

**GROUNDWATER SAMPLING  
EVENT REPORT  
JANUARY 16, 2016**

**FORMER FLINTSTONE FUEL SITE  
2840 C BLACKLAKE BOULEVARD SW  
TUMWATER, WASHINGTON**

*Prepared By*

*Paul W. Stemen*

*Stemen Environmental, Inc.*

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LOCATION MAP, SURVEYORS MAP, LABORATORY ANALYSES DATA,  
AND WELL LOGS

# STEMEN ENVIRONMENTAL, INC.

PO BOX 3644  
LACEY, WA. 98509-3644  
CONTR. LIC. #STEMEEI081J9

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Telephone 360-438-9521 Fax 360-412-1225

January 16, 2016

Mr. John Meek  
Meek Logging  
Olympia, Washington

Dear Mr. Meek:

RE: QUARTERLY GROUNDWATER MONITORING EVENT FOR FORMER  
FLINSTONE FUEL SITE LOCATED AT 2840 - C BLACKLAKE BOULEVARD SW,  
TUMWATER, WASHINGTON.

## **1.0 MONITORING WELL INSTALLATION**

On February 19, 2015, four (4) groundwater monitoring wells were installed at selected locations on the subject site. The one (1) inch diameter PVC monitoring wells were installed using a Direct Push Probe operated by licensed well drillers from ESN Northwest, Inc, Olympia, Washington. The monitoring wells were advanced to approximate depths of 25 b.g.s. (below ground surface) and screened, with a pre-packed screen, at depths of approximately 5 to 25 feet b.g.s.

The monitoring wells were properly developed by the removal of ten (10) volumes of water from each of the wells using a low flow pump.

Measurable quantities of water were found to be present in all of the monitoring wells on the dates of their installation.

## **2.0 GROUNDWATER ELEVATIONS AND DIRECTION OF GROUNDWATER FLOW**

Groundwater elevations were measured, during the groundwater sampling event using an electronic water level indicator. Groundwater depths were measured from the northern side of the top of the well casing/pipe.

On December 14, 2015, depth to groundwater measurements were obtained from the four (4) on-site groundwater monitoring wells .Groundwater was present in



monitoring well MW1 at a depth of 5.30 ft., MW2 - 3.05 ft., MW3 - 3.31 ft., and MW4 - 3.87 ft.

The inferred direction of groundwater flow was determined to be to northeast on this date.

Approximate direction of groundwater flow was determined using the relative groundwater elevations in three wells installed in a triangular configuration. The groundwater elevation in each well was calculated by surveying the top of each well casing, and subtracting the measured depth to groundwater from the same surveyed points.

The groundwater gradient was then calculated using the three point problem, in which the calculated gradient is perpendicular to the contour line connecting the mid-elevation well with the line between the low and high points at the elevation of the mid elevation well.

Groundwater gradients were determined by John Kane, Licensed Geologist/Hydrogeologist #1193, of Kane Environmental, Inc.

Monitoring well, top of casing/pipe elevations were surveyed by Coastal Land Surveying. (See attached survey map)

### **3.0 GROUNDWATER SAMPLING**

Prior to sampling, the monitoring wells were properly purged by removing a minimum of three (3) casing volumes (4.8 gallons) of water from the wells using a peristaltic pump set a low flow rate.

On December 14, 2015, representative samples of the groundwater present in each of the on-site groundwater monitoring wells were obtained. The representative groundwater samples were obtained from the waters present in the upper portion of the screened interval of the well and approximately 12 inches below the measured water level using a variable speed peristaltic pump operating set at the lowest flow rating and disposable PVC tubing that was replaced prior to each individual sampling event.

The sampled waters were transferred directly into laboratory supplied containers for temporary storage and transport.

All waters generated during purging activities were placed in appropriate containers for transportation to an appropriate off-site treatment/disposal facility.

All disposable PVC tubing was properly disposed as solid waste.

Water samples MW1, MW2, MW3, and MW4 were submitted for appropriate laboratory analyses.

Ground water sampling was performed by Paul Stemen of Stemen Environmental, Inc.

