BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE STATE OF IDAHO

IN THE MATTER OF APPLICATION TO APPROPRIATE WATER NO. 63-33064 IN THE NAME OF LAWRENCE HANSEN AND KAY HANSEN	))))	**PRELIMINARY ORDER APPROVING APPLICATION**

PARTIES

On June 10, 2008, Lawrence and Kay Hansen ("Hansens" or "applicants") filed an application to appropriate water with the Idaho Department of Water Resources ("IDWR" or "Department"). The Hansens' application, no. 63-33064, seeks the appropriation of 0.16 cubic feet per second ("cfs") from ground water for the irrigation of six acres of land and for commercial use in a winery.

The Department published notice of application no. 63-33064, and it was protested by Herbert H. Nitz, Herbert D. Lloyd, James and Michele Unsworth, Fred Nitz, and John Jobe. James and Michele Unsworth did not appear at the pre-hearing conference, and on May 19, 2009, the Department issued a Default Order dismissing their protest. Herbert H. Nitz and Herbert D. Lloyd did not appear at the hearing, and on December 21, 2009, the Department issued a Default Order dismissing their protests.

ISSUES PRESENTED

The protestants assert that diversion of ground water by the Hansens will interfere with their ability to divert ground water from their domestic wells. The protestants also assert that the Hansens should have to conserve the ground water resource by using surface water as the primary source of irrigation water for their land.

PROCEDURAL HISTORY

On December 3, 2009, at the Department's State Office in Boise, Idaho, the hearing officer conducted a hearing to resolve the protests filed against application for permit no. 63-33064.

Protestants Fred Nitz and John Jobe ("protestants") were present at the hearing and represented themselves. Attorney Jo Beeman represented the applicants. The following witnesses testified at the hearing:

- Applicant Lawrence Hansen
- Steven R. Hannula of ERO Resources Corp. as an expert witness for the applicants
- Protestant John Jobe
- Protestant Fred Nitz

At the hearing, the hearing officer admitted the following items into evidence:

- Exhibit 100 – A written statement from Fred Nitz and Carolyn Nitz
- Exhibit A – Deficit Irrigation Practices: Watering Techniques Used to manage Water Application.
- Exhibit B – Netafim dripline specifications.
- Exhibit C – Picture of New Holland tractor with in-row and between-row tillers for weed management.
- Exhibit D – Picture of Toro vineyard maintenance vehicle.
- Exhibit E – Pictures of vineyard.
- Exhibit F – Picture of dripline and trellis.
- Exhibit G – Davis Creek Cellars: Customer for Tempranillo graps [sic] for '08 and '09.
- Exhibit H – Indian Creek Winery: Customer for Tempranillo grapes for '08 and '09.
- Exhibit I – Report of expert witness (ERO Resources).
- Exhibit J – Resume of Steven R. Hannula (ERO Resources).
- Exhibit K – Boise-Kuna Irrigation District annual assessment to Lawrence A. Hansen dated November 4, 2009.
- Exhibit L – FPS Grower Agreement between Larry. A. Hansen and the University of California

The hearing officer left the record open after the hearing to allow the parties to submit information about the presence of the herbicide 2,4-D in the Boise-Kuna Irrigation District ("BKID") surface water and its potential impacts on grapevines. The parties submitted the following items admitted into the record:

- December 10, 2009, letter from Steven R. Hannula of ERO Resources Corp. to Josephine Beeman.
- December 2000 information about 2,4-D from the State of Wisconsin.
- July 2004, chemicalWATCH Factsheet on 2,4-D published by Beyond Pesticides of Washington, D.C.
- Label for 2,4-D Amine Weed Killer.
- October 1999 Oregon State University Extension Service article *Preventing Phenoxy Herbicide Damage to Grape Vineyards.*
- Undated and unsigned Statement of Larry Hansen.
- December 7, 2009, letter from Tim Page of the Boise Project Board of Control to Caroline Nitz.
- December 7, 2009, unsigned letter from Roger Williamson of Williamson Orchards and Vineyards to Caroline Nitz.

