

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 92-7229
Exam Date: 5/22/2013

1. Current Owner: EVERGREEN TERRACE WATER ASSN
248 EVERGREEN TERRACE RD
SAINT MARIES ID 83861
(208) 245-2448
2. Accompanied by: Bryce Coulter
Phone No: (208) 245-5813
Address: 248 Evergreen Terrace RD
Relationship to Permit Holder: Secretary of Association
3. SOURCE TRIBUTARY
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NONE
2. Other water rights with the same point of diversion: NONE

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER SW1/4NE1/4 Sec. 25, Twp 46N, Rge 02W, B.M. BENEWAH County
GROUND WATER SW1/4NE1/4 Sec. 25, Twp 46N, Rge 02W, B.M. BENEWAH County

Method of Determination: GPS and Visual Inspection

2.

PLACE OF USE: MUNICIPAL

See Map for Place of Use. (No Place of Use is data entered for Municipal Use.)

Method of Determination: GIS and Visual Inspection

3. YES Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
YES Aerial Photo Attached (required for irrigation of 10+ acres).
YES Photo of Diversion and System Attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Well #3 Main Well	Unknown	15	Unknown	Unknown	4" line
Well #2 Backup Well	Franklin	3/4	280107101	Franklin	4" line

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Owner's Meter	Mag Meter	Siemens	MAG5000	7ME6910-1AA3 0-1AA0	4"	UNKNOWN

2. Measurements: I used the Mag Flow meter to measure this system. The meter was recently installed and installed correctly. The theoretical calculation showed a diversion rate of 219 gpm and this meter showed a diversion rate of 203.5 gpm. Both calculations were reasonably close.

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method:

Flow meter = 203.5 gpm (0.45 cfs)

Theoretical = 219 gpm (0.49 cfs)

Permit Allowed = 0.88 cfs

I recommend the measured flow rate for this system of 0.45 cfs.

F. VOLUME CALCULATIONS**1. Volume Calculations for Irrigation:**

$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$ _____

$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$ _____

$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} =$ _____

2. Volume Calculations for Other Uses:

Administrative Memo 22 allows a domestic use of 1.2 acre feet of water per home and yard up to ½ acre. Due to the heavy tree cover, it was impossible to ascertain the number of acres that are actually irrigated under this system. During the exam, I spoke with the representative, that state that each lot is pretty much limited to ½ acre of irrigation. I found 47 lots that were either stubbed in or that had a home on the property. Therefore, I used the following equation to attain the volume for this permit:

$$47 \text{ Homes} \times 1.2 \text{ acre feet per home} = 56.4 \text{ acre feet.}$$

G. NARRATIVE/REMARKS/COMMENTS

There are 4 wells at this property. Of the 4 wells, only 2 are in use. Well #1 and Well A are no longer connected to power or to the system. I have informed the water right holders they need to properly decommission these wells. Well #3 is the main well that services this subdivision. It is a 15 Hp well that pumps up a hill to a 40,000 gallon storage tank. Well #2 is a ¾ Hp well that is used as a backup or for emergency purposes. Well # 2 is located on the hill next to the water tank. The water for this permit is pumped to the reservoir on the hill, and the water is then gravity fed back downhill to the subdivision. There are no re-lift pumps pressurizing the water from the storage tanks. The storage tanks and all of the wells are located in the NWSE of Section 25, Township 46 North, Range 2 West.

There are a total of 56 lots associated with the Evergreen subdivision. The permit originally requested 53 lots for the subdivision. Of the 56 lots one is a well lot, and two are associated with a gravel pit north of the subdivision, which would reduce the total number of possible occupied lots to 53 lots. During the field exam I discovered that there are currently only 35 water connections on the system. Therefore, I needed to determine the maximum number of water connections that could be developed for this subdivision. During the build out of the subdivision, a number of individuals purchased multiple lots and built a home in a manner that prevented the possibility of selling those lots separately to allow additional home construction. Arlo Slack owns two large lots, and only has one domestic use, so I could only count one water connection for his use. There are also 3 lots that were connected into the system outside of the borders of the original subdivision, but the total number of lots is still below the number of lots that were permitted for this system. There are only 47 water connections that are currently connected to the water system or could connect to the water system in the future. The 47 water connections include only one connection for Arlo Slack's two lots. With a standard volume of 1.2 acre feet per lot and a limitation of 1/2 acre of irrigation per home, this would allow 56.4 acre feet of water, and up to 23.5 acres of irrigation. This sounds more than reasonable for this subdivision.