Laboratory analyses results for groundwater water samples MW1, MW2, MW3, and MW4 reported no detectable presence of gasoline range T.P.H. and/or B.T.E.X.s in these sampled waters.

#### **4.0 LABORATORY ANALYSES**

All samples were tightly packed in recommended containers with no head space, properly refrigerated and transported with proper chain of custody forms to ESN Northwest, Inc., of Olympia, Washington for appropriate laboratory analyses. Groundwater samples were screened for Gasoline Range TPH (Total Petroleum Hydrocarbons) using methods NWTPH-Gx , and B.T.E.X.s (Benzene, Toluene, Ethylbenzene, and Xylenes) using E.P.A. method 8260. These analytical methods meet all current Department of Ecology recommendations for groundwater sample analyses and quality controls.

#### **5.0 HEALTH AND SAFETY**

1. All on-site work was performed under the Health and Safety guidelines set forth in sections 29 CRF 1910.120 of the Federal Register and Chapter 296-62 WAC which provide regulations for individuals who are engaged in activities involving hazardous substances, including petroleum, and who perform confined space entry during field activities, also Chapter 296-155 WAC which provides State safety standards for construction work.

2. All on-site workers were 40 hour Hazmat certified.

#### **6.0 SUMMARY AND CONCLUSIONS**

The following summary and conclusions are based on information gathered during on-site investigations described in this report.

1. On December 14, 2015, groundwater elevations were measured in the four (4) on-site groundwater monitoring wells.

Groundwater was present in the on-site monitoring wells at depths of 3.05 ft. - 5.30 ft.

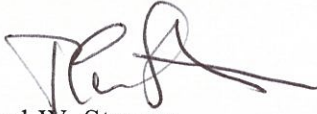
Based on the December 14, 2015 groundwater elevation measurements, the inferred direction of groundwater flow is to the northeast. Groundwater gradients were determined by John Kane, Licensed Geologist/Hydrogeologist #1193, of Kane Environmental, Inc.

2. On December 14, 2015, representative samples of the groundwater present in on-site monitoring wells MW1, MW2, MW3, and MW4 were obtained and submitted for appropriate laboratory analyses.

Laboratory analyses results for groundwater water samples MW1, MW2, MW3, and MW4 reported no detectable presence of gasoline range T.P.H. and/or B.T.E.X.s in these sampled waters.

If you have any questions or require further information please feel free to contact us at the above phone number.

Sincerely,

A handwritten signature in dark ink, appearing to read 'P. Stemen', with a long horizontal flourish extending to the right.

Paul W. Stemen  
Ecology-Registered Site Assessment Supervisor  
IFCI #0874201-26  
ASTM Certificate



## **APPENDIX A**

**LABORATORY ANALYSES  
CHARTS, MONITORING WELL  
LOCATION MAP, SURVEYORS  
MAP, LABORATORY ANALYSES  
DATA, AND WELL LOGS**



MONITORING WELL EVENT 3

ANALYSIS OF DIESEL RANGE ORGANICS, LUBE OIL RANGE ORGANICS, GASOLINE RANGE ORGANICS & BTEX IN WATER BY METHOD NWTPH Dx/Dx EXTENDED AND METHOD NWTPH-Gx/8260									
SAMPLE NUMBER	SAMPLE DATE	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE RANGE ORGANICS	DIESEL RANGE ORGANICS	LUBE OIL RANGE ORGANICS	
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	
MW1	5/21/15	ND	ND	ND	ND	ND	ND	ND	
MW1	8/16/15	ND	ND	ND	ND	ND	ND	ND	
MW1	12/17/15	ND	ND	ND	ND	ND	ND	ND	
MW2	5/21/15	ND	ND	ND	ND	ND	ND	ND	
MW2	8/16/15	ND	ND	ND	ND	ND	ND	ND	
MW2	12/17/15	ND	ND	ND	ND	ND	ND	ND	
MW3	5/21/15	ND	ND	ND	ND	ND	ND	ND	
MW3	8/16/15	ND	ND	ND	ND	ND	ND	ND	
MW3	12/17/15	ND	ND	ND	ND	ND	ND	ND	
MW4	5/21/15	ND	ND	ND	ND	ND	ND	ND	
MW4	8/16/15	ND	ND	ND	ND	ND	ND	ND	
MW4	12/17/15	ND	ND	ND	ND	ND	ND	ND	
REPORTING LIMITS		1	1	1	3	100	250	500	
METHOD "A" CLEAN UP LEVELS		5	1000	700	1000	*1000	2000	2000	
* BENZENE NOT PRESENT									
DECEMBER 14, 2015 GROUNDWATER MONITORING EVENT									
WELL NUMBER	TOC	GW DEPTH	GW ELEV.						
MW1	132.76	6.93	125.83						
MW1	132.76	7.75	125.01						
MW1	132.76	5.3	127.46						
MW2	129.87	4.64	125.23						
MW2	129.87	10.47	119.4						
MW2	129.87	3.05	126.82						
MW3	129.21	3.44	125.77						
MW3	129.21	6.99	122.22						
MW3	129.21	3.31	125.9						
MW4	129.63	4.86	124.77						
MW4	129.63	5.97	123.66						
MW4	129.63	3.87	125.66						





