

**PACIFIC** groundwater **GROUP**

**SAN JUAN COUNTY  
ANNUAL GROUNDWATER  
MONITORING REPORT 2008**

**DECEMBER 2008**

**SAN JUAN COUNTY  
ANNUAL GROUNDWATER MONITORING REPORT  
2008**

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## SIGNATURE

This report, and Pacific Groundwater Group's work contributing to this report, were reviewed by the undersigned and approved for release.



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## 1.0 SUMMARY OF FINDINGS

San Juan County has established a well network to monitor groundwater quality and elevation. The networks are currently focused on the East-sound and Lopez Village areas.

The monitoring network currently includes 17 groundwater quality and groundwater elevation monitoring wells on Lopez Island and the East-sound area of Orcas Island.

Groundwater quality samples were collected on April 23 and April 24, 2008 and again on October 21 and 22, 2008. Data loggers were initially installed on January 29 and 30, 2008 and downloaded during groundwater sampling events. Further data loggers have been installed during subsequent download events.

The following findings may be drawn from this report:

- In the Eastsound region, groundwater generally flows towards town from the two bedrock uplands east and west of town.
- All groundwater concentrations were below their respective Ground Water Quality Criteria (WAC173-200) in the Eastsound monitoring network except for sodium. Sodium concentrations were above the GWQC (20 mg/L) in six of the ten wells monitored. The concentrations ranged from 10.7 to 52.7 mg/L and are within the range of naturally occurring sodium.
- In the Eastsound monitoring network, elevated nitrate concentrations were detected in the Curtis (5 and 4.7 mg/L), School (1.3 mg/L), and EWUA #1R (2.5 and 2.4 mg/L) wells. All concentrations were below the GWQC (10 mg/L).
- All groundwater concentrations were below their respective GWQCs in the Lopez Village monitoring network except for sodium and specific conductance.
- Sodium concentrations were above the GWQC of 20 mg/L in all Lopez wells. So-

dium was above background concentrations in the Langenbach (145 mg/L) and Greene (84.5 and 87.8 mg/L) wells. The source of the elevated sodium concentration in the Greene well is likely saltwater intrusion since this well is also elevated in chloride. The source of elevated chloride in the Langenbach well is unknown.

- Specific conductance was above the GWQC (700 mg/L) in four of the seven Lopez Village wells: Greene (1320 and 1280 mg/L), Roberts (898 and 872 mg/L), Langenbach (846 and 768 mg/L) and Meng's Arena (747 and 735 mg/L).

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## 2.0 INTRODUCTION

San Juan County's water resources are provided by local rainfall only and are characterized by the rain shadow created by the Olympic Mountains to the south and Vancouver Island to the west, by predominantly steep terrain and bedrock geology, by small watershed catchment areas, and by extensive shoreline. These conditions result in low rainfall, limited groundwater storage, and extensive runoff and discharge to the sea. Key issues for San Juan County include:

- Very low recharge to aquifers,
- Seawater intrusion,
- Water right allocations by the state that exceed water available,
- Areas where current use of water exceeds aquifer capacity,
- Water development that is occurring primarily via exempt wells,
- Failure of many individual and community wells during summer months,
- Lack of capacity to serve areas designated by the county's GMA process for growth,
- A gap in responsibility and authority between state and county agencies,
- Lack of comprehensive monitoring and assessment of water resource capacity, and

- Lack of coordinated, cooperative resource management.

Recommendations in the recently adopted San Juan County Water Resources Management Plan include a program to develop local management of the water resource. Future management of water resources in San Juan County will require careful, on-going assessment of the availability of fresh water; groundwater monitoring is an essential component of this effort.

Sound Hydrogeology produced a Quality Assurance Project Plan in December 2007 that outlines procedures to be used in the monitoring program.

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## 2.1 MONITORING SYSTEM DESCRIPTION

San Juan County has developed a groundwater monitoring network to collect groundwater elevation and quality data. These data are used in management of the County's groundwater resources. Specific technical uses of the data are diverse and include:

- Seawater intrusion evaluation
- Groundwater elevation trend analysis
- Groundwater flow model calibration
- Water quality sampling

The monitoring network currently includes 17 groundwater quality groundwater elevation monitoring wells in the vicinity of Lopez Village on Lopez Island and the Eastsound area of Orcas Island. These two locations were selected because they are currently experiencing the most population growth and associated water quantity and quality issues. Network wells are presented in Table 1 and Figures 1 and 2.

All wells are screened in the primary aquifer. The monitoring locations were selected based on availability, access, spatial distribution, and availability of prior sampling data. Additional

wells areas will be selected as part of this program based on the same criteria.

The Eastsound, monitoring network currently includes the Clark, Curtis, EWUA#1, EWUA #4, EWUA #5, Fischer, Greer, NAPA, Pearson, and School wells (Figure 1). The Lopez Island monitoring network currently includes the Aiken, Grant, Greene, Langenbach, Lopez Village Park, Mengs Arena, Roberts, and Top of the World wells (Figure 2).

Each monitoring location records a time-series of water level and, in some cases, water quality measurements with dedicated transducers (Table 1). Monitoring wells in the Eastsound network have Solinst Levellogger transducers which record water level and temperature on an hourly basis. All monitored wells on Lopez Island except for Top of the World are outfitted with CTD Divers which also measure electrical conductivity. The Top of the World well is monitored with a Levellogger. Barometric dataloggers (Barologger) are installed in the Village Park well on Lopez Island and EWUA #5 on Orcas for barometric compensation of transducer water level measurements.

It is anticipated that the network will gradually be expanded to cover most areas of the County, with an emphasis on areas experiencing higher rates and/or densities of growth, and areas experiencing groundwater quality and/or quantity issues. The network will utilize domestic water wells as sampling locations for collection of water level and groundwater quality data.

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## 2.2 WELLHEAD SURVEY SOURCES

Domestic wells included in the Lopez Village monitoring system were surveyed by the County in 2002 as part of the Lopez Village Saltwater Intrusion Modeling Project. The Aiken well was not included in this survey so the elevation was estimated from the Digital Elevation Model of the County. Eastsound wells were surveyed by the County in 2008 as part of this project. All elevations were surveyed in NGVD 29. Mean

Sea Level is approximately 0.1 feet above the surveyed 0 elevation.

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### 3.0 FIELD NARRATIVE

Groundwater monitoring tasks were completed during four field mobilizations including:

- January 29 and 30, 2008: transducer installation at Eastsound and Lopez Island locations
- April 23 and 24, 2008: groundwater sampling and transducer data downloads at Eastsound and Lopez Island locations
- May 12, 2008: transducer maintenance at Lopez Island locations
- October 21 and 22, groundwater sampling and transducer data downloads at Eastsound and Lopez Island locations

San Juan County installed Solinst Leveloggers in nine Eastsound wells on January 29, 2008. The County installed a specially constructed well cap with a 2-inch PVC riser and cap in wells that were not easily accessible for water level measurements and transducer installation. Transducers were hung from direct-read cables and started in the field with a Solinst Leveloader.

CTD Divers were installed in seven Lopez Island wells on January 30, 2008. CTD Divers were calibrated for conductivity and set to record on an hourly basis on the previous evening. Transducers were hung from direct read cables. All wells were outfitted with the specially constructed well caps with 2-inch PVC risers. The Grant well was outfitted with a Solinst Levelogger.

Groundwater samples were collected at Eastsound wells on April 23, 2008. No pumps were installed at the Beemer or EWUA #4 wells so no samples were collected. When the data was downloaded from the Clark, Pearson, Greer, Beemer/Minnis, and NAPA transducers, it was noted that the time-interval had been incorrectly set to record at too high a rate, resulting in filling of the memory cache in less than two days.

Transducers were reset to record on an hourly basis.

Groundwater samples were collected at Lopez Island wells on April 24, 2008. When water level and conductivity data were downloaded from the CTD Divers, the Leveloader reported low battery levels in the transducers.

San Juan County returned to Lopez Island on May 12, 2008 to replace the transducers which indicated low voltages. Because it was believed that the hourly sampling rate was drawing down the battery, the sampling rate in replacement transducers was set to once every four days. A Solinst Levelogger was also placed in each well and set to record water levels once every two hours. A CTD Diver was not installed in the Top of the World well because of the difficulty in feeding transducers past the discharge piping and wiring.

When the CTD Divers pulled from the Lopez Island wells were connected directly to a computer via optical reader they reported nearly full batteries. The Leveloader does not appear to report accurate battery levels when connected to CTD Divers via direct read cable.

Readings in the EWUA #4 logger were all above 8000 feet after June 26. This logger is slated for replacement.

Insufficient bottles during the October sampling event prevented analysis of all constituents for the Eastsound network.

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### 3.1 GROUNDWATER SAMPLING ANALYTES

Samples were analyzed for total alkalinity, bicarbonate alkalinity, carbonate, dissolved calcium, chloride, fluoride, hydroxide, nitrate, specific conductance, sulfate, magnesium, potassium, and sodium by Analytical Resources Incorporated of Tukwila, WA.



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## 4.0 MONITORING RESULTS

Groundwater elevation and quality data were collected for the Eastsound and Lopez Village monitoring networks. Results for each network are described below.

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### 4.1 EASTSOUND WELLS

Groundwater elevation contours for the Eastsound monitoring system on October 21, 2008 are presented in Figure 1. This date was selected because the greatest number of data points was available. The water level in the Napa well was likely pumping at the time of measurement and therefore was estimated based on the measurement collected during April, 2008.

Groundwater generally flows towards Eastsound from the three bedrock uplands to the north, south east and south west. The current groundwater flow directions indicated by the contours may be due to the limited number of monitoring points and may change as further points are added to the network.

Figure 3 presents time series plot of groundwater elevations. Groundwater elevation data for the Clark, Pearson, Greer, Beemer/Minnis, School, and NAPA wells are not presented on time series plots because of data issues (see Section 3). All wells indicate influences of pumping except for the Fisher well. EWUA #1, #4, and #5 are high capacity production wells and show long-term pumping and recovery cycles. The groundwater time series plot for the Curtis well indicates short pumping periods with rapid recovery. The Fisher well is apparently not pumped. The time series plots for Curtis and EWUA #2, and EWUA #5 indicate seasonal groundwater elevation change with peak groundwater elevations occurring in February.

Groundwater concentration results for April 23 and October 21, 2008 are presented in Tables 2 and 3. Groundwater concentrations were compared to their respective Ground Water Quality Standards (GWQCs) from WAC-173-200. All concentrations were below their respective

GWQCs except for sodium. Chloride concentrations were not elevated and are not indicative of saltwater intrusion.

Nitrate concentrations (Figure 4) were all below the detection limit of 0.1 mg/L except for three wells: Curtis (5 mg/L and 4.7 mg/L), School (1.3 mg/L), and EWUA #1R (2.5 mg/L, 2.5 mg/L). All of the detections are below the groundwater quality criteria (GWQC) of 10 mg/L. The elevated nitrate concentrations are not likely from the same source given their locations relative to the groundwater flow directions. Sources of nitrate contamination are discussed in more detail in (PGG, 2008).

Sodium concentrations in the Eastsound wells were above the GWQC (20 mg/L) in six of the ten wells monitored. The concentrations ranged from 10.7 to 52.7 mg/L and are within the range of naturally occurring sodium.

Figure 5 presents a trilinear diagram for the Eastsound water quality sampling results from the first quarter of 2008. Eastsound wells plot as a calcium carbonate water type, with the exception of the Pearson well, which has a relatively elevated sodium concentration. None of the wells show any indications of seawater intrusion.

The analytes required for trilinear diagram generation were not available for the Eastsound fourth quarter sampling round. For those parameters that were sampled for in the fourth quarter, no significant deviations were found in comparison with the first quarter results, with the exception of EWUA #13 which showed a significant drop in sulfate concentrations (9.5 mg/l in Q1 to 3.1 mg/l in Q4). Average chloride concentrations dropped slightly between the first and fourth quarters. Additional rounds of sampling will need to be collected before a statistically valid evaluation of trends in water quality can be made.

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## 4.2 LOPEZ ISLAND WELLS

There are currently insufficient data points to present a groundwater contour map of the Lopez Island monitoring system. However, groundwater elevations from January 30, 2008 are presented in Figure 2. The anomalous elevations in the Greene and Aiken wells are likely due to inconsistent survey results or the effects of tidal influence on non-synchronous spot groundwater elevation measurements. Further data collection will allow for average groundwater elevations to be presented.

Figure 6 presents a groundwater elevation time series plot for monitored wells on Lopez Island. Groundwater elevation data for the Aiken well are not presented on time series plots because of the anomalous results discussed above. Village Park is the closest well to the shore and indicates tidal influence. The Greene well also suggests some variability that may be tidally derived. The Greene well water level record indicated an anomalous 7+ foot water level rise over a two hour period on January 31, 2008. A correction has been applied but the source of the rise is unknown.

All wells indicate some degree of seasonal variability except for Top of the World. Peak water levels occurred in February and declined until August in all wells in 2008.

Tables 4 and 5 present the groundwater quality results collected from the Lopez Island monitoring wells on April 24 and October 22, 2008. All concentrations were below their respective GWQCs except for sodium and specific conductance.

Chloride concentrations in all Lopez wells were below the GWQC of 250 mg/L as indicated in Table 3 and Figure 7. Generally, chloride concentrations were near background concentrations except for the Greene well which had a chloride concentration of 186 mg/L in April and 172 mg/L in October. Chloride concentrations in the Greene well have been elevated since it was first monitored in 2002.

Sodium concentrations were above the GWQC of 20 mg/L in all Lopez wells for both sampling events. Sodium was above background concentrations in the Langenbach (145 mg/L) and Greene (84.5 and 87.8 mg/L) wells. The source of the elevated sodium concentration in the Greene well is likely saltwater intrusion since this well is also elevated in chloride. The source of elevated chloride in the Langenbach well is unknown.

Specific conductance was above the GWQC (700 mg/L) in four of the seven wells: Greene (1320 and 1280 mg/L), Roberts (898 and 872 mg/L), Langenbach (846 and 768 mg/L) and Meng's Arena (747 and 735 mg/L).

Trilinear diagrams are useful in evaluating the degree of salt water intrusion in wells. Figures 8 and 9 present trilinear diagrams for the 2008 Q1 and 2008 Q3 sampling events at Lopez Island. In general, the effect of seawater intrusion is to move the plotted location of the datapoint in the upper diamond of the piper diagram from the background water quality location (in this case, Aiken, Lopez Village Park, and Top of the World wells) upward and then to the right. It is not uncommon for intruded wells to improve during the wetter, lower water use months only to re-intrude the following summer.

The results from the first quarter of 2008 (Figure 8) plot as a calcium carbonate water type, with the exception of the Langenbach water sample. The Langenbach sample has very low to non-detectable levels of potassium, calcium and magnesium, and relatively elevated levels of sodium. This combination of results is indicative of water that has been treated by an ion-exchange water softener, so it is possible that this sample was collected from a faucet that provided softened / treated water.

The Aiken, Lopez Village Park, and Top of the World wells appear to be unaffected by seawater intrusion during the first quarter 2008 sampling event. The Langenbach, Roberts, and Meng's Arena wells have slightly elevated chloride concentrations, with both the Roberts and Meng's Arena wells showing shifts in relative chemistry

indicative of the early onset of seawater intrusion (relative to the unaffected wells). Because of the apparent softening of the Langenbach sample, relative chemistry cannot be evaluated. The Greene well has significantly elevated chloride concentrations, and shows shifts in relative chemistry indicative of seawater intrusion.

Figure 9 shows a trilinear plot for the Lopez Island water quality sampling results from the fourth quarter of 2008. As with the first quarter sampling, the fourth quarter water quality from the Greene well indicated elevated chloride and shifts in relative chemistry indicative of seawater intrusion. In general water quality between the first round and fourth round did not vary significantly (with the exception of the Langenbach softened and un-softened samples). Average chloride concentrations dropped slightly between the first and fourth quarters. Additional rounds of sampling will need to be collected before a statistically valid evaluation of trends in water quality can be made.

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### 4.3 PRECIPITATION

Precipitation is monitored at three stations:

- Eastsound by Paul Kamin of EWUA
- Lopez Village at 818 Cross Road by Scott Rozenbaum
- Lopez Island at 1412 Bakerview Road by Jack Giard

Precipitation data for 2008 are presented in Figure 10. Eastsound showed greater precipitation for 2008 as consistent with published isohyetal maps. For 2008, the increased precipitation in Eastsound generally fell during the winter months.

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## 5.0 RECOMMENDATIONS

The following recommendations are made based on the findings of this report:

- Expand the Eastsound groundwater monitoring network towards north to include wells between Greer and EWUA #4, the School well, and wells east of Beemer-Minnis.
- Expand the Lopez groundwater monitoring network by adding previously surveyed monitoring points including Stephens, Duncan, Carter, Bennett, Marsh, Erisman, Horn, Arnold, Normandy Heights, Mariner Hill, Galley, Cormorant, and Harbor.
- Survey the measuring point of the Aiken, Greene, and Lopez Village wells so they can be included in groundwater elevation contouring.

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## 6.0 REFERENCES

Sound Hydrogeologic, 2008. *Quality Assurance Project Plan, Ambient Groundwater Monitoring, San Juan County, Washington*. Consultants report prepared for San Juan County Community Planning Services.

Pacific Groundwater Group, 2008. *Interim Aquifer Protection Report, Eastsound, San Juan County, Washington*. Consultant's Report to the San Juan County Department of Health and Community Services.

