

POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

SCOTT CORNELIUS, PALOUSE
WATER CONSERVATION NETWORK,
and SIERRA CLUB PALOUSE GROUP,

Appellants,

v.

WASHINGTON DEPARTMENT OF
ECOLOGY and WASHINGTON STATE
UNIVERSITY,

Respondents.

PCHB No. 06-099

**FINDINGS OF FACT,
CONCLUSIONS OF LAW AND
ORDER**

This matter comes before the Pollution Control Hearings Board (Board) as part of the above-captioned appeal contesting the approval by the Department of Ecology (Ecology) of changes to six groundwater rights at Washington State University (WSU). Appellants challenged the consolidation of WSU's groundwater rights on several bases related to Ecology's interpretation of the recently enacted Municipal Water Supply Act, commonly referred to as the 2003 Municipal Water Law (2003 MWL)¹ and its application to WSU's rights. Most of the issues in this matter have been resolved prior to hearing on summary judgment.² The Board conducted a hearing on the three remaining legal issues in the appeal, related to questions of impairment, public welfare, and enlargement.

Attorneys Rachael Paschal Osborn, M. Patrick Williams of the Center for Environmental Law & Policy, and Harold Magistrale, represented Appellants Scott Cornelius, *et. al.* at hearing.

¹ Chapter 5, Laws of 2003 (58th Leg, 1st Spec Session) [2E2SHB 1338].

² See the Board's Amended Order on Summary Judgment, issued January 18, 2008.

1 Alan M. Reichman and Sarah M. Bendersky, Assistant Attorneys General, represented
2 Respondent Ecology. Frank M. Hruban, Assistant Attorney General, and Sarah E. Mack, of
3 Tupper Mack Brower, PLLC, represented Respondent WSU. The first two days of hearing were
4 held on January 22-23, 2008 in Pullman, Washington. The final half-day of hearing was held on
5 January 31, 2008, in Lacey, Washington, with some counsel and witnesses participating via
6 video and teleconference.³

7 The Board was comprised of Andrea McNamara Doyle, Presiding, Kathleen D. Mix,
8 Chair, and William H. Lynch, Member. Court reporting services were provided by William
9 Bridges of Bridges & Associates, and Kim Otis of Olympia Court Reporters.

10 SUMMARY OF DECISION

11 After consideration of the competing legal theories and review of the expert
12 hydrogeologic testimony in this matter, we conclude Appellants have failed to meet their burden
13 of proof to establish that Ecology erred when it determined the subject water rights changes will
14 not impair other existing water rights. We conclude a preponderance of the evidence
15 demonstrates that consolidation of WSU's existing water rights will not impair Mr. Cornelius'
16 well or other existing water right holders. In the absence of impairment, we also therefore
17 conclude that the public welfare will not be harmed by Ecology's approval of these water right
18 changes. Finally, we conclude Ecology's approval of the application for change of Permit No.
19 G3-28278P did not unlawfully "enlarge" the water right represented by that permit. We reach

20 _____
21 ³ Participating via videoconference from Pullman were Ms. Osborn, Mr. Cornelius, and Dr. Keller (witness) for the
Appellants, and Mr. Hruban for Respondents. Participating via telephone was Mr. Magistrale for Appellants and
Mr. Gregory (witness) for Respondents.

1 this conclusion based on our finding that the quantities authorized by Permit No. G3-28278P
2 were not derived from or based on the instantaneous and annual quantities associated with Claim
3 No. 098524 (Well No. 3), the claim that Ecology had tentatively determined to be invalid.

4 In reaching these conclusions, the Board is mindful that all parties concede the Grande
5 Ronde aquifer (GRA) is experiencing a long-term and troubling trend of declining water levels
6 that, if not adequately addressed, will eventually threaten all water users in the basin. The
7 testimony and evidence were undisputed in this respect, and also revealed a flavor of the on-
8 going scientific, regulatory, public policy, and personal efforts that are underway to address this
9 complicated problem. That being said, the Board has previously made clear the legal issues in
10 this hearing were not about the declining aquifer or how Ecology should manage groundwater in
11 the Pullman area. Nor was it about whether WSU should be allowed to withdraw more water
12 than it presently does from the aquifer, or about the uses to which WSU chooses to apply the
13 water it is currently authorized to withdraw. Instead, this case was focused on the much
14 narrower question of whether WSU is legally entitled to consolidate its existing water rights in
15 order to be able to pump its currently authorized quantities from a different configuration of
16 wells within its integrated campus water system.

17 **PROCEDURAL BACKGROUND**

18
19 Although previously detailed in the Board's summary judgment ruling, we briefly review
20 the procedural history of the water right change applications at issue in this appeal.

1 In October 2004, WSU applied to Ecology to change/consolidate all of the existing
2 groundwater rights currently used to serve the Pullman campus. WSU proposed to integrate the
3 water rights associated with the existing campus well system, by adding seven (7) of its existing
4 wells as authorized points of withdrawal for each of the existing groundwater rights in the area,
5 and changing the place of use for each right to be consistent with the approved water service
6 area. In other words, WSU wished to be able to withdraw water under each of its groundwater
7 rights from any or all of the existing wells that serve the campus. The required notice of
8 application was published and three letters of protest or concern were received, including ones
9 on behalf of Appellants Scott Cornelius and Palouse Water Conservation Network.

10 The university conducted a State Environmental Policy Act (SEPA) analysis and issued a
11 final Determination of Non-Significance (DNS) on June 7, 2004. The university determined the
12 proposal would not have a significant adverse impact on the environment. In reviewing the
13 change applications, Ecology relied on the DNS issued by WSU and did not conduct a new
14 threshold determination or perform supplemental SEPA analysis.

15 As part of its review of the change applications, Ecology applied a number of provisions
16 from the 2003 MWL. Most notably, Ecology determined that WSU is a “municipal water
17 supplier” under the terms of the new law, and that the rights it holds for the Pullman campus
18 qualify as rights for “municipal supply purposes” as that term is now defined. In September
19 2006, Ecology issued Reports of Examination (ROEs) for each of the change applications at
20 issue in this appeal, approving, in large part, WSU’s change/consolidation requests. Ecology
21

1 denied integration of Claim No. 098524 (associated with Well No. 3) upon Ecology's tentative
2 determination that this claim is invalid.

3 Appellants timely appealed Ecology's decisions to this Board. The parties' joint
4 Statement of Agreed Legal Issues originally identified forty (40) issues, comprising eighteen
5 (18) general topics, presented by Ecology's interpretation of the 2003 MWL and its application
6 to WSU's rights. As previously noted, the Board resolved all but three of the legal issues
7 through the parties' cross motions for summary judgment.⁴ The issues remaining for hearing at
8 the Board level included whether Ecology's decision approving the change of WSU's water
9 rights will impair existing rights (Legal Issue No. 12), harm the public welfare (Legal Issue No.
10 13), or enlarge Water Right Permit No. G3-28278P to the extent it may include quantities from
11 an invalid claim (Legal Issue No. 7).

