



**Jennifer Orozco**

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**From:** Ropp, Matt <Matt.Ropp@kniferiver.com>  
**Sent:** Wednesday, March 9, 2022 1:16 PM  
**To:** Plan; Will VanVactor  
**Subject:** Please add to the record for 217-21-000537-PLNG (CUP)  
**Attachments:** Stantec\_Lidstone.pdf

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**MAR 09 2022**

**Crook County  
Community Development**

This exhibit rebuts issues raised by Mikulski, Davis, Zimmerlee and Newton.

Matt Ropp  
NW Region Technical Services Manager  
Knife River Corporation – Northwest Region  
32260 Old Hwy 34  
Tangent, Oregon 97389  
Email: Matt.Ropp@kniferiver.com  
Direct: (541) 918-5133  
Cell: (541) 223-1079  
Fax: (541) 918-5375



To: Mr. Will Van Vactor  
Community Development Department  
Planning Division  
300 NE 3rd Street, Room 12  
Prineville, OR 97754

From: Mark Stacy, Stantec  
Christopher Lidstone, CDLidstone  
Fort Collins

Project/File: 227704752

Date: March 8, 2022

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**Reference: 217-21-000436-PLNG Knife River Vanier**

Dear Mr. Van Vactor, Members of the Planning Division and Citizens of the Board,

We have reviewed the recently augmented record to include Exhibits 67 through 71 and have prepared the following rebuttal. Despite the significant volume of this newly "added" testimony (144 pages), there is little substance and a significant amount of misleading information and overall misrepresentations of the data. The following rebuttal will be an effort at brevity balanced by facts and good science.

## **1 Rebuttal to Efforts to Discredit the Stantec 2021 Hydrogeologic Report**

Mr. Zimmerlee (Exhibit 67) included Mr. Newton's November 15, 2021, memorandum (Exhibit 62) which sought to discredit Stantec's 2021 Hydrogeologic Characterization report. Exhibit 67 and Mr. Newton's Exhibit 69 provide no technical basis to discredit the groundwater characterization work completed by Stantec. The following comments serve as a technical response to several of Newton's submittals to the County Court and your office, respectively. The references within these rebuttal comments can be directly cross referenced to the Knife River CUP Application and the evidence in support of that CUP application, entitled "Woodward/Vanier Aggregate Mine Hydrogeologic Characterization, March 2021", which was prepared under the direct supervision of Mark Stacy, RG.

- Stantec's water table map (Figure 3) that was submitted with the comprehensive plan amendment application was prepared to assess aquifer thickness, depths to water, and regional groundwater flow directions in the shallow aquifer near the Woodward and Vanier properties. The map was prepared using depth to water information provided on well completion reports filed at different times through the years with the Oregon Department of Water Resources. The purpose of this water level map was to simply assess the regional hydrogeologic conditions to support local recommendations on mine dewatering and mitigation measures.
- As identified within the report (Page 4.1), the wells questioned by Cascade Geoengineering were designed to obtain the hydrogeologic properties of the shallow aquifer which Knife River intends to mine. The use of sonic drilling methods and geologic logging during drilling allows a qualified geologist to field design and complete the wells such that one can make a professional opinion on the local hydrogeologic conditions of the shallow aquifer materials.

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- Stantec collected sufficient data through its field investigation described in the March 2021 report (Sections 4 through 8) to estimate the hydrogeologic parameters of the shallow aquifer, evaluate potential groundwater inflows to the mine cells, and assess potential impacts to neighboring wells. Based on this hydrogeologic assessment, Stantec recommended, and Knife River agreed that mitigation measures such as baseline monitoring, recharge trenches, and monitoring wells would mitigate the effects of mine cell dewatering and provide supporting data to the public. The proposed mine plan approach has been incorporated into subsequent testimony throughout the Crook County Planning Process.
- Stantec's assessment in Section 8 of the March 2021 hydrogeologic report was focused on potential impacts to neighboring water users whose wells are completed in the shallow aquifer. The assessment and our recommendations were intended to protect the availability of water in the shallow aquifer to neighboring users and was not limited to only existing water right holders.
- Stantec's conclusion that mine cell dewatering and reinjection of groundwater into downgradient recharge trenches is viable is supported by Knife River and is further supported by the Oregon Department of Geology and Mineral Industries (DOGAMI). DOGAMI's Exhibit 38 indicated that dewatering of sand and gravel reserves are a common mining practice in Oregon, and the combination of recharge trenches and monitoring wells are successful best practices. DOGAMI has not had an instance where a properly designed and maintained recharge trench with real time water level monitoring has failed to prevent unacceptable declines in offsite water wells.