**Table 1. Groundwater Monitoring Network Configuration**

San Juan County, Washington

Well	Ecology ID	Transducer	Measuring Point Elevation	Data Logger	Groundwater Sample Collected
<i>Eastsound</i>					
Beemer-Minnis	AAH 572	23915		Levellogger	
Clark	ALQ 041	24080	85.7	Levellogger	X
Curtis	AGQ 153	20775	51.4	Levellogger	X
EWUA #1	AER 014	23835	38.6	Levellogger	X
EWUA #4	AER 004	24575	12.5	Levellogger	
EWUA #5	Not Listed	20774	101.1	Levellogger	X
Fisher	AEC 764	24568	86.5	Levellogger	X
Greer	AGA 330	23841	98.3	Levellogger	X
NAPA	ACW 193	23827	80.1	Levellogger	X
Pearson	AHH 533	20769	30.8	Levellogger	X
School	ALQ 042	31023847	66.1	Levellogger	X
<i>Lopez Island</i>					
Aiken	AFJ 405	62083/20779	16.4	CTD Diver	X
Grant	AEC 760	62086/23909	93.69	CTD Diver	
Greene	ABO 736	85138/24574	127.33	CTD Diver	X
Langenbach		85176/23850	128.11	CTD Diver	X
Lopez Village Park	AAB 776	85170/24573	25.33	CTD Diver/Baro	X
Mengs Arena	ABO 733	85173	145.66	CTD Diver	X
Roberts	AAE 786	85137/20911	112.23	CTD Diver	X
Top Of The World	ACJ 942	23845	277.85	Levellogger	X

System configuration as of October 24, 2008.

Survey Datum = NGVD 29

**Table 2. Eastsound Groundwater Concentrations, April 23, 2008**

San Juan County, Washington

Constituent	Units	GWQC <sup>1</sup>	Clark	Curtis	EWUA #1R	EWUA #3R	EWUA #5	Fischer	Greer	NAPA	Pearson	School
<b>Inorganic Parameters</b>												
Alkalinity as CaCO <sub>3</sub> , Total	mg/L CaCO <sub>3</sub>		152	94.8	119	167	173	170	232	166	144	127
Alkalinity, Bicarbonate	mg/L CaCO <sub>3</sub>		142	94.8	119	163	173	170	232	166	137	127
Carbonate	mg/L		10.2	1U	1U	4.2	1U	1U	1U	1U	7.6	1U
Calcium, Dissolved	mg/L		13.7	24.4	49.7	28.4	42.2	34.2	52.8	27.3	14.8	53.2
Chloride	mg/L	250	33.8	26.7	18	29.1	25.1	29.5	25.1	18.4	27.4	14.5
Fluoride	mg/L	2	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.2	0.1U
Hydroxide	mg/L		1U	1U	1U	1U	1U	1U	1U	1U	1U	1U
Nitrate as N	mg/L as N	10	0.1U	5	2.5	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	1.3
Specific Conductance @ 25C	umhos/cm	700	423	378	369	418	484	413	523	377	356	376
Sulfate	mg/L	250	8.1	33.6	31.4	9.5	38.4	10.1	19.5	6.7	0.1	38.2
<b>Metals</b>												
Magnesium	mg/L	--	18.5	18.4	7.39	17.3	19.7	18.4	23.8	13.8	5.56	7.85
Potassium	mg/L	--	4.2	2	0.8	4.1	3	2.2	3.4	5	3.2	0.7
Sodium	mg/L	20 <sup>2</sup>	<b>29.6</b>	19	12.7	<b>30.4</b>	<b>26.9</b>	<b>22.8</b>	18.6	<b>26.1</b>	<b>52.7</b>	10.8

Bolded values are above their corresponding GWQC

<sup>1</sup> Ground water quality criteria (GWQC) as reported in WAC 173-200, also includes maximum contaminant levels reported in WAC 246-290-310.

<sup>2</sup> The EPA has established a recommended level of 20 mg/L for sodium as a level of concern for those consumers that may be restricted for daily sodium intake in their diets.

U = Compound not detected

Note: EWUA Well 3R is also referred to as EWUA 13.

**Table 3. Eastsound Groundwater Concentrations, October 21, 2008**

San Juan County, Washington

<b>Constituent</b>	<b>Units</b>	<b>GWQC<sup>1</sup></b>	<b>Curtis</b>	<b>EWUA #1R</b>	<b>EWUA #3R</b>	<b>EWUA #5</b>	<b>Greer</b>	<b>Pearson</b>
Chloride	mg/L	250	25.2	18	25.1	25.9	22.2	26.2
Fluoride	mg/L	4	0.1U	0.1U	0.1U	0.1U	0.1U	0.2
Nitrate as N	mg/L as N	10	4.7	2.4	0.1U	0.1U	0.1U	0.1U
Sulfate	mg/L	500	31.4	30.6	3.1	40.7	14.5	0.1U

<sup>1</sup> Ground water quality criteria (GWQC) as reported in WAC 173-200, also includes maximum contaminant levels reported in WAC 246-290-310.

U = Compound not detected

Note: EWUA Well 3R is also referred to as EWUA 13.

**Table 4. Lopez Island Groundwater Concentrations, April 24, 2008**

San Juan County, Washington

Constituent	Units	GWQC <sup>1</sup>	Aiken	Greene	Langenbach	Lopez Village Park	Mengs Arena	Roberts	Top Of The World
<b>Inorganic Parameters</b>									
Alkalinity as CaCO <sub>3</sub> , Total	mg/L CaCO <sub>3</sub>		218	417	351	267	339	397	266
Alkalinity, Bicarbonate	mg/L CaCO <sub>3</sub>		218	417	351	267	339	397	266
Carbonate	mg/L		1U	1U	1U	1U	1U	1U	1U
Calcium, Dissolved	mg/L		48.7	88.2	0.05U	45.1	75.8	75.3	58.2
Chloride	mg/L	250	25.2	186	45.7	20.1	38.3	37.8	24
Fluoride	mg/L	2	0.1U	0.1U	0.1U	0.1	0.1U	0.1	0.1U
Hydroxide	mg/L		1U	1U	1U	1U	1U	1U	1U
Nitrate as N	mg/L as N	10	0.1U	0.1U	0.1U	0.3	0.1U	0.1U	0.3
Specific Conductance @ 25C	umhos/cm	700	494	<b>1320</b>	<b>846</b>	534	<b>747</b>	<b>898</b>	556
Sulfate	mg/L	250	15	76.8	38.2	8.3	35.1	71.8	10
<b>Metals</b>									
Magnesium	mg/L		18.4	76.7	0.05U	24.4	36.7	53.9	22.5
Potassium	mg/L		2.8	12.4	0.6	3.9	6.8	8.1	5.3
Sodium	mg/L	20 <sup>2</sup>	<b>23.9</b>	<b>84.5</b>	<b>145</b>	<b>37.1</b>	<b>32.9</b>	<b>36.1</b>	<b>25</b>

Bolded values are above their corresponding GWQC

<sup>1</sup> Ground water quality criteria (GWQC) as reported in WAC 173-200, also includes maximum contaminant levels reported in WAC 246-290-310.

<sup>2</sup> The EPA has established a recommended level of 20 mg/L for sodium as a level of concern for those consumers that may be restricted for daily sodium intake in their diets.

U = Compound not detected

**Table 5. Lopez Island Groundwater Concentrations, October 22, 2008**

San Juan County, Washington

Constituent	Units	GWQC <sup>1</sup>	Lopez Village					
			Aiken	Greene	Langenbach	Park	Mengs Arena	Roberts
<b>Inorganic Parameters</b>								
Alkalinity as CaCO <sub>3</sub> , Total	mg/L CaCO <sub>3</sub>		214	403	346	265	336	392
Alkalinity, Bicarbonate	mg/L CaCO <sub>3</sub>		214	403	346	265	336	392
Calcium, Total	mg/L		52.9	90.5	82	46.8	76.8	80
Carbonate	mg/L		1U	1U	1U	1U	1U	1U
Chloride	mg/L	250	24.3	172	45	17.8	39.2	37.2
Conductivity	umhos/cm	700	505	<b>1280</b>	<b>768</b>	535	<b>735</b>	<b>872</b>
Fluoride	mg/L	4	0.1U	0.1U	0.1U	0.1U	0.1U	0.1
Hydroxide	mg/L		1U	1U	1U	1U	1U	1U
Nitrate as N	mg/L as N	10	0.1U	0.2	0.1U	0.3	0.1U	0.1U
Sulfate	mg/L	500	14.5	76.8	39.7	7.7	36.1	69.5
Total Dissolved Solids	g/L		0.282	0.796	0.474	0.306	0.454	0.554
<b>Metals</b>								
Magnesium, Total	mg/L		19.9	77.5	38	24.9	36.2	55.7
Potassium, Total	mg/L		2.8	12.5	6.7	4	6.7	8.5
Sodium, Total	mg/L	20 <sup>2</sup>	<b>24.4</b>	<b>87.8</b>	<b>32</b>	<b>36.6</b>	<b>31.4</b>	<b>36.2</b>

Bolded values are above their corresponding GWQC

<sup>1</sup> Ground water quality criteria (GWQC) as reported in WAC 173-200, also includes maximum contaminant levels reported in WAC 246-290-310.

<sup>2</sup> The EPA has established a recommended level of 20 mg/L for sodium as a level of concern for those consumers that may be restricted for daily sodium intake in their diets.



Figure 1  
 Eastsound  
 Groundwater Elevations  
 October 21, 2008

Monitoring Report



- Greer 45.4 Well Locations
- Groundwater Elevation Contours  
(Dashed where inferred)

Note:  
 The NAPA well appeared to be pumping during measurement so the reading from 4/24/08 was substituted.

Elevations in NGVD29

0 Feet 2,000



2006 NRCS Orthophoto



East Sound



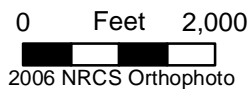
● Current Monitoring Well Locations

Note:

The elevation at the Aiken has not been surveyed and was therefore determined from the less accurate digital elevation model.

**Figure 2**  
**Lopez Island**  
**Groundwater Elevations**  
**January 30, 2008**

MSL/Tidal Elevation Conversion



JS0713



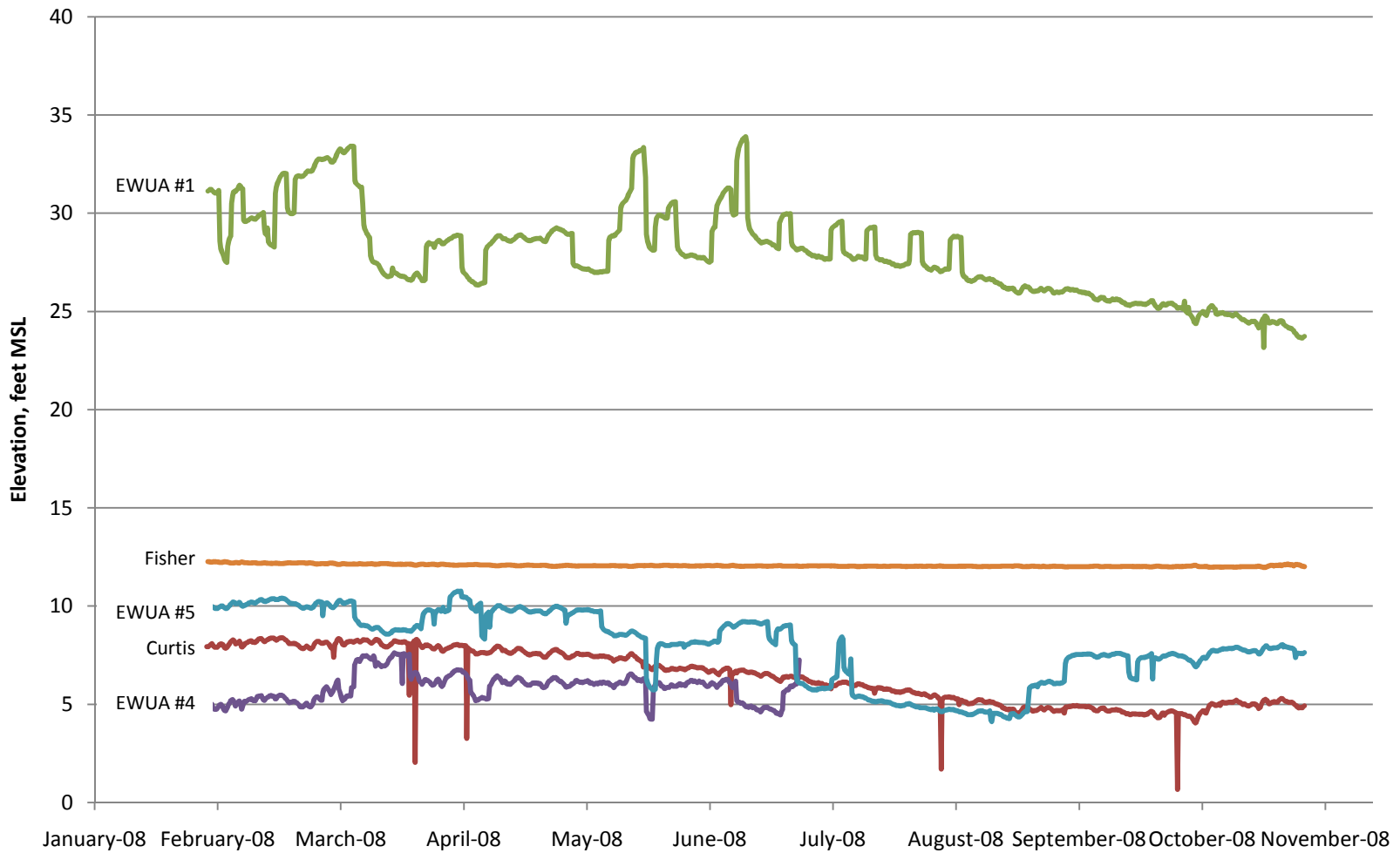


Figure 3. Eastsound Groundwater Elevation Time Series Plot

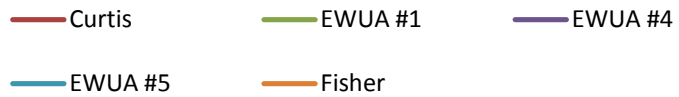


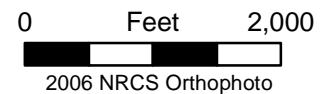
Figure 4  
 Eastsound  
 Nitrate Concentrations

SAN JUAN COUNTY  
 MONITORING REPORT  
 JS0713



EWUA #1R  
 2.5  
 2.4

● Current Monitoring Well Locations  
 Nitrate Concentration, mg/L - April 2008  
 Nitrate Concentration, mg/L - October 2008



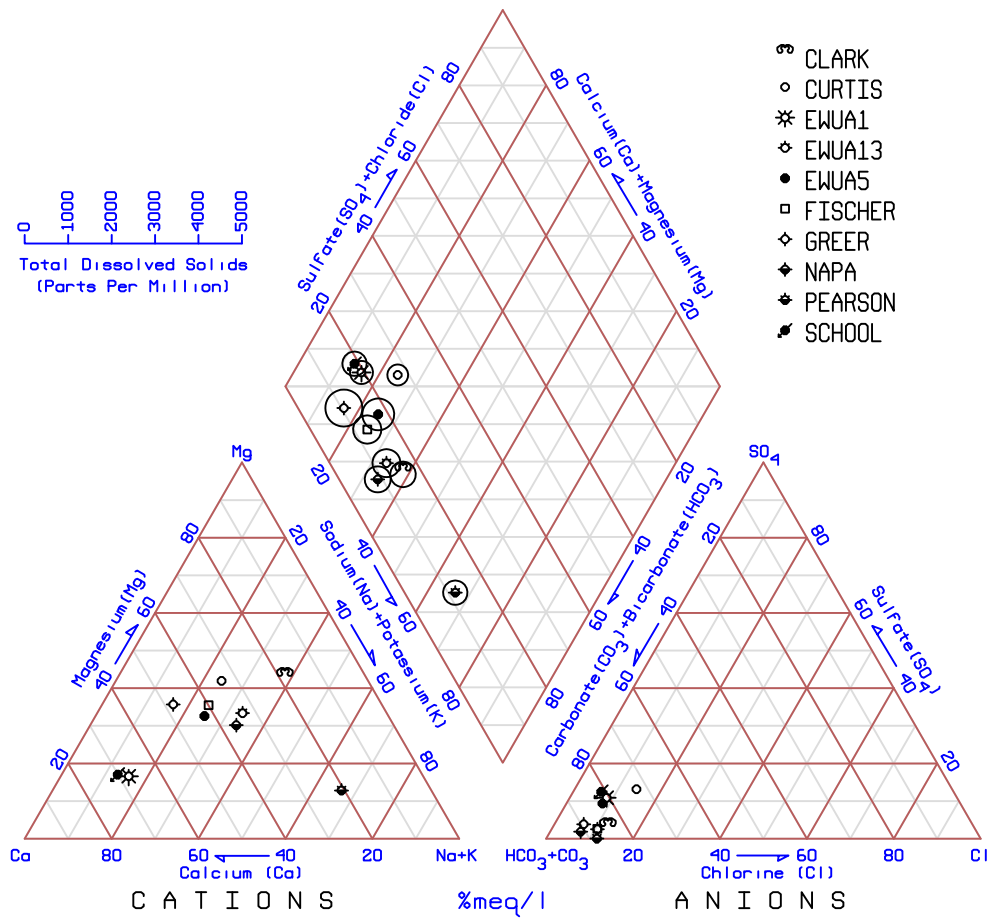
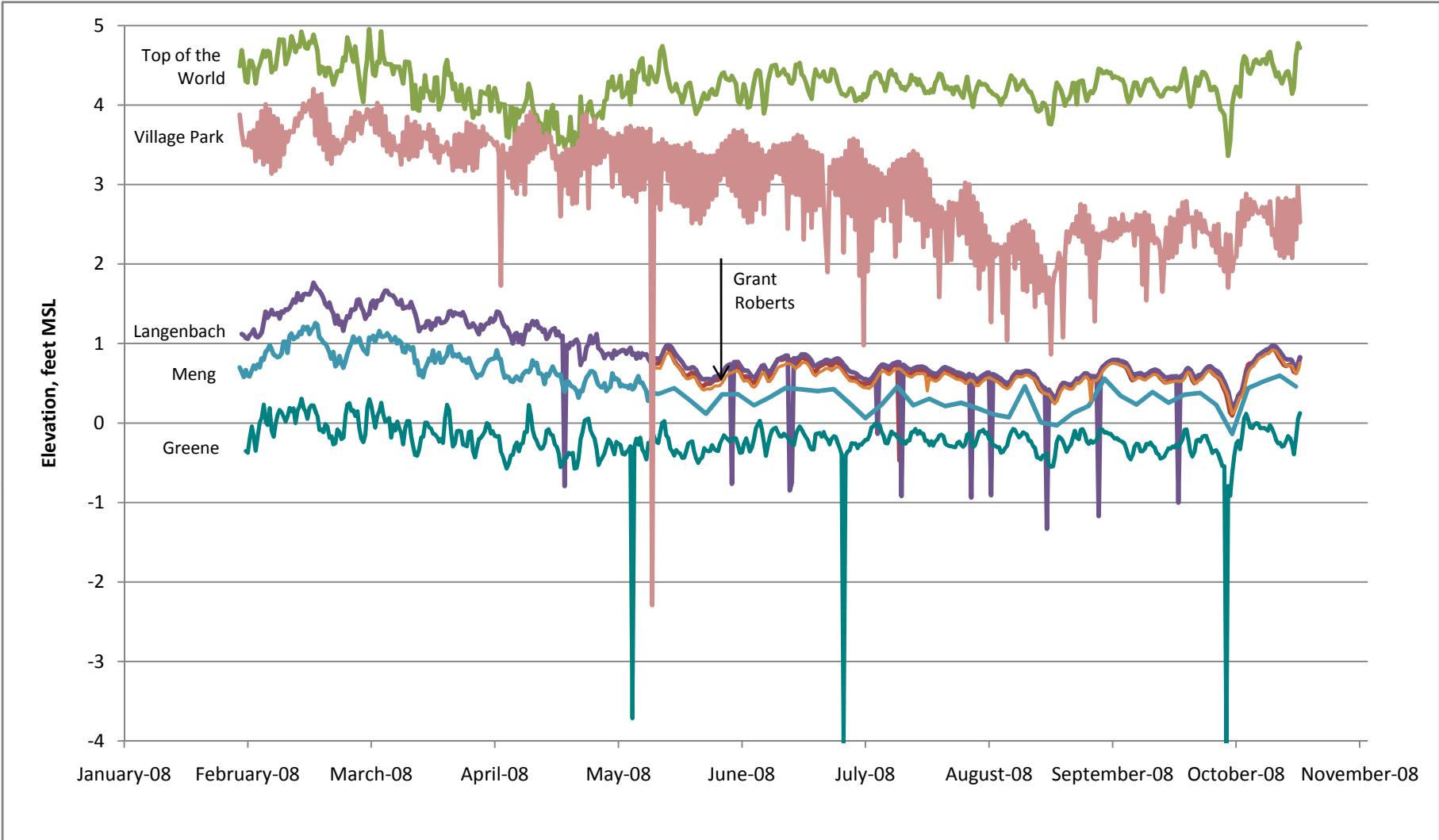


