Memorandum

Subject: Response to Testimony Related to Pipelines

Project #s: PWB: W02563 BC: 152606

Date: May 5, 2025

To: Dan Hogan, P.E., Project Manager / Portland Water Bureau

From: Brad Phelps, P.E., Project Manager / Jacobs Engineering

Prepared by: [1] Brad Phelps/Jacobs Engineering, Todd Cotton/Jacobs Engineering, Laura Miles/Delve Underground, Robert Fraley/ Portland Water Bureau, Bonita Oswald/Portland Water Bureau

Reviewed by: Michelle Cheek, Deputy Program Manager / Portland Water Bureau

This memorandum responds to a selection of public comments related to pipelines entered into the land use record at or before the Multnomah County April 16, 2025, Remand Public Hearing.

The responses below are intended to broadly address the themes and concepts in this selection of public comments. For that reason, these responses are likely to also be applicable to other public comments now in the record or that are placed in the record after the date of this response.

[1] Where a specific response in this memorandum is from a specific expert, the expert is noted *in italics* before that response.

Comment 1: Exhibit N.4: Susan and John Swinford Comment dated March 31, 2025 (Page 2)

> "The construction and operation of pipelines could disrupt natural drainage patterns, potentially affecting the viability of nearby farmland."

Response to Swinford Comment – construction and operation of pipelines:

Brad Phelps/Jacobs Engineering

The restoration following pipelines construction will return the landforms to the condition and general topography they were in prior to construction, not changing the existing drainage patterns of the area.

Comment 2: Exhibit N.10: Meacham Comment dated April 11, 2025 (Page 2)

> "I remember several years ago Multnomah County spent a good deal of time and money retrofitting the culverts along Dodge Park Boulevard to make the whole watershed more Salmon friendly. Now a whole new impermeable road is being installed between Dodge Park Boulevard and Lusted Road in the very same area where this Salmon restoration work was done!"

Response to Meacham Comment – impermeable road

Brad Phelps/Jacobs Engineering

Culverts along Dodge Park Blvd will be replaced in the same location, size, and configuration, if disturbed by the pipeline construction. No change in the flow direction of stormwater is proposed along the pipeline alignments.

An improved gravel road is proposed across the farm field between Dodge Park Blvd and Lusted Rd, within the PWB easement area. Prior to construction, in the same alignment along the edge of the farm field, there was an existing impermeable farm road that had been in use for quite some time. Therefore, this is not a "new impermeable road" being installed for the project.

Comment 3: Exhibit N.10: Meacham Comment dated April 11, 2025 (Page 2)

"Beaver Creek is also being adversely affected by the PWB Filtration Plant construction on Lusted Road. An area of field that never had water runoff has been packed and graveled, so it is no longer permeable. I have documented on several occasions muddy water running off this site and down the road into Beaver Creek."

Uncontrolled water runoff into Beaver Creek from the PWB Lusted site. March 21 2025

Response to Meacham Comment – runoff from Finished Water Intertie Site

Portland Water Bureau Construction Team (photos), Robert Fraley/Portland Water Bureau, Brad Phelps/Jacobs Engineering

This comment is about construction water management, and as such is outside the scope of this proceeding and irrelevant to compliance with MCC 39.7515(B). The commenter describes a short-term event related to the finished water intertie (FWI) site that was resolved during construction, as described below.

The drainage issue from the FWI site referenced in this comment is a pre-existing issue, as this location has a history of flooding and continues to receive runoff from the larger farm parcels above the site immediately to the south.

As shown in Photo 1 below, the pre-construction drainage collection and disposal system was constructed several years prior to construction commencement.[2] That system was constructed by the landowner to address the runoff issues that had

[2] Construction mobilization to the FWI site was on January 13, 2025. Construction commencement for the main filtration facility site was on or about November 12, 2024 (per Condition of Approval A.1.a.ii, notice was provided to the County of this date). Construction commencement for the pipelines generally was on or about November 11, 2024 (per Condition of Approval A.3.a.ii, notice was provided to the County of this date).

Photo 1: Image from Google StreetView from October, 2023 (Pre-Construction) showing vertical HDPE pipe installed by property owner

previously occurred. The landowner created a system where water from subsurface drainage collection tiles in the farm field is combined with surface water runoff, which is all then delivered to a culvert which was placed under SE Lusted Road and eventually discharges to one of the Beaver Creek arms, north of SE Lusted Rd. The system consists of a vertical HDPE pipe where subsurface drainage tiles from the farm field enter the bottom of the vertical pipe. As the water fills and eventually overflows this vertical pipe, it flows into the nearby catch basin. This grated surface catch basin (catch basin cannot be seen in the weeds of Photo 1) collects water from the HDPE pipe and surface water runoff from the farmland. When the water discharged from the drain tiles overwhelms the volume of the vertical standpipe, water bubbles out the top of the vertical pipe and spills onto the ground, with the intent of being collected into the grated inlet catch basin. Once the water is collected into the catch basin, it is transmitted into the culvert crossing Lusted Rd and then drains to Beaver Creek.

As shown in Photo 2 and 3, pre-construction, the farm field created significant turbidity in the runoff as shown in Photo 2. The catch basin and the vertical HDPE are located near the NE corner of what will be the FWI site.

Photo 2: Taken February 15, 2023 on a dry day showing muddy, pooling water from surface runoff at the site before draining to the pre-existing collection point and grated catch basin and prior to conducting any construction

Photo 3: Taken February 9, 2023, on a wet day showing muddy, turbid runoff prior to commencing work, delivering water to the pre-existing collection point and grated catch basin

Photo 4: Taken February 9, 2023 showing excess drainage around the pre-existing collection system and unprotected catch basin prior to conducting work

At commencement of construction at the FWI, sediment fences and straw wattles were installed, as shown in Photo 5.

Photo 5: Taken November 13, 2024, showing construction stormwater management improvements surrounding the pre-existing vertical HDPE pipe in the foreground and grated catch basin behind.