***Conclusion: The work completed under Mr. Stacy's direct supervision meets not only hydrogeologic guidelines, but also meets professional standards of care. No information has been submitted during the land use permitting process that substantially alters or disproves the efficacy of either the mining approach or mitigation measures proposed to be used in mining the Vanier property.***

## **2 Rebuttal to Concerns of a High-Water Table and Alleged Damming by Knife River Backfill**

Mr. Zimmerlee (Exhibit 67) has presented himself as a neutral party at the hearings and clearly has a position opposed to mining. He continues to present photos of where his equipment gets "stuck" and claims this is caused by the mining and backfilling process at Woodward. The location where Mr. Zimmerlee's equipment has gotten stuck is adjacent to Davis Springs (Exhibit 50). The springs are by definition a point of groundwater discharge. Mr. Zimmerlee presented this unsubstantiated accusation to DOGAMI in January 2022. In response to Zimmerlee's complaint, DOGAMI initiated an investigation. As part of that investigation, DOGAMI held a video call with Knife River, Mr. Vanier and Mr. Lidstone in February 2022. At that meeting Mr. Vanier stated to DOGAMI that he is intimately familiar with his own property and has worked the fields in question. He told DOGAMI that the area where Zimmerlee's tractor got stuck has "always been a wet, soggy area". It doesn't take a hydrogeologist to understand that "if springs discharge to the surface", it is likely an area of naturally high-water table. One generally gets stuck when the water table is high. Mr. Zimmerlee continues to return to his concern that mining has created a

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high-water table and fails to recognize that there are portions of the Vanier and Davis property where the water table is naturally high. The long-term presence of water in and adjacent to that drainage is most likely the result of leakage from the unlined Ochoco Irrigation District (OID) irrigation canal to the east, and seasonal fluctuations in shallow groundwater conditions due to precipitation, recharge, and irrigation canal operations. It is doubtful given the predominant northeast to southwest groundwater flow direction and approximately 500-foot distance between these areas that Knife River's recent backfilling operations at Woodward caused the saturated conditions at the north edge of the Vanier property. Zimmerlee (Exhibit 67) and Newton (Exhibit 69) dug test holes per their testimony on February 28, 2022. Newton stated that he measured Test Hole ZT-2 (native ground) on March 1, 2022 and found that the surface elevation was 2922 feet (as noted by Google Earth Pro) and the depth to water was 9.8 feet, suggesting that groundwater elevation was approximately 2912.2. Newton fails to mention that Zimmerlee dug a second test pit approximately 600 feet to the west with an approximate surface elevation of 2916 and depth to water of 8 feet suggesting a groundwater elevation of approximately 2908. Interestingly both test pits were dug adjacent to and within 200 feet of Woodward reclamation.

Mr. Newton failed to take any measurements of the reclaimed land. In response to Zimmerlee's accusations, Knife River measured the actual elevations of the reclaimed land surface (with the same Newton datum) and found that the reclamation surface was 2918.4 (near ZT2) and 2918 near the second test pit, which we will call ZT-1. Based on the actual groundwater level and the actual reclamation land surface, the post mining water table lies between 6.2 and 10 feet below final ground. Knife River has committed to a final reclamation land use for both Woodward and Vanier as "farmland". This is similar to their commitment and DOGAMI award winning success at the Butler property in Crook County. Successful reclamation is not "soggy ground" or land that cannot be planted or tilled. The Knife River reclamation goal is to replace overburden and topsoil in a contemporaneous and sequential fashion such that the final land surface is typically 5 feet above the post mining groundwater table during farming season. The ultimate goal is to ensure productive land farming and by achieving this, the farmer may actually reduce the irrigation needs on the reclaimed land surface.

