

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 84-12279
Exam Date: 7/23/2015

1. Current Owner:
EMPIRE LUMBER CO PO BOX 206 WEIPPE ID 83553 (208) 435-4113
2. Accompanied by: Randy Eller
Phone No: (208) 435-4113
Address: EMPIRE LUMBER CO PO BOX 206 206 WEIPPE ID 83553
Relationship to Permit Holder: **Manager**

3. **SOURCE:**
GROUND WATER

TRIBUTARY:

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 84-12242, 84 7002, 84-7038, 84-12249
2. Other water rights with the same point-of-diversion: 84-12242

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 15, Twp 35N, Rge 04E, B.M. CLEARWATER County

Method of Determination: Garmin GPS Receiver, U.S.G.S. 7.5 Minute Topographic Maps 'Weippe North', 'Weippe South'

2.

PLACE OF USE: FIRE PROTECTION FROM STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
35N	04E	14						X	X										
35N	04E	15	X			X													

PLACE OF USE: FIRE PROTECTION STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
35N	04E	15	X			X													

DIVERSION TO STORAGE same as FIRE PROTECTION STORAGE

Method of Determination: ArcMap™, U.S.G.S. 7.5 Minute U.S.G.S. Topographic Maps Weippe North, Weippe South

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☐ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ Photo of Diversion and System Attached

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4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
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Well D0054612 submersible pump is installed and operating. Inspection was not feasible due to pump being installed and operating in well.

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
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2. Measurements:

Well and piping configuration were not suitable for measurement due to time constraints and the configuration of the Northern Region Fuji Portaflow flow meter. IDWR (Dennis Owsley) previously measured flow from well D0054612 / A0015800 on August 16, 2012 at 493 Gallons Per Minute (1.1 CFS) during Field Exam for License 84-12242. A Tyme Flight flow meter was used for the 2012 measurement.

E. FLOW CALCULATIONS

Measured Method:

Additional Computation Sheets Attached

Theoretical

PUMP EQUATIONS WATER RIGHT No. 84-12279						
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	125	598.3401361	0.7	448	65
Q =	1.289 cfs 578.5 gpm					

.20 CFS DIVERSION TO STORAGE (FROM WELL FLOW INTO POND) (per Permit 84-12242)

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F. VOLUME CALCULATIONS**1. Volume Calculations for Irrigation: Not Applicable**

$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \text{Not Applicable}$

$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \text{Not Applicable}$

$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} =$

2. Volume Calculations for Other Uses: (See Attachments) (pond size 1.53 AF by Permit 84-12279)**AF**

4.6 FIRE PROTECT FRM STORAGE	a.)	POND SIZE	1.5 AF
	b.)	EVAPORATION	0.4 AF
	c.)	SEEPAGE	0.0 AF
	d.)	POND REFILLS	2.7 AF
		SUBTOTAL	4.6 AF
4.6 FIRE PROTECT STORAGE	a.)	POND SIZE	1.5 AF
	b.)	EVAPORATION	0.4 AF
	c.)	SEEPAGE	0.0 AF
	d.)	POND REFILLS	2.7 AF
		SUBTOTAL	4.6 AF
4.6		TOTAL	

G. NARRATIVE/REMARKS/COMMENTS

THIS WATER RIGHT IS REQUIRED BECAUSE FIRE PROTECTION STORAGE WAS NOT INCLUDED IN WATER RIGHT 84-12242.

WELL IS SHARED WITH LISC. 84-12242 (EMPIRE LUMBER. COMMERCIAL & FIRE PROTECTION). EXAM COMPLETED 7-23-2105. NO D WELL TAG PRESENT FOR WELL D0054612. TAG A0015800 PRESENT. WELL HAS 125 HP SUBMERSIBLE PUMP AT 448 FEET AND CAN BE OPERATED AT VARYING SPEEDS. PUMP TEST DATA (10-23-2008) SUPPLIED BY EMPIRE LUMBER INDICATES WELL HAS OPERATED BREIFLY AT 504 GALLONS PER MINUTE (1.12 CFS) AND CAN OPERATE AT A STEADY RATE OF 420 GPM (.93 CFS). EQUIPMENT IN WELL HOUSE ADJACENT TO POND IS CAPABLE OF REFILL AT PERMIT RATE OF 0.20 CFS OR LESS.

GPS COORDINATES (9 SAT. NEXT TO WELL BUILDING AT 9:57 A.M. 07-23-2015) - 115 DEGREES 56 MINUTES 03.0 SECONDS (LONGITUDE) 46 DEGREES 22 MINUTES 47.2 SECONDS (LATITUDE).

