

Tina Kotek, Governor

February 6th, 2025

Corey Benzel  
Rice Hill Owners Association  
5256 Boswell Road  
Yoncalla, OR 97499

*sent by email only*

**Re: Water system (PR#151-2024)  
Rice Hill Owners Association (PWS ID#94108)  
Conditional Approval**

Dear Corey Benzel:

Thank you for your submittal to the Oregon Health Authority's Drinking Water Services (DWS) of plan review information for the water system for Rice Hill Owner's Association. On November 8<sup>th</sup>, 2024, our office received drawings, product information, testing and a plan review fee of \$825.

The project includes review of "Well #1", "Well #2", "Well #3", "Well #4", "Well #6", associated water storage, treatments and water distribution. The well and associated water system facilities are owned and operated by the Pilot Flying J company. The public water systems and associated facilities are located in the unincorporated community of Rice Hill, Oregon

The plans are approved subject to the following conditions:

*General-*

- The water system appears to be using a water softener system. Provide product information on the water softener chemical being used to demonstrate the chemical is NSF certified. Refer 333-061-0050(1)(e).

*Well #1-*

- The land within a 100-foot radius around "Well #1" does not appear to be owned by the Rice Hill Owner's Association based on submitted GIS coordinates for the well. The well's 100-foot radius setback to the west of the well is within the adjacent road

right-of-way. With the exception public rights-of-ways, perpetual restrictive easement shall be obtained by the water supplier for all land within 100 feet of the well. The easement shall be recorded with the county in which the well is located and with the recorded deed to the property. A certified true copy shall be filed with the Authority. Please reference OAR 333-061-0050(2)(a)(B).

- A public road right-of-way is within the 100-foot setback of the well. Public or private roadways may be allowed within 100 feet of a confined well, provided the well is protected against contamination from surface runoff or hazardous liquids which may be spilled. The public road has earthen ditches that allow stormwater disposal through soil infiltration. Please reference OAR 333-0061-0050(a)(D) & (E).
- A casing vent shall be provided and shall be fitted with a screened return bend shall be. Demonstrate “Well #1” meets this requirement. Reference OAR 333-0061-0050(a)(K)(iii).
- Piping arrangements shall include provisions for pumping the total flow from the well to waste. Demonstrate that the construction meets this requirement. Reference OAR 333-0061-0050(a)(K)(vi).
- A method of determining the total output of each well shall be provided. Demonstrate “Well #1” meets this requirement. Reference OAR 333-0061-0050(a)(K)(vii).
- The wellhouse shall be constructed so that the well pump can be removed. Demonstrate that the construction meets this requirement. Reference OAR 333-0061-0050(a)(K)(xii).

#### *Well #2-*

- The land within a 100-foot radius around “Well #2” does not appear to be owned by the Rice Hill Owner’s Association based on submitted GIS coordinates for the well. The well’s 100-foot radius setback to the east enters the adjacent railroad right-of-way. With the exception public rights-of-ways, perpetual restrictive easement shall be obtained by the water supplier for all land within 100 feet of the well. The easement shall be recorded with the county in which the well is located and with the recorded deed to the property. A certified true copy shall be filed with the Authority. Please reference OAR 333-061-0050(2)(a)(B).
- A casing vent shall be provided and shall be fitted with a screened return bend. Demonstrate “Well #2” meets this requirement. Reference OAR 333-0061-0050(a)(K)(iii).
- Piping arrangements shall include provisions for pumping the total flow from the well to waste. Demonstrate “Well #2” meets this requirement. Reference OAR 333-0061-0050(a)(K)(vi).
- A method of determining the total output of each well shall be provided. Demonstrate

“Well #2” meets this requirement. Reference OAR 333-0061-0050(a)(K)(vii).

