

# SITE HAZARD ASSESSMENT

## Worksheet 1

### Summary Score Sheet

#### SITE INFORMATION:

Anacortes Former WTP

14549 River Bend Rd

Mount Vernon, Skagit County, WA 98221

Cleanup Site ID: 13264

Facility/Site ID: 79423677

Section: 13

Latitude: -48.43756

Township: 34N

Longitude: -122.37065

Range: 03E

Tax/Parcel ID: P21669

*Site scored/ranked for the Hazardous Sites List Publication: August 2018*

#### SITE DESCRIPTION:

The Anacortes Former WTP site (Site) is a former water treatment plant located in Mount Vernon, Skagit County, Washington. The 9.93-acre property is located approximately 400 feet from Skagit River, and zoned for Agricultural Natural Resources Lands use.

The former Anacortes water treatment plant (WTP) operated on a parcel adjacent to the east bank of the Skagit River (Figures 1 and 2). Details about parcel P21669 show that it includes listed addresses 14489, 14495, 14503, and 14553 River Bend Road. In some early reports and correspondence, the Site was identified as being at 14549 River Bend Road.

The parcel is surrounded by agricultural lands with residences to the north and southeast. One site listed on Ecology's Confirmed and Suspected Contaminated Sites List lies within a ½-mile radius from this Site, however, it is on the west side of Skagit River and not hydraulically connected. Another site, the Smith Property Riverbend, previously impacted with diesel-range petroleum hydrocarbons, is located within a half mile southeast.

The Site is currently operated as a Anacortes water treatment plant by City of Anacortes.

The former WTP was constructed in 1969-1970 and consisted of an Administration Building, Filtration Basin and Sedimentation Basin. It began operating in 1970 and provided treated drinking water to the City of Anacortes. The former WTP was taken out of service in 2013 when it was replaced with a new plant on an adjacent location southwest of the Sedimentation Basin (Figure 3).

The parcel rests on a point bar of the Skagit River and, therefore, has a fairly flat topography. It is located within Special Flood Hazard Area Zone A21 with a Base Flood Elevation of 30 feet. The Site has not flooded since it was constructed. A railroad track runs along the east bank of the river but the floodplain has otherwise been developed for agricultural purposes.

#### SITE BACKGROUND:

A summary of prior operations/tenants at the subject property is presented below.

<u>From</u>	<u>To</u>	<u>Operator/Tenant</u>	<u>Activity</u>
1969	2018	City of Anacortes Public Works	water treatment plant

#### SITE CONTAMINATION:

In 2017 the Anacortes Former WTP site was reported to Washington State Department of Ecology (Ecology) and placed on the Confirmed and Suspected Contaminated Sites List (CSCSL).

In preparation for the deconstruction of the former WTP, sampling was conducted around the facility for the

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presence of asbestos and polychlorinated biphenyls (PCBs). Both were discovered in building materials and areas throughout the Site during a Hazard Materials Assessment in January 2015 and in follow up investigations in 2016. While hazardous substances were identified throughout the facility, this Site Hazard Assessment only addresses PCBs detected in the natural environment. These are believed to be generated from weathered sealing/coating material containing PCBs applied to concrete surfaces and present in soil from 0-12 inches below ground surface (bgs).

Two investigations were completed in 2016 to provide a more detailed characterization of PCB impacts. The first phase, known as the "Initial Investigation", focused on determining where the PCBs found in the Hazardous Material Assessment originated. During the second "Data Gap Investigation" phase, shallow soil borings and groundwater monitoring wells were installed. During these investigations, groundwater flow direction was determined to fluctuate from the northwest to northeast, depending on the season.

Sixteen soil samples were collected in May 2016 around the vicinity of the Sedimentation and Filtration Basins (Figure 3). With the exceptions of SB-08 and DG-GW, soil borings were extended to a depth of 30 feet bgs. Soil borings were completed as 14 groundwater monitoring wells. Groundwater was encountered in all locations and ranged in depth from 17.2 to 18.0 feet.

Analysis of these soil samples found no detection of PCBs (as Aroclor) up to 15.6 ppm total Aroclors in sample FB-SOIL-12-03 (Figure 4). PCB was not detected in groundwater samples.

