



Source Water Assessment

A Hydrogeologic Susceptibility and
Vulnerability Assessment for
Eureka Lodge
Drinking Water System,
Mile 128 Glenn Highway, Alaska
Eureka Lodge # 226397

DRINKING WATER PROTECTION PROGRAM REPORT 249
Alaska Department of Environmental Conservation

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By Shannon & Wilson, Inc.

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The Drinking Water Protection Program is producing Source Water Assessments in compliance with the Safe Drinking Water Act Amendments of 1996. Each assessment includes a delineation of the source water area, an inventory of potential and existing contaminant sources that may impact the water, a risk ranking for each of these contaminants, and an evaluation of the potential vulnerability of these drinking water sources.

These assessments are intended to provide public water systems owners/operators, communities, and local governments with the best available information that may be used to protect the quality of their drinking water. The assessments combine information obtained from various sources, including the U.S. Environmental Protection Agency, Alaska Department of Environmental Conservation (ADEC), public water system owners/operators, and other public information sources. The results of this assessment are subject to change if additional data becomes available. If you have any additional information that may affect the results of this assessment, please contact the Program Coordinator of DWPP, (907) 269-7521.

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Source Water Assessment for Eureka Lodge Source of Public Drinking Water, Mile 128 Glenn Highway, Alaska

By Shannon & Wilson, Inc.

Drinking Water Protection Program Alaska Department of Environmental Conservation

EXECUTIVE SUMMARY

The Eureka Lodge is a Class B (transient/non-community) water system consisting of a surface water intake located at Mile 128 of the Glenn Highway. Identified potential and current sources of contaminants for Eureka Lodge public drinking water source include: large capacity and single family septic systems, residential areas, airports, and roads. These identified potential and existing sources of contamination are considered sources of bacteria and viruses, nitrates and/or nitrites, and volatile organic chemicals. Overall, the public water sources for Eureka Lodge received a vulnerability rating of **High** for volatile organic chemicals, **Very High** for bacteria and viruses, and **Very High** for nitrates and nitrites.

INTRODUCTION

The Alaska Department of Environmental Conservation (ADEC) is completing source water assessments for all public drinking water sources in the State of Alaska. The purpose of this assessment is to provide owners and/or operators, communities, and local governments with information they can use to preserve the quality of Alaska's public drinking water supplies. The results of this source water assessment can be used to decide where voluntary protection efforts are needed and feasible, and also what efforts will be most effective in reducing contaminant risks to your water system. Shannon & Wilson has been contracted to perform these assessments under the supervision of ADEC.

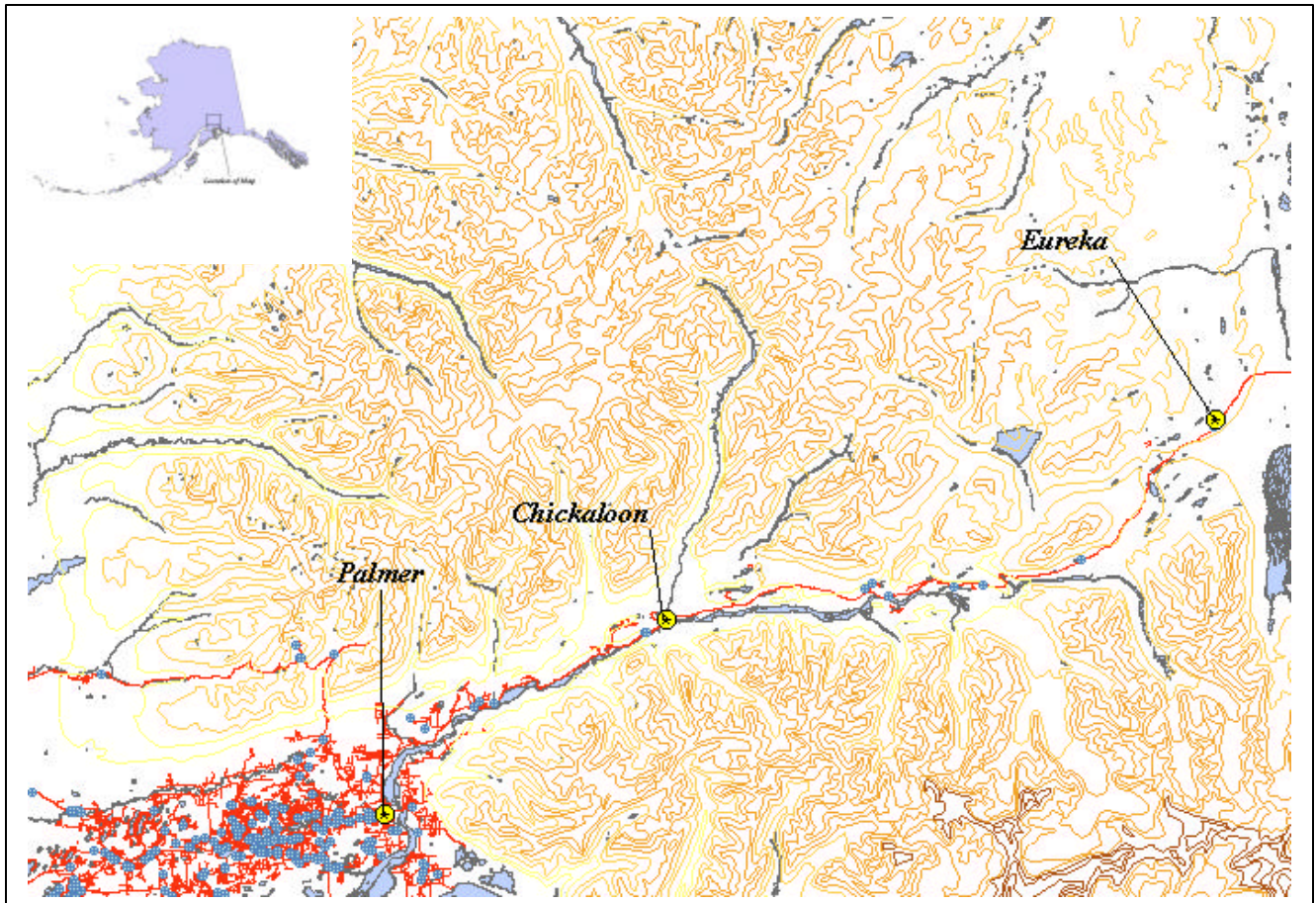


Figure 1. Index map showing the location of the Western Copper River Basin.

This source water assessment combines a review of the natural conditions at the site and the potential and existing contaminant risks. These are combined to determine the overall vulnerability of the drinking water source to contamination.

DESCRIPTION OF THE COPPER RIVER BASIN, ALASKA

Location

The western portion of the Copper River Basin encompasses the headwaters of the Nelchina, Little Nelchina, Tazlina and Gulkana Rivers and generally includes Lake Louise. The area is located west of the community of Glennallen, as shown in Figure 1. While Lake Louise is located in the Matanuska-Susitna (Mat-Su) Borough, other portions of the Copper River Basin are not located within the Mat-Su Borough.

A large lake occupied the Copper River Basin before the Copper River cut an outlet through the Chugach Mountains and entered the Gulf of Alaska east of Cordova. The former lake and glaciers that reached the lake margins, coupled with recent alluvial forces, have shaped the landforms of the Copper River Basin. Landforms common in the western portion of the Copper River Basin include gentle undulating terrain and low ridges, terraces, and numerous lakes and streams.

Precipitation

Glennallen averages about 12 inches of precipitation per year.

Topography and Drainage

The area topography varies from about 3,000 feet at Tahnetta Pass (separating the Matanuska and Copper River drainage basins) to 2,000 feet at Tolsona Creek, due west of Glennallen. Drainages along the Glenn Highway in this area generally flow south into Tazlina Lake or Tazlina River and then into the Copper River.

Groundwater

Although the quality can vary significantly in a short distance, groundwater supplies are generally abundant in the area. Many homes and businesses in the area rely on individual wells for their water supply. Most of these wells are shallow with depths of less than 100 feet to 200 feet. Static water levels in many of these wells are less than 15 feet below the surface. The coarse, alluvial, sandy gravel in the floodplains of the areas streams and rivers provides a large aquifer even in the winter when infiltration is low.

Geology and Soils

The unconsolidated soils in the western Copper River Basin include fine-grained lacustrine deposits (silts and clays deposited in a lake depositional environment), fine to coarse-grained soils deposited at the margins of the glaciers, and reworked sands and gravels along the streams and rivers. Much of the soils in the area provide good sources of sand, gravel.

EUREKA LODGE PUBLIC DRINKING WATER SYSTEM

Eureka Lodge is a Class B (transient/non-community) water system. The system consists of one surface water intake at Mile 128 of the Glenn Highway.

The surface water intake was initially put into operation in the early 1970's. The most recent Sanitary Survey (7/16/99) indicates the intake was adequately constructed. An adequately constructed intake may provide protection against debris and contaminants from entering the system. The surface water source that the system draws from is or less than 1 square mile. There is a potential for runoff within the area surrounding the surface water.

This system operates year-round and serves 4 residents and more than 50 non-residents through one service connection.

EUREKA LODGE DRINKING WATER PROTECTION AREA

In order to evaluate whether a drinking water source is at risk, we must first evaluate what are the most likely pathways for surface contamination to reach the intake. These pathways are determined by looking at the characteristics of the lake, surrounding areas, and the intake.

The most probable area for contamination to reach the drinking water system is the area that contributes water to the surface water body that water is being drawn from. This area is designated as the Drinking Water Protection Area (DWPA). Because a release of contaminants within the DWPA are most likely to impact the drinking water system, this area will serve as the focus for voluntary protection efforts.

The size and shape of the DWPAs were established based on aerial distances from the surface water body, and the watershed that recharges the surface water body. Additional methods were also used to take into account any uncertainties in surface water flow and topographic characteristics to arrive at a meaningful

DWPA (Please refer to the Guidance Manual for Class B Public Water Systems for additional information).

