

# Drinking Water Source Assessment

---

Water System

**MUIR BEACH COMMUNITY**

Marin County

Water Source

**MBCSD WELL 01**

Assessment Date

**October, 2002**

---

California Department of Health Services  
Drinking Water Field Operations Branch  
LPA Marin County

<b>District No.</b>	<b>51</b>
<b>System No.</b>	<b>2100508</b>
<b>Source No.</b>	<b>001</b>
<b>PS Code</b>	<b>2100508-001</b>

MUIR BEACH COMMUNITY

District Name LPA Marin County District No. 51 County Marin  
 System Name MUIR BEACH COMMUNITY System No. 2100508  
 Source Name MBCSD WELL Source No. 001 PS Code 2100508-001  
 Completed by Scott Callow Date October, 2002

According to DHS records, this Source is Groundwater. This Assessment was done using the Default Groundwater System Method.

**Description of System and Source**

The MUIR BEACH COMMUNITY water system is located in Marin County and serves the MUIR BEACH COMMUNITY. There are approximately 146 service connections serving a population of approximately 750.

The drinking water source for the MUIR BEACH COMMUNITY water system is a WELL located in the BBQ area along Muir Beach- Frank Valley Rd. General land use is rural and open space.

The well is directly chlorinated, then the water is pumped uphill to storage tanks that are in the neighborhoods.

**Assessment Procedures**

The assessment of the source MBCSD WELL 01 was conducted by the EHS County office. The following sources of information were used in the assessment: water system files, EHS files, County records, previous study.

**Contents of this Assessment**

- Yes  No  Assessment Summary
- Yes  No  Vulnerability Summary
- Yes  No  Source Location Form
- Yes  No  Delineation of Water Protection Zones
- Yes  No  Physical Barrier Effectiveness Checklist
- Yes  No  Source Data Sheet
- Yes  No  Inventory of Possible Contaminating Activities
- Yes  No  Vulnerability Ranking
- Yes  No  Assessment Map

**Drinking Water Source Assessment and Protection (DWSAP) Program**



District Name LPA Marin County District No. 51 County Marin

System Name MUIR BEACH COMMUNITY System No. 2100508

Source Name MBCSD WELL Source No. 001 PS Code 2100508-001

Completed by Scott Callow Date October, 2002

**THE FOLLOWING INFORMATION MUST BE INCLUDED IN THE SYSTEM CONSUMER CONFIDENCE REPORT**

A source water assessment was conducted for the MBCSD WELL  
of the MUIR BEACH COMMUNITY water system in October, 2002.

The source is considered most vulnerable to the following activities not associated with any detected contaminants:

Wells - Agricultural/ Irrigation

**Discussion of Vulnerability**

The source is still considered vulnerable to activities located near the drinking water source, primarily the abandoned wells nearby.

The district is planning to drill an additional well and improve the treatment system.

A copy of the complete assessment may be viewed at:

Environmental Health Services  
Marin County Civic Center  
3501 Civic Center Dr., Rm. 236  
San Rafael, CA 95472

You may request a summary of the assessment be sent to you by contacting:

Water Specialist  
415-499-6907  
415-507-4120 (fax)

**Drinking Water Source Assessment and Protection (DWSAP) Program**

**Method Used to Delineate Protection Zones**

District Name LPA Marin County District No. 51 County Marin  
 System Name MUIR BEACH COMMUNITY System No. 2100508  
 Source Name MBCSD WELL Source No. 001 PS Code 2100508-001

Completed by Scott Callow Date October, 2002

**Method Used to Delineate Protection Zones**

1. Calculated Fixed Radius
2. Modified Calculated Fixed Radius (Attach documentation for direction of ground water flow.)
3. More Detailed Methods

**X 4. Arbitrary Fixed Radius** (For use only by or permission of DHS)

Protection Zone		Minimum Value	Radius of Protection Zone
Zone A - 2 Year TOT*		600 Feet	600 Feet
Zone B5 - 5 Year TOT*		1,000 Feet	1,000 Feet
Zone B10 - 10 Year TOT*		1,500 Feet	1,500 Feet

\*TOT = Time of Travel

Drinking Water Source Assessment and Protection (DWSAP) Program

**Physical & Chemical Analysis (P&C)**

District Name LPA Marin County District No. 51 County Marin  
 System Name MUIR BEACH COMMUNITY System No. 2100508  
 Source Name MBCSD WELL Source No. 001 PS Code 2100508-001