Figure 5.  
Eastsound Trilinear Diagram  
April, 2008



- Lopez- Grant
- Lopez- Langenbach
- Lopez- Meng
- Lopez- Roberts
- Lopez- Greene
- Lopez- Top of World
- Lopez- Village Park

**Figure 6. Lopez Groundwater Elevation Time Series Plot**





Aiken  **Current Monitoring Well Locations**  
 25.2 Chloride Concentration, mg/L - April 2008  
 24.3 Chloride Concentration, mg/L - October 2008

**Figure 7**  
**Lopez Island**  
**Chloride Concentrations**



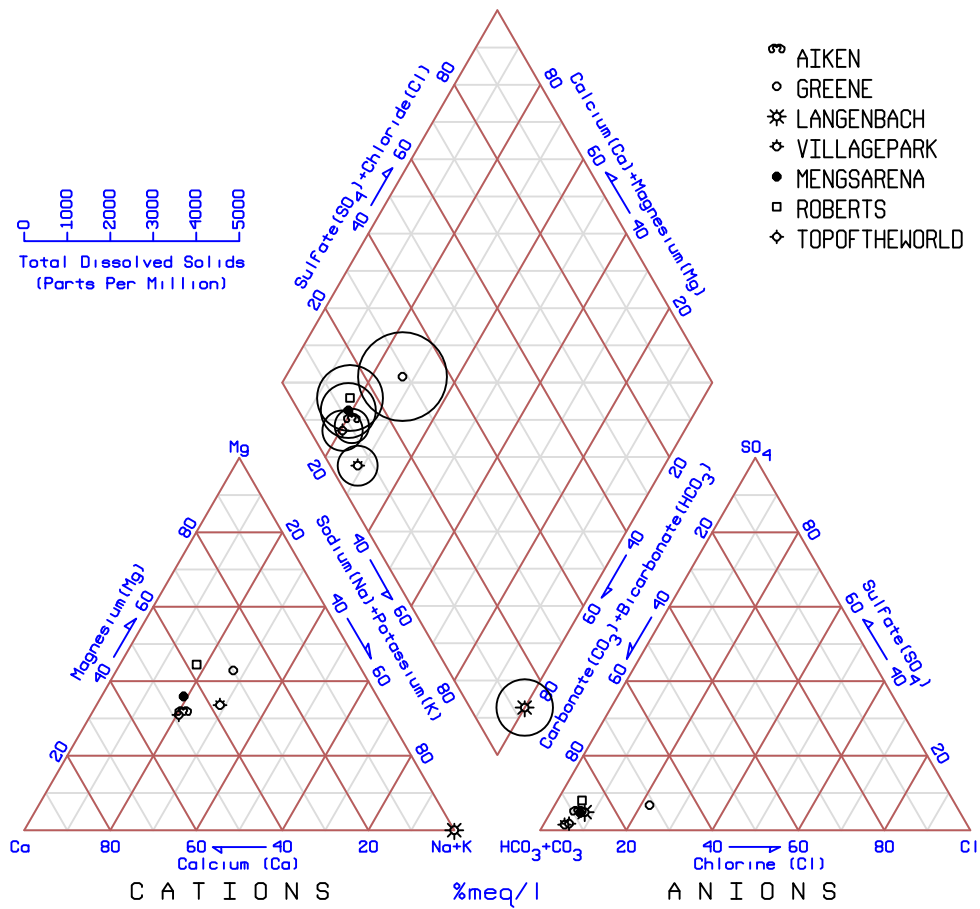


Figure 8.  
Lopez Island Trilinear Diagram  
April, 2008





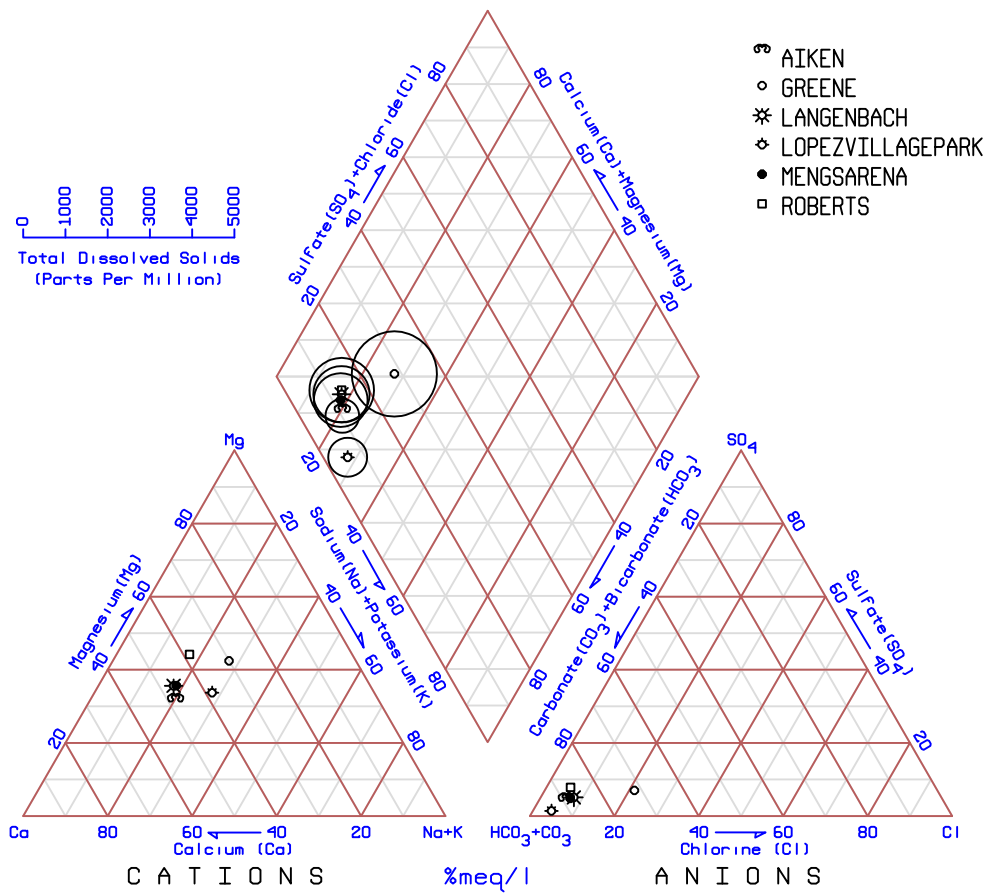
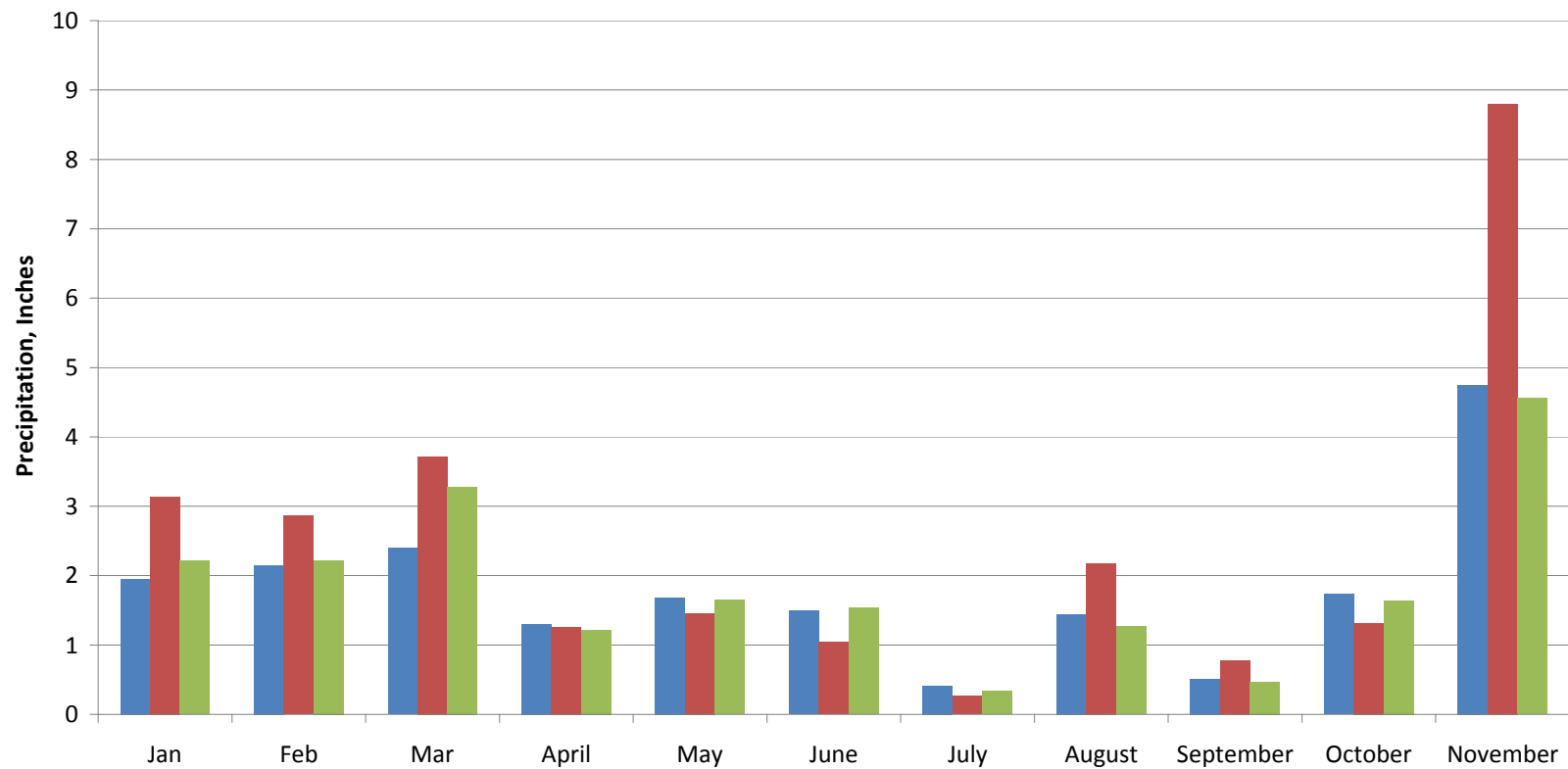


Figure 9.  
Lopez Island Trilinear Diagram  
October, 2008



■ Cross Rd  
■ Eastsound  
■ Giard

Figure 10.  
Lopez and Eastsound Precipitation Comparison, 2008

San Juan Monitoring Report



**APPENDIX A**  
**EASTSOUND MONITORING NETWORK WELL LOGS**

The Dep. The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

37-2W-44

Please print, sign and return to the Department of Ecology



**Water Well Report**

Original - Ecology, 1<sup>st</sup> copy - owner, 2<sup>nd</sup> copy - driller

**Construction/Decommission**

172910

Construction

Decommission ORIGINAL INSTALLATION Notice of Intent Number \_\_\_\_\_

<b>PROPOSED USE:</b> <input type="checkbox"/> DeWater <input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial <input type="checkbox"/> Test Well <input type="checkbox"/> Municipal <input type="checkbox"/> Other _____																								
<b>TYPE OF WORK:</b> Owner's number of well (if more than one) _____ <input checked="" type="checkbox"/> New well <input type="checkbox"/> Reconditioned <input type="checkbox"/> Deepened Method: <input type="checkbox"/> Dug <input type="checkbox"/> Bored <input type="checkbox"/> Driven <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rotary <input type="checkbox"/> Jetted																								
<b>DIMENSIONS:</b> Diameter of well <u>6</u> inches, drilled <u>113</u> ft. Depth of completed well <u>113</u> ft.																								
<b>CONSTRUCTION DETAILS</b> Casing <input checked="" type="checkbox"/> Welded <u>6</u> " Diam. from <u>+1</u> ft. to <u>98</u> ft. Installed: <input type="checkbox"/> Liner installed _____ " Diam. from _____ ft. to _____ ft. <input type="checkbox"/> Threaded _____ " Diam. from _____ ft. to _____ ft.																								
Perforations: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Type of perforator used _____ SIZE of perfs _____ in. by _____ in. and no. of perfs from _____ ft. to _____ ft.																								
Screens: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> K-Pac Location _____ Manufacturer's Name <u>Johnson</u> Type <u>Telescoping</u> Model No. _____ Diam. <u>6</u> Slot size <u>6/8</u> from <u>98</u> ft. to <u>103</u> ft. Diam. <u>6</u> Slot size <u>8/8</u> from <u>103</u> ft. to <u>113</u> ft.																								
Gravel/Filter packed: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Size of gravel/sand _____ ft. to _____ ft. Materials placed from _____ ft. to _____ ft.																								
Surface Seal: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No To what depth? <u>23</u> Material used in seal <u>Bentonite</u> Did any strata contain unusable water? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Type of water? _____ Depth of strata _____ Method of sealing strata off _____																								
PUMP: Manufacturer's Name _____ H.P. _____ Type: _____																								
<b>WATER LEVELS:</b> Land-surface elevation above mean sea level <u>60</u> ft. Static level <u>35</u> ft. below top of well Date <u>3-11-05</u> Artesian pressure _____ lbs. per square inch Date _____ Artesian water is controlled by _____ (cap, valve, etc.)																								
<b>WELL TESTS:</b> Drawdown is amount water level is lowered below static level Was a pump test made? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, by whom? _____ Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs. Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs. Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.																								
<i>Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)</i>																								
<table border="1"> <thead> <tr> <th>Time</th> <th>Water Level</th> <th>Time</th> <th>Water Level</th> <th>Time</th> <th>Water Level</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Time	Water Level	Time	Water Level	Time	Water Level																		
Time	Water Level	Time	Water Level	Time	Water Level																			
Date of test _____ Bailer test <u>30+</u> gal./min. with <u>15</u> ft. drawdown after <u>2</u> hrs. Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs. Artesian flow _____ g.p.m. Date _____ Temperature of water _____ Was a chemical analysis made? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No																								

**Current**  
 Notice of Intent No. W182465  
 Unique Ecology Well ID Tag No. AH572  
 Water Right Permit No. \_\_\_\_\_  
 Property Owner Name Beemu & Minnie's  
 Well Street Address \_\_\_\_\_  
 City East Sound County San Juan  
 Location SE 1/4-1/4 NW 1/4 Sec 14 Twn 37R 2  EWM  WWM  circle one  
 Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Lat Min/Sec \_\_\_\_\_  
 still REQUIRED ) Long Deg \_\_\_\_\_ Long Min/Sec \_\_\_\_\_  
 Tax Parcel No. \_\_\_\_\_

**CONSTRUCTION OR DECOMMISSION PROCEDURE**

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information indicate all water encountered. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
light brown clayey gravel	0	3
Tan silt sand, gravel and cobble till	3	13
Gray clayey silt sand & gravel	13	84
Gray silty sand w/ clay lenses	84	87
Gray fine sand	87	111
Gray clayey silt, sand & gravel	111	113
<p><b>RECEIVED</b> MAY 25 2005 DEPT OF ECOLOGY</p>		
Start Date <u>3-1-05</u>	Completed Date <u>3-11-05</u>	