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FIRE FIGHTING STORAGE POND SURFACE AREA IS 104 FEET BY 104 FEET (.24 ACRES) WITH 6.2 FEET AVERAGE DEPTH. CURRENT POND DIMENSIONS ARE CONSISTENT WITH PERMIT. POND IS LINED AND DOES NOT HAVE A COVER. A HEAVY DUTY FENCE SURROUNDS POND. POND SERVES AS BACK UP TO WELL FOR FIRE FIGHTING USE AND CAN SUPPLY WATER TO IN-BUILDING FIRE SPRINKLERS AND HYDRANTS. POND WAS FULL ON DATE OF EXAM.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
DIVERSION TO STORAGE	01/01 to 12/31	0.20 CFS	
FIRE PROTECTION FROM STORAGE	01/01 to 12/31		4.6 AF
FIRE PROTECTION STORAGE	01/01 to 12/31		4.6 AF
	Totals:	0.200 CFS	4.60 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 ☒ None

I. AUTHENTICATION

Field Examiner's Name Shawn M. May Date 07-27-2016

Reviewer Morgan Case ✓ Date 7/29/2016

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Total Storage Calculations

FILE NUMBER	84-12279
REVIEWER	Shaun Maxey
DATE	7/26/2016

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond.

User Input
Calculated value
Formula Explanations

Surface Area (AC.)	0.248	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	6.2	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	1.5376	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	2.7	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: If a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	0.0	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.4	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	4.6	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.

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Flow Rate into Pond (CFS)	0.20	The "Flow Rate into Pond" depicts the actual flow, either measured or estimated, into the pond. For offstream facilities, this will be equivalent to "diversion to storage" rate.
Highest Daily Evaporation Rate From Evaporation Tab. (mm/Day)	4.38	This number is carried over from the "Evaporation Loss" sheet. It is the highest recorded number in the "Precipitation Deficit Table".
Required Daily Maintenance Volume (AF/Day)	0.00	"Required Daily Maintenance Volume" is the maximum volume of water needed on any given day during the year to maintain pond volume. It is calculated by adding the highest daily evaporation loss to the average daily seepage loss in acre feet. The average daily seepage loss is calculated by dividing the "Estimated Seepage Loss" by 365 days. This is acceptable, since the seepage rate shouldn't vary throughout the season unless the pond completely freezes over during the winter months. The highest daily evaporation loss is calculated by dividing the Highest Daily Evaporation Rate by the 304.8 conversion factor and multiplying this number by the pond surface area to attain a combined daily acre feet requirement.
Minimum Maintenance Flow (CFS)	0.00	The "Minimum Maintenance Flow" is the minimum amount of flow required to maintain the level of the pond. This number is determined by dividing the "Maximum Required Daily Maintenance Volume" by 1.9835. This flow can be used to determine if the flow rate into the pond is adequate to maintain the pond level.
Days Required to Fill the Pond	4	The "Days Required to Fill the Pond" is calculated by dividing the "Pond Capacity" by the "Flow Rate" minus "Minimum Maintenance Flow" multiplied by 1.9835. This section will assist you in determining if the flow rate being diverted to the pond is adequate to fill the pond while maintaining the pond level. The length of time to fill the pond will help determine if the flow rate is adequate for the size of pond being proposed. If this number is approximately 6 months (180 days) or more, the reviewer should have a discussion with the applicant to make sure he/she understands that it will take a significant length of time to fill the pond.
Days Required to Fill the Pond at 13,000 Gallons per Day	42	Some water users may want to fill a pond under the 13,000 gallons per day domestic exemption. The "Days Required to Fill the Pond at 13,000 Gallons per Day" is calculated by converting the "Pond Capacity" and the "Required Daily Maintenance Volume" to gallons. The "Pond Capacity" is then divided by 13,000 gallons minus the "Required Daily Maintenance Volume" in gallons to determine the number of days to fill pond. If this number is approximately 6 months (180 days) or more, the reviewer should have a discussion with the applicant to make sure he/she understands that it will take a significant length of time to fill the pond. Negative values indicate that the supply of 13,000 gallons per day is not enough volume to overcome the required daily maintenance volume; the pond will never fill.

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Evaporation Loss Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the annual evaporation losses from a pond.

FILE NUMBER: **84-12279**
 REVIEWER: **Shaun Maxey**
 DATE: **7/26/2016**

User Input
 Calculated value
 Formula Explanations

The acronyms used on the Kimberly Research Center website are defined below:

P = Precipitation
 ET = Evapotranspiration
 P_d = Precipitation deficit
 P_d = ET - P

USING THIS SPREADSHEET

Use the link below to access the Kimberly Research Center website. This website provides the Precipitation Deficit for a station most representative of the pond under examination. The Precipitation Deficit is the total amount of free water surface evaporation minus the precipitation for a given area, which gives the total amount of evaporative losses incurred by the pond. There are several weather sites that are used throughout the state. IDWR staff can find the nearest site using Arc Map. The shape file containing the sites can be found at <X:/Spatial/Climate/ETIdahostations.shp>.