The DWPA's established for surface water systems by the ADEC are separated into three zones. These zones correspond to different distances from the surface water body, and the watershed that recharges the surface water body. The following is a summary of the three DWPA zones and their definitions:

Table 1. Definition of Zones

Zone	Definition
A	1000 Feet From the Surface Water Body
B	1 Mile From the Surface Water Body
C	The Entire Watershed

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 Eureka Lodge DWPA. This inventory was completed through a search of agency records and other publicly available information. Potential sources of contamination to the drinking water system include 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 all Class B public water system assessments, three categories of drinking water contaminants were inventoried, they include:

- Bacteria and viruses;
- Nitrates and/or nitrites; and
- Volatile organic chemicals.

Inventoried potential sources of contamination within Zones A through Zone C were associated with residential and light industrial type activities. The sources are summarized in the tables in Appendix B.

RANKING OF CONTAMINANT RISKS

Once the potential and existing sources of contamination have been identified, they are 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. Further, contaminant risks are a function of the number and

density of those types of contaminant sources as well as the proximity of those sources to the intake.

VULNERABILITY OF EUREKA LODGE DRINKING WATER SOURCE

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

- Natural susceptibility; and
- Contaminant risks.

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

Natural Susceptibility (0 – 50 points)

+

Contaminant Risks (0 – 50 points)

=

Vulnerability of the Drinking Water Source to Contamination (0 – 100).

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

Susceptibility of the Wellhead (0 – 25 Points)

+

Susceptibility of the Aquifer (0 – 25 Points)

=

Natural Susceptibility (Susceptibility of the Well) (0 – 50 Points)

The surface water intake for Eureka Lodge is completed in Eureka Lake, a small lake located a short distance from the lodge. Because an unconfined aquifer is recharged by surface water and precipitation that migrates downward from the surface, contaminants at the surface have the potential to adversely impact this aquifer. Table 2 shows the Overall Susceptibility score and rating for Eureka Lodge.

Table 2. Natural Susceptibility - Susceptibility of the Surface Water Source to Contamination

	Score	Rating
Natural Susceptibility	42	Very High

Contaminant risks to a drinking water source depend on the type, number or density, and distribution of contaminant sources. This data has been derived from

an examination of existing or historical contamination that has been detected at the drinking water source through routine sampling. It also evaluates potential sources of contamination. Table 3 summarizes the Contaminant Risks for each category of drinking water contaminants.

Table 3. Contaminant Risks

Category	Score	Rating
Bacteria and Viruses	40	Very High
Nitrates and/or Nitrites	50	Very High
Volatile Organic Chemicals	25	Medium

Appendix D contains seven charts, which together form the ‘Vulnerability Analysis’ for a source water assessment for a public drinking water source. Chart 1 analyzes the ‘Susceptibility of the Surface Water Source’ to contamination by looking at the construction of the intake and its surrounding area and naturally-occurring attributes of the water source and influences on the groundwater system that might lead to contamination. Chart 2 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. Chart 3 contains the ‘Vulnerability Analysis for Bacteria and Viruses.’ Charts 4 through 7 contain the Contaminant Risks and Vulnerability Analyses for nitrates and nitrites and volatile organic chemicals, respectively.

Table 4 contains the overall vulnerability scores (0- 100) and ratings for each of the three categories of drinking water contaminants. Note: scores are rounded off to the nearest five.

Table 4. Overall Vulnerability of Eureka Lodge to Contamination by Category

Category	Score	Rating
Bacteria and Viruses	80	Very High
Nitrates and Nitrites	90	Very High
Volatile Organic Chemicals	65	High

Tables 2 through 4 in Appendix B contain the ranking of potential and existing sources of contamination with respect to bacteria and viruses, nitrates and/or nitrites, and volatile organic chemicals.

The large-capacity and single-family septic systems; residential areas; airports; and roads create a risk increase for the bacteria and viruses, nitrates and nitrites, and volatile organic compounds.

Only a small amount of bacteria and viruses are required to endanger public health. The sanitary survey noted that physical and chemical treatment and monitoring is performed on a regular basis. Bacteria and viruses have not been detected during recent water sampling of the system at Eureka Lodge.

Nitrates and/or nitrites are found in natural background concentration at this site, as elsewhere throughout Alaska. Nitrate concentrations in uncontaminated groundwater are typically less than 2 milligrams per liter (mg/L) and are derived primarily from the decomposition of organic matter in soils, adopted from the U.S. Geological Survey (Wang, et al., 2000).

Sampling history for Eureka Lodge indicates that low concentrations of nitrate have been detected (see Chart 5 - Contaminant Risks for Nitrates and/or Nitrites in Appendix D). Existing nitrate concentration is approximately 1.48 mg/L or 15% of the Maximum Contaminant Level (MCL) of 10 mg/L. The MCL is the maximum level of contaminant that is allowed to exist in drinking water and still be consumed by humans without harmful health effects. Due to the high solubility and weak retention by soil, nitrates are very mobile, moving at approximately the same rate as water. Though existing nitrate contamination was detected at the site, concentrations remain at safe levels with respect to human health.

The large-capacity and single-family septic systems; residential areas; airports; and roads located in Zone A form the greatest risk for volatile organic chemicals.

SUMMARY

A *Source Water Assessment* has been completed for the sources of public drinking water serving Eureka Lodge. The overall vulnerability of this source to contamination is **High** for volatile organic chemicals, **Very High** for bacteria and viruses, and **Very High** for nitrates and nitrites. 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 Eureka Lodge 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 Eureka Lodge public drinking water source.

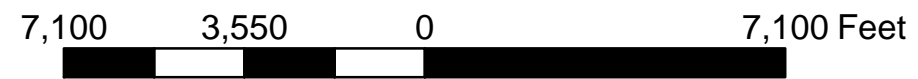
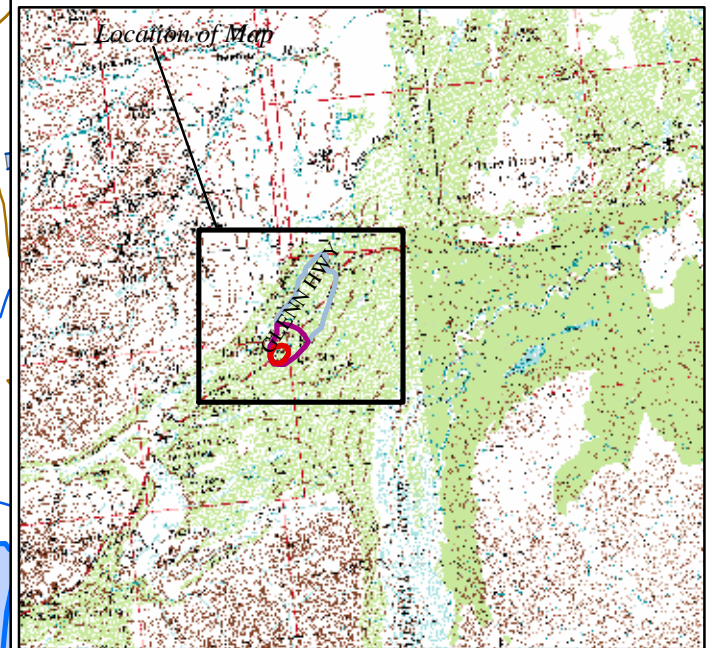
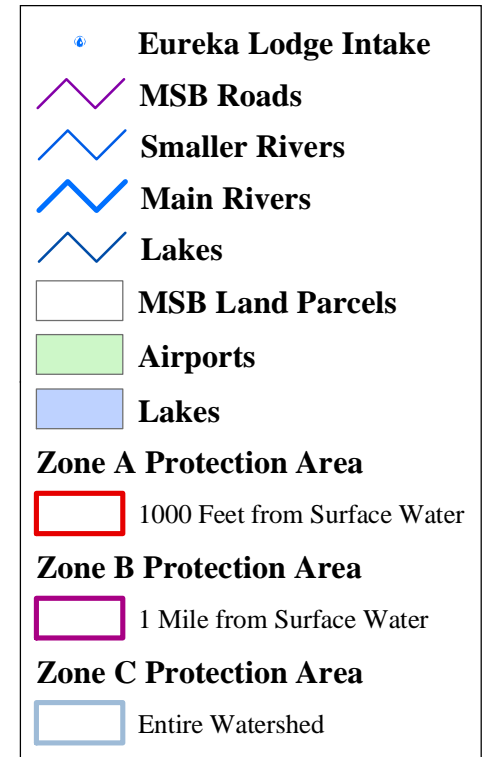
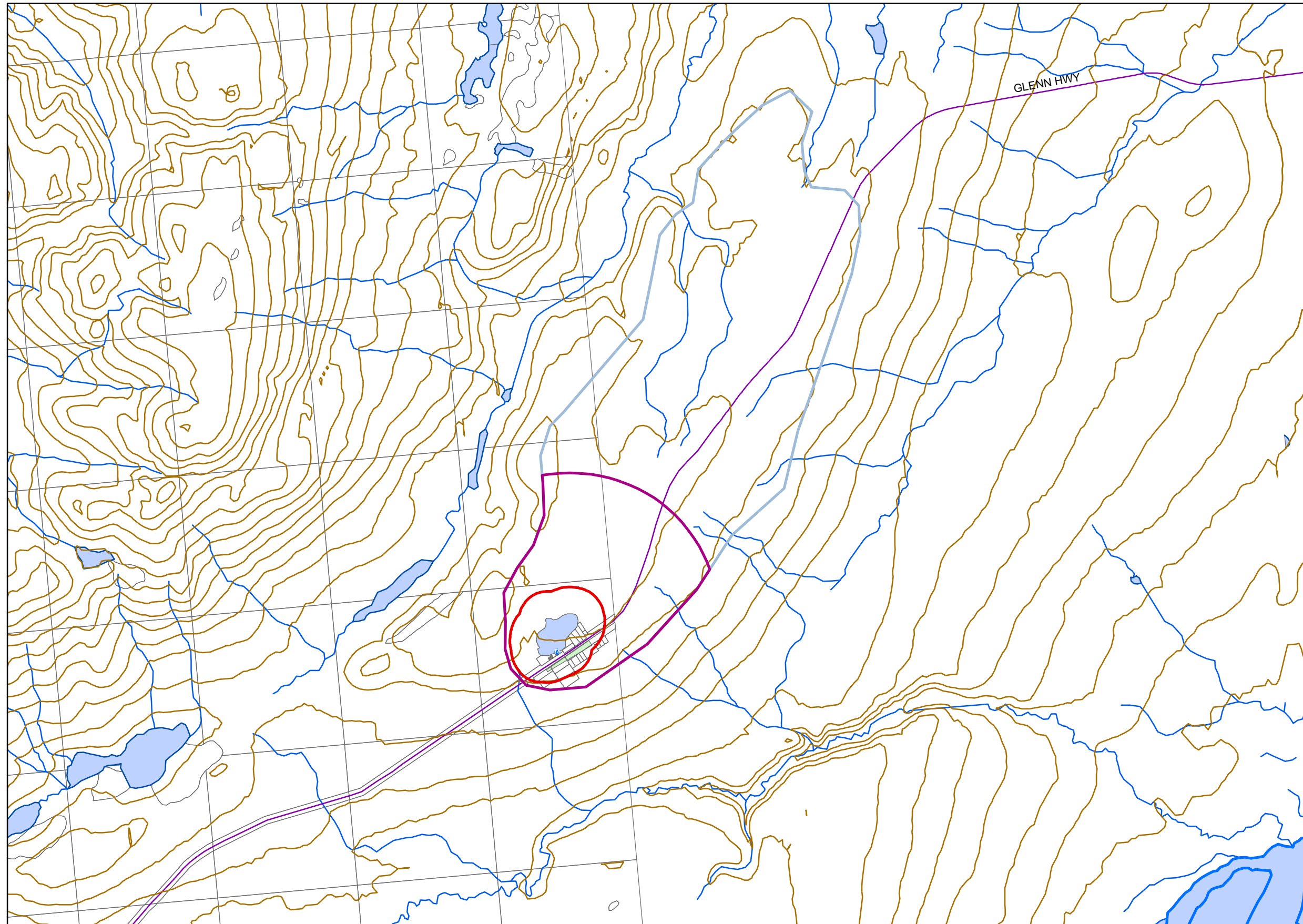
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- Weather Underground, June 18, 2002, Web extension to the *Western Regional Climate Center* [WWW document].
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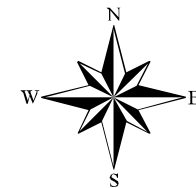
APPENDIX A