A Terrestrial Ecological Evaluation was also conducted to determine the potential exposure to wildlife. It was determined that the largest contiguous portion of undeveloped land is about 1.6 acres, which required no further ecological evaluation per the Simplified TEE, Exposure Analysis Condition 2.

The City of Anacortes is currently working with Ecology to finalize an Agreed Order proposing a remedial action to excavate and remove the PCB-affected soil and collect confirmation soil sampling.

#### **REMEDIATION ACTIVITIES:**

In May 2017, a Skagit County Public Health and Community Services representative met with Fred Buckenmeyer, City of Anacortes Public Works Director, to visit the site as part of an Initial Investigation. During that visit, it was confirmed that no remediation or demolition work had been conducted at the site. In 2018, an Ecology cleanup site manager confirmed the status of the site is the same as found in 2016.

#### **CURRENT SITE CONDITIONS:**

The continual degradation of PCB-laden coating on the exterior walls of the Sedimentation and Filtration Basins remains a potential source for shallow soil contamination as long as the structures or building materials remain onsite. The bare ground with sparsely paved areas provides a possible airborne exposure pathway to contractors, visitors and trespassers.

The approximate depth to groundwater is 12-15 feet below ground surface, with groundwater flowing to the northwest to northeast, depending on the season and tidal fluctuations of Skagit River. Subsurface soils are silty, fine-grained sand to 25 feet below ground surface.

#### **SPECIAL CONSIDERATIONS:**

Checked boxes indicate routes applicable for Washington Ranking Method (WARM) scoring

**Surface Water**

There is no evidence that contamination from this site has reached a surface water body. Therefore, the surface water route is not scored.

**Air**

PCB-impacted soils are shallow and have the potential to become airborne.

# SITE HAZARD ASSESSMENT

## Worksheet 1

### Summary Score Sheet

**Groundwater**

Groundwater has been sampled from onsite monitoring wells and PCB was not detected. For this reason, the groundwater route is not scored.

The Skagit River provides a natural hydraulic barrier between groundwater at the Site and groundwater on the opposing bank. For this reason, groundwater wells on the north, west and south sides of the Skagit River are not included in the 2-mile radius used for this SHA.

Also, the City of Anacortes, which continues to operate a water treatment plan on the same parcel, has several wells identified as its water source on water right G1-\*03767. The City applied for a change in this water right to allow surface water to be diverted from the Skagit River in lieu of pumping water from wells. This change has been approved by Ecology but the deadline for completing the full project is 2046, which keeps the original water right document active. According to the Anacortes Public Works department and Department of Health's Office of Drinking Water, water supplied to the water treatment plant is pumped out of the Skagit River. The wells are no longer in use and, therefore, were not used to calculate the population served by drinking water wells within the area described above.

#### **ROUTE SCORES:**

Surface Water/ Human Health:

Surface Water/ Environment:

Air/ Human Health: 20.1

Air/ Environment: 1.4

Groundwater/ Human Health:

**Overall Rank: 5**

#### **REFERENCES:**

- 1 Anacortes Public Works Water Treatment Plant website - <https://www.cityofanacortes.org/496/History-of-the-Plant>
- 2 Evaluation of Potential Human Health Risks Associated with Contamination Identified in Building Materials at the Former Anacortes Water Treatment Plant, INTERTOX, INC., March 30, 2017
- 3 GWIS application using aerial photography
- 4 Initial Investigation Field Report, May 15, 2017
- 5 Missouri Census Data Center
- 6 Rain Master Control Systems website - <http://www.rainmaster.com/historicET.aspx>
- 7 Skagit County iMap
- 8 Toxicology Database for Use in Washington Ranking Method Scoring, Dept. of Ecology, January 1992
- 9 US Fish & Wildlife Service National Wetlands Inventory - <https://www.fws.gov/wetlands/Data/Mapper.html>
- 10 Washington Ranking Method manual, Dept. of Ecology, April 1992
- 11 Washington State Dept. of Health, Office of Drinking Water Sentry
- 12 Water Rights Map, Dept of Ecology
- 13 Weather Atlas website - <https://www.weather-us.com/en/washington-usa/arlington-climate>
- 14 Well Log database, Dept. of Ecology
- 15 Remedial Investigation Report, Stantec Consulting Services, Inc., July 12, 2018