Based on the evidence presented at the hearing, the hearing officer finds, concludes, and orders as follows:

FINDINGS OF FACT

1. Application no. 63-33064, filed by the Hansens, proposes the following:

Flow rate:	0.12 cfs for irrigation 0.04 cfs for commercial use 0.16 cfs total diversion rate
Purpose of Use:	Irrigation of 6 acres Commercial use for a winery
Source of Water:	Ground water
Period of Use:	Irrigation use: March 1 through November 15 Commercial use: January 1 through December 31
Proposed Priority Date:	June 10, 2008
Point of Diversion:	SE¼NE¼, Sec. 31, Township 3 North, Range 1 East, B.M.
Place of Use:	SE¼NE¼, Sec. 31, Township 3 North, Range 1 East, B. M.

2. The applicants own approximately 6.1 acres of land at the proposed place of use, which is about five miles south of Meridian, Idaho, in the Treasure Valley. Their land is bounded on the north by Tanya Lane and on the south by Mary Lane. Two contiguous parcels comprise the proposed place of use: a 1-acre parcel on the south end on which the house and well are located, and an approximately 5- acre parcel in the north. The Hansens purchased the two parcels in 2001 from Gilbert Rice to develop a vineyard and winery.

3. On May 4, 2000, the Snake River Basin Adjudication ("SRBA") court decreed water right no. 63-27790 for domestic use from ground water for 0.04 cfs in the names of Gladys Rice and Gilbert Rice. Water right no. 63-27790 has a priority date of September 1, 1962. The Department's database for water rights includes an explanatory remark that water right no. 63-27790 is appurtenant to parcel no. S1131141900, which is the southernmost of the Hansens' two parcels of land. A house and a well are located on parcel no. S1131141900. Right 63-27790 authorizes the irrigation of up to half an acre in connection with the home. The Hansens have not submitted a water right ownership change notice to the Department.

4. The Hansens' proposed place of use is within the Boise-Kuna Irrigation District ("BKID") service area. The applicants pay assessments to BKID for the delivery of water sufficient to irrigate 6.16 acres, although they have not used BKID water for irrigation since they acquired their two parcels of land from Gilbert Rice.

5. The Farr Lateral carries surface water for irrigation purposes from the BKID to within 300 feet south of the Hansen property. A Parma lift pump lifts water from the Farr Lateral to buried pipe. The pipe carries water from the lateral to a vertical standpipe on the south side of the Hansens' property, adjacent to Mary Lane. There is a 20 foot rise in elevation from the lift station to the standpipe. From the standpipe, water is delivered to BKID water users in the vicinity of the Hansen property.

6. The pipeline from the Farr Lateral originally served six to eight water users, including Gilbert Rice when he owned the land now owned by the Hansens. Currently six water users, including protestants John Jobe and Fred Nitz, receive irrigation water from the Farr Lateral via the pipeline (herein referred to as the "neighborhood pipeline").

7. At least until 1980, and possibly beyond, Gilbert Rice used BKID surface water delivered through the Farr Lateral and the neighborhood pipeline to irrigate the land now owned by the Hansens.

8. Historically, the neighborhood pipeline users have rotated the use of their BKID surface water among themselves. Currently the rotation system operates informally. John Jobe typically waters his lawn with BKID surface water three days a week during the irrigation season. Fred Nitz usually irrigates three consecutive days in rotation during the irrigation season.

9. Every irrigation season since 2004, the Hansens have irrigated their vineyard of various grape varieties, including Tempranillo grapes, with ground water diverted from the well located on their land. Since 2008 the Hansens have obtained authorization to divert ground water for irrigation by renting water from the Idaho Water Resource Board's Water Supply Bank.

10. The Hansens' proposed point of diversion is a well 306 feet deep and six inches in diameter. The static water level in the well is 130 feet below ground level. The well was drilled in or before 1963. The applicants replaced the pump in their well with a three horsepower variable speed pump, set at 180' below ground level.