After having installed the water management and control system shown in Photo 5, in February 2025, the contractor damaged existing unmapped clay drainage tiles on the FWI site while removing the top 18” of topsoil in preparation for construction.

This tile damage created an uncontrolled water discharge being released from the drain tile system, which is believed to have been previously clogged. The water released above ground instead of being routed underground to the vertical HDPE pipe caused additional turbid flow. The condition was further exacerbated by excess water from ongoing large rain events combined with the surface drainage from the farm field. All of this water together was enough to bypass the pre-construction collection point and catch basin, leaving the site, flowing east down SE Lusted Rd, and create the temporary ponding observed at the driveway on the property located at 33608 SE Lusted Rd (Exhibit N.10) on February 23, 2025. This driveway on the adjoining property to the east is also located at the low point the general vicinity. At this juncture, flows from the FWI site combined with runoff from the east and the south from the large rain events.

Also of note, Photo 6 below documents a clogged culvert underneath the adjoining easterly driveway at the bottom of the hill (33608 SE Lusted Rd) on November 14, 2024, well before construction mobilization to the FWI site on January 13, 2025. The pre-existing clogged culvert in this area contributed to the observed ponding due to a lack of maintenance to keep the culvert open. To date, this culvert has yet to be cleaned, as evidenced in the Photo 7 below. For a culvert in the right of way (like this one is), cleaning would be performed by the County.

Photo 6: Taken November 14, 2024 showing clogged culvert under the driveway at 33608 SE Lusted Rd

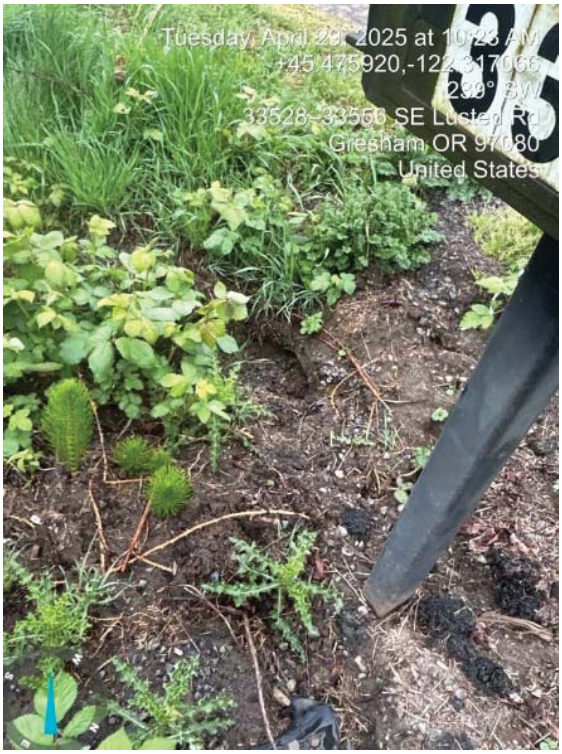


Photo 7: Taken April 29, 2025 showing culvert still filled with mud and rock, not allowing water to pass through the culvert.

In response to the damaged drain tiles at the FWI site in February, the contractor temporarily re-routed the water emerging from the damaged subsurface drain tiles to an above ground pipe (where it previously had been connected underground to the black vertical HDPE pipe shown in the Photo 1 above). Twenty-four inches of gravel base was also added to the FWI site to stabilize the muddy ground and help slow surface water sheet flowing across the property.

To accomplish the re-routing of the broken drain tile, a 6” HDPE temporary drain line was installed across the site from the broken drain tile area to the existing grated catch basin. A silt fence was also installed around the stockpiled soil along with straw wattles and straw bales to slow and filter overland surface flows before getting to the catch basin. A berm has also been added on the east side of the FWI site to provide a means to capture and contain drainage within the site and redirect water back into the catch basin through a 24” dewatering well and sump pump system that includes passing all water through sediment filter bags (see Photo 12 below). As shown in the photos below, these changes and improvements provide better means of maintaining the water quality leaving the site and controlling the site drainage.

Photo 8: Taken February 27, 2025 shows water that was running under the FWI gravel pad and down the shoulder of SE Lusted Road. Since this picture was taken, a berm was built forcing the water to a small well with a pump that discharges water back to the grated catch basin.

Photo 9: Taken February 27, 2025 shows clear/filtered water entering catch basin from sediment bags flowing through added rock.

As shown in Photo 9, the adjustments made to the pre-construction collection system greatly improved the collected and discharged water quality -- shown as clear water discharging into the catch basin.

On March 21, 2025, when the photo shown in Exhibit N.10 was taken, a heavy rain event between 10am and 4pm, stormwater discharged from the farm field onto the FWI site. Over one and half inches of rain fell during this 24-hour period on March 21, which flooded the FWI site and overwhelmed the collection system. As the berm and sump pump had been installed before March 21, 2025, the collection system prevented water from exiting the FWI to the east. The water was pumped back to the catch basin as intended and into the catch basin/culvert system. As shown in Photo 10, no remnant evidence of turbid water flowed away from the FWI site.

Throughout the storm events, daily water quality sampling was completed and test results collected during this time showed the turbidity of water leaving the site (664 and 774 Nephelometric Turbidity Unit [NTU]) via the catch basin remained in compliance with Oregon Department of Environmental Quality (DEQ) discharge parameters and did not exceed the 10% of the baseline reading (790 and 862 NTU) of other waters going into Beaver Creek. In fact, turbidity samples have consistently shown that the water leaving the FWI site with the adjustments made to the pre-construction collection system is providing treatment well within DEQ's discharge parameters of not exceeding 10% of the baseline reading for turbidity.

a Photo 10: Taken March 24, 2025, after the rain event on March 21, 2025. In contrast to Photo 8, this photo shows no water running down the shoulder of SE Lusted Road. As noted in Photo 8, between Photo 8 and this photo, a berm was built forcing the water to a small well with a pump that discharges water back to the grated catch basin after passing through filter bag.