**SITE HAZARD ASSESSMENT**  
**Worksheet 2**  
**Route Documentation**

Cleanup Site ID: 13264

Anacortes Former WTP

Facility/Site ID:

**1. SURFACE WATER ROUTE**

**List those substances to be considered for scoring:**

Not scored

**Explain the basis for choice of substances to be used in scoring:**

**List those management units to be considered for scoring:**

**Explain basis for choice of unit to be used in scoring:**

**2. AIR ROUTE**

**List those substances to be considered for scoring:**

PCBs

**Explain the basis for choice of substances to be used in scoring:**

Detected in surface and subsurface soils

**List those management units to be considered for scoring:**

Soil

**Explain basis for choice of unit to be used in scoring:**

Contaminated soils have not been addressed.

**3. GROUNDWATER ROUTE**

**List those substances to be considered for scoring:**

Not scored

**Explain the basis for choice of substances to be used in scoring:**

**List those management units to be considered for scoring:**

**Explain basis for choice of unit to be used in scoring:**

Figure 1: Anacortes Former WTP Site Location

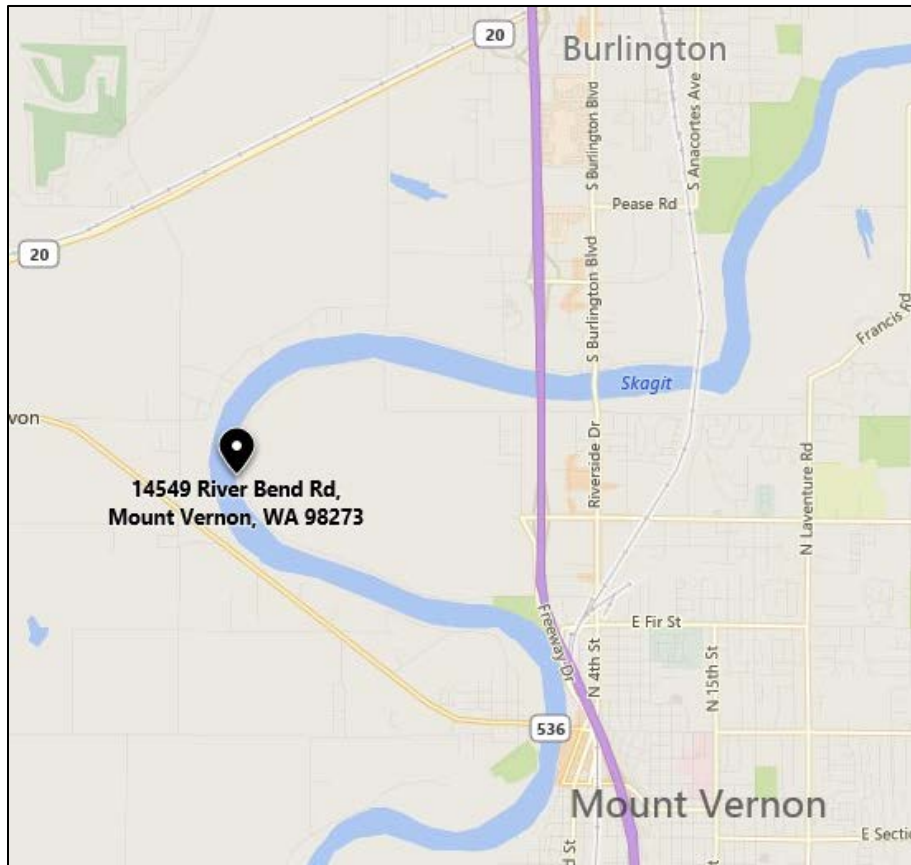


Figure 2: Anacortes Former WTP Site Vicinity (parcel identified on 2017 aerial photo)