11. The current delivery system from the applicants' well includes a two inch mainline from which lateral pipelines convey water to a Netafim dripline irrigation system. The dripline has 0.5 gph pressure-compensating emitters spaced every two feet. The Netafim emitters use a fine membrane to control the application of water to the root zone of the grapevines. The lateral rows are approximately 200 feet long and receive a maximum 0.8 gpm for six hours. The vineyard is divided into seven irrigation zones. Each zone is irrigated once a week. The largest zone is 15 rows. At 18 gpm, the entire system currently uses approximately 4320 gpd.

12. Water impurities impair the functionality of Netafim dripline and water emitters, which can be clogged by particles and mineral deposits in the water they deliver.

13. The Hansens employ a water management practice called "regulated deficit irrigation" (RDI). In RDI, the amount of irrigation is varied through the growing season according to the state of grapevine development. RDI allows the grower to control water stress at certain stages in vine development. The goal of RDI is to limit shoot growth and vine vigor and to maximize fruit quality and yield by carefully applying a limited volume of water for irrigation. A high volume of irrigation water encourages vine growth, which is detrimental to fruit quality.

14. RDI cannot be accomplished effectively with furrow or flood irrigation.

15. During the summer months, the Hansens irrigate their vineyard seven days a week to provide optimum growing conditions for grapes.

16. Surface water for irrigation is not always consistently available from BKID during the entire irrigation season. During drought years, BKID notifies its shareholders when their normal quantity of water will be cut back.

17. When BKID surface water is in short supply, Fred Nitz buys water from other users, including users on the common pipeline system.

18. The commercial use proposed in the application is for a winery, which requires chemical-free, clean, potable water. Without expensive treatment, surface water is not of sufficient quality for a winery.

19. The Hansens sold grapes to Davis Wine Cellars and Indian Creek Winery in 2008 and 2009, and they have commitments for future sales. They are the sole suppliers of Tempranillo grapes for the Indian Creek Winery.

20. In most of the Treasure Valley the Department usually authorizes an annual diversion volume of 4.5 af per acre for irrigation purposes. The standard is based on the water needs of alfalfa.

21. Unless justification is provided for requiring a greater diversion rate, the Department limits irrigation rights to a diversion rate of 0.02 cfs per acre for parcels exceeding five acres.

22. When RDI is employed, grapes consume about ten percent of the amount of water consumed by alfalfa.

23. Six acres of grapevines irrigated according to RDI and the highly efficient diversion and delivery system put in place by the Hansens will use about 3 acre-feet annually for irrigation under ordinary seasonal conditions.

24. The Hansens consulted three irrigation pump companies about using the BKID surface water to irrigate their vineyard. The companies advised against using the surface water due to the following technical issues:

    a) The topography of the vineyard and the distance of the lateral ditch and the lift pump from it are challenges to reconfiguring the surface water system.
    b) The current system delivers a much higher flow of water than the vineyard needs. Because the vineyard surface area is mainly dirt, soil erosion would probably result from using the high volume of water for some type of flood irrigation.
    c) The Hansens would not need all the water currently supplied from the neighborhood pipeline to irrigate their vineyard. The excess water would have to be contained in a tank or pond, drained away, or used for another purpose to prevent flooding on the

neighboring properties. It would be inordinately expensive relative to the volume of water needed to redesign the surface water delivery system so that only the required amount of water would be delivered to the Hansens' property or so that the water exceeding the Hansens' instantaneous demand could be stored on site.

d) To use the surface water, the Hansens would have to install a complex filtering system due to the water purity requirements of the Netafim dripline and emitters used to irrigate the grapevines. Even with a filtering system, particulates and dissolved minerals in the surface water could clog the Netafim emitters and shorten their useful lives.

25. Grapevines are highly sensitive to the herbicide 2,4-D and similar phenoxy herbicides, which are used by the Boise Project Board of Control for chemical mowing along waterways in the Treasure Valley. Inadequate spraying precautions and wind drift provide the greatest danger to grapevines from 2,4-D and similar herbicides. It is unlikely that 2,4-D in the surface water supplied by BKID would damage grapevines.

26. Ground water is available for appropriation from the Treasure Valley aquifer in the area where the applicants propose to divert water.