Photo 11: Taken March 24, 2025, showing no water leaving the site and running down the road due to the well and pump that had been installed.

Photo 12: Taken March 24, 2025, showing clear water from the sump pump and 6" HDPE line filtered through sediment filter bags prior to entering the catch basin and discharging to the culvert across SE Lusted Rd

Photo 13: Taken March 24, 2025, showing filtered clear water from sediment filter bags discharging to the catch basin

As a further requirement of excavation on the FWI site, the contractor is required by DEQ to prepare and provide to DEQ an Environmental Management Plan (EMP). The EMP details the drainage and treatment methods the contractor will use during dewatering the excavation pit at the FWI site. A draft EMP has been submitted and is being reviewed by DEQ and the site improvements described in the paragraph of the EMP below will be installed if and when construction commences after the remand, and prior to excavation of the FWI vault area.

As noted in the draft EMP:

> *"Accumulated groundwater will be pumped out of excavation area at a rate of approximately 50 gallons per minute using four 3-inch submersible pumps staged at the corners of the excavation and pumped through the treatment system (see Treatment Overview below). Prior to beginning excavation*

activities, existing drain tiles along the southern portion of the project area will be routed to a cutoff trench to manage groundwater levels. Groundwater routed to the cutoff trench will be pumped through sediment bags before either infiltrating onsite or discharging to an existing 18-inch storm pipe that outfalls into an unnamed tributary to Beaver Creek. Water routed through the cutoff trench will not be discharged through the treatment system."

The EMP includes additional details about ground and surface water treatment methods, water quality sampling, and eventual discharge of the treated water to Beaver Creek, which will be in compliance with DEQ's 1200-CA Permit and water quality standards.

Overall, the excess water events at the FWI site described in this and other comments have been resolved and will not occur again as effective water management systems are now in place (see Photos 6-10) and will continue to be in place under the EMP approved by DEQ. Therefore, this was a limited construction impact that is not relevant to compliance with MCC 39.7515(B).

Comment 4: Exhibit N.10: Meacham Comment dated April 11, 2025 (Page 6)

"Uncontrolled water runoff into Beaver Creek from the PWB Lusted site. February 23 2025 This area never flooded or suffered from runoff before the ground was compacted and graveled by PWB construction."

Response to Meacham Comment – runoff from Finished Water Intertie Site

Brad Phelps/Jacobs Engineering

See response to Exhibit N.10, Pg 2.

Comment 5: Exhibit N.15: Carlson comments dated April 14, 2025

"We have deep concerns in regards to the effects your pipeline down Dodge Park Blvd will have on springs that feed into Beaver Creek. We know of 4 springs in total along Dodge Park Blvd. One spring is the headwater of the south fork of Beaver Creek. The other 3 feed the middle fork of Beaver Creek. Our address is 34163 SE Dodge Park Blvd. Our family has been here for more than 80 years on 20 acres bordering the south side of Dodge Park Blvd. We would like to know what your experts know about these springs and that they will not be disrupted by your pipeline construction. These springs feed water to beaver Creek which as you know

provides water to various wildlife along its route. We need to know that these springs will not be rerouted or detoured in any way. These springs feed water to beaver Creek which as you know provides water to various wildlife along its route. We need to know that these springs will not be rerouted or detoured in any way. We know that a neighbor relies on water from a spring to water her garden and lawn during the summer months."

Response to Carlson Comment – Springs into Beaver Creek Impact

Todd Cotton/Jacobs Engineering

Monitoring of the groundwater levels along SE Dodge Park Blvd was performed as part of the geotechnical explorations program completed for design of the Finished Water Pipeline to be located in SE Dodge Park Blvd. That exploration program included drilling six borings between SE Cottrell Rd and where the proposed pipeline will turn to the north and follows a pre-existing farm road. One of these six borings is located very near 34215 SE Dodge Park Blvd (neighboring property of this Exhibit N.15 commenter, to the east). That boring had a groundwater monitoring device installed which continuously collected water level data for more than 12 months. The data from all six borings shows that the static groundwater table ranges between about 25 to 40 feet below the ground surface (seasonally dependent), which is below the bottom of the pipeline excavation depth. The excavated depth of the pipeline installation will be approximately 19 feet below ground along SE Dodge Park in the area where these borings were completed. Another important feature of the pipeline design is the intermittent placement of trench cutoffs that will stop water flowing along the low permeability zones of backfill of the pipeline and interrupt flow of water along the pipeline. The trench dams prevent the pipeline from acting as a "French drain" that could otherwise alter a shallow groundwater regime.

Because of the relatively shallow installation depth of the pipeline, combined with the inclusion of the trench cutoffs to prevent groundwater flow along the pipeline, and the groundwater table having been shown to be entirely below the bottom of excavation, the pipeline will not change shallow groundwater flows or reduce the flow from existing springs into Beaver Creek.

Comment 6: Exhibit N.41: Hart Comment dated April 15, 2025 (Page 1)

"……several field tile lines are directing runoff into Beaver Creek, located across from the Lusted Road Pipeline intertie. This runoff has resulted in increased silt downstream, clogging culverts and clouding the streams and adjacent ponds."

Response to Hart Comment – Finished Water Intertie Runoff

Brad Phelps/Jacobs Engineering

See response to Exhibit N.10

Comment 7: Exhibit N.43: Cottrell CPO & PHCA Adverse Effects Report dated April 15, 2025 (Page 14)

"In the fall of 2024, PWB began equipment staging and site preparations at the property adjacent to the raw water pipeline portal on SE Lusted Road. Significant modification to the property was completed to accommodate heavy equipment, construction materials, and construction traffic. This disturbance has inherently impaired natural resources since the start of construction activity, including surface water, wetlands, and associated wetland habitat. Site preparation resulted in the removal of at least 24 trees (> 6 inches in diameter) and an undetermined loss of existing shrubs. Contrary to Winterbrook's report on habitat survey results that were conducted on October 19, 2021 (Exhibit G.1), a wetland features do exist on the affected properties (Figure 6). Exhibit G.1 nor any other evidence submitted into the record acknowledges the existence of the pond or wetland."