**WELL CONSTRUCTION CERTIFICATION:** I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Driller/Engineer/Trainee Name (Print) Ken Enble  
 Driller/Engineer/Trainee Signature [Signature]  
 Driller or trainee License No. 1390  
 If TRAINEE, Driller's Licensed No. \_\_\_\_\_  
 Driller's Signature \_\_\_\_\_

Drilling Company M. Sawyer Drilling & Pump Service  
 Address 77 E Young Rd  
 City, State, Zip Olya WA 98279  
 Contractor's Registration No. MSAW405055N13 Date 4-25-05  
 Ecology is an Equal Opportunity Employer. ECY 050-1-20 (Rev 2/03)

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

37-2W-11R



# 185345 WATER WELL REPORT

Original & 1<sup>st</sup> copy - Ecology, 2<sup>nd</sup> copy - owner, 3<sup>rd</sup> copy - driller

Construction/Decommission ("x" in circle)  
 Construction  
 Decommission ORIGINAL INSTALLATION Notice of Intent Number \_\_\_\_\_

CURRENT  
Notice of Intent No. W2189956  
Unique Ecology Well ID Tag No. ALQ041  
Water Right Permit No. Supplemental to all EWUA GW Rights  
Property Owner Name Gary Clark  
Well Street Address Mt Baker Road & Deye Ln  
City Eastsound County San Juan  
Location SE 1/4-1/4 SE 1/4 Sec 11 Twn 37 R 2 EWM or WWM  circle  one  
Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Lat Min/Sec \_\_\_\_\_  
Still REQUIRED) Long Deg \_\_\_\_\_ Long Min/Sec \_\_\_\_\_  
Tax Parcel No. 271144004

**PROPOSED USE:**  DeWater  Domestic  Industrial  Municipal  Other \_\_\_\_\_  
 Irrigation  Test Well

**TYPE OF WORK:** Owner's number of well (if more than one) \_\_\_\_\_  
 New well  Reconditioned Method:  Dug  Bored  Driven  
 Deepened  Cable  Rotary  Jetted

**DIMENSIONS:** Diameter of well 12 inches, drilled 234 ft.  
Depth of completed well 230 ft.

**CONSTRUCTION DETAILS**  
Casing  Welded 12 " Diam. from +5 ft. to 130 ft.  
Installed:  Liner installed 8 " Diam. from +2 ft. to 140 ft.  
 Threaded " Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**Perforations:**  Yes  No  
Type of perforator used \_\_\_\_\_  
SIZE of perfs \_\_\_\_\_ in. by \_\_\_\_\_ in. and no. of perfs from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**Screens:**  Yes  No  K-Pac Location \_\_\_\_\_  
Manufacturer's Name Johnson  
Type 304 SS Model No. \_\_\_\_\_  
Diam. 8-inch Slot size 30 from See Attached ft. to \_\_\_\_\_ ft.  
Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from Comp. Design ft. to \_\_\_\_\_ ft.

**Gravel/Filter packed:**  Yes  No  Size of gravel/sand \_\_\_\_\_  
Materials placed from 230 ft. to 86 ft.

**Surface Seal:**  Yes  No To what depth? 18 ft.  
Material used in seal Bentonite  
Did any strata contain unusable water?  Yes  No  
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_

**PUMP:** Manufacturer's Name \_\_\_\_\_  
Type: \_\_\_\_\_ H.P. \_\_\_\_\_

**WATER LEVELS:** Land-surface elevation above mean sea level approx 80 ft.  
Static level 73.80 ft. below top of well Date 5/14/05  
Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_  
Artesian water is controlled by \_\_\_\_\_ (cap, valve, etc.)

**WELL TESTS:** Drawdown is amount water level is lowered below static level  
Was a pump test made?  Yes  No If yes, by whom? CR Hydrogeo.  
Yield: 87 gal./min. with 17.35 ft. drawdown after 24 hrs.  
Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
1	78.80	15	76.35	120	74.35
5	77.20	30	75.60	180	74.06
10	76.84	00	74.88	1445	73.76

Date of test 5/15/05 - 5/16/05  
Bailer test \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Airtest \_\_\_\_\_ gal./min. with stem set at \_\_\_\_\_ ft. for \_\_\_\_\_ hrs.  
Artesian flow \_\_\_\_\_ g.p.m. Date \_\_\_\_\_  
Temperature of water 51 F Was a chemical analysis made?  Yes  No

### CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Topsoil	0	1
Brn Silty Sand, some Gravel	1	3
Glacial Till (hardpan)	3	112
Gry. Sandy Silt	112	126
v. fine Gry. Sand, WB (dirty)	126	136
v. fine Gry. Sand with cemented layers	136	149
v. fine - fine Gry. Sand, WB	149	156
Gry. Silty Sand, WB, (tight)	156	163
v. fine to fine Gry. Sand, WB	163	213
fine to med Gry. Sand with Shell Fragments, WB	213	227
Gry. Silt	227	234

LOG FOR EWUA - Clark Production Well  
Prepared by CR Hydrogeologic Consulting

**RECEIVED**  
JUL 28 2005  
DEPT OF ECOLOGY

Start Date 4/19/05 Completed Date 5/16/05

**WELL CONSTRUCTION CERTIFICATION:** I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Driller  Engineer  Trainee Name (Print) Randy Holt  
Driller/Engineer/Trainee Signature \_\_\_\_\_  
Driller or trainee License No. 1099

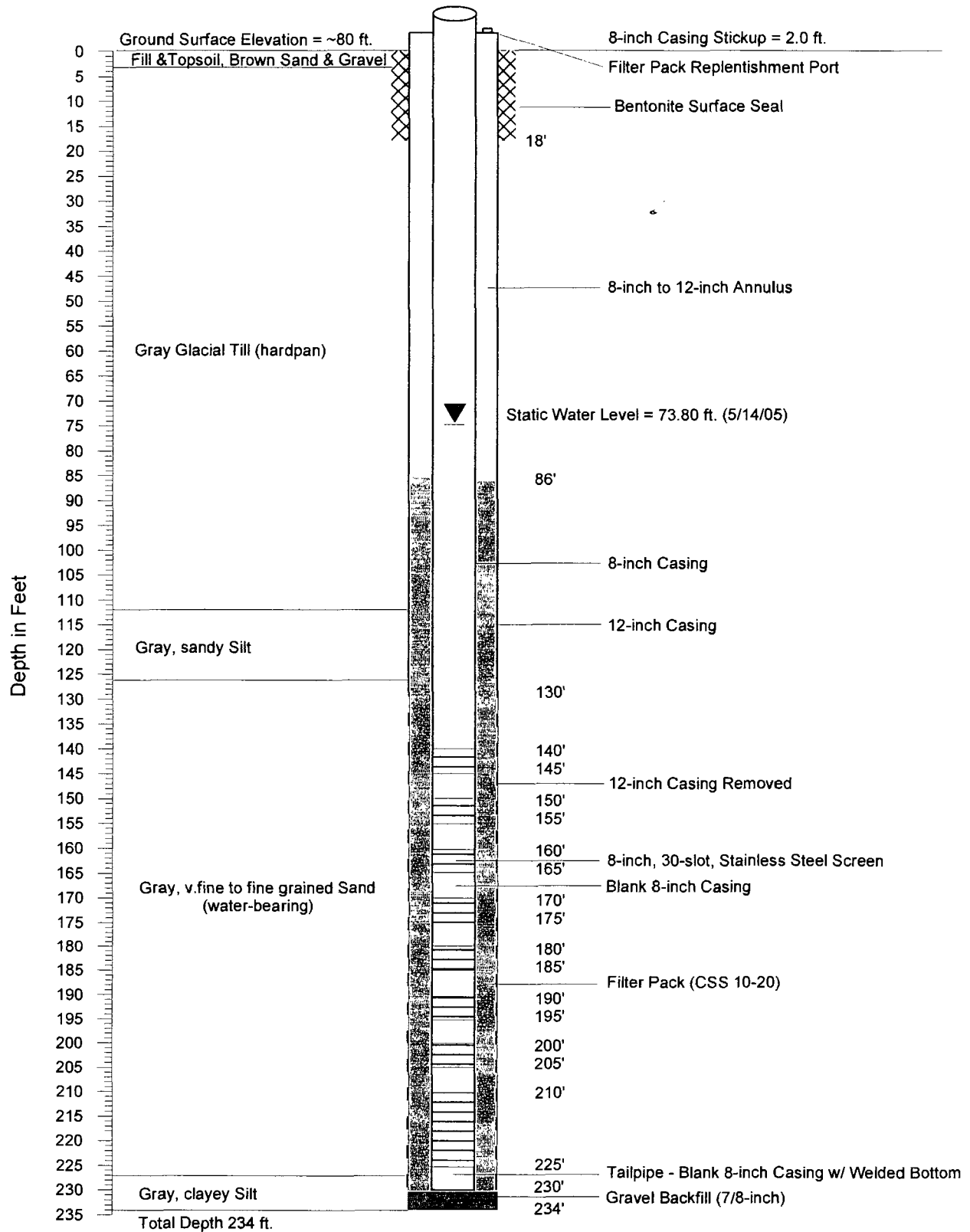
Drilling Company Holt Drilling / Boart Longyear  
Address Po Box 1890  
City, State, Zip Milton WA 98354

**IF TRAINEE,**  
Driller's Licensed No. \_\_\_\_\_  
Driller's Signature \_\_\_\_\_

Contractor's  
Registration No. BoartLC05SPZ Date 7-20-05  
Ecology is an Equal Opportunity Employer.

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

## EWUA - Clark Production Well Lithologic Log and Completion Design



**CR**

EWUA  
Clark Production Well  
c:\clark\clarklog&design\grf

EWUA - Clark Production Well  
Lithologic Log and Completion Design

Figure 2

File Original and First Copy with Department of Ecology  
Second Copy- Owner's Copy  
Third Copy- Driller's Copy

121665

# WATER WELL REPORT

STATE OF WASHINGTON

37-2W-112

Start Card No WE00536  
Well ID No AGQ153  
Water Permit No \_\_\_\_\_  
Tax Parcel No 271157004

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

1 OWNER Name BARTON & SHELLEY CURTIS Address 125 SEAVIEW STREET, EASTSOUND, WA 98245  
2 LOCATION OF WELL County SAN JUAN NE 1/4 SW 1/4 Sec 11 T 37 N , R 2 W M  
2a STREET ADDRESS OF WELL (or nearest address) BLANCHARD ROAD, EASTSOUND, WA 98245

3 PROPOSED USE  Domestic  Industrial  Municipal   
 Irrigation  Test Well  Other   
 DeWater

10 WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION  
Formation Describe color, character, size of material and structure and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information

4 TYPE OF WORK Owner's number of well \_\_\_\_\_ (if more than one)  
Abandoned  New Well  Method Dug  Bored   
Deepened  Cable  Driven   
Reconditioned  Rotary  Jetted

MATERIAL	FROM	TO
BROWN SILTY SAND & PEBBLES	0	5
BROWN SANDY SILT	5	28
BROWN FINE SAND	28	43
BROWN CLAYEY SAND	43	61
BROWN FINE SAND (WATER BEARING)	61	72
BROWN FINE TO MEDIUM SAND (H2O BEARING)	72	84
BROWN CLAY	84	-

RECEIVED  
OCT 21 2002  
DEPT OF ECOLOGY

5 DIMENSIONS Diameter of Well 6 inches  
Drilled 84 feet Depth of completed well 84 ft

6 CONSTRUCTION DETAILS  
Casing installed 6" Diam from +1 ft to 69 ft  
Welded  \_\_\_\_\_" Diam from \_\_\_\_\_ ft to \_\_\_\_\_ ft  
Liner installed \_\_\_\_\_" Diam from \_\_\_\_\_ ft to \_\_\_\_\_ ft  
Threaded \_\_\_\_\_" Diam from \_\_\_\_\_ ft to \_\_\_\_\_ ft

Perforations Yes \_\_\_\_\_ No   
Type of perforator used \_\_\_\_\_  
SIZE of perforations \_\_\_\_\_ in by \_\_\_\_\_ in  
\_\_\_\_\_ perforation from \_\_\_\_\_ ft to \_\_\_\_\_ ft  
\_\_\_\_\_ perforation from \_\_\_\_\_ ft to \_\_\_\_\_ ft  
\_\_\_\_\_ perforation from \_\_\_\_\_ ft to \_\_\_\_\_ ft

Screens Yes \_\_\_\_\_ No   
Manufacturer's Name JOHNSON  
Type STAINLESS Model No \_\_\_\_\_  
Diam 6 Slot size 0 008 from 69 ft to 74 ft  
Diam 6 Slot size 0 010 from 74 ft to 84 ft

Gravel packed Yes \_\_\_\_\_ No  Size of gravel \_\_\_\_\_  
Gravel placed from \_\_\_\_\_ ft to \_\_\_\_\_ ft

Surface Seal Yes  No \_\_\_\_\_ To what depth? 18 ft  
Material used in seal BENTONITE CHIPS  
Did any strata contain unusable water? Yes \_\_\_\_\_ No   
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_

7 PUMP Manufacturer's Name \_\_\_\_\_  
Type \_\_\_\_\_ HP \_\_\_\_\_

8 WATER LEVELS Land surface elevation \_\_\_\_\_  
above mean sea level 60 ft  
Static level 47 ft below top of well Date 8/16/02  
Artesian pressure \_\_\_\_\_ lbs Per square inch Date \_\_\_\_\_  
Artesian water is controlled by \_\_\_\_\_ (cap. valve, etc.)

Work Started 8/3/02 Completed 8/16/02

9 WELL TESTS Drawdown is amount water level is lowered below static level Was a pump test made? Yes \_\_\_\_\_ No   
If yes, by whom? \_\_\_\_\_  
Yield \_\_\_\_\_ gal/min with \_\_\_\_\_ ft drawdown after \_\_\_\_\_ hrs  
Recovery data ( time taken as zero when pump turned off ) (water level measured from well top to water level )  
Time Water Level Time Water Level Time Water Level  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Date of test \_\_\_\_\_  
Bailer test \_\_\_\_\_ gal /min with 10 ft drawdown after 15 hrs  
Airstest 90 gal /min with stem set at \_\_\_\_\_ ft for \_\_\_\_\_ hrs  
Artesian flow \_\_\_\_\_ g p m Date \_\_\_\_\_  
Temperature of water \_\_\_\_\_ Was a chemical analysis made? Yes \_\_\_\_\_  
No

WELL CONSTRUCTION CERTIFICATION  
I constructed and/or accept responsibility for construction of this well and it's compliance with all Washington Well construction standards Materials used and the information reported above are true to my best knowledge and belief  
NAME MARTEL WELL DRILLING  
(Person, Firm, or Corporation) (Type or Print)  
Address P O BOX 905, FRIDAY HARBOR, WA 98250  
(Signed) David Yentes License No 2438  
Contractor's Registration Number MARTEWD044PA Date 8/23/02

(USE ADDITIONAL SHEETS IF NECESSARY)

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

File Original with  
Department of Ecology  
Second Copy - Owner's Copy  
Third Copy - Driller's Copy

# WATER WELL REPORT

STATE OF WASHINGTON

Notice of Intent W10Z548  
UNIQUE WELL I.D.# AER 014  
Water Right Permit No. G1 \* 03683C

(1) OWNER: Name East sound water users Assoc Address P.O. Box 115 East Sound wa. 98245  
(2) LOCATION OF WELL: County San Juan NW 1/4 NE 1/4 Sec 13 T 37 N.R. 2W WM  
(2a) STREET ADDRESS OF WELL: (or nearest address) Corner of terril Beach Rd & Mt Bahr Rd.  
TAX PARCEL NO.: 271350025 37-2W-13B

(3) PROPOSED USE:  Domestic  Industrial  Municipal  
 Irrigation  Test Well  Other  
 DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) 1R  
 New Well Method:  Dug  Bored  
 Deepened  Cable  Driven  
 Reconditioned  Rotary  Jetted  
 Decommission

(5) DIMENSIONS: Diameter of well 12 x 8 inches  
Drilled 55 feet. Depth of completed well 55 feet.

(6) CONSTRUCTION DETAILS  
Casing Installed:  Welded 12 : Diam. from 1.5 ft. to 36 ft.  
 Liner installed 8 : Diam. from 3 ft. to 36 ft.  
 Threaded : Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Perforations:  Yes  No  
Type of perforator used \_\_\_\_\_  
SIZE of perforations \_\_\_\_\_ in. by \_\_\_\_\_ in.  
perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Screens:  Yes  No  K-Pac Location welded to pipe  
Manufacturer's Name Johnson  
Type \_\_\_\_\_ Model No. \_\_\_\_\_  
Diam. 7 Slot Size .20 from 31 ft. to 36 ft.  
Diam. \_\_\_\_\_ Slot Size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Gravel/Filter packed:  Yes  No  Size of gravel/sand .10-20  
Material placed from 54 ft. to 24 ft.

Surface seal:  Yes  No To what depth? 35 ft.  
Material used in seal Went cement 50% Benbrink  
Did any strata contain unusable water?  Yes  No  
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_

(7) PUMP: Manufacturer's Name \_\_\_\_\_  
Type: \_\_\_\_\_ H.P. \_\_\_\_\_

(8) WATER LEVELS: Land-surface elevation above mean sea level 39 ft.  
Static level 1 ft. below top of well Date 7-14-2000  
Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_  
Artesian water is controlled by \_\_\_\_\_ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level  
Was a pump test made?  Yes  No If yes, by whom? \_\_\_\_\_  
Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)  
Time Water Level Time Water Level Time Water Level  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Date of test \_\_\_\_\_  
Bailer test 36 gal./min. with 22 ft. drawdown after 20 min  
Airtest \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Artesian flow \_\_\_\_\_ g.p.m. Date \_\_\_\_\_  
Temperature of water \_\_\_\_\_ Was a chemical analysis made?  Yes  No

(10) WELL LOG or DECOMMISSIONING PROCEDURE DESCRIPTION  
Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. Indicate all water encountered.

