

MEMORANDUM

TO: Files 95-11037 and 95-11136

FROM: Daniel Nelson – Staff Hydrologist

DATE: October 1, 2014

SUBJECT: Field Exam Requirements.

There are two properties that are right next to one another in the NWNE quarter of Section 27, Township 52 North, Range 4 West. One of the properties is owned by W. Jeanie Peery, and the other is owned by Deanna and Stephen Hughes. Both properties have two water rights attached to each of the properties. These water rights are as follows:

Peery:

Permit -	95-11037 -	for 0.15 cfs for irrigation of 5 acres and 0.02 cfs for stockwater for a total diversion rate of 0.15 cfs.
Recommendation -	95-13413 -	for 0.04 cfs for domestic and 0.02 cfs stockwater for a total diversion rate of 0.06 cfs.

Hughes:

Permit -	95-11136 -	for 0.15 cfs for irrigation of 5 acres and 0.02 cfs for stockwater for a total diversion rate of 0.15 cfs.
Recommendation -	⁻¹³⁴⁷⁸ 95- ~~11136~~ -	for 0.04 cfs for domestic

CS 03-11-2016

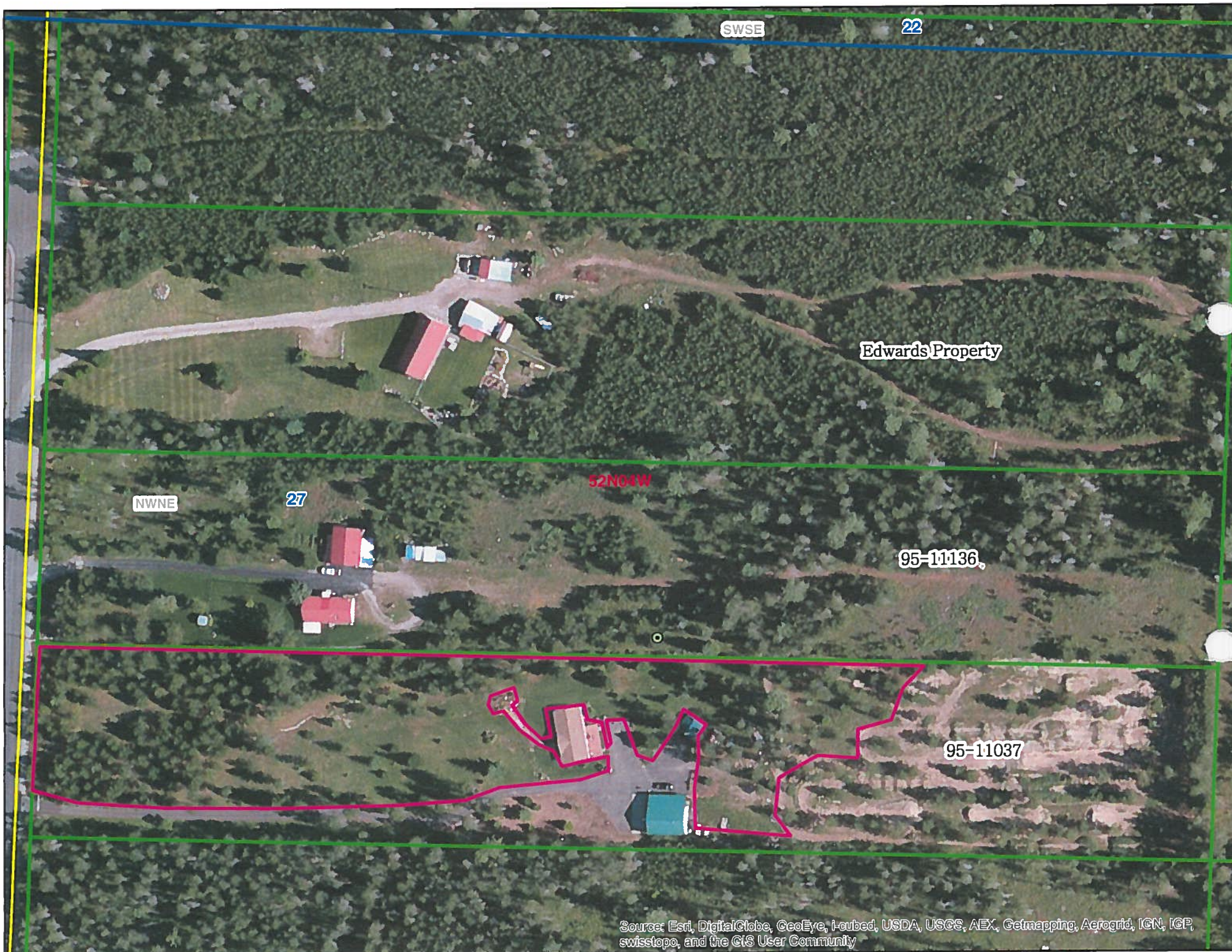
When all of these rights are added together the total combined diversion rate would be 0.40 cfs.