Instructions:

1. Use the link below to navigate to ET Idaho 2012.
2. Select the station which is most representative to your pond location.
3. Click Submit Query.
4. Under "Land Covers with Evapotranspiration Estimates," select "Open Water - Shallow Systems (ponds, streams)" or "Open Water - small stock ponds" depending on the pond size.
5. Click the link to "Precipitation Deficit."
6. Reference and copy (ctrl + C) the first subheading "Mean" values.
7. Click the "Paste Values from ET Idaho" button. The table will automatically enter a zero (0) for any

Found at: <http://data.kimberly.uidaho.edu/ETIdaho/>

Precipitation Deficit

Station: **Twin Falls 2 NNE (NWS -- 109294)**

Month	mm/day ¹	Days per month	mm/Month
Jan	-2.24	31	0.00
Feb	-1.31	28	0.00
March	-0.31	31	0.00
April	0.65	30	19.50
May	1.74	31	53.94
June	2.29	30	68.70
July	4.38	31	135.78
August	3.75	31	116.25
September	1.97	30	59.10
October	-0.16	31	0.00
November	-2.01	30	0.00
December	-2.67	31	0.00

PLEASE NOTE: The seasonal average for precipitation deficit should not be used for calculations because precipitation often exceeds evaporation during wetter months of the year. If the pond is kept full, excess precipitation during wetter months does not serve to refill the pond during drier months.

For example, see Sandpoint KSPT (NWS -- 108137), the annual precipitation deficit is -106 mm. However, April through September have positive precipitation deficit values. To properly estimate the annual volume of water necessary to refill a pond due to evaporation losses, the table will automatically enter a zero (0) for each month that the precipitation value is reported as a negative value.

As described above, precipitation offsets evaporation in winter months, so the net effect is that wintertime precipitation deficit is usually zero.

Total mm/year = **453.27**

((mm/yr) ÷ (convert to feet)) X (Surface area of pond, in acres) = Evaporation Loss in Acre Feet

((**453.27**) ÷ (**304.8**)) X (**0.25**) = (**0.4 AFA**)

Surface Area of Pond is automatically carried over from the Seepage Loss Sheet.

Example Data:

ET Idaho 2012 -- Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho

Please send suggestions for improving this site to webmaster@kimberly.uidaho.edu Copyright 2012, University of Idaho

Twin Falls 2 NNE (NWS -- 109294)

Statistics based on thirty year normal spans 1943 to 1973 years

For a different land cover or crop click on the above link
 Right click table and copy into the clipboard to a Microsoft Excel or OpenOffice spreadsheet to plot or otherwise work with this data.

Open water - shallow systems (ponds, streams)

Precipitation Deficit (Click here for a graph)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Growing Season ^a	Non Growing Season ^b	Annual
Mean¹	mm-day														
30-day ²	-0.17	0.32	1.19	2.40	3.13	3.73	4.84	4.24	3.13	2.00	0.21	-0.33	731	0	731
15-Day Moving Average ³	-0.30	0.31	1.19	2.42	3.08	3.74	4.81	4.33	3.08	2.02	0.12	-0.33			
7-Day Moving Average ⁴	-0.41	0.32	1.19	2.40	3.13	3.72	4.86	4.23	3.12	2.02	0.16	-0.33			
3-Day Moving Average ⁵	-0.17	0.33	1.20	2.41	3.12	3.73	4.84	4.24	3.12	2.01	0.20	-0.33			

The above table is a snap shot of the tables you find at the Kimberly Research Center Webpage. (Use link above.) Copy (ctrl + C) the

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Seepage Loss Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total annual seepage losses from a pond.

FILE NUMBER	84-12279
REVIEWER	Shaun Maxey
DATE	7/25/2016

User Input
Calculated value
Formula Explanations

INPUTS

Pond Surface Area (AC.)	0.248	AC.
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Pond Surface Area (SQ. FT.)	10803	SQ. FT.
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I used the following method to obtain my Soil Classification information:	NRCS Web Soil Survey	
My Soil Classification is	Lined	
Suggested Seepage Rate (FT./DAY)	0.0000	FT./DAY

Formula: (Surface Area X Seepage Rate) X 7.48 = Gallons Per Day Loss
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Convert to GPD	0	GPD
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Total Seepage Loss (AFA)	0.0	AFA
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Though sand and gravel seepage rates may actually be higher, the maximum allowable rate is 0.2 ft/day, pursuant to Administrative Memo "Seepage Loss Standards for Ponds and Reservoirs."

