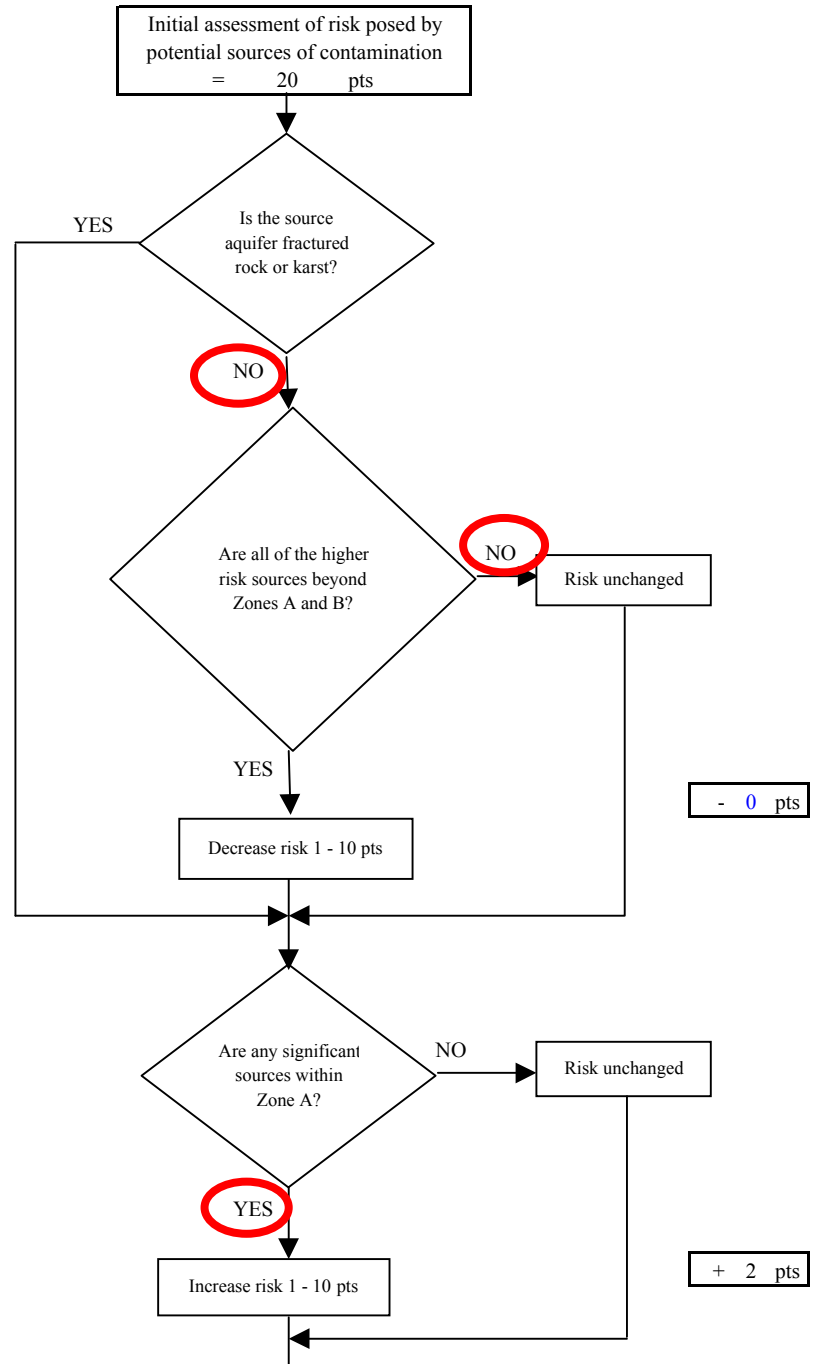
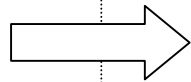


Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	0	0
Low(s)	2	20	22

	<b>LOW</b> 10 pts	<b>MEDIUM</b> 20 pts	<b>HIGH</b> 30 pts	<b>VERY HIGH</b> 40 pts
<b>LOW</b>	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
<b>MEDIUM</b>	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
<b>HIGH</b>	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
<b>VERY HIGH</b>	----	----	----	≥ 1 source + 10 pts

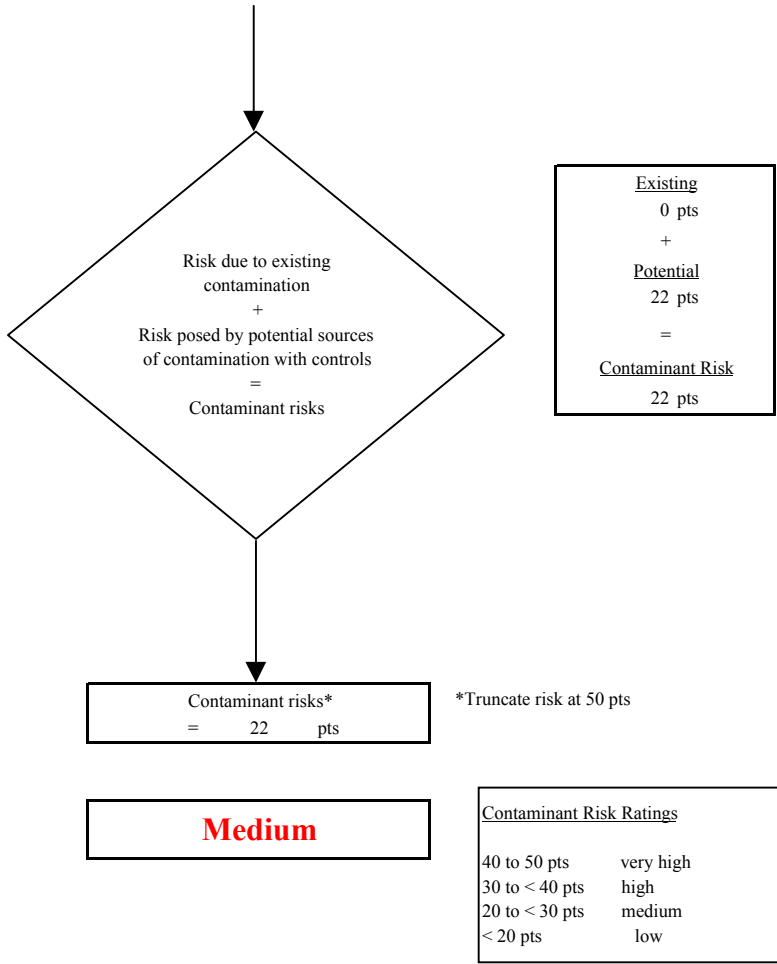
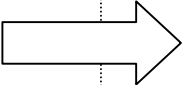
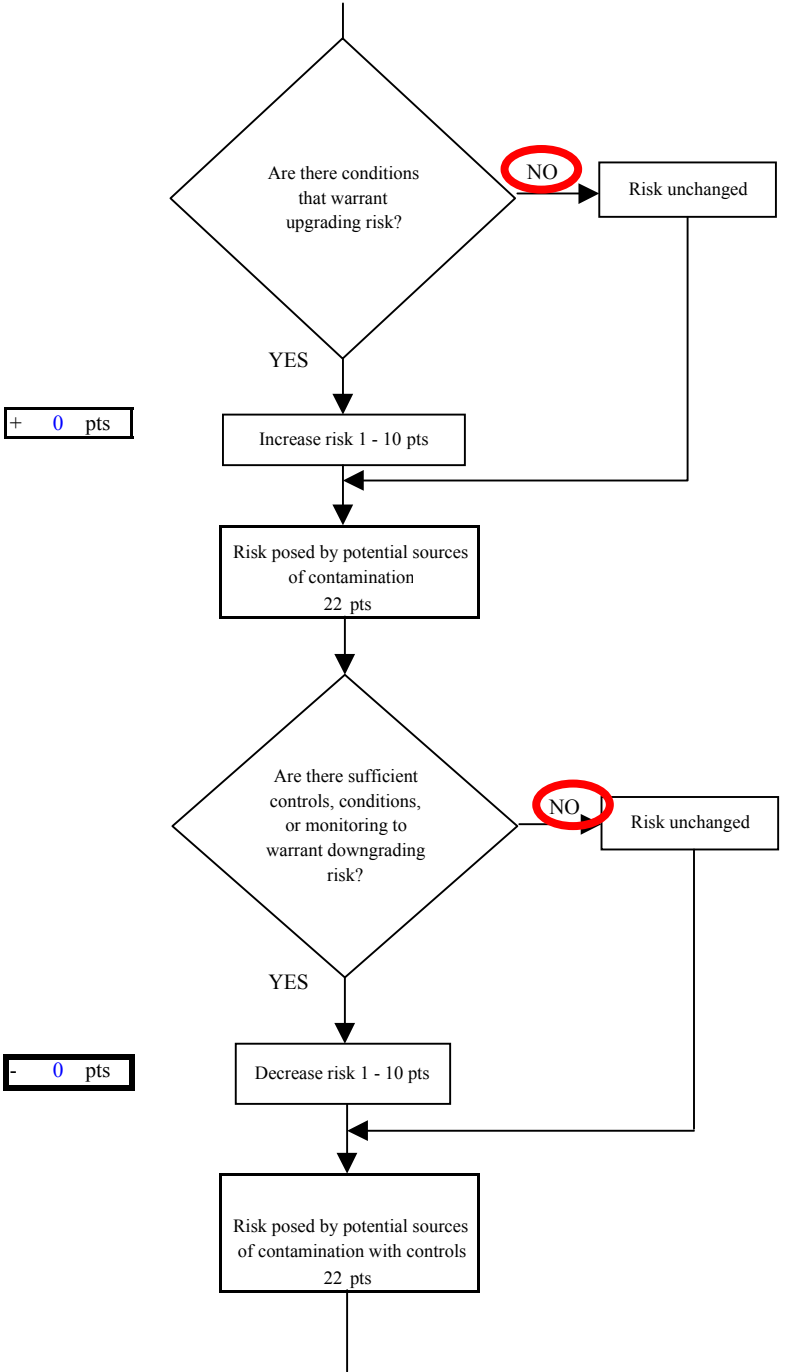
Matrix Score      20

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.