The water right files suggest that all of these water rights are diverted from the same well. This well was drilled under well drilling permit 96-N-018-000. The well log for this permit shows a static water level of 265 feet, with water first being encountered at 285 feet. Using this data, and the 5 Hp pump that the water right permits say is used in the well, the estimated capacity of this well is 0.08 cfs. If there is only one well with a 5 Hp pump, then the well cannot provide the 0.40 cfs needed for these four water rights, and combined conditions would be needed.

Another issue is that these two properties seem to be on the same water distribution system. Each water right permit could be done as an in-house permit if they were separate systems, however, if there is actually one system, the combination of the two water rights would require an on sight field exam be performed according to the beneficial use rules. Since there is confusion on whether or not this is two separate systems or one system, it is in the best interest of the Department to perform an on sight field exam for these two water rights.

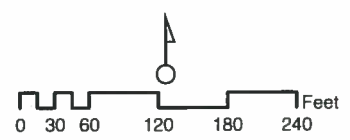
With the confusion over the capacity of the well and the possible number of systems supplying these water rights, a field exam needs to be done. Proof of Beneficial use for permit 95-11136 has not been submitted yet, so permit 95-11037 should be placed on hold until proof is received for 95-11136 so both permits can be licensed at the same time. Once proof of beneficial use has been received, a field exam can be done to determine what is actually happening at this location.

Maps, theoretical calculations, well log, and a place of use report has been attached to this memo for your consideration.



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

95-11037



D. Favreau 09/26/14

NENW

27

S2N04W

NWNE

NENE

SENW

Based on imagery ~3 Ac 1m

SWNE

SENE

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 95-11037
 Reviewer: D. Favreau
 Date of Review: 9/26/2014

P/D No.:	Senerio 1	Senerio 2	Senerio 3
PUMP HORSEPOWER	5	5	5
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	275	275	275
DISCHARGE PRESSURE	40	50	60
RATE OF FLOW (cfs)	0.08 38	0.08 35	0.07 33
			0.08 35.48

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:

The horsepower was supplied by the owner on permit app. The pressure was estimated by using the standard for pressure tank turn on and shut off of 40 to 60 psi. The lift was estimated using the well log static - 265 + 10.

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 95-11037
 Reviewer: D. Favreau
 Date of Review: 9/26/2014

P/D No.:	Senerio 1	Senerio 2	Senerio 3
PUMP HORSEPOWER	5	5	5
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	295	295	295
DISCHARGE PRESSURE	40	50	60
RATE OF FLOW (cfs)	0.08 36	0.08 34	0.07 32
			0.08 33.74

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:

The horsepower was supplied by the owner on permit app. The pressure was estimated by using the standard for pressure tank turn on and shut off of 40 to 60 psi. The lift was estimated using the well log - water between 285 and 299 - well placed at least 10 ft below high water.

Office Use Only
 Inspected by _____
 Twp _____ Rge _____ Sec _____
 _____ 1/4 _____ 1/4 _____ 1/4
 Lat: : : Long: : :

(Sign Once if Firm Official and Operator)

[illegible]

[illegible]