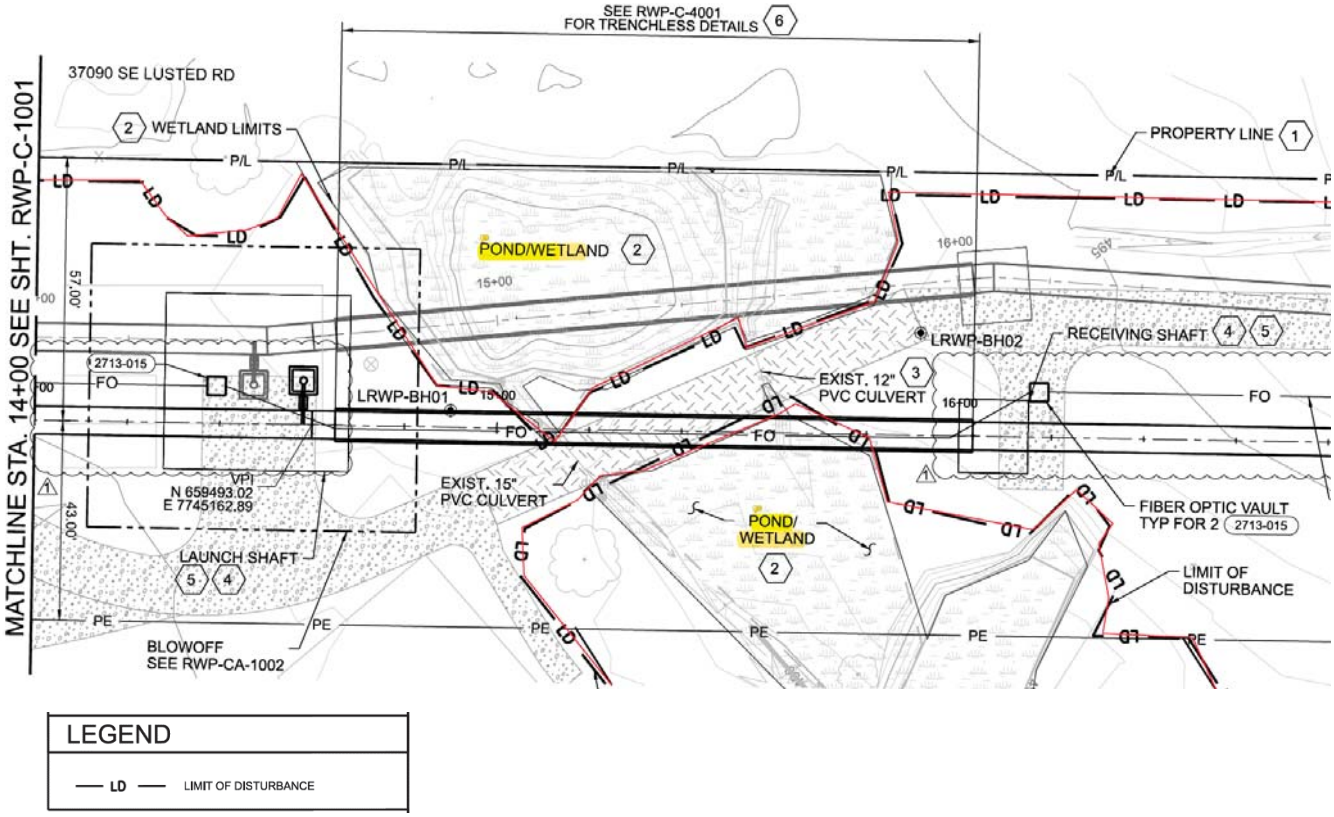
Figure 6. Property associated with raw water portal near 37077 SE Lusted Rd. before raw water portal staging construction (A) Street view of the entrance of impacted property (October 2023, *GoogleMaps*); (B) Existing wetland, associated wetland grasses, pasture and surrounding trees (February 2024).

Response to Cottrell CPO & PHCA Adverse Effects Report Comment – Wetlands Impact at Raw Water Pipeline Portal

Laura Miles/Delve Underground, Brad Phelps/Jacobs Engineering

Winterbrook provided wetlands delineation and obtained Department of State Lands concurrence with that delineation, which is included in the record in a separate memorandum during the first open record period. The PWB survey team accounted for the boundary of this delineation as a part of the design process on the identified raw water pipeline property. Specifically, the design avoids impacts to: 1) the pond south of the existing road (Water #2 in the delineation), the wetland surrounding the pond (wetland #3 in the delineation), and 3) the wetland north of the existing road (wetland #4 in the delineation). Pre-construction, the wetlands had always been separated by a farm access road with property owner installed culverts that prevented the pond from overflowing onto the farm road. Both the pond and the ditch associated with the wetland on the north side of the road are human-made features of the property. The design team developed solutions to avoid impacts to the wetland and pond by boring the two pipelines beneath the pond using a trenchless installation system. In addition, the farm road and existing culverts were protected by requiring the contractor to install a hardened road surface (described further below), reducing the heavy loads on the existing farm road and property owner culverts to avoid any damage. As described below and in the memorandum (submitted concurrently with this memorandum into the record) prepared by the project's wetland expert, Anita Cate Smyth of Winterbrook (the "Winterbrook Memo"), the constructed road surface also allowed construction access without disturbing the nearby pond and wetlands.

The wetland and pond delineation limits have been included on construction drawings and are designated as wetlands, as shown in this example section (note that north is down):



As shown on that construction drawing, the wetlands are outside of the construction limit of disturbance. A black sediment/silt fence has been installed to provide protection to the wetland. No activities are permitted to occur beyond this sediment fence into the wetland areas.