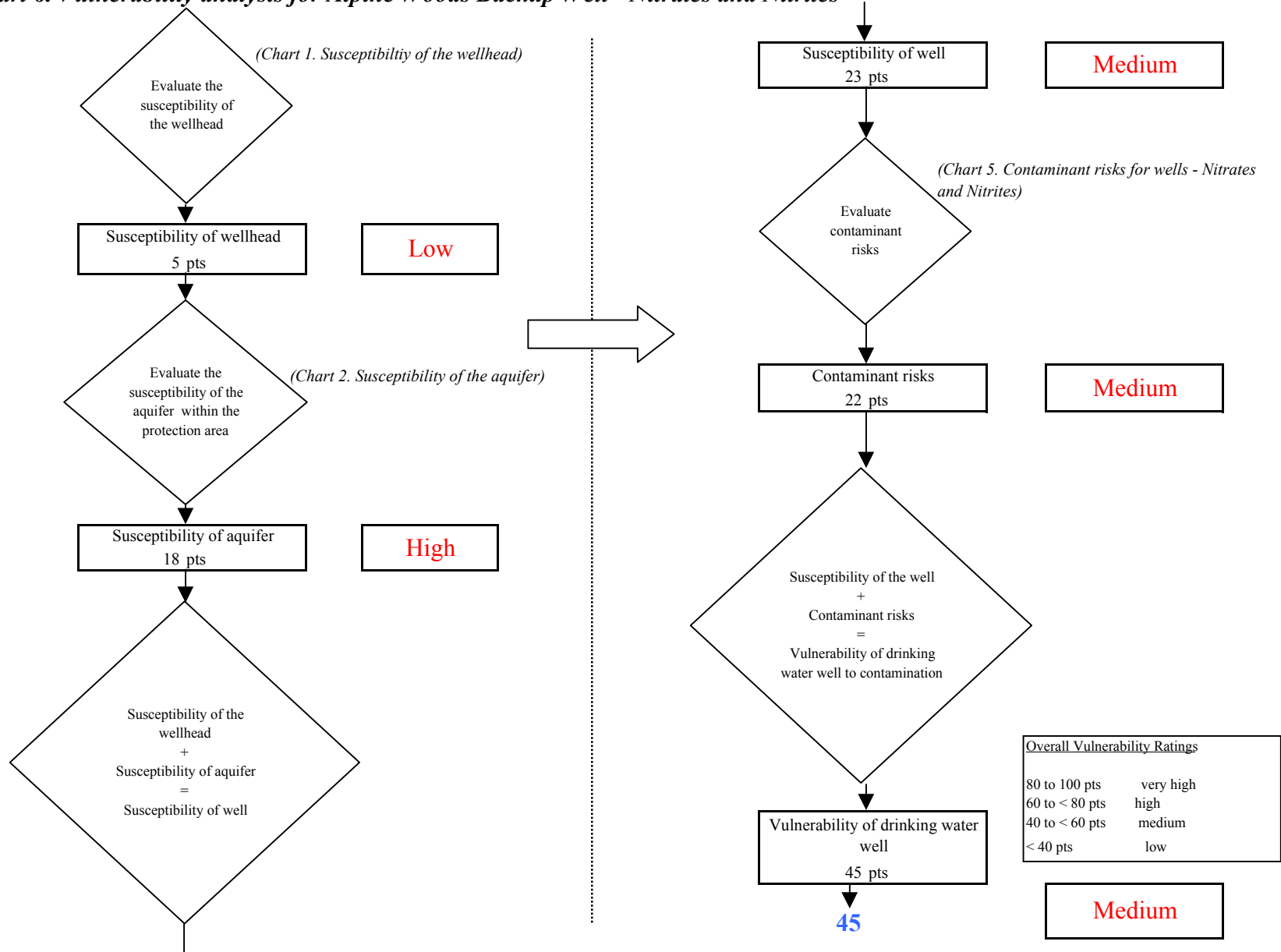




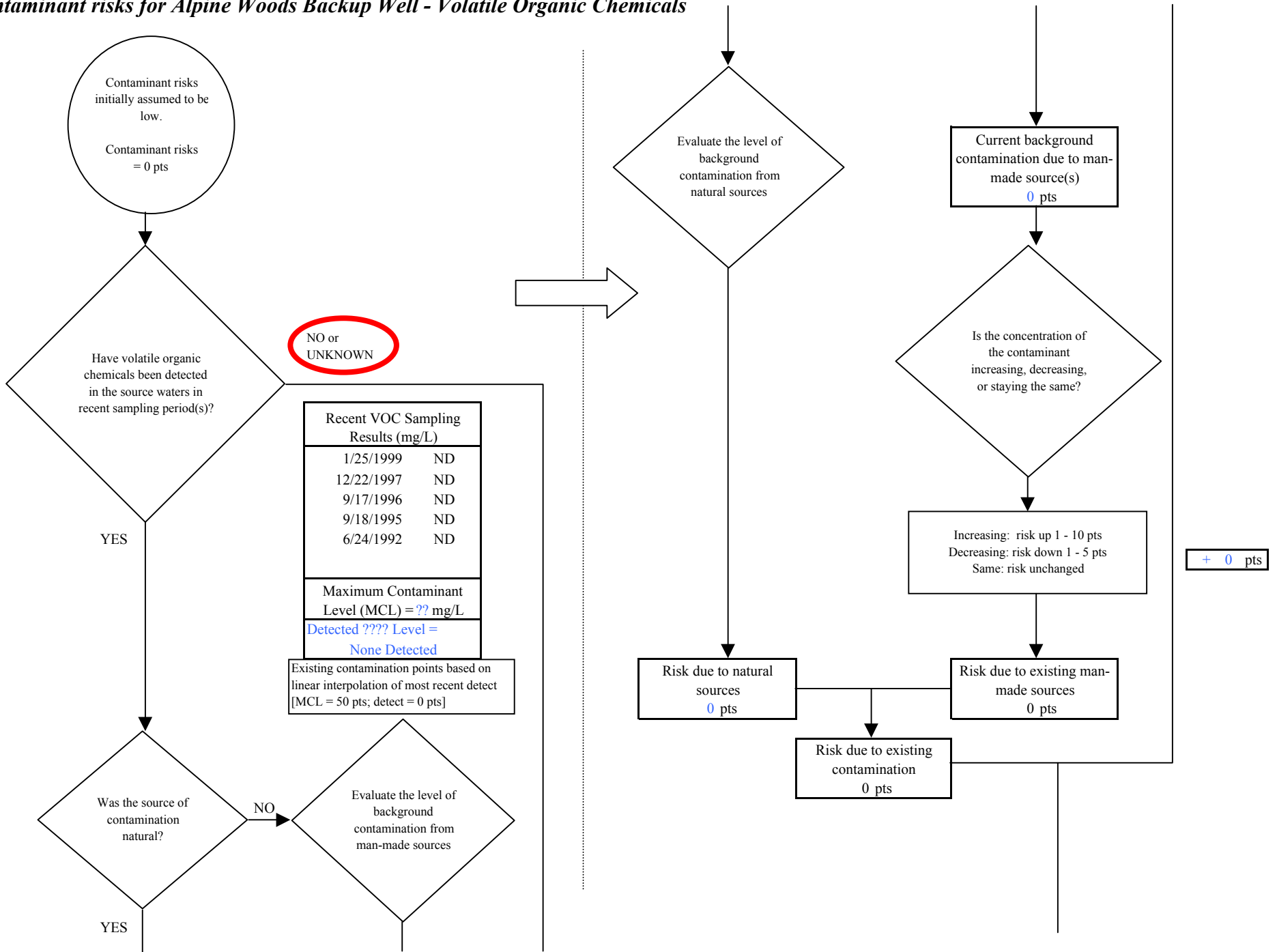
**Chart 5. Contaminant risks for Alpine Woods Backup Well - Nitrates and Nitrites**



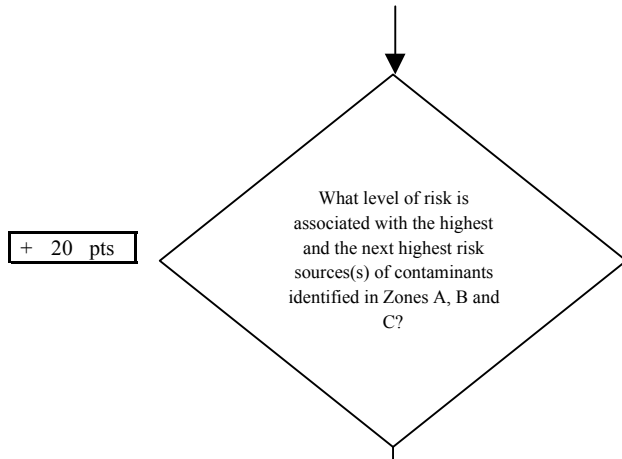
**Chart 6. Vulnerability analysis for Alpine Woods Backup Well - Nitrates and Nitrites**



