



## Memorandum

Date: February 10, 2025

To: West Linn City Council

From: Darren Wyss, Planning Commission

Subject: Public Comments Received for VAC-24-01

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As of 12:00pm today, four public comments were submitted after the publication of the staff report for VAC-24-01, a petition to vacate a portion of the 5<sup>th</sup> Street and 4<sup>th</sup> Avenue rights-of-way. All comments are attached.

Two additional comments were submitted after the 12:00pm written comment deadline.

If you have any questions, please contact me at [dwyss@westlinnoregon.gov](mailto:dwyss@westlinnoregon.gov) or 503-742-6064.

## Wyss, Darren

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**From:** jennifer aberg <aberg1jen@gmail.com>  
**Sent:** Monday, February 10, 2025 10:12 AM  
**To:** Wyss, Darren  
**Cc:** aberg1jen@gmail.com  
**Subject:** Objection to VAC-24-001 Right of Way Vacation

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I didn't send this to the City Council, I assume you will provide this to them before the meeting tonight.  
Thank you,

Dear Darren and West Linn City Council Members:

I am writing to let you know my strong opposition to the proposed vacation of the rights-of-way at 4th and 5th Avenue and 5th and 7th Street. My concerns are based on preserving the environment, public safety, and sound long-term urban planning. I urge you to carefully consider these important factors before making a decision.

### **Legal and Policy Considerations:**

Under Oregon Revised Statutes (ORS) 271.120, a city governing body must determine whether vacating a public right-of-way serves the public interest. Given the ecological significance of wetlands in this area, I believe vacating these rights-of-way would not be in the best interest of the public. A petition by Friends of Willamette, as well as feedback from the West Linn community engagement survey, strongly demonstrate that residents prioritize environmental conservation in the city. The community's concerns align with sound legal and policy standards aimed at protecting our shared natural resources.

### **Environmental Preservation:**

The proposed vacation areas intersect with ecologically sensitive wetlands, which provide crucial environmental services such as water purification, aquifer replenishment, and wildlife habitat. These wetlands also serve as natural flood buffers. By allowing development in these areas, we risk significant ecological degradation and the exacerbation of flooding risks. Once these rights-of-way are vacated, the city will lose control over the management and preservation of these critical ecosystems. This permanent loss could have far-reaching consequences for both the environment and the quality of life in West Linn.

### **Public Safety and Connectivity:**

Vacating these rights-of-way would eliminate potential opportunities for future public use. This area could be considered a "view corridor" or "scenic corridor," offering access and valuable connectivity through the enjoyment of wetland wildlife and the shared beauty of the landscape. Such spaces foster a deeper connection with nature and create opportunities for community members to engage in shared experiences, further strengthening the social fabric of West Linn.

Other cities in the region have recognized the broader value of rights-of-way and incorporated them into their planning strategies for public benefit. For example:

- **Oregon City** views its rights-of-way as "valuable assets," including not just streets and sidewalks but also land set aside for utilities, and emphasizes coordinated use among public and private users to manage this resource efficiently. [orc.org](http://orc.org)
- **City of Portland** considers factors such as view corridors, tree retention, pedestrian amenities, and community uses when evaluating street vacations. According to Portland's approval criteria for vacating streets (17.84.025), any area proposed for vacation must not be needed for these critical

functions, and any potential loss of public benefit must be carefully weighed against the long-term impact on the community. [portland.gov](http://portland.gov)

This philosophy of utilizing rights-of-way for more than just infrastructure is also evident in other nearby cities like Lake Oswego and Milwaukie, which have integrated similar principles into their urban planning to ensure that public spaces continue to serve a variety of functions for the benefit of their communities.

Additionally, floodplain rights-of-way should be preserved to safeguard public safety. Wetlands and floodplains play a critical role in storing excess water during emergency flood situations, acting as natural buffers that protect both the environment and our community. Vacating these rights-of-way to make way for development in such a sensitive area not only places a higher number of residents at risk but also creates additional pressure on emergency response services. More residents in a potentially hazardous area increase the burden on first responders during flood events or other disasters. Preserving these pathways ensures that we maintain flexibility in emergency planning and protect public safety in the face of increasing risks due to climate change and urban growth.

**Long-Term Urban Planning:**

Smart urban planning emphasizes the need for forward-thinking infrastructure that supports both current and future residents. Vacating rights-of-way undermines long-term planning goals by reducing public infrastructure in favor of private development. Preserving these existing pathways ensures the city can maintain its commitment to sustainable, interconnected, and resilient growth. It is important to think beyond short-term gain and prioritize the preservation of pathways that benefit the entire community in the long run.

**Conclusion:**

In conclusion, I respectfully urge the City Council to reject the proposed vacation of these rights-of-way. Preserving these areas is not only an environmental imperative but also crucial for future planning. By taking a stand to protect these spaces, the City of West Linn can demonstrate its commitment to sustainable growth, environmental stewardship, and the well-being of its residents.

Thank you for considering my perspective. I trust that you will make the decision that is in the best interest of the community and future generations.

Sincerely,  
Jennifer Aberg, West Linn Resident, 30 years

February 10, 2025

**To:** West Linn City Council

**Subject:** Testimony/comments RE VAC-24-01 Right-of-Way Vacations (RVACs) to support inappropriate future housing project in West Linn's highest-valued wetlands

Mayor and Council Members,

Ten days ago (January 31) I submitted to you my comments on the Dec 2024 draft waterfront plan in progress.

In those comments regarding the Ponds District I noted a dense housing area (shown in yellow shading on wetlands/floodplain land south of 5<sup>th</sup> Ave) that was entirely inconsistent with the planning framework for this District which is centered on environmental stewardship and protecting/restoring the City's water resource areas. I explained in those prior comments why the dense housing demarcation was inappropriate and should be removed from the wetland/floodplain location shown on the draft District map.

I support our city adding dense housing options (especially needed affordable housing), but they must occur at the right locations supported by infrastructure (e.g., WF Drive/I-205 corridor between Willamette and Arch Bridge Area and the Hwy 43 corridor) where they can be served/built/sold at lower cost, and where traffic and other factors won't degrade the quality/safety of our livable neighborhoods.

Just four days ago I was shocked to learn that our planning department was actually advancing a dense housing project within the boundary of our City's most significant wetlands in the Ponds District (that same shaded area mentioned above). I also learned that in a later stage of the project a hotel is envisioned on the south side of the wetlands. This is a very disturbing and inappropriate plan, and any hotel consideration further conflicts with the District framework as noted in my previous (January 31) comments. A hotel development here also conflicts with our Parks Master Plan approved in 2019.

As I mentioned in my prior comments, one of my first major endeavors as Mayor was to initiate Master Planning of our waterfront area to see that it's properly developed and that we don't make the same planning mistakes our City has made in many past developments – This is why you Master Plan!

This is especially critical when it involves our remaining water resource areas, and this is how I first got involved at a deeper level in city planning issues @15 yrs ago when I served as technical expert on our City's water resource area committee before serving on our Planning Commission (PC). Led by then City Planner Peter Spir, we rewrote Chapter 32 to reasonably protect and preserve the limited remaining water resource areas in our City after years of irresponsible/destructive development.

The ROW vacations on your agenda tonight are only needed to support a development project in direct conflict with the waterfront planning framework and community aspirations for this District. In this regard, the development would also violate the very premise of our Chapter 32 code to reasonably protect our remaining critical water resource areas.

This wetland area is not a zoo! This is our most substantial wetland complex remaining in our City and it requires restoration action, not dense housing construction within the natural area that would critically impact the habitat characteristics and functions of this complex, environmentally sensitive area.

The ROW vacations on your agenda tonight are only needed should our City intend to allow the proposed housing development in the wetlands to proceed. This development project is not in the public's interest and I'm requesting you deny these ROW vacancies to stop this irresponsible plan now and protect our City's options for

the area/properties and their future management in the public's interest. In this regard, your approval of VAC-24-01 ROW vacations would prejudice the public interest in violation of ORS 271.120.

Our community wants to work productively with our city planning, and avoid or minimize conflicts. Our planning staff is limited in its capacity and our community is not interested in creating hardships and disruption for our staff or creating unnecessary additional costs/expenses for our City.

However, if Council does not take action now to stop this irresponsible development, there will unfortunately be considerable conflict, stressed staff, wasted vital resources, and undesired legal costs for all parties.