Completed by Scott Callow Date October, 2002

Parameter	Possible Points	This Source	Score
<b>Type of Aquifer Confinement</b>			
1. Unconfined, Semi-confined, Fractured Rock, Unknown Aquifer	0	X	0
2. Confined	50		
<b>Aquifer Material (Unconfined Aquifers)</b>			
<b>Type of material within aquifer</b>			
1. Porous Media (Interbedded sands, silts, clays, gravels) with continuous clay layer minimum 25' thick above water table within Zone A	20	X	20
2. Porous Media (Interbedded sands, silts, clays, gravels)	10		
3. Fractured rock ( Low Physical Barrier Effectiveness - no further questions required)	0		
<b>Pathways of Contamination (All Aquifers)</b>			
<b>Presence of Abandoned or Improperly Destroyed Wells</b>			
1. Present within Zone A (2 year TOT distance)	Yes	0	X
	No	5	
	Unknown	0	
2. Present within Zone B5 (2 -5 year TOT distance)	Yes	0	X
	No	3	
	Unknown	0	
3. Present within Zone B10 (5-10 year TOT distance)	Yes	0	
	No	2	X
	Unknown	0	
<b>Static Water Conditions (Unconfined Aquifers)</b>			
Depth to Static Water (DTW) <u>11</u> feet	0 to 20 feet	0	X
	20 to 50 feet	2	
	50 to 100 feet	6	
	Greater than 100 feet	10	
	Unknown	0	
<b>Well Operation (Unconfined Aquifers)</b>			
Depth to Uppermost Perforations (DUP) <u>20</u> feet			
Maximum Pumping Rate of Well (Q) <u>61</u> gallons/minute			
Length of Screened Interval (H) <u>16</u> feet	Less than 5	0	X
	Between 5 and 10	5	
	Greater than 10	10	
	Unknown	0	
	[DUP - DTW / Q/H] <u>2.36</u>		

**Drinking Water Source Assessment and Protection (DWSAP) Program**

System Name MUIR BEACH COMMUNITY System No. 2100508  
 Source Name MBCSD WELL Source No. 001 PS Code 2100508-001

Parameter		Possible Points	This Source	Score
<b>Well Construction (All Aquifers)</b>				
Sanitary Seal (Annular Seal) Depth <u>20</u> feet	None or less than 20 feet	0		
	Between 20 and 50 feet	6	X	6
	50 feet or greater	10		
	Unknown	0		
Surface Seal (concrete cap)	Not present or improperly constructed	0		
	Watertight, slopes away from well at least 2' laterally in all directions	4	X	4
	Unknown	0		
Flooding potential at well site	Subject to localized flooding (i.e. in low area or unsealed pit or vault) or within 100 year flood plain	0	X	0
	Not subject to flooding	1		
	Unknown	0		
Security at well site	Not secure	0	X	0
	Secure	5		
	Unknown	0		

Score	Effectiveness
0 to 35	Low
36 to 69	Moderate
70 to 100	High

Maximum Score = 70

Score	<u>32</u>
Effectiveness	<u>Low</u>

**Drinking Water Source Assessment and Protection (DWSAP) Program**

**Summary of Possible Contaminating Activities (PCA Inventory)**

District Name LPA Marin County District No. 51 County Marin

System Name MUIR BEACH COMMUNITY System No. 2100508

Source Name MBCSD WELL Source No. 001 PS Code 2100508-001

Completed by Scott Callow Date October, 2002

PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
<b>Agricultural/Rural Activities</b>					
Grazing (> 5 large animals or equivalent per acre) (H in Zone A, otherwise M)	N	N	N		
Concentrated Animal Feeding Operations (CAFOs) as defined in federal regulation1 (VH in Zone A, otherwise H)	N	N	N		
Animal Feeding Operations as defined in federal regulation2 (VH in Zone A, otherwise H)	N	N	N		
Other Animal operations (H in Zone A, otherwise M)	N	Y	Y		
Farm chemical distributor/ application service (H)	N	N	N		
Farm machinery repair (H)	N	N	N		
Septic systems - low density (<1/acre) (H in Zone A, otherwise L)	N	N	N		
Lagoons / liquid wastes (H)	N	N	N		
Machine shops (H)	N	N	N		
Pesticide/fertilizer/ petroleum storage & transfer areas (H)	N	N	N		
Agricultural Drainage (H in Zone A, otherwise M)	N	N	N		
Wells - Agricultural/ Irrigation (H)	Y	Y	Y		
Managed Forests (M)	N	N	N		
Crops, irrigated (Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable) (M)	N	N	N		
Fertilizer, Pesticide/ Herbicide Application (M)	N	Y	N		Historic use 20 yrs. ago - flower farm
Sewage sludge/biosolids application (M)	N	N	N		
Crops, nonirrigated (e.g., Christmas trees, grains, grass seeds, hay, pasture) (includes drip-irrigated crops) (L)	N	N	N		
<b>Other Activities</b>					
NPDES/WDR permitted discharges (H)	N	N	N		
Underground Injection of Commercial/Industrial Discharges (VH)	N	N	N		
Historic gas stations (VH)	N	N	N		
Historic waste dumps/ landfills (VH)	N	N	N		
Illegal activities/ unauthorized dumping (H)	N	N	N		
Injection wells/ dry wells/ sumps (VH)	N	N	N		
Known Contaminant Plumes (VH)	N	N	N		

Y = Yes    N = No    U = Unknown  
 \* = A contaminant potentially associated with this activity has been detected in the water supply.