### LEGEND

- Approximate Property Boundary
  -  Approximate Locations of Groundwater Monitoring Wells  
(Groundwater Elevations above Mean Sea Level)
  -  Approximate Calculated Direction of Groundwater Flow (12/14/15)  
Based on Elevations in MW-1, MW-2, and MW-4
- 0                      50                      100
- Approximate Scale in Feet



JOHN R. KANE

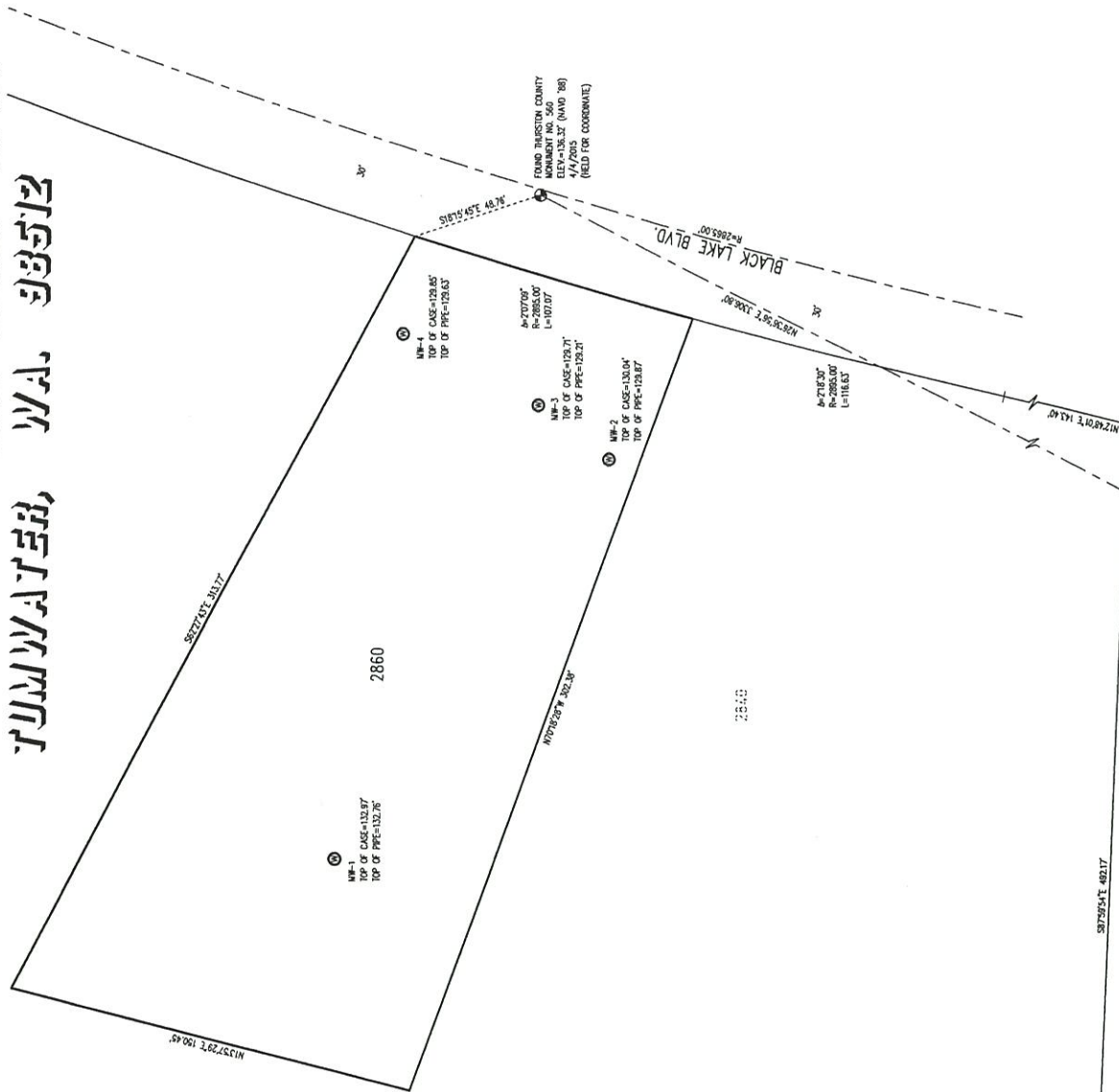


Flintstone Fuel  
2840-C Black Lake Blvd  
Tumwater, Washington

**Figure 3c**  
Site Plan with  
Groundwater Elevations  
(12/14/2015)



# MONITORING WELL SURVEY 2860 C BLACK LAKE BLVD. S.W. TUMWATER, WA. 98512



**BASIS OF BEARINGS:**  
BEARINGS FOR MON. NO. 323 FOR COORDINATE  
ROTATED TO TAX NO. 323

**VERTICAL DATUM:**  
TUMWATER COUNTY B.M. TAX NO. 560  
ELEV. = 136.32' (NAD 83)  
BRIDGE SPK. AND WAGON W. CENTER OF BLACK  
LAKE BLVD.

**EQUIPMENT UTILIZED FOR THIS SURVEY:**  
TRIPOLI  
METHOD - FIELD TRANSFER  
THIS SURVEY COMPLES WITH ALL STANDARDS  
AND STATUTES OF THE SURVEY RECORDING ACT  