The owners asked to amend the permit to change the use from domestic and irrigation for these lots to municipal use. An amendment was required anyway to correct the point of diversion descriptions and the place of use descriptions. Since this is being changed to a municipal use, conditions 128 and 180 were added to the licenses, and conditions 03A, 004, 26A, and the domestic description condition were removed at licensing.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
MUNICIPAL	01/01 to 12/31	0.450 CFS	56.40 AF
<u>Totals:</u>		0.450 CFS	56.40 AF

2. Recommended Amendments

☒ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None

☒ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ Other (Changed use to municipal)

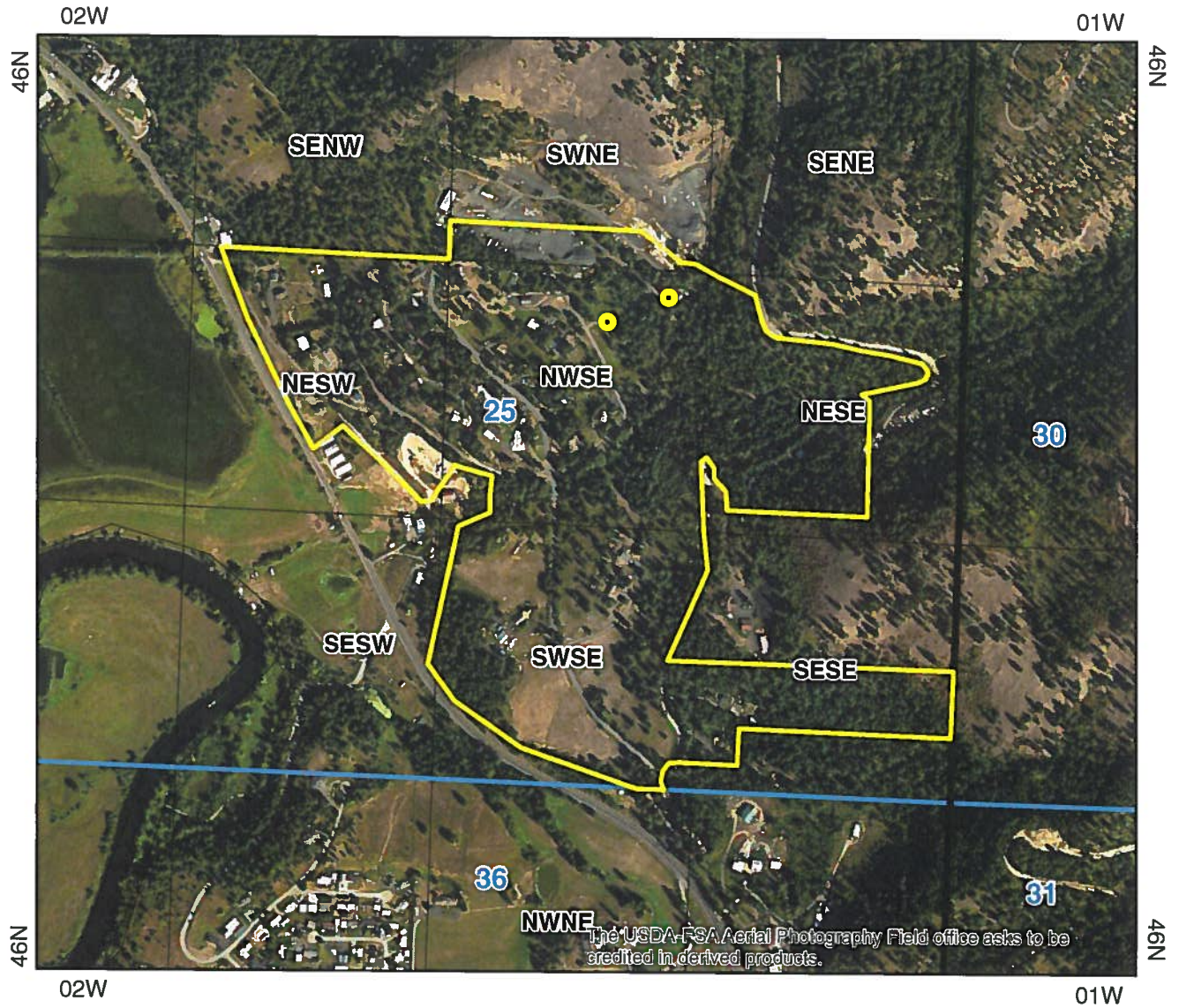
I. AUTHENTICATION Daniel A. Nelson – Staff Hydrologist

Field Examiner's Name  Date 4-8-2014

Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Field Exam Map
92-7229

This map depicts the MUNICIPAL place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