The hardened road structure, located between the two wetlands, protects the existing farm road and culverts and maintains the existing drainage for the pond throughout construction. Protective steel plates have been installed on the road over the culvert areas, with a layer of gravel wrapped in geotextile placed atop the steel plates. The wrapping prevents gravel from entering the wetlands. The wrapped gravel encases an internal layer of gravel, which is then covered by timber crane mats, and a final plywood sheeting as the driving surface. The plywood surfacing is approximately 12 feet wide and 100 feet long, all covering the existing road. A wood curb on both sides of the road surface prevents traffic from entering the pond or wetlands. Prior to erecting the hardened road structure, the contractor installed the silt fencing between the construction area and wetland delineation area. After installation of the hardened road, the contractor placed straw wattles just outside

the curb of the hardened road structure to prevent sediment from entering the pond or wetland. Erosion protection is monitored weekly during construction for maintenance, including enhancement or replacement.

Photo 14: Silt/Sediment Fence installed at delineated wetland boundary – Pond side of Hardened Road

Photo 15: View of hardened road structure with sediment fence and straw wattles on each side.

Photo 16: View of west end of hardened road with black sediment fencing below road protecting wetlands on each side from sediment/erosion. The taller grey fabric walls in background are sound wall material for noise mitigation during construction.

After completion of construction, erosion control measures will be removed after vegetation is established, but the hardened road structure will remain. As explained in the Winterbrook Memo, restoration of the dirt road to pre-construction conditions could result in impacts to the pond and wetlands. In contrast, retention allows the road surface and road prism to remain undisturbed while reducing the sedimentation compared to the original road surface. Wetland enhancement vegetation will be planted on either side of the hardened road section once construction is complete. The wetland enhancement plan is attached to the Winterbrook Memo.

Comment 8: Exhibit N.43: Cottrell CPO & PHCA Adverse Effects Report dated April 15, 2025 (Page 17)

> *"It is unknown to what extent PWB has implemented culverts or drainage control systems to direct overland flow and erosion. Figure 10 provides evidence that current systems are inadequate and inefficient. Therefore, overland flow is leaving the site, east flowing and downhill on SE Lusted Road, subsequently entering the north fork of Beaver Creek. Uncontrolled runoff is thereby adding increased sedimentation into Beaver Creek."*

Response to Cottrell CPO & PHCA Adverse Effects Report Comment – Flow from Finished Water Intertie Site to Beaver Creek

Brad Phelps/Jacobs Engineering

See response to Exhibit N.10

Comment 9: Exhibit N.43: Cottrell CPO & PHCA Adverse Effects Report dated April 15, 2025 (Page 20)

"The new easement road along the finished pipeline route is also negatively impacting farm operations and agricultural resources in a significant way. When the recent rainy season began in the fall of 2024, Surface Nursery experienced extreme impacts of the new PWB access road and altered landscape. To control dust and erosion, PWB implemented measures that included the installation of heavy impervious materials and silt fencing. As a result, significant flooding occurred (and continues to occur) during rain events (Figure 11). According to Surface Nursery, operators (including the neighboring farm, Ekstrom Nursery) experienced unprecedented flooding causing the inability to operate and access farmland, destruction of seedlings, and unworkable soils for farming (Figure 11B)."

Figure 11. Significant negative impacts of altered landscape and erosion control measures on agricultural resources and existing farmland in fall of 2024 (*photo credit: Surface Nursery*). The location captured in the photos are along the finished pipeline route between SE Dodge Park Blvd and SE Lusted Road. (A) Excessive flooding of Surface Nursery property following fall rain events causing inaccessibility for farm operators; and (B) Flooded field of newly planted nursery stock saplings.

Response to Cottrell CPO & PHCA Adverse Effects Report Comment – Flooded Farmland

Brad Phelps/Jacobs Engineering, Robert Fraley/Portland Water Bureau

This was a short-term event that was resolved within a week and is solely a construction impact.

PWB received an email from Shawn Nerison (farm operator of the Schoepper property to the east of the farm road south of the FWI site) on November 14, 2024, notifying PWB of the issue discussed by this comment. In response, the next

morning, on November 15, 2024, the contractor opened gaps in the stockpile and silt fence and added wattles as check dams to prevent sediment movement from work areas with the water. This was intended to allow drainage to resume as would normally have occurred pre-construction from the Schoepper onto the Ekstrom property.

PWB received another complaint about ponding from Shawn Nerison on November 20, 2024. PWB visited the site on November 20 (that same day) and a conveyance pipe was added on November 21 to help convey the flow of water as would normally have occurred pre-construction from the Schoepper onto the Ekstrom property (see Nov 26 Photo 17 below). PWB has received no other complaints since these improvements were made and has not observed any additional ponding or issues similar to that raised by the commenter at this location. Therefore, this was a limited construction impact that is not relevant to compliance with MCC 39.7515(B).

Photo 17: Taken November 26, 2024, showing installation of pipe to help convey water off the Shoepper property as pre-construction would have normally drained.

<u>Comment 10:</u> Exhibit N.43: Cottrell CPO & PHCA Adverse Effects Report dated April 15, 2025 (Page 27)

"Minimally, PWB should fund a comprehensive groundwater monitoring program to study the potential for well impacts both during and after construction. The work should be conducted by an independent consultant with the appropriate expertise

and no previous business ties to PWB. Monitoring should include consideration of static water level measurements, drawdown testing, turbidity and water quality sampling, and the installation of monitoring wells near high-risk zones."

Response to Cottrell CPO & PHCA Adverse Effects Report Comment – Comprehensive Groundwater Monitoring Program

Brad Phelps/Jacobs Engineering

Two well monitoring assessments of private wells in the project area have been conducted. The first series of tests were conducted during the design phase and included thirteen (13) private wells where production testing occurred. All the owners of the wells granted permission to PWB to conduct the tests. These tests were conducted in 2021 prior to, and then again after, the geotechnical boring exploration program for the pipelines design and was completed to determine any impacts resulting from the subsurface investigation. No impacts to the wells were discovered.