Eureka Lodge Drinking Water Protection Area (Map 1)

Drinking Water Protection Areas for Eureka Lodge



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Map 1

APPENDIX B

Contaminant Source Inventory and Risk Ranking for Eureka Lodge (Tables 1-4)

Table 1

**Contaminant Source Inventory for
Eureka Lodge**

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Contaminant Source Type	Contaminant Source ID	CS ID tag	Zone	Location	Map Number	Comments
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-1	A	West of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-2	A	South of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-3	A	SW of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-4	A	SE of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-5	A	SE of Eureka Lodge	3	
Residential Areas	R01	R1-1	A	Residences along Glenn Highway, north of Eureka Lodge	2	32 acres of residential area in Zone A
Septic systems (serves one single-family home)	R02	R2-1	A	SE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-2	A	SE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-3	A	NE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-4	A	NE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-5	A	NE of Eureka Lodge	3	
Airports	X14	X14-1	A	Skeleton Landing Sloop	3	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Glenn Highway	2	

Contaminant Source Inventory and Risk Ranking for

PWSID 226397.001

Eureka Lodge

Sources of Bacteria and Viruses

Table 2

<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>
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-1	A	High	1	West of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-2	A	High	2	South of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-3	A	High	3	SW of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-4	A	High	4	SE of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-5	A	High	5	SE of Eureka Lodge	3	
Residential Areas	R01	R1-1	A	Low	6	Residences along Glenn Highway, north of Eureka Lodge	2	32 acres of residential area in Zone A
Septic systems (serves one single-family home)	R02	R2-1	A	Low	7	SE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-2	A	Low	8	SE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-3	A	Low	9	NE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-4	A	Low	10	NE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-5	A	Low		NE of Eureka Lodge	3	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low		Glenn Highway	2	

Contaminant Source Inventory and Risk Ranking for

PWSID 226397.001

Eureka Lodge

Sources of Nitrates/Nitrites

Table 3

<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>
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-1	A	High	1	West of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-2	A	High	2	South of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-3	A	High	3	SW of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-4	A	High	4	SE of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-5	A	High	5	SE of Eureka Lodge	3	
Residential Areas	R01	R1-1	A	Low	6	Residences along Glenn Highway, north of Eureka Lodge	2	32 acres of residential area in Zone A
Septic systems (serves one single-family home)	R02	R2-1	A	Low	7	SE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-2	A	Low	8	SE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-3	A	Low	9	NE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-4	A	Low	10	NE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-5	A	Low		NE of Eureka Lodge	3	
Airports	X14	X14-1	A	Low		Skeleton Landing Sloop	3	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low		Glenn Highway	2	

Contaminant Source Inventory and Risk Ranking for

PWSID 226397.001

Eureka Lodge

Sources of Volatile Organic Chemicals

<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>
Airports	X14	X14-1	A	Medium	1	Skeleton Landing Sloop	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-1	A	Low	2	West of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-2	A	Low	3	South of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-3	A	Low	4	SW of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-4	A	Low	5	SE of Eureka Lodge	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-5	A	Low	6	SE of Eureka Lodge	3	
Residential Areas	R01	R1-1	A	Low	7	Residences along Glenn Highway, north of Eureka Lodge	2	32 acres of residential area in Zone A
Septic systems (serves one single-family home)	R02	R2-1	A	Low	8	SE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-2	A	Low	9	SE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-3	A	Low	10	NE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-4	A	Low		NE of Eureka Lodge	3	
Septic systems (serves one single-family home)	R02	R2-5	A	Low		NE of Eureka Lodge	3	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low		Glenn Highway	2	

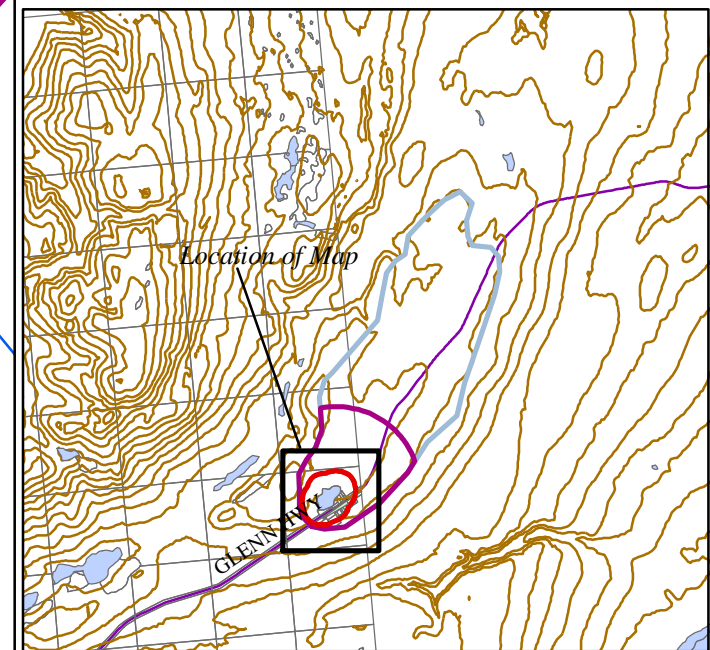
APPENDIX C

Eureka Lodge Drinking Water Protection Area and Potential and Existing Contaminant Sources (Maps 2-3)

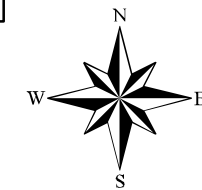
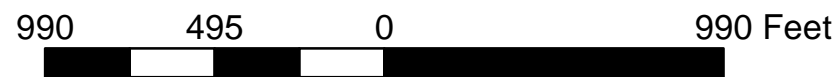
Drinking Water Protection Areas for Eureka Lodge and Potential and Existing Sources of Contamination



- Eureka Lodge Intake
- MSB Roads
- Smaller Rivers
- Main Rivers
- Lakes
- MSB Land Parcels
- Lakes
- Airports (X14)
- Residential Areas (R1)
- Zone A Protection Area**
- 1000 Feet from Surface Water
- Zone B Protection Area**
- 1 Mile from Surface Water
- Zone C Protection Area**
- Entire Watershed

