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DEPARTMENT OF
WATER RESOURCES

Idaho Statutes To Be Used In Presentation

Idaho Code 42-1401B

Idaho Code 18-304

Idaho Code 42-607

Idaho Code 42-201

Idaho Code 42-701

Idaho Code 42-203

Witnesses To Be Called

Jim Kempton

David Bell

Don Gunderson

Leo Bell
1/6/07

**WATER BALANCE ANALYSIS FOR PROPOSED SNOWMAKING
AT THE POMERELLE SKI AREA**

Brookway Engineering 5/29/02
For 11/13/02 mitigation proposal

PROPOSED MITIGATION

- 27 gpm pumping from Bennett Springs during snowmaking period
- No spill back to creek during snowmaking (all water stored on hill)
- New earthen storage reservoir on hill, re-filled with:
 - 27 gpm pumping from Bennett Springs from 1/1 - 4/15, ending prior to spring snowmelt
 - Remainder from spring snowmelt

Snowmaking period	10/15 - 12/31
Total days in period	75
No. of days of snowmaking	55
Number of snowmaking guns	2
Output of guns	60 gpm
Operating hours / day	16 hrs/day
Volume of water required for snowmaking	19.4 acre-feet
Average daily demand of guns	115200 gpd
Average flow rate to guns	80 gpm
Average surface area of reservoir(s)	2 acres
Pond evaporation 1/1 - 12/31	38 inches (est. from N OAA data)

During snowmaking period:

	Bennet Rd	Howell Rd	
Howell Creek average flow	2.0	2.4 cfs	
Total creek volumetric discharge	297.5	357.0 acre-feet	
Pumping rate	27	27 gpm or	0.06 cfs
Volume pumped from creek for snowmaking	8.9	8.9 acre-feet	
Percent of total discharge	3.0%	2.5%	
Estimated consumptive use percentage	10.0%		
Total annual consumptive use	1.94	ac-ft	

Howell Creek average discharge volumes:

	Bennet Rd	Howell Rd
Estimated average annual surface runoff	2050	3930 ac-ft (measured)
Estimated average base flow discharge	830	1000 ac-ft (2-10 days)
Estimated average annual discharge	2880	4760 ac-ft

Water balance:

Total applied to hill 10/15 - 12/31	19.45 ac-ft
Drawn from Bennett Springs during 10/15 - 12/31	8.95 ac-ft (27 gpm for 75 days)
Drawn from reservoir during 10/15 - 12/31	10.50 ac-ft
Volume pumped from springs 1/1 - 4/15 for reservoir refill	12.41 ac-ft (27 gpm for 104 days)
Lost to reservoir evaporation	6.33 ac-ft
Spring runoff stored	4.42 ac-ft (res draw + evap - refill from springs)
Lost to consumptive use - snowmaking	1.94 ac-ft
Volume which melts and contributes to runoff	17.50 ac-ft (water stored on hill - consumptive loss)
NET EFFECT ON SPRING / SUMMER RUNOFF	13.08 ac-ft
NET EFFECT ON CREEK FROM 10/15 TO 12/31	-8.95 ac-ft
NET EFFECT ON CREEK FROM 1/1 TO 4/15	-12.41 ac-ft
TOTAL CONSUMPTIVE USE	-8.28 ac-ft

November 23, 2002

Mr. Charles G. Brockway
2016 North Washington St. Suite 4
Twin Falls, Idaho 83301

Dear Mr. Brockway,

I am in receipt of your letter of Nov. 13, regarding the USFS waster application for Pomerelle Ski Resort. I feel that clarification is needed on a number of points.