System Name MUIR BEACH COMMUNITY System No. 2100508  
 Source Name MBCSD WELL Source No. 001 PS Code 2100508-001

PCA (Risk Ranking)	PCA In Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
<b>Other Activities</b>					
Military installations (VH)	N	N	N		
Mining operations - Historic (VH)	N	N	N		
Mining operations - Active (VH)	N	N	N		
Mining - Sand/Gravel (H)	N	N	N		
Wells - Oil, Gas, Geothermal (H)	N	N	N		
Salt Water Intrusion (H)	N	N	N		
Recreational area - surface water source (H)	N	N	N		
Underground storage tanks - Confirmed leaking tanks (VH)	N	N	N		
Underground storage tanks - Decommissioned - inactive tanks (L)	N	N	N		
Underground storage tanks - Non-regulated tanks (tanks smaller than regulatory limit) (H)	N	N	N		
Underground storage tanks - Not yet upgraded or registered tanks (H)	N	N	N		
Underground storage tanks - Upgraded and/or registered - active tanks (L)	N	N	N		
Above ground storage tanks (M)	N	N	N		
Wells - Water supply (M)	Y	N	N		Abandoned ag. and DW well
Construction/demolition staging areas (M)	N	N	N		
Contractor or government agency equipment storage yards (M)	N	N	N		
Dredging (M)	N	N	N		
Transportation corridors - Freeways/state highways (M)	N	N	N		
Transportation corridors - Railroads (M)	N	N	N		
Transportation corridors - Historic railroad right-of-ways (M)	N	N	N		
Transportation corridors - Road Right-of-ways (herbicide use areas) (M)	N	N	N		
Transportation corridors - Roads/ Streets (L)	Y	N	N		
Hospitals (M)	N	N	N		
Storm Drain Discharge Points (M)	N	N	N		
Storm Water Detention Facilities (M)	N	N	N		
Artificial Recharge Projects - Injection wells (potable water) (L)	N	N	N		
Artificial Recharge Projects - Injection wells (non-potable water) (M)	N	N	N		

Y = Yes      N = No      U = Unknown  
 \* = A contaminant potentially associated with this activity has been detected in the water supply.



**Contaminant Source Categories and Contaminating Activities (PCA Inventory)**

System Name MUIR BEACH COMMUNITY System No. 2100508  
 Source Name MBCSD WELL Source No. 001 PS Code 2100508-001

PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
<b>Other Activities</b>					
Artificial Recharge Projects - Spreading Basins (potable water) (L)	N	N	N		
Artificial Recharge Projects - Spreading Basins (non-potable water) (M)	N	N	N		
Medical/dental offices/clinics (L)	N	N	N		
Veterinary offices/clinics (L)	N	N	N		
Surface water - streams/ lakes/rivers (L)	Y	N	N		
Wells - monitoring, test holes (L)	Y	N	N		NPS stream research

Y = Yes    N = No    U = Unknown  
 \* = A contaminant potentially associated with this activity has been detected in the water supply.

**Drinking Water Source Assessment and Protection (DWSAP) Program**

**District Name** LPA Marin County      **District No.** 51      **County** Marin  
**System Name** MUIR BEACH COMMUNITY      **System No.** 2100508  
**Source Name** MBCSD WELL      **Source No.** 001      **PS Code** 2100508-001  