Adjudication Recommendation	95-13764		MYERS, SCOTT A	GROUND WATER	POD					X							0
Adjudication Recommendation	95-13764		MYERS, SCOTT A	GROUND WATER	POU					X							0
Water Right	95-7006	N	WILKINSON, RALPH N	GROUND WATER	POD							X					0
Water Right	95-7006	N	WILKINSON, RALPH N	GROUND WATER	POU	X		X	X		X	X	X	X		X	0
Adjudication Recommendation	95-7006		PANHANDLE VILLAGE WATER SYSTEM	GROUND WATER	POD	X						X					0
Adjudication Recommendation	95-7006		PANHANDLE VILLAGE WATER SYSTEM	GROUND WATER	POU	X		X	X		X	X	X	X		X	0
Water Right	95-7013	N	WILKINSON, RALPH N	GROUND WATER	POD	X											0
Water Right	95-7013	N	WILKINSON, RALPH N	GROUND WATER	POU	X		X	X		X	X	X	X		X	0
Adjudication Recommendation	95-7013		PANHANDLE VILLAGE WATER SYSTEM	GROUND WATER	POD	X						X					0
Adjudication Recommendation	95-7013		PANHANDLE VILLAGE WATER SYSTEM	GROUND WATER	POU	X		X	X		X	X	X	X		X	0
Water Right	95-7138	N	NORTH KOOTENAI WATER DISTRICT	GROUND WATER	POU			X	X								0
Water Right	95-7422	N	WALTON, CHARLES A	GROUND WATER	POD						X						0
Water Right	95-7422	N	WALTON, CHARLES A	GROUND WATER	POU						X						0
Adjudication Recommendation	95-7422		EVENSON, DOUG; EVENSON, LORI	GROUND WATER	POD						X						0
Adjudication Recommendation	95-7422		EVENSON, DOUG; EVENSON, LORI	GROUND WATER	POU						X						0
Water Right	95-7529	N	BURLINGAME, ROBERT L;	GROUND WATER	POD		X										0
Water Right	95-7529	N	BURLINGAME, ROSEMARY	GROUND WATER	POU		8.0										8
Water Right	95-7713	N	NORTH KOOTENAI WATER DISTRICT	GROUND WATER	POU			X	X								0
Water Right	95-7716	N	CALAPP, FLORA; CALAPP, QUENTIN L	GROUND WATER	POD							X					0
Water Right	95-7716	N	CALAPP, FLORA; CALAPP, QUENTIN L	GROUND WATER	POU							X					0
Water Right	95-7827	N	NORTH KOOTENAI WATER DISTRICT	GROUND WATER	POU			X	X								0

Water Right	95-8177	N	CALAPP, FLORA; CALAPP, QUENTIN L	GROUND WATER	POD					X		0
Water Right	95-8177	N	CALAPP, FLORA; CALAPP, QUENTIN L	GROUND WATER	POU					2.0		2
Water Right	95-8244	N	C H & S WATER SYSTEM	GROUND WATER	POD						X	0
Water Right	95-8244	N	C H & S WATER SYSTEM	GROUND WATER	POU			X			X	0
Adjudication Recommendation	95-8244		C H & S WATER SYSTEM	GROUND WATER	POD						X	0
Adjudication Recommendation	95-8244		C H & S WATER SYSTEM	GROUND WATER	POU			X			X	0
Water Right	95-8522	N	NORTH KOOTENAI WATER DISTRICT	GROUND WATER	POU		X	X				0
Water Right	95-8615	N	BORLEY, WALTER G	GROUND WATER	POD		X					0
Water Right	95-8615	N	BORLEY, WALTER G	GROUND WATER	POU		X					0
Water Right	95-8639	N	NORTH KOOTENAI WATER DISTRICT	GROUND WATER	POU			X	X			0
Water Right	95-8686	N	CHILDERS, BILL E	GROUND WATER	POD						X	0
Water Right	95-8686	N	CHILDERS, BILL E	GROUND WATER	POU						X	0
Water Permit	95-9129	N	NORTH KOOTENAI WATER DISTRICT	GROUND WATER	POU			X	X			0
Water Right	95-9199	N	NORTH KOOTENAI WATER DISTRICT	GROUND WATER	POU			X	X			0
Water Right	95-9217	N	NORTH KOOTENAI WATER DISTRICT	GROUND WATER	POU			X	X			0
Water Permit	95-9244	N	NORTH KOOTENAI WATER DISTRICT	GROUND WATER	POU			X	X			0
Water Right	95-9244	Y	NORTH KOOTENAI WATER DISTRICT	GROUND WATER	POU			X	X			0