Our community is also not interested in having developers be misled and spend unnecessarily on projects that don't get built when they fail to meet our codes and our community's planning aspirations and goals.

Again, only Council has the authority to stop this irresponsible project now and help put our planning and development of this District back on the responsible, community inspired track. As former Mayor and long-term resident deeply caring about our community and its future, I expect this leadership from you tonight by denying VAC-24-01, and at the same time provide clarity to the community toward our draft waterfront development plan in progress.

Finally, I'm asking that Council tonight direct our City Manager (J. Williams) to direct our Planning Director (D. Weiss) to have the PC immediately address the loophole problems associated with Chapter 32.080 (Alternative Review Process) that has been sitting idle on the PC docket to address for at least two years now. This is the (albeit) poorly worded section of Chapter 32 that staff has relied on to circumvent certain critical aspects of our code in order to get some projects/actions approved that otherwise would fail; this is the very section that staff has already indicated would need to be followed on the proposed (subject) housing development project.

Respectfully,

Russell B. Axelrod  
Former Mayor and 34-year resident of West Linn  
19648 Wildwood Drive, West Linn OR 97068  
(503) 312-8464

## Wyss, Darren

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**From:** Mollusky, Kathy  
**Sent:** Monday, February 10, 2025 11:08 AM  
**To:** Wyss, Darren; Schroder, Lynn  
**Subject:** FW: Comment on VACATING A PORTION OF THE 5TH STREET AND 4TH AVENUE RIGHTS-OF-WAY

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**From:** Marti Long <sethandmarti@comcast.net>  
**Sent:** Monday, February 10, 2025 10:42 AM  
**To:** City Council <citycouncil@westlinnoregon.gov>  
**Subject:** Comment on VACATING A PORTION OF THE 5TH STREET AND 4TH AVENUE RIGHTS-OF-WAY

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Hello, I'm writing in opposition of vacating the right of way adjacent to Fifth Street and Fourth Avenue. A single property owner has filed to vacate the city-owned right of way, for his sole benefit. On the other hand, all of the residents of West Linn will enjoy control and enjoyment of this large piece of property undisturbed if the right of way is retained by the city. This property is a wetland adjacent to the river and bordering on a large park; residents of the entire city—not just the neighborhood—constantly enjoy walking next to this wetland. In fact, in the 2019 Parks and Rec Master Plan, it was identified as a potential West Linn park.

The city council has a duty to protect the interests of the residents of the city—there is simply no reason that this city should hand over the right of way to a developer, potentially disturbing the balance that has been created in this parcel. As has been noted by Friends of Willamette Wetlands, there's no evidence of any sort of liner, so any disturbance to the parcel could have unknown effects on the rest of the property and the water table. Disturbance of this property will definitely affect those who live close to it—we've already seen wildlife start to move out of this property and into the adjacent neighborhood. On my property, we have had an uptick in possums and skunks in the past year since more houses have been put in on Ninth Avenue.

I urge you to protect the interest of the entire city and reject this request from a single property owner.

Marti Long  
2136 5th Ave

**Kathy Mollusky**  
*City Recorder*  
Administration

[#6013](#)

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**Date:** February 10, 2025

**To:** West Linn City Council

**Subject:** Concerns regarding proposed VAC-24-01

Mayor and City Councilors,

My name is Nicole Jackson and I was born and raised in West Linn for 18 years. I have recently moved back in August of last year and joined the efforts of Friends of Willamette Wetlands (FOWW).

First, I would like to thank you all for allowing me the opportunity to provide this testimony (written, as well as in person this evening) and share my concerns. I virtually attended the Land Use Training seminar held at City Hall on Wednesday, February 5th, 2025. My hope with the following testimony is to provide enough evidence to the record that a reasonable person would rely on for the criteria of ORS 271.120, to demonstrate why Council should deny the right-of-way vacation (VAC-24-01), or at the very least, pause/postpone this hearing until further evidence can be provided.

## Considering Public Interest

### **ORS 271.120 Hearing; determination.**

*“At the time fixed by the governing body for hearing the petition and any objections filed thereto or at any postponement or continuance of such matter, **the governing body shall hear the petition and objections and shall determine** whether the consent of the owners of the requisite area has been obtained, whether notice has been duly given and **whether the public interest will be prejudiced by the vacation of such plat or street or parts thereof.** If such matters are determined in favor of the petition the governing body shall by ordinance make such determination a matter of record and vacate such plat or street; **otherwise it shall deny the petition.** The governing body may, upon hearing, grant the petition in part and deny it in part, and make such reservations, or either, as appear to be for the public interest.”*

The ORS Statute 271.120 in bold above highlights an important part of the decision-making criteria: to determine whether public interest will be prejudiced by this vacation. It is my understanding that the use of “prejudiced” in this context means “cause harm to”. Vacating these rights-of-way **will** harm the public interest and public



benefit of the wetlands and hillside along 5th Avenue. Significant evidence of public interest in this area is provided below.

## Community Feedback

The [Community Engagement Summary](#) for the Waterfront Project provides substantial feedback from city residents indicating a desire to preserve this area. A complete excerpt of the Ponds District feedback is attached, and below are a few key quotes from this section:

- *“The overwhelming majority of comments in this area were to retain and enhance this as a natural area with minimal development.”*
- *“There was little support and significant opposition to a hotel and to residential development.”*

As of this morning, Friends of Willamette Wetlands [Change.org petition](#) has received **over 2,970 signatures** in support of preserving the wetlands and stopping the proposed development. This is yet another source demonstrating a strong public interest to protect this wetland. Attached to this testimony are **over 30 comments from the petition** highlighting the public interest and concern for protecting this wetland and riparian area. *These comments should be carefully reviewed and considered when determining whether the public interest will be prejudiced.*

## City Acknowledgement and Other City Examples

Further, the [Parks and Rec Master Plan](#) from 2019 outlines this property and ROWs in question as a “Planned Riverfront Park”. This shows that the City recognized the inherent value of this wetland for the public.

I ask you, Councilors, to take into account the examples of other cities’ approval criteria for vacating a right-of-way when considering public interest, most notably, the City of Portland.

City of Portland 17.84.025 Approval Criteria for Vacating Streets:

*“A. In considering **whether the vacation will prejudice the public interest**, the Council will consider the following factors, as relevant:*

*1. The area proposed to be vacated is not needed presently, and is **not identified in any adopted plan**, for public services, transportation functions, utility functions,*

***stormwater functions, view corridors and/or viewpoints, tree planting/retention, pedestrian amenities, or community or commercial uses.”***

Taking this framework into consideration, the proposed ROWs to be vacated are already identified in the adopted 2019 Parks and Rec Master Plan, as mentioned above. I also ask you to think beyond just streets and utilities for a “right-of-way”. This particular area provides critical stormwater functions, as both a wetland and a floodplain. We need to keep entire floodplain “pathways” intact as a benefit to public safety. In emergency flood situations, wetlands and floodplains do a fantastic job of storing water. Rather than vacate the ROWs, I ask that you realize the importance of retaining them, while looking into stronger protections and designations for this wetland habitat (such as a conservation easement). This will serve as both a benefit to the wildlife and to the citizens of this town by preserving this area as a protected floodplain and allowing the continued opportunity for accessible wildlife viewing of beavers, river otters, and over 130 bird species.

### **View Corridors**

When considering view corridors and/or viewpoints, it should be noted that the right-of-way identified perpendicular to 4th Street “4th Avenue (east)” has become a notable view corridor for the community. It is here that I witnessed wild river otters in the wetlands for the first time in December 2023. It is here that [West Linn High School students in AP Environmental Science visited](#) the wetlands this past fall to view the wildlife. It is here that the flat pavement of 4th Street provides accessibility to all members of the community to easily view the wetland property.

The “5th Street” right-of-way perpendicular to 5th Avenue provides similar viewing benefits to the community, where one can view the entire wetland from a higher elevation. This should also be retained as a “view corridor” for the public.

As noted in the Land Use Training last week, the city government has a constitutional right to “taking” of property that “can be the result of regulations that limit the use of the property.” City Council has the opportunity to deny this right-of-way vacation, and instead establish a conservation easement on the property.

## Concerns Regarding Blue Heron Settling Pond

### Integrity of the Settling Pond Berm

Evidence discovered in DEQ documents from 2012-2014 indicate that there is **no liner** in the Blue Heron Settling Pond next to the Willamette Wetlands and the “4th Avenue (east)” right-of-way. Excerpts from the DEQ documents are provided below.