**Chart 7. Contaminant risks for Alpine Woods Backup Well - Volatile Organic Chemicals**



**Chart 7. Contaminant risks for Alpine Woods Backup Well - Volatile Organic Chemicals**

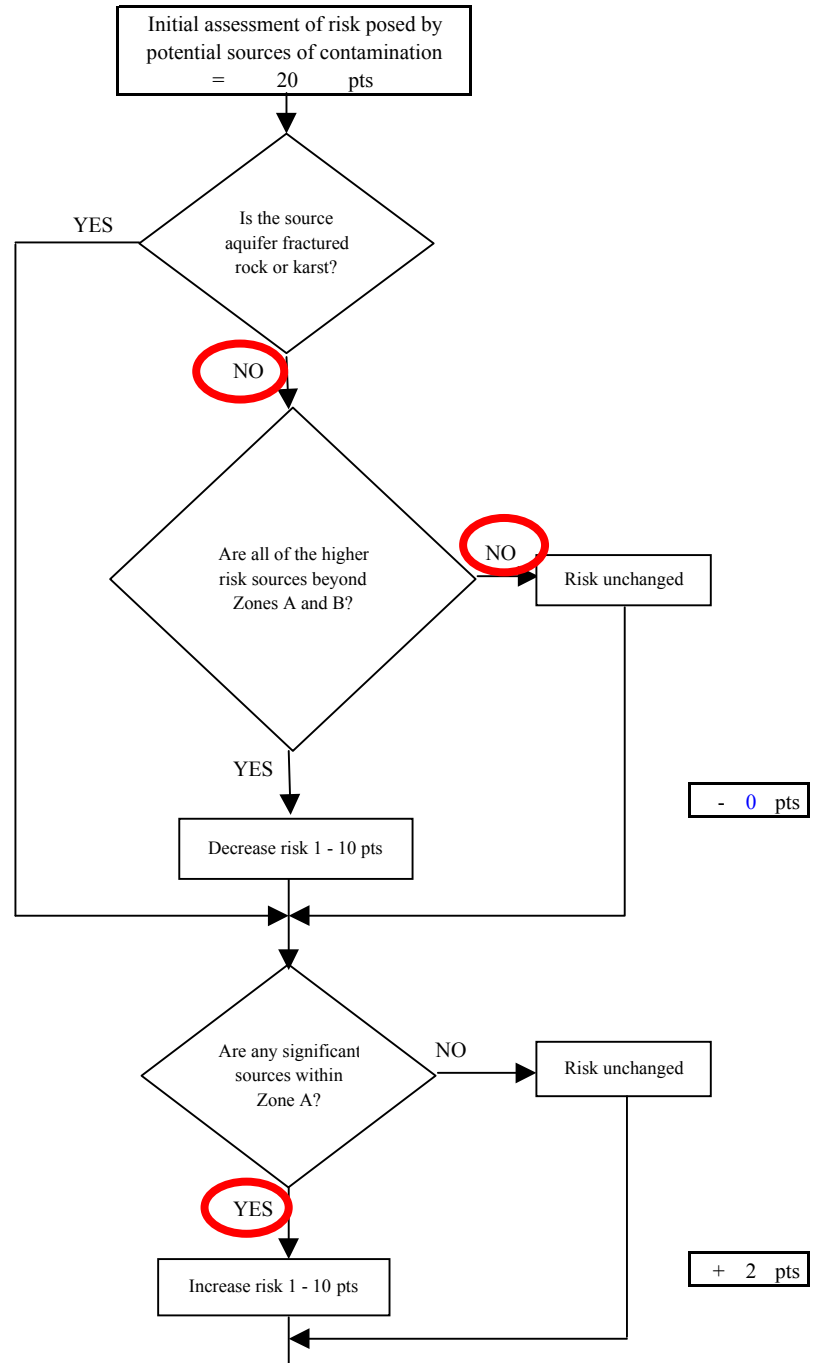
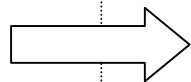


Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	1	1
Low(s)	2	5	7

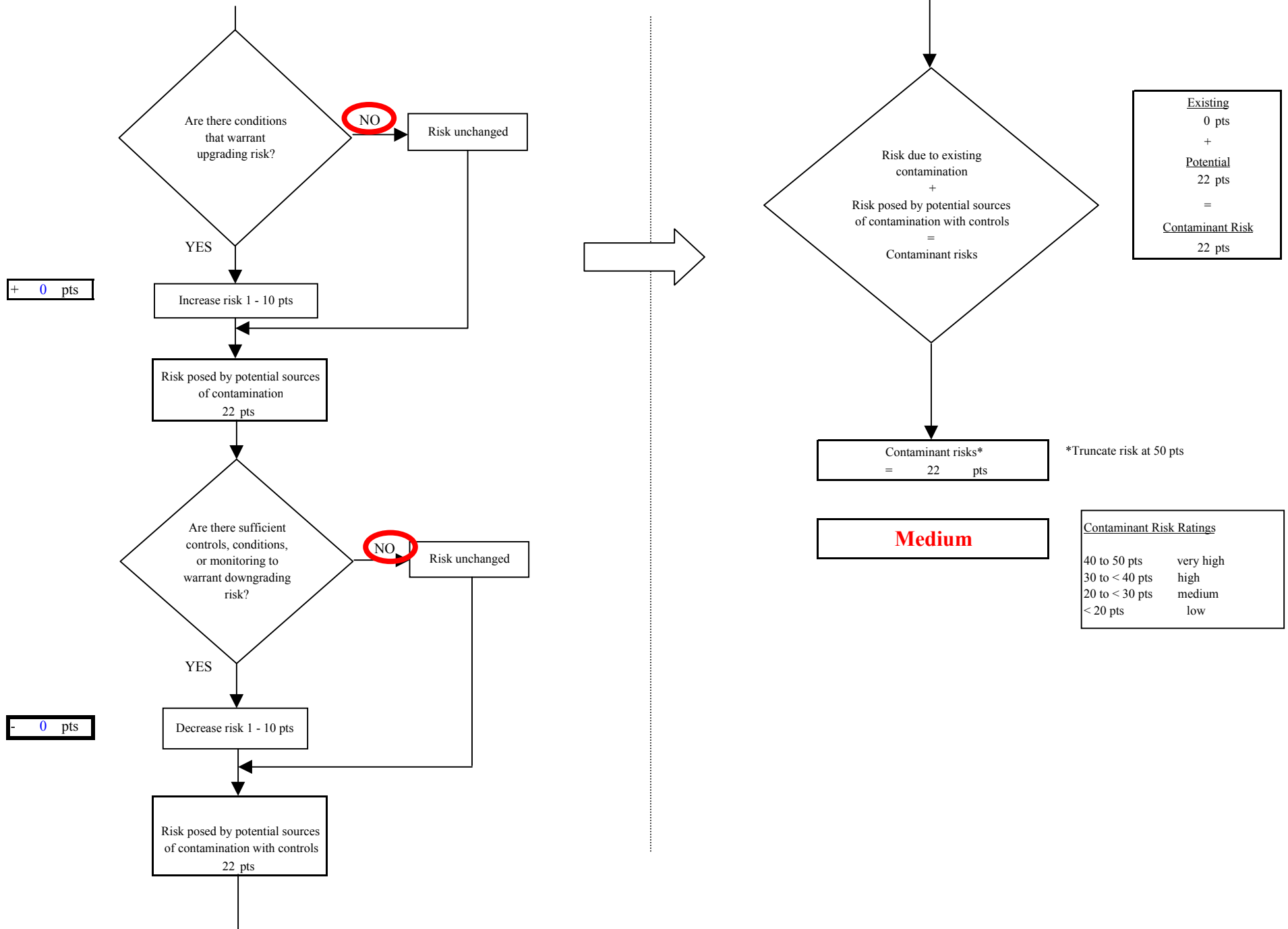
	LOW 10 pts	<b>MEDIUM 20 pts</b>	HIGH 30 pts	VERY HIGH 40 pts
<b>LOW</b>	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
<b>MEDIUM</b>	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
<b>HIGH</b>	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
<b>VERY HIGH</b>	----	----	----	≥ 1 source + 10 pts

Matrix Score      20

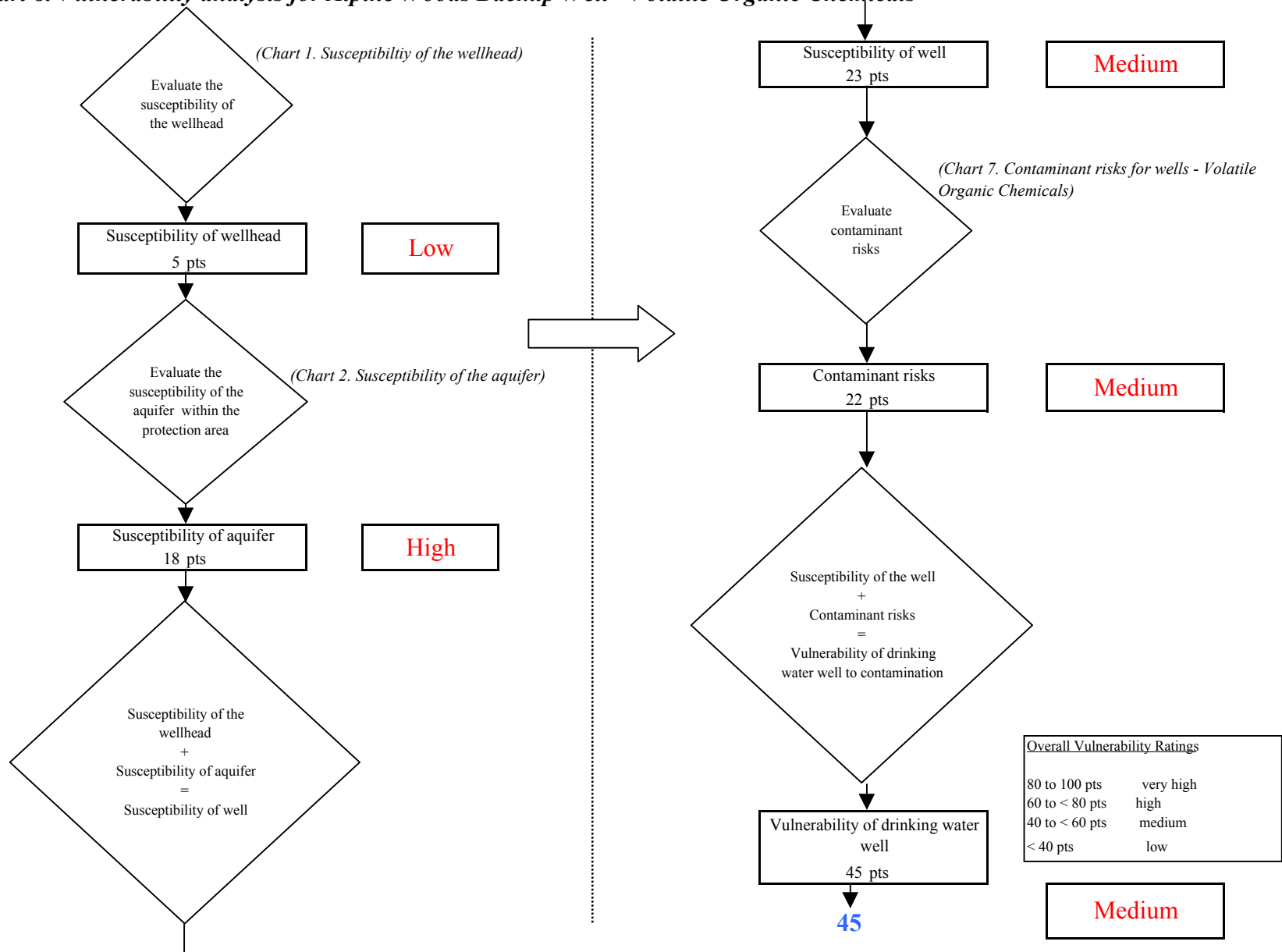
Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.