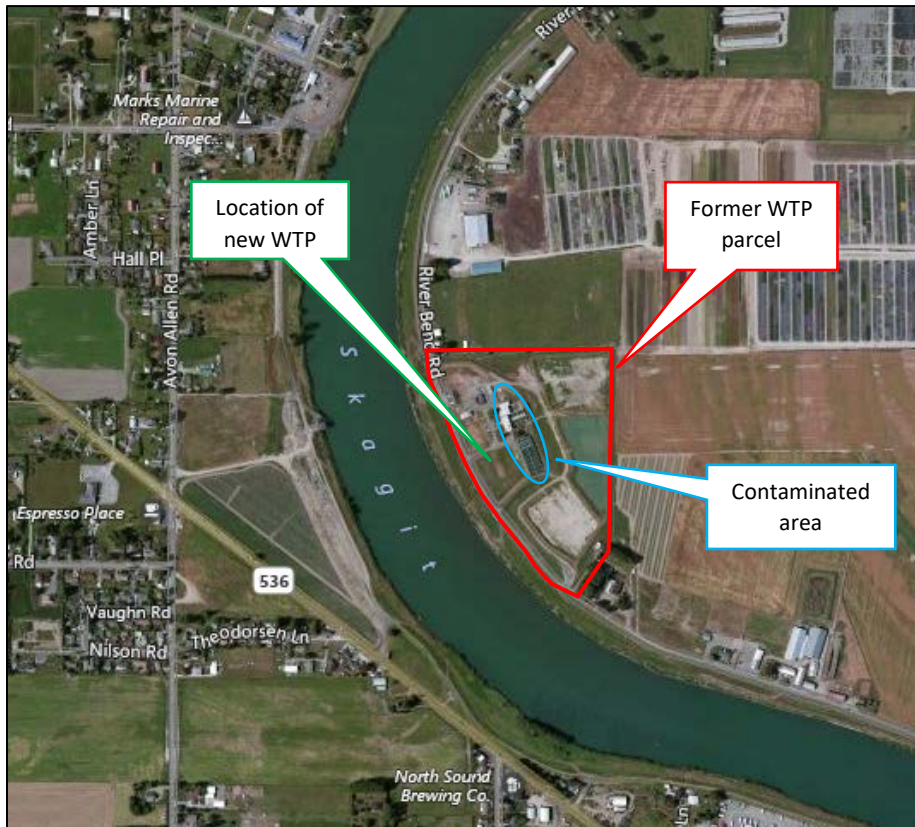


Figure 3: 2017 Remedial Investigation Soil Boring Locations



● Samples exceeding MTCA Method A cleanup levels

Figure 4: Data Gap Investigation Soil Sample Results (ppm) – table does not include samples with no detections

Sample ID	Aroclor 1254	Aroclor 1260	Total Aroclors
SB-SOIL-12-01	3.3	3.5	<b>6.8</b>
SB-SOIL-12-02	0.33	0.29	0.62
SB-SOIL-12-03	0.34	0.2	0.54
SB-SOIL-12-05	1.2	1.5	<b>2.7</b>
SB-SOIL-36-05	0.28	0.29	0.57
SB-SOIL-36-08	0.21	0.2U	0.21
SB-SOIL-12-09	0.33	0.57	0.9
FB-SOIL-12-01	0.52	0.54	<b>1.06</b>
FB-SOIL-12-03	6.9	8.7	<b>15.6</b>
FB-SOIL-12-04	1.9	1.2	<b>3.1</b>
FB-SOIL-36-04	0.24	0.2U	0.24
FB-SOIL-12-05	0.57	0.53	<b>1.1</b>
FB-SOIL-12-DUP	0.36	0.35	0.71
FB-SOIL-12-06	0.06	0.72	<b>1.32</b>
FB-SOIL-36-06	0.33	0.24	0.57
<b>MTCA Method A cleanup levels</b>			<b>1</b>

**Bold** – exceeds MTCA Method A cleanup level  
 U – not detected above method detection limit

Figure 5: 2-mile radius around Anacortes Former WTP site (including townships, ranges and sections)