12 The Board hereby incorporates by reference those facts concerning the WSU water
13 rights and campus water system contained in the Board's Amended Order on Summary
14 Judgment and makes the following additional:

15 **FINDINGS OF FACT**

16 [1]

17 ***WSU Campus Water System***

18 The WSU Pullman campus water system is comprised of an integrated network of source
19 wells (each historically associated with its own individual water right), storage reservoirs, and
20

21 ⁴ See Amended Order on Summary Judgment, issued January 18, 2008, rejecting several of Appellants' challenges to the changes and declining to address those based on constitutional claims. The Order reserved the latter for the parties to litigate in a court with jurisdiction to hear claims related to the constitutionality of the 2003 MWL.

1 distribution pipelines. The system is divided into two zones, the “low pressure” zone which
2 includes Wells No. 1, 2 (decommissioned), 3, 4, and 7, and the “high pressure” zone which
3 includes Wells No. 5, 6, and 8. The system was developed to fit the needs of the topography of
4 the campus and integrated without specific authorization from Ecology or its predecessor
5 agencies. As presently operated, all the water for the system is withdrawn primarily from one
6 well in each zone, Wells No. 7 and 8. *Testimony of Wells,⁵ Exh. R-1.*

7 [2]

8 The system includes a small area of overlap, and a number of emergency crossover
9 connection points, between the two zones. *Testimony of Wells, Exh. R-59, Exh. R-63A.* From an
10 operational standpoint, it is most desirable to supply approximately two-thirds of the campus
11 water needs from the low zone and approximately one-third from the high zone, although the
12 present ratio is closer to 60:40 or 50:50. No single well on campus can pump more than 2,500
13 gallons per minute (gpm). *Testimony of Wells.*

14 [3]

15 In the low pressure zone, Wells No. 1, 3, and 4, are clustered closely together and
16 completed to similar depths. All three of their well house buildings are located within
17 approximately 80 feet of one another. They are drilled to depths of 247, 223, and 275 feet,
18 respectively, and the pumps for each are located at nearly the same elevations. Collectively,
19

20 ⁵ Gary Wells is a licensed civil engineer with a master’s degree in sanitary engineering. Presently he is the manager
21 of facilities and operations for WSU, where he has been employed for nearly 23 years. In that capacity, Mr. Wells is
responsible for managing the preparation and construction of campus public works projects and rights of way and
providing technical assistance and support to other engineers and construction workers related to the campus water,
sewer and steam systems. *Testimony of Wells.*

1 their pumping capacity is just over 3,000 gpm, although Wells No. 1 and 3 are inactive, leaving
2 Well No. 4 with a current pump capacity of 1,500 gpm. The primary active well in the low zone
3 is Well No. 7, which is also located in the same general area of the campus, to the southeast. It is
4 drilled to a depth of 1,814 feet, with a pump location approximately 150 feet lower than Well
5 No. 4, and has a current pump capacity of 2,500 gpm. *Testimony of Wells, Exh. R-58, Exh. R-60,*
6 *Exh. R-63A.*

7 [4]

8 In the high zone, Wells No. 5 and 6 are located in the north central and north eastern
9 portions of the campus. Well No. 5 is completed to a depth of 394 feet and has a pump capacity
10 of 450 gpm, although the pump has been removed and it presently inactive (other than for use as
11 a monitoring point). Well No. 6 is 702 feet deep, with its pump located at an elevation nearly
12 100 feet above the elevation of the pump for Well No. 7. *Testimony of Wells, Exh. R-58, Exh. R-*
13 *60, Exh. R-63A.*

14 [5]

15 WSU's newest well, Well No. 8, is located in the overlap area between the low and high
16 zones. It is drilled to a depth of 812 feet, with a pump located at an elevation approximately 100
17 feet deeper than Well No. 7. It has a current pump capacity of 2,500 gpm. *Testimony of Wells,*
18 *Exh. R-58, Exh. R-60, Exh. R-63A.* Well No. 8 was drilled in 2003, first pumped in 2006, and
19 started producing at 2,500 gpm in 2007. *Testimony of Wells.*

20 [6]

1 *Exh. R-41, Exh. A-25.* As part of its investigation into the 1987 application, Ecology noted at the
2 time:

3 WSU proposes to develop a new well, Well No. 7, as a supplemental source of
4 water for the university campus. Three existing wells, presently on-line, are
5 considered to have a very limited future. It is the expressed intent of WSU to
bring the proposed well on-line as a direct substitute for these wells as they
eventually decrease in productivity, or fail. *Exh. A-26.*

6 Ecology then issued Permit No. G3-28278P (for Well No. 7) with a priority date of 1987 and
7 included the following proviso:

8 The quantities granted under this permit are issued less those amounts
9 appropriated under Ground Water Certificate No. 5070-A and Ground Water
10 Claims No. 098522 and No. 098524. The total combined withdrawal under this
permit and Ground Water Certificate No. 5070-A shall not exceed 2500 gallons
per minute, 2260 acre feet per year. *Exh. A-25.*

11 [9]

12 Well No. 8 was also developed in response to concerns about the need for greater
13 capacity and redundancy in the system. The largest pump in the high zone has an instantaneous
14 capacity of 1,500 gpm, and the water right historically associated with that well (Well No. 6) was
15 limited to an instantaneous quantity of 1,500 gpm. *Testimony of Wells, Exh. A-20 (Cert. No. G3-*
16 *22065C).* A design was developed in 1998 for the new well with a capacity of 2,500 gpm to
17 serve the high zone and provide back-up to the entire system. Well No. 8 was constructed as an
18 additional point of withdrawal under the right previously associated with Well No. 6 (G3-
19 22065C), and a showing of compliance was submitted to and accepted by Ecology in January
20 2005. The university chose to apply for an additional point of withdrawal, rather than simply
21

1 replacing Well No. 6, so that it could keep both wells. *Testimony of Wells, Exh. A-19, R-43 and*
2 *44.*⁶

3 [10]

4 In 2007, WSU's Well No. 7 broke down due to failure of a control transformer. During
5 the three to four weeks it took for Well No. 7 to get back on line, the university relied on Well
6 No. 8 to provide water to the campus. Well No. 4 was also activated during this time, but it took
7 a couple of weeks before Well No. 4 was operational. *Testimony of Wells.*

8 [11]

9 ***WSU Water Right Change Applications & Decisions***

10 During the same time period WSU was preparing the change request to add Well No. 8 as
11 an additional point of withdrawal under Certificate No. G3-22065C, it decided to seek regulatory
12 approval for the operational flexibility offered by integrating and consolidating its historic water
13 rights, which it did in October 2004 . *Exhs. R-45, R-8, R-10, R-13, R-16, R-23, R-30, R-37.*

14 [12]

15 Ecology processed the WSU change applications in the typical manner, by assigning a
16 permit writer to investigate and prepare findings and recommendations in consultation with
17 technical staff. In this case, Kevin Brown, an Ecology environmental specialist, prepared the
18 Reports of Examination with technical assistance from senior hydrogeologist, Guy Gregory. Mr.

19
20
21

⁶ The reference in Exh. 44 to a "replacement well" appears to be a ministerial error and not a decision or
determination by Ecology that Well No. 8 is a replacement well rather than an additional point of withdrawal.
Testimony of Brown.