-  Point of Diversion
-  Water Service Area Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.1 0.2 0.4 Miles



Permit 92-7229
Lot Analysis

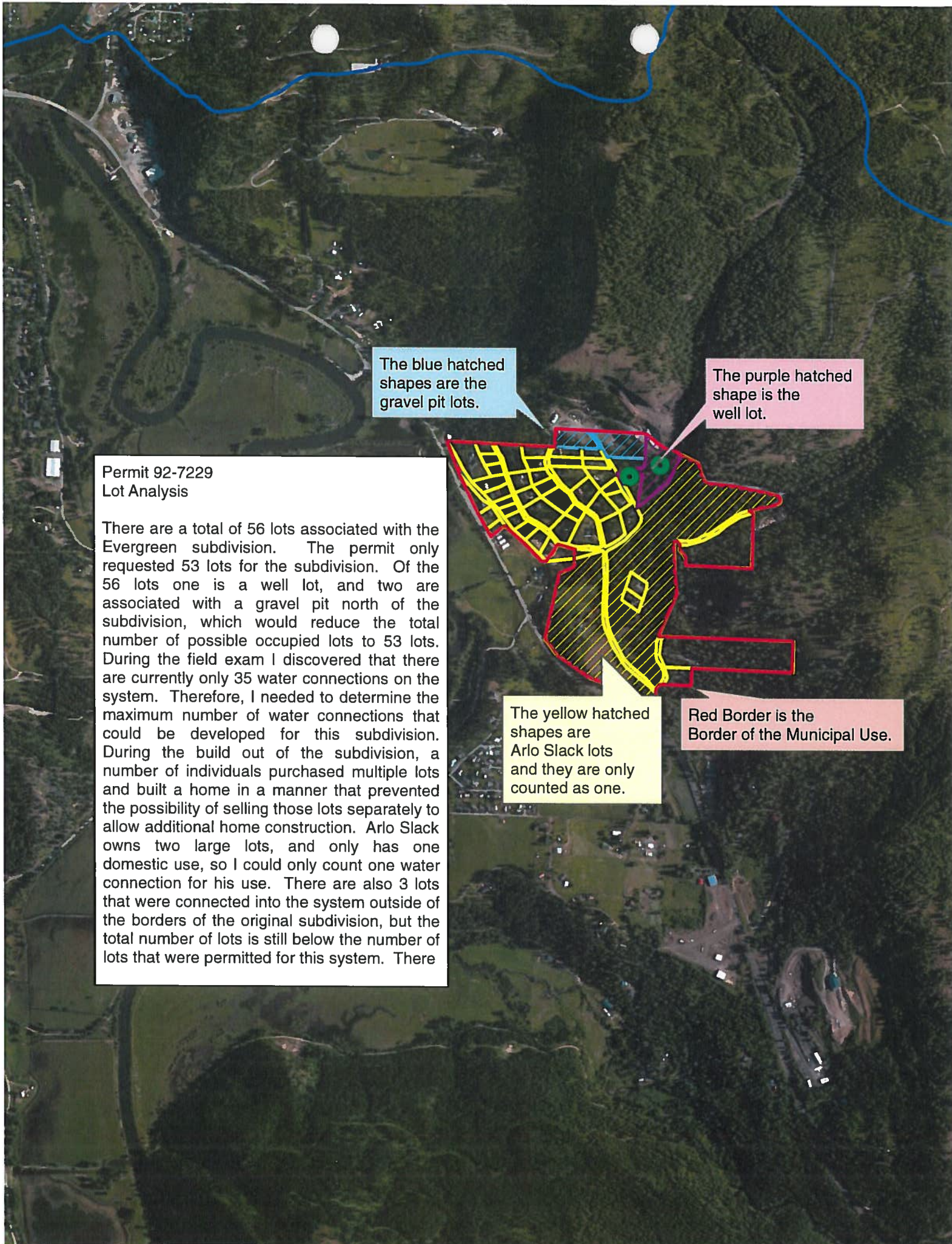
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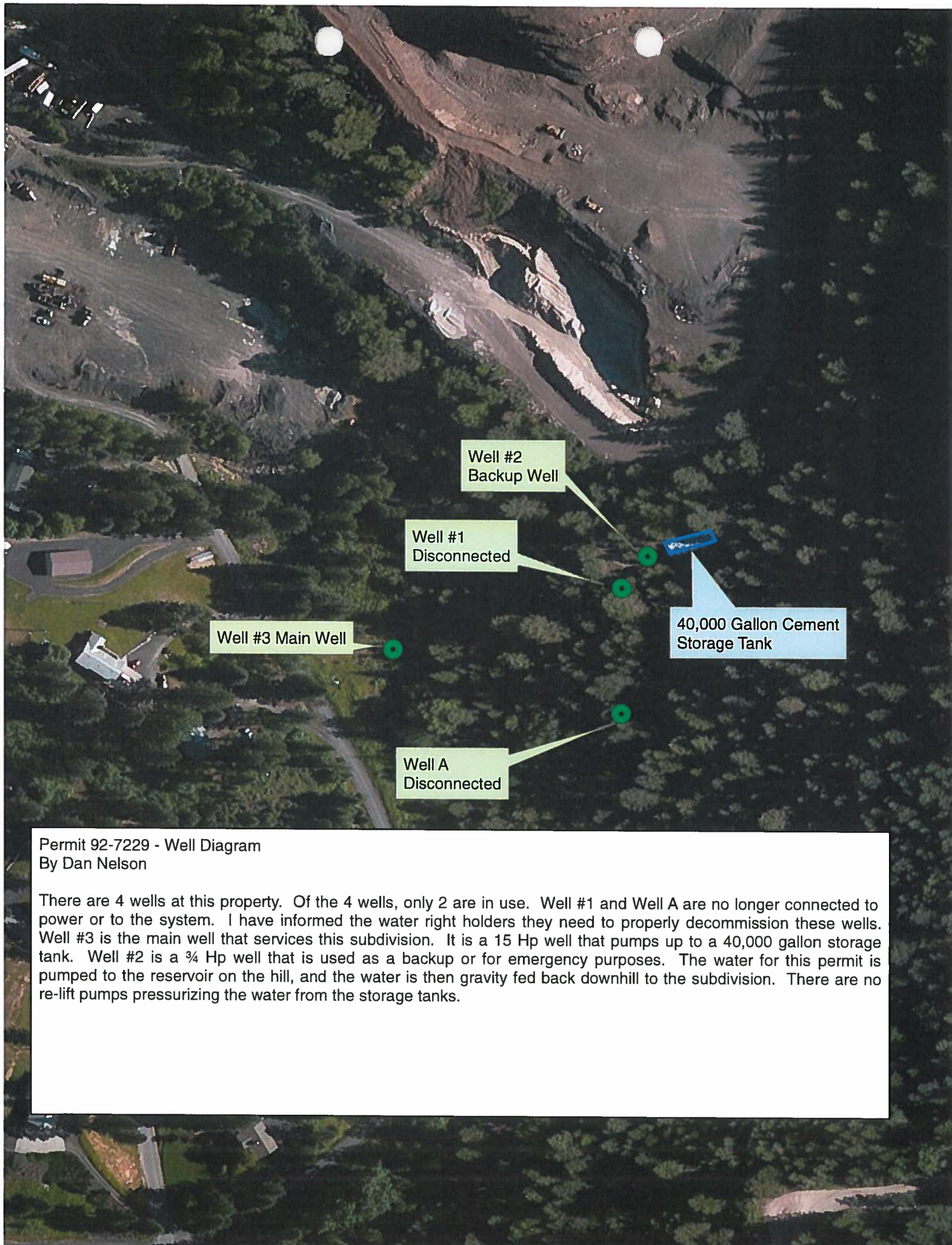
The blue hatched shapes are the gravel pit lots.