Suggested Seepage Rates for Different Soil Types:
GW, GP, GM, GC, SW, SP and SM (silty sand, sand silt mixtures and gravel mixtures) = 0.2 ft per day
OL and ML (inorganic silts - very fine sands, silty, or clayey fine sands) = 0.02 ft per day
SC (clayey sands, sand clay mixtures) = 0.007 ft per day
CL (Low to medium plasticity clays) = 0.003 ft per day
MH, OH, PT and CH (high plasticity clays) = 0.0003 ft per day
LINED PONDS (liners can be chemical, fabric, or bentonite) = 0 ft per day
Ponds Intercepting Groundwater (excavated ponds filled by ground water) = 0 ft per day

PLEASE NOTE: The initial basis for the Suggested Seepage Rates in the table above is found on Page 16 of Seepage from Fish Ponds, Bulletin 599, August 1989 Alabama Agricultural experiment Station, Auburn University, Auburn University Alabama. If you don't know the soil type, please refer to the map provided at the NRCS Web Soil Survey (Tab #1), an ArcMap Soil Classification Map (Tab #1.1), or published NRCS Soil Survey (Tab #1.2). Use "0" if the pond fill relies on the water table.

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-- Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007 (<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>).

Clearwater Area, Idaho

Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches Pct	3-10 inches Pct	4	10	40	200		
192—Reggear-Sedgwick complex, 5 to 15 percent slopes														
Reggear	50	C/D	0-1	Slightly decomposed plant material	PT	A-8	0-0-0	0-0-0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			1-8	Ashy silt loam	ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	85-90-95	25-35-40	NP-2 -10
			8-13	Ashy silt loam	CL, CL-ML, ML	A-4, A-6	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	85-90-95	20-30-35	NP-5 -15
			13-22	Silt loam	CL-ML, CL	A-4, A-6	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	85-90-95	25-30-35	7-10-15
			22-31	Silt loam, silty clay loam	CL	A-6, A-4	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	80-90-100	25-35-40	10-15-20
			31-60	Silty clay loam, silt loam, clay	CL, CH	A-6, A-7	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	75-95-100	32-35-50	15-15-30
			60-86	Silt loam, clay loam, silty clay loam	CL	A-7, A-6, A-4	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	75-95-100	30-36-45	10-15-25
Sedgwick	30	B	0-1	Slightly decomposed plant material	PT	A-8	0-0-0	0-0-0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			1-3	Ashy silt loam	ML	A-4	0-0-0	0-0-0	85-100-100	75-95-100	70-90-95	65-75-85	25-30-35	NP-2 -5
			3-5	Ashy silt loam	ML	A-4	0-0-0	0-0-0	95-100-100	90-95-100	80-90-95	70-75-85	25-30-35	NP-5 -10
			5-13	Ashy silt loam, gravelly ash loam	CL-ML, CL	A-4, A-6	0-0-0	0-0-0	68-91-100	66-90-100	60-85-99	50-70-80	25-30-35	5-10-15
			13-35	Silt loam, gravelly silty clay loam, gravelly loam	CL, CL-ML, GC-GM	A-6, A-7, A-4	0-0-0	0-0-0	65-95-95	60-90-90	50-75-80	45-70-75	25-35-45	5-15-20
			35-44	Very gravelly silt loam, extremely gravelly clay loam, gravelly clay loam	CL, GC, GM	A-2, A-6, A-7	0-0-0	0-20-35	35-65-75	30-55-65	25-50-60	20-45-50	35-35-45	10-15-25
			44-54	Bedrock	—	—	—	—	—	—	—	—	—	—

Description -- Engineering Properties

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007 (<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

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Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification

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Orofino (NWS -- 106681)

Statistics based on thirty year normal spans 1938 to 1980 years

For a different land cover or crop click on the above link.

You can highlight this table and copy via the clipboard to a Microsoft Excel or OpenOffice spreadsheet to plot or otherwise work with this data.

Open water - shallow systems (ponds, streams)															
Precipitation Deficit (Click here for a graph)															
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Growing Season ^a	Non Growing Season ^b	Annual
Mean ^j	mm/day												mm		
Monthly ^c	-2.24	-1.31	-0.31	0.65	1.74	2.29	4.38	3.75	1.97	-0.16	-2.01	-2.67	188	0	188

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State of Idaho
Department of Water Resources
Delivery System Diagram
84-12279