2012-03-26 Blue Heron Lagoon Phase II ESA:

- Page 13/48: "A review of the as-built drawings of the ASB (PPC 1981) indicates that the lowest portion of the base of the pond is at approximate elevation of 59.5 feet AMSL. **The drawings do not appear to specify a clay or synthetic liner for the base of the ASB, nor was any type of liner indicated during this investigation.**"
- Page 20/48: "Sediment in the core samples consisted primarily of a gray clay-like material with varying amounts of small fibers and wood fragments. At the bottom of core samples F5 and E2 approximately 1.5 feet of sandy silt was observed that was indicative of native alluvial soil at the bottom of the lagoon. **None of the material recovered indicated the presence of a clay or synthetic liner.**"

2014-07-14 Final Blue Heron RI:

- Page 12/538: "...**no evidence of a clay seal or liner was discovered during CDM Smith's Phase II ESA when the sludge was sampled** using a coring device to penetrate the entire sludge interval. The base of the ASB appeared to be constructed with native sediments."
- Page 344/538: "It is likely that the **base of the ASB is in hydraulic communication with the shallow groundwater system**, given the **lack of any apparent liner** and the similar elevations of the base of the ASB and groundwater observed in site borings."

It is quite concerning that these details of no liner are conveniently omitted from the Contaminated Media Management Plan (CMMP), compiled by Evren Northwest, for the developer/current property owner. This CMMP also relies on data from over 10 years ago when the DEQ investigation was conducted. A lot can happen in 10 years, including the potential for breaching of the settling pond berm by burrowing animals (e.g. nutria).

2014-07-14 Final Blue Heron RI:

- Page 461/538: "A **large number of nutria** was also noted throughout the site, **utilizing the grassy area along the ASB berm**, and swimming in the ASB water and in the wetland."
- Page 487/538: "It is also assumed that the soil cover over the dried sludge will be of a thickness sufficient to **preclude burrowing animals (e.g., Nutria) from damaging the impermeable barrier.**"
- Page 534/538: Nutria swimming in ASB. Photo taken March 5, 2013.



Given that there is documented evidence of nutria having a large presence in the area since 2013 and their proclivity to burrow holes into berms, it is not unreasonable to consider that this has occurred in the past and has the likelihood to occur in the near future. Especially if the property owner is not required to remediate before building the proposed 52 new homes. I've personally seen five juvenile nutria next to 4th Street in just the last few weeks.

Further, upon reviewing satellite footage of the area going back over 20 years, there has been substantial water accumulation in the wetland since the early 2000s. The settling pond was built in the 1970s and the wetland at the time was heavily forested. At the time of the DEQ investigations, an ecological site assessment was conducted in early 2013, and no beavers or beaver dams were identified. Particularly next to 4th Street where the current beaver dam is in place. In fact, there is a photo from the 2013

assessment showing this very area with no beaver dam (page 536/538). How else could the water be accumulating at a notable rate from 2000-2013?

Another fact to consider is that water inputs from the former mill to the settling pond continued until summer 2013. If holes were burrowed prior to this, the hydraulics of the pond would certainly be impacted and could aid in the flow of water into the wetland.

Finally, during the DEQ assessment from 2012 to 2014, testing of the soil/sediment in the wetlands was never conducted, just 3 surface water samples with only one being adjacent to the settling pond berm. However, it is acknowledged in the same risk assessment that many of the toxins found in the settling pond tend to bind to soil/sediment, rather than float in the surface water. The soil of the wetlands needs to be tested for the presence of toxins found in the settling pond.

### **Public Safety**

Given these recent revelations in evidence from the DEQ documents, I am very concerned as a resident of West Linn that there are not adequate measures in place to monitor potential leaking in the north berm of the settling pond as the result of burrowing animals (e.g. nutria).

It is not unreasonable to ask that the property owner conducts a thorough investigation of potential breaching of the settling pond berm adjacent to West Linn's largest wetland. Especially since this wetland feeds into Bernert Creek and subsequently the Willamette River. This is a matter of public safety to ensure that toxic chemicals (heavy metals, PCBs, dioxins/furans, etc.) are not being discharged into our water resource areas. These concerns need to be addressed while the City Council still has authority over these ROWs.

### **Concluding Remarks**

It is no secret that the impetus for this Right-Of-Way Vacation hearing is for the property owner who plans to build [26 duplexes / 52 units](#) on this property. Vacating these ROWs, without any other conservation easements in place, gets the developer one step closer to their planned development, which as written, has significant violations of the city code, including the 100 ft wetland buffer. These duplexes will substantially infringe upon the documented boundary of the wetland, not to mention

the removal of significant trees in the surrounding habitat. **Do you, City Councilors, want this development to be your legacy?**

At the very least, I ask you to pause / postpone any decision on this hearing until further evidence can be presented to ensure the safety of the public and the wildlife in the wetland.

I am providing this testimony to the City Council on behalf of the wildlife in this wetland that has no voice<sup>1</sup> – who nevertheless should be included when considering public interest.

Thank you again for taking the time to consider these thoughts above and the supporting evidence attached. I encourage you to strongly consider the importance of public interest as ORS 271.120 stipulates and as you all claim to value in high regard.

Sincerely,

Nicole Jackson

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*<sup>1</sup> The 'No Voice' Perspective holds space for the voices of future generations, non-human relations, Mother Earth and others to be considered in the decision-making process. Long Ago Peoples' approach to land relationship and care included all affected parties' perspective in planning and decision-making. The Model includes "those with no voice" in all discussions and decisions made at the roundtable, and their presence is represented with a sign or symbol; The "No Voice" contribution could become a critical factor in final decision-making.*

*"Take care of the land; the Land takes care of you. Take only what you need."*

*- Native American Elder, Copper Joe Jack*



(all photographs above were taken in the Willamette Wetland area)

#### **Sources Attached:**

1. FOWW Petition Comments and Waterfront Survey Responses (in email attachments)
2. Change.org Petition:  
<https://www.change.org/p/protect-willamette-wetlands-and-wildlife-86c34d24-4811-4a31-916f-340d2941b0ea>
3. West Linn Parks and Rec Master Plan 2019  
[https://westlinnoregon.gov/sites/default/files/fileattachments/parks\\_and\\_recreation/page/5788/10\\_14\\_19\\_master\\_plan\\_in\\_word\\_final\\_final.pdf](https://westlinnoregon.gov/sites/default/files/fileattachments/parks_and_recreation/page/5788/10_14_19_master_plan_in_word_final_final.pdf)
4. WLHS environmental science students visit site of proposed Willamette Wetlands development, West Linn Tidings  
[https://www.westlinntidings.com/news/wlhs-environmental-science-students-visit-site-of-proposed-willamette-wetlands-development/article\\_2d5daf4-9543-11ef-9219-5bf9a1380430.html](https://www.westlinntidings.com/news/wlhs-environmental-science-students-visit-site-of-proposed-willamette-wetlands-development/article_2d5daf4-9543-11ef-9219-5bf9a1380430.html)
5. Contaminated Media Management Plan (attached in email)
6. DEQ 2014-07-14 Final Blue Heron Remedial Investigation and Risk Assessment (attached in email)

# Friends of Willamette Wetlands Petition Comments & Waterfront Survey Responses

## Petition Comments

(Sources: "[reasons for signing](#)" & [featured comments](#))

### 2,968 Signatures as of 2/10/2025

1. I was raised next to the Willamette Wetlands. Growing up next to these beautiful wetlands inspired me to get to know and understand nature and the complex environment so close to me. I spent hours out in these wetlands exploring and admiring the plants and animals that I had once only seen in books. I hope these beauties can be preserved for future generations.
2. I have lived by the wetlands my entire life. Every time me and my sister went on a walk we went into the wetland area, and there were many animals and bird nests. We need to protect the wetlands in order to preserve the habitats.
3. These species and this climate needs our help! There is no need to destroy this habitat for homes that would be hard to sell anyway!
4. It's possible to develop while prioritizing sustainability. That's the sign of an organization that cares. It's not impossibly difficult.
5. I live in West Linn. Everything that makes this place special is systematically being compromised by a complete lack of vision and greed. West Linn is a highly sought place to live and contractors have dollar signs in their eyes and I'm sick and tired of it. As long as they can make an almighty buck. And frankly, I've lost faith in our local politicians because they are not good caretakers of this beautiful place. Please save Willamette Wetlands. This place not only belongs to the people but it is home to wildlife too.
6. Wetlands are among the most vital habitats and high value ecosystems. The creatures who depend on them can't speak for themselves. Wetlands are our natural stormwater detention or retention ponds.
7. Willamette is really cool and i would be extremely sad if a bunch of ceos decided "hey let's build some stuff in a flood zone" then have to spend all the money they put into building back into cleaning up a destructive flash flood.