27. Within a ¼-mile radius of the Hansens' well there are several wells that utilize the same aquifer. Five of these wells were drilled before 1978. Those five wells range from about 760 feet away from the Hansens' well to about 1280 feet from the Hansens' well. One of the five domestic wells drilled prior to 1978 belongs to Herbert D. Lloyd. A sixth nearby well, Herbert H. Nitz's, may also have been in use since before 1978. It is about 350 feet from the Hansens' well.

28. The applicants' expert witness, Steve Hannula of ERO Resources, conducted a Theis analysis of theoretical drawdown in wells proximal to the subject well. The Theis analysis used a continuous pumping rate of 0.04 cfs for 365 days. The modeled diversion rate of 0.04 cfs was chosen to approximate a variation in flow from zero up to 0.16 cfs. The Theis analysis predicted a 2.3 foot drawdown in wells 500 feet from the Hansen well, and a drawdown of 1.3 feet in wells 1000 feet from the Hansen well.

29. Protestant John Jobe diverts water for domestic use from a well located approximately 470 feet from the Hansens' well. Mr. Jobe's well, drilled in 1983, replaced a well drilled in 1966. Mr. Jobe does not have a recorded water right authorizing diversion of water from his well. Instead, Mr. Jobe diverts water pursuant to the domestic exemption in accordance with Idaho Code §§ 42-111 and 42-227. Mr. Jobe has a sufficient supply of water and is not aware of water level changes in his well. However, in 2007 he began treating the water from his well to reduce a sulfur odor.

30. Protestant Fred Nitz diverts water for domestic purposes from a well located approximately 500 feet from the Hansens' well. Mr. Nitz's well was drilled in 1992. Mr. Nitz does not have a recorded water right authorizing diversion of water from his well. Instead, Mr. Nitz diverts water pursuant to the domestic exemption in accordance with Idaho Code §§ 42-111 and 42-227. Mr. Nitz has not noticed a decline in the productivity of his well.

31. The applicants have already invested substantial financial resources in the development of the vineyard. To finance the proposed winery, the Hansens intend to sell a four-acre parcel of land in Ada County.

CONCLUSIONS OF LAW

Governing Statutes

1. Idaho Code § 42-203A states in pertinent part:

> In all applications whether protested or not protested, where the proposed use is such (a) that it will reduce the quantity of water under existing water rights, or (b) that the water supply itself is insufficient for the purpose for which it is sought to be appropriated, or (c) where it appears to the satisfaction of the director that such application is not made in good faith, is made for delay or speculative purposes, or (d) that the applicant has not sufficient financial resources with which to complete the work involved therein, or (e) that it will conflict with the local public interest as defined in section 42-202B, Idaho Code, or (f) that it is contrary to conservation of water resources within the state of Idaho, or (g) that it will adversely affect the local economy of the watershed or local area within which the source of water for the proposed use originates, in the case where the place of use is outside of the watershed or local area where the source of water originates; the director of the department of water resources may reject such application and refuse issuance of a permit therefor, or may partially approve and grant a permit for a smaller quantity of water than applied for, or may grant a permit upon conditions.

2. Idaho Code § 42-226 states in pertinent part:

> The traditional policy of the state of Idaho, requiring the water resources of this state to be devoted to beneficial use in reasonable amounts through appropriation, is affirmed with respect to the ground water resources of this state as said term is hereinafter defined and, while the doctrine of "first in time is first in right" is recognized, a reasonable exercise of this right shall not block full economic development of underground water resources.

3. The Idaho Supreme Court ruled in *Parker v. Wallentine*, 103 Idaho 506, 650 P.2d 648 (1982) ". . . that domestic wells drilled prior to 1978 are exempt from the provisions of I.C. § 42-226." In other words, the concept of reasonable pumping levels cannot be applied to domestic wells drilled before 1978.

4. Idaho Code § 42-231 states in pertinent part:

> In addition to other duties prescribed by law, it shall be the duty of the director of the department of water resources ... to control the appropriation and use of the ground water of this state as in this act provided and to do all things reasonably

necessary or appropriate to protect the people of the state from depletion of ground water resources contrary to the public policy expressed in this act.

