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5/28/19

SENT BY ELECTRONIC MAIL

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RE: Request for state intervention to halt harmful clearcutting operations in the Wilsonville Drinking Water Protection Area (PWS # 4100954)

Dear Mayor Knapp, Mr. Cosgrove, Ms. Kerber & Stewardship Foresters:

The State of Oregon (State) and its designees, including the State Forester and the City of Wilsonville, have an affirmative statutory and constitutional duty to safeguard drinking water supplies for existing and future generations of water users.¹ Furthermore, in Oregon, water is

¹ ORS 448.273; ORS 537.332(3), (5); ORS 537.334(2).

a public trust resource and the supply of drinking water a protected public use.² Despite this, decades of mismanagement of forestlands has and continues to degrade water flow, water quality, and watershed conditions in public water supply (PWS) source areas statewide.

As recognized by the Oregon Department of Environmental Quality (DEQ) and Oregon Health Authority, industrial forest practices, including clearcutting, timber plantations, dense networks of logging roads and application of chemical herbicides and fertilizers are primary threats in Wilsonville's drinking water protection area.³ As you know, the City of Wilsonville must take action "to assure that water system facilities are free of public health hazards."⁴ As such, we are writing to request that you intervene to halt harmful clearcutting operations in Wilsonville Drinking Water Protection Area (PWS 4100954) that are planned for the remainder of 2019. A list of operations of concern are attached as Exhibit A.

More details of each can be found by retrieving project plans from Oregon Department of Forestry's FERNs notification system available online at <https://ferns.odf.oregon.gov/e-notification> and searching with the notification (NOAP) numbers listed on Exhibit A. These planned operations will create an additional 1,487 acres of clearcut land in a watershed that has already been damaged by industrial logging operations.

These projects, in combination with past, present, and reasonably foreseeable future projects of a similar nature will continue to undermine the City of Wilsonville's ability to provide stable, clean supplies of water to its customers and increase water treatment costs. These concerns are only will only be exacerbated by the anticipated effects of climate change. Without invention, Wilsonville residents can expect to face:

- **Depleted water supplies.** Dry season stream flows are today dramatically depleted across western Oregon and the Pacific Northwest as a consequence of extensive logging and vegetative regrowth in plantations after logging.⁵ Long-term paired watershed experiments indicate that the conversion of mature and old growth conifer forests to plantations of native Douglas fir produced a persistent summer streamflow deficit of 50 percent relative to reference basins, in plantations aged 25 to 45 years.⁶ Climate change will make matters worse by further reducing dry season flows thereby

² See Blumm, M., Doot, E. 2012. Oregon's public trust doctrine: public rights in waters, wildlife, and beaches. *Environmental Law* 42: 375-414.

³ Oregon Department of Environmental Quality (DEQ). 2002. Source Water Assessment Brochure. City of Wilsonville PWS #4100954. Salem, OR: Oregon Dept. of Env'tl. Quality and the Oregon Health Division.

⁴ OAR 333-061-0025; ORS 448.115 et seq;

⁵ Perry, T. D., Jones, J.A., 2016. Summer streamflow deficits from regenerating Douglas-fir forest in the Pacific Northwest, USA. *Ecohydrology*. 1-13.

⁶ Bureau of Land Management, 2017. Environmental Assessment and Draft Finding of No Significant Impact for the Pickett West Forest Management Project. Grants Pass, OR: USDI Bureau of Land Management Grants Pass Field Office.

straining “the ability of existing infrastructure and operations to meet the many and varied water needs of Oregonians.”⁷