(CHAPTER 36.09 RCW AND 320-130 WAC)

**SYMBOL LEGEND:**  
① FOUND MONUMENT AS NOTED  
② MONITORING WELL

**LEGAL DESCRIPTION:**  
TAX PARCEL NO. 12829130202

TAX PARCEL NO. 12829130202



**SUBSISTAL LAND  
SURVEYING, L.L.C.**  
P.O. Box 1128  
Westport, WA 98595  
(360) 268-7223

<b>MONITORING WELL SURVEY - 2860 C BLACK LAKE BLVD.</b>	
Name	Phone
Job # 6495	
Scale 1" = 30'	Address 2860 C BLACK LAKE BLVD. S.W. TUMWATER WA. 98512
Date 4/7/2015	Delineate TUMWATER COUNTY B.M. TAX NO. 560
Drawn by CSB	Field book # 510
	Checked by AER JR.
SW 1/4 OF THE N.E. 1/4 OF SECTION 29, TWP. 18 N., RGE. 2 W., W.M.	

FOUND TUMWATER COUNTY  
MONUMENT NO. 323  
4/1/2015  
(FIELD FOR ROTATION)

December 23, 2015

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

Dear Mr. Stemen:

Please find enclosed the analytical data report for the Flintstone Fuel Project in Olympia, Washington. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended and Gasoline by NWTPH-Gx on December 17, 2015.