1 Brown's supervisor, Keith Stoffel, gave final approval to the ROE decisions. *Testimony of*
2 *Stoffel.*

3 [13]

4 Kevin Brown is a senior permit writer for the eastern regional office Water Resources
5 Program. His educational background is in civil engineering technology, and he has been
6 employed by Ecology since 1991. *Testimony of Brown, Exh. R-82.*

7 [14]

8 Keith Stoffel is the Section Manager of the Water Resources Program in Ecology's
9 eastern regional office. He is a geologist by training and previously worked for more than ten
10 years as a hydrogeologist with Ecology. Currently his responsibilities include directing the
11 regional administration of Ecology's water resources permitting, compliance, well construction,
12 technical assistance, watershed management, adjudications, and data management. In that
13 capacity, he had review and approval authority over the agency's decisions on the water right
14 change applications at issue in this appeal. *Testimony of Stoffel, Exh. R-83.*

15 [15]

16 Guy Gregory is a Washington licensed hydrogeologist and Oregon registered geologist.
17 He has been a senior hydrogeologist with Ecology since 1991, and presently is the Technical
18 Unit Supervisor for the Water Resources Program in Ecology's eastern regional office. In that
19 capacity, he has served as the agency or unit lead for significant aquifer investigations involving
20 the Spokane Valley – Rathdrum Prairie Aquifer, the Odessa Subarea, and the Walla Walla basin.
21 His experience includes coordinating hydrogeologic investigations and field studies related to

1 measurements of groundwater levels and surface water flows, and supervising regional well
2 drilling regulatory programs. *Testimony of Gregory, Exh. R-84.*

3 [16]

4 **Enlargement**

5 Ecology approved each of WSU's change applications except for the one associated with
6 Well No. 3. Ecology denied WSU's request to integrate the quantities from Claim No. 098524
7 into its campus water system, and to add additional points of withdrawal to Claim No. 098524.
8 The denial was based on Ecology's tentative determination that the original claim was invalid
9 because the first use of water represented by the claim had occurred in 1946 when Well No. 3
10 was constructed, which was after adoption of the state's Ground Water Code in 1945. *Exh. A-5,*
11 *Testimony of Stoffel.* Appellants have asserted that the annual and instantaneous quantities
12 associated with this invalid claim were wrongfully credited to WSU as a result of the
13 consolidation decision.

14 [17]

15 In 1988, Ecology issued a ROE, recommending approval of WSU's application for a new
16 municipal supply water right to be associated with a proposed Well No. 7 (Permit No. G3-
17 28278). Ecology approved this new water right in the amount of 2,500 gallons per minute and
18 2,260 acre feet per year for continuous municipal supply. The ROE includes the following
19 provisions relevant to quantities:

20 The quantities granted under this permit are issued less those amounts
21 appropriated under Ground Water Certificate 5070-A, and Ground Water Claims

1 98522, 98524. The total combined withdrawal under this permit and Ground
2 Water Certificate No. 5070-A shall not exceed 2500 gallons per minute 2260
3 acre-feet per year.
The amount of water granted is a maximum limit that shall not be exceeded...
Exh. A-26.

4 [18]

5 When Ecology acted on WSU's consolidation request, it allowed WSU the total
6 quantities previously authorized by Permit No. G3-28278P, and neither included nor subtracted
7 the 1,000 gpm of instantaneous quantity (Qi) or the 1,440 afy of annual quantity (Qa)
8 represented by Claim No. 098524. Ecology determined that Permit No. G3-28278P, associated
9 with Well No. 7, was a new water right, with a new priority date, not tied to the validity or
10 invalidity of other rights. This new water right was intended to be a non-additive, alternative
11 source of up to 2,500 gpm, to be used as other wells associated with other water rights failed.
12 *Testimony of Brown, Exhibits A-25, A-26.*

13 [19]

14 In reaching this conclusion with respect to Permit No. G3-28278P, Mr. Brown applied
15 the guidance contained in Ecology's Policy No. 1040, "Use of Terms that Clarify Relationships
16 between Water Rights." *Testimony of Brown, Exh. R-85.* He also examined the original intent
17 behind Well No. 7 and the associated water right (G3-28278), by examining all the related water
18 rights documents mentioned in the 1988 ROE and the amounts authorized by each one. Mr.
19 Brown concluded that the intent behind these rights was to allow a total maximum pumping of
20 2,500 gpm/2,260 afy from the combination of four wells, so long as the total combined pumping
21 amount never exceeded 2,500 gpm/2,260 afy from any combination of the wells. He concluded

1 that Permit No. G3-28278P was “non-additive” in the sense that it did not increase the water
2 available through existing rights, and “alternate” in the sense that it could be used either instead
3 of, or simultaneously with, other water rights, up to the 2,500 gpm/2,260 afy maximum.
4 *Testimony of Brown, Exh. R-85.* Accordingly, Ecology concluded it should not subtract the
5 quantities represented by the invalid Claim No. 098524 from the 2,500 gpm or 2,260 afy
6 authorized in Permit No. G3-28278P.⁷ Based on that conclusion, Ecology approved the
7 consolidation action because the permit represented a new right for a non-additive, alternative
8 source of water to replace water from older sources as needed, and a change or transfer of that
9 right was not legally dependent on those prior rights for its authorized quantities. *Testimony of*
10 *Stoffel, Testimony of Brown.*

11 [20]

12 **Impairment**

13 Ecology’s analysis of the change applications included a qualitative assessment of
14 whether integration of WSU’s water rights would impair existing water right holders. Ecology
15 considered a number of factors in its qualitative assessment, including that: (1) despite the
16 historically declining water levels in the aquifer, existing domestic water right holders in the area
17 had not previously experienced any interruptions or difficulties withdrawing water from their
18 wells; (2) no new additional instantaneous or annual quantities of water were authorized by the
19

20 ⁷ As part of its analysis of the water rights appurtenant to the WSU campus, Ecology recognized that these claimed
21 quantities from Claim No. 098524 were tentatively determined to be invalid. Ecology then attempted to graphically
depict this tentative determination by listing the Qi and Qa for Claim No. 098524 in parenthesis in the water rights
summary table included in the ROE for Permit No. G3-28278P. *Exh. A-24 (p. 3), Testimony of Stoffel, Testimony of*
Brown.