8. The Willamette Wetlands is a lovely spot with lots of birds and a quiet place to walk. Please keep it the way it is! It is a flood zone - no more building in flood zones!
9. This will destroy an important part of our neighborhood if allowed to move forward. It will also create more traffic in an already over crowded streets. 50 apartments is an additional 100 or more cars and 400 people. Please dont ruin our quiet historic neighborhood!
10. Be a voice for the voiceless! Protect them!
11. Wetlands and wildlife should be protected in the upmost way before anything else. Do not ruin a beautiful area.
12. Beavers are essential to our ecosystem, and we need to protect them!
13. This is a horrible decision for the environment, the climate, and the animals we share this planet with. Please stop! I will not want to be in West Linn anymore if this continues.
14. I do not live in the immediate area but do frequently enjoy the fishing and outdoors there. Beavers are an important component to the watershed's ecological health. Interference with their habitat along the Willamette for any amount of economic gain is disgusting. No real Oregonian could condone this. I am in the trades and make my living building Oregon's infrastructure. These projects aren't necessary and should not be displacing rare native wildlife. Put yourself on the right side of history and in your old age be able to tell people you defended Oregon's wild spaces and wildlife. They can't defend themselves.
15. How can this even be considered? The restrictions about building on wetlands no longer exist??? Not to mention, this area is so inaccessible for the people who already live here! It's going to make those hilly, treacherous roads even more dangerous. This is just a bad idea all around!
16. West Linn wants to tout "Tree City USA". Developing every square inch of land will make this city no better than any other. It will just blend into obscurity. With an elementary school so close, and we no longer have outdoor school, I can still take my kids to this area to show them nature, not on a tablet/PC. This area is a wealth of learning potential. This area is showing how humans and nature can co-exist.
17. I have lived in this area for 32 years. Not only is this bad for the ecosystem, it is bad for the neighborhood. This is without a doubt the worst idea I've heard/seen for this area. City council, mayor, put a stop to this now.

18. Incomprehensible to me. Destroy a natural wonder for greed? Find somewhere else where beaver and eagles don't live.
19. We need to protect wetlands. Wetlands provide critical wildlife habitat and allow the river to expand during floods. Additionally the city is not requiring adequate infrastructure upgrades to support this development. Should a disaster, like a fire, strike the neighborhoods, there are not enough ways for existing residents to safely leave the area let alone add another 52 households. This is willfully irresponsible by the city.
20. The wear and tear on existing streets from heavy construction vehicles is not being addressed. Existing home owners are living through major noise and pollution and post-construction we will have crumbling roads and many more drivers on them. The path to the elementary school is up 9th to 5th—the same as the construction traffic. The roads are narrow, sidewalks in disrepair and there are many pedestrians. This is not safe! Any developer should have to do major upgrades to the adjacent streets if allowed at all.
21. I live in the area and frequently run, walk, and bike down 5th Avenue down to Vlopp. 5th avenue is utilized by so many to get out side, say hello to neighbors and enjoy our local wildlife. I often witness Eagles in the area and I truly believe they will not nest here if this build goes ahead.
22. This will destroy West Linn's Wetlands and wildlife habitats. How will our schools handle all these additional residents? Schools are already getting overcrowded with the recent neighborhood developments.
23. The wetlands are to be protected. Development and big money should not be a deciding factor in going against habitat and wetland rulings in place.
24. I think we take too much from the land as it is. This is wrong and money grabbing.
25. Wetlands need to be protected. We don't need more homes and congestion in West Linn.
26. Wetlands are critical habitat that need to be protected.
27. City of West Linn code states development must be at least 100 feet from wetland borders. The "Rivianna Beach" proposed duplex lots are much too close to the borders of the wetland, some literally on the wetland border. This is unacceptable and violates state and federal wetland protections.
28. We are facing an extinction crisis. People have plenty of habitat to live in already.

29. Obviously, it's the right thing to do to promote and save the wetlands.
30. Even 100 yards is too close to such an important wetland area. Those construction trucks, plus all the worker's vehicles create a real hazard with the noise and such. Additionally, the developers should always be required to supply more for the infrastructural impact, such as; all impacted roads, fire and police departmental impacts, schools, etc. I may not be local, but these issues are important, especially for the ecological future. It's not like they can just offer a new apartment to the affected species.
31. The infrastructure of willamette area does not support this development. It would also disturb the wetlands and animals.
32. As a lifetime resident of Willamette, the detriment and destruction to our coveted community would be enormous. Wildlife prospers on this specific area and the loss would not be something we could recover from.  
Greed over the peace and calm that we enjoy is the issue, PLEASE don't let our neighborhood get overtaken by the commotion that will ensue if this project is allowed. If you enjoy the peace and calm, it will be LOST, literally, forever.

## **West Linn Waterfront Community Engagement Summary (Survey Results)**

### **[Pond District Survey Results](#) on start on page 15/40**

General themes heard from community engagement for this district include:

Support:

- The overwhelming majority of comments in this area were to retain and enhance this as a natural area with minimal development. There was also a desire to see environmental clean-up of the ponds to help restore wetlands and species habitat.
- People also wanted increased access to open space with more trails in the area as well as access to the river for paddling, swimming, and fishing. There was few comments and only mixed support for a more intensive marina.
- There was limited support for more intense development in the area because of the potential impact on natural areas and wetlands. There was little support and significant opposition to a hotel and to residential development. There were

concerns that these uses would contribute significant traffic to the narrow streets in the area and would also need to be resilient to flooding in this area.

- There was general push back to creating sports fields in the District and people identified that there were already other locations in West Linn for this use. Nevertheless, there was some support for a community pool that does not currently exist in West Linn.

#### Concerns:

- These are documented above, but mostly related to the impact of more intense development types on natural areas, wetlands, and wildlife habitat. There were also concerns related to the potential traffic generation of these uses and the impact on the existing neighborhood.
- Although people identified a strong interest in wetland restoration, there were concerns raised about the need for and cost of environmental remediation of the ponds. There may be opportunities for federal, state, or regional funding to support this.

#### Some quotes that captured some of the more common themes above included:

- “We do need to keep this area natural and preserved. While also connecting it to all the other sites around it. It would be so cool to have a walking/hiking/biking trail that could go from Historic Willamette district all the way even to Lake Oswego!”
- “Wetlands and species restoration should take precedence over ball fields and sports use, except for water recreation; kayak, SUP, and canoe use. Wetlands are critically, shrinking habitats that perform crucial pollution filtering and flood mitigation roles.”
- “Wetlands and beaver are important. Along with eagles, wildlife and bird watching.”
- “This area should NOT include a sports complex, hotels, a marina or imitation lagoon, high density housing or any other development. This is an important wetlands area that should be protected and kept as natural as possible. Put any large development in the previous two areas and maintain this area as a wetlands preserve with trails for walkers, birders and nature lovers. This area is what makes West Linn so special.”
- “The Pond Redevelopment seems like it should be two districts, with the east end for nature and preservation, and the west end for development and an extension to the Willamette commercial and housing area.”
- “There is not good access, traffic is in the neighborhood that has narrow streets and no through access.”

