

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date September 9, 2013

FROM: Groundwater Section Marc Norton Reviewer's Name

SUBJECT: Application G- 17640 Supersedes review of _____ Date of Review(s)

PUBLIC INTEREST PRESUMPTION; GROUNDWATER

OAR 690-310-130 (1) *The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525.* Department staff review ground water applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. **This review is based upon available information and agency policies in place at the time of evaluation.**

A. GENERAL INFORMATION: Applicant's Name: Cunningham Sheep Company County: Umatilla

A1. Applicant(s) seek(s) 0.86 cfs from 1 well(s) in the Umatilla River Basin, Birch Creek subbasin Quad Map: Pilot Rock & Nye

A2. Proposed use Irrigation (63.5 acres) Seasonality: March 1 – October 31

A3. Well and aquifer data (**attach and number logs for existing wells; mark proposed wells as such under logid**):

Well	Logid	Applicant's Well #	Proposed Aquifer*	Proposed Rate(cfs)	Location (T/R-S QQ-Q)	Location, metes and bounds, e.g. 2250' N, 1200' E fr NW cor S 36
1	UMAT 57116		CRBG	0.86	01S/32E-30 SW/4 NW/4	850' N, 2010' W fr center S 30
2						
3						
4						
5						

* Alluvium, CRB, Bedrock

Well	Well Elev ft msl	First Water ft bls	SWL ft bls	SWL Date	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Draw Down (ft)	Test Type
1	1855		36.80	1/29/2012	738	?	+1 - 67	-----	-----	?	?	?

Use data from application for proposed wells.

A4. **Comments:** No original water well report exists for this well, A well information report was completed for the well based on a field visit and down-hole camera video.

Requested discharge rate is 385 gpm = 0.86 cfs.

A5. **Provisions of the Umatilla River** Basin rules relative to the development, classification and/or management of groundwater hydraulically connected to surface water **are**, or **are not**, activated by this application. (Not all basin rules contain such provisions.)

Comments: OAR Birch and McKay Creeks Subbasin – (e) Prevent new appropriations from ground water/surface water interference.

A6. **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.

Name of administrative area: None

Comments: _____

B. GROUND WATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1. **Based upon available data**, I have determined that ground water* for the proposed use:

- a. is over appropriated, is not over appropriated, or **cannot be determined to be** over appropriated during any period of the proposed use. * This finding is limited to the ground water portion of the over-appropriation determination as prescribed in OAR 690-310-130;
- b. **will not** or **will** likely be available in the amounts requested without injury to prior water rights. * This finding is limited to the ground water portion of the injury determination as prescribed in OAR 690-310-130;
- c. **will not** or **will** likely to be available within the capacity of the ground water resource; or
- d. **will, if properly conditioned**, avoid injury to existing ground water rights or to the ground water resource:
 - i. The permit should contain condition #(s) 7B – Interference, 7N - Annual WL (February/March), 7P – Well Tag, 7T – Measuring Tube, Large measuring and reporting with flow meter on each well;
 - ii. The permit should be conditioned as indicated in item 2 below.
 - iii. The permit should contain special condition(s) as indicated in item 3 below;

- B2. a. **Condition** to allow ground water production from no deeper than _____ ft. below land surface;
- b. **Condition** to allow ground water production from no shallower than _____ ft. below land surface;
- c. **Condition** to allow ground water production only from the _____ ground water reservoir between approximately _____ ft. and _____ ft. below land surface;
- d. **Condition** to allow ground water production only from a single aquifer in the Columbia River Basalt groundwater reservoir;
- e. **Well reconstruction** is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Ground Water Section.

Describe injury –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc): _____

B3. **Ground water availability remarks:** No original water well report exists for this well. A well information report was completed for the well based on a field visit and down-hole camera video. The video log was of poor quality because of poor visibility. No vertical flow was noted on the video at the time the video was conducted. This well has been in use for many years but the water level is relatively shallow; probably because the well develops groundwater from an aquifer(s) that is hydraulically connected to the nearby stream.

Groundwater levels have been measured at UMAT 94, located about 1/2 miles northeast of the proposed production well. Water levels have declined 23 feet over the last 60 years. The amount of decline is minimal, but the trend is steady. Use of this well has contributed to the 23 feet of decline.

Modified 7T – Measuring Tube

Wells with pumps shall be equipped with a minimum 3/4-inch diameter, unobstructed, dedicated measuring tube pursuant to figure 200-5 in OAR 690-200. If a pump has been installed prior to the issuance of this permit, and if static water levels and pumping levels can be measured using an electrical tape, then the installation of the measuring tube **can** be delayed until such time that water levels cannot be measured or the pump is repaired or replaced.

C. GROUND WATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	CRBG	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer confinement evaluation: _____

C2. **690-09-040 (2) (3):** Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
1	1	West Fork Birch Creek	1818	1830	400	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: Groundwater levels are consistent with nearby West Fork of Birch Creek. According to Tony Justus, the creek is perennial at that point. The quad map shows the stream being intermittent at about ¼ mile north of the proposed POA.

Water Availability Basin the well(s) are located within: Umatilla

C3a. **690-09-040 (4):** Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% natural flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
1	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	IS70687A	3.46	<input checked="" type="checkbox"/>	1.39	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Basis for impact evaluation: _____

C4b. **690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.**

- C5. **If properly conditioned**, the surface water source(s) can be adequately protected from interference, and/or ground water use under this permit can be regulated if it is found to substantially interfere with surface water:
- i. The permit should contain condition #(s) _____;
 - ii. The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions** Groundwater levels at UMAT 57116 are similar to surface water in the West Fork of Birch Creek. Well construction information is limited with unknown amount of seal and a fairly limited amount of casing (67') in a 738 foot deep well. The well has been in use for irrigation for a considerable amount of time, yet the water level is still fairly shallow indicating a probable connection to a source of recharge - West Fork of Birch Creek. This combination supports a well that is hydraulically connected to surface water source that is over appropriated.