1 change applications beyond those WSU already had rights to withdraw; (3) the distance between
2 the originally authorized point of withdrawal for each existing right and the additional points of
3 withdrawal being sought was relatively small compared to the distance between the WSU
4 campus wells and the domestic wells in the nearby area; and (4) a review of Ecology’s database
5 revealed the majority of the neighboring domestic wells penetrated fairly deep into the aquifer,
6 as they were completed to a depth in the range of 250 feet, with a few between 300-400 feet
7 deep, and one at approximately 450 feet. *Testimony of Gregory.*

8 [21]

9 Prior to approving WSU’s change applications, Ecology did not make a “reasonable or
10 feasible pump lift” determination for the Cornelius well, or any other well. Based on its analysis
11 of the change applications, Ecology concluded there was no reason to expect that integration of
12 WSU’s water rights would interfere with any nearby wells to a level where any other water right
13 holders might have trouble withdrawing water from their wells. Based on that conclusion, as
14 well as the general qualitative assessment, Ecology determined the change applications would
15 not impair existing rights and there was no reason to undertake a reasonable or feasible pump lift
16 determination. *Testimony of Stoffel, Testimony of Gregory.*

17 [22]

18 Since the approval of WSU’s change applications in 2006, and the resulting consolidation
19 of pumping from Wells No. 7 and 8, Ecology has received no complaints of well interference
20 and has no data indicating water levels in surrounding observation or test wells have declined
21 more rapidly than before the consolidation. *Testimony of Stoffel.*

1 [23]

2 **Reasonable or Feasible Pump Lift**

3 Although referenced in state law, the term “reasonable or feasible pump lift” is not
4 defined in the Ground Water Code, and neither is the process for when or how a reasonable and
5 feasible pump lift should be determined. The term is generally used to describe the depth a water
6 right holder can reasonably and feasibly be expected to pump water from in order to get
7 groundwater to the surface. *Testimony of Stoffel.*

8 [24]

9 The concept of a reasonable or feasible pump lift is typically applied to a specific well or
10 to a sub-area within a basin, rather than to an entire aquifer or basin, because it is usually
11 dependent on site-specific variables such as the thickness of an aquifer at a particular location
12 relative to well construction. It may be possible to make a pumping lift determination on an
13 aquifer-wide basis if the conditions are known to be sufficiently uniform throughout the area.
14 *Testimony of Stoffel.*

15 [25]

16 Ecology normally works through the process of making reasonable or feasible pump lift
17 determinations on a case-by-case basis, depending on the aquifer system and what is known
18 about specific wells in the system. The agency does not undertake a formal pump lift
19 determination unless it has reason to believe water levels in a particular well are in peril or it has
20 an indication that a water right holder is having trouble exercising its water right. *Testimony of*
21 *Stoffel.*

1 [26]

2 While aware of the declining water levels of the GRA, Ecology has not made any
3 determination of a reasonable or feasible pump lift for the aquifer as a whole or any sub-area in
4 the Pullman-Moscow region because it has no indication that any water right holders are
5 presently at risk of not being able to pump water from their wells. *Testimony of Stoffel*. The
6 Board was provided with no evidence that any water right holders in the area have been unable
7 to exercise water rights from existing wells as a result of WSU's pumping regime.

8 [27]

9 Ecology recognizes it may need to do an analysis of what constitutes a reasonable and
10 feasible pumping lift in the GRA at some point in future. Presently it is working collaboratively
11 through the Palouse Basin Aquifer Committee (PBAC) to address the declining aquifer levels.
12 The PBAC is considering strategies that may result in new regulations for groundwater
13 management in the basin, or one or more sub-areas. Such regulations could include reasonable
14 and feasible pump lifts or could set maximum annual rates of decline. *Testimony of Stoffel*.

15 [28]

16 **Objections to Change Decisions**

17 The Sierra Club Palouse Group is a regional branch of the Northern Rockies Chapter of
18 the Sierra Club. The Group's mission is to preserve, protect, and enjoy the natural world,
19 including water resources such as the Palouse Aquifer. A large majority of the group's 467
20 members live in the area above the aquifer and depend on it for drinking water and all aspects of
21 life. They are troubled about its declining condition and have appealed the consolidation of

1 WSU's water rights because they are concerned that re-arranging the water rights will lead to
2 greater exploitation of the aquifer. *Testimony of Coombs.*

3 [29]

4 The Palouse Water Conservation Network (PWCN) is a group of concerned citizens
5 whose goal is to promote awareness and action to preserve water resources in the Pullman-
6 Moscow area. They are generally concerned about water mining of the aquifer and are
7 particularly concerned that WSU's consolidation of its water rights will cause greater pumping
8 of water from the aquifer. *Testimony of French.* PWCN submitted a letter to Ecology in
9 February, 2005, protesting WSU's application for change of its groundwater rights, and also filed
10 a formal Protest Questionnaire the following month. *Exh. A-28, R-51.* At that time, no
11 members knew of any specific personal wells that had been affected by WSU's pumping or
12 withdrawals. *Testimony of French, Exh. R-51.* PWCN was aware that the City of Pullman's
13 change applications were approved by Ecology at the same time WSU's were approved. PWCN
14 chose not to appeal the city's consolidation because it has been working cooperatively with the
15 city as a municipality. *Testimony of French.*

16 [30]

17 Scott Cornelius lives outside the city limits of Pullman, approximately three to three and
18 one half miles south of the WSU campus. He has long had concerns about the condition of the
19 Grande Ronde aquifer and the rate at which it has been declining throughout the basin. He
20 generally follows the trends in water usage by the Pullman area's largest water users, including
21 the City of Pullman and WSU. He is concerned with both the decline of the aquifer system

1 generally, as well as potential impacts to his personal water supply, which comes from a
2 domestic well drilled to a depth of approximately 250 feet. The water level in Mr. Cornelius'
3 well has dropped an average of approximately 10 inches per year over the fifteen years he has
4 lived there. Mr. Cornelius is unsure whether the rate of decline in his well has accelerated since
5 WSU Well No. 8 came on line in 2006. *Testimony of Cornelius, Exh. A-34.*

6 [31]

7 ***Grande Ronde Aquifer Background***

8 At the request of Appellants, Dr. Kent Keller prepared a report on the hydrogeology of
9 the Grande Ronde aquifer for the purpose of providing background information on the aquifer's
10 hydrogeology. *Testimony of Keller, Exh. A-31.* Dr. Keller is a professor in the School of Earth
11 and Environmental Sciences at WSU. He has a Ph.D. in Earth Sciences with a specialty in
12 hydrogeology and has spent fifteen years researching the Palouse Basin and the Grande Ronde
13 aquifer at the University of Idaho and WSU. *Testimony of Keller, Exh. A-30.* Dr. Keller has
14 also directed the research of numerous graduate students related to the hydrology and
15 geochemistry of the Palouse Basin. He has authored, and co-authored with Dr. James Osiensky
16 and others, a number of articles and reports concerning the Palouse Basin Aquifer System,
17 including publications on the hydrostratigraphy of the basin, and groundwater recharge and
18 residence times in the Pullman-Moscow Basin. *Exh. A-30.*

19 [32]

20 The Grande Ronde aquifer is a subregion of the Columbia River Basalts and associated
21 sediments. It is comprised of that portion of the Grande Ronde basalt in the Palouse Basin

1 containing groundwater that can be exploited by pumping in the Pullman-Moscow region. *Exh.*
2 *A-31.*

3 [33]

4 The Grande Ronde aquifer lies within the Grande Ronde Formation, which is comprised
5 of millions of years of episodic flood-basalt flows and interstratified rubble and sediments, piled
6 onto an irregular topography which now lies beneath the present-day Pullman-Moscow region.
7 Far from being a simple, uniform “layer-cake,” the numerous strata are irregular and
8 interconnected, resulting in a complex system with substantial groundwater transmissivity
9 (horizontal movement of water) and irregular but relatively small vertical hydraulic conductivity.
10 *Exh. A-31.*