## Comments on the Draft Vision Plan ([Link](#))

1. The Pond Redevelopment District should be "redeveloped" as wetlands. The land was once wetlands, but a mistake was made in turning the area into waste lagoons. Let's not make another mistake by paving over the area for the quick benefit of developers and builders. This area is wetlands. Period. As stated previously, building any kind of structures on the highly unstable soil in this area is pure folly. There are means with which this land can be acquired, but the city and its citizens must first have the will to do it. Again, any other development in the pond area other than returning it to wetlands is pure folly.
2. The pond redevelopment district consists of wetlands that need to be preserved and not disturbed, this should be the first item reviewed. Additionally, before anything gets approved/built in that area, infrastructure must be improved. The City should not allow any development until the streets/sidewalks/lighting/fire hydrants etc. are all in place. After that is built, then deliberate intentional housing should be reviewed/approved/developed with neighborhood input. We should not allow a builder to jam as many structures as they can in an area, this neighborhood cannot support the number of new cars this will introduce.
3. I recently read the West Linn Natural Hazard Mitigation Plan and was struck by the section on the problem of liquefaction in the low-lying zones next to the Willamette River that now contain settling ponds previously or currently linked to paper manufacturing. Although the waterfront development plan recognizes the engineering challenge of building on a flood plain, it does not acknowledge the challenge of building on soil that will turn into pudding in the event of a sizable earthquake with a high likelihood of taking place in the next century,. Having seen the impact of such an earthquake on a new rugby stadium built on an area that was subject to liquefaction in Christchurch, New Zealand a few years ago, it seems wise not to forget this possibility as potentially millions of dollars are invested in this project.
4. This area is identified in the draft vision plan as Intertribal Public Access. Where does this boundary come from? This is currently a "study area only" in an agreement between Willamette Falls Trust and PGE. I don't believe it is appropriate to designate this area before the waterfront plan is completed. It seems more appropriate to have extensive "public access", all of which would include recognition of indigenous current and past uses.
5. Protecting and preserving the wetlands and creek green zones in the pond redevelopment district must be given priority. Protecting that habitat must be the top priority in that area, and housing should only be developed with

neighborhood input. The streets and infrastructure in this area are not equipped to handle large amounts of traffic. Furthermore, traffic, parking etc, will all have its own environmental impact. Of the options, the cultural heritage district seems most actionable and most straightforward. Those old industrial buildings appear to be in various stages of decay, and reusing and repurposing that infrastructure would be a smart use of city funds.

6. Comments from PGE:

PGE GUIDING PRINCIPLES

- The T.W. Sullivan plant will continue to operate and provide clean electricity.
- The Willamette Falls Locks will be open and operational.
- Transportation access and improvements will be consistent with ODOT and City plans.
- Historical and cultural aspects of the site will be included in any plans for redevelopment.

Portland General Electric Company (PGE) has owned land on the west side of the Willamette Falls, including a portion of an island, for well over a century. It is the birthplace of the first long-distance transmission of electricity and home to PGE's federally regulated and licensed Sullivan hydropower plant. PGE prioritizes stewardship of fish, wildlife and the environment at the falls. Paper mills have operated on the island for over a century and continue operating even today. PGE has participated in various activities regarding the future of the property. As part of the broader West Linn Waterfront Redevelopment planning process in 2018, PGE and the City of West Linn engaged with stakeholders and the community to explore future possibilities for our land. In 2021, PGE shared with stakeholders and community members the dangerous conditions of some papermaking buildings. We gathered ideas about preserving the industrial history. PGE consistently heard significant interest in honoring the history of the property while looking to future uses, preserving and protecting the environment and providing scenic views in a setting the whole community could access and learn from.

7. It would be preferable to see a focus on environmental restoration instead of land development at the blue heron ponds. With these being within in the 100 year flood plain, it feels unwise and extremely expensive to make major housing and structural investments in these areas.

Based on the map, most of the priority program area designated for this district is relying on the development of these ponds.

Although not formally designated as wetland, what studies have been done to determine environmental impacts and current wildlife populations in the ponds? The animals and birds in the area don't know where we draw lines on a map....

8. The Rivianna Beach proposed housing development (26 duplexes) along 5th Ave is in an ecological corridor and the project area overlays with key wetland areas.

[https://westlinnoregon.gov/sites/default/files/fileattachments/planning/meeting/56318/pa-24-07\\_applicant\\_submittal.pdf](https://westlinnoregon.gov/sites/default/files/fileattachments/planning/meeting/56318/pa-24-07_applicant_submittal.pdf)

This particular project's potential development/approvals should not precede the broader waterfront development discussion, ongoing public feedback process, and wetland/environmental due diligence.

9. Can a Pool please be considered for one of the other redevelopment areas? We would LOVE a pool but do not want to trade preserving the wetlands to get one...

### **Links to Sources Listed Above:**

1. Change.Org Reasons for Signing:  
<https://www.change.org/p/protect-willamette-wetlands-and-wildlife-86c34d24-4811-4a31-916f-340d2941b0ea/c>
2. Change.Org Featured Comments:  
<https://www.change.org/p/protect-willamette-wetlands-and-wildlife-86c34d24-4811-4a31-916f-340d2941b0ea/feed>
3. Pond District Survey Results:  
[https://westlinnoregon.gov/sites/default/files/fileattachments/planning/meeting/56481/community\\_engagement\\_summary\\_06.20.24.pdf](https://westlinnoregon.gov/sites/default/files/fileattachments/planning/meeting/56481/community_engagement_summary_06.20.24.pdf)
4. Comments on Draft Vision Plan:  
<https://acrobat.adobe.com/id/urn:aaid:sc:VA6C2:d3ac160d-edd5-47e9-b8ae-61c62dc86c9a>



# CONTAMINATED MEDIA MANAGEMENT PLAN



## FORMER BLUE HERON PAPER MILL AERATED SETTLING BASIN

1317 Willamette Falls Drive  
West Linn, Oregon

Prepared for:

**SDG-2, LLC**

Attn: RJ Schultz

Issued on:

February 26, 2024

Project No. 927-20005-09



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## Purpose

This Contaminated Media Management Plan (Plan) must be followed by any person or entity hired or granted permission to conduct surface and subsurface work on the subject site (Former Blue Heron Paper Mill Aerated Settling Basin, 1317 Willamette Falls Drive, West Linn, Oregon). This Plan applies to site development, operations, maintenance, and other work, and:

- Has been designed as a tool for architects, engineers, and others involved in the design, planning, and implementation of subject site redevelopment.
- Has been prepared in accordance with State of Oregon requirements.
- Outlines methods to minimize risk to human health and the environment from historic contamination beneath the site.
- Provides guidance for managing impacted soil, sludge, surface water, and ground water.

**ANY FIRM or INDIVIDUAL involved with earthwork / subsurface work who has the potential to encounter soil, ground water or surface water at the subject site should review, understand, follow this Plan, and sign the Acknowledgement attached as Attachment A.**

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## Use

**This Plan has been prepared for use during site redevelopment.** The property owner must provide a copy of this Plan to any firm or person with the potential to come in contact with the contaminated media at the subject site (e.g., contractors, maintenance workers, landscapers, utility companies, etc.) prior to starting surface or subsurface work.

The Plan includes generic requirements for conducting surface and subsurface work. Detailed sampling/work plans may need to be developed, depending on the nature of the subsurface work at the property. The Plan covers the following:

- Explains the current understanding of impacted media at the site.
- Details contractor, subcontractor, field personnel and permitting requirements.
- Outlines guidance and requirements for managing impacted media in a manner that is protective of human health and the environment.

This Plan should be reviewed and signed by any person involved in any work with the potential to come in contact with contaminated media at the subject site prior to site work. A copy of this Plan will be made available to all personnel involved as a reference, with at least one copy being kept onsite during work. In order to document review and understanding, an acknowledgment page has been prepared (Attachment A) and should be signed by anyone conducting work involving contaminated media at the site prior to the commencement of this work.

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## Plan Revisions

Users of this Plan are advised that Oregon Department of Environmental Quality (ODEQ) regulations and other applicable state or federal regulations and guidance may change in the future and applicable regulations should be reviewed prior to commencing any subsurface work. If it is believed that local and State regulations related to contaminated soils have changed, revisions to the Plan may be necessary to reflect current regulatory standards. Additionally, the Contact Information listed in Attachment B should be kept current.

*This*  
**Contaminated Media Management Plan**

*for:*

**Former Blue Heron Paper Mill  
Aerated Settling Basin**

1317 Willamette Falls Drive  
West Linn, Oregon  
ECSI # 5717

*Has been prepared for the sole benefit and use of our Client:*

**SDG-2, LLC**

**Attn: Robert J. Schultz**

*and its assignees*

*Issued*  
February 26, 2024

*by:*



**Assumptions and Limitations**

This Contaminated Media Management Plan (Plan) is designed to provide earthwork contractors with guidance for the proper handling and management of potentially contaminated media. This document is intended to be used as a general overview document for use by the excavation contractor during any earthwork completed at the project site. This Plan is reflective of site conditions discovered through environmental site assessments. Required actions described in this Plan are consistent with State of Oregon and Oregon Department of Environmental Quality rules, regulations and guidance enforce and available as of the date of issue. The user of this Plan is advised to check for any updates that may be applicable to a specific scope of work being conducted under this Plan. Each contractor and subcontractor are responsible for the safety of its employees, including compliance with applicable OSHA regulations and compliance with all specifications for the project.