Zimmerlee (Exhibit 67) is concerned about water levels at the three monitor wells completed on the east end of the Woodward property. He continues to contest that there is a "significant increase in water levels due to mining". This is false and patently untrue. The three wells lie east of the Woodward mine pit and adjacent to reclamation backfill. Since January 2021, water level within these wells has been measured 30 times by Hudspeth Land and Water (Hudspeth) and these data are presented in a separate exhibit. Over the course of this period water levels at WW-1A have changed from as low as 26.81 feet below ground surface to as high as 18.63 feet below ground surface. As most farmers are aware, shallow groundwater will fluctuate over the course of a year and is subject to numerous variables including precipitation and irrigation. Mr. Zimmerlee (Exhibit 67) misrepresented Hudspeth's November 2021 measurements (Exhibit 61) by reporting WW-1A at 17.6 feet below ground level, when in fact it was measured at 18.63 feet below ground. Subsequent measurements by Hudspeth, (March 3, 2022) demonstrate that the water level of the WW-1A well fell to 20.76 feet, which demonstrates the seasonality of the water level change. In any case the groundwater level is not being "dammed" by Knife River's reclamation backfill.

Newton and Zimmerlee continue to reference Knife River's final reclamation contours (Exhibit 59), which were drawn in January 2021 and were presented in October 2021 to demonstrate surface flow direction. For the record, the referenced map is not the Final Reclamation Plan and is not, nor was ever intended to serve as a reflection of as-built conditions. In an effort to again clarify the permitting process and following land use approval, Knife River will submit a proposed reclamation plan to DOGAMI for their technical

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review. Crook County conditions become part of that submittal. As additional data are collected in the field including the construction and data collection from monitoring wells, the final reclamation plan will be modified to support the goal of "successful reclamation" and the stated goal of a final land surface, which is typically five feet above the post mining water table as present during farming season. As has been testified several times, final reclamation will be completed when the berms are removed and the overburden and topsoil from within those berms are placed on the final reclamation surface. DOGAMI will hold Knife River's reclamation bonds and these surety bonds will be returned to the Operator only when successful reclamation has been established.

***Conclusion: Mining and reclamation have not adversely "dammed up the water table". Final reclamation to agricultural land will be achieved and is regulated by DOGAMI. Knife River has set an achievable goal that the final land surface will be typically 5 feet above the water table during farming season and will document this in their reclamation plan submittal to DOGAMI at the time of its filing. Although portions of the Woodward property reclamation are not completed, the achievement of this goal has been demonstrated by the current data presented above. These data points are supported by Mr. Zimmerlee's and Mr. Newton's observations. Furthermore, Knife River's reclamation on the Butler property in northwestern Crook County and Mr. Butler's testimony to the County Court demonstrates what Knife River has achieved and what they intend to achieve at the Vanier and Woodward property.***

### **3 Rebuttal to Concerns Related to OWRD Approval of a Limited License to Use Groundwater**

Mr. Mikulski (Exhibit 68), Mr. Zimmerlee (Exhibit 67) and Mr. Davis (Exhibit 70) raised concerns about the Oregon Water Resources Department approval of a limited license to use groundwater up to an appropriation of 1.114 cfs (500 gpm) for a 5-year period. As noted on the approval, the Oregon Water Resources Department initiated public notice on June 8, 2021 and did not receive any public comments. Further and in accordance with their statutes, OWRD made a finding that this limited license will "not impair nor be detrimental to the public interest". It is interesting that there is such a flurry of public comment now as part of the Vanier CUP. Mr. Mikulski provides the County a calculation, which suggests that Knife River will use this 500 gpm during every operational working hour over the course of the year (50 hours a week, 52 weeks a year) for a 5-year period resulting in a total withdrawal from the aquifer of 390 million gallons. Mr. Mikulski further notes that he is a farmer and produces grass hay and irrigates from the OID. Given each protestant's agricultural background, it should be obvious that Knife River could not possibly remove and beneficially use 240 acre-feet per year for mineral processing and dust control. The principal proposed water use is "makeup" water for the plant, as wash water is recirculated to the current process water pond. Makeup water is required to accommodate evaporation losses from the pond as well as water that is entrained with the gravel when it is loaded and delivered to customers.

***Conclusion: Oregon Water Resources Department issued a public notice and there were no public comments received at the time of the public notice (June 2021). This water use is a Limited License for industrial and commercial use on an as needed basis. Mr. Mikulski as well as the other protestants have exaggerated the proposed usage by suggesting that Knife River would use 240-acre feet (78 million gallons) per year on any of their property. This is not reasonable and would not have been approved "if the proposed water withdrawal was found to impair or be detrimental to the public interest."***

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#### 4 Rebuttal to Accusations that Agencies Ignore Multiple Violations

Mr. Zimmerlee (Exhibit 67) references "multiple violations that have been ignored by DOGAMI". This is simply untrue, and Zimmerlee should review the public file. The County should they be equally concerned can certainly contact DOGAMI to address this alleged failure to act. Lidstone (since 1988) and Stacy (since 2002) have been involved in numerous mining and reclamation projects in Oregon. Either will testify that DOGAMI is a professionally based and competent regulatory agency and to the best of our knowledge has been very responsive to the public where there were concerns over mining and reclamation practices.