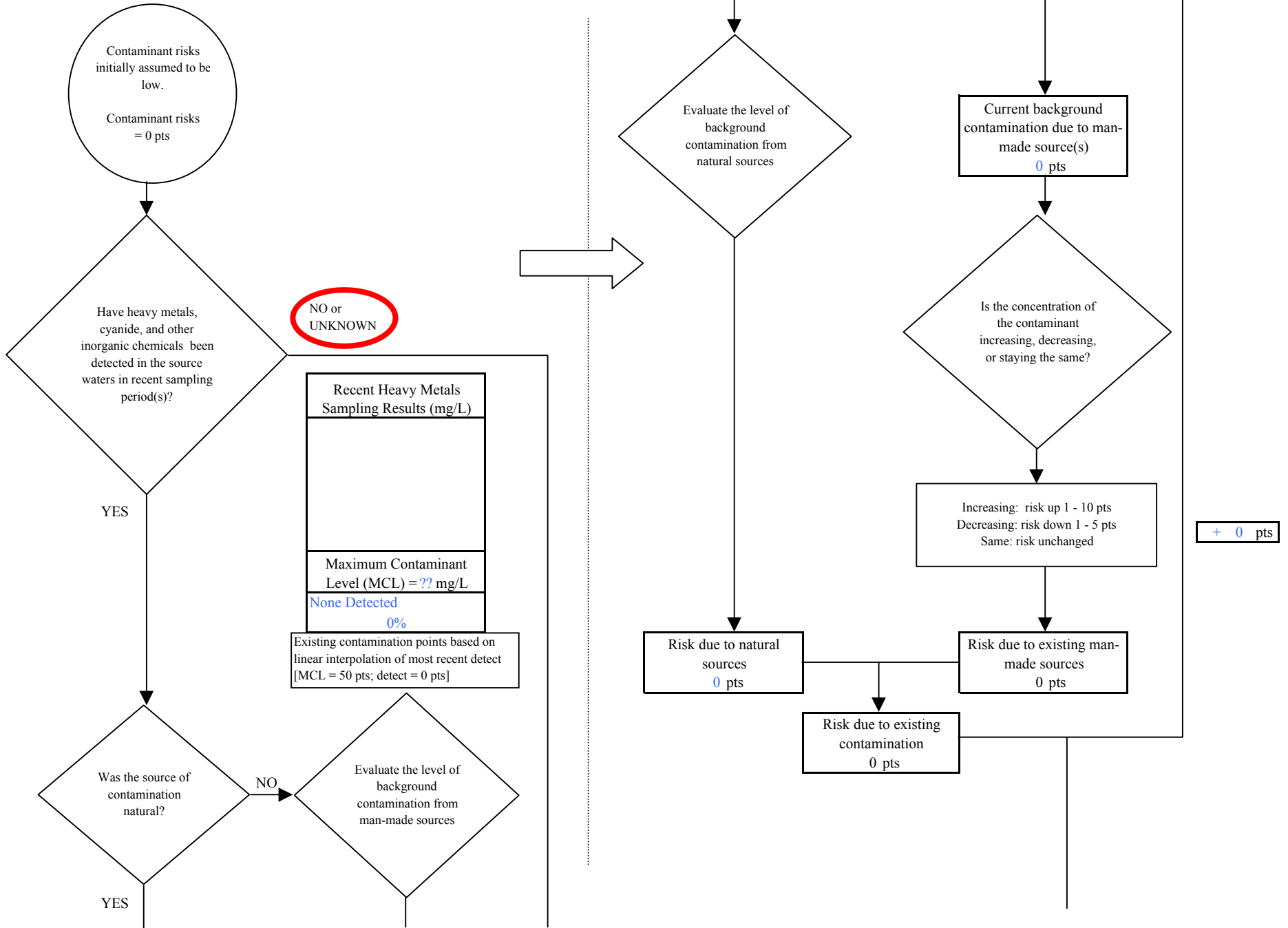
**Chart 7. Contaminant risks for Alpine Woods Backup Well - Volatile Organic Chemicals**



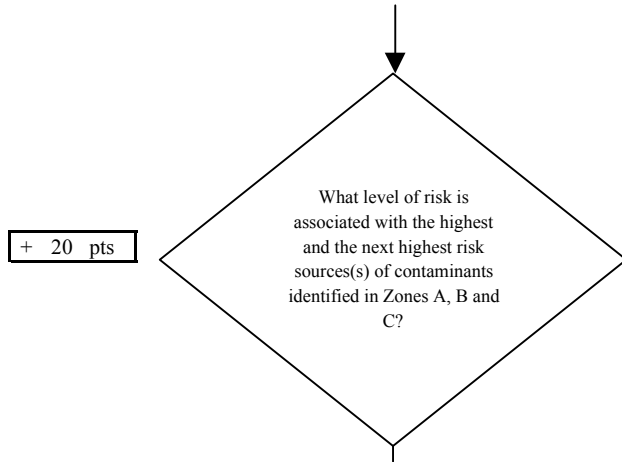
**Chart 8. Vulnerability analysis for Alpine Woods Backup Well - Volatile Organic Chemicals**



**Chart 9. Contaminant risks for Alpine Woods Backup Well - Heavy Metals, Cyanide and Other Inorganic Chemicals**



**Chart 9. Contaminant risks for Alpine Woods Backup Well - Heavy Metals, Cyanide and Other Inorganic Chemicals**



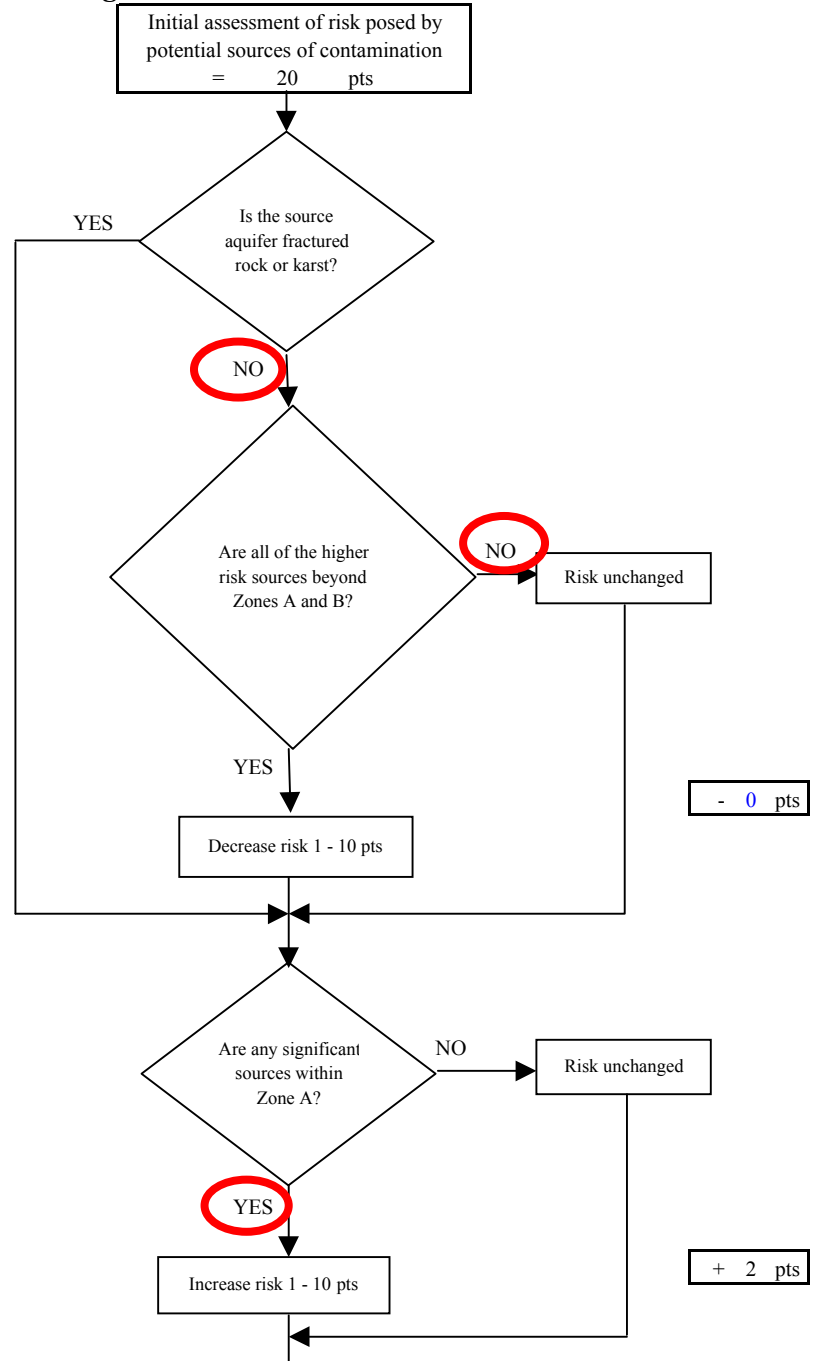
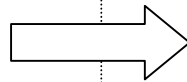
+ 20 pts

Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very High(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	1	1
Low(s)	2	4	6

	LOW 10 pts	MEDIUM 20 pts	HIGH 30 pts	VERY HIGH 40 pts
<b>LOW</b>	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
<b>MEDIUM</b>	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
<b>HIGH</b>	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
<b>VERY HIGH</b>	----	----	----	≥ 1 source + 10 pts

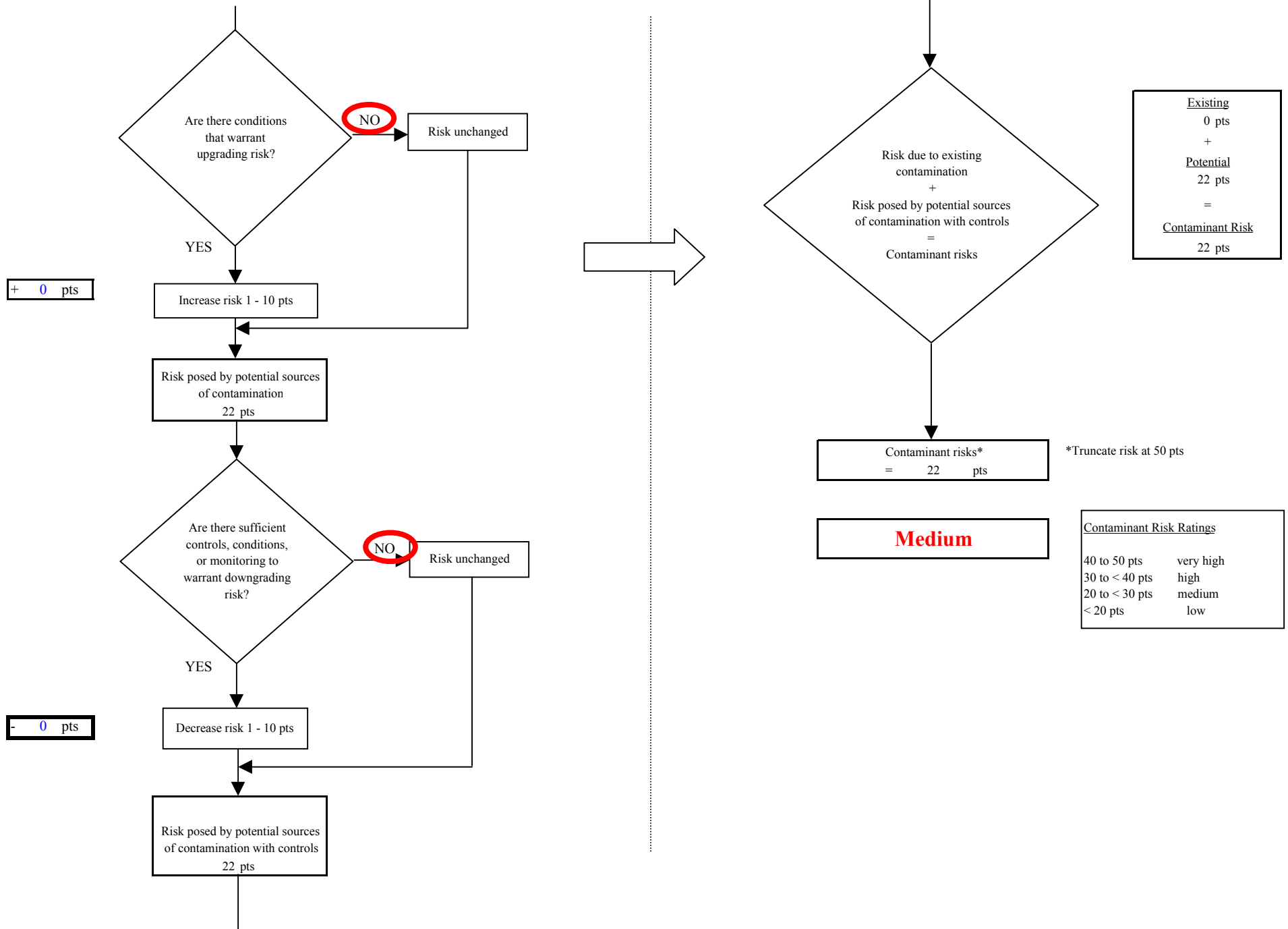
Matrix Score 20

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.