11 [34]

12 The GRA contains water that is distinct from waters in overlying basalts and sediments,
13 based on isotope-geochemical characterization. It also exhibits distinct water levels and water-
14 level time trends relative to surrounding areas and overlying basalts and sediments. Using
15 isotope-geochemical age-dating, the mean residence time of water in the system is estimated at
16 approximately 20,000 years. *Testimony of Keller, Exh. A-31.*

17 [35]

18 The extent and availability of groundwater resources in the GRA are poorly known, due
19 in part to lack of precise information about the aquifer’s rate of recharge. It is therefore
20 impossible to predict with any degree of certainty how long the water in the GRA will last. This
21 is also due in part to the fact that when drawdowns get large enough, important aquifer properties

1 (such as the relative thickness of the aquifer) change, causing the magnitude and direction of
2 water movement to change. Sub-basins begin to isolate themselves and interconnections
3 between various parts of the system decrease. *Testimony of Keller.*

4 [36]

5 Despite this uncertainty, known reductions in pore pressure currently indicate that the
6 amount of groundwater stored is declining relative to amount of groundwater pumped. Although
7 the precise recharge rate in the Palouse Basin and GRA is not known, it is very low. Generous
8 estimates of the natural flow rate into the GRA are substantially smaller than pumpage rates for
9 Pullman-Moscow area (approximately one-tenth to one-quarter). The GRA is a declining
10 aquifer because the pumpage from the GRA exceeds the amount of recharge into the GRA.

11 *Testimony of Keller, Exh. A-31.*

12 [37]

13 The present, aggregate withdrawal rate from the GRA is approximately 2.7 – 2.8 billion
14 gallons per year. *Testimony of Keller.* Increases in aggregate pumpage from the GRA in the
15 Pullman-Moscow region will necessarily cause water-level declines within the aquifer, because
16 increased flows to wells can only occur under increased hydraulic gradients, which are generated
17 by lowering water levels in pumping wells. *Testimony of Keller, Exh. A-31.*

18 [38]

19 Wells completed in the GRA show hydrographs that trend downward. Water levels have
20 typically declined, on average, more than 100 feet over the period of record. Research has
21 shown that wells distributed across the entire Pullman-Moscow basin all behave similarly; that

1 is, they are all declining at approximately the same rate, when measured over the course of
2 weeks, months, or years. A consistent finding of the research into the Grande Ronde shows that
3 the aquifer system is well interconnected laterally at the basin scale. *Testimony of Keller.*

4 [39]

5 It is Dr. Keller's opinion that water level trends in the aquifer are affected primarily by
6 aggregate pumping, and that changes in the position or point of withdrawals from the aquifer
7 would have only minor effects on the water levels of any given well in the system. *Testimony of*
8 *Keller.*

9 [40]

10 Due to wide variations in the hydraulic properties that are distributed laterally throughout
11 basalt aquifer systems such as the GRA, drawdowns at different radial distances cannot be
12 reliably predicted through 3-10 day pumping tests. It is possible for a well farther from the point
13 of withdrawal to show levels of decline before a different well closer to the point of withdrawal
14 exhibits impacts from pumping. *Testimony of Keller.*

15 [41]

16 ***Interference/Impairment***

17 At the request of Appellants, Kevin Brackney reviewed data and information related to
18 the water rights at issue in this appeal in order to formulate an opinion about how consolidation
19 of WSU's water rights might impact the GRA. Kevin Brackney is a professional geologist and
20 certified groundwater professional, with a master's degree in hydrology from the University of
21 Idaho. Mr. Brackney is currently employed as a hydrogeologist and water planner for the Nez

1 Perce Tribe and previously worked for ten years as a research support scientist at the University
2 of Idaho's Environmental Biotechnology Institute. Mr. Brackney's knowledge of the Grande
3 Ronde aquifer is based on his education and work experience. He has been working in the
4 Palouse Aquifer Basin since 1992. *Testimony of Brackney, Exh. A-29.*

5 [42]

6 Although Mr. Brackney did not specifically analyze or attempt to calculate the possible
7 impact of WSU's pre-consolidation or post-consolidation withdrawals on the Cornelius or other
8 neighboring wells, he is of the opinion that pumping more water from WSU's newer, deeper
9 wells will cause a greater impact on nearby wells than pumping from WSU's older and shallower
10 wells. His opinion is based on his understanding of changes in the aquifer's hydraulic properties
11 with respect to vertical conductivity and transmissivity between layers of the basalt flows, and
12 his understanding of the depths of the existing wells at issue. *Testimony of Brackney.*

13 [43]

14 The most porous portion of each basalt layer is the flow top, which consists of rubble and
15 ranges from one-two feet up to 15-20 feet thick in this aquifer system. Due to the many layers of
16 basalt flows that collectively comprise the GRA system, Mr. Brackney opines that well
17 construction can play a significant role in the effects experienced by neighboring wells. He
18 reasons that because Well No. 7 fully penetrates the aquifer to a depth of 2,225 feet, it draws
19 water from the entire thickness of the aquifer, and pumping more water from it will have a
20 greater impact than WSU's previous withdrawals from shallower wells that tap only a portion of
21

1 the aquifer thickness.⁸ In Mr. Brackney's opinion, steep slopes associated with the drawdowns
2 from the WSU well suggest that a shallower well like Mr. Cornelius' will respond much later to
3 the withdrawals. *Testimony of Brackney; Exh. A-39.*

4 [44]

5 At the request of WSU, Dr. James Osiensky analyzed potential interference drawdown at
6 the Cornelius well that may result from WSU's pumping its full authorized quantities of
7 groundwater.⁹ Dr. Osiensky is a professor of hydrogeology in the Geological Sciences
8 Department at the University of Idaho, where some of his areas of specialization include
9 hydrogeology site characterization, hydrogeologic property testing, hydrogeophysical
10 applications in hydrogeology, and groundwater hydraulics. Since 1981, he has held various
11 appointments as an associate professor of hydrogeology and geology, and as a research associate
12 and research scientist, all with the University of Idaho and WSU. *Exh. R-67.*

13 [45]

14 Dr. Osiensky has published numerous refereed and peer-reviewed articles and research
15 papers on a range of hydrogeologic topics, and has conducted and supervised many

16 ⁸ Mr. Brackney testified that the general rule of thumb is for a well to be considered fully penetrating if it penetrates
17 60 percent of the aquifer.

18 ⁹The Presiding Officer allowed the testimony of Dr. Osiensky over the objection of Appellants regarding his
19 predictions of the relative interference drawdown resulting from different pre and post-consolidation pumping
20 scenarios of WSU's wells. Appellants' motion to strike the testimony was denied after considering the arguments of
21 counsel. The Board found that while it appeared the substance of Dr. Osiensky's testimony had not been seasonably
supplemented to the Appellants in a timely fashion as required by CR 26E, the subject matter about which he
testified had previously been known and available to Appellants through discovery of another of Respondents'
expert witnesses, Dr. Banton. Given the highly relevant nature of the testimony, the Board determined the
preferable remedy was to allow Appellants additional time to prepare cross examination and expert rebuttal
testimony. Appellants' expert, Dr. Keller, provided his rebuttal testimony to the Board one week later, on January
31, 2008.

