

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
IN-OFFICE REVIEW/BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATIONPermit No: 77-14336

Exam Date: 11/5/2015

1. Does this qualify for an in-office field exam (IDAPA 035.02.r)? X Y N
- Irrigation of 5 acres or less
 - Storage of up to 14.6 AF for stockwater purposes only
 - Any use other than irrigation or storage, if the combined diversion rate is 0.24 cfs or less
 - Other < >

2. Current Owner: Name: US Forest Service
- Owner of Record Correct? X Y N
- Address of Record Correct? Y N
- If No: Address

PLEASE NOTE: The place of use is in the Payette National Forest

3. Beneficial Use Fees have been paid: X Y N Receipt No: C0
4. SOURCE TRIBUTARY

Ground Water

Method of Determination: GIS, Well Log, and Taxlot DataChange in Source: Y X N**B. OVERLAP REVIEW**

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
77-10702	Indian Creek	Administrative	Decree
77-13931	Spring	Administrative	Decree

Comments: Water right 77-10702 is a Federal Reserve water right from Indian Creek for the fire suppression and irrigation uses for the Upper Krassel Guard Station. Please see email dated November 3, 2015. 77-10702 is not connected into the well system. Water right 77-13931 is also a Federal Reserve water right from a spring that supplies the culinary water. Water right 77-13931 is the main culinary source of water for the Lower Krassel Guard Station, that does not have any water system connection to the Upper Krassel Guard Station. The database shows water right 77-2603 also overlaps this place of use, but it was formerly withdrawn from the Snake River Basin Adjudication, because the use was fully covered by water right 77-13931, so 77-2603 is actually no longer a valid water right.

2. Other water rights with the same point of diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis
NONE			

Comments: There are no other points of diversion in the same 40 acre tract.

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.		County
Well			NW	NE	21	19N	6E	B.M.	Valley
								B.M.	
								B.M.	

Method of Determination: GIS, map supplied with proof of beneficial use, and Well log Manually Supplied GPS Coordinates.Change in POD? X N Amendment Required? X N**2. PLACE OF USE:** Use: Irrigation

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
19N	6E	21		D	D		D			D									
		Lot #																	
Total Acres =																			

Method of Determination: GIS and map supplied with proof of beneficial use.Change in POU? X N Amendment Required? X N X Delivery System Diagram Attached (required). Indicate all major components and distances between components.

Indicate weir size/pipe as applicable.

 X Aerial Photo Attached (required for irrigation of 10+ acres). 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	Grundfos	1400 Watt Max		6-SQF-3 Solar Power	10s05

*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
NONE						

2. Measurements: No measurement is required for an in-house exam, but the permit holder supplied the model and type of pump used for this system. Please see email dated November 2, 2015. With the information supplied by the permit holder, I was able to download the pump curve and a pump manual for this style of pump.

E. FLOW CALCULATIONS X Additional Computation Sheets Attached

Measured Method:

The pump manual data supplied by the manufacturer shows that the 6-SQFlex – 3 Pump has a maximum pumping capacity of 6 gpm. The pump curve is based on the amount of power supplied by the batteries and the solar panel(s). The capacity of this pump is based on a minimum lift of 295 feet. The well log shows that the lift for this pump is 178 feet and the pump open discharges into a storage tank. I estimated the pressure against the pump to be around 10 psi to allow for open discharge so the total dynamic head for this system would be in the 200 ft range $[178 + (10 \times 2.31) = 201.1 \text{ feet}]$. Since the actual TDH is actually less than the minimum shown in the pump curve, I gave them the benefit of the doubt by rounding the cfs amount up, instead of normal rounding standards.

Pump Curve = 6 gpm / 448.8 = 0.013368984 cfs rounded up to 0.02 cfs.

Permit allowed = 0.04 cfs

I recommend that this permit be licensed for 0.02 cfs per the pump capacity for this type of solar pump.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \underline{\quad X 3.5 \quad} = \underline{\hspace{2cm}}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \underline{\quad X 214 \quad} \underline{\quad X 1.9835 \quad} = \underline{\hspace{2cm}}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \underline{\hspace{2cm}}$$

2. Volume Calculations for Other Uses:

The permit holder supplied information that shows the total water use for this facility is 0.2 af. Please see the attached volume calculation document. I recommend a volume for this permit of 0.2 af.

G. PURPOSE OF USE

Irrigation Y N # Stock Domestic # of Homes X

Other: < >

Change in Purpose of Use? Y N

Method of Determination: Taxlot data, conversations with owner, and GIS Imagery.

If Yes: From Use To Use Amount CFS AFA

H. NARRATIVE/REMARKS/COMMENTS

This permit is qualified for an in-house exam. The permit holder supplied information showing the water use for this permit in an email dated November 2, 2015. From this information and the maps supplied with the proof of beneficial use statement, I have determined the above diversion rates and volumes. There are two reserved rights used on this property, but they are not connected into the well's water system. The diversion rate and volume will be reduced to reflect what had actually been developed.

This use falls within the Wild and Scenic area. However, it is a domestic use that would comply with Idaho Code 42-111. The well can only produce 6 gpm or 8640 gallons per day (6 gpm X 24 Hrs. X 60 mins. = 8640 gallons per day), and it is an organizational camp as discussed in part A of Idaho Code 42-111. Section 3 C of the Wild and Scenic Stipulation and Joint Motion for Order Approving Stipulation and Entry of Partial Decrees, a measurement device and data logger are not required on de-minimis water rights. Therefore no condition should be needed to add a measurement device for this permit.

I am going to leave the conditions 199 and X01 on the license, but I am going to remove condition 26A as is standard.