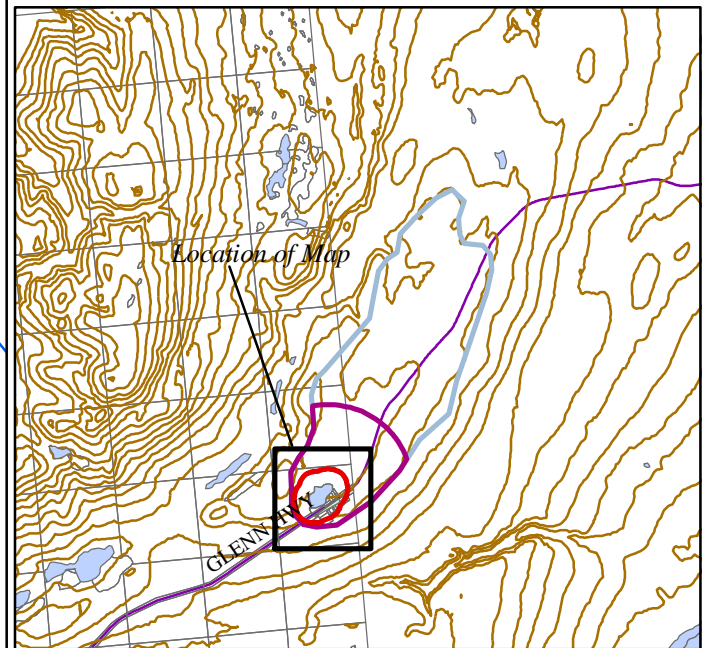
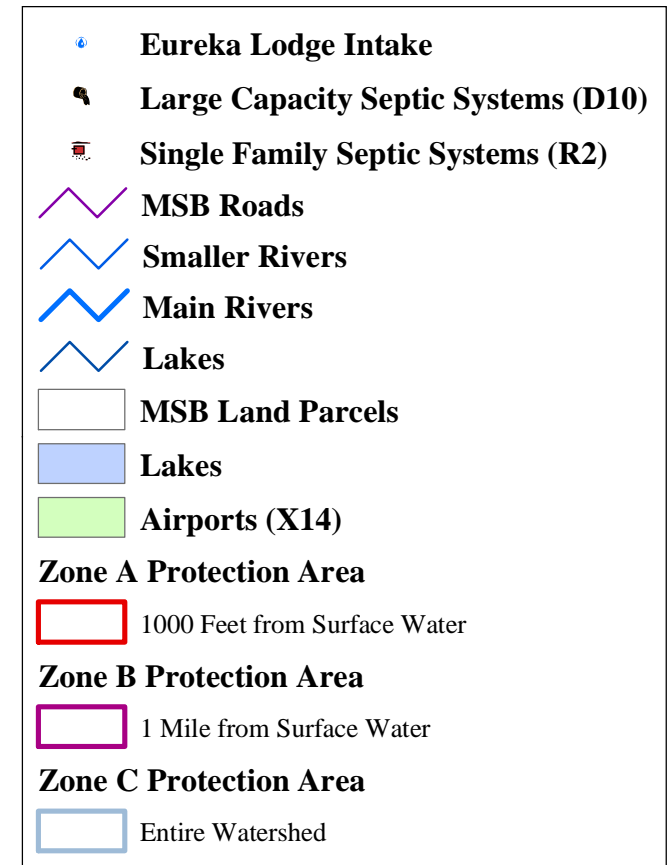


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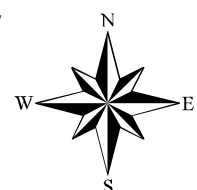


Map 2

Drinking Water Protection Areas for Eureka Lodge and Potential and Existing Sources of Contamination



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Map 3

APPENDIX D

Vulnerability Analysis for Eureka Lodge Public Drinking Water Source (Charts 1-7)

Chart 1. Susceptibility of the Surface Water Source - Eureka Lodge

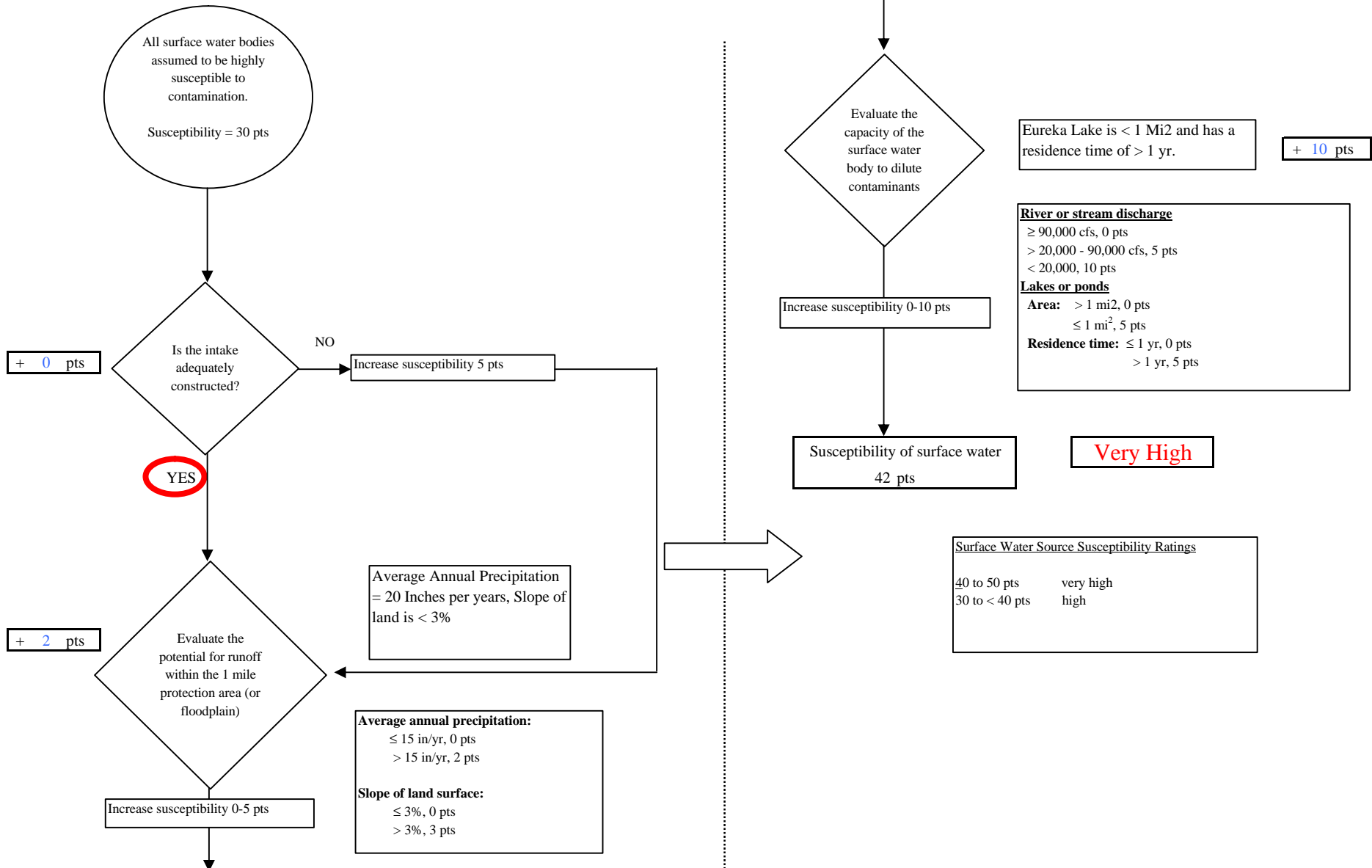
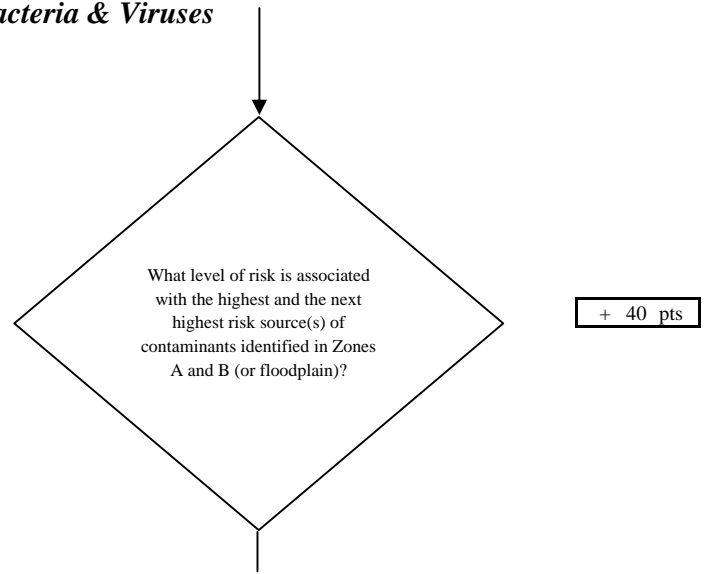
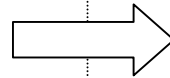
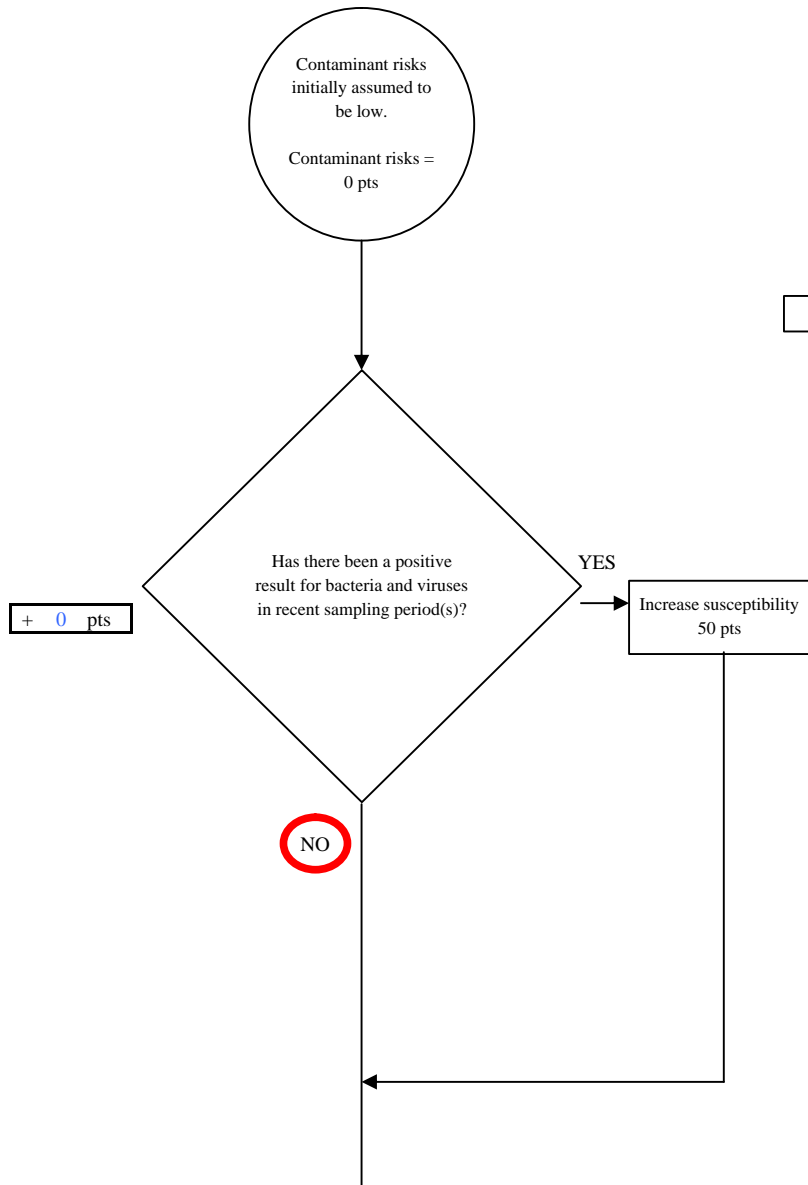