0 0.0075 0.015 0.03 Miles

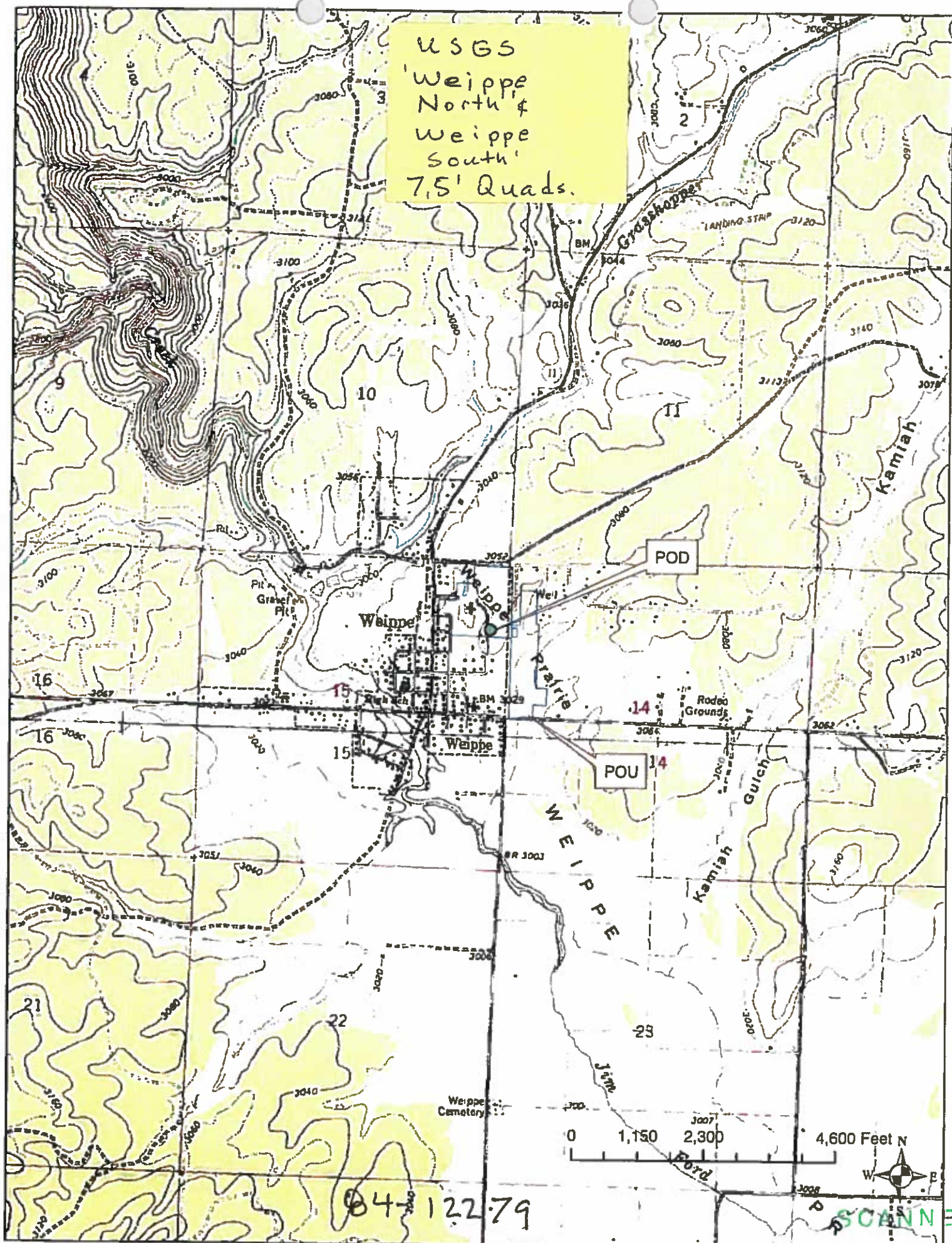
 Taxlots



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USGS
'Weippe
North' &
Weippe
South'
7.5' Quads.



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Point of Diversion Well D $\phi\phi$ 54612/A $\phi\phi$ 158 $\phi\phi$