MATERIAL	FROM	TO
Sand, Brn, med	0	5
Tan clay Rocks & Gravel	5	15
Blue clay, 13 1/2 Rocks	15	36
Silty Sand - Brn.		
Becoming slight by coarse with Deftn -	36	49
Sand coarse Gravel,		
Small Rocks - Gray	49	55
Silt Band or cemented		

## RECEIVED

JUL 20 2000

Department of Ecology

Work Started 8-16-99 Completed 7-16-2000

### WELL CONSTRUCTION CERTIFICATION:

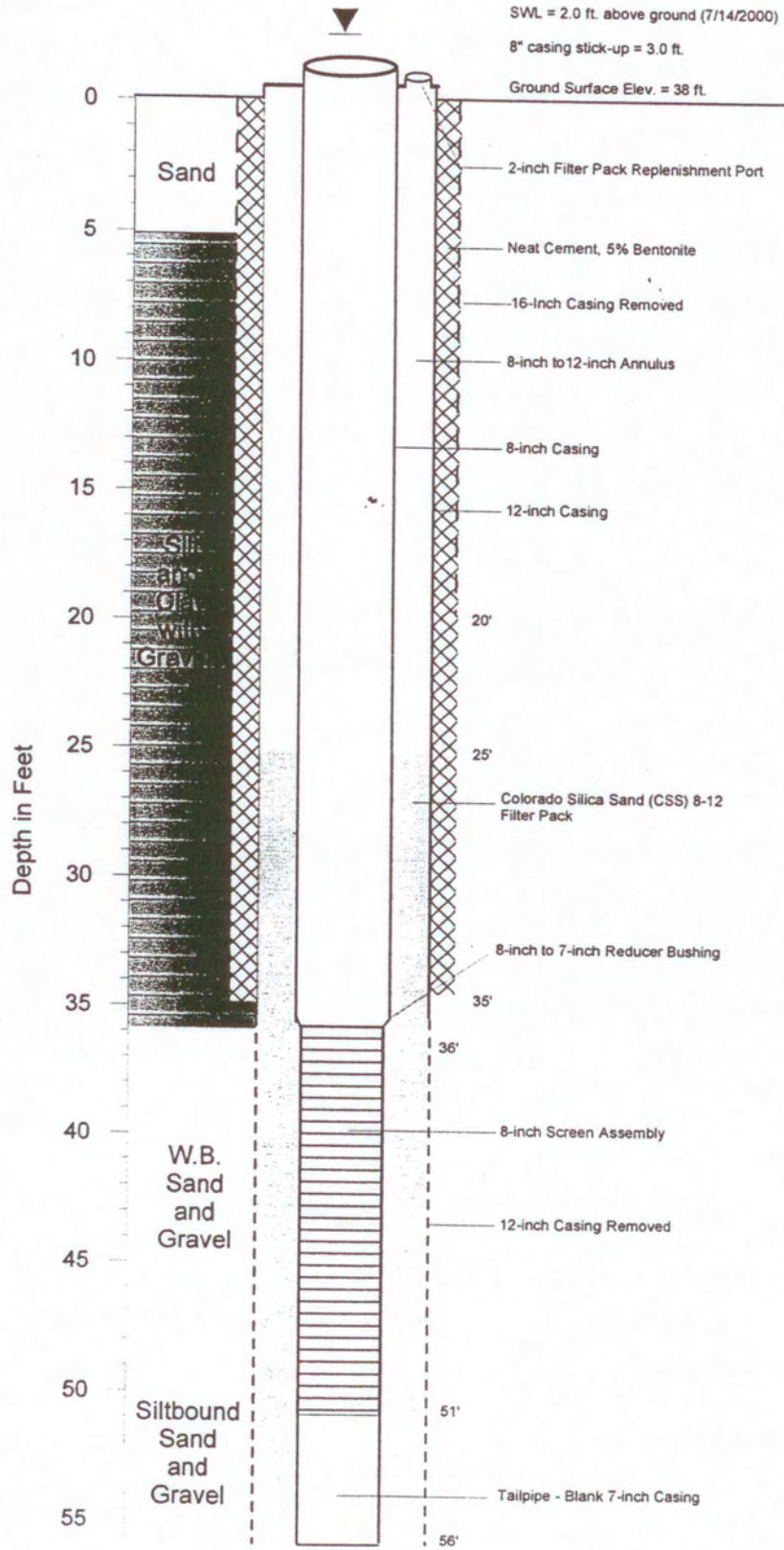
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.  
Type or Print Name Mark Sawyer License No. 2461  
(Licensed Driller/Engineer)  
Trainee Name \_\_\_\_\_ License No. \_\_\_\_\_  
Drilling Company M. Sawyer Drilling & Pump Serv Inc  
(Signed) Mark Sawyer License No. 2461  
(Licensed Driller/Engineer)  
Address 621 abstraction pass Rd Olga wa.  
Contractor's Registration No. MSAWYD5655NB Date 7-17-2000

(USE ADDITIONAL SHEETS IF NECESSARY)

Ecology is an Equal Opportunity and Affirmative Action employer. For special accommodation needs, contact the Water Resources Program at (360) 407-6600. The TDD number is (360) 407-6006.



Well 1R



**WATER WELL REPORT**

STATE OF WASHINGTON

Applic. No. 10780  
Permit No. 10570

(1) OWNER: Name EAST SOUND WATER USER Address EAST SOUND WOOD 9824

(2) LOCATION OF WELL: County SAN JUAN

Bearing and distance from section or subdivision corner 240' NORTH AND 500 FEET EAST FROM CORNER OF SEC 11

(3) PROPOSED USE: Domestic  Industrial  Municipal   
Irrigation  Test Well  Other

(4) TYPE OF WORK: Owner's number of well (if more than one) \_\_\_\_\_  
New well  Method: Dig  Bored   
Deepened  Cable  Driven   
Reconditioned  Rotary  Jetted

(5) DIMENSIONS: Diameter of well 8 inches.  
Drilled 250 ft. Depth of completed well 35 ft.

(6) CONSTRUCTION DETAILS:  
Casing installed: 8" Diam. from 0 ft. to 63 ft.  
Threaded  " Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Welded  " Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Perforations: Yes  No   
Type of perforator used \_\_\_\_\_  
SIZE of perforations 1 in. by 1/4 in.  
perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Screens: Yes  No   
Manufacturer's Name Johnson  
Type Stainless Steel Model No \_\_\_\_\_  
Diam. 8 Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Gravel packed: Yes  No  Size of gravel: \_\_\_\_\_  
Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Surface seal: Yes  No  To what depth? \_\_\_\_\_ ft.  
Material used in seal \_\_\_\_\_  
Did any strata contain unconsolidated water? Yes  No   
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_

(10) WELL LOG: SEE CENTER

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Sand Gravel	0	5
Clay	5	63
Rock	63	187
No Water in Bank	63	250

*Well was pulled back to 63 feet and perforated at 35 feet in sand. Used Gravel Rock Hole was filled with sand and gravel.*

SWL = 6

(7) PUMP: Manufacturer's Name \_\_\_\_\_  
Type \_\_\_\_\_ H.P. \_\_\_\_\_

(8) WATER LEVELS: Land surface elevation \_\_\_\_\_ ft. above mean sea level.  
Static level 6 ft. below top of well Date April 1972  
Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_  
Artesian water is controlled by \_\_\_\_\_ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level.  
Was a pump test made? Yes  No  If yes, by whom? \_\_\_\_\_  
Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.

Recovery data (time when as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level

Date of test \_\_\_\_\_  
Pump test \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Artesian flow \_\_\_\_\_ g.p.m. Date March 20 1972  
Temperature of water \_\_\_\_\_ Was a chemical analysis made? Yes  No

Work started March 15 1972 completed April 1 1972

**WELL DRILLER'S STATEMENT:**

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

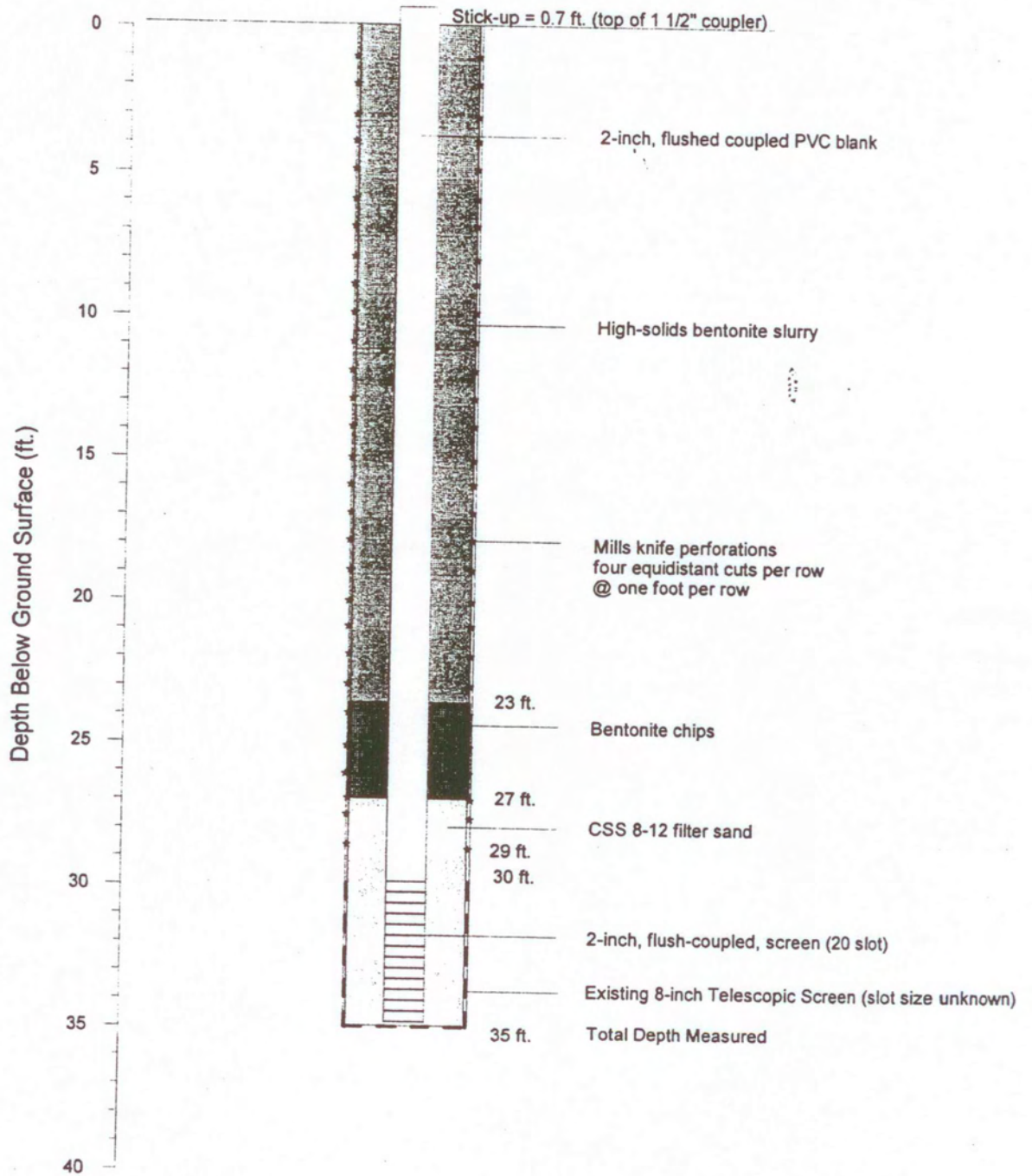
**GEORGE H. BROWN**  
Well Drilling  
NAME \_\_\_\_\_ (Type or print)  
(Person: \_\_\_\_\_)

Address \_\_\_\_\_

[Signed] George H. Brown  
(Well Driller)

License No. \_\_\_\_\_ Date Mar 25 1972

# EWUA Well 4 Conversion Construction Details



(1) OWNER: Name EAST SOUND WATER DEP. Address ORCAS, WASHINGTON 98245

(2) LOCATION OF WELL: County San Juan (Buena Vista Hts.) site 14 1/4 Sec. 11 T. 37N R. 2W

Bearing and distance from section or subdivision corner SE 1/4 SW 1/4 Sec 11, T 37N, R 2W

(3) PROPOSED USE: Domestic  Industrial  Municipal   
Irrigation  Test Well  Other

(4) TYPE OF WORK: Owner's number of well (if more than one) 5-7A  
New well  Method: Dug  Bored   
Deepened  Cable  Driven   
Reconditioned  Rotary  Jetted

(5) DIMENSIONS: Diameter of well 8 inches.  
Drilled 120 ft. Depth of completed well 115 ft.

(6) CONSTRUCTION DETAILS:  
Casing installed: 8" Diam. from 7.2 ft. to 10.5 ft.  
Threaded  " Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Welded  " Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Perforations: Yes  No   
Type of perforator used \_\_\_\_\_  
SIZE of perforations \_\_\_\_\_ in. by \_\_\_\_\_ in.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Screens: Yes  No   
Manufacturer's Name Coak  
Type \_\_\_\_\_ Model No. \_\_\_\_\_  
Diam. 8" Slot size 80 from 10.5 ft. to 11.5 ft.  
Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Gravel packed: Yes  No  Size of gravel: \_\_\_\_\_  
Gravel placed from 118 ft. to 115 ft.

Surface seal: Yes  No  To what depth? 20 ft.  
Material used in seal Portland Cement  
Did any strata contain unusable water? Yes  No   
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_

(7) PUMP: Manufacturer's Name \_\_\_\_\_  
Type: \_\_\_\_\_ H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level 10.5 ft.  
Static level 90 ft. below top of well Date 8/26/74  
Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_  
Artesian water is controlled by \_\_\_\_\_ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level  
Was a pump test made? Yes  No  If yes, by whom M. Martel  
Yield: gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
" 65 " 20 " 8 "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test \_\_\_\_\_  
Ballor test \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Artesian flow \_\_\_\_\_ g.p.m. Date \_\_\_\_\_  
Temperature of water \_\_\_\_\_ Was a chemical analysis made? Yes  No

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Sandy top soil	0	2
sand & small rocks	2	6
brown clay & sand	6	90
blue clay	90	107
thin layer of gravel on clay		
3 to 5 gpm		
water bearing sand	107	114
clay	114	118
water & fine sand	118	120

Work started 7/11 1974 Completed 8/27 1974

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Martel Well Drilling Inc.  
(Person, firm, or corporation) (Type or print)

Address Box 53, Buckley, WA 98250

[Signed] Martel  
(well driller)

License No. 0292 Date 9/4 1974

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

ENTERED

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W102527

UNIQUE WELL I.D. # REC 764

Water Right Permit No. 37-2W-11R

File Original and First Copy with Department of Ecology
Second Copy - Owner's Copy
Third Copy - Driller's Copy

(1) OWNER: Name Ed Sullivan Address P.O. Box 1018 East Sound wa 98245

(2) LOCATION OF WELL: County SAN Juan SWE 1/4 S4E 1/4 Sec 11 T. 37 N. R. 2W W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) Mt Baker Hwy. SE SE

(3) PROPOSED USE: Domestic Irrigation DeWater Industrial Test Well Other Municipal Other

(4) TYPE OF WORK: Abandoned New well Deepened Reconditioned Method: Dug Cable Rotary Bored Driven Jetted

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 130 feet. Depth of completed well 127 ft.

(6) CONSTRUCTION DETAILS: Casing installed 6 ft. Welded Liner installed Threaded

Perforations: Yes No Type of perforator used SIZE of perforations in. by in.

Screens: Yes No Manufacturer's Name Johnson Type Model No. Diam. 5 Slot size .04

Gravel packed: Yes No Size of gravel Gravel placed from ft. to ft.

Surface seal: Yes No To what depth? 18 ft. Material used in seal Bentonite

(7) PUMP: Manufacturer's Name Arco meter Type T5-12 H.P. 1/2

(8) WATER LEVELS: Land-surface elevation above mean sea level 90 Static level 80

(9) WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made?

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level) Bailer test

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

Table with columns: MATERIAL, FROM, TO. Entries include TOP Soil, Sand & Gravel, Tan clay, Blue clay, Silty Blue clay, Fine Grey Sand.

RECEIVED

FEB 23 1999

DEPT OF ECOLOGY

Work Started 11-6 19. Completed 11-9 19 89

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards.

NAME M. Sawyer Drilling & Pump Service Inc Address HL Box 160 Olga wa 98279

Contractor's Registration No. MSAW4DSOSSND Date 12-20 19 98

(USE ADDITIONAL SHEETS IF NECESSARY)

Ecology is an Equal Opportunity and Affirmative Action employer. For special accommodation needs, contact the Water Resources Program at (206) 407-6600.

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

WATER WELL REPORT 37/2/125

File Original and First Copy with Department of Ecology Second Copy-Owner's Copy Third Copy-Drillier's Copy

STATE OF WASHINGTON

Start Date No: 024901 Water Permit No: \_\_\_\_\_

1. OWNER : Name: HARRY GREER Address: P.O. BOX 136, EASTSOUND, WA 98245.

2. LOCATION OF WELL : County SAN JUAN NE 1/4 SE 1/4 Sec 12 T 37 N., R 2 W.M.

2a. STREET ADDRESS OF WELL (or nearest address) ANDERSEN ROAD

3. PROPOSED USE: [X] Domestic Industrial Municipal [X] Irrigation Test Well [X] DeWater

4. TYPE OF WORK: Owner's number of well (if more than one) Abandoned \_\_\_ New Well [X] Deepened \_\_\_ Reconditioned \_\_\_ Method: Dig Cable Rotary [X] Driven Jetted

5. DIMENSIONS: Diameter of well 6 inches. Drilled 101 feet. Depth of completed well 101 ft.

6. CONSTRUCTION DETAILS: Casing installed: 5" Dia. from +1 ft. to 91 ft. Welded [X] " Dia. from \_\_\_ ft. to \_\_\_ ft. Liner installed \_\_\_ " Dia. from \_\_\_ ft. to \_\_\_ ft. Threaded \_\_\_ " Dia. from \_\_\_ ft. to \_\_\_ ft.