- A reinforced concrete slab shall be poured around the well casing at ground surface. The slab shall be sloped to drain away from the casing. Demonstrate “Well #2” meets this requirement. Reference OAR 333-0061-0050(a)(K)(viii).
- The top of the well casing shall extend at least 12 inches above the any new or existing concrete slab around the well head. Demonstrate “Well #2” meets this requirement. Reference OAR 333-0061-0050(a)(K)(x).
- Based on submitted information, it is unclear if wellhead is protected from exterior elements (i.e., weather, vandalism, etc.). Provisions shall be made for protecting pump controls and other above-ground appurtenances at the well head. Where a wellhouse is installed for this purpose, it shall meet applicable building codes and shall be insulated, heated and provided with lights, except that where the wellhouse consists of a small removable box-like structure the requirement for lights may be waived by the Authority. Demonstrate “Well #2” meets this requirement. Reference OAR 333-0061-0050(a)(K)(xi)

#### Well #3-

- The land within a 100-foot radius around “Well #3” does not appear to be owned by the Rice Hill Owner’s Association based on submitted GIS coordinates for the well. The well’s 100-foot radius setback to the east enters the adjacent railroad right-of-way and the well does not appear to be located on property owned by the water system. With the exception public rights-of-ways, perpetual restrictive easement shall be obtained by the water supplier for all land within 100 feet of the well. The easement shall be recorded with the county in which the well is located and with the recorded deed to the property. A certified true copy shall be filed with the Authority. Please reference OAR 333-061-0050(2)(a)(B).
- A casing vent shall be provided and shall be fitted with a screened return bend. Demonstrate “Well #3” meets this requirement. Reference OAR 333-0061-0050(a)(K)(iii).
- Piping arrangements shall include provisions for pumping the total flow from the well to waste. Demonstrate “Well #3” meets this requirement. Reference OAR 333-0061-0050(a)(K)(vi).
- A method of determining the total output of each well shall be provided. Demonstrate “Well #3” meets this requirement. Reference OAR 333-0061-0050(a)(K)(vii).
- A reinforced concrete slab shall be poured around the well casing at ground surface. The slab shall be sloped to drain away from the casing. Demonstrate “Well #3” meets this requirement. Reference OAR 333-0061-0050(a)(K)(viii).
- The top of the well casing shall extend at least 12 inches above the any new or

existing concrete slab around the well head. Demonstrate “Well #3” meets this requirement. Reference OAR 333-0061-0050(a)(K)(x).

- Based on submitted information, it is unclear if wellhead is protected from exterior elements (i.e., weather, vandalism, etc.). Provisions shall be made for protecting pump controls and other above-ground appurtenances at the well head. Where a wellhouse is installed for this purpose, it shall meet applicable building codes and shall be insulated, heated and provided with lights, except that where the wellhouse consists of a small removable box-like structure the requirement for lights may be waived by the Authority. Demonstrate “Well #3” meets this requirement. Reference OAR 333-0061-0050(a)(K)(xi).

#### *Well #4-*

- The land within a 100-foot radius around “Well #4” does not appear to be owned by the Rice Hill Owner’s Association based on submitted GIS coordinates for the well. The well’s 100-foot radius setback to the west enters the adjacent road right-of-way. With the exception public rights-of-ways, perpetual restrictive easement shall be obtained by the water supplier for all land within 100 feet of the well. The easement shall be recorded with the county in which the well is located and with the recorded deed to the property. A certified true copy shall be filed with the Authority. Please reference OAR 333-061-0050(2)(a)(B).
- A casing vent shall be provided and shall be fitted with a screened return bend. Demonstrate “Well #4” meets this requirement. Reference OAR 333-0061-0050(a)(K)(iii).
- Piping arrangements shall include provisions for pumping the total flow from the well to waste. Demonstrate “Well #4” meets this requirement. Reference OAR 333-0061-0050(a)(K)(vi).
- A method of determining the total output of each well shall be provided. Demonstrate “Well #4” meets this requirement. Reference OAR 333-0061-0050(a)(K)(vii).
- A reinforced concrete slab shall be poured around the well casing at ground surface. The slab shall be sloped to drain away from the casing. Demonstrate “Well #4” meets this requirement. Reference OAR 333-0061-0050(a)(K)(viii).
- The top of the well casing shall extend at least 12 inches above the any new or existing concrete slab around the well head. Demonstrate “Well #4” meets this requirement. Reference OAR 333-0061-0050(a)(K)(x).
- Based on submitted information, it is unclear if wellhead is protected from exterior elements (i.e., weather, vandalism, etc.). Provisions shall be made for protecting pump controls and other above-ground appurtenances at the well head. Where a wellhouse is installed for this purpose, it shall meet applicable building codes and shall be insulated, heated and provided with lights, except that where the wellhouse consists of a small removable box-like structure the requirement for lights may be

waived by the Authority. Demonstrate “Well #4” meets this requirement. Reference OAR 333-0061-0050(a)(K)(xi).