The second series of tests included four wells (Courter, Walter, Tatro, Bissel) which were conducted in the winter of 2024 (with the private owners' permission and approval). These wells are in the area surrounding the Tunnel/Portal for the raw water pipeline portion of the project. All four of the wells were sampled for water quality, and two of the wells were tested for production characteristics. The other two wells had previously been tested for production assessment in 2021. The results of these wells tests were provided to the landowners and provide a baseline set of data that can be used after construction of the Tunnel/Portal to confirm that there has been no impacts to wells.

The testing was conducted by a local pump/well installer within the area, with oversight by a subconsultant of the pipeline's designer, Jacobs Engineering.

Comment 11: Exhibit N.48: Charles Ciecko Comments dated April 15, 2025 (Page 18/19)

"Sheet LU100 (existing conditions raw water pipelines) shows the location of 2 ponds. The CU narrative fails to provide any evaluation of their ecological value or condition. The Applicant has apparently failed to conduct a wetland delineation to determine the location or extent of jurisdictional wetlands within this area or other proposed project areas. Instead, the Applicant's CU narrative assumes that auger boring the 2 large pipelines under one of the ponds is sufficient evidence that adverse impacts to natural resources are avoided. Lacking a wetland delineation

and full inventory of mammals, avian, and amphibian species, it is impossible for the Applicant to make any such conclusion.

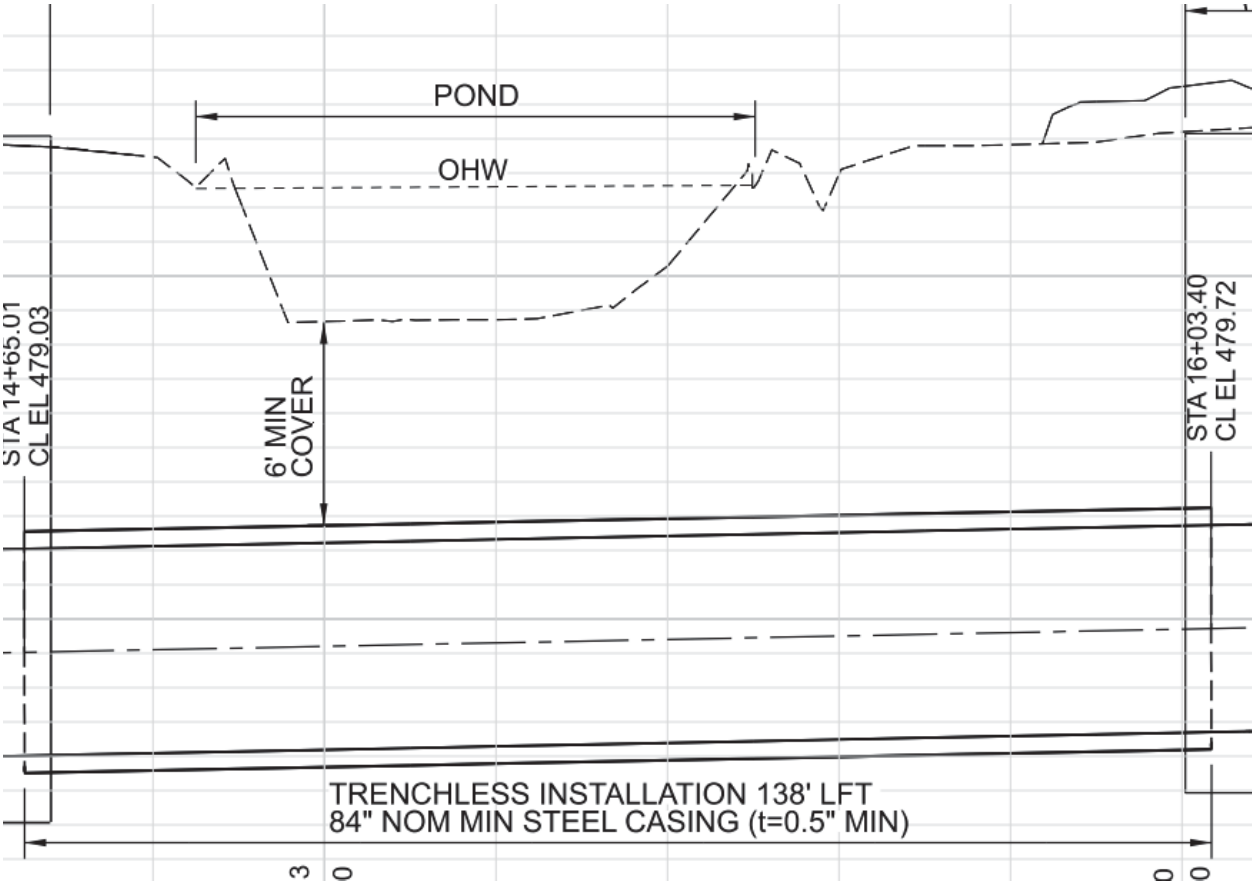
It is now clear that a wetland delineation was never completed. Without baseline information PWB cannot provide evidence to support a finding that wetlands were not adversely impacted by the site alternation or the ongoing operation of the raw water pipelines.

Response Charles Ciecko Comment – No Wetland Assessment Conducted

Brad Phelps/Jacobs Engineering

See response to Exhibit N.43, Page 14.

Additionally, boring the pipeline under the pond/wetlands area will not adversely affect the pond/wetlands. The permanent installation of the pipelines in this area includes an outer steel casing installed a minimum of six feet below the deepest point of the pond/wetlands. The pipeline carrying the raw water to the filtration facility is then placed inside the steel casing.