1 investigations into various aspects of the Palouse Basin and Grande Ronde aquifer. Dr. Osiensky
2 has also worked as a consultant on various hydrogeologic and groundwater issues for the U.S.
3 Nuclear Regulatory Commission and other entities in Idaho over the past two and one-half
4 decades. *Exh. R-67.*

5 [46]

6 Since 1999, Dr. Osiensky and Dr. Keller have collaborated on at least four occasions as
7 co-principal investigators of the hydrostratigraphic conditions in the Palouse Basin for the
8 Palouse Basin Aquifer Committee (PBAC). They have also collaborated under contract with
9 PBAC on investigations of groundwater age dating in the Palouse Basin. *Exh. R-67.*

10 [47]

11 Dr. Osiensky's analysis was intended to quantify the interference drawdown that can be
12 expected to occur both with and without consolidation of WSU's existing groundwater rights,
13 and to compare the relative effects of various consolidation scenarios with pre-consolidation
14 conditions. Interference drawdown occurs when the pumping of one causes the groundwater
15 level to decline in another well. The amount of interference drawdown varies depending on a
16 number of factors, including the distance between the wells, aquifer properties, pumping rates,
17 and duration of pumping. *Testimony of Osiensky.*

18 [48]

19 WSU's campus well system is about three to three and one-half miles north of the well on
20 Mr. Cornelius' property. *Exh. R-64A.* More specifically, the cluster of WSU Wells No. 1, 2, 3,
21 and 4 are approximately 15,887 feet from the Cornelius Well, and WSU Wells No. 6 and 7 are

1 approximately 15,937 and 15,335 feet away, respectively. WSU Well No. 5 is the farthest from
2 the Cornelius Well at approximately 17,923 feet; and WSU Well No. 8 is the closest, at
3 approximately 14,800 feet. *Testimony of Osiensky, Exh. R-63A, Exh. R-64A.*

4 [49]

5 Dr. Osiensky calculated the projected drawdown effects of various well configurations
6 and pumping scenarios using the Cooper-Jacobs approximation method, which is a modified and
7 simplified form of a more complicated theoretical approach known as the Theis Equation. The
8 Theis Equation estimates drawdown using inputs, based on data or assumptions, of static water
9 levels, pumping rates, time, storativity and transmissivity of the aquifer, and the distance
10 between the wells in question. The Cooper-Jacobs method allows investigators to evaluate the
11 impacts of multiple wells by using the principle of super-position and, like the Theis Equation,
12 uses data or assumptions about several variables such as pumping rates, aquifer transmissivity
13 and storativity, and time. *Testimony of Osiensky.*

14 [50]

15 Dr. Osiensky's calculations indicate that if WSU were to pump its entire authorized
16 quantities continuously for ten years, the maximum drawdown that would be experienced at the
17 Cornelius well is no more than 1.9 feet by the end of the decade, with the greatest portion of that
18 being experienced in the first year. Additionally, Dr. Osiensky's calculations indicate that the
19 relative difference in the drawdowns that would be caused by withdrawing water from different
20 configurations of pumping wells is approximately one-half inch after 10 years. The scenarios he
21 used compared the relative differences between pumping under the pre-consolidation well

1 configuration with a variety of post-consolidation scenarios, including pumping WSU's entire
2 authorized quantities from any single well or from only Wells No. 7 and 8. *Testimony of*
3 *Osiensky.*

4 [51]

5 The Cooper-Jacobs method has notable limitations, in that it uses a number of
6 assumptions about aquifer properties, some of which are known not to be true in the Grande
7 Ronde aquifer system. These include the assumptions that the area influenced by the test has a
8 uniform thickness, and that all wells fully penetrate the aquifer. *Testimony of Osiensky,*
9 *Testimony of Keller.* To compensate for these known limitations, Dr. Osiensky used
10 conservative estimates for each of the different assumptions in order to produce the greatest
11 potential impact. Other, more complicated, methods are available for calculating interference
12 drawdown, but all are based on the Theis Equation and use more complicated methods with more
13 variables and assumptions. In Dr. Osiensky's opinion, no better tool is available for evaluating
14 the anticipated drawdown effects of different pumping scenarios for the WSU Pullman campus
15 well system. *Testimony of Osiensky.*

16 [52]

17 In Dr. Keller's opinion, the calculations employing the Cooper-Jacobs method are not
18 reliable in this situation. Dr. Keller notes that Dr. Osiensky assumed the GRA is infinite in size,
19 when in fact, boundaries for the GRA exist. Without the inclusion of boundary assumptions, the
20 resulting calculations will show much smaller drawdown impacts. Additionally, Dr. Osiensky's
21 calculations do not realistically depict what is actually occurring. Data regarding the observed

1 rate static level drawdown is approximately one foot per year, whereas Dr. Osiensky's
2 calculations show drops in the static water level that are one-twentieth or less than what is
3 normally observed. *Testimony of Keller.*

4 [53]

5 Dr. Keller supports the use of both theoretical (Cooper Jacobs method) and observation
6 approaches (use of data from observation wells) as available methods to analyze potential
7 impacts to the GRA from a change in the pumping regime. However, Dr. Keller believes it
8 makes more sense to place a priority on known and existing data from observation wells.
9 Available observation data shows that drawdowns in the GRA are not related to the radial
10 distance between the point of withdrawal and the observation location, nor to the relative depths
11 of the wells, but instead are driven much more by the aggregate rate of pumping from the aquifer
12 system. Given the complexity of the GRA system, additional pump tests involving the WSU
13 wells could not add much to what is already known about the potential drawdowns effects of
14 consolidating WSU's water rights. This is because typical pump tests, lasting from a few hours
15 to as long as two weeks, will not reliably predict affects that might occur over the longer term.
16 *Testimony of Keller.*

17 [54]

18 Although the Cooper-Jacobs method is not a perfect theoretical tool because it is unlikely
19 to give accurate *quantitative* results, Dr. Keller agrees that the method is a reasonable tool to
20 evaluate the *relative* changes that can be expected from different pumping scenarios and well
21 configurations. This is because even if the underlying assumptions are changed to reflect

1 different views of various aquifer parameters, which would result in different quantitative
2 drawdown results, the Cooper-Jacobs method still reliably calculates the relative changes
3 between various pumping scenarios. *Testimony of Keller.*

4 [55]

5 Based on the weight of expert testimony (Keller, Osiensky), the Board finds that it is the
6 aggregate pumping of the aquifer that most directly affects water levels in the aquifer. A change
7 in the point of withdrawal within this particular basalt system will have only minor effects on the
8 water table. The Board also finds that the method used by Dr. Osiensky was sufficient to show
9 that the relative changes to the aquifer would be slight if the WSU wells were consolidated.
10 Furthermore, the Board finds that the use of this method is appropriate because additional pump
11 tests involving the WSU wells could not add much additional information on drawdown impacts.

12 [56]

13 The Board also finds, consistent with the weight of expert opinion, that consolidation of
14 WSU's existing water rights will have no appreciable effect on the Cornelius well, or other
15 surrounding wells, and will not change the manner in which Cornelius is able to withdraw water
16 from his well.