- **Warming waters.** As the climate warms and dries in the summer, Oregon’s waterways will also warm. This thermal pollution is intensified by plantation forestry. Department of Forestry modeling concludes that a typical clearcut compliant with the Oregon Forest Practices Act on average, boosts water temperatures by 2.6 degrees Fahrenheit on top of any background increase due to climate change.⁸ According to multiple federal agencies, “the evidence is . . . overwhelming that forest practices on private lands in Oregon contribute to widespread stream temperature problems.”⁹ Warmer water, in turn, will cause “harmful algal blooms to occur more often, in more waterbodies and to be more intense.”¹⁰
- **Increased wildfire risk.** Timber plantations burn hotter and faster than natural forests. This is because they lack the moisture content and structural complexity needed to keep wildfires in check. Decades of monitoring by firefighters and researchers show that fires burning in complex natural forests create a mosaic of intensely burned and relatively untouched areas. On the other hand, fires burning in homogenous tree plantations are more likely to be uniformly severe.¹¹
- **Increased incidence and severity of landslides.** The vast network of clearcuts and logging roads permeating industrial timber plantations present a significant risk of landslides, especially during extreme precipitation events, such as the 1996 floods. Under almost all climate change scenarios for Oregon, the frequency of these events will increase. Maintenance of strong root systems is an important factor in stabilizing soils during these events. Clearcutting reduces the strength of root systems dramatically, and thus is a major factor in increased landslide risk.¹² Logging roads

⁷ Dalton, M.M., K.D. Dello, L. Hawkins, P.W. Mote, and D.E. Rupp, 2017 *The Third Oregon Climate Assessment Report*, Oregon Climate Change Research Institute, College of Earth, Ocean and Atmospheric Sciences, Oregon State University, Corvallis, OR, page 18.

⁸ Oregon Department of Forestry (ODF), 2015. Detailed analysis: predicted temperature change results. Agenda Item 7, Attachment 3 to the meeting packet prepared for the Board of Forestry, June 3rd, 2015. Salem, OR: ODF.

⁹ EPA-FWS-NMFS, 2/28/01 Stream Temperature Sufficiency Analysis Letter to ODF and ODEQ.

¹⁰ US Environmental Protection Agency, “Climate change and harmful algae blooms,” available online at: <https://www.epa.gov/nutrientpollution/climate-change-and-harmful-algal-blooms>.

¹¹ See, e.g., Stone, C., Hudak, A., Morgan, P., 2008. Forest harvest can increase subsequent forest fire severity. In *Proceedings of the Second International Symposium on Fire Economics, Planning and Policy: A Global View*. Armando González-Cabán, ed. Riverside, CA: USDA Forest Service, Pacific Southwest Research Station.

¹² Schmidt, K.M, J. J. Roering, J.D. Stock, W.E. Dietrich, D.R. Montgomery, Schaub, T. 2001. The variability of root cohesion as an influence on shallow landslide susceptibility in the Oregon Coast Range. *Can. Geotech. J* (38): 995-1024.

channel water runoff and cause debris torrents that can travel many miles downstream, pick up momentum, and become heavily destructive.¹³ Studies indicate that clearcuts exhibit landslide rates up to 20 times higher than background rates. Near logging roads, landslide rates are up to 300 times higher than in forested areas.¹⁴

- **Increased risk of flooding.** Research has demonstrated that heavily logged watersheds are at a much higher risk of flooding than those maintained in natural forest conditions. For example, Jones and Grant found that logging increased peak discharges by as much as 50% in small basins and 100% in large basins over a 50-year study period. A 2008 Forest Service science synthesis confirmed the detrimental impacts of logging and logging roads on peak flows across western Oregon and Washington.¹⁵
- **Enhanced habitat for invasive species and organisms that put public health at risk.** Invasive species find few barriers in monoculture tree plantations since key natural processes that keep such species in check have been removed. As succinctly stated by Norse, “in monocultures, without barriers to dispersal, insects and pathogens find unlimited resources in all directions.”¹⁶ As Oregon’s climate changes, a wide variety of non-native plants, insects, and disease-causing organisms, such as viruses, bacteria, prions, fungi, protozoans, and internal (roundworms, tapeworms) and external (lice, ticks) parasites will spread, adversely affecting the health of humans, livestock, and pets in addition to fish and wildlife. A recent Forest Service assessment concluded “[e]vidence suggests that future climate change will further increase the likelihood of invasion of forests and rangelands by nonnative plant species that do not normally occur there (invasive plants), and that the consequences of those invasions may be magnified.”¹⁷
- **Elevated risk of harmful algae blooms.** Harmful algal blooms (HAB) are an urgent concern statewide as climate change unfolds. Industrial forest practices greatly

¹³ Swanson, F. J., J. L. Clayton, W. F. Megahan, Bush, G., 1989. Erosional processes and long-term site productivity, pp. 67-81 in *Maintaining the Long-Term Productivity of Pacific Northwest Forest Ecosystems*. D. A. Perry, R. Meurisse, B. Thomas, R. Miller, J. Boyle, J. Means, C.R. Perry, R. F. Powers, eds. Portland, Oregon: Timber Press.