5. Idaho Code § 42-248 states in pertinent part:

> All persons owning or claiming ownership of a right to use the water of this state, whether the right is represented by decree of the court, by claim to a water right filed with the department of water resources or by permit or license issued by the director of the department of water resources, shall provide notice to the department of water resources of any change in ownership of any part of the water right or of any change in the owner's mailing address, either of which occurs after June 30, 2000. Notice shall be provided within one hundred twenty (120) days of any change using forms acceptable to the director.

Burden of Proof

6. The applicant bears the ultimate burden of proof regarding all the factors set forth in Idaho Code § 42-203A.

Analysis of the well interference issue

7. The protestants testified that ground water levels in their wells have declined over time. They attributed the ground water level declines to increased pumping, and they are concerned that further ground water withdrawals will result in significant additional declines in ground water levels. In general, pursuant to Idaho Code § 42-226, ground water appropriators are not entitled to historic ground water levels, but merely reasonable pumping levels. Expert witness Steven R. Hannula predicted that pumping from the Hansens' well as proposed in the application would result in ground water declines of approximately 2.3 feet at a distance of 500 feet from the well and 1.3 feet at a distance of 1000 feet from the well. Declines of such a small magnitude are not beyond reasonable pumping levels. Because it was established in 1992, protestant Fred Nitz's domestic water use is subject to reasonable pumping levels.

8. Ground water diversions for domestic purposes that commenced prior to 1978 are exempt from the application of reasonable pumping levels. The domestic water use on protestant John Jobe's land began in 1966, but the original well was replaced in 1983. Mr. Jobe currently has a sufficient supply of water from his well, even while the Hansens have been pumping ground water pursuant to their rental from the Water Supply Bank. Either the Hansens' pumping has had no effect on the water levels in Mr. Jobe's well, or the effect has been insignificant. As for the handful of other pre-1978 domestic wells within a quarter mile of the Hansens' well, only Herbert H. Nitz and Herbert D. Lloyd communicated a concern about current or potential declines in ground water levels attributable to the Hansens, but neither Herbert H. Nitz nor Herbert D. Lloyd appeared at the hearing to testify about their experiences and concerns.

Analysis of the conservation of ground water issue

9. This case juxtaposes the public benefits of requiring the use of surface water for irrigation against the individual benefits to the Hansens of the opportunity to divert and use ground water to irrigate their vineyard. There is no question that surface water from BKID is not a viable source for the winery component of the Hansens' application. To serve as a source of water for the winery, the surface water would have to undergo substantial and costly treatment to achieve the sanitary standards for winemaking and customer service. For irrigation, however, the issue is more complicated. In general, requiring the use of surface water instead of ground water has several benefits for the Treasure Valley. First, leaky canals and ditches and relatively inefficient surface water irrigation practices provide a critical source of recharge for the valley's aquifers, which supply water for critical municipal, industrial, commercial, and domestic uses throughout the valley. Second, using surface water when possible conserves the higher quality ground water for uses that require higher quality water.[1] Third, using surface water conserves for Idaho's benefit a resource that might otherwise flow downstream and be lost to the state. And fourth, continued surface water use maintains a broad base of financial support for the surface water delivery entities. For these reasons, if the Hansens proposed to irrigate alfalfa, lawn, or some typical row crop, their proposed use of ground water as a primary source when surface water is available might not be in the public interest. However, the Hansens have demonstrated that irrigating specialty grapevines for winemaking is different than irrigating a typical row crop or cover crop. The RDI method necessary to achieve the high quality grapes sought by the Hansens requires a high level of control over their water supply. As pointed out by the three irrigation companies the Hansens consulted, achieving the required level of control over the surface water supply would not be possible without a very costly capital expenditure. The high level of control is achieved with a carefully engineered Netafim drip irrigation system that will not work effectively over a sufficient period of time unless the water it delivers is free from impurities. The potential cost of filtering impurities from the surface water, combined with the potential cost of redesigning the surface water delivery system to limit the flow of surface water to their property, necessitates the Hansens' use of ground water.