17 [57]

18 Any Conclusion of Law deemed to be a Finding of Fact is hereby adopted as such.

19 //

20 //

21 //

1 **CONCLUSIONS OF LAW**

2 [1]

3 ***Enlargement***

4 Appellants contend Ecology improperly used the quantities from an invalid claim (Claim
5 No. 098524) as a basis to award additional quantities at an alternative location. To allow the
6 transfer of any quantity that is based on an invalid claim, Appellants argue, would improperly
7 validate illegal water use and unlawfully enlarge the subsequent right. They seek a reduction in
8 the instantaneous quantity authorized by Permit No. G3-28278P (historically associated with
9 Well No. 7) because they believe the instantaneous quantity contained in that permit is based, in
10 part, on the 500 gpm instantaneous quantity represented by Claim No. 098524.

11 [2]

12 The statutory prohibition on enlargement provides: "...where an additional well or wells
13 is constructed, the original well or wells may continue to be used, but the combined total
14 withdrawal from the original and additional well or wells shall not enlarge the right conveyed by
15 the original permit or certificate..." *RCW 90.44.100(2)*.

16 [3]

17 We conclude that the invalidity of Claim No. 098524 did not require Ecology to subtract
18 the quantities associated with that claim from the quantities authorized under Permit No. G3-
19 28278P. We denied summary judgment on this issue because it involves mixed questions of law
20 and fact; specifically what, in fact, was intended by the "supplemental" nature of the permit, and
21 what is the legal effect of such characterization. The parties disputed the factual relationship
between the quantities in the two related water rights, and disagree on the legal effect of
Ecology's determination that Claim No. 098524 is not a valid water right.

[4]

1 We conclude that the language in Permit No. G3-28278P was intended to indicate that
2 Well No. 7 was non-additive to other rights, meaning that the permit did not increase the water
3 available to WSU, and would provide an alternate source of water for WSU. This intent was
4 reflected in the permit condition limiting the maximum instantaneous quantity (Qi) of
5 withdrawal to 2,500 gpm, “*less those amounts appropriated under Ground Water Certificate No.*
6 *5070-A and Ground Water Claims No. 098522 and 098524.*” See, *Exh. A-25*. Importantly, this
7 interconnection or interrelationship between the rights is not the same as finding the 2,500 gpm
8 Qi authorized by Permit No. G3-28278P was somehow *calculated from, or legally dependent on,*
9 WSU’s other pre-existing water rights or claims. Instead, Ecology determined the amounts of Qi
10 and Qa authorized in Permit No. G3-28378P were based on WSU’s water system capacity,
11 limitations, and long-range operational plans. This determination, although in some ways related
12 to the quantities of WSU’s existing water rights, was not derived or calculated from the specific
13 quantities contained in the invalid claim and the other WSU water rights.

[5]

14 Additionally, we recognize that Permit G3-28278P is a separate water right, with its own
15 priority date. By seeking a new water right through the Permit, rather than redrilling existing
16 wells, WSU was aware that this water right would be perfected at a much later time than the
17 priority date established for its other water rights. It was important to WSU that it have a reliable
18 source of water to meet the needs of the entire campus. The Permit is limited only to the extent
19 that the maximum quantity of the permit is dependent on how much water is being withdrawn
20 pursuant to the water rights mentioned in the permit itself (Claims No. 098522, 098524, and
21 Certificate No. 5070-A). Based on the analysis above, we conclude Ecology’s approval of the
change application for Permit No. G3-28278P did not unlawfully enlarge the right represented by
that permit.

1 [6]

2 ***Impairment***

3 The Ground Water Code allows the approval of a change application only on the
4 condition that “other rights shall not be impaired.” *RCW 90.44.100(2)*. The impairment analysis
5 involved in a change application is the same as an original application for a new right. *Id.*, *RCW*
6 *90.03.290(3)*.¹⁰ In the absence of a statutory definition of “impairment,” Ecology has
7 established, by rule, a two-part test for determining impairment in the groundwater context. The
8 impairment test is set forth at WAC 173-150-060 as follows:

9 For the purposes of this chapter, a ground water right which pertains to qualifying
10 withdrawal facilities, shall be deemed to be impaired whenever:

11 (1) There is an *interruption or an interference in the availability of water*
12 to said facilities, or a contamination of such water, caused by the
13 withdrawal of ground water by a junior water right holder or holders;

14 *and*
15 (2) *Significant modification is required* to be made to said facilities in
16 order to allow the senior ground water right to be exercised. *WAC 173-*
17 *150-060* (emphasis added).¹¹

18 [7]

19 This two-part rule reflects the Ground Water Code’s correlative objectives of protecting
20 prior rights and at the same time promoting full utilization of the public resource. Like the code
21 it implements, the rule seeks to harmonize the priority system established by *RCW 90.44.130*
and the “reasonable or feasible pump lift” concept of *RCW 90.44.070* which qualifies that

¹⁰ *RCW 90.03.290(3)* directs Ecology to issue the permit “if it shall find ... the proposed application will not impair existing rights or be detrimental to the public welfare...”

¹¹ Although the test is stated in terms of analyzing the impact of new, junior rights on senior rights, Ecology applies the same standard to its evaluation of change applications in which all existing rights (both junior and senior) must be protected. See *WAC 173-150-120*.

1 system.¹² Thus, “impairment” will not be found to require denial of a new or amended water
2 right application unless any identified interference or interruption cannot be remedied by
3 withdrawing from a deeper level that is within the “reasonable or feasible pump lift” standard.
4 See *Graves v. Ecology and City of Okanogan*, PCHB Nos. 88-140, 141 & 144, at COL III-IV
5 (1989) (citing *Shinn v. Ecology*, PCHB Nos. 75-613 (1975)).

6 [8]

7 This Board previously explained in its Amended Order on Summary Judgment in this
8 case, that where a proposed change will, beyond speculation, have a detrimental effect upon a
9 lawful existing well or a substantial cumulative increase in pumping lift, then a remand to
10 Ecology would be appropriate for determination of the reasonable or feasible pumping lift that it
11 will protect in existing lawful wells. *Amended Order on Summary Judgment*, (January 18,
12 2008), at fn 23 (citing *Pair v. Ecology & Lehn Ranches*, PCHB 77-189 (1978)). Where the
13 evidence does not establish a realistic probability of interference or interruption in the
14 availability of water that is attributable to the requested change application, however, Ecology is
15 not required to undertake a reasonable or feasible pump lift determination. *Id.*

16 [9]

17 Where interference or interruption may be expected to occur as a result of approving an
18 application for a new or amended water right, a further evaluation is then required of what sort of
19 modifications to the existing facilities may remedy the expected interference or interruption.
20 *WAC 173-150-060(2). Heer Brothers v. Ecology & Schell*, PCHB Nos. 894 & 894A (1976), at 8.

21 ¹² RCW 90.44.070 provides, in part: “No permit shall be granted for the development or withdrawal of public
ground waters beyond the capacity of the underground bed or formation in the given basin, district, or locality to
yield such water within a reasonable or feasible pumping lift in case of pumping developments...”