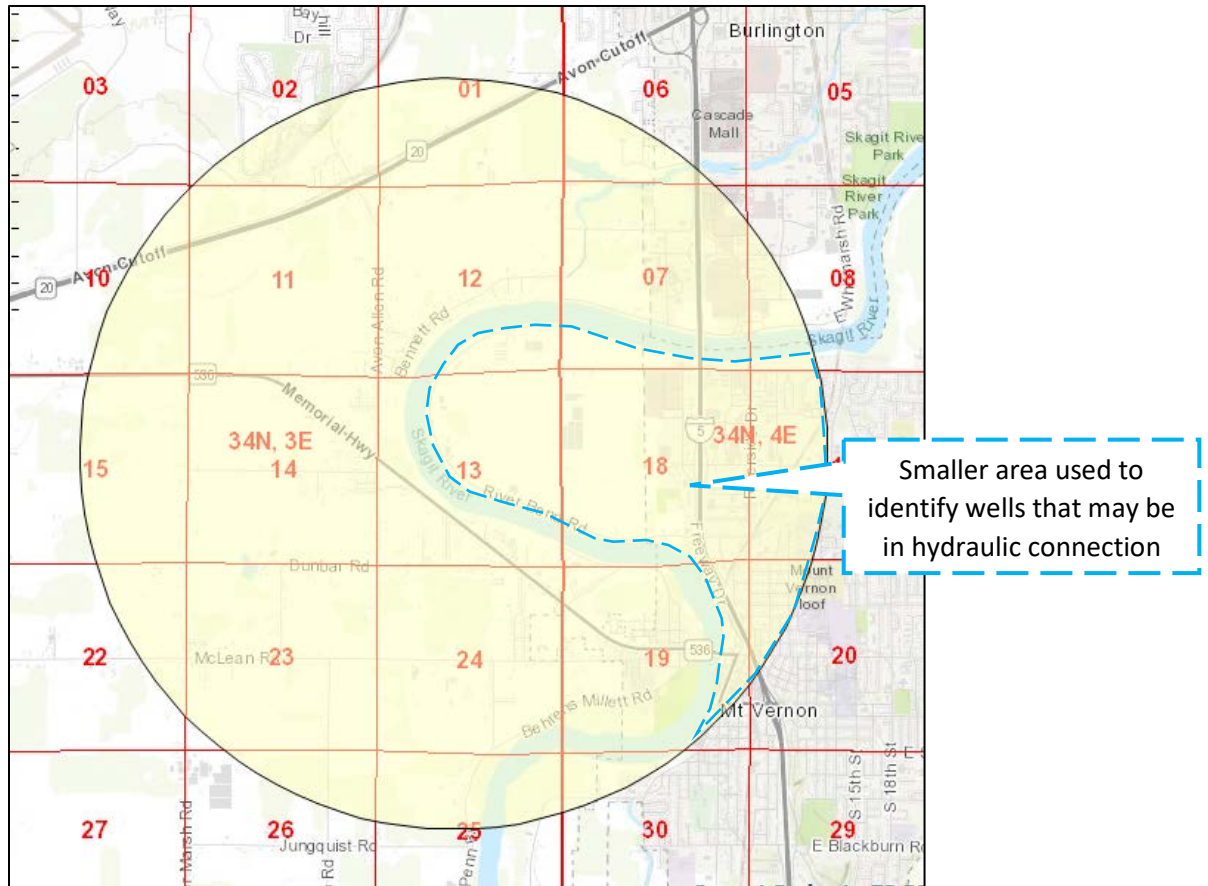


Figure 6: Wetland identified (by green overlay) on the Anacortes Former WTP parcel



## **Worksheet 4**

### **Surface Water Route**

**CSID: 13264**

**Site: Anacortes Former WTP**

**Not Scored**



# Worksheet 5

## Air Route

CSID: 13264

Site: Anacortes Former WTP

### 1.0 SUBSTANCE CHARACTERISTICS

#### 1.1 Introduction

No scoring in Section 1.1.

#### 1.2 Human Toxicity

Substance	Amb. Air Stnd.		Acute Toxicity		Chronic Toxicity		Carcinogenicity	
	Value (ug/m <sup>3</sup> )	Score	Value (mg/m <sup>3</sup> )	Score	Value (mg/kg/day)	Score	Adj. CPFi (risk/mg/kg- day)	Score
PCBs	0.00175	10	na		na		1.60E+00	7

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Maximum score:	10		
Bonus points:	0		Human Toxicity Score: 10
Source:	WARM Toxicity Database		Range: 1-12

#### 1.3 Mobility

##### Gaseous Mobility

Substance	Vapor Pressure		Henry's Law	
	Value (mm Hg)	Score	Value (atm- m <sup>3</sup> /mol)	Score
PCBs	<1E-4	1	na	

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Maximum score:	1
Source:	WARM Toxicity Database

##### Particulate Mobility

Soil type:	silty, fine-grained sand		
Erodibility factor:	220		
Climatic factor:	1-10		
Mobility value:	3		Mobility Score: 3
Source:	WARM, RI Report		Range: 0-4