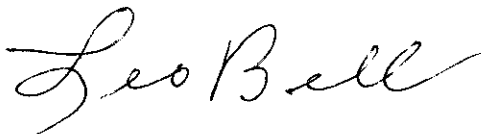
Little or no information has been provided concerning the physical and operating characteristics of the reservoir system. Where will they be constructed? Will they be constructed in a natural water course? If so, what provisions will be provided to convey water through them when run off does not meet the demand of senior down stream irrigators? If the reservoirs are not constructed in a natural water course, how will run off be collected and diverted into them? Who will be responsible for and oversee the operation of these works? What is the physical size and characteristics of the on hill storage? The USFS operating plan for Pomerelle calls for three reservoirs; two acres in size for a combined surface area of six acres. Your water balancing scenario and supporting calculations use a figure of two acres of reservoir surface. If the six acre figure is correct, the evaporation loss (using the rate provided in your calculations) would be a 18.99 ac-ft. This is more than the proposed storage capacity and demonstrates the futility of this project.

Now to the issue of mitigation. Your water balance indicates that 8.3 ac-ft of consumptive use needs to be mitigated. Actually, if the six acre reservoir size discussed above is correct, the amount of consumptive use to be mitigated is 20.93 ac-ft (evaporation loss + sublimation). Further, you used an IDWR standard of 3.0 ac-ft/acre allowance in your calculations. Actually, the three year average consumptive use for right 45-311 is 1.55 ac-ft/acre (water masters annual reports for 1999-2001). Whereas these statistics are available, they ought to be used because they more accurately represent the unique characteristics of this basin. Therefore, 20.93 ac-ft of consumptive use divided by 1.55 ac-ft/acre dictates that irrigation be abandoned on 13.5 acres. Not only does irrigated acreage need to be abandoned, but the diversion of water needs to be reduced by an amount that would actually make 20.93 ac-ft of water available to those right impacted by this action. Further, this proposal to mitigate provides **absolutely no relief** to the Howell Creek irrigators who would be injured. These irrigators all divert water from Howell Creek at least two miles up stream from the point where Howell Creek combines with Marsh Creek. In order for this consumptive use to be fairly mitigated, it must be mitigated with Howell creek water from a right senior to those that would be diminished by this proposed use.

These concerns are at the very basis of my protest and must be fairly addressed before this issue can be resolved.

Cordially,

Leo Bell
Intervener

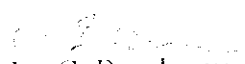


Brockway

In terms of consumption of water, the total estimated consumptive use is 10.96 acre-feet (1.94 for the snowmaking, and 9.06 evaporative). This is a substantial volume, but could be considered insignificant relative to the total basin surface water yield. Also, the analyses provided herein show that, because of location and timing, this new permit would have no effect on prior surface or groundwater rights in the Howell Creek basin.

Please do not hesitate to call if you have questions or need clarification.

Sincerely,


Charles G. Brockway

9.06 evap.
4.24

13.32 less

Brockway

It is proposed to store early-season runoff in three reservoirs for use later during the snowmaking period. The application requests 16.3 acre-feet of storage. Diversion to storage of this water would occur during the runoff period, which generally begins in mid-April. The reservoirs would fill rapidly and only during the period when the flow in Howell Creek is very high and water cannot be utilized by downstream irrigators. It is estimated that the reservoirs will take less than two weeks to fill, after which no diversion of runoff will occur. No injury to other senior water right holders on Howell Creek would occur because of this capture of spring runoff.

It should be noted that water withdrawn from Howell Creek or from the reservoirs during the snowmaking period will be stored on the hill in the form of artificial snowpack. This snow then melts and contributes to runoff the next spring. The calculations show that the runoff will be augmented by 17.5 ac-ft in this manner, which more than offsets the 16.3 ac-ft required to fill the reservoirs. Therefore, there will be no net decrease in spring/summer runoff.

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Reservoir?
Once full, evaporation will occur from the reservoir surface. My site inspections and a review of the topography indicate that an average water depth of 6.0 feet should be achievable. The water surface area will therefore be 2.72 acres. Average annual free water surface evaporation has been estimated by the Idaho State Climatologist's office. For the Pomerelle area, this value is 39.8 inches/year which yields a total annual evaporative volume of 9.02 acre-feet.