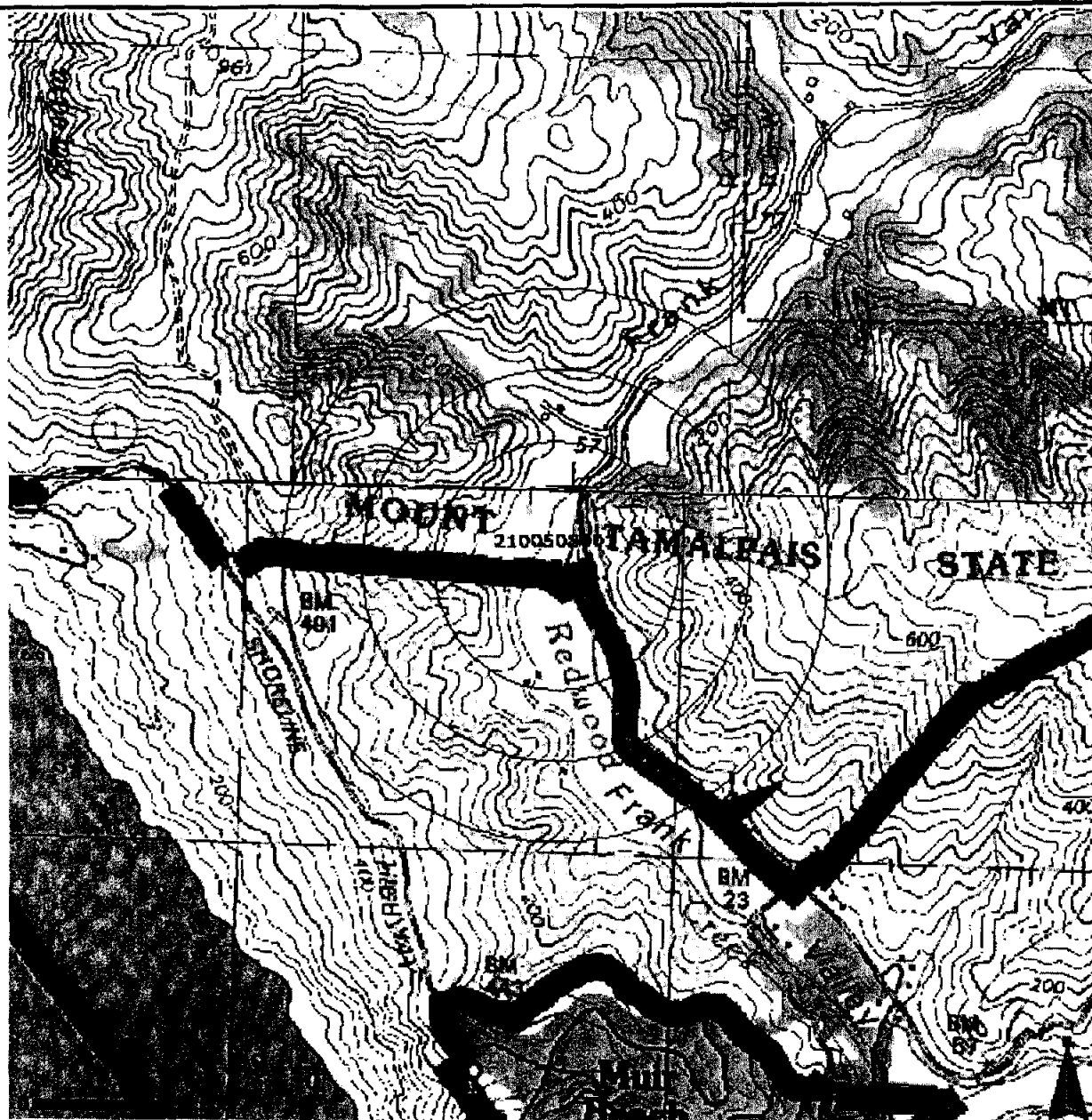

---

**Completed by** Scott Callow      **Date** October, 2002

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Wells - Agricultural/ Irrigation (H)		5	5	5	15
A	Wells - Water supply (M)		3	5	5	13
B5	Wells - Agricultural/ Irrigation (H)		5	3	5	13
A	Surface water - streams/ lakes/ rivers (L)		1	5	5	11
A	Transportation corridors - Roads/ Streets (L)		1	5	5	11
A	Wells - monitoring, test holes (L)		1	5	5	11
B5	Fertilizer, Pesticide/ Herbicide Application (M)		3	3	5	11
B5	Other Animal operations (H in Zone A, otherwise M)		3	3	5	11
B10	Wells - Agricultural/ Irrigation (H)		5	1	5	11
B10	Other Animal operations (H in Zone A, otherwise M)		3	1	5	9

**\* = A contaminant potentially associated with this activity has been detected in the water supply.**

**DWSAP Ground Water Zone Interface**



Well Identification Information					
Well Number	Longitude *	Latitude *	GPS'd	* Well location coordinates have been rounded to 3 decimal places due to security concerns.	
2100508001	-122.584	37.873	Yes		
System Number	System Name	Source Number	Source Name	District Number/Name	County Number/Name
2100508	MUIR BEACH COMMUNITY	001	MBCSD WELL 01-ACROSS BRIDGE IN SHED, NEE	51/Marin County	21/Marin County
Well Zone Delineation Information					
Media Type	System Type	Effective Porosity (n)	Screened Interval (h)	Pumping Capacity (q)	Azimuth of Flow (a)
Porous Media	All Other System	0.2	16	61 gpm	0 - No Translation
Radii Measures					
Defaults Used	R2	R5	R10		
No	922 ft	1460 ft	2064 ft		