The pond/wetlands sit above an impermeable soil layer that allows it to store water. That impermeable soil layer will not be pierced by installation of the casing or

pipeline inside of it. Use of a tunneled casing and grout sealing the annulus outside of the casing further establishes that there will be no pathway or connection between the water in the pond/wetlands and pipelines. Once the pipe is installed in the casing, the annulus space between the piping and the casing will also be filled with grout, which further prevents flow paths of water under the pond/wetlands from escaping through or around the casing and pipe.

The pipeline installation will be 11 feet below the ground surface (wetland), and laterally the construction entry and exit points ("pits") will be 20 feet from the top of the bank on the east side and 50 feet away to the west side. Both the pits will be well outside the delineated wetland area.

According to Anita Smyth, Sr. Professional Wetland Scientist: project engineers and natural resources professionals consulted together to evaluate design alternatives to avoid natural resources impacts at the raw water alignment site. Boring underneath was identified as the only option that avoided direct impacts. Project engineers and geologists determined that six feet of separation was sufficient to protect the wetland from being dewatered by the construction activities. This approach was discussed with The Streamlining Committee members, which included representatives from the US Army Corps of Engineers (USACE) and Oregon Department of State Lands (DSL). The agency staff indicated they were satisfied that the boring option avoided impacts to wetlands and other waters of the state and this design proceeded through the USACE and DSL permit application processes. No comments were received during the agencies' review indicating the proposal was insufficient to avoid impacts or that significant risk remained unaddressed in the application. Based on the assessment of the design team and agency approval, and in my professional opinion, no adverse effect to wetlands, waters of the state, or other natural resources will result from the boring activities.

Comment 12: Exhibit N.48: Charles Ciecko Comment dated April 15, 2025 (Page 19)

Applicant materials specify "pipeline drains" in both raw and finished water pipelines.

It is assumed that these drains are utilized when pipelines must be emptied for the purpose of repair or maintenance activities. Applicant provides no information about either the quantity or chemical content of water that will be discharged or how the discharged water will be managed. In the case of the the raw water pipelines, 2 @72" pipes will extend 1200 feet and then rise approximately 230 ft to

the surface at the proposed filtration plant site. Assuming only the water from the tunneled pipes is drained, 604,908 gallons of water will be discharged under pressure of 230 ft. of head. This volume has the capacity to cause localized ponding, erosion or run-off into local drainage swales and protected watercourses.

Applicant's failure to identify or assess issues related to pipeline drains creates the likelihood of impacts to natural resources and potential damage to adjacent private property."

Response Charles Ciecko Comment – Pipeline Drains

Brad Phelps/Jacobs Engineering

Portland Water Bureau has been operating the conduit systems that convey Bull Run water to Portland for over a century, including all of the associated drainage blow-offs, which are the same as will be associated with the new pipelines. All drinking water systems have a periodic need to drain the pipes and there are well-established best management practices (BMPs) in place across the utility sector for conducting this activity safely and without adverse impacts on the surrounding environment. For example, Portland Water Bureau implements the appropriate BMPs by dechlorinating previously treated drinking water when it must be released and controlling flow rates using valves and energy dissipation BMPs such as rip rap to prevent water quality, erosional, or other impacts to the environment. The new pipeline segments associated with the filtration facility will be operated and maintained using the same established BMPs.

Comment 13: Exhibit N.53: Anthony Kinen Comment dated April 15, 2025 (Page 1)

"…..I have noticed significant flooding and silt deposit find their way into the North Fork of Beaver Creek. This creek is a vital habitat for several species of animals. In years past, I have never seen the creek go over its banks or it's the roads that are on my property. This year the creek was over the road and banks for close to a month straight….."

Response Anthony Kinen Comment – Flooding of Beaver Creek

Brad Phelps, Jacobs Engineering

See response to Exhibit N.10

Comment 14: Exhibit N.69: Carrie Richter, Cottrell CPO Comments dated April 15, 2025 (Page 7)

> "Destruction of a large wetland at the entrance to the raw water pipeline tunnel. The wetland was known to have multiple small ephemeral water bodies with populations of native amphibians, as well as numerous large coniferous trees."

Response to Carrie Richter, Cottrell CPO Comments – impact to wetlands at the raw water pipeline tunnel

Brad Phelps/Jacobs Engineering

See response to Exhibit N.43, Pg 14

Comment 15: Verbal Testimony Public Hearing @ 3:24:39, 4/16/2025 by Mr Dysinger

> "I am a resident of the county for 37 years at 32234 Southeast Pipeline Road and I recently acquired 32 – pardon me, 32535 Southeast Pipeline Road, which is just two houses down and it borders Oxbow. Actually Oxbow goes right through the middle of my property. I have property on both sides of the – of the road. And Oxbow is the northern boundary to that property and it has an artesian well on it. And I've been trying to acquire from --- inquire of the people at the Water Bureau how their project will affect my artesian well, and artesian well, just a run of the mill, artesian well is worth $90,000. And I cannot get an answer for them how or whatever, they say it won't affect it. But if they're going to dig down, they're going to affect my artesian well, which is above the road.
>
> And if they're going to dig down on the --- on the lower end of it, it will affect it. And I don't have water to part of the property that's on the east side of the Oxbow Drive....."

Response Verbal Testimony of Mr. Dysinger – impact to Artesian Well

Todd Cotton/Jacobs Engineering, Brad Phelps/Jacobs Engineering, Bonita Oswald/Portland Water Bureau

The testimony mentions the presence of an artesian well located on the property at 32535 SE Pipeline Road, on the part of his property that is on the west side of Oxbow Drive (he mentions that the east side does not have water). However, a specific location of the well is not provided. A records review of the Oregon Water Resources Department Well Report Mapping Tool (Well Report Map Tool) did not provide a record of the well. Additionally, a review of current and historic aerial images for the

subject property was made but also did not provide evidence of the location of the well. Without additional information on the location of the well and its depth and type of construction, it is not possible to determine the distance between the well and the planned pipelines other than that it is alleged to exist on the property (shown in a blue outline below) located between SE Pipeline Rd, SE Altman Rd, and SE Oxbow Dr.