The purple hatched shape is the well lot.

The yellow hatched shapes are Arlo Slack lots and they are only counted as one.

Red Border is the Border of the Municipal Use.





Permit 92-7229 - Well Diagram
By Dan Nelson

There are 4 wells at this property. Of the 4 wells, only 2 are in use. Well #1 and Well A are no longer connected to power or to the system. I have informed the water right holders they need to properly decommission these wells. Well #3 is the main well that services this subdivision. It is a 15 Hp well that pumps up to a 40,000 gallon storage tank. Well #2 is a $\frac{3}{4}$ Hp well that is used as a backup or for emergency purposes. The water for this permit is pumped to the reservoir on the hill, and the water is then gravity fed back downhill to the subdivision. There are no re-lift pumps pressurizing the water from the storage tanks.

WATER
ASSOCIATION
BOUNDARY

Evergreen Terrace
Water Association
T46N R2W
Sec. 25
N ↑

PUGH BROTHERS
CONSTRUCTION ROCK PIT

LARCH RD

WELL NO. 2

WELL AND
RESERVOIR SITE

WELL NO. 1

WELL "A"

WELL NO. 3

SHEET C1

SHEET C2

SHEET C3

CEDAR RD

EVERGREEN

PONDEROSA LN

TERRACE RD

FIR RD

INTERMITTENT STREAM

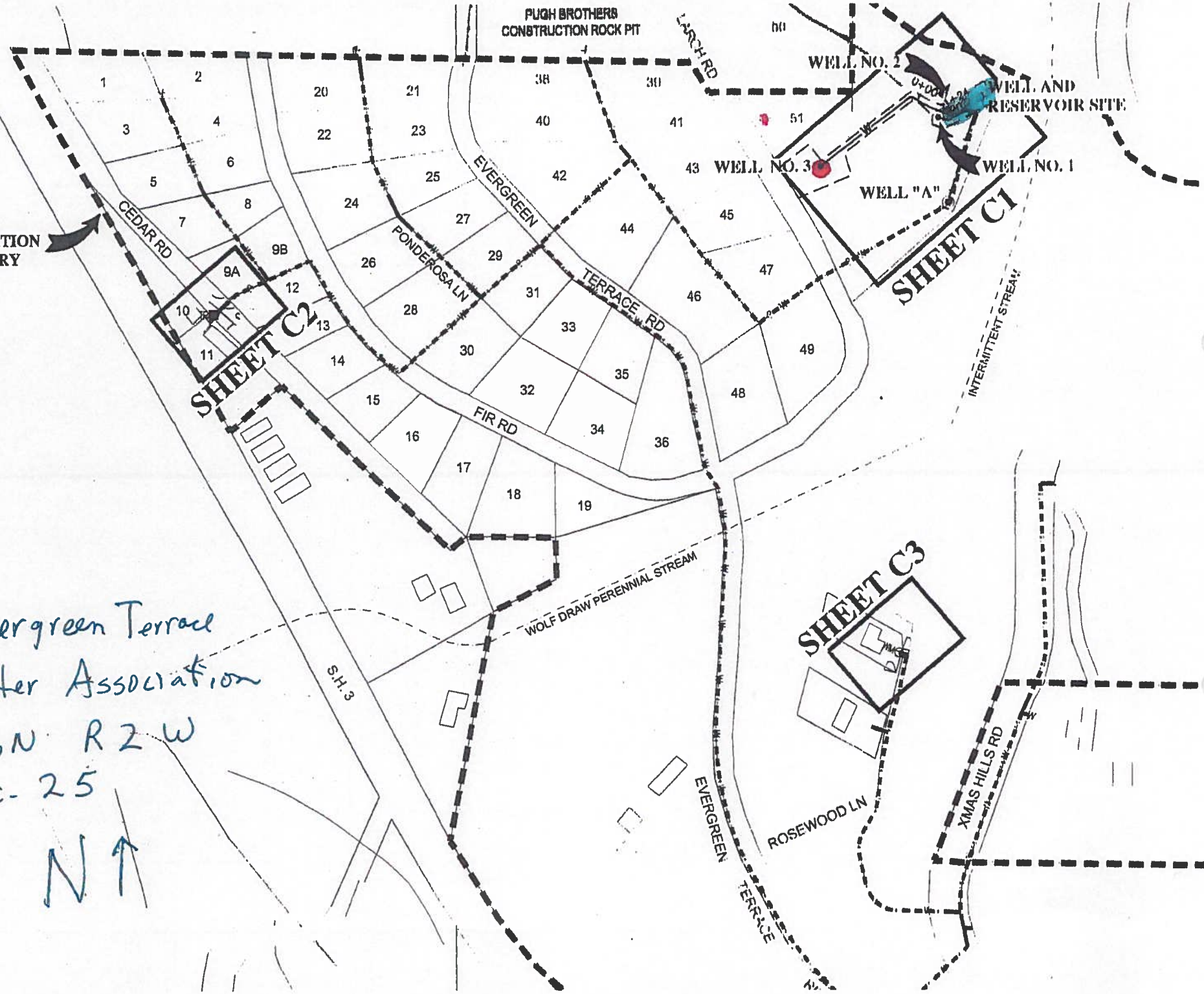
WOLF DRAW PERENNIAL STREAM