Have conditions of permit approval been met? X Yes No

I. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
Irrigation	04/01 to 10/31	0.02 CFS	0.2 AF
	<u>Totals:</u>	0.02 CFS	0.2 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

Other: < >

J. AUTHENTICATION – Daniel A. Nelson – Staff Hydrologist

Field Examiner's Name

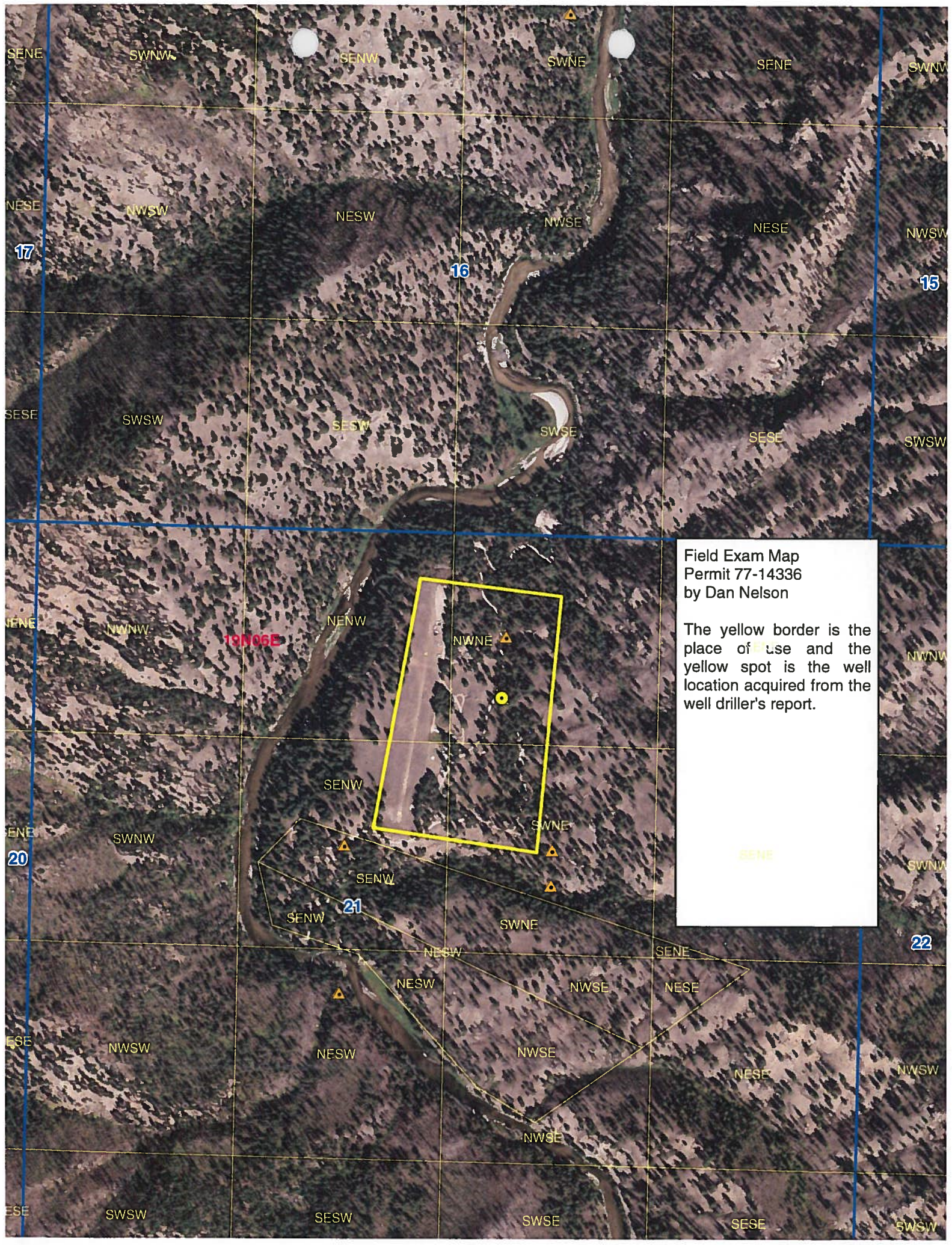


Date

11-5-15

Reviewer

Date



Field Exam Map
Permit 77-14336
by Dan Nelson

The yellow border is the
place of use and the
yellow spot is the well
location acquired from the
well driller's report.



US Forest Service map of area



Field Exam for Permit 77-14336

By Dan Nelson

Volume Calculations

The volume calculation is based on what I term as "Person Days." A person day is the number of days a person has used a water feature. For example, 3 people use a trailer for 10 days equals 30 person days. The water use for the Upper Krassel Guard Station is broken down to 4 basic areas – Trailers, Bunkhouses, Wash House, and Office. The following are my calculations from the information provided by the US Forest Service. All of the gallons per feature were attained from the Department's Field Examiner's Handbook Domestic Use Tables.

3 – Trailer Houses =

100 days occupancy X 150 gpd per person = **15,000 total gallons per year**

Wash House =

2 showers X 100 uses X 60 gallons per use = 12,000 gallons per year

1 toilet X 200 uses X 7 gallons per use = 1400 gallons per year

1 sink X 200 uses X 2 gallons per use = 400 gallons per year

Total Wash House use = 12,000 gpy + 1400 gpy + 400 gpy = **13,800 total gallons per year**

Office =

250 person days X 15 gallons per day = 3,750 gallons per year

250 washing machine loads X 50 gallons per load = 12,500 gallons per year

Total Office use = 3,750 gpy + 12,500 gpy = **16,250 total gallons per year**

Bunk Houses =

500 person days X 35 gallons per day = **17,250 total gallons per year**

Total Use =

15,000 gpy + 13,800 gpy + 16,250 gpy + 17,250 gpy = 62,300 total gallons per year