Chart 2. Contaminant Risks for Eureka Lodge - Bacteria & Viruses



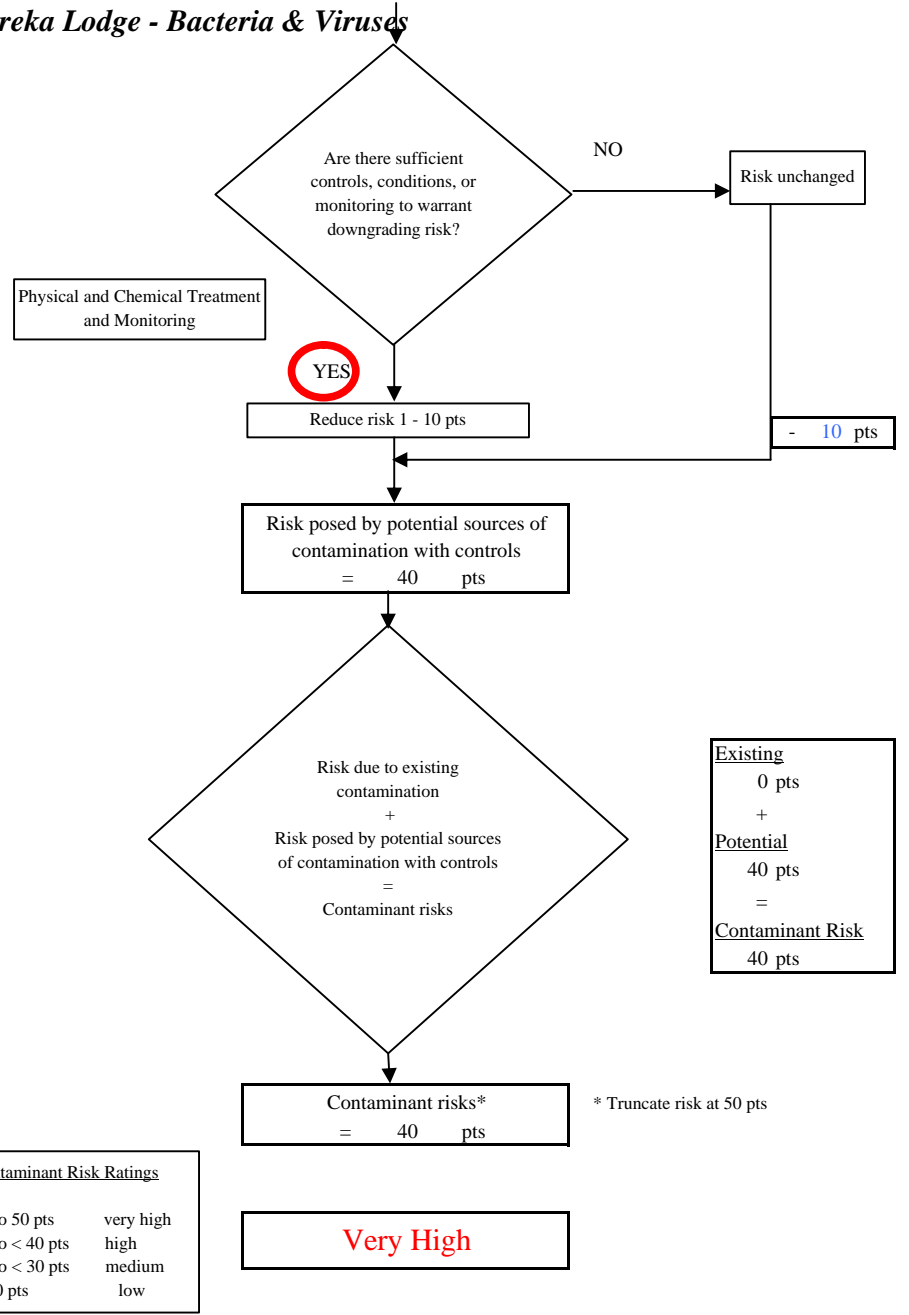
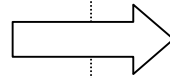
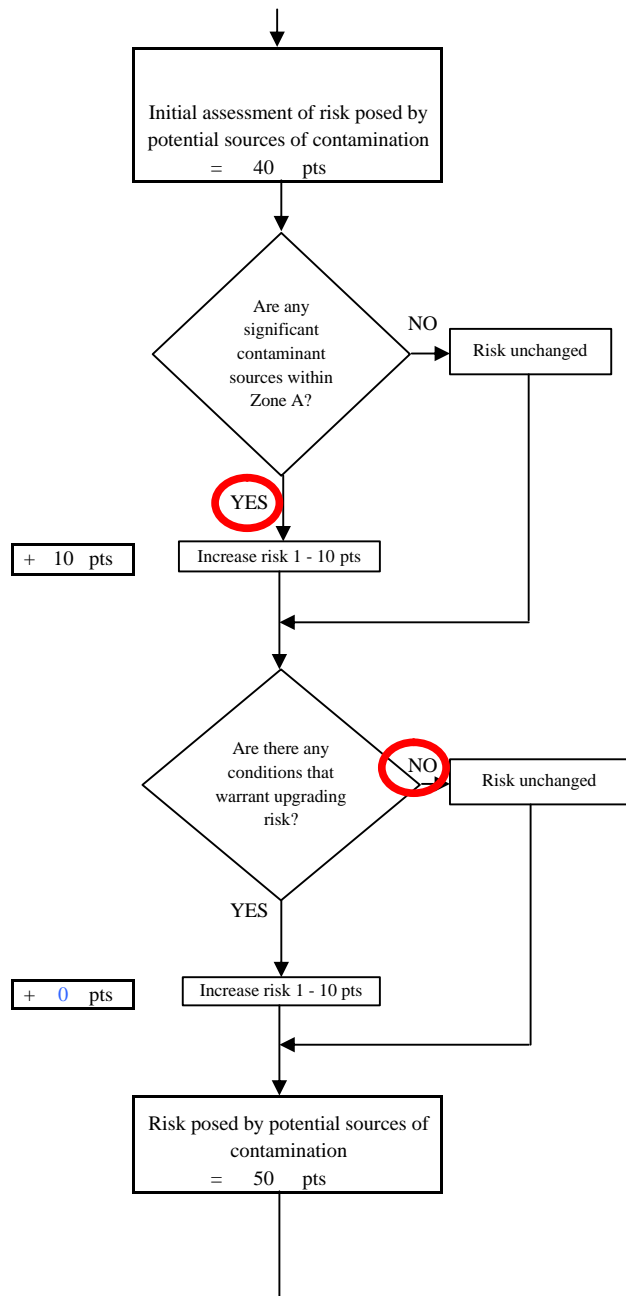
Risk Rankings for Contaminant Sources Identified in Zones A and B			
	Zone A	Zone B	Total
Very High(s)	0	0	0
High(s)	5	0	5
Medium(s)	0		0
Low(s)	7		7

	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 40

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 2. Contaminant Risks for Eureka Lodge - Bacteria & Viruses