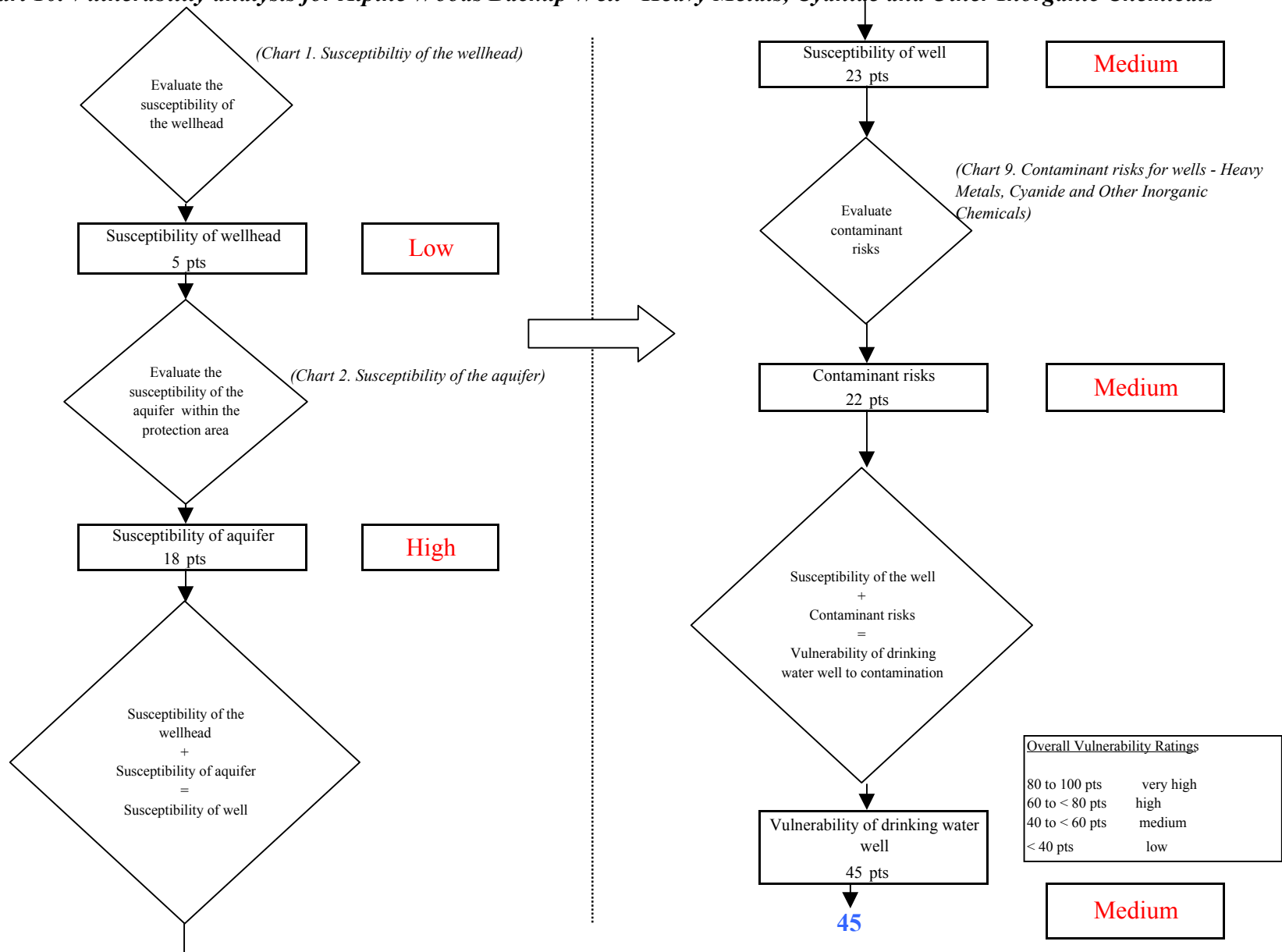




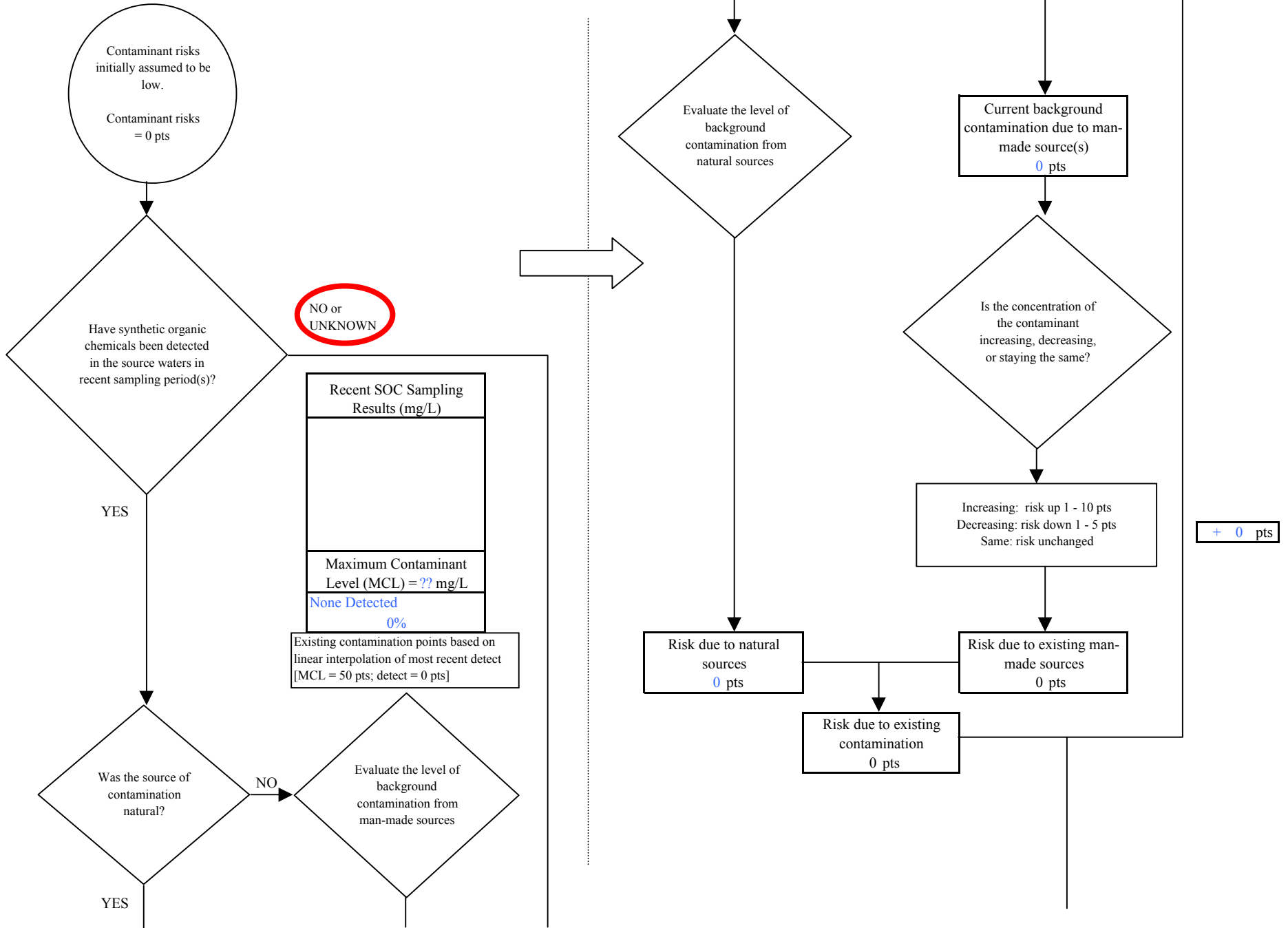
**Chart 9. Contaminant risks for Alpine Woods Backup Well - Heavy Metals, Cyanide and Other Inorganic Chemicals**



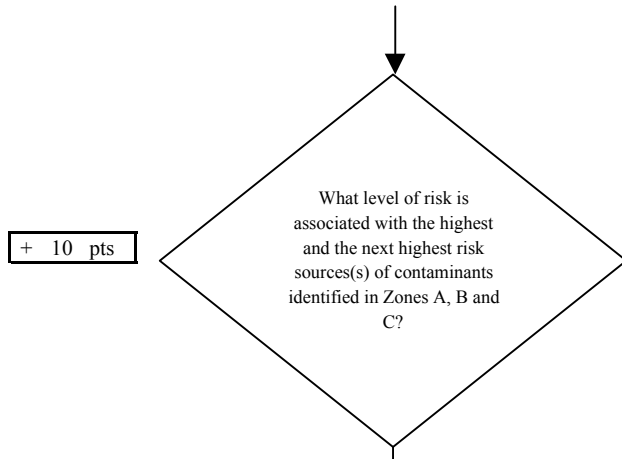
**Chart 10. Vulnerability analysis for Alpine Woods Backup Well - Heavy Metals, Cyanide and Other Inorganic Chemicals**



**Chart 11. Contaminant risks for Alpine Woods Backup Well - Synthetic Organic Chemicals**



**Chart 11. Contaminant risks for Alpine Woods Backup Well - Synthetic Organic Chemicals**

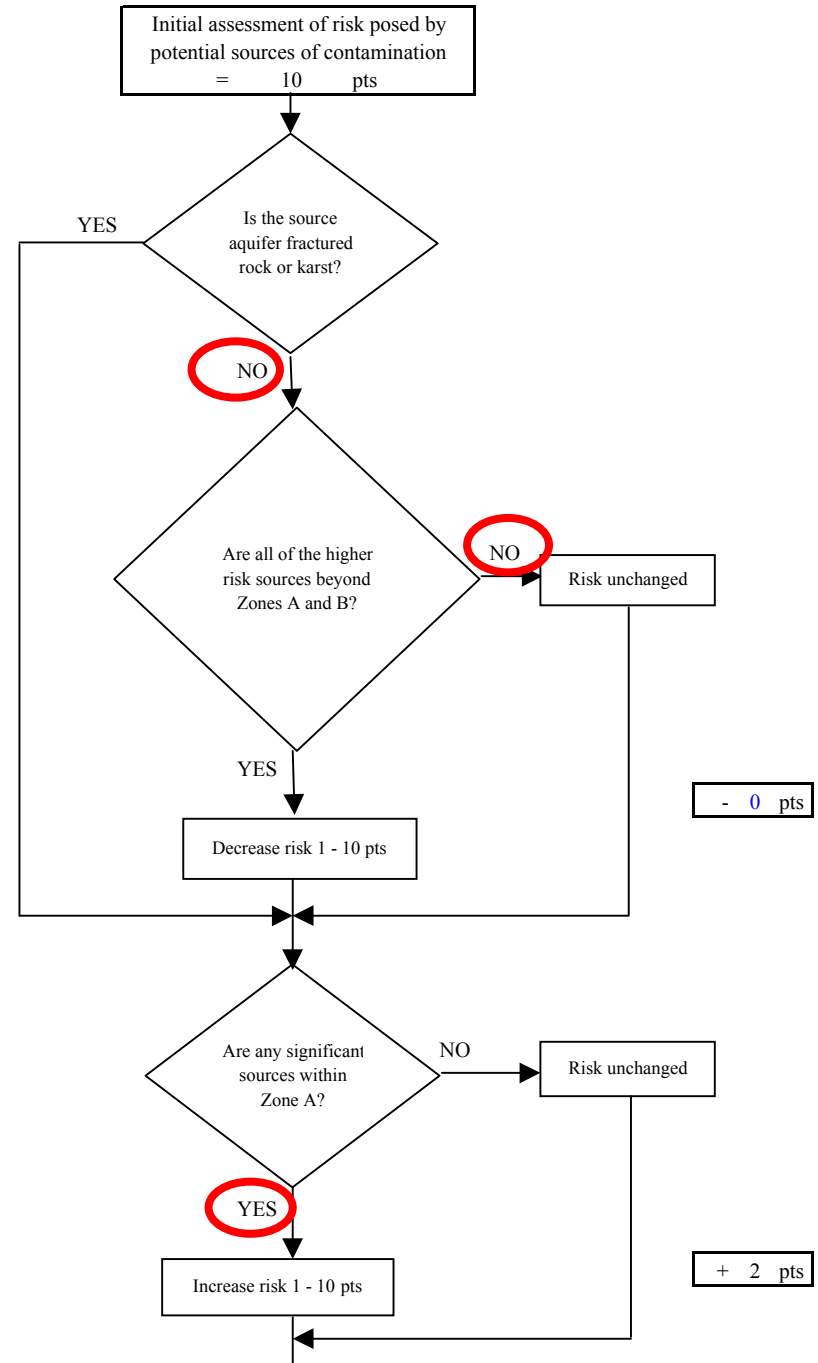
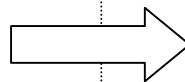


Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	0	0
Low(s)	2	3	5

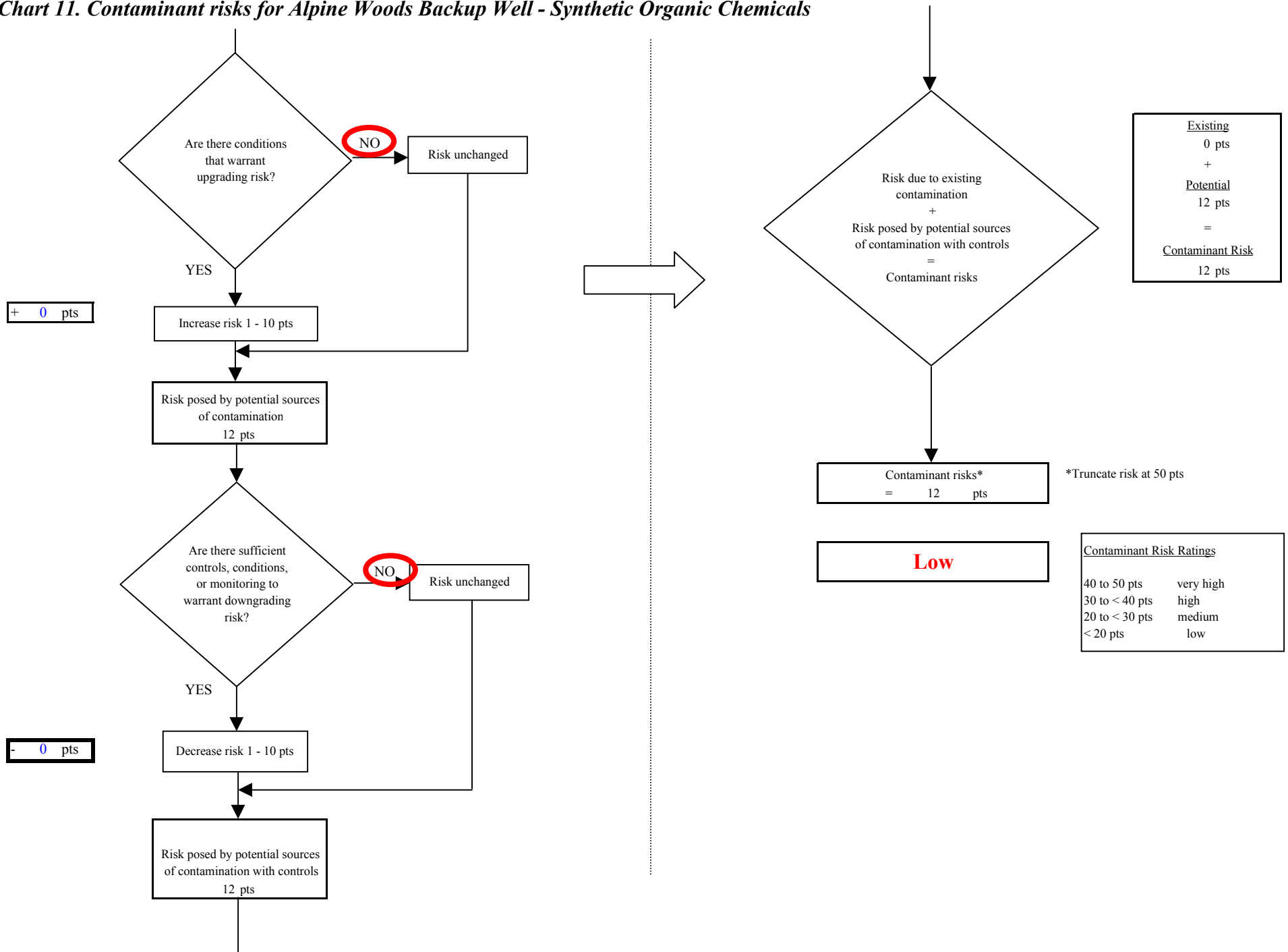
	<b>LOW</b> 10 pts	<b>MEDIUM</b> 20 pts	<b>HIGH</b> 30 pts	<b>VERY HIGH</b> 40 pts
<b>LOW</b>	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
<b>MEDIUM</b>	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
<b>HIGH</b>	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
<b>VERY HIGH</b>	----	----	----	≥ 1 source + 10 pts

Matrix Score      10

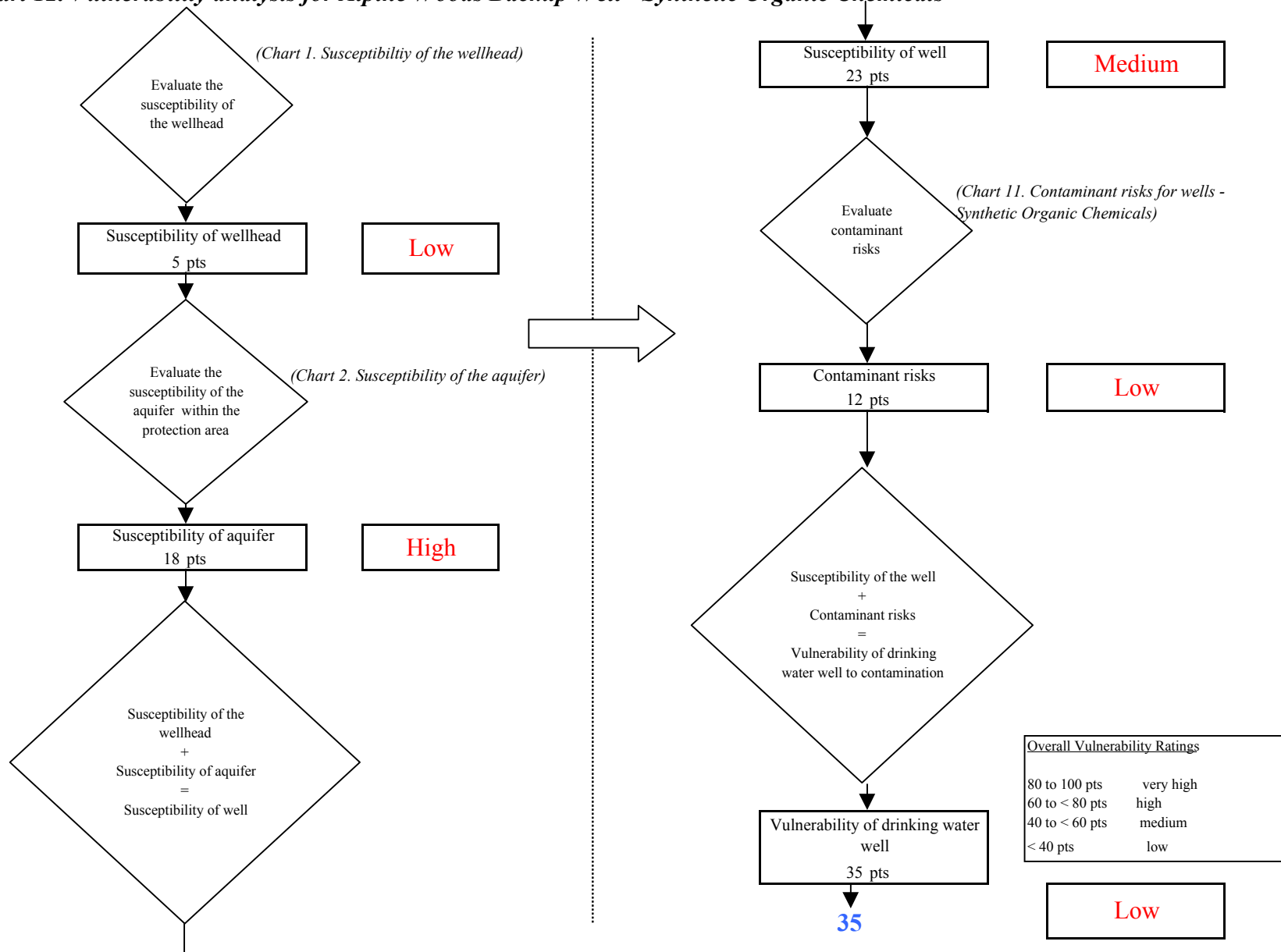
Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.



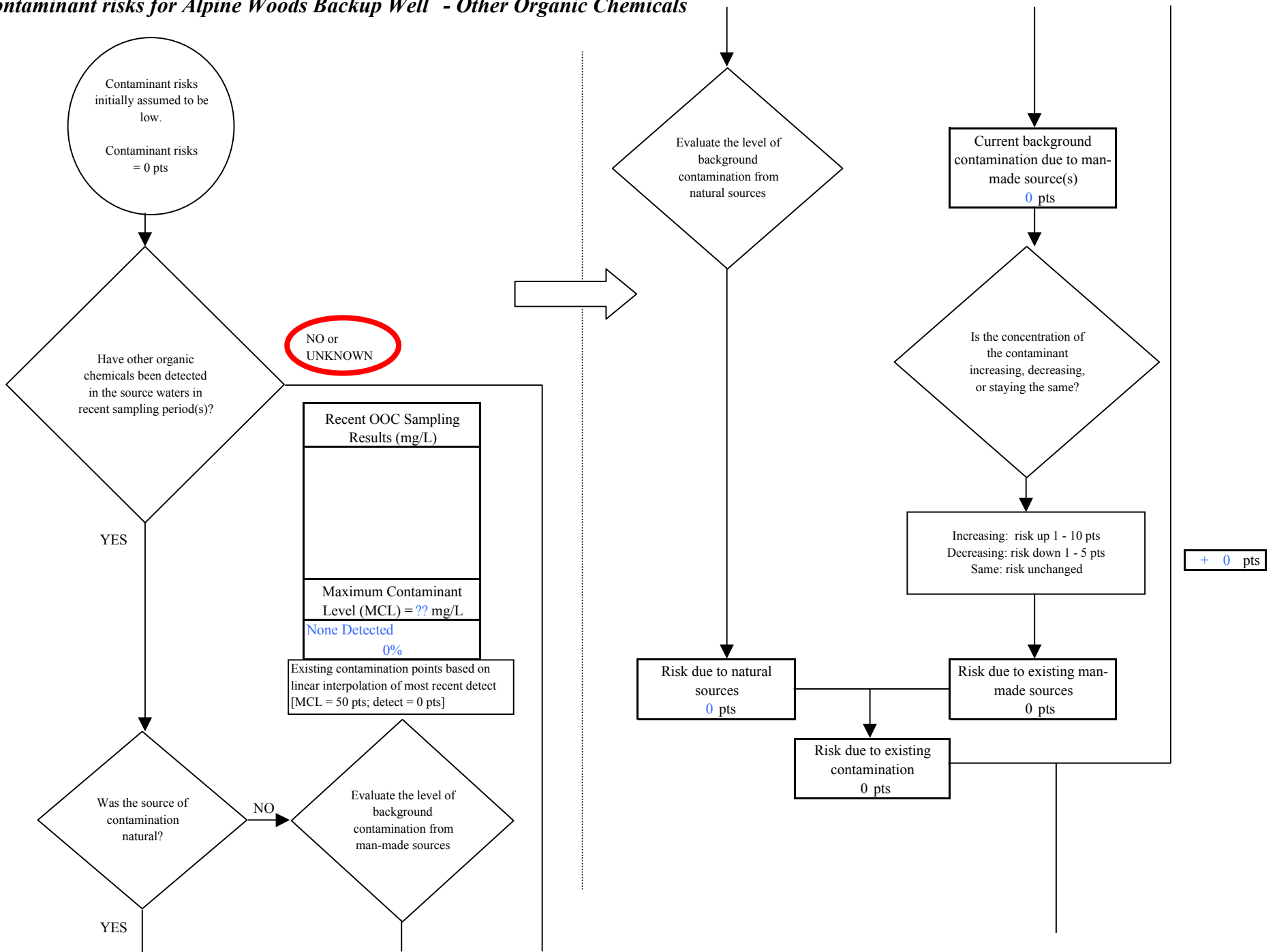
**Chart 11. Contaminant risks for Alpine Woods Backup Well - Synthetic Organic Chemicals**