62,300 gpy / 325850 = 0.19 acre- feet per year rounded to 0.2 acre-feet

GRUNDFOS SQFLEX

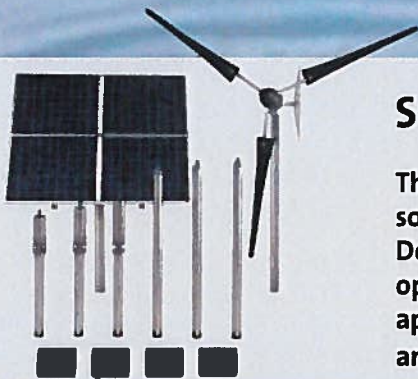
WATER, WHEREVER, WHATEVER

AN INDIVIDUAL SOLUTION TO REMOTE WATER SUPPLY



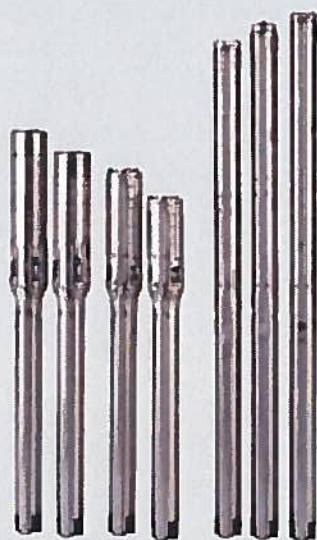
BE > THINK > INNOVATE >

GRUNDFOS 



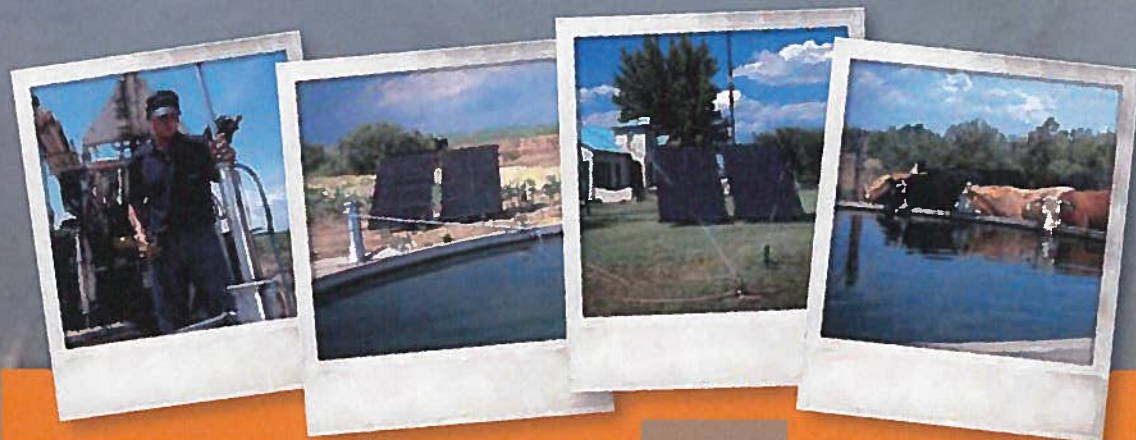
SQFlex SYSTEM

The SQFlex system from Grundfos is not just another solar pump; it's a revolution in remote water supply. Designed for maximum reliability, maintenance-free operation, and the flexibility to adapt to virtually any application, SQFlex provides water wherever necessary and whatever the local conditions.



Eleven different pump models cover a wide range of heads and flows to allow pumping at extended depths (820 ft) or at high flow rates (80 gal/min) or anywhere in between, depending on your requirements.

PUMP MODEL	PUMP TYPE	MAX HEAD	MAX FLOW
3 SQF-2	Helical Rotor	395 ft	3 gal/min
3 SQF-3	Helical Rotor	655 ft	3 gal/min
6 SQF-2	Helical Rotor	395 ft	6 gal/min
6 SQF-3	Helical Rotor	820 ft	6 gal/min
11 SQF-2	Helical Rotor	395 ft	13 gal/min
16 SQF-10	Centrifugal	230 ft	22 gal/min
25 SQF-3	Centrifugal	50 ft	40 gal/min
25 SQF-7	Centrifugal	185 ft	40 gal/min
40 SQF-3	Centrifugal	50 ft	70 gal/min
40 SQF-5	Centrifugal	100 ft	70 gal/min
60 SQF-3	Centrifugal	50 ft	80 gal/min



Whether it's used for livestock watering, a pressure system on a remote cabin, or for irrigation, the SQFlex system can be tailored to meet any requirements. Based on the location, depth to water, and the volume of water required, Grundfos' exclusive sizing program finds the best pump and most efficient energy source for your application.

The SQFlex system means:

- simple installation
- reliable water supply
- virtually no maintenance
- cost-efficient pumping – every day!

DRY-RUNNING PROTECTION

This unique feature shuts down the pump if it detects water shortage. Every SQFlex pump comes standard with this sensor pre-installed, protecting the well from being over-pumped and the pump from damage.

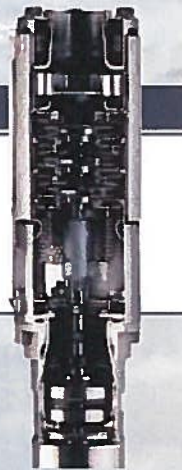


HELICAL ROTOR PUMP (3")

Designed to pump high levels very efficiently, these models allow pumping levels as deep as 820 ft. The 3 in. diameter allows the pump to go in installations where others can't.

CENTRIFUGAL PUMP (4")

Based on Grundfos' 40 years of experience in submersible pumps, these models are capable of providing high flows, up to 80 gal/min, at moderate heads.



MATERIALS

All Stainless steel for long pump life.