S.H. 3

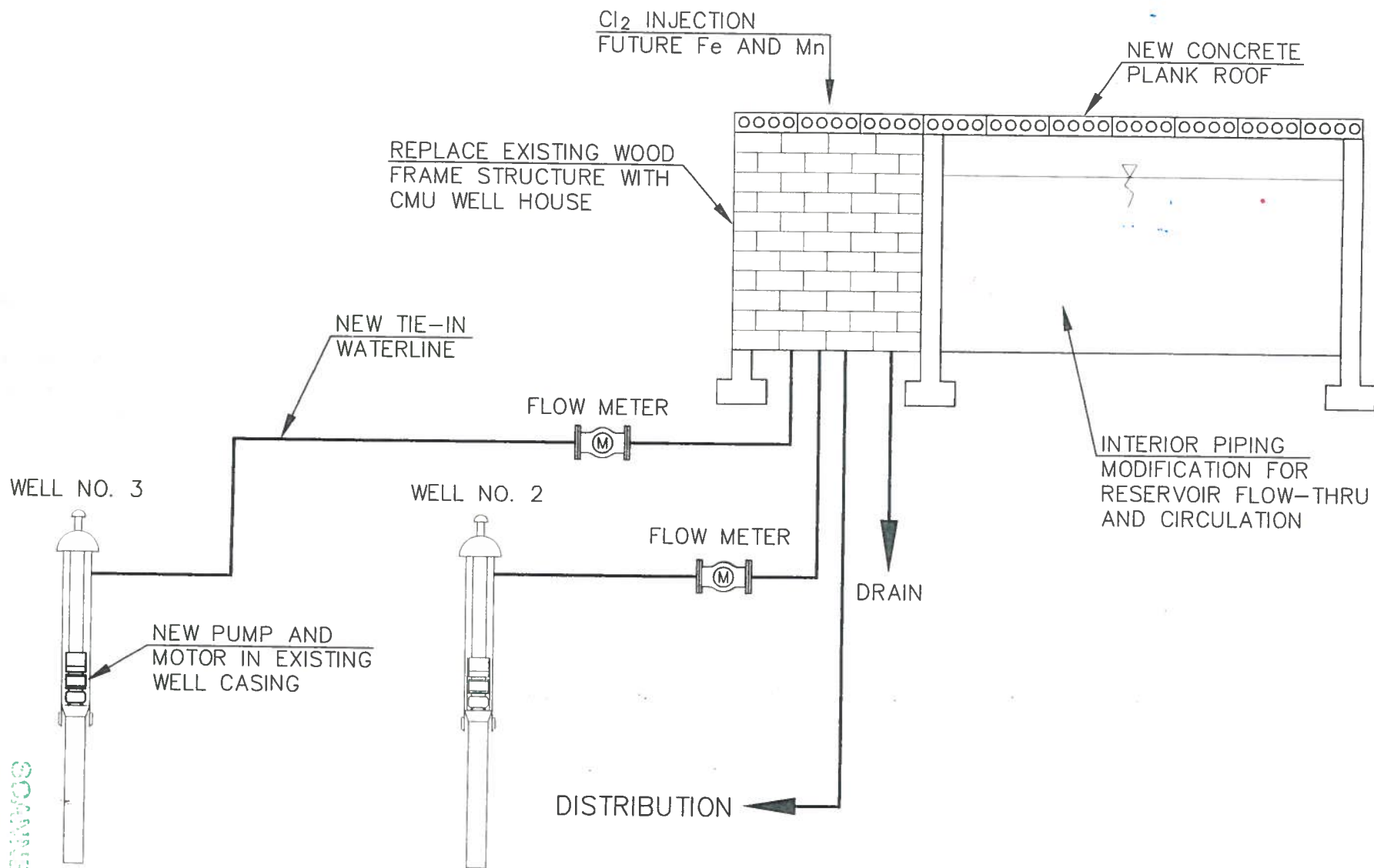
EVERGREEN
TERRACE

ROSEWOOD LN

XMAS HILLS RD



13758
DS06



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EVERGREEN TERRACE
WATER ASSOCIATION

IMPROVEMENTS SCHEMATIC

PROJECT NO.: 13105/13758
DESIGNED BY: D.D.O.
DRAWN BY: J.A.L.
DWG NAME: 13758DS06.DWG
DATE: 08-02-10
SHEET NO:

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 92-7229 Pump 3
 Reviewer: Dan Nelson
 Date of Review: 5/22/2013

P/D No.:	Senerio 1	Senerio 2	Senerio 3
PUMP HORSEPOWER	15	15	15
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	100	100	100
DISCHARGE PRESSURE	34	39	44
RATE OF FLOW (cfs)	0.52 232	0.49 218	0.46 206
			0.49 218.69

The above calculates the formula =
$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency.
 No Friction

Examiners Notes:

I attain the lift per the well log that showed the screens were at 100 to 126 feet. The static was at 14 feet, but it was cased from 0 to 126 feet. With a solid casing, the drawdown would probably go down to the screen level. I estimated the pressure by calculating the elevation diverence of 76 feet and an open discharge pressure of 2 to 10 psi. The flow measured on the flow meter ranged between 201.9 tp 203.5 gpm, so this seems like an