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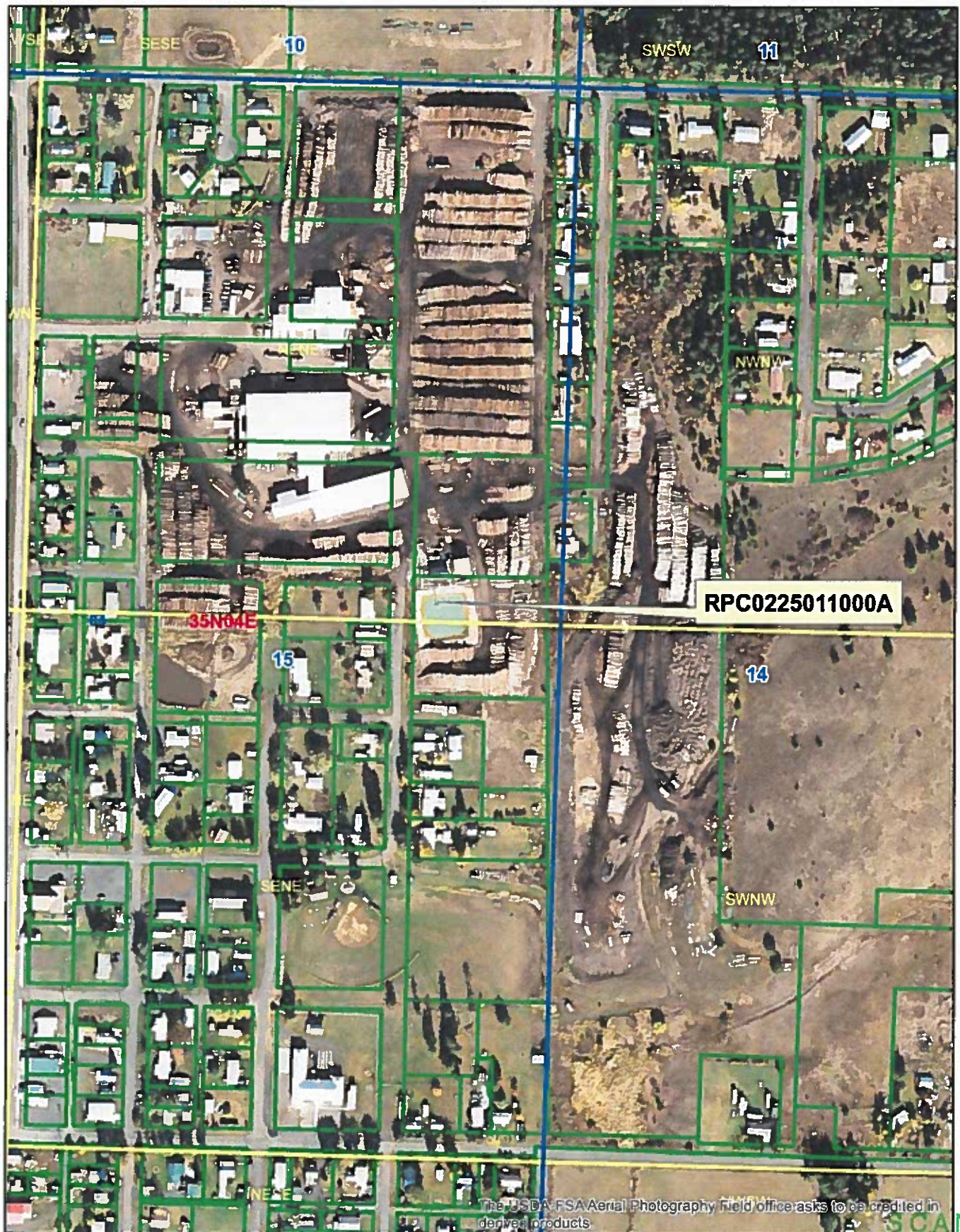


Place of Use - Fire Protection Storage

84-12279

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2013 IMAGE
84-12279 EMPIRE LUMBER CLEARWATER PARCEL RPC0225011000A



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AUG 03 2016

NO19278

Form 238-7
8/07

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

RECEIVED

OCT 17 2003

1. WELL TAG NO. D 0054612

Drilling Permit No. 858950

Water right or injection well # 588377

2. OWNER

Name Empire Lumber Company

Address P.O. Box 206

City Weippe State ID Zip 83553

3. WELL LOCATION:

Twp. 32 North ☒ or South ☐ Rge. 4 East ☒ or West ☐

Sec. 14 1/4 NE 1/4 NE 1/4

Gov't Lot _____ County Clearwater

Lat. _____ (Deg. and Decimal minutes)

Long. _____ (Deg. and Decimal minutes)

Address of Well Site 206 6th Ave. E

City Weippe

Lot. 8 Blk. _____ Sub. Name Brown's 3rd Addition

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation ☐ Thermal ☐ Injection

☒ Other Fire Protection

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

☒ New Well ☐ Replacement well ☐ Modify existing well

☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES

Seal material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method/procedure
Port. Cement	0	480	10 cu. yds	tremie

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
16"	0	31		Steel	☒	☐	☐	☒
12"	+3	282		Steel	☒	☐	☐	☒
10"	275	480		Steel	☒	☐	☐	☒

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) N/A

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method N/A

Manufactured screen ☐ Y ☒ N Type N/A

Method of installation N/A

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule

Length of Headpipe N/A Length of Tailpipe N/A

Packer ☐ Y ☒ N Type N/A

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) N/A

Describe control device N/A

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 117 Static water level (ft) 318

Water temp. (°F) _____ Bottom hole temp. (°F) _____

Describe access port _____

Well test:	Test method:
Drawdown (feet)	Discharge or yield (gpm)
Test duration (minutes)	Pump
	☐
	☐
	☐
	☐