References Used: _____

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: _____ Logid: _____

D2. THE WELL does not appear to meet current well construction standards based upon:

- a. review of the well log;
- b. field inspection by _____;
- c. report of CWRE _____;
- d. other: (specify) _____

D3. THE WELL construction deficiency or other comment is described as follows: _____

D4. Route to the Well Construction and Compliance Section for a review of existing well construction.

Water Availability Tables

Water Availability Calculation

Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

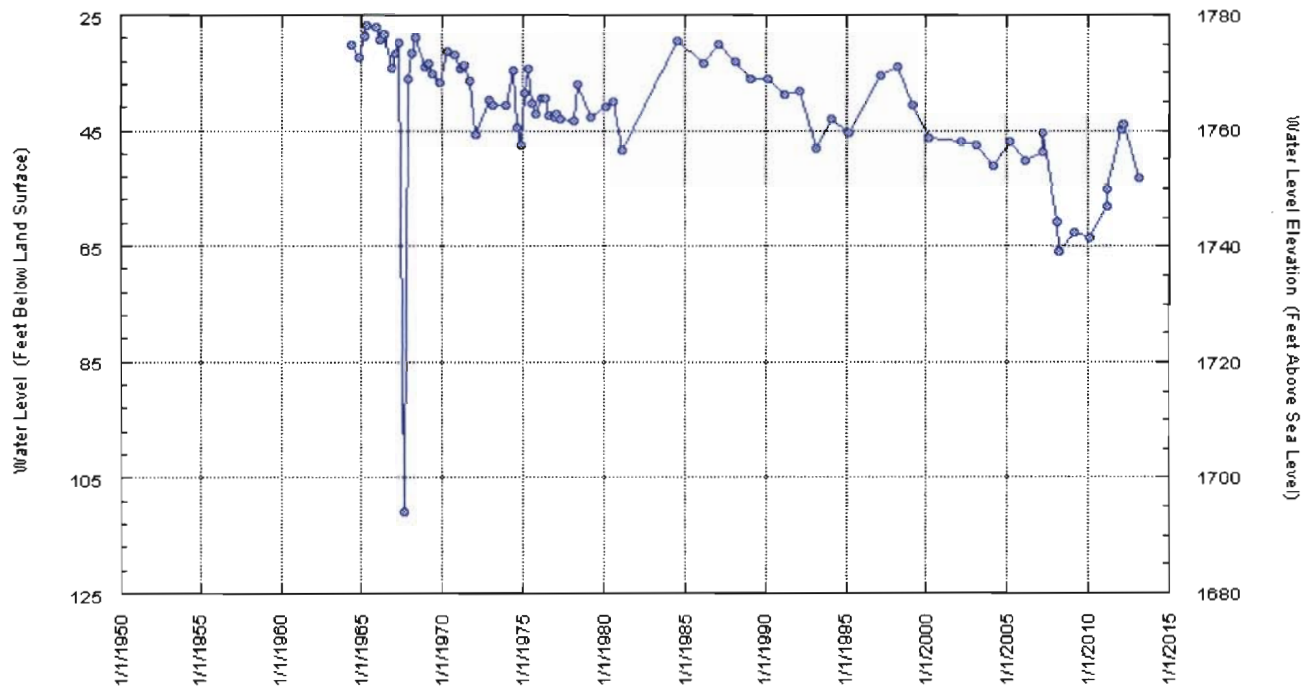
Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	6.62	0.01	6.61	0.00	21.70	-15.10
FEB	17.20	0.01	17.20	0.00	30.20	-13.00
MAR	26.60	1.06	25.50	0.00	32.00	-6.46
APR	35.90	5.07	30.80	0.00	32.00	-1.17
MAY	22.90	12.90	9.99	0.00	32.00	-22.00
JUN	9.97	10.50	-0.49	0.00	14.80	-15.30
JUL	3.64	3.50	0.14	0.00	12.00	-11.90
AUG	1.79	1.40	0.39	0.00	9.67	-9.28
SEP	1.39	0.73	0.66	0.00	5.94	-5.28
OCT	1.47	0.36	1.11	0.00	3.46	-2.35
NOV	2.71	0.01	2.70	0.00	5.64	-2.94
DEC	4.47	0.01	4.46	0.00	16.70	-12.20
ANN	18,400.00	2,150.00	16,200.00	0.00	13,000.00	5,330.00

Detailed Report of Instream Flow Requirements

Instream Flow Requirements in Cubic Feet per Second

Application #	Status	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
IS70687A	CERTIFICATE	21.70	30.20	32.00	32.00	32.00	14.80	12.00	9.67	5.94	3.46	5.64	16.70
Maximum		21.70	30.20	32.00	32.00	32.00	14.80	12.00	9.67	5.94	3.46	5.64	16.70

Hoelt Irrigation Well
 Lithology: basalt
 Aquifer: CRB
 Land surface elevation: 1805'
 Well Depth: 937'
UMATILLA BASIN GROUNDWATER STUDY
OWRD LOGID UMAT 94
01S/32E-19CDD



Well Location for Groundwater Application G-17640, Cunningham Sheep Comp. Umatilla County, Pilot Rock & Nye Quads