Perforations: Yes \_\_\_ No [X] Type of perforator used \_\_\_ SIZE of perforations \_\_\_ in. by \_\_\_ in. perforation from \_\_\_ ft to \_\_\_ ft.

Screens: Yes [X] No \_\_\_ Manufacturer's Name JOHNSON Type STAINLESS Model No \_\_\_ Diam 6 Slot size 18 from 91 ft. to 101 ft.

Gravel packed: yes \_\_\_ No [X] Size of gravel \_\_\_ Gravel placed from \_\_\_ ft. to \_\_\_ ft.

Surface Seal: Yes [X] No \_\_\_ To what depth? 18 ft. Material used in seal BENTONITE Did any strata contain unusable water? Yes \_\_\_ No [X] Type of water \_\_\_ Depth of strata \_\_\_ Method of sealing strata off \_\_\_

7. PUMP : Manufacturer's Name \_\_\_ Type : \_\_\_ H.P. \_\_\_

8. WATER LEVELS: Land surface elevation above mean sea level 60 ft Static level 56 ft below top of well Date \_\_\_ Artesian pressure \_\_\_ lbs. per square inch Date \_\_\_ Artesian water is controlled by \_\_\_ (cap. valve, etc)

9. WELL TESTS: Drawdown is amount water level is lowered below static level. Was a pump test made? Yes \_\_\_ No \_\_\_ If yes, by whom? \_\_\_ Yield: \_\_\_ gal/min with \_\_\_ ft drawdown after \_\_\_ hrs

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level) Time Water Level Time Water Level Time Water Level

Bailer test 12.0 gal./min. with 2 ft. drawdown after 1 hrs Airtest \_\_\_ gal./min. with stem set at \_\_\_ ft. for \_\_\_ hrs Artesian flow \_\_\_ g.p.m. Date \_\_\_ Temperature of water \_\_\_ Was a chemical analysis made? Yes \_\_\_ No \_\_\_

RECEIVED JUN 18 1993

DEPT. OF ECOLOGY

10. WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION: Formation: Describe by color, character, size of material and structure and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

Table with columns: MATERIAL, FROM, TO. Rows: LIGHT BROWN SAND (0-1), LIGHT BROWN CLAYEY SILTY GRAVEL (1-36), GREY SILT (36-90), GREY MEDIUM SAND & SMALL GRAVEL (90-101)

Work started : MAY 16, 1993. Completed : MAY 19, 1993.

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME : MARTEL WELL DRILLING INC. (Person, Firm, Or Corporation) (Type Or Print) Address : P.O. BOX 905, FRIDAY HARBOR, WA 98250. (Signed) [Signature] License No. : 0541 (Well Driller)

Contractor's Registration Number : MARTEWD12102 Date : MAY 19, 1993

(USE ADDITIONAL SHEETS IF NECESSARY)

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

WATER WELL REPORT

37/2/12J

File Original and First Copy with Department of Ecology Second Copy-Owner's Copy Third Copy-Driller's Copy

STATE OF WASHINGTON

Start Card No. Water Permit No.

1. OWNER : Name: HARRY GREER Address: P.O. BOX 136, EASTSOUND, WA 98245.

2. LOCATION OF WELL : County SJ, NE 1/4 SE 1/4 Sec 12 T 37 N., R 2 W.M.

2a. STREET ADDRESS OF WELL (or nearest address) NORTH BEACH, ORCAS ISLAND.

3. PROPOSED USE: X Domestic Industrial Municipal Irrigation Test Well Other DeWater

4. TYPE OF WORK: Owner's number of well (if more than one) Abandoned New Well X Method: Dug Bored Deepened Cable X Driven Reconditioned Rotary Jetted

5. DIMENSIONS: Diameter of well 6 inches. Drilled 89 feet. Depth of completed well 89 ft

6. CONSTRUCTION DETAILS: Casing installed: 6" Diam. from +1 ft. to 84 ft. Welded X 6" Diam. from 84 ft. to 89 ft. Liner installed 6" Diam. from 84 ft. to 89 ft. Threaded 6" Diam. from 89 ft. to 89 ft.

Perforations: Yes No X Type of perforator used SIZE of perforations in. by in. perforation from ft to ft.

Screens: Yes X No Manufacturer's Name SMITH Type STAINLESS Model No Diam 6 Slot size 20 from 84 ft. to 89 ft.

Gravel packed: Yes No X Size of gravel Gravel placed from ft. to ft.

Surfact Seal: Yes X No To what depth? 18 ft. Material used in seal BENTONITE Did any strata contain unusable water? Yes No Type of water? Depth of strata Method of sealing strata off

7. PUMP : Manufacturer's Name Type : H.P.

8. WATER LEVELS: Land surface elevation above mean sea level 70 ft Static level 52 ft below top of well Date Artesian pressure lbs. per square inch Date Artesian water is controlled by (cap, valve, etc)

9. WELL TESTS: Drawdown is amount water level is lowered below static level. Was a pump test made? Yes No If yes, by whom? Yield: gal/min with ft drawdown after hrs

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level) Time Water Level Time Water Level Time Water Level Date of test

Bailer test 12.0 gal./min. with 1 ft. drawdown after 2 hrs Airtest gal./min. with stem set at ft. for hrs Artesian flow g.p.m. Date Temperature of water Was a chemical analysis made? Yes No

10. WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION Formation: Describe by color, character, size of material and structure and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

Table with columns MATERIAL, FROM, TO. Rows: BROWN SILTY SAND & GRAVEL (0-8), BROWN CLAYEY SAND & GRAVEL (8-38), GREY CLAYEY SILT (38-82), GREY COARSE SAND & SMALL GRAVEL (82-89)

RECEIVED DEC 21 1992 DEPT. OF ECOLOGY

Work started : NOVEMBER 29, 1992. Completed : DECEMBER 4, 1992.

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME : MARTEL WELL DRILLING INC. (Person, Firm, Or Corporation) (Type Or Print)

Address : P.O. BOX 905, FRIDAY HARBOR, WA 98250.

(Signed) Al Mauldi License No. : 1923 (Well Driller)

Contractor's Registration Number : MARTEWD1210Z Date : DECEMBER 4, 1992.

(USE ADDITIONAL SHEETS IF NECESSARY)

File Original and First Copy  
with Department of Ecology  
Second Copy- Owner's Copy  
Third Copy- Driller's Copy

# WATER WELL REPORT

## ENTERED

Start Card No. W106233  
Well ID No. ACW193  
Water Permit No. \_\_\_\_\_  
Tax Parcel No. \_\_\_\_\_

1. OWNER: Name: PERRY & MARY PUGH Address: P.O. BOX 92, EASTSOUND, WA 98245  
2. LOCATION OF WELL: County SAN JUAN SE 1/4 SW 1/4 Sec 11 T 37 N., R 2 W.M.

2a. STREET ADDRESS OF WELL (or nearest address) MT BAKER RD  
3. PROPOSED USE:  Domestic  Industrial  Municipal  
 Irrigation  Test Well  Other  
 DeWater

4. TYPE OF WORK: Owner's number of well \_\_\_\_\_ (if more than one)  
Abandoned  New Well  Method: Dug  Bored   
Deepened  Cable  Driven   
Reconditioned  Rotary  Jetted

5. DIMENSIONS: Diameter of Well 6 inches.  
Drilled 97 feet. Depth of completed well 91 ft.

6. CONSTRUCTION DETAILS:  
Casing installed: 6" Diam. from +1 ft. to 86 ft.  
Welded  " Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Liner installed \_\_\_\_\_ " Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Threaded \_\_\_\_\_ " Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Perforations: Yes  No   
Type of perforator used \_\_\_\_\_  
SIZE of perforations \_\_\_\_\_ in. by \_\_\_\_\_ in.  
\_\_\_\_\_ perforation from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforation from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforation from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Screens: Yes  No   
Manufacturer's Name JOHNSON  
Type STAINLESS Model No. \_\_\_\_\_  
Diam. 6 Slot size 12 from 86 ft. to 91 ft.  
Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Gravel packed: Yes  No  Size of gravel \_\_\_\_\_  
Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Surface Seal: Yes  No  To what depth? 18 ft.  
Material used in seal NEAT CEMENT  
Did any strata contain unusable water? Yes  No   
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_

7. PUMP : Manufacturer's Name \_\_\_\_\_  
Type : \_\_\_\_\_ H.P. \_\_\_\_\_

8. WATER LEVELS: Land surface elevation \_\_\_\_\_  
above mean sea level 82 ft.  
Static level 60 ft. below top of well Date: 3/23/99  
Artesian pressure \_\_\_\_\_ lbs. Per square inch Date: \_\_\_\_\_  
Artesian water is controlled by \_\_\_\_\_  
(cap. valve, etc.)

9. WELL TESTS: Drawdown is amount water level is lowered below static level. Was a pump test made? Yes  No   
If yes, by whom? \_\_\_\_\_  
Yield: \_\_\_\_\_ gal/min with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Recovery data ( time taken as zero when pump turned off ) (water level measured from well top to water level)  
Time Water Level Time Water Level Time Water Level  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Date of test \_\_\_\_\_

Bailer test 1500 gal./DAY. with 25 ft. drawdown after 2 hrs.  
Airstest \_\_\_\_\_ gal./min. with stem set at \_\_\_\_\_ ft. for \_\_\_\_\_ hrs.  
Artesian flow \_\_\_\_\_ g.p.m. Date \_\_\_\_\_  
Temperature of water \_\_\_\_\_ Was a chemical analysis made? Yes  No

### 10. WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe color, character, size of material and structure and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
BROWN SILTY CLAYEY SAND & GRAVEL	0	6
BROWN SILTY SAND	6	14
GRAY SANDY CLAY	14	39
GRAY TILL	39	65
GRAY SILTY SAND (SMALL AMT H2O)	65	92
GRAY ROCK	92	97
(HOLE BACKFILLED TO 91 FT WITH BENTONITE CHIPS)		

RECEIVED

JUN 14 1999

DEPT OF ECOLOGY

SALINITY TEST \_\_\_\_\_ PPM

Work Started: 3/11/99 Completed: 3/23/99

#### WELL CONSTRUCTION CERTIFICATION:

I constructed and/or accept responsibility for construction of this well and it's compliance with all Washington Well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME : MARTEL WELL DRILLING  
(Person, Firm, or Corporation) (Type or Print)

Address : P.O. BOX 905, FRIDAY HARBOR, WA 98250

(Signed) *Dave Spinto* License No. : 2483  
Contractor's

Registration Number : MARTEWD044PA Date: \_\_\_\_\_

(USE ADDITIONAL SHEETS IF NECESSARY)

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

37-2E-11P



37-2W-14A

# WATER WELL REPORT

Original & 1st copy Ecology 2nd copy owner, 3rd copy driller

Construction/Decommission (circle)

149033

Construction

Decommission ORIGINAL CONSTRUCTION Notice of Intent Number \_\_\_\_\_

CURRENT

Notice of Intent No W175758

Unique Ecology Well ID Tag No AHH 533

Water Right Permut No \_\_\_\_\_

Property Owner Name Steve Pearson

Well Street Address Enchanted Forest Rd

City Eastsound County San Juan

Location NE 1/4 1/4 NW 1/4 Sec 14 Twn 37 R 2 EWM circle one

Lat/Long (s, r still REQUIRED) Lat Deg \_\_\_\_\_ Lat Min/Sec \_\_\_\_\_

Long Deg \_\_\_\_\_ Long Min/Sec \_\_\_\_\_

Tax Parcel No 271412007

PROPOSED USE  Domestic  Industrial  Municipal  
 DeWater  Irrigation  Test Well  Other \_\_\_\_\_

TYPE OF WORK Owner's number of well (if more than one) \_\_\_\_\_  
 New Well  Reconditioned Method  Dug  Bored  Driven  
 Deepened  Cable  Rotary  Jetted

DIMENSIONS Diameter of well 6 inches drilled 380 ft  
Depth of completed well 62 ft

CONSTRUCTION DETAILS  
Casing  Welded 6 Diam from +2 ft to 102 ft  
Installed  Liner installed Diam from \_\_\_\_\_ ft to \_\_\_\_\_ ft  
 Threaded PVC 4 Diam from +1 ft to 62 ft

Perforations  Yes  No  
Type of perforator used \_\_\_\_\_  
SIZE of perfs \_\_\_\_\_ in by \_\_\_\_\_ in and no of perfs \_\_\_\_\_ from \_\_\_\_\_ ft to \_\_\_\_\_ ft

Screens  Yes  No  K Pac Location \_\_\_\_\_  
Manufacturer's Name \_\_\_\_\_  
Type \_\_\_\_\_ Model No \_\_\_\_\_  
Diam 4 Slot Size 10 from 52 ft to 42 ft  
Diam \_\_\_\_\_ Slot Size \_\_\_\_\_ from \_\_\_\_\_ ft to \_\_\_\_\_ ft

Gravel/Filter packed  Yes  No  Size of gravel/sand 10-20  
Materials placed from 25 ft to 62 ft

Surface Seal  Yes  No To what depth? 20 ft  
Materials used in seal Bentomile  
Did any strata contain unusable water?  Yes  No  
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_

PUMP Manufacturer's Name \_\_\_\_\_  
Type \_\_\_\_\_ HP \_\_\_\_\_

WATER LEVELS Land-surface elevation above mean sea level 54 ft  
Static level 0 ft below top of well Date \_\_\_\_\_  
Artesian pressure \_\_\_\_\_ lbs per square inch Date \_\_\_\_\_  
Artesian water is controlled by CAP  
(cap valve etc)

WELL TESTS Drawdown is amount water level is lowered below static level  
Was a pump test made?  Yes  No If yes, by whom? \_\_\_\_\_  
Yield \_\_\_\_\_ gal/min with \_\_\_\_\_ ft drawdown after \_\_\_\_\_ hrs  
Yield \_\_\_\_\_ gal/min with \_\_\_\_\_ ft drawdown after \_\_\_\_\_ hrs  
Yield \_\_\_\_\_ gal/min with \_\_\_\_\_ ft drawdown after \_\_\_\_\_ hrs  
Recovery data (time taken as zero when pump turned off)(water level measured from well top to water level)  
Time Water Level Time Water Level Time Water Level  
\_\_\_\_\_  
Date of test \_\_\_\_\_  
Bailer test \_\_\_\_\_ gal/min with \_\_\_\_\_ ft drawdown after \_\_\_\_\_ hrs  
Artest 1.4 gal/min with stem set at \_\_\_\_\_ ft for \_\_\_\_\_ hrs  
Artesian flow 0.3 g p m Date \_\_\_\_\_  
Temperature of water \_\_\_\_\_ Was a chemical analysis made?  Yes  No

CONSTRUCTION OR DECOMMISSION PROCEDURE  
Formation Describe by color character size of material and structure and the kind and nature of the material in each stratum penetrated with at least one entry for each change of information Indicate all water encountered (USE ADDITIONAL SHEETS IF NECESSARY)

MATERIAL	FROM	TO
Fill	0	1
Pete	1	3
Blue clay	3	48
Self & Blue clay	48	52
Rock soft	52	160
Caving -		
Sand Stone	160	380

Hydrofractured & well cased in 2 days  
later casing cut at 63' ~~bottom of hole~~ bottom of hole abandoned with Bentomile - 4" PVC installed with 10 ft of screen & gravel packed - steel casing pulled to 25'

**RECEIVED**  
MAY 13 2004  
DEPT OF ECOLOGY

Start Date 2-5-04 Completed Date 4-12-04

WELL CONSTRUCTION CERTIFICATION I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards Materials used and the information reported above are true to my best knowledge and belief

Driller  Engineer  Trainee Name (Print) Mark Sawyer  
Driller/Engineer/Trainee Signature Mark Sawyer  
Driller or Trainee License No 2461

Drilling Company M Sawyer Drilling & Pump Service  
Address 621 obstruction Pass Rd

City, State, Zip Olga wa 98279  
Contractor's Registration No WASAWYD050200 Date 5-11-04

If trainee, licensed driller's Signature and License no \_\_\_\_\_

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

37-2W-13D



# 181460 WATER WELL REPORT

Original & 1<sup>st</sup> copy - Ecology, 2<sup>nd</sup> copy - owner, 3<sup>rd</sup> copy - driller

## Construction/Decommission ("x" in circle)

- Construction
- Decommission ORIGINAL INSTALLATION Notice of Intent Number \_\_\_\_\_

**PROPOSED USE:**  DeWater  Domestic  Irrigation  Industrial  Test Well  Municipal  Other \_\_\_\_\_

**TYPE OF WORK:** Owner's number of well (if more than one) \_\_\_\_\_  
 New well  Reconditioned  Deepened Method:  Dug  Bored  Driven  Cable  Rotary  Jetted

**DIMENSIONS:** Diameter of well 6 inches, drilled 158 ft.  
 Depth of completed well 146 ft.

**CONSTRUCTION DETAILS**  
 Casing  Welded 6 " Diam. from +2 ft. to 110 ft.  
 Installed:  Liner installed " Diam. from " ft. to " ft.  
 Threaded " Diam. from " ft. to " ft.

**Perforations:**  Yes  No  
 Type of perforator used \_\_\_\_\_  
 SIZE of perfs \_\_\_\_\_ in. by \_\_\_\_\_ in. and no. of perfs from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**Screens:**  Yes  No  K-Pac Location \_\_\_\_\_  
 Manufacturer's Name Johnson  
 Type 304 SS Model No. \_\_\_\_\_  
 Diam. 6" PS Slot size 6 from 110 ft. to 120 ft.  
 Diam. 6" PS Slot size 4 from 120 ft. to 140 ft.