Water Quality test or comments: Good

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water Y	N
19	0	2	Crushed rock		x
19	2	21	Brown clay		x
19	21	23	Broken basalt		x
19	23	31	Basalt, med, black		x
15	31	53	Basalt, med, black		x
15	53	62	Broken basalt		x
15	62	95	Basalt, med, black		x
15	95	97	Broken basalt & wood		x
15	97	117	Clay, blue & tan		x
15	117	122	White sand - H2O approx. 20 GPM	x	
15	122	126	Basalt, soft, black		x
15	126	210	Basalt, hard, black		x
15	210	273	Sandstone interbed		x
15	273	282	Basalt, med, black		x
12	282	288	Basalt, med, black		x
12	288	338	Basalt, hard, black		x
12	338	354	Vascular basalt	x	
12	354	378	Basalt, med, black		x
12	378	480	Basalt, hard, black		x
10	480	558	Basalt, hard, black		x
10	558	605	Claystone blue - H2O approx. 150 GPM	x	
10	605	642	Cemented gravel		x
10	642	728	Basalt, med, black		x
10	728	736	Basalt, hard gray		x
10	736	744	Interbed w/sand - H2O approx. 400 GPM	x	
10	744	748	Brown clay		x
10	748	753	Broken basalt		x
10	753	851	Claystone brown		x
10	851	855	Granite, med, S & P		x

Completed Depth (Measurable) 855'

Date: Started 8-01-08 Completed 8-01-08

14. DRILLER'S CERTIFICATION

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

Company Name Intermountain Drilling Co. No. 513

*Principal Driller [Signature] Date 10-7-08

*Driller _____ Date _____

*Operator II [Signature] Date 10-10-08

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

RECEIVED

SEP 03 2013

IDWR / NORTH

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
STATEMENT OF COMPLETION
FOR SUBMITTING PROOF OF BENEFICIAL USE

FOR OFFICE USE ONLY

Amt. of Fee \$ 50.00
Receipt No. N030104
Receipt By: CB
Date Received 9/3/13

The Idaho Department of Water Resources considers this form a statement by the permit holder(s) that development of a water right has been completed and that water has been applied to beneficial use to the extent described below. This form must be accompanied by an examination fee, when necessary, or by a completed Beneficial Use Field Report prepared by a certified water right examiner. Please refer to the instructions and fee schedule for this form. If ownership of the permit has changed, please contact any Department office or visit the Department's website at: www.idwr.idaho.gov for an Assignment of Permit form. If you wish to relinquish your permit because you have not established the authorized use of the water and are not applying for an extension, please notify the Department in writing.