Although the reservoir evaporation is certainly a consumptive use, no injury to senior water right holders on Howell Creek will occur for the reasons outlined above. Once full, the ponds will be isolated and will simply store water on the hill until it is required for snowmaking in late October. This is very unlike the typical case of constructing a pond on a live stream, which increases the water surface area and hence raises the evaporative depletion on a continuous basis. It is also unlike a typical irrigation diversion, which causes a consumptive depletion on a continuous basis throughout the irrigation season.

Paragraph 9(b) of the Amended Moratorium Order for the Eastern Snake River Plain states that a new permit can be approved if "The Director determines that the development and use of the water pursuant to an application will have no effect on prior surface and groundwater rights because of its location, insignificant consumption of water or mitigation provided by the applicant to offset injury to other rights."

WATERMASTER'S PROPOSED BUDGET

Report # 4

Prp Date: 2/18/2003

Run Date: 2/28/2003

2003

Marsh Creek Water Distric 45-F

IDWR

Past Season Deliveries

Water Right Owner: IDWR Water Right Ident No: Diversion Name/Remarks

Water Right Owner:	IDWR	Water Right Ident No:	Diversion Name/Remarks	Past Season Deliveries					Avg/Divr. for Past Seasons:	2.12162 Estimated Billing:	cost/fac	Adjusted Billing (if Budget Approved) credit (+) debit (-)
				one 2001	two 2002	three 1998	four 1999	five 2000				
Adams, Eldon	45F-317		T12sR25Es06 MrsCrk	8.99	11.13	15.1	8.19	10.96	10.874	\$23.07		(\$13.56)
Adams, Richard	45F-317			13.06	18.18	27.43	29.76	19.25	21.536	\$45.69		(\$36.94)
Adams, Robert	45F-317			8.38	19.42	19.27	18.53	16.54	16.428	\$34.85		(\$48.17)
Adams, Todd	45F-317				2.4			0.7	1.55	\$3.29		(\$8.35)
Albion, City of	45F-307			54.07	70.55	23.07	42.53	52.56	48.556	\$103.02		(\$54.72)
Allen, Randall	45F-529B		T12sR25Es05 MrsCrk	6.2	6.2	16.17	16.7	8.5	10.754	\$22.82		(\$15.13)
Anderson, Heln/Dick	45F-275,284,285,327		T12sR25Es21 Hw/Crk	99.83	247.27	219.05	268.1	187.73	204.396	\$433.65		(\$626.54)
	45F-517		SprCrk					0	0			
Andersen, A.Woody	45F-311,312		T12sR24Es12 MrsCrk	152.24	138.8	83.64	120.93	137.01	126.524	\$268.44	15.4	
(Denaugle)	45F-317waschabove		MrsCrk	0				0	0			
called 2001	45F-294		LkClvld	0				0	0			
Anderson, Marc	45F-521		T12sR24Es13 LndCrk	4.05	4	4.38	9.1	4.05	5.116	\$10.85		(\$5.65)
Asher, Tom	45F-309		T12sR25Es06 MrsCrk	33.35	27.7	52.86	20.44	21.07	31.084	\$65.95	3.28	
Bailey, Bernice	45F-300		T12sR25Es09 Hw/Crk					0	0			
Bailey, Iona/Robert	45F-317		T12sR25Es06 MrsCrk	5.96	5.88	11.05	10.63	10.67	8.838	\$18.75		(\$9.21)
Banner, Kevin	45F-308		MrsCrk	38.17	34.88	103.46	89.55	40.42	61.296	\$130.05		(\$73.83)
Bell, Leo/David(Hagr)	45F-320,321,327		T12sR25Es04 Hw/Crk	94.06	243.4	179.52	296.37	177.48	198.166	\$420.43		(\$632.15)
	45F-526		T12sR25Es09 CowGuich	63.77	71.74	81.38	70.42	61.94	69.85	\$148.20		(\$50.94)
Brackenbury, Randy	45F-319		T12sR25Es07 Hw/Crk	13.09	149.24	111.8	110.21	80.76	93.02	\$197.35		(\$516.09)