MOTOR

Only one motor size covers the entire pump range. Designed for peak efficiency and complete reliability, the motor features integrated electronics, eliminating the need for complicated external controls.

MOTOR PROTECTION

Built in protections against over-temperature, overload, and over and under-voltage for reliability, as well as two-way communication with a control box to alert you in case there's a problem.

ANY VOLTAGE

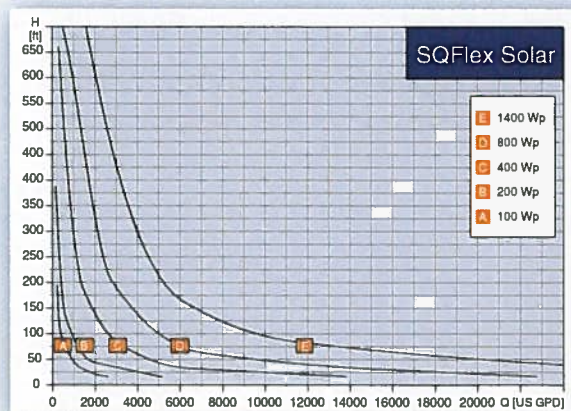
The motor can operate under any voltage from 30 - 300 VDC and 90 - 240 VAC without additional controls, making sizing and installation easy, even as a retrofit to existing installations. AC power capabilities mean every SQFlex pump has the ability to use an AC generator for backup power.





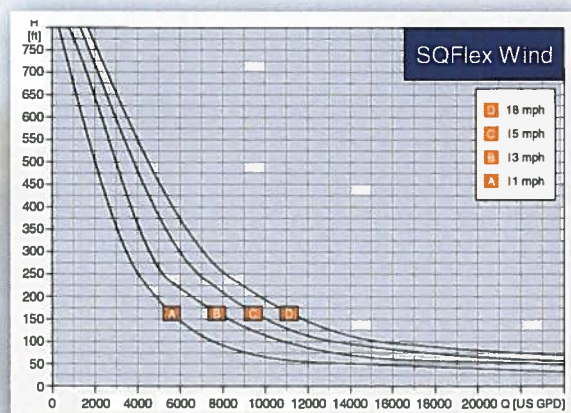
SQFlex Solar

Ideal for most pumping systems, SQFlex Solar provides a reliable supply of water whenever the sun shines. Extremely simple to operate with no moving parts and no maintenance - just clean the panels periodically.



SQFlex Wind

Very cost effective in locations with consistent winds, SQFlex Wind has the ability to pump day and night. The wind turbine design calls for no regular maintenance and provides reliable energy in wind speeds above 7 mph.



SQFlex Combo

Combine wind and solar to get the best of both worlds; you get higher output from the sun in summer and from the wind in winter, giving more consistent water production all year round. Plus, there are very few days when the system can't pump. SQFlex draws power from both sources simultaneously, so there's no switching required and you get maximum production on days that are sunny and windy.



SQFlex Back-Up

If the sun or wind ever fall short, every SQFlex pump has the ability to use a generator for backup power. Built-in electronics switch between AC and DC power automatically, so there are no special control boxes required or settings to change.

I-SQ-SL-010 Rev. 10/09 (US)

Grundfos Pumps Corporation
17100 W. 118th Terrace
Olathe, Kansas 66061
Telephone: (913) 227-3400
Fax: (913) 227-3500

Grundfos Canada, Inc.
2941 Brighton Rd.
Oakville, Ontario L6H 6C9
Telephone: (905) 829-9533
Fax: (905) 829-9512

Bombas Grundfos de Mexico, S.A. de C.V.
Boulevard TLC #15,
Parque Industrial Stiva Aeropuerto
C.P. 66600 Apodaca, N.L. Mexico
Telephone: 011-52-81-8144-4000
Fax: 011-52-81-8144-4010



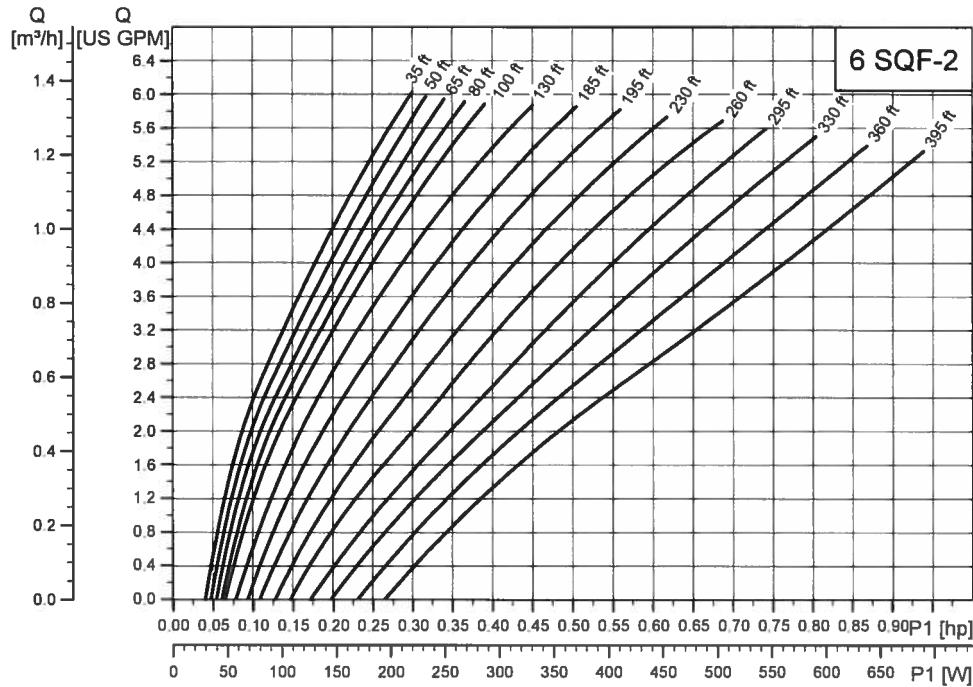
Mixed Sources

Product group from well-managed
forests, controlled sources and
recycled wood or fibre
www.fsc.org Cert no. SGS-COC-003624
© 1996 Forest Stewardship Council