No warranties are expressed, or implied concerning potential contaminants or environmental media not addressed through sampling and analysis. EVREN Northwest, Inc. is not responsible for conditions or consequences arising from information not available at the time of Plan preparation. This Plan was prepared in accordance with generally accepted professional practice in the area at this time for the exclusive use of our client and their agents or authorized third parties. No other warranty, either expressed or implied, is made.

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- 4 Further Evaluation of COPCs, Surface Soil
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- 7 Further Evaluation of COPCs, ASB Water
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## Attachments

- A Acknowledgement Signature Page
- B Site Contacts

## List of Acronyms and Abbreviations

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ASB	aerated settling basin	ITRC	Intestate Technology & Regulatory Council
AST	above-ground storage tank	MRLs	method reporting limits
bgs	below ground surface	NPDES	National Pollutant Discharge Elimination System
CDM	CDM Smith	OAR	Oregon Administrative Rule
CFSLs	clean fill screening levels	ODEQ	Oregon Department of Environmental Quality
Client	SDG-2, LLC	OSHA	Occupational Safety & Health Administration
COCs	constituents of concern	PCBs	polychlorinated biphenyls
COPCs	constituents of potential concern	PID	photoionization detector
D/F	dioxins/furans	PPE	personal protective equipment
DRO	diesel-range organics	ppmv	parts per million by volume
DU	decision unit	RBC	risk-based concentration
E&E	Ecology & Environment, Inc.	RCRA	Resource Conservation and Recovery Act
E&ES	Easement & Equitable Servitude	RI/RA	Remedial Investigation and Risk Assessment
ELCR	excess lifetime cancer risk	RRO	residual (oil)-range organics
ENW	EVREN Northwest, Inc.	SAP	sampling and analysis plan
EPA	U.S. Environmental Protection Agency	SLRBCs	screening level risk-based concentrations
ERA	Ecological Risk Assessment	TPH	total petroleum hydrocarbons
ESA	Environmental Site Assessment	VOCs	volatile organic constituents
HASP	Health and Safety Plan		
HHRA	Human Health Risk Assessment		
HI	hazard indices (non-cancer)		
ISM	Incremental Sampling Methodology		

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## 1.0 Site Setting & Environmental Conditions

This Plan applies to the property located at 1317 Willamette Falls Drive in West Linn, Oregon (subject site or subject property). Please reference Figure 1 for a site vicinity map and Figure 2 for site features. The site is # 5717 on ODEQ's Environmental Cleanup Site Information database.

### 1.1 Site Location and Setting

The subject property is located on the north side of the Willamette River, approximately three miles southwest of the City of West Linn. It is north of Volpp Street and bisected by 4<sup>th</sup> Street, with a situs address reported as 1317 Willamette Falls Drive, West Linn, Oregon. The subject property is irregular in outline, measures approximately 39.15 acres and is currently developed with an approximately 15-acre aerated settling basin formerly used for industrial wastewater treatment by the Blue Heron Paper Mill. The City of West Linn's current zoning for the area north of 4<sup>th</sup> Avenue is R10 – Single-Family Residential Detached and the area south of 4<sup>th</sup> Avenue is GI – General Industrial. The properties adjacent to the east and south are zoned GI. The properties adjacent to the north and west are zoned R10.

**Historical Use.** As described by CDM Smith (CDM),<sup>1</sup> the property was developed with an aerated settling basin (ASB) to receive industrial wastewater and storm water from the former Blue Heron Paper Mill (and its predecessors). This paper mill operated from 1972 until early 2011, when the mill was closed. The ASB received wastewater from the mill via a 3-mile-long pipeline that runs under the Willamette River, continues aboveground, and extends underground onto the subject site from the east side of the property.

Wastewater from the mill's primary treatment clarifier, chemical recovery area, cooling water, and storm water was pumped to the ASB for treatment. Treatment methods included settling of solids and use of microorganisms to facilitate the breakdown of organic matter in wastewater. Treated water discharged through an outfall (Outfall 001) to the river at River Mile 27.8 under a National Pollutant Discharge Elimination System (NPDES) permit. Solids settled as sludge remained in the ASB. It appears that the only discharge of waste sulfite liquor, an historical waste by-product of the chemical pulping processes, to the property was a one-time failed experiment in 1951 when 47,700 gallons of waste sulfite liquor was deposited into an asphalt-lined 50 x 50-foot waste pond in the approximate area of the current ASB boat house. All this waste sulfite liquor leached into the ground from this pond over an 18-day period. In addition to the sulfite pulping process, it has been reported that chlorine was likely used to bleach pulp at the site between the years 1972 and 1983, when magnesium sulfite processing was commonly used. The use of elemental chlorine to bleach pulp and sulfite-based pulping are both associated with the generation of dioxins/furans.

From July 2012 to August 2013, NRI Global, Inc, discharged storm water and wastewater to the ASB under an agreement with Clackamas County Service District No. 1/Tri-City Service District that water discharged be "treated Compliant Wastewater meeting all effluent limits and other requirements of the permit." The

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<sup>1</sup> CDM Smith, *Remedial Investigation and Risk Assessment, Blue Heron Paper Company, Aerated Stabilization Basin Site, 1317 Willamette Falls Drive, West Linn, Oregon 97068*. Dated April 7, 2014.

agreement specifically prohibited discharge of bulk chemicals including oil, coolant, organic solvents, transformer oil, or fuel.

Paper recycling activities were also historically conducted at the mill. Low concentrations of heavy metals may be found in de-inking sludges. Additionally, polychlorinated biphenyls (PCBs) were used in coatings on the back of carbonless paper and could have contributed PCBs to the waste stream.

The ASB has been dredged four times between 1978 and 1999, although dredging never resulted in the removal of all sludge. The average amount of sludge left after each dredging event ranged from 4 to 9.3 feet. The thickness of remaining sludge in the ASB is estimated to range from 1.3 to 16.2 feet. Since the mill shut down, the water surface has never dropped low enough to expose the surface of the sludge.

**Topography.** Topography at the subject property is irregular, but generally slopes to the southeast towards the Willamette River. The highest elevation (around 120 feet above mean sea level) is located at the north edge of the site, along 5<sup>th</sup> Avenue. See Figure 1.

**Geologic Setting.** According to previous reporting<sup>2</sup> the subject property lies within the Willamette Trough or Willamette Lowland, which is an elongated north-south trending depression located between the Cascade Range to the east and the Coast Range to the west. The trough is divided by folded and distorted bedrock and basalt outcrops into several structure basins, including the central Willamette Valley basin, in which the subject property is located. The bedrock and basalt are overlain by unconsolidated basin-fill sediments consisting of recent alluvium near the surface and by deeper sedimentary units originating from the catastrophic Missoula floods, older alluvial fans, streams, and lakes. The site is reportedly underlain by fine-grained alluvium consisting primarily of sandy silt and silty sand, with occasional layers of silt, sand, and gravel.

**Surface Water and Ground Water.** Previous investigations<sup>1</sup> have identified ground water beneath the site to be between approximately 10 and 17 feet below ground surface (bgs). Comparison of the elevation of the base of the ASB to ground water elevations measured in onsite monitoring wells suggests some amount of hydraulic communication between water in the ASB and ground water. However, previous reports have indicated that the permeability of the base and sides of the ASB is very low and thus the ASB has little impact on the overall ground water flow at the site. In line with the general topography at the site, ground water flow underneath the property is generally to the southeast, toward the Willamette River.

## 1.2 Summary of Regulatory and Environmental Investigation History

Previous environmental investigations are described in detail in CDM's 2014 Remedial Investigation and Risk Assessment.<sup>1</sup> As reported by CDM, highlights of work completed to date are as follows:

- In 2008, Ecology & Environment, Inc. (E&E) completed a site inspection for the entire Blue Heron Paper Company facility on behalf of the U.S. Environmental Protection Agency (EPA), which included limited sampling on the subject site.

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<sup>2</sup> CDM Smith, *Phase II Environmental Site Assessment, Blue Heron Paper Company, Aerated Stabilization Basin Site, 1317 Willamette Falls Drive, West Linn, Oregon 97068*. Dated March 26, 2011.