*Well #6-*

- The land within a 100-foot radius around “Well #6” does not appear to be owned by the Rice Hill Owner’s Association based on submitted GIS coordinates for the well. The well’s 100-foot radius setback to the east enters the adjacent road right-of-way. With the exception public rights-of-ways, perpetual restrictive easement shall be obtained by the water supplier for all land within 100 feet of the well. The easement shall be recorded with the county in which the well is located and with the recorded deed to the property. A certified true copy shall be filed with the Authority. Please reference OAR 333-061-0050(2)(a)(B)
- “Well #6” is noted as being an artesian well per the Oregon Water Resource Department’s (OWRD) records. Demonstrate the wellhead meets all required the OWRD construction standards for an artesian well. Existing photos of the wellhead show the wellhead leaking water out of the wellhead seal. Refer to OAR 333-061-0050(2)(G).
- A casing vent shall be provided and shall be fitted with a screened return bend if approved by OWRD construction standards. Demonstrate “Well #6” meets this requirement, if applicable. Reference OAR 333-0061-0050(a)(K)(iii).
- Piping arrangements shall include provisions for pumping the total flow from the well to waste. Demonstrate “Well #6” meets this requirement. Reference OAR 333-0061-0050(a)(K)(vi).
- A method of determining the total output of each well shall be provided. Demonstrate “Well #6” meets this requirement. Reference OAR 333-0061-0050(a)(K)(vii).
- The top of the well casing shall extend at least 12 inches above the any new or existing concrete slab around the well head. Demonstrate “Well #6” meets this requirement. Reference OAR 333-0061-0050(a)(K)(x).
- Based on photos wellhead is not protected from exterior elements (i.e., weather, vandalism, etc.). Provisions shall be made for protecting pump controls and other above-ground appurtenances at the well head. Where a wellhouse is installed for this purpose, it shall meet applicable building codes and shall be insulated, heated and provided with lights, except that where the wellhouse consists of a small removable box-like structure the requirement for lights may be waived by the Authority. Demonstrate “Well #6” meets this requirement. Reference OAR 333-0061-0050(a)(K)(xi).



A DWS Geologist has reviewed the existing wells and offered the following comments:

Well #1-

*“The well was drilled to a depth of 140 feet in September 1982. A 6 inch casing was placed to a depth of 30 feet and sealed to that same depth. (~8 sacks of cement calculated as required, 9 sacks cement utilized-Method C). The well construction is considered to meet minimum standards in terms of casing depth, casing seal depth, sealant volume, and annular spacing.”*

*“The well is surficially located in what is mapped as tuff member of the Umpqua Formation. The well appears to produce from what is likely the siltstone member of the Umpqua Formation at a depth of 91 feet. The aquifer is considered confined based on the rise and static water level (30 feet in depth) compared the initial water bearing zone depth of 91 feet. Surface geology as described by Hoover, L. Bulletin 1122-D, 1963.”*

Well #2-

*“The well was drilled to a depth of 125 feet in September 1982. A 6 inch casing was placed to a depth of 30 feet and sealed to that same depth. (~8 sacks of cement calculated as required, 8 sacks cement utilized-Method C). The well construction is considered to meet minimum standards in terms of casing depth, casing seal depth, sealant volume, and annular spacing.”*

*“The well is surficially located in what is mapped as tuff member of the Umpqua Formation. The well appears to produce from what is likely the siltstone member of the Umpqua Formation at a depth of 70 feet. The aquifer is considered confined based on the rise and static water level (20 feet in depth) compared the initial water bearing zone depth of 70 feet. Surface geology as described by Hoover, L. Bulletin 1122-D, 1963.”*