Contaminant Risk Ratings

40 to 50 pts	very high
30 to < 40 pts	high
20 to < 30 pts	medium
< 20 pts	low

Existing	0 pts
+	
Potential	40 pts
=	
Contaminant Risk	40 pts

Chart 3. Vulnerability Analysis for Eureka Lodge - Bacteria & Viruses

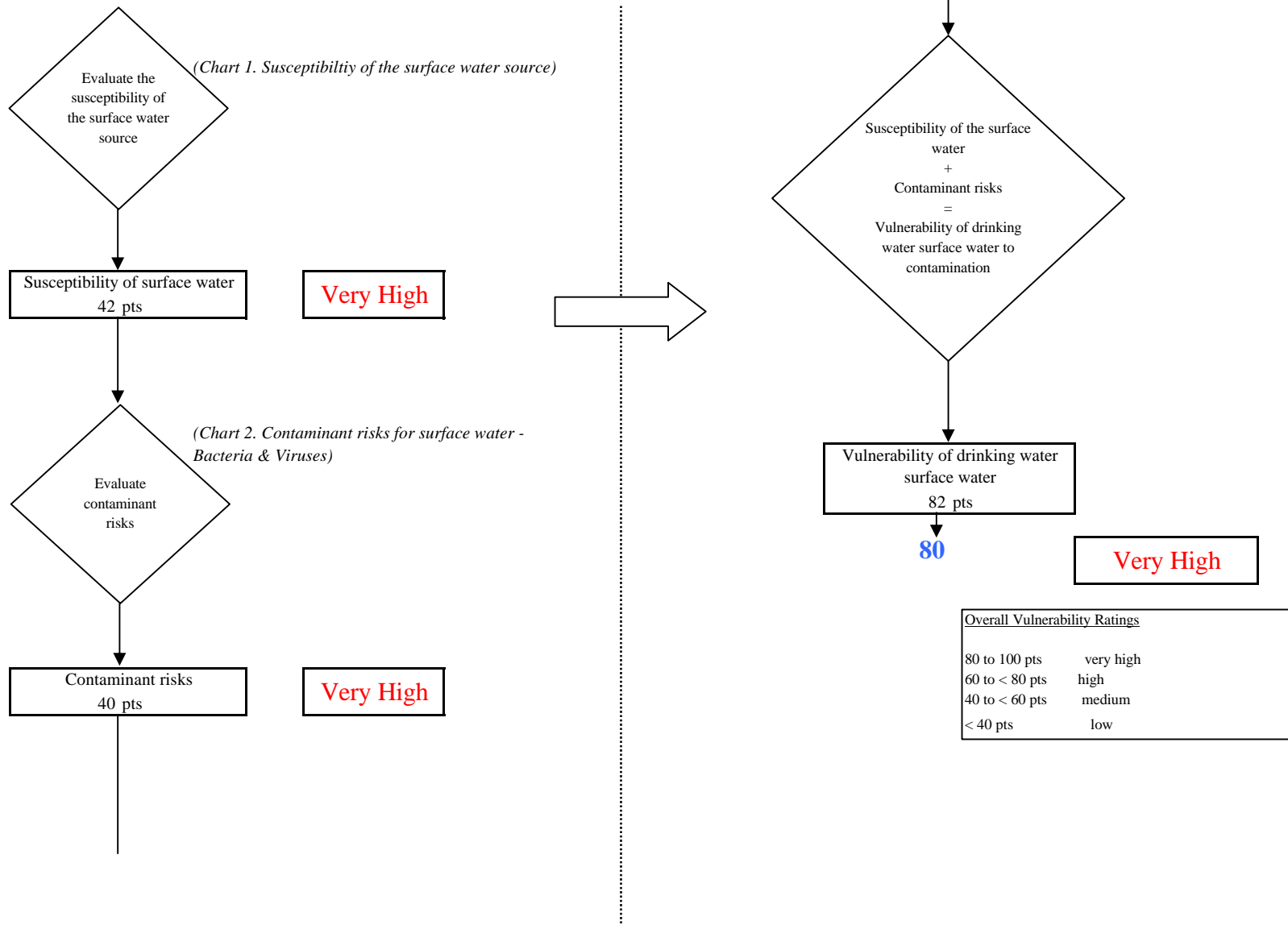


Chart 4. Contaminant Risks for Eureka Lodge - Nitrates and Nitrites

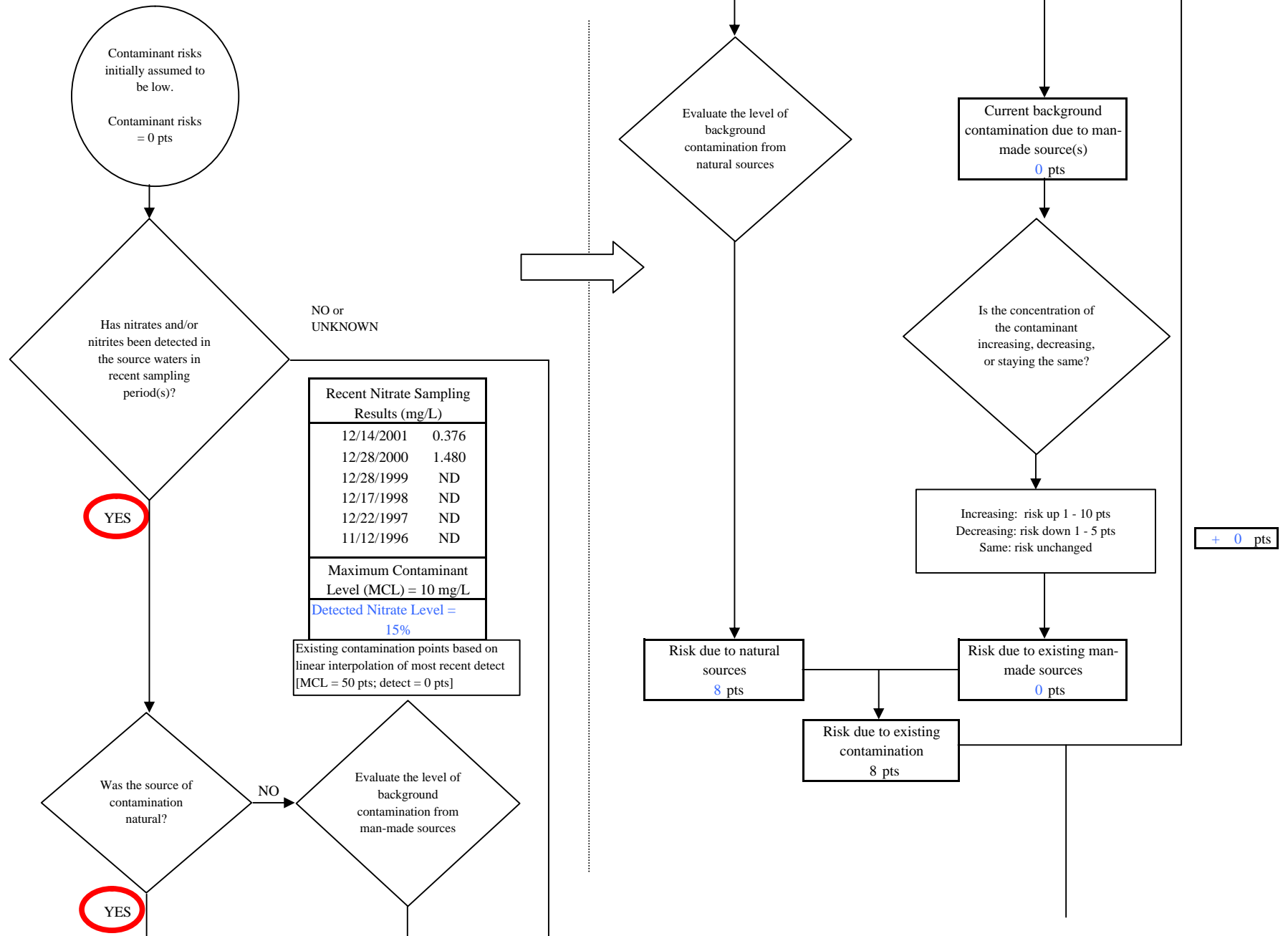