¹⁴ Heiken, D., 2007. *Landslides and Clearcuts: What Does the Science Really Say?* Eugene, OR: Oregon Wild.

¹⁵ Grant, G.E., Lewis, S.L., Swanson, F.J., Cissel, J.H., McDonnell, J.J. 2008. *Effect of Forest Practices on Peak Flows and Consequent Channel Response: A State-of-Science Report for Western Oregon and Washington*. PNW-GTR-760. Portland, OR: USDA Forest Service, Pacific Northwest Research Station.

¹⁶ Norse, E., 1990. *Ancient Forests of the Pacific Northwest*. Washington, DC: The Wilderness Society.

¹⁷ Kerns, B., Guo, Q., 2012. *Climate Change and Invasive Plants in Forests and Rangelands*. U.S. Department of Agriculture, Forest Service, Climate Change Resource Center. Available online at: <https://www.fs.usda.gov/ccrc/topics/climate-change-and-invasive-plants-forests-and-rangelands>.

amplify this risk through three channels: (a) by warming waters; (b) by decreasing natural flow rates, and (c) by contaminating water supplies with glyphosate, urea along with other chemicals and fertilizers that enhance HAB growth. With the presence of glyphosate and urea in streams, nontoxic algae growth is inhibited and HABs dominate without competition.¹⁸

In order to mitigate these threats and comply with the State's duties to safeguard drinking water supplies, CSE, our members and our partners request that the State Forester and the City of Wilsonville take the following actions:

1. Issue an order to the corporate forestland owners identified in Exhibit A halting implementation of the clearcutting projects identified in Exhibit A because of the risks these projects present to existing and future water supplies.
2. Work with forestland owners to implement climate smart, ecological forestry alternatives to these projects to maximize protection of public trust water resources. Such techniques include variable density thinning, individual tree selection, ecological restoration of tree plantations, long rotations and other ecological techniques well documented in scientific literature.¹⁹
3. Pursuant to ORS 527.765, adopt best management practices for forestlands within Wilsonville's Drinking Water Protection Area (PWS #4100954) to minimize threats from industrial forest practices enumerated above. Clearcutting, application of chemical herbicides, pesticides and fertilizers, as well as construction of new logging roads should be prohibited.
4. Pursuant to Public Trust Doctrine obligations and those of Article XI, Section 4 of Oregon's Constitution investigate and begin the process of collecting damages for impairments to Glide's drinking water supplies associated with past logging activities by corporate forestland owners.²⁰

¹⁸ Glibert, P. M., Harrison, J., Heil, C., & Seitzinger, S., 2006. Escalating worldwide use of urea—a global change contributing to coastal eutrophication. *Biogeochemistry*, 77(3): 441-463.

¹⁹ See, e.g., Kohm, K.A., Franklin, J.A. eds. 1997. *Creating a Forestry for the 21st Century: The Science of Ecosystem Management*. Washington, DC: Island Press; Franklin, J.A., Johnson, K.N., Johnson, D.L. 2018. *Ecological Forest Management*. Long Grove, IL: Waveland Press.

²⁰ As a trustee of drinking water supplies, the State of Oregon and its designees must not only protect drinking water from future impairments but work proactively to restore past damages. See, e.g. Quirke, D. 2016. *The Public Trust Doctrine: A Primer*. A White Paper of the University of Oregon School of Law, Environmental and Natural Resources Law Center. Eugene, OR: ENR. Article XI, Section 4 of Oregon's constitution prohibits takings of public trust resources by corporations without compensation and has been applied to the taking of water supply by private logging companies.