**Gravel/Filter packed:**  Yes  No  Size of gravel/sand \_\_\_\_\_ ft.  
 Materials placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**Surface Seal:**  Yes  No To what depth? 18 ft.  
 Material used in seal Bentonite  
 Did any strata contain unusable water?  Yes  No  
 Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
 Method of sealing strata off \_\_\_\_\_

**PUMP:** Manufacturer's Name \_\_\_\_\_  
 Type: \_\_\_\_\_ H.P. \_\_\_\_\_

**WATER LEVELS:** Land-surface elevation above mean sea level approx 60 ft.  
 Static level 53.63 ft. below top of well Date 6/14/05  
 Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_  
 Artesian water is controlled by \_\_\_\_\_ (cap, valve, etc.)

**WELL TESTS:** Drawdown is amount water level is lowered below static level  
 Was a pump test made?  Yes  No If yes, by whom? CR Hydrogeo.  
 Yield: 73 gal./min. with 26.98 ft. drawdown after 24 hrs.  
 Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
 Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
1	78.80	15	76.35	120	74.35
5	77.20	30	75.60	180	74.06
10	76.84	00	74.88	1445	73.76

Date of test 6/14/05 - 6/15/05  
 Bailer test \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft drawdown after \_\_\_\_\_ hrs.  
 Airtest \_\_\_\_\_ gal./min. with stem set at \_\_\_\_\_ ft. for \_\_\_\_\_ hrs.  
 Artesian flow \_\_\_\_\_ g.p.m. Date \_\_\_\_\_  
 Temperature of water 51 F Was a chemical analysis made?  Yes  No

**CURRENT**  
 Notice of Intent No. WEO3427  
 Unique Ecology Well ID Tag No. ALQ042  
 Water Right Permit No. Supplemental to all EWUA GW Rights  
 Property Owner Name Eastsound School District  
 Well Street Address Mt Baker Road @ Buck Park  
 City Eastsound County San Juan  
 Location NW1/4-1/4 NW1/4 Sec 13 Twn 37 R 2 EWM  circle or WWM  one  
 Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Lat Min/Sec \_\_\_\_\_  
 Still **REQUIRED** Long Deg \_\_\_\_\_ Long Min/Sec \_\_\_\_\_  
 Tax Parcel No. P271322002

**CONSTRUCTION OR DECOMMISSION PROCEDURE**

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Brn. Silty Clay	0	17
Brn. Silty Sand	17	75
Brn. fine to med. Sand	75	118
Gry. v. fine to fine Sand	118	158

LOG FOR EWUA - Eastsound School Well  
 Prepared by CR Hydrogeologic Consulting

**RECEIVED**  
 JUL 28 2005  
 DEPT OF ECOLOGY

Start Date 5/10/05 Completed Date 6/15/05

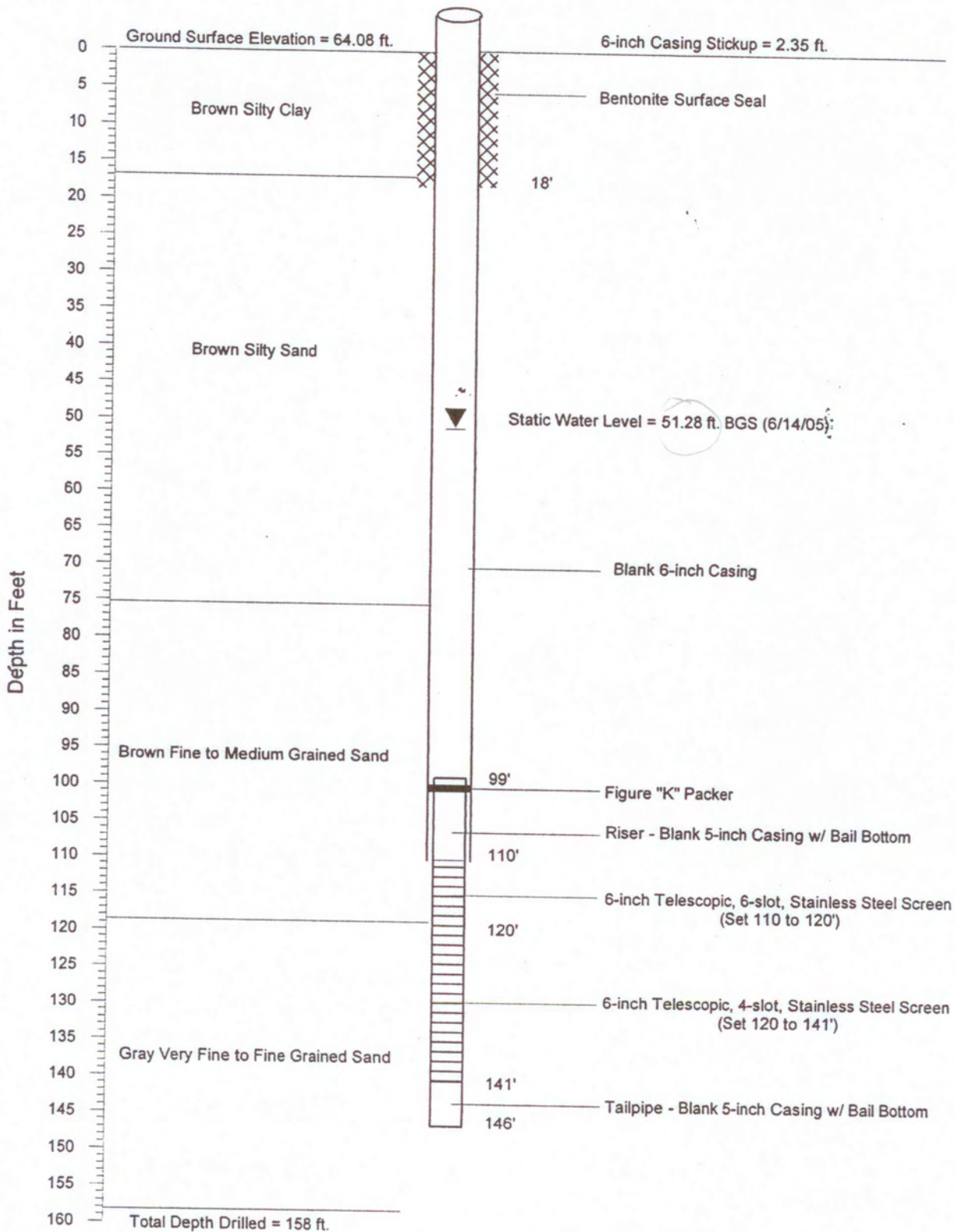
**WELL CONSTRUCTION CERTIFICATION:** I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Driller  Engineer  Trainee Name (Print) Bryan Holt Drilling Company Holt Drilling / Boart Longyear  
 Driller/Engineer/Trainee Signature [Signature] Address Po Box 1890  
 Driller or trainee License No. 1099 City, State, Zip Milton WA 98354

**IF TRAINEE,**  
 Driller's Licensed No. \_\_\_\_\_ Contractor's \_\_\_\_\_  
 Driller's Signature \_\_\_\_\_ Registration No. BOARTL2055 PZ Date 7-20-05  
 Ecology is an Equal Opportunity Employer.

School Well  
ALB odz

# Eastsound School Well Lithologic Log and Completion Design



**APPENDIX B**  
**LOPEZ ISLAND MONITORING NETWORK WELL LOGS**

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

File Original with  
Department of Ecology  
Second Copy - Owner's Copy  
Third Copy - Driller's Copy

# WATER WELL REPORT

STATE OF WASHINGTON

**ENTERED** Notice of Intent W 111321  
UNIQUE WELL I.D. # AFJ 405  
Water Right Permit No. \_\_\_\_\_

(1) OWNER: Name Doris Aitken Address 124 Erisman Drive, Lopez Is., Wa. 98061

(2) LOCATION OF WELL: County San Juan SE 1/4 NE 1/4 Sec 22 T 35 N.R. 2WWM

(2a) STREET ADDRESS OF WELL: (or nearest address) Fisherman Bay Rd.  
TAX PARCEL NO.: 252214001 35-2W-22H

(3) PROPOSED USE:  Domestic  Industrial  Municipal  
 Irrigation  Test Well  Other  
 DeWater

(10) WELL LOG or DECOMMISSIONING PROCEDURE DESCRIPTION  
Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. Indicate all water encountered.

(4) TYPE OF WORK: Owner's number of well (if more than one) \_\_\_\_\_  
 New Well Method:  Dug  Bored  
 Deepened  Cable  Driven  
 Reconditioned  Rotary  Jetted  
 Decommission

MATERIAL	FROM	TO
Top Soil	0	6"
Sand Gravel	6"	3'
Brown Clay	3'	29'
Sand Gravel	29'	46'

(5) DIMENSIONS: Diameter of well SIX inches  
Drilled 46 feet. Depth of completed well 46 ft.

(6) CONSTRUCTION DETAILS  
Casing Installed:  
 Welded 6 Diam. from 1 ft. to 46 ft.  
 Liner installed \_\_\_\_\_ Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 Threaded \_\_\_\_\_ Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Perforations:  Yes  No  
Type of perforator used \_\_\_\_\_  
SIZE of perforations \_\_\_\_\_ in. by \_\_\_\_\_ in.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Screens:  Yes  No  K-Pac Location \_\_\_\_\_  
Manufacturer's Name \_\_\_\_\_  
Type \_\_\_\_\_ Model No. \_\_\_\_\_  
Diam. \_\_\_\_\_ Slot Size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Diam. \_\_\_\_\_ Slot Size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Gravel/Filter packed:  Yes  No  Size of gravel/sand \_\_\_\_\_  
Material placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Surface seal:  Yes  No To what depth? 19' ft.  
Material used in seal Bentonite  
Did any strata contain unusable water?  Yes  No  
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_

(7) PUMP: Manufacturer's Name Goolds  
Type: Sub H.P. 3/4

(8) WATER LEVELS: Land-surface elevation above mean sea level \_\_\_\_\_ ft.  
Static level 20 ft. below top of well Date 1-28-00  
Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_  
Artesian water is controlled by \_\_\_\_\_ (Cap, valve, etc.)

**RECEIVED**  
FEB 14 2000  
NWRO - WIP  
DEPT OF ECOLOGY

Work Started 1-26-00 Completed 1-27-00

(9) WELL TESTS: Drawdown is amount water level is lowered below static level  
Was a pump test made?  Yes  No If yes, by whom? \_\_\_\_\_  
Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)  
Time Water Level Time Water Level Time Water Level  
\_\_\_\_\_  
Date of test \_\_\_\_\_  
Bailey test \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Airtest 20 gal./min. with \_\_\_\_\_ ft. drawdown after 1 hrs.  
Artesian flow \_\_\_\_\_ g.p.m. Date \_\_\_\_\_  
Temperature of water \_\_\_\_\_ Was a chemical analysis made?  Yes  No

WELL CONSTRUCTION CERTIFICATION:  
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.  
Type or Print Name Lynnie R. Amott License No. 1084  
(Licensed Driller/Engineer)  
Trainee Name \_\_\_\_\_ License No. \_\_\_\_\_  
Drilling Company A&A Well Drilling  
(Signed) Lynnie R. Amott License No. 1084  
(Licensed Driller/Engineer)  
Address 1301 Ferry Rd., Lopez Is., Wa.  
Contractor's Registration No. AAWELD 125CT Date 2-11-00  
98261

The Department of Ecology does NOT Warrant the Data and/or the Information on this Well Report.

File Original and First Copy with Department of Ecology  
Second Copy—Owner's Copy  
Third Copy—Driller's Copy

# WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 217209  
35/2/15 R

Water Right Permit No. \_\_\_\_\_

(1) OWNER: Name Lopez Chamber of Commerce Address PO Box 65 Lopez Wa 98261

(2) LOCATION OF WELL: County San Juan SE 1/4 SE 1/4 Sec 15 T. 35 N. R. 2 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) Cr. Lopez Rd - Weeks Pt. Rd.

(3) PROPOSED USE:  Domestic  Industrial  Municipal   
 Irrigation  Test Well  Other   
 DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) \_\_\_\_\_  
Abandoned  New well  Method: Dug  Bored   
Deepened  Cable  Driven   
Reconditioned  Rotary  Jetted

(5) DIMENSIONS: Diameter of well 6 inches.  
Drilled 65 feet. Depth of completed well 65 ft.

(6) CONSTRUCTION DETAILS:  
Casing installed: 6 \* Diam. from +1 ft. to 61 ft.  
Welded  \* Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Liner installed  \* Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Threaded  \* Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Perforations: Yes  No   
Type of perforator used \_\_\_\_\_  
SIZE of perforations \_\_\_\_\_ in. by \_\_\_\_\_ in.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Screens: Yes  No   
Manufacturer's Name Johnson  
Type Stainless Model No. \_\_\_\_\_  
Diam. 5" Slot size 1/4 from 61 ft. to 65 ft.  
Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Gravel packed: Yes  No  Size of gravel \_\_\_\_\_  
Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Surface seal: Yes  No  To what depth? 22 ft.  
Material used in seal Portland Cement  
Did any strata contain unusable water? Yes  No   
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_

(7) PUMP: Manufacturer's Name \_\_\_\_\_  
Type: \_\_\_\_\_ H.P.

(8) WATER LEVELS: Land-surface elevation 30 ft. above mean sea level  
Static level 21 ft. below top of well Date 6-25  
Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_  
Artesian water is controlled by \_\_\_\_\_ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level  
Was a pump test made? Yes  No  If yes, by whom? \_\_\_\_\_  
Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
" " " " " " " " " " " "  
" " " " " " " " " " " "  
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Date of test \_\_\_\_\_  
Bailer test 30 gal./min. with 7 ft. drawdown after 4 hrs.  
Airtest \_\_\_\_\_ gal./min. with stem set at \_\_\_\_\_ ft. for \_\_\_\_\_ hrs.  
Artesian flow \_\_\_\_\_ g.p.m. Date \_\_\_\_\_  
Temperature of water \_\_\_\_\_ Was a chemical analysis made? Yes  No

### (10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Top soil	0	1
Brown Clay - Sand Gravel	1	24
Blue Silty Clay	24	57
Sand Gravel - WB	57	65

Work started 6-21, 19. Completed 6-25, 19. 93

**WELL CONSTRUCTOR CERTIFICATION:**  
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.  
NAME Johnson Well Drilling (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)  
Address PO Box 152 Lopez Wa 98261  
(Signed) Donald Johnson License No. 1530  
(WELL DRILLER)  
Contractor's Registration No. JOHNSW0044NY4 Date 6-25, 19. 93

(USE ADDITIONAL SHEETS IF NECESSARY)

# WATER WELL REPORT

STATE OF WASHINGTON

Application No. \_\_\_\_\_  
 Permit No. \_\_\_\_\_

(1) OWNER: Name Edward R. Langenbach Jr. Address 1659 Rowling Lane Bellevue WA

(2) LOCATION OF WELL: County San Juan SE 1/4 NW 1/4 Sec. 17 T. 35 N., R. 2 W.M.  
 Bearing and distance from section or subdivision corner \_\_\_\_\_

(3) PROPOSED USE: Domestic  Industrial  Municipal   
 Irrigation  Test Well  Other

(4) TYPE OF WORK: Owner's number of well (if more than one) \_\_\_\_\_  
 New well  Method: Dug  Bored   
 Deepened  Cable  Driven   
 Reconditioned  Rotary  Jetted

(5) DIMENSIONS: Diameter of well \_\_\_\_\_ inches.  
 Drilled 1 1/2 ft. Depth of completed well 172 ft.

(6) CONSTRUCTION DETAILS:  
 Casing installed: 6" Diam. from 0 ft. to 136 ft.  
 Threaded  \_\_\_\_\_" Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 Welded  \_\_\_\_\_" Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Perforations: Yes  No   
 Type of perforator used \_\_\_\_\_  
 SIZE of perforations \_\_\_\_\_ in. by \_\_\_\_\_ in.  
 \_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 \_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 \_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Screens: Yes  No   
 Manufacturer's Name \_\_\_\_\_  
 Type \_\_\_\_\_ Model No. \_\_\_\_\_  
 Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Gravel packed: Yes  No  Size of gravel: \_\_\_\_\_  
 Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Surface seal: Yes  No  To what depth? \_\_\_\_\_ ft.  
 Material used in seal Native clay  
 Did any strata contain unusable water? Yes  No   
 Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
 Method of sealing strata off \_\_\_\_\_

(7) PUMP: Manufacturer's Name \_\_\_\_\_  
 Type: \_\_\_\_\_ HP \_\_\_\_\_

(8) WATER LEVELS: Land-surface elevation above mean sea level 139  
 Static level 126 ft. below top of well Date Dec 20  
 Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_  
 Artesian water is controlled by \_\_\_\_\_ (Cap. valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level  
 Was a pump test made? Yes  No  If yes, by whom? \_\_\_\_\_  
 Yield: gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
 " " " " " " " "  
 " " " " " " " "

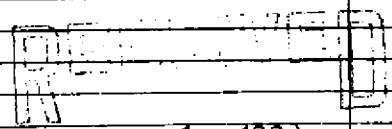
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test \_\_\_\_\_  
 Bailor test 10 gal./min. with 2 ft. drawdown after 2 hrs.  
 Artesian flow \_\_\_\_\_ g.p.m. Date \_\_\_\_\_  
 Temperature of water \_\_\_\_\_ Was a chemical analysis made? Yes  No

(10) WELL LOG:  
 Formation: Describes by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Top soil	0	2
Brown clay	2	32
Sand, cemented	32	84
Sand, coarse	84	110
Sand & gravel	110	132
Sand	132	134
gravel	134	136
Clay, blue	136	—



DEC 15 1983

DEPARTMENT OF ECOLOGY  
 NORTHWEST REGION

Work started Oct 20, 1983 Completed Dec 2, 1983

WELL DRILLER'S STATEMENT:  
 This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME San Juan Drillers  
 (Person, firm, or corporation) (Type or print)

Address RT 2 Box 3292 Lopez WA

[Signed] Paul R. Thompson  
 (Well Driller)

License No. 0497 Date Dec 2, 1983

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

File Original and First Copy with Department of Ecology  
Second Copy-Owner's Copy  
Third Copy-Driller's Copy

# WATER WELL REPORT

**ENTERED**

STATE OF WASHINGTON

35-2<sup>W</sup>-15/B

Start Card No : W054185  
Well ID No \_\_\_\_\_  
Water Permit No \_\_\_\_\_

1. OWNER : Name: RON & JENNIFER MENG Address: P.O. BOX 88, LOPEZ, WA 98261

2. LOCATION OF WELL : County SAN JUAN NW 1/4 NE 1/4 Sec 15 T 35 N. R 2 W.M.

2a. STREET ADDRESS OF WELL (or nearest address) \_\_\_\_\_

3. PROPOSED USE:  Domestic  Industrial  Municipal   
 Irrigation  Test Well  Other \_\_\_\_\_  
 DeWater

## 10. WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure and show thickness of aquifers and the kind and nature of of the material in each stratum penetrated, with at least one entry for each change of information.