#### 1.4 Human Toxicity/Mobility

Source: WARM Scoring Manual

Human Tox/Mobil Score: 15  
Range: 1-24

#### 1.5 Environmental Toxicity/Mobility

Substance	Acute Value (mg/m <sup>3</sup> )	Score
PCBs	na	

Maximum score 0  
Source: WARM Toxicity Database

Environmental Toxicity Score: 0  
Range: 1-10

Environmental Tox/Mobil Score: 0  
Range: 1-24

#### 1.6 Substance Quantity

Quantity: 416-2100 cubic yards  
volume estimated by determine approximate area confirmed  
Basis: contaminated with one foot depth  
Source: RI Report, WARM

Substance Quantity Score: 7  
Range: 1-10

#### 2.1 Containment

Description: bare ground with contamination at or near ground surface  
Basis: RI Report, WARM

Containment Score: 10  
Range: 0-10

### SUBSTANCE PARAMETER CALCULATIONS

#### Human Health Pathway

SUBh (Human Tox/Mobil + 5) x (Containment +1) + Substance Quantity

227.0

#### Environmental Pathway

SUBe (Environ. Tox/Mobil + 5) x (Containment +1) + Substance Quantity

62.0

### 3.0 TARGETS

#### 3.1 Nearest Population

Description: residential property located about 900 feet to southeast  
Distance (ft): <1000  
Source: iMap

Nearest Population Score: 10  
Range: 0-10

3.2 Nearest Sensitive Environment

Description: Freshwater Emergent Wetland  
Distance (ft): <1000  
Source: NWI Wetland Map

Nearest Sensitive Environment Score: 7  
Range: 0-7

3.3 Population within One-Half Mile

Number: 337  
Source: MO CDC

Population within Half Mile Score: 18.4  
Range: 0-75

**TARGET PARAMETER CALCULATIONS**

Human Health Pathway

TARh: Nearest Population + Population within Half Mile

28.4

Environmental Pathway

TARe Nearest Sensitive Environment

7.0

**4.0 RELEASE**

Evid. of release? 0  
Source: no documented releases to air

Release Score (REL): 0.0  
Range: 0 or 5

**AIR ROUTE CALCULATIONS**

Human Health Pathway

AIRh : (SUBh x 60/329) x {REL + (TARh x 35/85)} / 24

20.1

Environmental Pathway

AIRe : (SUBe x 60/329) x {REL + (TARe x 35/85)} / 24

1.4

Range: 0-100

# Worksheet 6

## Groundwater Route

CSID: 13264

Site: Anacortes Former WTP

Not Scored

# Washington Ranking Method

## Route Scoring Summary and Ranking Calculation

**CSID:** 13264  
**Site:** Anacortes Former WTP

Human Health Route Scores		
Pathway	Score	Quintile
Surface water	0.0	
Air	20.1	3
Groundwater	0.0	

Quintile	Value
High (H)	3
Middle (M)	
Low (L)	

Human Health Pathway Quintiles - August 2018							
Quintile	Surface Water		Air		Groundwater		
1	<=	7.9	<=	8.5	<=	24.0	
2		8.0		16.3		33.0	
3		15.5		25.3		40.3	
4		21.4		40.1		49.8	
5	>=	29.9	>=	40.2	>=	49.9	

$$(H^2 + 2M + L) / 8$$

Human Health Priority Bin Score: 1.1

Environmental Route Scores		
Pathway	Score	Quintile
Surface water	0.0	
Air	1.4	2

Quintile	Value
High (H)	2
Low (L)	

Environmental Pathway Quintiles - August 2018				
Quintile	Surface Water		Air	
1	<=	11.3	<=	1.2
2		11.4		1.5
3		24.2		14.1
4		32.1		27.7
5	>=	49.7	>=	27.8

$$(H^2 + 2L) / 7$$

Environmental Priority Bin Score: 0.6

### FINAL MATRIX RANKING

Human Health Priority	Environmental Priority					
	5	4	3	2	1	n/a
5	1	1	1	1	1	1
4	1	2	2	2	3	2
3	1	2	3	4	4	3
2	2	3	4	4	5	3
1	2	3	4	5	5	5
n/a	3	4	5	5	5	NFA

n/a - not applicable

NFA - no further action

**Site Rank:** 5