1 [10]

2 The first prong of the impairment test requires some analysis of the probability and extent
3 of any potential interference or interruption, as well as consideration of causation. In an ideal
4 world, Ecology and the interested parties would have a full and complete picture of whether,
5 how, and to what extent the proposed right would impact the exercise of existing rights. But in
6 the context of a complicated or poorly understood aquifer system such as the GRA, where there
7 continues to be imperfect information about how the system works despite considerable
8 scientific investigations, a qualitative analysis may suffice. In such situations, relevant factors
9 include the amount of water involved in the proposed change, the relative distances among the
10 original and proposed changes in points of withdrawal and the facilities of the existing right
holders, and the available information about aquifer properties.

11 [11]

12 We conclude the Appellants did not meet their burden to establish impairment or any
13 realistic probability of interference or interruption based on changing the location of WSU's
14 pumping. At the time Ecology issued the ROEs in this case, it had as much information as
15 reasonably could be expected under the circumstances to consider the impairment issue and
16 reach a correct "no impairment" conclusion. Our de novo review of the additional information
17 and expert analysis developed for the hearing confirms that approval of the change applications
18 will not cause impairment of exiting water rights. In the absence of impairment, we also
19 therefore conclude that the public welfare will not be harmed by Ecology's approval of these
water right changes.

20 [12]

21 Appellants' case focused primarily the declining trend of the aquifer and how WSU's
withdrawal of more of its authorized quantity of water will contribute to, or further accelerate,

1 that decline to the detriment of all water users in the area. However, Appellants failed to show
2 that changing the points of withdrawal for WSU's existing water rights or re-configuring the
3 withdrawals among its existing wells would have any appreciably different impact on Mr.
4 Cornelius or other water right holders than if WSU continued to exercise its rights as it has in the
5 past. In a case involving whether a change in the place of use of a surface water right would
6 adversely impact existing rights, this Board has previously recognized that, to the extent existing
7 valid rights were at issue, the fact water was over-appropriated in the Methow River system was
8 not in and of itself relevant to the impairment question. *Knight, et al. v. Ecology and R.D. Merrill*
9 *Co.*, PCHB Nos. 94-61, 94-77, & 94-80, (Final Findings of Fact, Conclusions of Law and Order)
10 (1995), at 13. The Board stated: "[t]he issue is whether the specific transfer and, in this case,
11 consolidation of rights, will have an increased impact on the river." *Id.*

12 Neither of Appellants' expert witnesses in this case performed their own analysis of the
13 changes in spatial distribution of the WSU wells relative to Mr. Cornelius' well. Appellant's
14 expert, Dr. Brackney, who opined that well construction had an effect on drawdowns, was
15 effectively contradicted by Appellant's second expert, Dr. Keller, who opined that well depths do
16 not appreciably affect aggregate drawdown rates, and that drawdown rates in the GRA do not
17 differ horizontally versus vertically. The experts of both sides agreed that the Cooper-Jacobs
18 approximation method used by Dr. Osiensky is a reasonable tool to evaluate the relative changes
19 between pumping configurations. We conclude this method was appropriately applied in the
20 Grande Ronde aquifer under these circumstances, and when combined with observation data,
21 identifies no material differences between WSU's pre-consolidation and post-consolidation
pumping authorized by the water right changes. Accordingly, we conclude that the Appellants
failed to meet their burden of demonstrating impairment such that RCW 90.44.100(2) would
preclude approval of the change applications.

1 [13]

2 The second prong of the impairment test involves analysis of what modifications to
3 existing facilities, such as deepening a well or otherwise increasing its pumping ability, might be
4 necessary to remedy any expected interference or interruption. Appellants urge the Board to
5 conclude that Ecology erred by not establishing a “reasonable or feasible pump lift” in this case.
6 They contend determination of a reasonable or feasible pump lift is necessary to protect Mr.
7 Cornelius and other existing water right holders from the declining water levels in the Grande
8 Ronde aquifer. What they failed to do, however, is establish that consolidation of WSU’s water
9 rights will cause any interference or interruption in the availability of water in the domestic well
10 of Mr. Cornelius or other existing water right holders. In the absence of any realistic probability
11 of interference, or a causal connection with the change in location of WSU’s withdrawals, we
12 conclude Ecology is not required to establish a reasonable or feasible pump lift.

13 [14]

14 Appellants urge the Board to direct Ecology to establish a reasonable or feasible pumping
15 lift in the GRA, even in the absence of finding impairment. They point to a previous Board
16 decision to argue Ecology has a statutory duty to set a reasonable and feasible pumping lift in
17 order to protect existing water right holders even if a change/transfer is found lawful. *Graves v.*
18 *Ecology and City of Okanogan*, PCHB Nos. 88-140, 141 & 144 (1989). In *Graves*, the Board
19 conditioned the approval of a water right transfer by requiring the permittee to submit evidence
20 sufficient for Ecology to determine reasonable or feasible pumping lifts for existing domestic
21 and irrigation rights. It did so even though it concluded the transfer did not impair existing water
rights. *Id.*, at COL V. Of significance to the Board in that case was that, although the Board
could not conclude the transfer would impair existing water rights, it found the transfer of the
City’s water rights had, in fact, caused other nearby wells to go dry (by drawing water levels

1 down in the range of 2-4 feet), and that modest measures to deepen the existing wells had, in
2 fact, restored existing appropriators' access to water. *Id.*, at FOF VIII. The significant
3 interference caused by approval of the City's water rights justified the further investigation into
4 establishing "with necessary clarity the line between the rights of senior and junior appropriators
5 in the locality in question." *Id.*, at COL VI. We find *Graves* distinguishable because the present
6 case offers no similar evidence of interference.

7 [15]

8 Finally, we note that Ecology is working within its existing authorities to manage
9 groundwater resources in the area. Many others, including Appellants and WSU, are
10 participating in those efforts. In the event water levels continue to decline as a result of
11 aggregate withdrawals from the GRA, to the point of interfering with appropriators' exercise of
12 their water rights, both Ecology and existing water right holders have a variety of tools available
13 to them, including procedures for filing and responding to notifications of claims of impairment
14 such as those provided in WAC 173-150-070 and 080.

15 [16]

16 Any Finding of Fact deemed to be a Conclusion of Law is hereby adopted as such.

17 //

18 //

19 //

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21 //

1 Based on the foregoing analysis, the Board hereby enters the following:

2 **ORDER**

3 Ecology's decisions approving changes to six groundwater rights held by WSU to serve
4 its Pullman campus are each AFFIRMED.¹³

5
6 DATED this 17th day of April, 2008.

7 **POLLUTION CONTROL HEARINGS BOARD**

8
9 ANDREA MCNAMARA DOYLE, Presiding

10
11 KATHLEEN D. MIX, Chair

12 see separate concurrence and dissent
13 WILLIAM H. LYNCH, Member

14
15
16
17
18
19
20
21 ¹³ The change decisions are those related to the following six water rights: Permit No. G3-28278P, Claims No. 098522 and 098523, and Certificates No. 5070-A, 5072-A, and G3-22065C.