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 92-7229 Pump 2
 Reviewer: Dan Nelson
 Date of Review: 5/22/2013

P/D No.:	Senerio 1	Senerio 2	Senerio 3
PUMP HORSEPOWER	0.75	0.75	0.75
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	100	100	100
DISCHARGE PRESSURE	10	10	10
RATE OF FLOW (cfs)	0.04 17	0.04 17	0.04 17
			0.04 16.84

The above calculates the formula =

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency.
 No Friction

Examiners Notes:

There was no well drillers report for the backup well (well 2), so I estimated the lift based on the well log for well 3. The lift is suspect, since well #2 is approximately 76 feet higher in elevation than well #3. However, this well is only used as a backup well, and is not capable of supplying water to the entire subdivision for a long period of time. Well #3 is the main well used for the subdivision.

SEP 15 1997

Corrected Well Report

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

Office Use Only

Inspected by TDK

Twp 46N Rge 2W Sec 25

1/4 NE 1/4 SE 1/4

Lat: : Long. :

~~Air~~ Flowing Artesian

1. ~~DATE OF BIRTH~~ ~~REMIT NO.~~ 92-97-N-0002-556 200
Other ID# 92-7229

2. OWNER:
Name Evergreen Water Co
Address _____
City St Marie State IN Zip 8

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N
 W E S
 Twp. 46 North X or South
 Rge. 02 East X or West 11
 Sec. 25 1/4 SE 1/4 NE 1/4
 Gov't Lot _____ County Bernice
 Lat. : : Long. : :
 Address of Well Site Evergreen Road
to Ranch City St. Mailes
 (Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. USE:

☐ Domestic	☒ Municipal	☐ Monitor	☐ Irrigation
☐ Thermal	☐ Injection	☐ Other	

5. TYPE OF WORK check all that apply (Replacement etc.)

6. DRILL METHOD
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
Bentonite	0	70	2000 #	Overlaid

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) _____
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
12	0	126	375	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☒ Perforations Method torch cut
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Line
126	100	1/4	160	1/4	Steel	X	

STATIC WATER LEVEL OR ARTESIAN PRESSURE:

ft. below ground Artesian pressure _____ lb.
flow encountered _____ ft. Describe access port or
devices:

E 25 46 N 26 W

11. WELL TESTS:

Yield gal./min.	Drawdown	Pumping Level	Time
1000 BPM			

Water Temp. _____ Bottom hole temp. _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

[illegible]

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Blue Water Drilling Firm No 452

Firm Official J. M. Carmona Date 9 12 97

Supervisor or Operator _____ Date _____

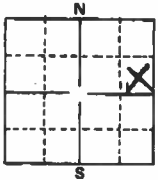
(Sign name of Firm Official & Organization)

WELL DRILLER'S REPORT

JUL 24 1975

State law requires that this report be filed with the State Reclamation Engineer
within 30 days after completion or abandonment of the well.