Chart 4. Contaminant Risks for Eureka Lodge - Nitrates and Nitrites

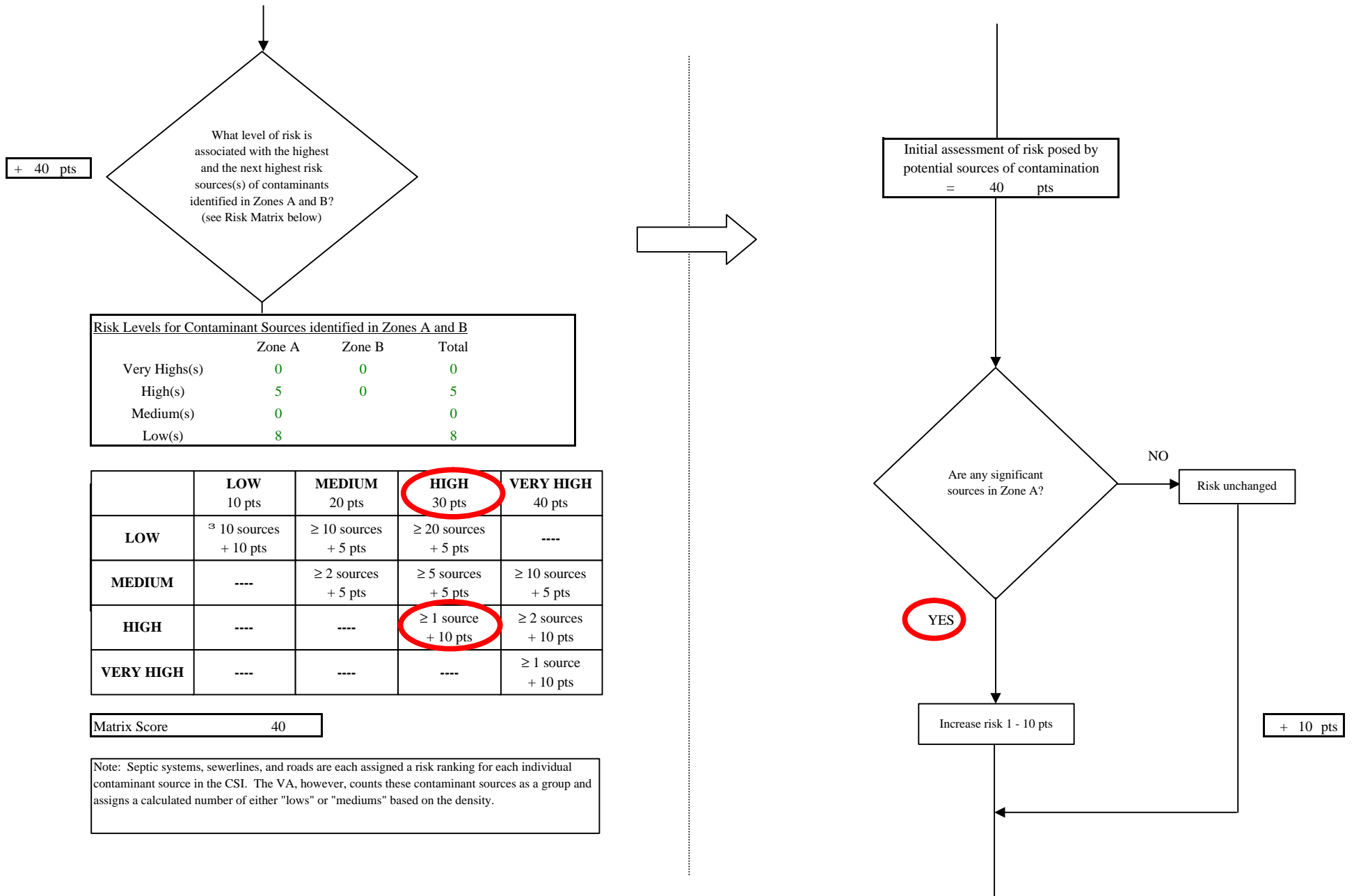


Chart 4. Contaminant Risks for Eureka Lodge - Nitrates and Nitrites

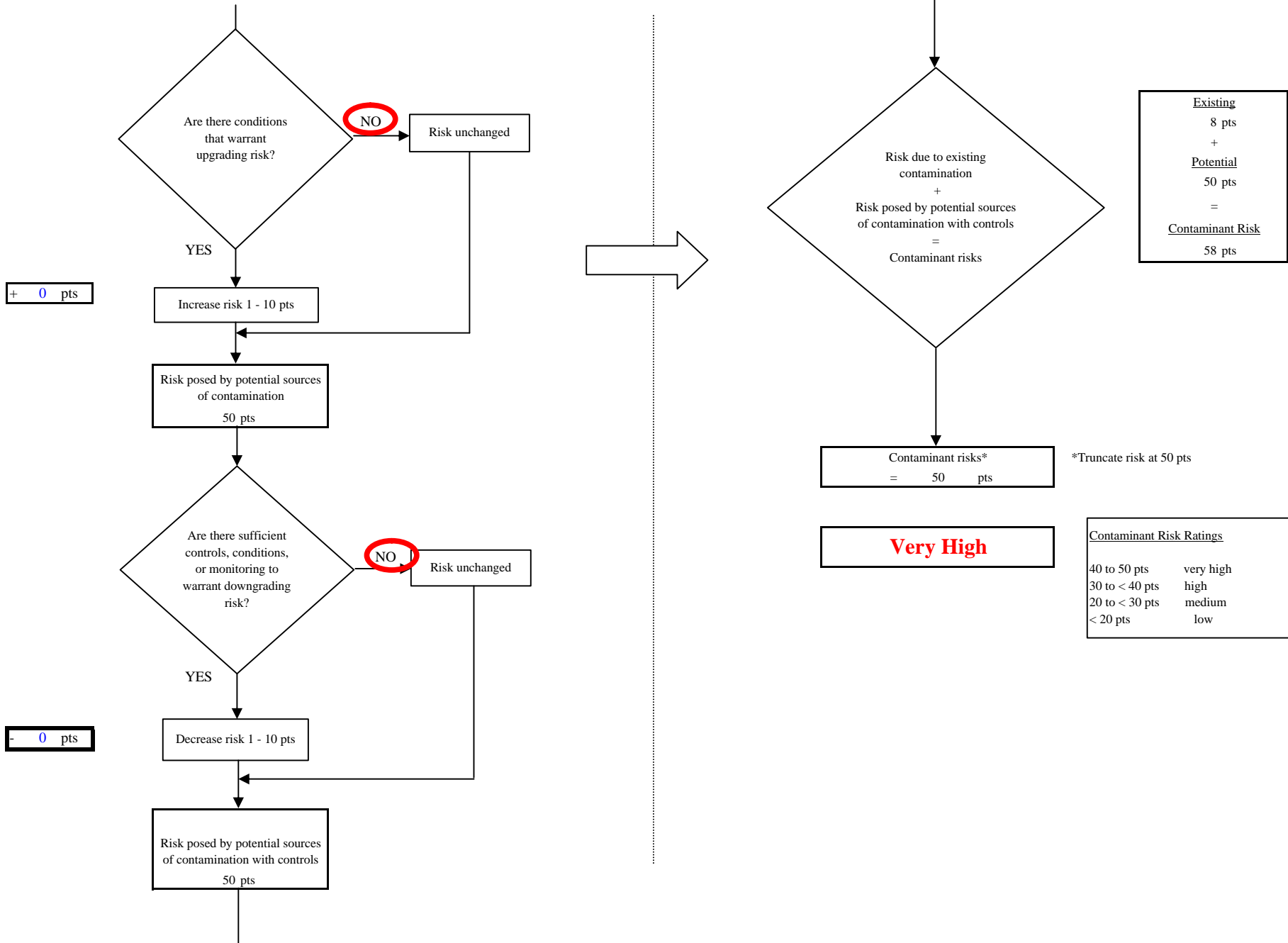


Chart 5. Vulnerability Analysis for Eureka Lodge - Nitrates and Nitrites

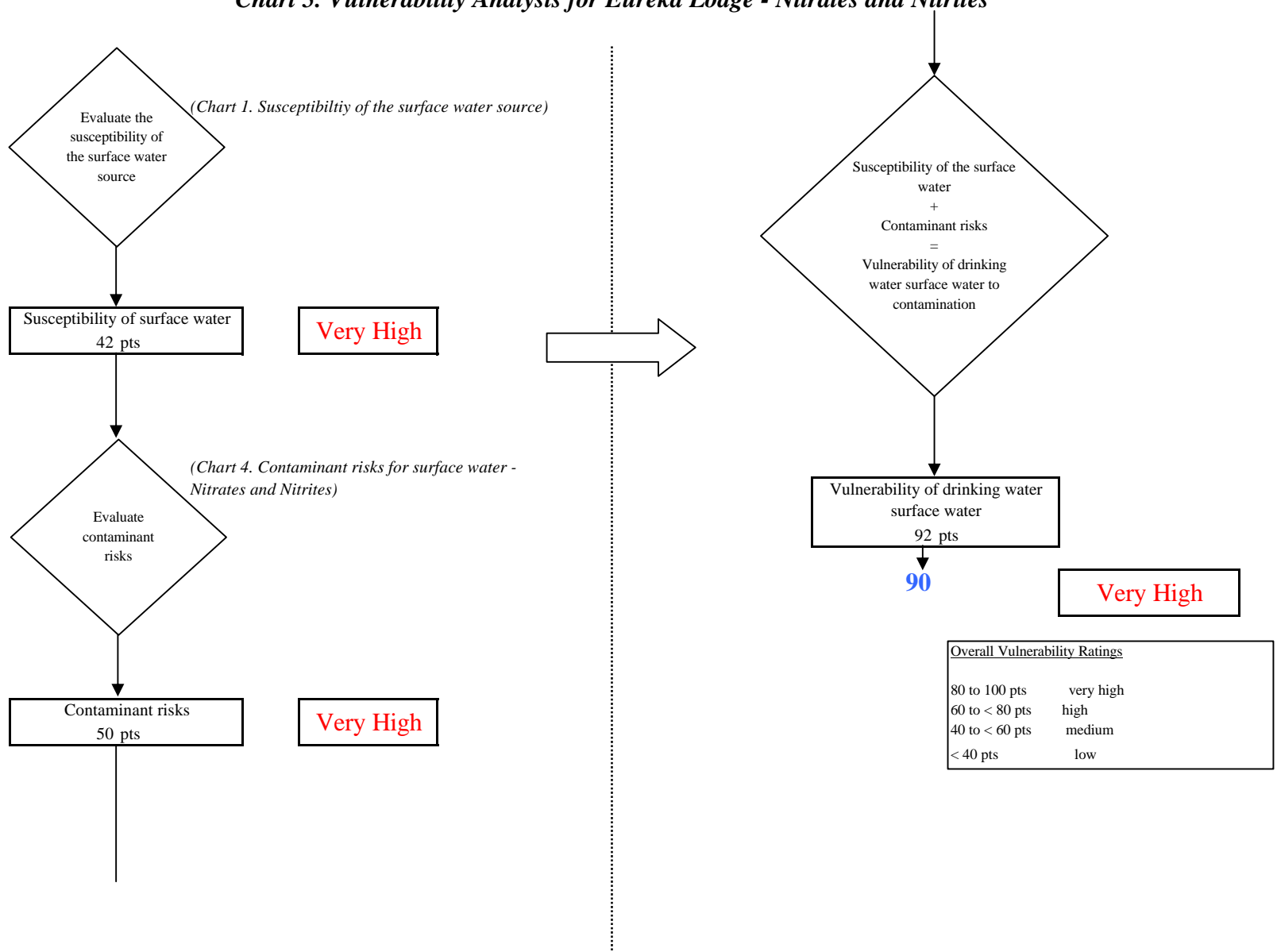


Chart 6. Contaminant Risks for Eureka Lodge - Volatile Organic Chemicals