www.grundfos.com

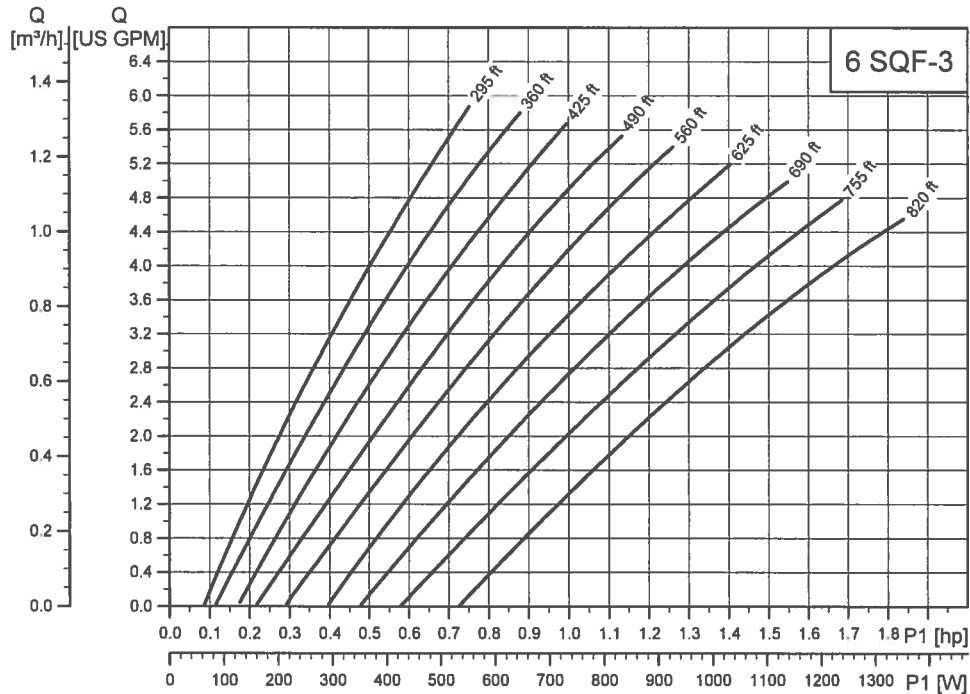
GRUNDFOS

6 SQF-2



TM02 2427 4311

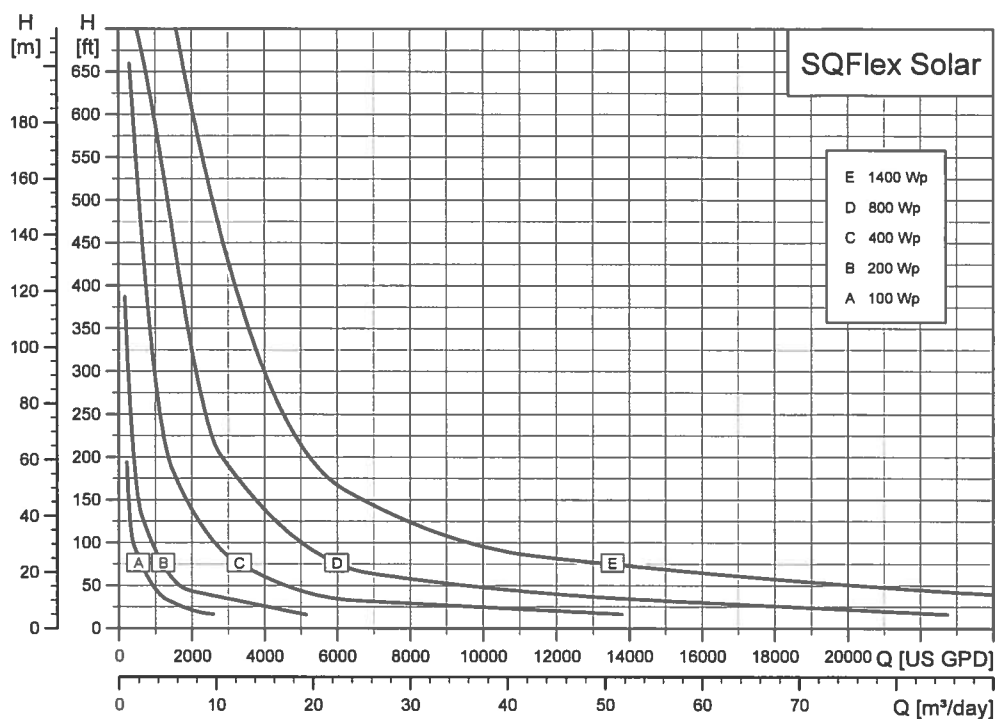
6 SQF-3



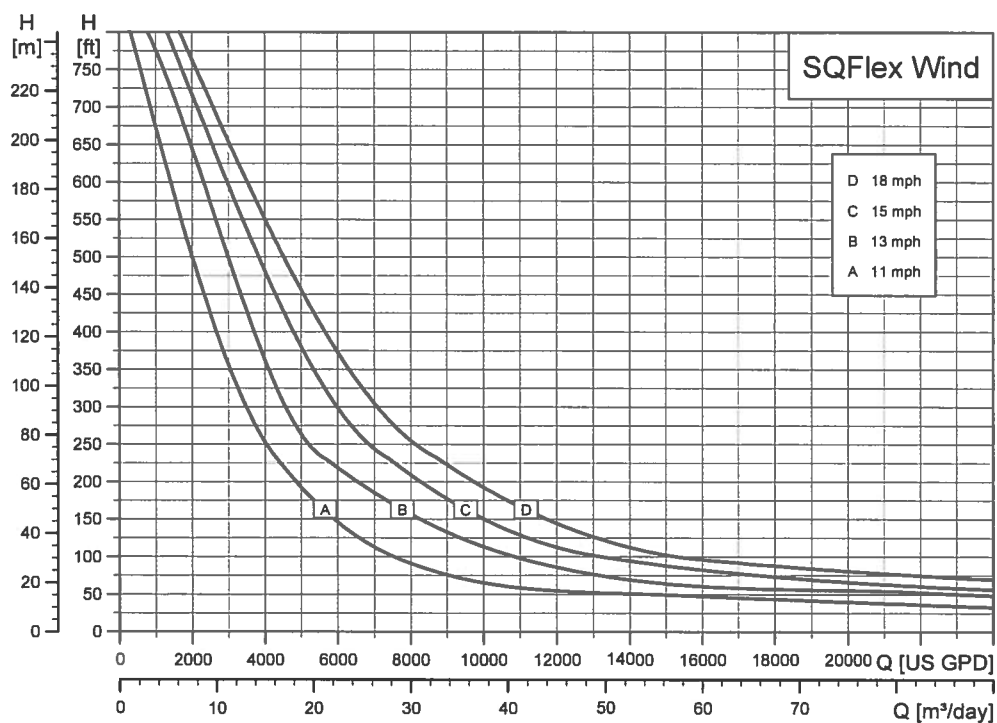
TM02 4648 4711

Note: Max. P1 (W) shown on curve represents max. motor RPM.

Performance range



TM02 2433 4311



TM02 2434 4311

Note: The curves must not be used as guarantee curves.

SQF pump

Power supply to pump	30-300 VDC, PE. 1 x 90-240 V -10 % / +6 %, 50/60 Hz, PE.
Run-up time	Depends on the energy source.
Start/stop	No limitation to the number of starts/stops per hour.
Enclosure class	IP 68.
Motor protection	Built into the pump. Protection against • dry running by means of a water level electrode • overvoltage and undervoltage • overload • overtemperature.
Conductivity	≥ 70 µs/cm (micro siemens).
Sound pressure level	The sound pressure level of the pump is lower than the limiting values stated in the EC Machinery Directive.
Radio noise	The SQF complies with the EMC Directive 89/336/EEC. Approved according to the standards EN 61000-6-2 and EN 61000-6-3.
Reset function	The SQF can be reset via the CU 200 or by disconnecting the power supply for 1 minute.
Power factor	PF = 1.
Operation via generator	Voltage: 115-230 VAC -10 % / +6 %. The generator output must be • minimum 1000 W (helical rotor pumps) • minimum 1500 W (centrifugal pumps).
Earth-leakage circuit breaker	If the pump is connected to an electric installation where an earth-leakage circuit breaker (ELCB) is used as an additional protection, this circuit breaker must trip out when earth fault currents with DC content (pulsating DC) occur.