Well #3-

*“The well was drilled to a depth of 150 feet in September 1982. A 6 inch casing was placed to a depth of 30 feet and sealed to that same depth. (~8 sacks of cement calculated as required, 8 sacks cement utilized-Method C). The well construction is considered to meet minimum standards in terms of casing depth, casing seal depth, sealant volume, and annular spacing.”*

*“The well is surficially located in what is mapped as tuff member of the Umpqua Formation. The well appears to produce from what is likely the siltstone member of the Umpqua Formation at a depth of 122 feet. The aquifer is considered confined based on the rise and static water level (50 feet in depth) compared the initial water bearing zone depth of 122 feet. Surface geology as described by Hoover, L. Bulletin 1122-D, 1963.”*

Well #4-

*“The well was drilled to a depth of 170 feet in September 2002. A 6-inch casing was placed to a depth of 19 feet and sealed to that same depth. (~8 sacks of cement calculated as required, 8 sacks cement utilized-Method C). The well construction is considered to meet minimum standards in terms of casing depth, casing seal depth, sealant volume, and annular spacing.”*

*“The well is surficially located in what is mapped as tuff member of the Umpqua Formation. The well appears to produce from what is likely the siltstone member of the Umpqua Formation at a depth of 140 feet. The aquifer is considered confined based on the rise and static water level (77 feet in depth) compared the initial water bearing zone depth of 140 feet. Surface geology as described by Hoover, L. Bulletin 1122-D, 1963.”*

Well #6-

*“The well was drilled to a depth of 125 feet in January 2023. A 6-inch casing extends to a depth of 19 feet, and is sealed to that same depth. Six sacks of cement were utilized in the casing seal, approximately five sacks were required. A 4.5-inch liner extends to a depth of 125 feet and is perforated from 85-125 feet in depth. The well likely functions as an open hole below the casing. The well construction is considered to meet standards in terms of casing depth, casing seal depth, sealant volume, and annular spacing.”*

*“The well is surficially located in what is field mapped as Quaternary alluvium. The well appears to produce from what is likely the siltstone member of the Umpqua Formation at a initial depths of 40, 79, and 97 feet. The aquifer appears to be fractured confined flowing artesian based on the rise and static water level and pressure displayed (0.5PSI). Surface geology as described by Hoover, L. Bulletin 1122-D, 1963.”*

*Facilities for disinfection and disinfectant residual maintenance-*

- For the existing elective chlorination system serving wells #1-4, it is not clear how the installed chlorination injection system is injecting chlorine proportional to the possible variable flows from the multiple groundwater source pumps. Provide an explanation of the chlorination controls system and demonstrate how the chlorine injection system is continuously proportional to any flow variation from the multiple well source pumps. Reference OAR 33-061-0050(5)(i).
- Install a post disinfection sample tap prior to any other treatments and after to any storage being used for disinfection contact time. The existing post disinfection sample tap appears to be installed after water softener system. Reference OAR 33-061-0050(5)(f).
- Demonstrate the water system has testing equipment to regularly test the chlorine

residual in the distribution system. Reference OAR 333-061-0050(5)(g).

- For the proposed new elective chlorination system for well 6, it is not clear how the proposed chlorination injection system is injecting chlorine proportional to the possible variable flows through water softener and associated bypass. Provide an explanation of the chlorination controls system and demonstrate how the chlorine injection system is continuously proportional to any flows at the injection point. It appears there will be a “purchased water supplier” piped water source after the chlorine injection point and prior to the proposed new 10,000-gallon storage. Provide a description of the water source so that it can be added to the water system’s inventory. This water source supply should be connected prior to the chlorine injection and factored into any chlorine injection proportionality control system. Reference OAR 33-061-0050(5)(i).
- If the proposed 10,000-gallon storage tank is intended for disinfection contact time, the install a post disinfection sample tap after the storage tank to monitor chlorine residual. Reference OAR 333-061-0050(5)(f)