Bonita Oswald, PWB Filtration Senior Communications Manager, had several documented interactions with Janice Dysinger (also of 32535 SE Pipeline Road) beginning in July 2024 and continuing through November 2024 as referenced below from her communications notes:

- On July 31, 2024, Bonita sent a letter to the PO Box listed as a mailing address for the property at 32235 SE Pipeline Road & 32535 SE Pipeline Road
- At the October 10, 2024, Neighborhood Meeting, Ms. Dysinger brought up concerns about her well. Video of the event shows PWB's contractor provided information about the work being completed in the area, noting that the work being completed at the time was only a temporary road widening and that the contractor would be completing pipeline connections at the Altman/Pipeline intersection later in the project. PWB let Ms. Dysinger know that all of the work would be in the public right of way and the connections would be no deeper than the existing pipeline in the area. PWB offered to have its team look at the well to confirm there would not be any impacts and that staff would be in contact with her to set up that meeting.
- On October 11, 2024, Bonita emailed Ms. Dysinger to schedule a time for PWB staff to meet with her. The email correspondence also included the original letter that was sent 7/31.
- On October 12, 2024, Bonita called Ms. Dysinger, but she did not have time to talk. Bonita let Ms. Dysinger know that she had also sent an email and she can either call back or respond to the email when convenient.
- On October 16, 2024, Bonita called Ms. Dysinger again and she said she would try to find the email.
- On November 11, 2024, Bonita emailed Ms. Dysinger letting her know that excavation was planned to start in the area soon for the PHWD pipeline on Altman and inquired again about meeting with our staff.
- On November 13, 2024, Bonita left a voicemail to follow up on the meeting request. She also sent an email that day letting Ms. Dysinger know that she had called.

- On November 14, 2024, Bonita spoke with Ms. Dysinger on the phone, and Ms. Dysinger confirmed receiving Bonita's email. Ms. Dysinger stated that she hadn't been feeling well and wasn't sure that she would be able to meet. Ms. Dysinger provided Bonita a description of where the well was located and Bonita told her she would mark it on a map and send it to her to confirm the location is correct.
- On November 15, 2024, Ms. Dysinger had not yet responded. Bonita sent a follow up email. Bonita also confirmed via email that the contractor would only be excavating 15ft down and PWB did not expect it to impact her well.

The geotechnical explorations program completed for the project included advancing one boring on SE Pipeline Road, directly adjacent and south of the property, and three borings and one cone-penetrometer test probe along SE Altman Road to the east of the property. The findings from these explorations show that the

soil profile extending from the ground surface to depths below the bottom of the pipe trench consists of clay ranging from lean clay having medium plasticity to fat clay having medium to high plasticity. This clay soil is also characterized by having very low permeability.

Monitoring of groundwater levels along SE Altman Road was also performed as part of the geotechnical explorations program completed for design of the Finished Water Pipeline. Two borings near the property site, located south of SE Pipeline Road and another located north of SE Pipeline Road, each had continuously recording groundwater monitoring devices installed which collected water level data for more than 12 months. The data shows that the static groundwater table ranged between about 12 to 18 feet below the ground surface (seasonally dependent). The depth to the bottom of the proposed pipeline along this segment of SE Altman Road generally ranges from 10 to 13 feet, except where the roads dips down at SE Oxbow Drive which is the connection point to the existing C4 conduit. Therefore, the existing groundwater is expected to be below the bottom of the new pipeline during most times during the year and occasionally just above the bottom of the pipeline. It would be extremely unusual for a well, including an artesian well, to be drawing water from an aquifer as shallow as 12-18 feet below the ground surface.

Even if groundwater does rise to above the pipeline during limited durations, an important feature of the pipeline design is the intermittent placement of trench cutoffs that will interrupt flow of water along the pipeline, disallowing the water to travel long distances along the pipe. Essentially, the trench dams will prevent the pipeline from acting as a "French drain" that could alter the shallow groundwater regime in the area.

Pipeline construction in this area is entirely located within the existing public right of way of SE Altman Rd, SE Oxbow Dr, and SE Pipeline Rd and will have a limited impact on the surrounding ground outside the trench excavation since the clay soil in the area is competent and has medium to high plasticity. In layman's terms the clay is sticky, strong, and does not allow groundwater to move through it easily.

For the reasons listed above, installation of the pipeline in the SE Altman Road public right of way would not be expected to have an impact on any existing artesian well located on the 32535 SE Pipeline Road property.

Multnomah County

LUP Hearings <lup-hearings@multco.us>

Applicant's First Open Record Period Submission -- T3-2022-16220

Zoee Powers <zpowers@radlerwhite.com> Mon, May 5, 2025 at 11:47 AM
To: LUP Hearings <lup-hearings@multco.us>
Cc: "Peters, David" <David.Peters@portlandoregon.gov>, Renee France <rfrance@radlerwhite.com>, Zoee Powers <zpowers@radlerwhite.com>

Multnomah County Staff,

At this link, please find the applicant's submissions into the record for the First Open Record Period of T3-2022-16220 on remand:

https://radlerwhite.sharefile.com/d-sc32887acc9964f03b16e192384a89def

I have personally endeavored to make sure these are all searchable, unlocked/editable, and of a proper size. I understand that in our last submission we missed recognizing that one of the documents was locked by an engineer's stamping procedure and it caused additional work for staff. Please let me know if you have that issue again and I will have the document corrected.

Thank you,

Zoee Lynn Powers

Partner

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Pronouns: She/her

Work Hours: I work normal business hours all days except for Tuesdays. On Tuesdays, I work until 2:30 PM and then return around 7 PM. If you have an urgent matter on a Tuesday afternoon between 2:30 PM and 7 PM, please call my legal assistant, Brittany, at 971.634.0216. Brittany will be able to contact me.