The results of these analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,



Michael A. Korosec  
President



## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINTSTONE SITE  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnww.com

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Water by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (ug/L)	Lube Oil Range Organics (ug/L)
Method Blank	12/17/2015	12/17/2015	130	nd	nd
LCS	12/17/2015	12/17/2015	80	114%	---
MW1	12/17/2015	12/17/2015	113	nd	nd
MW2	12/17/2015	12/17/2015	142	nd	nd
MW3	12/17/2015	12/17/2015	123	nd	nd
MW4	12/17/2015	12/17/2015	114	nd	nd
Reporting Limits				250	500

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINTSTONE SITE  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnww.com

### Analysis of Gasoline Range Organics & BTEX in Water by Method NWTPH-Gx/8260

Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Gasoline Range Organics (ug/L)	Surrogate Recovery (%)
Method Blank	12/17/2015	nd	nd	nd	nd	nd	105
LCS	12/17/2015	109%	87%	81%	89%	123%	89
LCSD	12/17/2015	120%	97%	90%	96%	---	96
MW1	12/17/2015	nd	nd	nd	nd	nd	99
MW2	12/17/2015	nd	nd	nd	nd	nd	103
MW3	12/17/2015	nd	nd	nd	nd	nd	99
MW4	12/17/2015	nd	nd	nd	nd	nd	104
MW4 Duplicate	12/17/2015	nd	nd	nd	nd	nd	103
Trip Blank	12/17/2015	nd	nd	nd	nd	nd	103
Reporting Limits		1.0	1.0	1.0	3.0	100	

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS: 65% TO 135%



# CHAIN-OF-CUSTODY RECORD

CLIENT: Spencer Environmental Inc DATE: 12/14/2015 PAGE 1 OF 1

ADDRESS: P.O. Box 3644 Everett, WA PROJECT NAME: Fluoride Site

PHONE: 360 438 9314 FAX:  LOCATION: Timpani Lake

CLIENT PROJECT #: Fluoride PROJECT MANAGER: Paul Spence COLLECTOR: Paul Spence DATE OF COLLECTION: 12/14/2015

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	TPH - HCLD	TPH - Diesel & Oil	BTEX	VOC 8260CL	Semivol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	RCRA 8 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	NOTES	Total Number of Containers	Note Number
1. <u>m w 1</u>			<u>HRD</u>	<u>glass</u>		<u>xx</u>	<u>xx</u>	<u>xx</u>														
2. <u>m w 2</u>						<u>xx</u>	<u>xx</u>	<u>xx</u>														
3. <u>m w 3</u>						<u>xx</u>	<u>xx</u>	<u>xx</u>														
4. <u>m w 4</u>						<u>xx</u>	<u>xx</u>	<u>xx</u>														
5.																						
6.																						
7.																						
8.																						
9.																						
10.																						
11.																						
12.																						
13.																						
14.																						
15.																						
16.																						
17.																						
18.																						

RELINQUISHED BY (Signature) [Signature] DATE/TIME 12/17/2015 RECEIVED BY (Signature) [Signature] DATE/TIME 12/17/2015

RELINQUISHED BY (Signature) [Signature] DATE/TIME 12/17/2015 RECEIVED BY (Signature) [Signature] DATE/TIME 12/17/2015

LABORATORY NOTES:

Turn Around Time: 24 HR 48 HR 5 DAY



Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. RE10973

SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- ☒ Construction  
☐ Decommission

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

Consulting Firm \_\_\_\_\_

Unique Ecology Well IDTag No. BIM-141

WELL CONSTRUCTION CERTIFICATION: I constructed and/or  
accepted 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 Last, First Name) Harnden, Don

Driller/Engineer/Trainee Signature \_\_\_\_\_

Driller or Trainee License No. 2914

Trainee, licensed driller's Signature and License Number: \_\_\_\_\_

Type of Well ("x" in box)