#### *Finished water storage-*

- The submitted plan review information provides no product data information on the existing subsurface water reservoirs. Provide information that the reservoirs are rated (NSF certification) for potable water use and engineering approval that the storage tank is being used as designed (as water reservoir). Please reference OAR 333-061-0050(6)(a).
- The submitted plan review information has no information as to whether the subsurface reservoirs are installed on an adequate foundation and has adequate subsurface drainage. Please provide engineered review and approval of storage as-built conditions. Where ground-level reservoirs are located partially below ground, the bottom shall be above the ground water table and footing drains discharging to daylight shall be provided to carry away ground water which may accumulate around the perimeter of the structure. Please reference OAR 333-061-0050(6)(a)(G).
- The submitted plan review information has no information as to whether existing reservoirs has a screened vent. Screened vents shall be provided above the highest water level to permit circulation of air above the water in finished water storage facilities. Please reference OAR 333-061-0050(6)(a)(L).
- Provide information demonstrating that the top of the existing reservoirs is watertight. Please reference OAR 333-061-0050(6)(a)(I).
- Provide information demonstrating a silt stop is provided at the existing reservoirs outlet pipe. Please reference OAR 333-061-0050(6)(a)(N).
- Provide information demonstrating bypass piping around the existing pressure tank



is provided to permit operation of the system while the tank is being maintained or repaired. Please reference OAR 333-061-0050(6)(b)(B).

- Provide information demonstrating pressure tank is provided with a drain, a pressure gauge, an air blow-off valve, means for adding air and pressure switches for controlling the operation of the pump(s). Please reference OAR 333-061-0050(6)(b)(D).
- The plan review has not submitted product data or design for the proposed 10,000-gallon reservoir to be installed in association with well #6. Please provide product data and design for the 10,000-gallon reservoir. Reference OAR 333-061-0050(6)(a).

#### *Distribution system-*

- The water distribution system between well sources and points of use/premises cross multiple public and private properties. Provide information that where pipelines pass through properties not owned by the water system, easements have been obtained for those pipelines from those respective property owners and easements have been recorded with the applicable County deeds and records department. Please reference OAR 333-061-0050(8)(a).
- Provide information that installed distribution pipe and fittings are in conformance with the standards of the American Water Works Association, NSF International or other equivalent standards acceptable to the Authority. Please reference OAR 333-061-0050(8)(b).
- Provide information that the distribution piping is designed and installed so that the pressure measured at the property line and/or premise or at the furthest point of water use shall not be reduced below 20 psi. Please reference OAR 333-061-0050(8)(e).
- Provide information that distribution piping is carefully bedded and fully supported in material free from rocks and shall be provided with a cover of at least 30 inches. Select backfill material shall be tamped in layers around and over the pipe to support and protect it. Large rocks or boulders shall not be used as backfill over the pipe. Please reference OAR 333-061-0050(8)(f).
- If applicable, air-relief valves shall be installed at high points where air can accumulate. The breather tube on air-relief valves shall be extended above ground surface and provided with a screened, downward facing elbow. Please reference OAR 333-061-0050(8)(i).
- Provide information that nonconductive water pipe (plastic or other material) that is

not encased in conductive pipe or casing has an electrically conductive wire or other approved means for locating the pipe when the pipeline is underground. Please reference OAR 333-061-0050(8)(k).

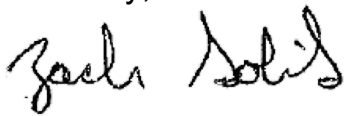
*Crossings-Sanitary sewers and water lines-*

- Based on the submitted site plan, the distribution water pipe appears it crosses sewer line(s). Please provide information for any water-sewer line crossing that their construction meets applicable portion(s) of subsection (a) through (c) of OAR 333-061-0050(9).

**Until we receive verification that the conditions have been met and final approval has been issued, the water system is not approved for use.** Documentation demonstrating how the above conditions were met should reference Plan Review #152-2024 and can be emailed to me at zachariah.cunningham-golik@oha.oregon.gov.

If you have any questions, please feel free to call me at 541-231-9077.

Sincerely,



Zach Golik, PE  
Regional Engineer  
Drinking Water Services

CC: Kimberly Tanner, Douglas County Public Health