- In April 2008, Maul Foster & Alongi, Inc. completed a Phase I and Phase II Environmental Site Assessment (ESA) for the subject site.
- Sampling and analysis of the ASB sludge was conducted on several occasions in order to gain approval of land application of the sludge prior to dredging.
- Discharge water from the ASB was sampled to comply with the NPDES permit.
- In 2011, Bridgewater Group Inc. investigated PCBs in soil.
- CDM completed Phase I and Phase II ESAs for the site in 2012.

In 2014, CDM completed a Remedial Investigation and Risk Assessment (RI/RA) for the property, which included analytical results of additional surface soil, ground water, ASB water, and wetland surface water sampling, a Human Health Risk Assessment (HHRA), and an Ecological Risk Assessment (ERA).

The HHRA was performed under several assumptions, including that no residential receptors would be present on site in the future and that impacted sludge and soil on site would be encapsulated. Therefore, the HHRA did not evaluate risk to future residents or occupational workers at the subject site.

CDM made the following conclusions in their HHRA report:

- The total excess lifetime cancer risk (ELCR) to current onsite ASB workers was below Oregon Department of Environmental Quality (ODEQ) acceptable limits; however, non-cancer hazard indices (HI) for an onsite worker were greater than ODEQ acceptable limits.
- The total ELCR to future construction/excavation workers on site was below ODEQ acceptable limits; however, HI for future construction/excavation workers were greater than ODEQ acceptable limits.
- No exposure of current residents to constituents of potential of concern (COPCs) was identified.

In June 2018, ODEQ accepted CDM's RI/RA with the following assumptions:

1. Based on the reports, and communications above, it is clear that the site may be redeveloped for a use other than a park, and therefore may include commercial uses. This is a change from the redevelopment assumptions ODEQ outlined in the letter dated January 14, 2014. Based on the land use zoning at the site (General Industrial), however, the HHRA concludes that there will be no residential development at the site.
2. The site is described as having two single family residences on the property, but based on zoning, the Residential Exposure Pathway is considered incomplete. This exposure pathway is considered complete by ODEQ, both now and in the future, but concludes based on the screening performed in the RI that only sludge and a minimal volume of surface soil exceed residential risk-based concentrations (RBCs). Exposure to these materials following site redevelopment is not anticipated as soil is expected to be relocated to the sludge pond area, and both this soil and sludge capped eliminating the potential for direct contact.
3. As stated by ODEQ in our meeting on January 28, 2014, ODEQ considers the ground-water-to-surface water (Willamette River) pathway to be complete. The Final Report has omitted this correction. ODEQ will require ground water monitoring following initial construction (dewatering, sludge management, etc.) to confirm that there is no unacceptable risk to surface water.



4. Slight differences exist within the HHRA and the ERA on the conclusions regarding the area of surface soil represented by soil sample CS-3. ODEQ concludes that this small volume of soil is *de minimis* and can be managed by placing it in the ASB pond following dewatering activities. The surface soil can then be managed with the ASB sludge based on similar contaminant concentrations.
5. ODEQ approves of the proposed management of the ASB sludge on-site and will require an Easement and Equitable Servitude (E&ES) to prevent its disturbance by future development of the site, and maintenance of the ASB cover to prevent disturbance by burrowing animals (e.g., nutria).

In 2023, an updated HHRA<sup>3</sup> was performed by ENW that confirmed ODEQ's conclusions regarding media of concern assuming future residential development of the subject site.

### 1.3 Overview of Known Residual Contamination

The known impacts of site contaminants to site media are summarized in this section based on reporting by CDM. Refer to Tables 1 through 3, and Figure 3.

#### Soil

Sampling results indicate some impacts of DRO, RRO, and dioxins/furans (D/F) in surface soil downgradient of the ASB; however, only D/F in surface soil at one location (sample location CS-3, see Figure 3) exceeds its screening level risk-based concentration (SLRBC).

#### ASB Sludge

Concentrations of petroleum hydrocarbons (GRO, DRO, and RRO) were generally detected at concentrations exceeding respective SLRBCs in most samples of sludge previously collected from the ASB. D/F and PCBs, while present at much lower concentrations, also typically exceed their respective SLRBCs. Overall, metals concentrations in the ASB sludge are comparable to background soil concentrations.

#### Ground Water

D/F and PCBs were not detected in ground water, which is consistent with the low overall concentrations of these constituents detected in the sludge and their low mobility in the subsurface. Petroleum hydrocarbons (DRO and RRO) detected at BH-4 are consistent with the petroleum hydrocarbons identified in ASB sludge and ASB water. Similarly, metals (arsenic, manganese, and nickel) concentrations are consistently highest at BH-4, which is located near surface soil sample CS-3, south (downgradient) of the ASB. The low concentrations of metals in the sludge and surface water indicate that the overall higher metals concentrations in ground water are likely related to redox conditions specific to the ground water. These ground water impacts appear to attenuate within a short distance downgradient of the ASB, based on the results from monitoring well BH-5, which is located approximately 100-feet south-southeast, downgradient of BH-4.

#### ASB Water

Similar to the ASB sludge results, ASB water appears to be impacted by low concentrations of DRO and RRO and D/F, with the concentration of DRO and D/F exceeding their respective SLRBCs. Concentrations

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<sup>3</sup> ENW, February 3, 2024. *Human Health Risk Assessment (Updated 2024)*, Former Blue Heron Paper Mill Aerated Stabilization Basin, 1317 Willamette Falls Drive, West Linn, Oregon: Prepared for: SDG-2, LLC, Attn: RJ Schultz.

of select metals were either detected at concentrations below their respective SLRBCs (total manganese and nickel) or were detected at concentrations below those typical of background concentrations in surface water (total arsenic).

#### **Wetland Surface Water**

Wetland surface water appears to be impacted by D/F at a concentration exceeding its respective SLRBC. Concentrations of select metals were either detected at concentrations below their respective SLRBCs (total manganese and nickel) or were detected at concentrations below those typical of background concentrations in surface water (total arsenic).

DRO in ASB sludge was identified as a potential risk to construction workers. None of the other soil, ASB sludge, surface water, or ground water impacts were identified as a potential risk to construction or excavation workers. The media-handling protocol described in this Plan is intended to minimize the risk to site workers during earthwork.

Please reference Figure 3, Sample Location Diagram, for sampling locations. Table 1 provides a summary of soil sampling results, Table 2 provides a summary of ASB sludge results, Table 3 provides a summary of ground water and surface water sampling results, Table 4 provides further evaluation of COPCs for soil and Table 5 provides further evaluation of constituents of potential concern for ASB sludge, Table 6 provides further evaluation of constituents of potential concern for ground water, Table 7 provides further evaluation of constituents of potential concern for ASB water, and Table 8 provides further evaluation of constituents of potential concern for wetland surface water.

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## **2.0 Site Work Initiation**

This section describes work to be conducted and requirements to be met prior to beginning site work.

### **2.1 Notifications, Permits and Other Approvals**

All notifications, legally required permits or other approvals required to conduct the work to be performed will be made or obtained prior to starting work at the site. State, county, and city permits, and related plans may include but are not limited to:

- ODEQ: a National Pollutant Discharge Elimination System (NPDES) 1200-C Construction Stormwater General Permit, an Erosion and Sediment Control Plan, Environmental Management Plan, and Best Management Practices.
- Clackamas County: development, entrance, grading, right of way, and utility, among other building related permits such as plumbing, electrical, and mechanical.
- City of West Linn: Building Permit and Site Development Application, along with other permits such as plumbing and mechanical.

### **2.2 Contractor Requirements**

Contractors and/or subcontractors hired to conduct surface and subsurface work at the site should be competent and experienced in the management of media impacted with hazardous substances. Pre-planning of anticipated work with the Environmental Consultant (contact information in Attachment B) is recommended.

### 2.3 On-Site Personnel

All field personnel who have the potential for coming in contact with impacted media should:

- Have a copy and be familiar with the site-specific Health and Safety Plan (HASP, see Section 2.4).
- Have reviewed this Plan and signed the acknowledgement page (Attachment A). The signed acknowledgement pages will be available for the property owner's or site management's inspection and permanent record-keeping, if requested.

### 2.4 Health and Safety Plan

Any contractor conducting earthwork at the subject site must prepare and implement a site-specific Hazard Communications Plan. The Hazard Communications Plan fulfills “worker right to know” requirements (29 CFR 1926.59). A copy of the Hazard Communications Plan must be submitted to the property owner prior to the start of work on the project. During work on the project, the Hazard Communications Plan must be posted at the project site. The general contractor is responsible for notifying any subcontractors of pertinent environmental conditions. Subcontractors may either adopt the prime general contractor's Hazard Communications Plan or must prepare their own Hazard Communications Plan. This document should be used in conjunction with, not in place of, the Hazard Communications Plan and the project specifications. The general contractor and subcontractor are responsible for the safety of its employees, including compliance with applicable Occupational Safety & Health Administration (OSHA) regulations, and compliance with all specifications in the technical specifications for the project.