10. While it is appropriate for the Hansens to irrigate their grapevines with ground water, it is also in the public interest to limit their diversion of ground water as much as possible. The Hansens justified their use of ground water by demonstrating that irrigating grapevines is not like other irrigation. But, because it's not like other irrigation, irrigating grapevines should not entitle the Hansens to the volume of water needed to irrigate other crops. Normally IDWR would authorize the annual diversion of up to 4.5 af of water per acre to irrigate in the Treasure Valley. The 4.5 af per acre standard volume is sufficient to grow alfalfa, a highly water consumptive crop, and almost any other row crop or cover crop. It allows farmers to change their cropping pattern from year to year within the limitations of a single water right. Grapevines, however, require only about 10% of the water required to grow alfalfa, and they are not removed in favor of another crop each year. Mr. Hansen testified that his mature grapevines may need a little more than 3 af annually, or about 0.5 af per acre. Therefore, one

[1] Natural attenuation processes such as settlement, filtration, and adsorption remove certain impurities from ground water as it travels underground.

af per acre should be adequate to irrigate the Hansens grapevines and provide for some flexibility in application efficiency and some variation in annual climatic conditions while preventing a future owner of the Hansens' land from irrigating a different crop with ground water instead of surface water.[2] Because Right 63-27790 already authorizes the irrigation of up to half an acre of the Hansens' land, and because the Hansens have not requested a diversion rate exceeding 0.02 cfs per acre, the irrigation component of their application should be limited to 5.5 acres, 0.11 cfs, and 5.5 af.

Water right ownership

11. The Hansens have not complied with the ownership change notice requirements of Idaho Code § 42-248 for water right 63-27790.

Satisfaction of Idaho Code § 42-203A criteria

12. Diversion and use of water as proposed in the application will not reduce the quantity of water under existing water rights.

13. The ground water supply is sufficient for the proposed water use.

14. The application has been made in good faith and is not speculative.

15. The applicants have sufficient financial resources to complete the project.

16. The application is in the local public interest as long as the proposed irrigation of grapevines is limited to 1.0 af per acre or less.

17. Delivery of water as proposed is consistent with principles of conservation of the waters of the State of Idaho as long as the proposed irrigation of grapevines is limited to 1.0 af per acre or less.

18. The proposed diversion and use of ground water will not adversely affect the local economy of the area where the water will be diverted.

ORDER

IT IS HEREBY ORDERED that application to appropriate water no. 63-33064 is **APPROVED** for the proposed commercial use and for 5.5 acres of irrigation.

IT IS FURTHER ORDERED that permit no. 63-33064 is subject to the following conditions:

[2] While it is not mandated by this approval, paying the annual assessments to BKID and assisting in the maintenance of the neighborhood surface water delivery system would help preserve the long-term value and marketability of the Hansens land .

1. Proof of application of water to beneficial use shall be submitted on or before February 1, 2012.

2. Subject to all prior water rights.

3. Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control.

4. The Director retains jurisdiction to require the right holder to provide purchased or leased natural flow or stored water to offset depletion of Lower Snake River flows if needed for salmon migration purposes. The amount of water required to be released into the Snake River or a tributary, if needed for this purpose, will be determined by the Director based upon the reduction in flow caused by the use of water pursuant to this permit.

5. After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to use power records to determine the amount of water diverted and shall annually report the information to the Department.

6. This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 4.5 afa per acre at the field headgate for irrigation of the lands above.

7. The diversion and use of water for irrigation purposes in connection with this right shall not exceed a total diversion rate of 0.11 cfs, a total annual maximum diversion volume of 5.5 af, and the irrigation of 5.5 acres.

8. Commercial use is for a winery.

IT IS FURTHER HEREBY ORDERED that the applicants shall **SUBMIT** a notice of change in water right ownership for water right 63-27790 as required by Idaho Code § 42-248 within 30 days.

DATED this 11th day of February, 2010.

Shelley W. Keen

SHELLEY KEEN
Hearing Officer

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 12th day of February, 2010, a true and correct copy of the above and foregoing document described below was served on the following by placing a copy of the same in the United States mail, postage prepaid and properly addressed to the following:

Document(s) Served: *Preliminary Order Approving Application* and *Statement of Available Procedures and Applicable Time Limits for responding to Preliminary Orders*

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