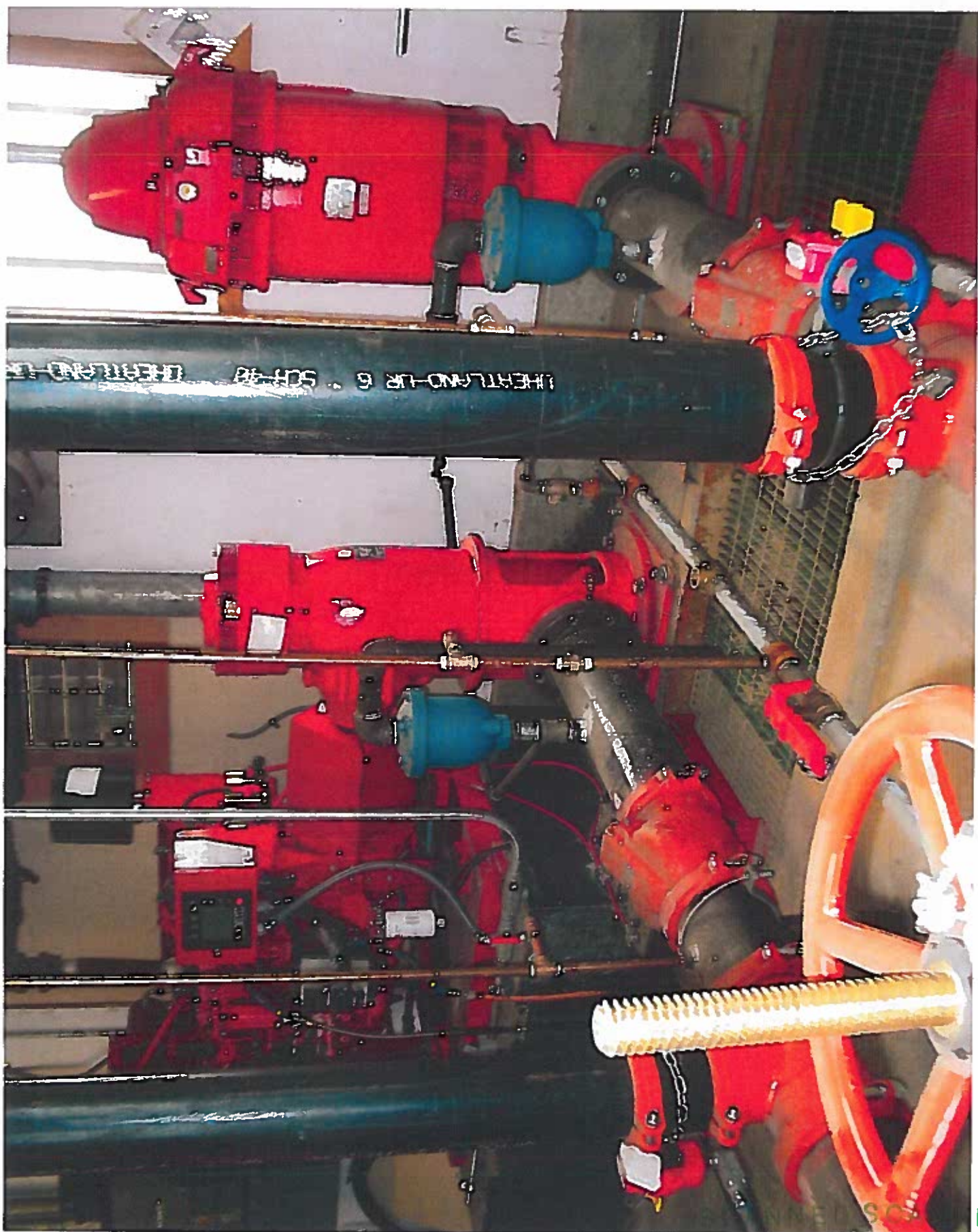
- Permit No.: 84-12279 Telephone No.: 208-935-0036
- Name of Permit Holder(s): Empire Lumber Company
- Mailing Address: P.O. Box 206 City: WEIPPE
State: IO Zip: 83553 Email: randy@empirelumber.com
- Source of Water: Groundwater If GROUND WATER (well), Date Drilled: mo. JUNE / yr. 2008
Well Driller: Intermountain Drilling Drilling Permit Number: 858952
- Extent of use(s) completed (as authorized by the water right permit):
Domestic (No. of households): _____ Stockwater (No. and type of stock): _____
Irrigation (No. of acres): _____ Other: FIRE PROTECTION from STORAGE
- Total rate of diversion or storage volume for which proof is submitted: _____ cfs OR 4.6 acre-feet.
- Compliance with a measuring device requirement, lockable controlling device requirement, and/or other conditions of permit: Refer to the approval conditions on your permit and respond accordingly. The Department will not issue a license if permit conditions are not met.
Measuring Device: Is a measuring device required? Yes ☐ No ☒
If yes, has the measuring device been installed? Yes ☐ No ☐
Lockable Controlling Device: Is a lockable device required to control the diversion? Yes ☐ No ☒
If yes, has the lockable device been installed? Yes ☐ No ☐
Other Conditions of Permit: Do the approval conditions on your permit require you to submit additional information in connection with your proof of beneficial use? If yes, list the conditions below and attach documents with the required information.

Completed? Yes ☐ No ☒
- Fee Enclosed: \$ 50 See fee schedule on back of the instructions for filing proof of beneficial use. Proofs filed without an appropriate fee, will be considered incomplete.
- Person to contact to accompany the Department representative during field examination of the water system.
Name: Randy Eiler Telephone Number: 208-935-0036
Mailing Address: P.O. Box 206 City: WEIPPE
State: IO Zip: 83553 Email: randy@empirelumber.com

The information given on this form is my true statement of the extent to which the above numbered permit has been developed and water has been diverted and applied to a beneficial use. I understand that any undeveloped portion of the permit is relinquished to the State of Idaho.

Signature of permit holder: Randy Eiler RESOURCE MANAGER Date: 8-22-13
(Include your title, if on behalf of company or organization)

Mail to: Idaho Department of Water Resources, PO Box 83720, Boise, ID 83720-0098



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POND ANALYSIS SHEET
84-12279

POND SIZE: 0.32 AC X 4.8 FT = 1.53 AF

SURFACE AREA: 13,939.2 SQFT

EVAPORATION: 869 GPD X 365 DAYS / 325,850 GAL/AF = 1.0 AF

SEEPAGE: 1876 GPD X 365 / 325,850 GAL/AF = 2.1 AF

0.2 CFS DIVERSION TO STORAGE

4.6 AF	FIRE PROTECTION STORAGE	A.) POND SIZE	1.53 AF
		B.) EVAPORATION	1.0 AF
		C.) SEEPAGE	2.1 AF
		TOTAL	4.6 AF

4.6 AF FIRE PROTECTION FROM STORAGE

0.2 CFS TOTAL DIVERSION

4.6 AF TOTAL STORAGE VOLUME

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AUG 03 2016