4. TYPE OF WORK: Owner's number of well \_\_\_\_\_  
(if more than one) \_\_\_\_\_

Abandoned \_\_\_\_\_ New Well  Method: Dug \_\_\_\_\_ Bored \_\_\_\_\_  
Deepened \_\_\_\_\_ Cable  Driven \_\_\_\_\_  
Reconditioned \_\_\_\_\_ Rotary \_\_\_\_\_ Jetted \_\_\_\_\_

MATERIAL	FROM	TO
BROWN SANDY LOAM	0	1
BROWN SANDY GRAVEL	1	4
BROWN SANDY SILT	4	38
BROWNISH GRAY TILL	38	137
BROWNISH GRAY TILL (MORE GRAVEL)	137	147
BROWN MEDIUM GRAVEL (H2O)	147	150

5. DIMENSIONS: Diameter of well 6 inches.  
Drilled 150 feet. Depth of completed well 150 ft

### 6. CONSTRUCTION DETAILS:

Casing installed: 6" Diam. from +1 ft. to 150 ft.  
Welded  \_\_\_\_\_" Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Liner installed \_\_\_\_\_" Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Threaded \_\_\_\_\_" Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Perforations: Yes \_\_\_\_\_ No   
Type of perforator used \_\_\_\_\_  
SIZE of perforations \_\_\_\_\_ in. by \_\_\_\_\_ in.  
\_\_\_\_\_ perforation from \_\_\_\_\_ ft to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforation from \_\_\_\_\_ ft to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforation from \_\_\_\_\_ ft to \_\_\_\_\_ ft.

Screens: Yes \_\_\_\_\_ No   
Manufacturer's Name \_\_\_\_\_  
Type \_\_\_\_\_ Model No \_\_\_\_\_  
Diam \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Diam \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Gravel packed: Yes \_\_\_\_\_ No  Size of gravel \_\_\_\_\_  
Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Surfact Seal: Yes  No \_\_\_\_\_ To what depth? 18 ft.  
Material used in seal BENTONITE  
Did any strata contain unusable water? Yes \_\_\_\_\_ No   
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_

7. PUMP : Manufacturer's Name \_\_\_\_\_  
Type : \_\_\_\_\_ H.P. \_\_\_\_\_

8. WATER LEVELS: Land surface elevation \_\_\_\_\_  
above mean sea level 120 ft  
Static level 113 ft below top of well Date 9/21/95  
Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_  
Artesian water is controlled by \_\_\_\_\_  
(cap.valve,etc)

9. WELL TESTS: Drawdown is amount water level is lowered below static level. Was a pump test made? Yes \_\_\_\_\_ No \_\_\_\_\_  
If yes, by whom? \_\_\_\_\_  
Yield: \_\_\_\_\_ gal/min with \_\_\_\_\_ ft drawdown after \_\_\_\_\_ hrs

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)  
Time Water Level Time Water Level Time Water Level

\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_  
\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_  
Date of test \_\_\_\_\_

Bailer test 7 gal./min. with 17 ft. drawdown after 1 hrs  
Airstest \_\_\_\_\_ gal./min. with stem set at \_\_\_\_\_ ft. for \_\_\_\_\_ hrs  
Artesian flow \_\_\_\_\_ g.p.m. Date \_\_\_\_\_  
Temperature of water \_\_\_\_\_ Was a chemical analysis made? Yes \_\_\_\_\_  
No \_\_\_\_\_

Work started : SEPTEMBER 15, 1995. Completed : SEPTEMBER 21, 1995

### WELL CONSTRUCTION CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME : MARTEL WELL DRILLING INC.  
(Person, Firm, Or Corporation) (Type Or Print)

Address : P.O. BOX 905, FRIDAY HARBOR, WA 98250.

(Signed) [Signature] License No. : 2153  
(Well Driller)

Contractor's Registration Number : MARTRWD12107 Date : SEPTEMBER 26, 1995.

(USE ADDITIONAL SHEETS IF NECESSARY)

RECEIVED  
OCT 05 1995  
DEPT. OF ECOLOGY



# Top of the World Well ENTERED WATER WELL REPORT

File Original and First Copy with Department of Ecology  
Second Copy — Owner's Copy  
Third Copy — Driller's Copy

STATE OF WASHINGTON Water Right Permit No. \_\_\_\_\_

252-3001 Parcel # 25233004  
Start Card No. W073827  
UNIQUE WELL I.D. # ACT 942

(1) OWNER: Name Andrew Marin Address P.O. Box 577 Lopez Is., Wa. 98261  
(2) LOCATION OF WELL: County San Juan County SW <sup>1/4</sup> SW <sup>1/4</sup> Sec 23 T. 35 N. R. 2 W.M.  
(2a) STREET ADDRESS OF WELL (or nearest address) Fisherman Bay Road

(3) PROPOSED USE:  Domestic  Industrial  Municipal   
 Irrigation  Test Well  Other   
 DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) \_\_\_\_\_  
Abandoned  New well  Method: Dug  Bored   
Deepened  Cable  Driven   
Reconditioned  Rotary  Jetted

(5) DIMENSIONS: Diameter of well 6 inches.  
Drilled 289 feet. Depth of completed well 289 ft.

(6) CONSTRUCTION DETAILS:  
Casing installed: 6 diam. from +1 ft. to 289 ft.  
Welded  Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Liner installed  Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Threaded  Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Perforations: Yes  No   
Type of perforator used \_\_\_\_\_  
SIZE of perforations \_\_\_\_\_ in. by \_\_\_\_\_ in.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Screens: Yes  No   
Manufacturer's Name \_\_\_\_\_ Model No. \_\_\_\_\_  
Type \_\_\_\_\_  
Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Gravel packed: Yes  No  Size of gravel \_\_\_\_\_  
Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Surface seal: Yes  No  To what depth? 22 ft.  
Material used in seal Bentonite  
Did any strata contain unusable water? Yes  No   
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_

(7) PUMP: Manufacturer's Name \_\_\_\_\_ H.P. \_\_\_\_\_  
Type: \_\_\_\_\_

(8) WATER LEVELS: Land surface elevation above mean sea level \_\_\_\_\_ ft.  
Static level 273 ft. below top of well Date \_\_\_\_\_  
Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_  
Artesian water is controlled by \_\_\_\_\_ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level  
Was a pump test made? Yes  No  If yes, by whom? AEA  
Yield: 20+ gal./min. with 4 ft. drawdown after 2 hrs.  
" " " " " " " "  
" " " " " " " "  
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)  
Time Water Level Time Water Level Time Water Level  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Date of test \_\_\_\_\_  
Baller test \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Airtest \_\_\_\_\_ gal./min. with stem set at \_\_\_\_\_ ft. for \_\_\_\_\_ hrs.  
Artesian flow \_\_\_\_\_ g.p.m. Date \_\_\_\_\_  
Temperature of water \_\_\_\_\_ Was a chemical analysis made? Yes  No

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Top soil	0	1
Clay, Gravel, Brown sand	1	12
Clay Gray, Gravel, Sand	12	29
Sand, Gravel, Clay Gray	29	105
Sand, Silt, Clay Gray	105	209
Gravel, Sand, Clay Brown	209	276
Gravel, Sand	276	289

RECEIVED  
JAN 28 1998  
DEPT. OF ECOLOGY

Work Started 12-8-97 Completed 12-22 19 98

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME A E A Well Drilling  
(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)  
Address P.O. Box 3296 Lopez Is., Wa. 98261  
(Signed) Lynnie R. Parnett License No. 1084  
(WELL DRILLER)

Contractor's Registration No. AA WELD 125CS Date 1-26 19 98

(USE ADDITIONAL SHEETS IF NECESSARY)

Ecology is an Equal Opportunity and Affirmative Action employer. For special accommodation needs, contact the Water Resources Program at (206) 407-6800. The TDD number is (206) 407-6006.

Cross Road Group, Inc.  
WATER WELL REPORT AAE 786  
Roberts  
STATE OF WASHINGTON

Application No.  
Permit No.

WELLER: Name REMIE N. CALSSAUN Address Rt. Box 274 Lacey WA 98261  
LOCATION OF WELL: County Tully County  
Distance from section or subdivision corner

PROPOSED USE: Domestic  Industrial  Municipal   
Irrigation  Test Well  Other

(4) TYPE OF WORK: Owner's number of well (if more than one).....  
New well  Method: Dug  Bored   
Deepened  Cable  Driven   
Reconditioned  Rotary  Jetted

(5) DIMENSIONS: Diameter of well 6 inches.  
Drilled 125 ft. Depth of completed wall 125 ft.

(6) CONSTRUCTION DETAILS:  
Casing installed: 6" Diam. from 1 1/2 ft. to 125 ft.  
Threaded  " Diam. from ft. to ft.  
Welded  " Diam. from ft. to ft.

Perforations: Yes  No   
Type of perforator used.....  
SIZE of perforations in. by in.  
perforations from ft. to ft.  
perforations from ft. to ft.  
perforations from ft. to ft.

Screens: Yes  No   
Manufacturer's Name.....  
Type..... Model No.....  
Diam. Slot size from ft. to ft.  
Diam. Slot size from ft. to ft.

Gravel packed: Yes  No  Size of gravel.....  
Gravel placed from ft. to ft.

Surface seal: Yes  No  To what depth? 18 ft.  
Material used in seal NATIVE CLAY  
Did any strata contain unusable water? Yes  No   
Type of water?..... Depth of strata.....  
Method of sealing strata off.....

(7) PUMP: Manufacturer's Name.....  
Type..... HP.....

(8) WATER LEVELS: Land-surface elevation above mean sea level 150 ft.  
Static level 110' 10" ft. below top of well Date 5/23/88  
Artesian pressure lbs. per square inch Date  
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level  
Was a pump test made? Yes  No  If yes, by whom?  
Flow: gal./min. with ft. drawdown after hrs.  
" " " " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Rate of test 15 gal./min. with 0 ft. drawdown after 1 1/2 hrs.  
Artesian flow g.p.m. Date 5/23/88  
Temperature of water Was a chemical analysis made? Yes  No

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Rocky Fill	0	2
Black Clay, brown	2	7
Clay Blue	7	15
Clay Stone	15	58
Sand & silt	58	82
Sand, Coarse	82	97
Gravel	97	125

Work started 5/23/88, 1988 Completed 5/29/88, 1988

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME San Juan Drillers  
(Person, firm, or corporation) (Type or print)

Address

[Signed] Earl R. Thompson (Well Driller)

License No. Date 5/29, 1988

**(1) OWNER:** Name F. S. Greene Address Box 2 Island Wash  
**(2) LOCATION OF WELL:** County Saukwan - NE 1/4 NW 1/4 Sec. 15 T. 95 N. R. 2 W.M.  
 Bearing and distance from section or subdivision corner (Approx) 585 FT W, 30 FT S, of NE corner Section 15

**(3) PROPOSED USE:** Domestic  Industrial  Municipal   
 Irrigation  Test Well  Other

**(4) TYPE OF WORK:** Owner's number of well (if more than one) ....  
 New well  Method: Dug  Bored   
 Deepened  Cable  Driven   
 Reconditioned  Rotary  Jetted

**(5) DIMENSIONS:** Diameter of well 6 inches.  
 Drilled 158 ft. Depth of completed well 158 ft.

**(6) CONSTRUCTION DETAILS:**  
 Casing installed: " Diam. from " ft. to " ft.  
 Threaded  " Diam. from " ft. to " ft.  
 Welded  6 " Diam. from 0 ft. to 154 ft.

**Perforations:** Yes  No   
 Type of perforator used .....  
 SIZE of perforations in. by in.  
 perforations from " ft. to " ft.  
 perforations from " ft. to " ft.  
 perforations from " ft. to " ft.

**Screens:** Yes  No   
 Manufacturer's Name COOK  
 Type Stainless Model No. WW  
 Diam. 6 Slot size 14 from 123 ft. to 128 ft.  
 Diam. Slot size from ft. to ft.

**Gravel packed:** Yes  No  Size of gravel: .....  
 Gravel placed from " ft. to " ft.

**Surface seal:** Yes  No  To what depth? " ft.  
 Material used in seal .....  
 Did any strata contain unusable water? Yes  No   
 Type of water? ..... Depth of strata .....  
 Method of sealing strata off .....

**(7) PUMP:** Manufacturer's Name Reda SUB  
 Type: SUB HPI/HP

**(8) WATER LEVELS:** Land-surface elevation above mean sea level. .... ft.  
 Static level 130 ft. below top of well Date 6-5-69  
 Artesian pressure lbs. per square inch Date .....  
 Artesian water is controlled by ..... (Cap, valve, etc.)

**(9) WELL TESTS:** Drawdown is amount water level is lowered below static level  
 Was a pump test made? Yes  No  If yes, by whom? .....

Yield:	gal./min. with	ft. drawdown after	hrs.
"	"	"	"
"	"	"	"

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 6-5-1969  
 Well test 20 gal./min. with 0 ft. drawdown after 1 hrs.  
 Artesian flow ..... g.p.m. Date .....  
 Temperature of water ..... Was a chemical analysis made? Yes  No

**(10) WELL LOG:** AB0736  
 Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Blue clay	0	26'
Red Pan	20	30
Semi Hardpan	50	91
Hardpan & Boulder	91	105
Combed Hardpan	105	111
Fine sand & gravel	111	119
Very sand	119	131
Mud to coarse sand	131	160
Water Bearing		

DRILL OPERATOR  
Stanley Freeman Inspected  
Wash

Work started 6-25-69 Completed 6-5-69 1969

**WELL DRILLER'S STATEMENT:**  
 This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME H.C. MEYER DRILLING CO  
 (Person, firm, or corporation) (Type or print)

Address 6424 Lake View Blvd. NE  
Kirkland, Wash

[Signed] H.C. MEYER  
 (Well Driller)

License No. 223-01-7149 Date Jun. 15, 1970

File Original and First Copy with  
Department of Ecology  
Second Copy - Owner's Copy  
Third Copy - Driller's Copy

# WATER WELL REPORT

Barbara Grant STATE OF WASHINGTON

Water Right Permit No. \_\_\_\_\_

OWNER: Name LARRY MORROW Address P.O. Box 446 Lopez wa. 98261-0446

LOCATION OF WELL: County SAN JUAN SW 1/4 SW 1/4 Sec 14 T. 35N N.R. 2W W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) Fishermans Bay Rd. 2514

(3) PROPOSED USE:  Domestic  Industrial  Municipal   
 Irrigation  Test Well  Other   
 DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) \_\_\_\_\_  
Abandoned  New well  Method: Dug  Bored   
Deepened  Cable  Driven   
Reconditioned  Rotary  Jetted

(5) DIMENSIONS: Diameter of well 6" inches.  
Drilled 125' feet. Depth of completed well 125 ft.

(6) CONSTRUCTION DETAILS:  
Casing installed: 6" Diam. from +2 ft. to -120 ft.  
Welded  Liner installed \_\_\_\_\_ Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Threaded  \_\_\_\_\_ Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Perforations: Yes  No   
Type of perforator used \_\_\_\_\_  
SIZE of perforations \_\_\_\_\_ in. by \_\_\_\_\_ in.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Screens: Yes  No   
Manufacturer's Name Jonsson  
Type \_\_\_\_\_ Model No. \_\_\_\_\_  
Diam. 5 Slot size 12 from 120 ft. to 125 ft.  
Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Gravel packed: Yes  No  Size of gravel \_\_\_\_\_  
Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Surface seal: Yes  No  To what depth? 18 ft.  
Material used in seal Bentolite  
Did any strata contain unusable water? Yes  No   
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_

(7) PUMP: Manufacturer's Name \_\_\_\_\_  
Type: \_\_\_\_\_ H.P. \_\_\_\_\_

(8) WATER LEVELS: Land-surface elevation 96 ft.  
Static level 90 ft. below top of well Date 7-10-98  
Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_  
Artesian water is controlled by \_\_\_\_\_ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level  
Was a pump test made? Yes  No  If yes, by whom? \_\_\_\_\_  
Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test \_\_\_\_\_  
Ballor test \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Airstest 5+ gal./min. with stem set at 124 ft. for 2 hrs.  
Artesian flow \_\_\_\_\_ g.p.m. Date \_\_\_\_\_  
Temperature of water \_\_\_\_\_ Was a chemical analysis made? Yes  No

## (10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
SANDY loam	1	-2
Tan clay	2	45
BRW sand	45	47
Blue clay	47	51
Blue sand	51	52
Blue clay	52	69
Blue clay (glue)	69	83
Blue sand	83	87
Blue clay	87	120
Water bearing coarse gravel	120	125

Work Started July 6, 19. Completed July 10, 1998

## WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME M. Sawyer Drilling & Pump Service  
(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address HC1 Box 160 Olja wa 98279

(Signed) M. Sawyer License No. 2305  
(WELL DRILLER)

Contractor's Registration No. MSAW4DSC55NB Date 8-2, 1998

(USE ADDITIONAL SHEETS IF NECESSARY)

P 206.329.0141 | F 206.329.6968

2377 Eastlake Avenue East | Seattle, WA 98102

P 206.842.3202 | F 206.842.5041

8150 West Port Madison NE | Bainbridge, WA 98110

P 360.570.8244 | F 360.570.0064

1627 Linwood Avenue SW | Tumwater, WA 98512

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