Borehole diameter	3 SQF, 6 SQF, 11 SQF: Minimum: 3 in. 16 SQF, 25 SQF, 40 SQF, 60 SQF: Minimum: 4 in.
Installation depth	Minimum: The pump must be completely submerged in the pumped liquid. Maximum: 500 ft below the static water table (220 psi).
Suction strainer	Holes of the suction strainer: 3 SQF, 6 SQF, 11 SQF: ø0.090 in. 16 SQF, 25 SQF: ø0.10 in. 40 SQF, 60 SQF: 0.16 in x 0.80 in.
Pumped liquids	pH 5 to 9. Sand content up to 50 ppm.
Marking	CE.

Motor

Electrical data

30-300 VDC or 1 x 90-240 VAC, 50/60 Hz

Pump type	Motor type	Max. power input P ₁ [W]	Max. current [A]
3 SQF-2	MSF 3	1400	8.4
3 SQF-3	MSF 3	1400	8.4
6 SQF-2	MSF 3	1400	8.4
6 SQF-3	MSF 3	1400	8.4
11 SQF-2	MSF 3	1400	8.4
16 SQF-10	MSF 3	1400	8.4
25 SQF-3	MSF 3	1400	8.4
25 SQF-7	MSF 3	1400	8.4
40 SQF-3	MSF 3	1400	8.4
40 SQF-5	MSF 3	1400	8.4
60 SQF-3	MSF 3	1400	8.4

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IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

858931

1. WELL TAG NO. D 0055929Drilling Permit No. 910297-858931Water right or injection well # 2. OWNER: USDA Forest ServiceName PAYETTE NATIONAL FORESTAddress 800 W. LAKE SIDE AVECity MCCALL State ID. Zip 83638

3. WELL LOCATION:

Twp. 19 North ☒ or South ☐ Rge. 6 East ☒ or West ☐Sec. 21 SW 1/4 NW 1/4 NE 1/4Gov't Lot County VALLEYLat. 44 ° 58.470 (Deg. and Decimal minutes)Long. 115 ° 43.659 (Deg. and Decimal minutes)Address of Well Site SOUTH FORK OF SALMON RIVER RD AT THEKRUSSEL AIRSTRIP & WORK CENTER City MCCALL

(Give at least name of road - distance to Road or Landmark)

Lot. Blk. Sub. Name NF1674 Between KrusselCRUISE C.G. Salmon Point C.G.☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation ☐ Thermal ☐ Injection☐ Other