Chatburn, Ben	45F-307		T12sR25Es06 MrsCrk	98.82	99.77	19.23	61.88	85.98	73.136	\$155.17	26.89	
Chatburn, Betheal/Jeff	45F-260,273,274,325		T12sR25Es04 Hw/Crk	67.95	225.91	270.03	205.59	209.78	195.852	\$415.52		(\$770.55)
	45F-(221-225)		T11sR25Es27/s28 Hw/cr					0	0			
	45F-532		MrsCrk					0	0			
Clark, Alan	45F-271		T11sR25Es22 WarmCrk	16.52	41.16	19.35	23.6	57.78	31.682	\$67.22		(\$100.00)
Clark, Shirley/Glenn	45F-521		T12sR24Es13 LndCrk	6.98	25.09	54.97	35.75	23.8	29.318	\$62.20		(\$90.00)
Clark, Grant	45F-521			32.36	90.56	133.1	157.81	74.42	97.65	\$207.18		(\$311.00)
Cooper, Kent	45F-284,286		T12sR25Es21 Hw/Crk	63.65	198.73	360.2	196.76	84.82	180.832	\$383.66		(\$601.44)
Crawforth, Gary	45F-256		s21/s28 Ant/Pine	30.99	113.88	61.4	39.63	78.24	64.828	\$137.54		(\$268.83)
Cunningham, Von & Viola	45F-315		T12sR24Es01 MrsCrk	41.35	36.94	21.91	33.24	53.81	37.45	\$79.45		(\$8.82)
Dayley, Norman	45F-309		T12sR25Es06 MrsCrk	44.62	43.76	60.56	59.17	29.49	47.52	\$100.82		(\$22.17)
Droz, Ina	High Water		MrsCrk		16.8		9.05	12.925	12.925	\$27.42		(\$54.99)
	45F-299		LndCrk			37.98	19	28.49	28.49	\$60.44		(\$63.70)
Fitzgerald, Harry	45F-304		T12sR25Es09 Hw/Crk	11.02	17.7	29.4	30.19	16.08	20.878	\$44.30		(\$47.76)
Geary, Tom	45F-321		T12sR25Es18 BrimCrk	1.29		13.98	13.79	10.12	9.795	\$20.78		(\$18.27)
Goodman, Helen est.	45F-277		Hw/Crk	0	29.01	5.3	4.2	9.72	9.646	\$20.47		(\$80.26)
Grigg, Mark	45F-310,2704		T12sR25Es12 LndCrk	134.77	133.93	197.7	213.58	112.16	158.428	\$336.12		(\$111.69)
Gunderson,Don	45F-260,326		T12sR24Es11/s14 MrsCr	37.35	133.48	70.65	87.89	66.88	79.25	\$168.14		(\$329.61)
	45F-276G		T12sR25Es09 Hw/Crk	23.89	47.71	129.11	105.65	69.82	75.236	\$159.62		(\$176.86)
	45F-521		T12sR25Es07 LndCrk	0	8	9.4	10.7	7.46	7.112	\$15.09		(\$30.69)

Pomerell's 1997 Master development plan with the U.S.. Forest Service calls for the development of three reservoirs with a combined capacity of 16.3 acre feet of storage. The primary source of water to fill these reservoirs was listed as surface water from melting snow.

According to records on file with the Idaho Dept. of Water Resources there are 46 court decreed water rights with priority dates at least 73 years senior to claim 45-4114 and 100 years senior to application 45-7745. These 46 rights with a combined diversion rate in excess of 607 cfs or 3,000 + inches claim the surface water from the melting snow and springs in this drainage. There is not adequate flow in this drainage to support additional diversions.

Under application 45-7745 the Forest Service proposes to store 16.3 acre feet of water. One cfs for 24 hours is approximately equal to one acre foot. If this diversion is allowed, a senior water right holder could be deprived of a flow of 50 inches for 16 days.

IN THE MATTER OF APPLICATION FOR PERMIT
NO. 45-07745

USDA- FOREST SERVICE,
Applicant

EARL L. WARTHEN, FRED HAWKER
Protestants

ANDRWOOD, INC., LEO BELL
Intervenors

Re: Documents and Proposed Exhibits

used. All information available @ www.idwr.st.us may be pertinent and may be