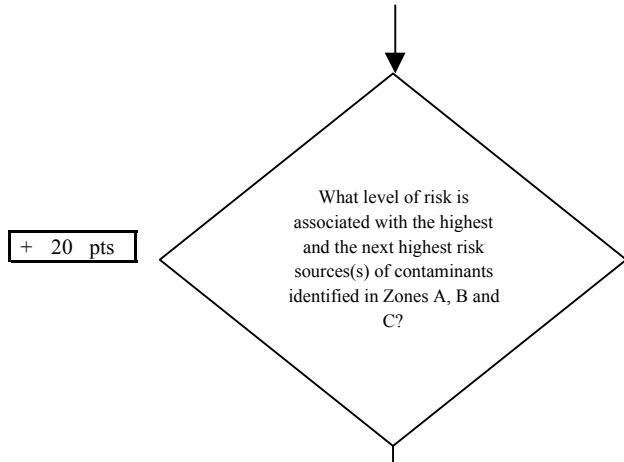
**Chart 12. Vulnerability analysis for Alpine Woods Backup Well - Synthetic Organic Chemicals**



**Chart 13. Contaminant risks for Alpine Woods Backup Well - Other Organic Chemicals**



**Chart 13. Contaminant risks for Alpine Woods Backup Well - Other Organic Chemicals**

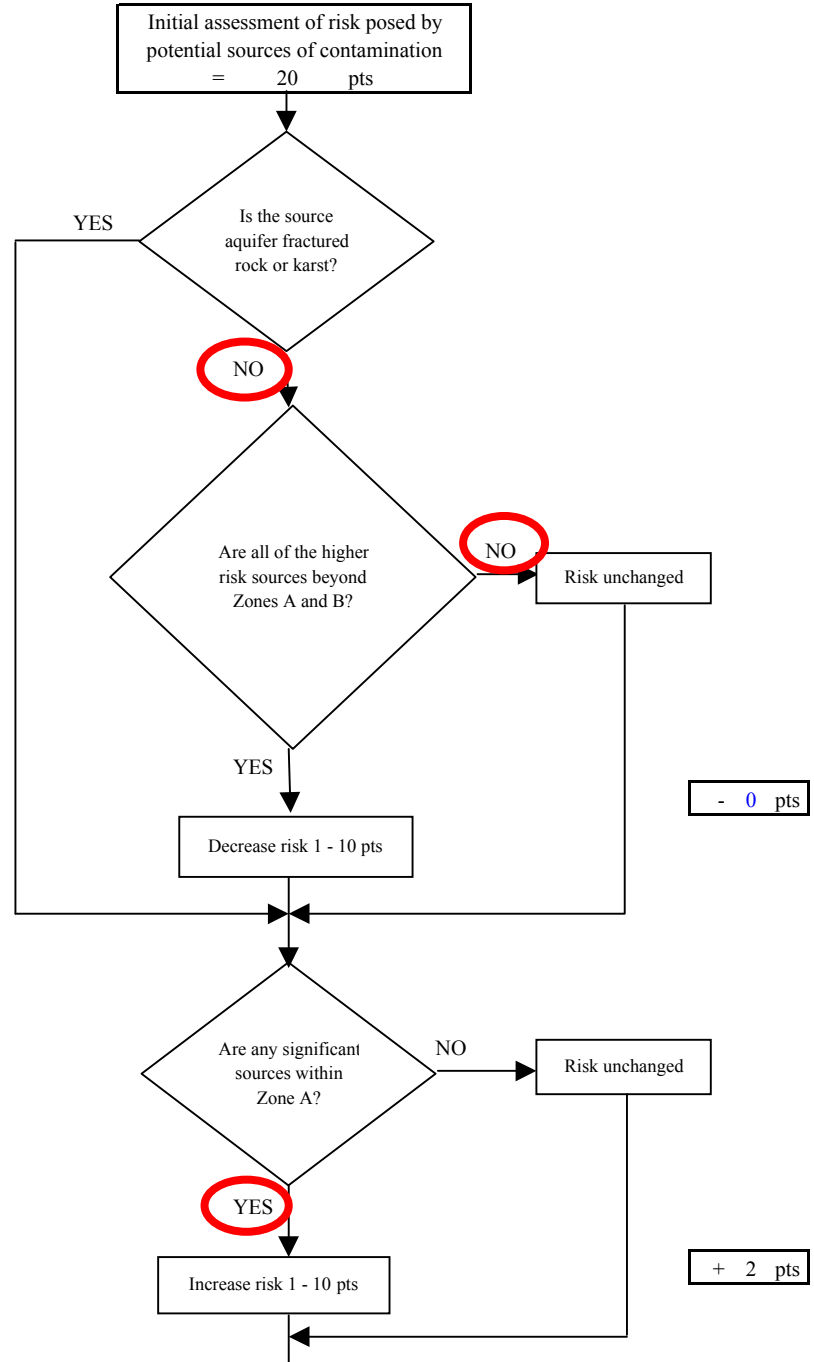
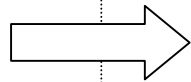


Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	1	1
Low(s)	1	4	5

	LOW 10 pts	<b>MEDIUM 20 pts</b>	HIGH 30 pts	VERY HIGH 40 pts
<b>LOW</b>	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
<b>MEDIUM</b>	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
<b>HIGH</b>	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
<b>VERY HIGH</b>	----	----	----	≥ 1 source + 10 pts

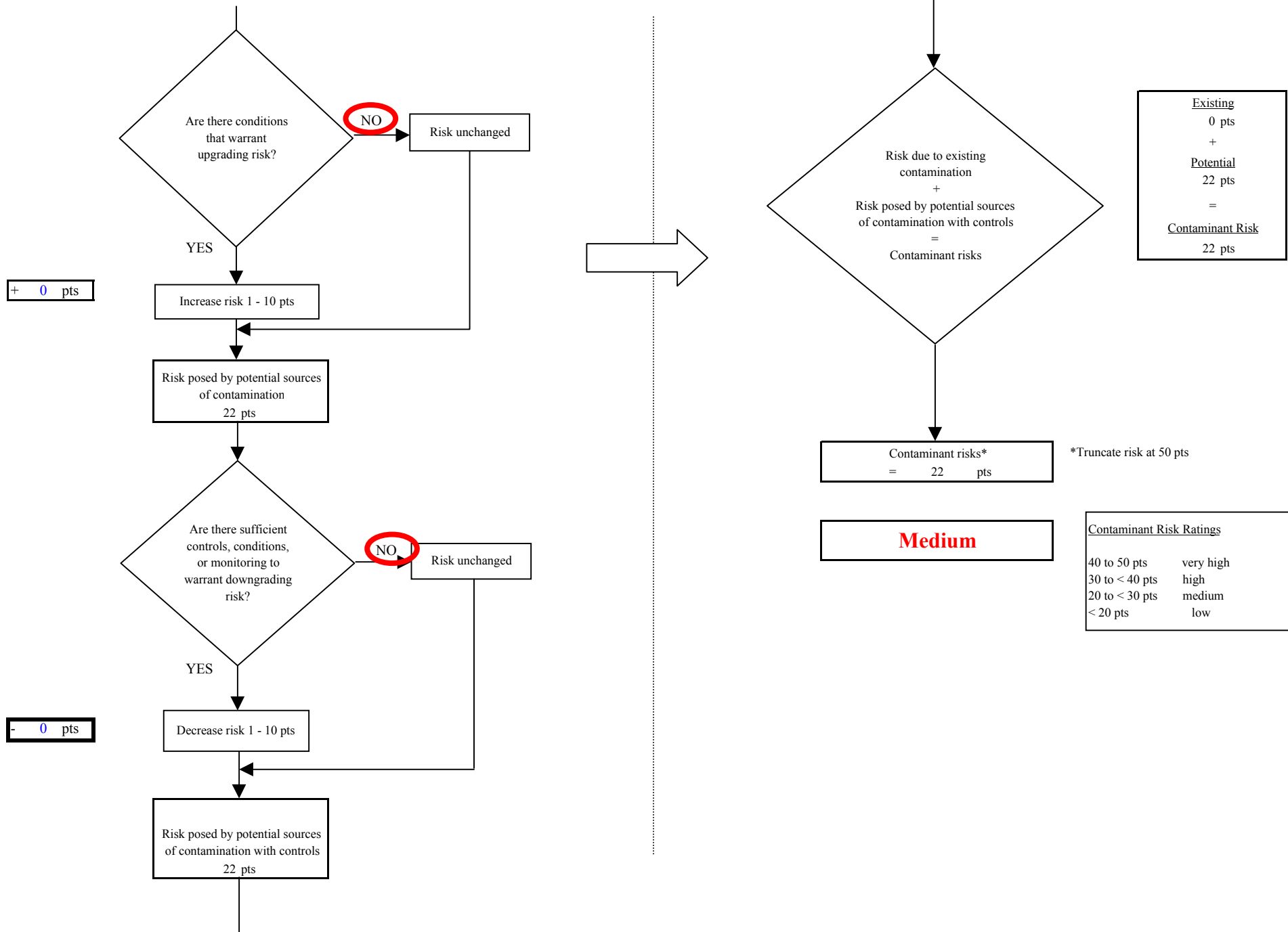
Matrix Score      20

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.





**Chart 13. Contaminant risks for Alpine Woods Backup Well - Other Organic Chemicals**



**Chart 14. Vulnerability analysis for Alpine Woods Backup Well - Other Organic Chemicals**