5. TYPE OF WORK:

☒ 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

Bentonite chips 0 7 1/2 600 lbs. PouredCement grout 7 1/2 135 6,072 lbs Pumped, bottom up

8. CASING/LINER:

Diameter (nominal) From (ft) To (ft) Gauge/Schedule Material Casing Liner Threaded Welded

8 +1 1/2 135 .322 STEEL ☒ ☐ ☐ ☒6 -8 188 SDR 17 PVC ☐ ☒ ☐ SPlice☐ ☐ ☐ ☐☐ ☐ ☐ ☐Was drive shoe used? ☐ Y ☒ N Shoe Depth(s)

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method Manufactured screen ☒ Y ☐ N Type Sawed PVCMethod of installation Set in place

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

188 248 .025 6 PVC SDR 17☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐Length of Headpipe Length of Tailpipe Packer ☐ Y ☒ N Type

10. FILTER PACK:

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

8-12 colorado 148 248 1,000 PouredSAND ☐ ☐ ☐ ☐☐ ☐ ☐ ☐

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) Describe control device

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 164 Static water level (ft) 70Water temp. (°F) 53 Bottom hole temp. (°F) Describe access port SANITARY well SEAL

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesian
<u>178</u>	<u>30</u>	<u>120</u>	☒	☐	☒	☐
<u>50.86</u>	<u>20</u>	<u>260</u>				

Test method:

Water quality test or comments: OPML IRON, good, clear

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
<u>13 1/2</u>	<u>0</u>	<u>11</u>	<u>BROWN SANDY CLAY w/ GRAVEL</u>		☒
<u>13 1/2</u>	<u>11</u>	<u>13</u>	<u>BROWN cemented SAND</u>		☒
<u>13 1/2</u>	<u>13</u>	<u>53</u>	<u>BROWN cemented SAND + GRAVEL</u>		☒
<u>12</u>	<u>53</u>	<u>59</u>	<u>BROWN cemented SAND + GRAVEL</u>		☒
<u>12</u>	<u>59</u>	<u>75</u>	<u>SOFT BROWN Decomposed GRANITE</u>		☒
<u>12</u>	<u>75</u>	<u>128</u>	<u>SOFT GRAY Decomposed GRANITE</u>		☒
<u>12</u>	<u>128</u>	<u>135</u>	<u>med. HARD GRAY GRANITE</u>		☒
<u>8</u>	<u>135</u>	<u>163</u>	<u>med. HARD GRAY GRANITE</u>		☒
<u>8</u>	<u>163</u>	<u>164</u>	<u>FRACTURED GRAY GRANITE</u>	<u>1/4 gpm</u>	
<u>8</u>	<u>164</u>	<u>167</u>	<u>med. HARD GRAY GRANITE</u>		☒
<u>8</u>	<u>167</u>	<u>186</u>	<u>HARD GRAY GRANITE</u>		☒
<u>8</u>	<u>186</u>	<u>191</u>	<u>med. HARD greenish GRAY GRANITE</u>	<u>1 gpm</u>	
<u>8</u>	<u>191</u>	<u>204</u>	<u>HARD greenish GRAY GRANITE</u>		☒
<u>8</u>	<u>204</u>	<u>209</u>	<u>med. HARD GRAY GRANITE</u>	<u>1 1/2 gpm</u>	
<u>8</u>	<u>209</u>	<u>225</u>	<u>HARD greenish GRAY GRANITE</u>		☒
<u>8</u>	<u>225</u>	<u>230</u>	<u>med. HARD BROWN GRANITE</u>		☒
<u>8</u>	<u>230</u>	<u>232</u>	<u>HARD GRAY GRANITE</u>		☒
<u>8</u>	<u>232</u>	<u>240</u>	<u>BROWN + GRAY FRACT. GRANITE</u>	<u>30 gpm</u>	
<u>8</u>	<u>240</u>	<u>248</u>	<u>HARD GRAY GRANITE</u>		☒

RECEIVED

JUN 16 2010

WATER RESOURCES
WESTERN REGIONCompleted Depth (Measurable): 248'Date Started: 5-12-10 Date Completed: 6-2-10

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 GASTIN Well Drilling, Inc. Co. No. 408*Principal Driller Rafael L. Gastin Date 6-3-10*Driller Date *Operator II Date Operator I Date

* Signature of Principal Driller and rig operator are required.

Nelson, Dan

From: Becker, Holly -FS [hbecker@fs.fed.us]
Sent: Tuesday, November 03, 2015 8:53 AM
To: Nelson, Dan
Cc: Spencer, Steven M -FS; Kennell, David -FS; Kimball, Stephen - FS; Bates, Tom -FS; Behm, Forrest F -FS; Ruhkala, Elizabeth F -FS; Thompson, Samuel P -FS
Subject: RE: Krassel Work Center

Dan, these are all separate systems, No cross over. Upper Krassel Well is a separate system. Lower Krassel water supply which is from the Spring (77-13931) is also it's own system. As is the Fire suppression system. A lot of pipe huh?? Thank you, let me know if I can be of more help. Take care, Holly

From: Nelson, Dan [<mailto:Dan.Nelson@idwr.idaho.gov>]
Sent: Tuesday, November 03, 2015 7:36 AM
To: Becker, Holly -FS
Cc: Spencer, Steven M -FS; Kennell, David -FS; Kimball, Stephen - FS; Bates, Tom -FS; Behm, Forrest F -FS; Ruhkala, Elizabeth F -FS; Thompson, Samuel P -FS
Subject: RE: Krassel Work Center

Holly,

This is great information. Thank you very much. This is awesome. I will start work on it and let you know what I come up with hopefully by the end of this week.