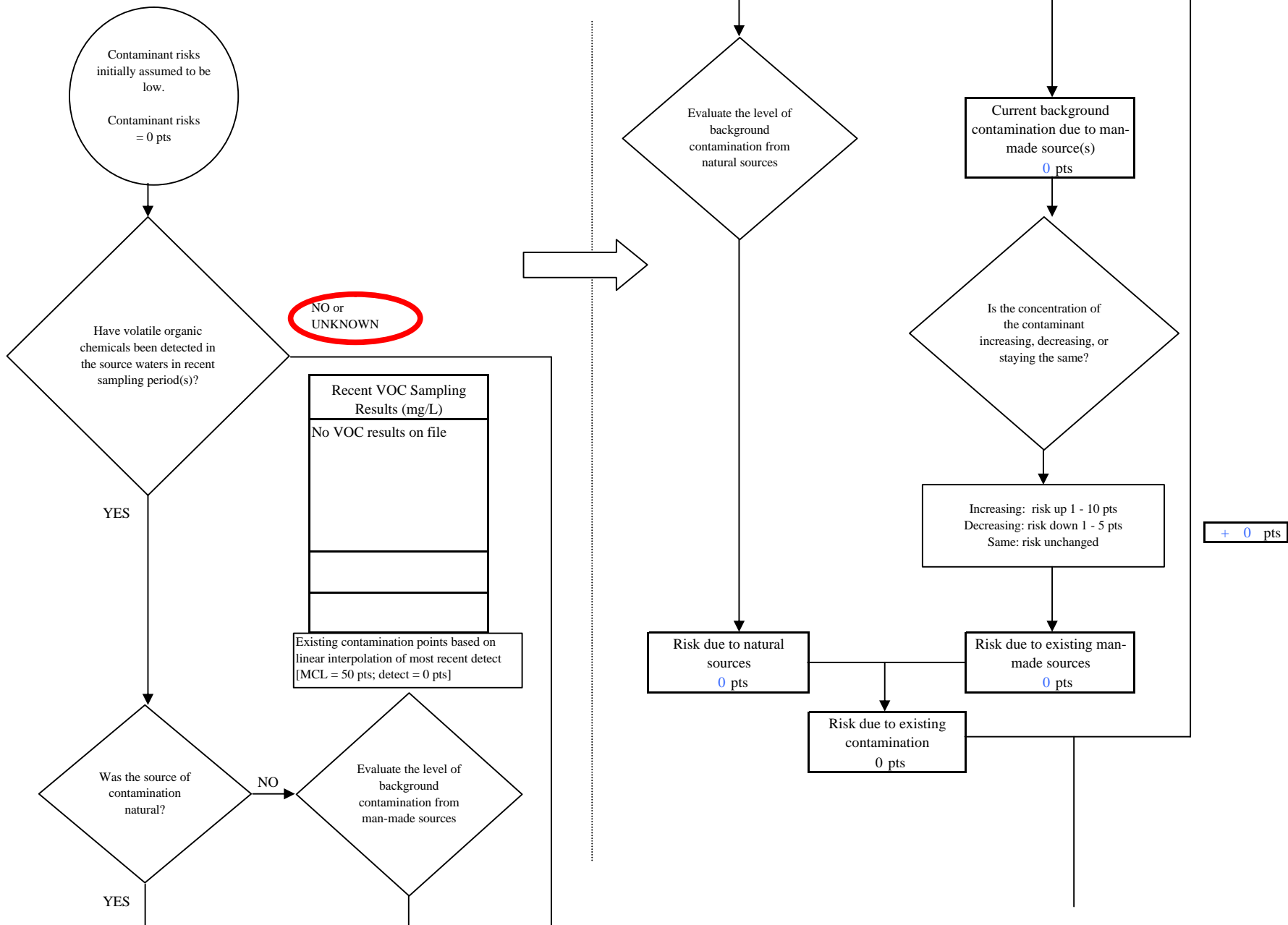


Chart 6. Contaminant Risks for Eureka Lodge - Volatile Organic Chemicals

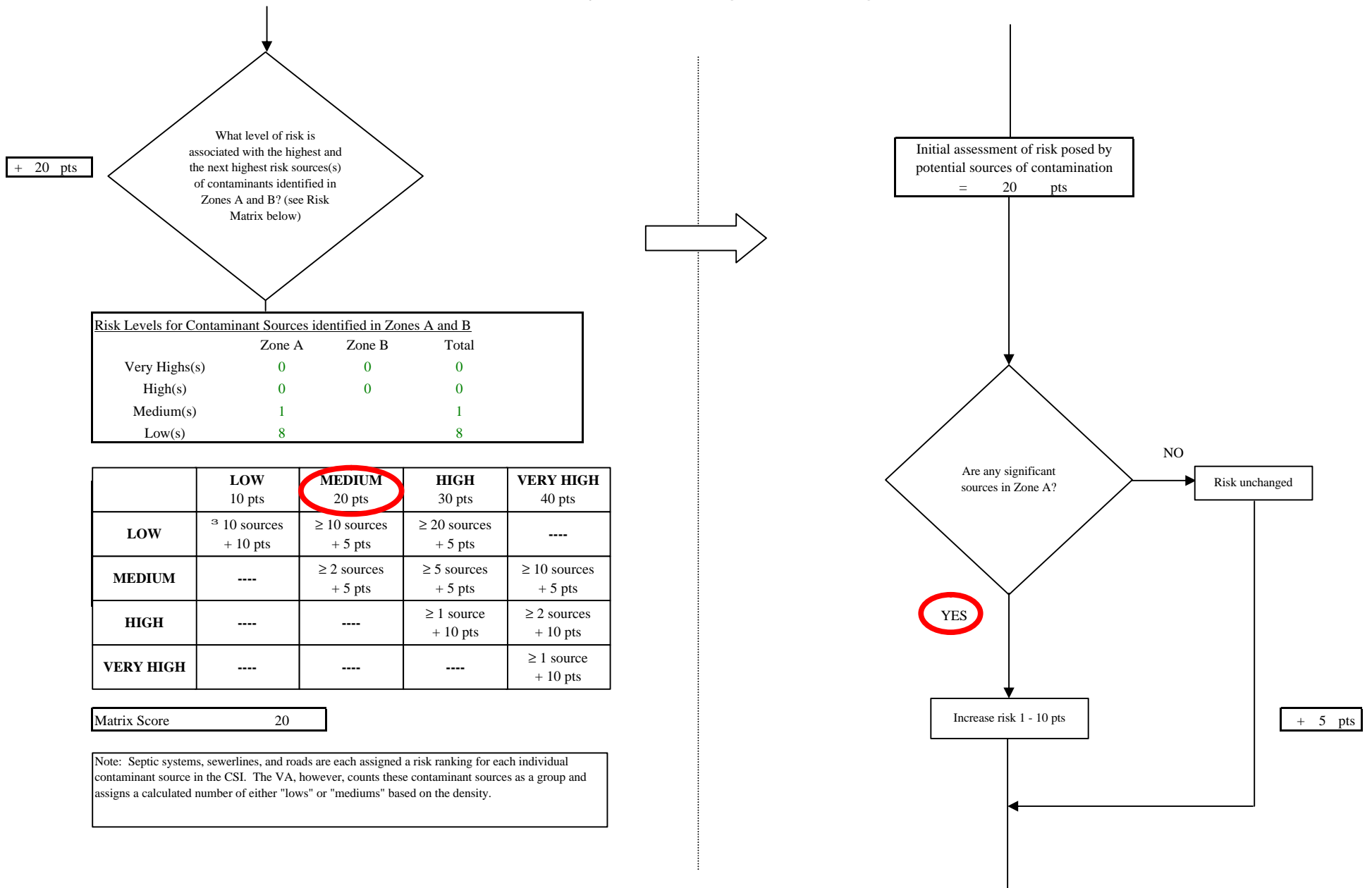


Chart 6. Contaminant Risks for Eureka Lodge - Volatile Organic Chemicals

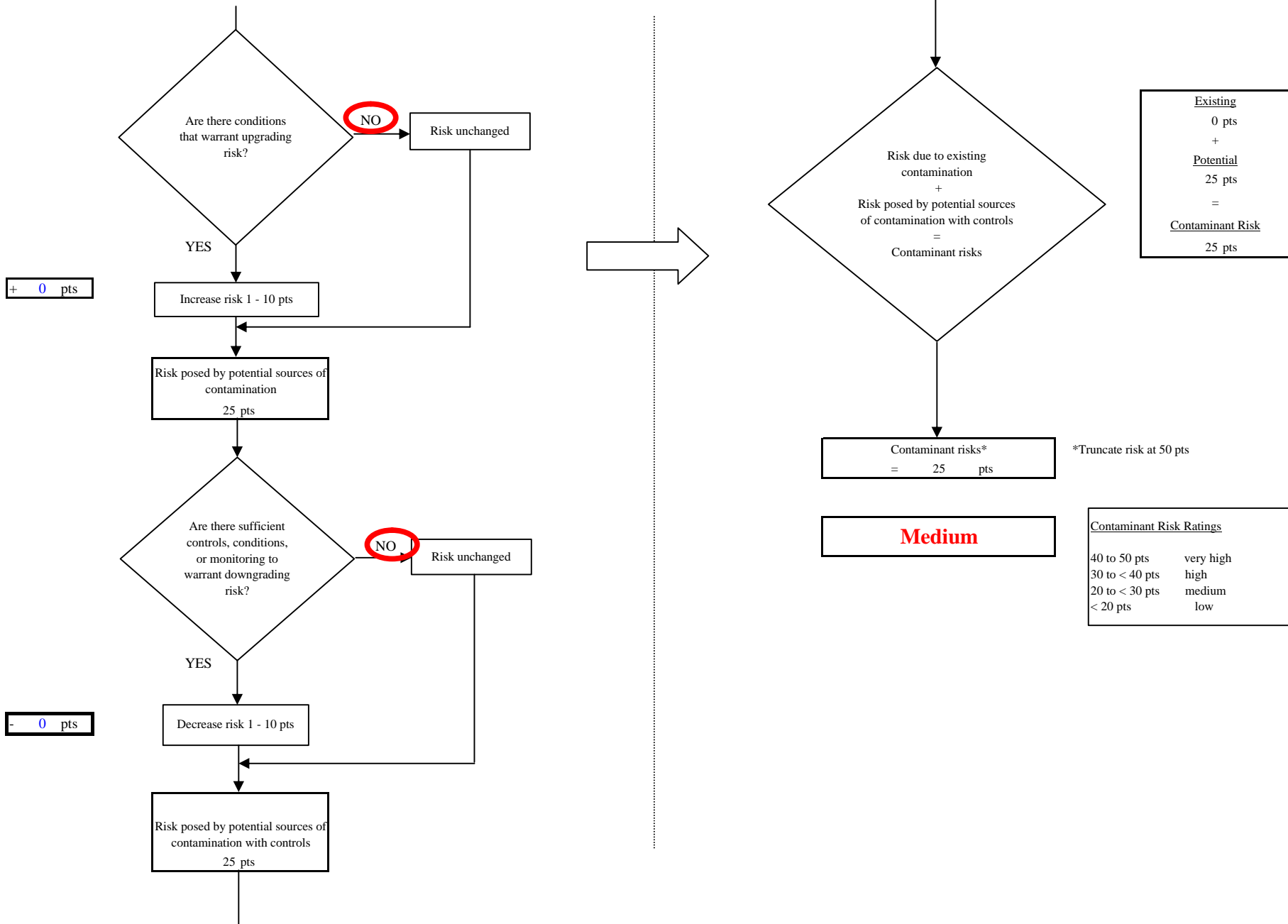


Chart 7. Vulnerability Analysis for Eureka Lodge - Volatile Organic Chemicals