We look forward to discussing our concerns in more detail in the weeks ahead.

Yours truly,

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Exhibit A:
Clearcut logging operations proposed in the source water assessment area
for the City of Wilsonville (PWS # 4100954)

NOAP #	Landowner	Clearcut acres
2019-552-03969	Weyerhaeuser Dallas	119.8
2019-531-02100	Weyerhaeuser Dallas	83.6
2019-552-00021	Weyerhaeuser Dallas	80.1
2019-531-02700	Jerri Emert	79.7
2019-531-03301	McDougal Bros. Investments	76.8
2019-531-04080	Billy Gourly	73.8
2019-531-03999	WY Dallas	71.7
2019-552-02989	Barbara Thorstad	53.3
2019-552-00184	Weyerhaeuser Dallas	51.6
2019-552-01247	AP Timber, LLC Trask River Land and Timber Owner C/O HFM Independence	49.8
2019-552-01356	AP Timber, LLC Trask River Land and Timber Owner C/O HFM Independence	45.8
2019-552-01641	Brad Douglas	43.6
2019-582-00624	Gene Collier	41
2019-531-00864	Weyerhaeuser Dallas	38
2019-552-00023	Weyerhaeuser Dallas	37.6
2019-531-01985	Weyerhaeuser Dallas	34.2
2019-552-00178	Weyerhaeuser Dallas	33.7
2019-531-02784	Samuel A Howard	31.7
2019-772-00654	CTCSALES ADMIN	31
2019-552-02897	WY Dallas	25.1
2019-552-01406	Kurt Oleman	24.1
2019-552-00204	Weyerhaeuser Dallas	23.1
2019-552-01703	Tom Van Well	23.1
2019-531-02820	Ron and Barbara Garand	18.2
2019-552-00029	WY Dallas	18
2019-551-02309	Brent Klumph	12.4
2019-551-02306	Brent Klumph	12.3
2019-551-02309	Brent Klumph	12.1
2019-552-01638	Jason Goodenough	11.6
2019-551-02123	Brent Klumph	11.5
2019-552-01357	Golden Pond Timberlands, Inc. Camp Creek Landowner C/O HFM Independence	11.5
2019-551-02127	Brent Klumph	10.9
2019-531-01897	Larry F Heesacker	10.5
2019-552-03084	Dave Dunn	9.7
2019-551-01188	Evelyn L. Hukari	9.6

2019-531-04343	Chris Brabb	9.2
2019-531-01936	Nancy Thornton	9.1
2019-551-02308	Brent Klumph	8.5
2019-551-02308	Brent Klumph	8.3
2019-552-01639	Fred Eichler	7.3
2019-552-02625	Ralph Martin Lopez	7.1
2019-551-01708	Dustin Fullen	6.9
2019-531-01936	Nancy Thornton	5.8
2019-551-02306	Brent Klumph	5.2
2019-772-03298	ATR Services Inc.	5.2
2019-582-02231	Sue Taylor	5
2019-551-02308	Brent Klumph	4.9
2019-582-00582	Haley Dyer	4.8
2019-551-02127	Brent Klumph	3.9
2019-772-01190	Ray Jackman	3.9
2019-551-02127	Brent Klumph	3.8
2019-582-00623	Gene Collier	3.5
2019-531-02669	Brock R Belt	3.4
2019-531-01936	Nancy Thornton	2.7
2019-531-01124	Hal Hagglund	2.6
2019-551-01708	Dustin Fullen	2.2
2019-581-03198	Robert E Marr	2
2019-582-00262	Gerald Buchholz	1.6
2019-552-01636	James Siegfried	1.3
2019-582-01404	Dennis & Marla Mack	1.3
2019-582-02382	Heirloom roses heirloom	1.2
2019-552-06436	Charles Brodd	4.3
2019-531-06191	Gene Belt	3.2
2019-581-06471	William Wyatt	3.9
2019-552-06250	Ron W Powers	20.3
2019-531-06529	Mary Reeves	13.8
	Total	1486.7