- ☒ Resource Protection  
☐ Geotech Soil Boring

Property Owner Michael Wood

Site Address 2860 Black Lake Blvd

City Tumwater County Thurston

Location SW1/4-1/4 NE1/4 Sec 29 Twn 18 R 02

EWM ☐ or WWM ☒

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

still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

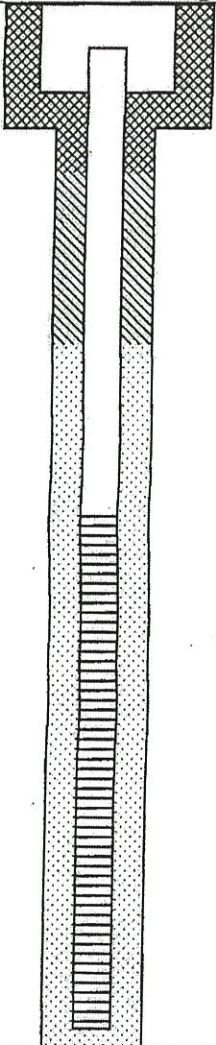
Tax Parcel No. 12829130202

Cased or Uncased Diameter 1" Static Level 7

Work/Decommission Start Date 2/19/15

Work/Decommission Completed Date 2/19/15

## Construction Design



## Well Data

MONUMENT TYPE: flush mount

CONCRETE SURFACE SEAL: 01

ANNULAR SPACE: \_\_\_\_\_

BACKFILL: 1-4  
TYPE: bentonite

PVC BLANK: 0-5

SCREEN: 5-25  
SLOT SIZE: .010  
TYPE: 1" prepack screen

SAND PACK: 4-25  
MATERIAL: 10/20 silica sand

DRILLING METHOD: DPT

WELL DEPTH: 25

BORING DIAMETER: \_\_\_\_\_

## Formation Description

0-10 sand and peat

10-25 sand

RECEIVED

MAR 19 2015

WA State Department  
of Ecology (SWRO)

SCALE: 1"= \_\_\_\_\_ PAGE 2 OF 4



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

Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. RE10973

SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- ☐ Construction  
☐ Decommission

ORIGINAL INSTALLATION Notice of Intent Number:

Consulting Firm

Unique Ecology Well IDTag No. BIM 140

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.

I Driller ☐ Engineer ☐ Trainee  
Name (Print Last, First Name) Harnden, Don  
Driller/Engineer/Trainee Signature [Signature]  
Driller or Trainee License No. 2914

If trainee, licensed driller's Signature and License Number:

Type of Well ("x" in box)

- ☒ Resource Protection  
☐ Geotech Soil Boring

Property Owner Michael Wood

Site Address 2860 Black Lake Blvd

City Tumwater County Thurston

Location SW 1/4-1/4 NE 1/4 Sec 29 Twn 18 R 02

EWM ☐ or WWM ☒

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

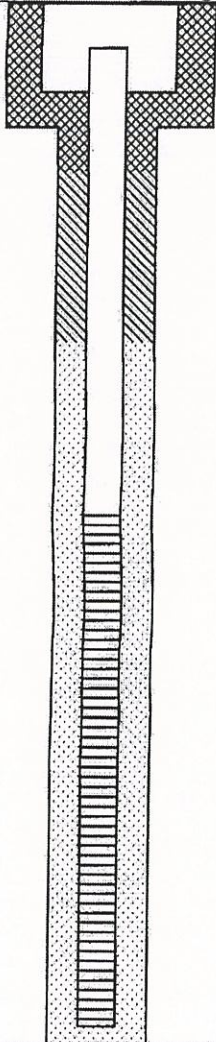
Tax Parcel No. 12829130202

Cased or Uncased Diameter 1" Static Level 7

Work/Decommission Start Date 2/19/15

Work/Decommission Completed Date 2/19/15

## Construction Design



## Well Data

MONUMENT TYPE:

Flush mount

CONCRETE SURFACE SEAL:

0-1

ANNULAR SPACE: \_\_\_\_\_

BACKFILL: 1-4

TYPE: bentonite

PVC BLANK: 0-5

SCREEN: 5-25"

SLOT SIZE: .010

TYPE: 1" prepack screen

SAND PACK: 4-25"

MATERIAL: 10/20 silica sand

DRILLING METHOD: DPT

WELL DEPTH: 25

BORING DIAMETER: \_\_\_\_\_

## Formation Description

0-10 sand and peat

10-25 sand

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MAR 19 2015

WA State Department  
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Construction/Decommission ("x" in box)

- ☐ Construction  
☐ Decommission

Type of Well ("x" in box)

- ☒ Resource Protection  
☐ Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

Consulting Firm

Unique Ecology Well IDTag No. BIM -143

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accepted 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 Last, First Name) Hamden, Don

Driller/Engineer /Trainee Signature [Signature]

Driller or Trainee License No. 2914

Trainee, licensed driller's Signature and License Number:

Property Owner Michael Wood

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City Tumwater

County Thurston

Location SW1/4-1/4 NE1/4 Sec 29 Twn 18 R 02

EWM ☐ or WWM ☒

Lat/Long (s, t, r

Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

still REQUIRED)