JUL 15 1975

1. WELL OWNER Name <u>R. J. Carman</u> Address <u>St. Maries, Idaho</u> Owner's Permit No. <u>92-75-N-12</u>		7. WATER LEVEL Static water level <u>40</u> feet below land surface Flowing? ☐ Yes ☒ No G.P.M. flow _____ Temperature _____ ° F. Quality _____ Artesian closed-in pressure _____ p.s.i. Controlled by ☐ Valve ☐ Cap ☐ Plug																																																																							
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Abandoned (describe method of abandoning) _____		8. WELL TEST DATA ☐ Pump ☐ Bailer ☒ Other <u>Air Lift</u> Discharge G.P.M. <u>20</u> Draw Down _____ Hours Pumped _____																																																																							
3. PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal ☐ Industrial ☐ Stock		9. LITHOLOGIC LOG																																																																							
4. METHOD DRILLED ☐ Cable ☒ Rotary ☐ Dug ☐ Other		<table border="1"><thead><tr><th rowspan="2">Hole Diam.</th><th colspan="2">Depth</th><th rowspan="2">Material</th><th colspan="2">Water</th></tr><tr><th>From</th><th>To</th><th>Yes</th><th>No</th></tr></thead><tbody><tr><td>6</td><td>0</td><td>35</td><td>Marl Boulders w/ Clay</td><td></td><td>X</td></tr><tr><td></td><td>35</td><td>45</td><td>Yellow Clay</td><td>X</td><td></td></tr><tr><td></td><td>45</td><td>54</td><td>Broken Basalt</td><td></td><td>X</td></tr><tr><td></td><td>54</td><td>70</td><td>Soft Black Basalt</td><td>X</td><td></td></tr><tr><td></td><td>70</td><td>175</td><td>Hard Black Basalt</td><td>X</td><td></td></tr><tr><td></td><td>175</td><td>135</td><td>Hard Tan Brown Clay</td><td>X</td><td></td></tr><tr><td></td><td>135</td><td>185</td><td>Hard Tan Gray Sand w/ Blue Clay</td><td></td><td>X</td></tr><tr><td></td><td>185</td><td>195</td><td>Hard Tan Brown Clay</td><td>X</td><td></td></tr><tr><td></td><td>195</td><td>235</td><td>Gray Sand, Hard Tan, Little Blue Clay</td><td>X</td><td></td></tr><tr><td></td><td>235</td><td>245</td><td>Brown Soapy Clay</td><td>X</td><td></td></tr></tbody></table>		Hole Diam.	Depth		Material	Water		From	To	Yes	No	6	0	35	Marl Boulders w/ Clay		X		35	45	Yellow Clay	X			45	54	Broken Basalt		X		54	70	Soft Black Basalt	X			70	175	Hard Black Basalt	X			175	135	Hard Tan Brown Clay	X			135	185	Hard Tan Gray Sand w/ Blue Clay		X		185	195	Hard Tan Brown Clay	X			195	235	Gray Sand, Hard Tan, Little Blue Clay	X			235	245	Brown Soapy Clay	X	
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5. WELL CONSTRUCTION Diameter of hole <u>6</u> inches Total depth <u>245</u> feet Casing schedule: ☒ Steel ☐ Concrete Thickness Diameter From To <u>2.50</u> inches <u>6</u> inches <u>41</u> feet <u>54</u> feet <u>PVC</u> inches <u>4</u> inches <u>120</u> feet <u>240</u> feet _____ inches _____ inches _____ feet _____ feet _____ inches _____ inches _____ feet _____ feet _____ inches _____ inches _____ feet _____ feet Was a packer or seal used? ☐ Yes ☒ No Perforated? ☒ Yes ☐ No <u>DRILL</u> How perforated? ☐ Factory ☐ Knife ☐ Torch Size of perforation <u>1/2</u> inches by <u>1/2</u> inches Number From To <u>180</u> perforations <u>120</u> feet <u>180</u> feet _____ perforations _____ feet _____ feet _____ perforations _____ feet _____ feet Well screen installed? ☐ Yes ☒ No Manufacturer's name _____ Type _____ Model No. _____ Diameter _____ Slot size _____ Set from _____ feet to _____ feet Diameter _____ Slot size _____ Set from _____ feet to _____ feet Gravel packed? ☐ Yes ☒ No Size of gravel _____ Placed from _____ feet to _____ feet Surface seal? ☒ Yes ☐ No To what depth <u>20</u> feet Material used in seal ☐ Cement grout ☒ Puddling clay																																																																									
6. LOCATION OF WELL Sketch map location must agree with written location.  County <u>Benedict</u> <u>36</u> 1/4 NE 1/4 Sec. <u>Y15</u> , T. <u>46</u> N. R. <u>2</u> (E/W)		10. Work started <u>6/11/75</u> finished <u>6/13/75</u>																																																																							
		11. DRILLER'S CERTIFICATION This well was drilled under my supervision and this report is true to the best of my knowledge. <u>CARMAN DEVELOPMENT CO 220</u> Driller's or Firm's Name Number <u>820 Main, St. Maries, ID</u> Address Signed By <u>Doug Headrick</u> Date <u>6/18/75</u> <u>John Carman</u>																																																																							

PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 5/22/2013

FILE NUMBER 92-7229



This top photo shows Well #1 and Well #2. Well #1 has been disconnected from the system and from power and is no longer used. Well # 2 is a backup well.



This photo is the power panel for Well #2.



This is Well A. Well A has been disconnected from power and the water system and is no longer used.

PLEASE NOTE: Shortly after this field exam, I dropped my camera and lost some of the pictures that I took. The photos of the main well – Well #3 – and its power panel were some of the photos lost. I also lost the photos of the place of use.

PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 5/22/2013

FILE NUMBER 92-7229



These upper photos show where the water from the wells enters the storage tank. The storage tank is on the back wall of this room. You can see the flow meter that was read during the field exam. It seemed to be good operating condition and matched the theoretical calculations. The photo shows a flow rate of 201.9 gpm, but I averaged the flows to 203.5 gpm.

The photos below show the 40,000 gallon cement water tank. The water from this tank is gravity fed to the subdivision down the hill.