You mentioned water right 77-10702 from Indian Creek supplies the irrigation water and the fire protection system. Is it connected into the culinary/washing system at all? I also need to know if Upper Krassel Guard Station is connected into the Lower Krassel Guard Station. They appear to be separate, but I want to make sure they don't share this well.

Thank you again for all of your hard work I really appreciate it.

Daniel Nelson
Staff Hydrologist
Idaho Department of Water Resources
Telephone (208) 287-4856
Fax (208) 287-6700 (attn: Dan Nelson)

From: Becker, Holly -FS [<mailto:hbecker@fs.fed.us>]
Sent: Monday, November 02, 2015 4:40 PM
To: Nelson, Dan
Cc: Spencer, Steven M -FS; Kennell, David -FS; Kimball, Stephen - FS; Bates, Tom -FS; Behm, Forrest F -FS; Becker, Holly -FS; Ruhkala, Elizabeth F -FS; Thompson, Samuel P -FS
Subject: RE: Krassel Work Center

Question 1.) There are 9 hook ups available, the number used however varies a bit from year to year. Two trailer hook ups are there all the time (site 3, 44.9729 E, 115.7272 N, and site 7, 44.9728 E 115.7268) with seasonal use from May through September, one trailer site was occupied this year by the work center host and occupied site 15. Estimated use would be 100 person days total for these 3 sites all together. Each of the sites does have water capability. Full use of all of these is doubtful.

Question 2.) The wash house (site 5, 44.9726 E 115.7267 N) has 2 shower stalls and a toilet and sink. Seasonal use (May through September at the most) would be 2 showers a day, estimating 100 uses over the entire season when used.

Question 3.) Office / Training Room (site 18, 44.9728 E 115.7289 N) has a bathroom with sink. It also houses 2 washers. Estimated use is 250 person days, (5 people at 50 days use over the season)

Question 4.) The bunk houses all have a single bathroom and shower. (buildings 1- 44.9724 E 115.7269N, 2- 44.9722 E 115.7283 N, 5- 44.9724E 115.7288 N, 8- 44.9724 E 115.7285 N, and 10- 44.9724E 115.7285 N). The total use over the season is estimated to be 500 person days. Capacity of each bunk house is 3 people each, except bunkhouse 5 which is 2 people. They are not occupied fully on a daily basis. Some occupied very little and some more so. The fire crew based out of Krassel has 5 people and is there more regularly. They may be dispatched out of the work center on fires. The trail crew based there, (crew of 5) occupies the bunkhouses roughly 8-10 days a month. Helitack and other seasonal workforce utilize the facilities when work projects deem it more feasible to stay at Krassel Work Center.

Question 5.) Irrigation watering, not greater than ½ acre in size, and comes off of the fire protection water system 77-10702.

Question 6.) So all total use adding up the Trailer pads, Office/ Training room, and cabins would be estimated at 950 person days use May through September.

Question 7.) The well is 248 feet in depth, with an 8 inch steel casing above ground and to 135 feet, and a 6 inch PVC liner to 188 feet. Pump is a Grundfos 6-SQF -3 DC solar powered pump. The water from Upper Krassel Well is in need of a filter system, and is not currently used for drinking water, but washing, and showering only. Drinking water is hauled from Lower Krassel Spring system, 77-13931. Upper Krassel work center is a fairly remote site, and water system use is seasonal only.

Let me know if I have answered your questions adequately, or if you need further information. Thank you so much, Holly Becker



**Holly B Becker, Water Rights
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Caring for the land and serving people

Hello Ms. Becker and Steve;

I have been asked to review permit 77-14336 for licensing. Thank you for submitting the pictures and the system diagram with your proof of beneficial use form. This allows us to move forward with a desktop filed examination. In other words, it doesn't appear as though we will need to go out to the site to do an onsite field inspection. Typically, we automatically give a 0.6 acre-feet volume to these types of filings, however, from the diagram you sent, 0.6 af of water may not be enough water for your needs. If you are willing to answer a few questions for me, I would be happy to run the numbers to see if we can get more volume for you. The questions that I have are the following:

- 1.) The diagram shows 9 trailers in the system. Are all of the trailers hooked up to the system? If so, how many days are they occupied and by how many people?

- 2.) The diagram shows a Wash House. What does this wash house supply? If it has showers and washing machines, do you have any estimates to the amount of use they get (10 washes per day for 100 days, or 60 showers a day for 200 days).
- 3.) Does the office have any water use such as toilets and/or sinks? If so, how many people use the office for how many days.
- 4.) Do any of the bunk house have any water uses (Bathrooms, sinks, showers). If so, how many people use the bunk houses for how many days.
- 5.) From aerial photos, it looks as though you may irrigate around 0.4 acres of ground around the office/warehouse. You are allowed up to a ½ acre of irrigation under this permit, so I want to confirm that you are irrigating that small space.
- 6.) Approximately how many people and the number of days for each person do you have at this facility. (For Example, we have 10 people 365 days a year, and 50 people 200 days a year) All we need is a reasonable estimate.
- 7.) This one is optional if you happen to have the information. I would appreciate it if you could tell us the size of the well used in the facility.

If you could send me the following information, I think I could allow this facility to be licensed for more water than the standard of 0.6 af per year. For instance, if you are irrigating that 0.4 acres, then I can raise the amount used to 1.2 af instead of the 0.6 standard. We generally allow up to 30 days to supply additional information, but I will be able to restart processing the license for this permit as soon as I receive the information. Therefore, if you could supply this information to me as soon as possible I will do my best to complete the licensing process as quickly as possible. If I do not receive anything from you by November 9, 2015, I will continue to move forward with the licensing process and recommend that it be limited to the 0.6 af.

If you have any questions, please don't hesitate to contact me.

Thank you.

Daniel Nelson
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Idaho Department of Water Resources
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