Mr. Zimmerlee then goes on to describe that "Knife River dewatered the Woodward Mine at a rate of 500 to 1,000 gpm from February through October 2020". As has been true with so much of Mr. Zimmerlee's accusations, such alleged action is a gross exaggeration. To begin with the rate of pumping and the period of pumping is incorrect. Knife River self-reported to Oregon DEQ a violation to their WPCF 1000 permit for the period May 2020 through August 2020. The water was pumped to their process water pond initially and used for industrial and commercial use. Any excess water was delivered to the Rye Grass Irrigation Canal. The Knife River "dewatering" pump was not operated continuously, and the State of Oregon can address the details in their ongoing enforcement action. This information is public record and is available for the County to review. It is important to note that during the period of this dewatering, no neighbors complained about groundwater impacts to their shallow wells. Data collected at the Mikulski well during this period verifies that there was no impact to water levels. These data are submitted as a separate exhibit. In summary there has been no data presented in the record that suggests a regional or even local lowering of the water table.

***Conclusion: Zimmerlee's accusations of multiple violations ignored by DOGAMI is untrue. DOGAMI's investigations are documented in the public record. Zimmerlee has attempted to "paint a picture" of indiscriminate dewatering and discharge by Knife River. This is untrue and the public record and ongoing enforcement action will document the actual facts. During the period of this alleged indiscriminate dewatering, no nearby neighbors documented any failure, loss of production or loss of head in their adjacent shallow domestic or agricultural water wells.***

#### 5 Knife River has Prepared a Mine and Reclamation Plan that will not Adversely Affect our Neighbors

Mr. Davis (Exhibit 70) and Ms. Johnson (Exhibit 71) have both raised concerns regarding the potential impact to their land and water resources. They have referenced the impacts of mining and reclamation at the Vanier property and the recently OWRD approved Limited License to Use Groundwater. As neighbors, Knife River has developed a mine and reclamation plan that will protect area water resources. As previously cited and described in testimony, Knife River's mine plan will include mining by small cells; contemporaneous reclamation of these mined cells; the establishment of recharge trenches located downgradient of the dewatered mine cell; and a monitoring program to ensure that there is no impact to adjacent water resources. Their use of water from the Limited License referenced by Mr. Davis is a "limited" usage to supply makeup water for their aggregate processing operation. Water at the plant is collected, recycled and the "new" water will only be "makeup" water to account for evaporation and the limited consumption in the aggregate washing process.

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In addition to the above, Knife River has offered a Groundwater Guarantee (Exhibit 34, Section III, subpart 18) as a Condition for County Approval. This groundwater guarantee assures that the neighbors' water resources are protected from any impacts due to mining. Not only is Mr. Davis concerned with dewatering of his wells, he is equally concerned with a rise in the water table due to the "proposed damming of the groundwater by reclamation". As has been noted within this document, previous testimony and data collection, there is no technical support for Zimmerlee's accusations as they pertain to the "damming of the aquifer". Mr. Davis' springs will continue to fluctuate in response to natural precipitation and irrigation return flows.

**Conclusion: Knife River respects Mr. Davis, Mr. and Mrs. Mikulski and Ms. Johnson's concerns and has prepared a mine and reclamation plan which is designed to mitigate the impacts of their proposed mining operation. In addition, they have offered a proposed Crook County condition to approval that establishes a Groundwater Guarantee. It specifically states that Knife River will take immediate action to address neighbor complaints. The Groundwater Guarantee establishes a monitoring program, transparent data collection and "sharing". It includes an action plan that is feasible and will be implemented, should there be a groundwater impact.**

If there are any further questions, we are happy to address them.

For Knife River

Sincerely,

STANTEC CONSULTING SERVICES INC



**Mark Stacy** P.G./R.G.  
Associate, Senior Hydrogeologist  
Stantec Consulting Services, Inc.  
Phone: (970) 893-4812  
Mobile: (970) 278-7854  
mark.stacy@stantec.com

**Christopher D. Lidstone**  
Principal  
CDLidstone, LLC  
Phone: (970) 420-5257  
chris@lidstone.com