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

Tax Parcel No. 12829130202

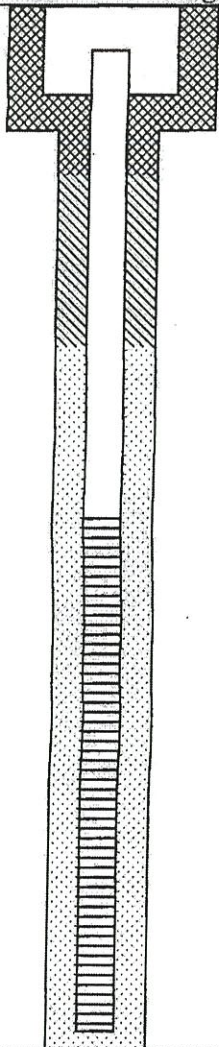
Cased or Uncased Diameter 1"

Static Level 7

Work/Decommission Start Date 2/19/15

Work/Decommission Completed Date 2/19/15

## Construction Design



## Well Data

MONUMENT TYPE:

Flush mount

CONCRETE SURFACE SEAL:

04

ANNULAR SPACE:

BACKFILL: 1-4

TYPE: bentonite

PVC BLANK: 0-5

SCREEN: 5-25

SLOT SIZE: .010

TYPE: 1" prepack

SAND PACK: 4-25

MATERIAL: 10/20 silica sand

DRILLING METHOD: DPT

WELL DEPTH: 25

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## Formation Description

0-10 sand and peat

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MAR 19 2015

WA State Department  
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SCALE: 1"= \_\_\_\_\_ PAGE 4 OF 4



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# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. RE10973

SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

☒ Construction

☐ Decommission

ORIGINAL INSTALLATION Notice of Intent Number:

Consulting Firm

Unique Ecology Well IDTag No. BIM - 142

WELL CONSTRUCTION CERTIFICATION: I constructed and/or  
accepted 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 Last, First Name) Hamden, Don

Driller/Engineer/Trainee Signature [Signature]

Driller or Trainee License No. 2914

Drill trainee, licensed driller's Signature and License Number:

Type of Well ("x" in box)

☒ Resource Protection

☐ Geotech Soil Boring

Property Owner Michael Wood

Site Address 2860 Black Lake Blvd

City Tumwater County Thurston

Location SW1/4-1/4 NE1/4 Sec 29 Twn 18 R 02

EWM ☐ or WWM ☒

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

still REQUIRED)

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

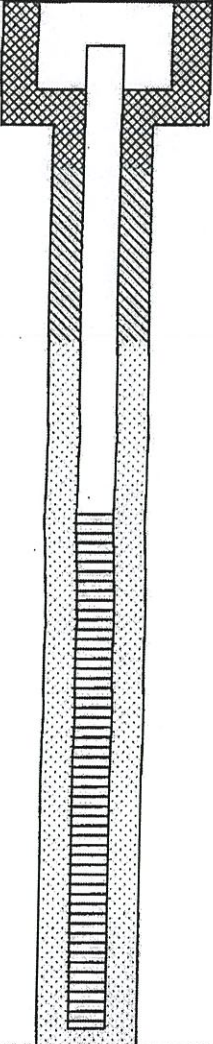
Tax Parcel No. 12829130202

Cased or Uncased Diameter 1" Static Level 7

Work/Decommission Start Date 2/19/15

Work/Decommission Completed Date 2/19/15

## Construction Design



## Well Data

MONUMENT TYPE:

Flush mount

CONCRETE SURFACE SEAL:

04

ANNULAR SPACE:

BACKFILL: 1-4

TYPE: bentonite

PVC BLANK: 0-5

SCREEN: 5-25

SLOT SIZE: .010

TYPE: 1" prepack screen

SAND PACK: 4-25

MATERIAL: 10/20 silica sand

DRILLING METHOD: DPT

WELL DEPTH: 25

BORING DIAMETER:

## Formation Description

0-10 sand and gravel

10-25 sand

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SCALE: 1"= \_\_\_\_\_ PAGE 3 OF 4