In addition, a HASP specific to the work to be performed will be prepared according to industry standards. At a minimum, OSHA standards specific to the work to be performed will be met. The HASP should be prepared by a qualified specialist knowledgeable about health and safety issues, the contaminants identified at the site, the previously documented site conditions, and the proposed contractors' scope of work.

### 2.5 Corrective Action

If the requirements outlined in this Plan are not fully or timely completed, the property owner or Project Manager may take appropriate corrective action to meet the intent of this Plan.

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## 3.0 Soil and Sludge Management

ODEQ requires contaminated media to be adequately characterized to determine management options. While it is not expected at the subject site, when soil/sludge is highly contaminated, the generation, treatment, transportation, and disposal may fall under both state and federal hazardous waste

regulations.<sup>4</sup> Contaminated media that is not hazardous waste is regulated under Oregon Administrative Rule (OAR) Chapter 340-093 for solid waste.

For the purposes of this Plan, contaminated soil/sludge is defined as soil/sludge with concentrations of hazardous substances greater than ODEQ's clean fill screening levels (CFSLs, ODEQ, Feb. 2019), or SLRBCs (see OAR 340-122-0115). It is important for field personnel to know how to identify, characterize (if appropriate), and manage contaminated soil/sludge.

A detailed sampling and analysis plan is outside the scope of this document as the specifics would be determined by the scope(s) of work to be conducted at the site. To minimize expenses from any surface or subsurface project, we recommend reviewing the scope with the Environmental Consultant.

### 3.1 Identification of Impacted Soil and Sludge

See Section 1.3 for an overview of known residual soil and sludge impacts on site. It should be noted that some constituents (i.e., metals, pesticide residues) may not be distinguishable by field screening methods. Potentially impacted soil/sludge may be identified using any of the following methods:

- Visual observation of discolored soil/sludge (staining).
  - Generally, soil/sludge that is contaminated with petroleum hydrocarbons exhibits gray or black staining, although other contaminants and natural conditions may also cause staining.
- Olfactory observation of petroleum odor.
  - Petroleum products, solvents, and other types of contaminated soil/sludge may release vapors when exposed to the atmosphere. If concentrated enough, these vapors will be interpreted as an odor. Odors may also be present in contaminated ground water. Odor can be subjective, and inhalation of vapors from impacted soil/sludge is harmful to human health. Therefore, odor is considered an inadvertent field indicator and will not be used for continuous screening of soil/sludge.
- Sheen
  - Sheen is another indication of petroleum contamination. Soil/sludge with a sheen may appear shiny and reflective. Sheens from heavily impacted soil may appear iridescent with rainbow-like colors. Sheens may also be observed in contaminated ground water.
- Collection and analysis of soil/sludge for COCs.
- Indication of impacts by instrumentation designed for screening for volatile constituents (e.g., photoionization detector [PID]).
  - PID readings involve the measurement of headspace vapors originating from a soil/sludge sample. PID screening is performed by placing a soil/sludge sample in a plastic bag. Air is

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<sup>4</sup> When soil is contaminated by a listed or characteristic hazardous waste, then soil contains a hazardous waste and must be managed accordingly. ODEQ hazardous waste generator requirements are triggered when the contaminated soil is removed from its original location.

captured in the bag, and the bag is shaken to expose the soil/sludge to the air trapped in the bag. The PID probe is inserted into the bag, which measures volatile organic constituents (VOCs) vapor (petroleum constituent) concentrations in units of parts per million by volume (ppmv). A PID is designed to quantify VOCs concentrations in the range between 1 and 2,000 ppmv. It should be noted that a PID may give false positive readings in the presence of water vapor and rain may also affect performance. High humidity can cause lamp fogging and decreased sensitivity. This can be significant when soil/sludge moisture levels are high.

- Where both soil/sludge and ground/surface water are present, soil/sludge impacts may be indicated by observation of iridescent sheen or separated fluid phases (i.e., immiscible liquids).

Section 1.3 describes the area where potential soil/sludge impacts could be present on the subject property. However, anyone performing subsurface work at the site should be prepared for the possibility to encounter impacted soil/sludge in other areas as well.

There may be impacted media on site in areas that have not been assessed. If soil/sludge with significantly different characteristics than those previously identified are excavated at the site, it may need to be appropriately characterized by laboratory analyses prior to disposal or reuse onsite. It should be brought to the attention of the Project Manager or Environmental Consultant. The Environmental Consultant will notify ODEQ, if applicable, to ensure proper characterization and management under this scenario.

*If samples are to be collected, they should be collected by personnel knowledgeable in soil sampling methods and protocols, ensuring that appropriate sample selection, collection (whether discrete or composite), labeling, and storage methods are followed.*

**If soil/sludge exhibiting evidence of contamination or other debris associated with chemical contamination is encountered during excavation work, it should be brought to the immediate attention of the Environmental Consultant. However, it must be emphasized that some impacted soils/sludge do not exhibit any physical indication of their impacts (e.g., no odor or discoloration or PID response associated with metals-impacted soils). Therefore, the most reliable method of determining if chemical impacts are present is laboratory analysis.**

### 3.2 Field Screening Protocols

Soil/sludge field screening will include observation of any disturbed project site soil/sludge. The field screening process includes the following:

- Observe the sidewalls and bases of excavations (or trenches) for evidence of possible contamination.
- Three inches of soil/sludge will be scraped from sidewalls prior to collection of samples. If samples are collected from an excavation bucket, they should be collected from the interior and away from the sides of the bucket.
- Collect grab samples by hand or trowel (approximately one hand full) that are representative of the material being stockpiled. If used, the trowel will be decontaminated between sampling intervals.

- Retain a portion of the samples (approximately the size of half a sugar cube) for sheen testing that includes dropping the soil/sludge into a black pan to observe the degree of soil sheen (no sheen, slight sheen, moderate sheen, or heavy sheen).
- The majority of the grab sample will be placed into a plastic bag with trapped air. The bagged sample is allowed to sit for approximately one minute and then tested for headspace vapors using a hand-held PID. Based on the routine field screening process and the use of standard bag size, it is assumed that the amount of trapped air in each bag is approximately equivalent for all field-screened samples. Calibration of the PID will be conducted on a daily basis and will be recorded in a calibration log. The calibration log will document the PID model calibration standard used and background level after calibration.
- Field screening documentation (i.e., staining, sheen, headspace vapor measurements, and odors) and a brief description of the soil type shall be recorded in soil/sludge field screening logs. The field logs will indicate areas and associated volumes of excavated material requiring stockpiling for further evaluation.

### 3.3 Management of Impacted Soil and Sludge

During site excavation, all soil/sludge will be monitored and field-screened for potential impacts during site excavation activities. If suspect subsurface features are encountered (e.g., underground storage tanks, piping, dry wells, sumps, etc.) or field-screening suggest impacts, all excavated or disturbed soil/sludge in these areas will be managed as impacted soil/sludge unless the Project Manager chooses to conduct additional sampling and testing (according to ODEQ-approved methods) and determines the soil/sludge is not impacted. If any soil/sludge is identified through observation or olfactory indication (sight or smell) as being impacted outside previously identified areas (Section 1.3), this will be brought to the attention of the Environmental Consultant. Soil/sludge testing, if appropriate, would be conducted to determine the regulatory status of impacted soil/sludge (e.g., soil/sludge with contaminants at levels triggering special regulatory, handling, and/or management requirements) and to confirm removal of impacted soil/sludge, if applicable.

**If impacted soil/sludge is excavated, it must be managed as a contaminated material.** Unless otherwise directed by the Project Manager, the preferred method of excavation and disposal of impacted soil/sludge will be to load the material directly into transport vehicles for off-site disposal.

#### 3.3.1 Stockpiling

Soil/sludge generated during excavation activities may be temporarily stockpiled for further evaluation (for example, if soil/sludge needs to be characterized prior to exporting from the subject site). Soil/sludge that is placed in temporary stockpiles must be well maintained at all times. All stockpiled soil/sludge must be placed either (1) in enclosed and covered metal bins with plastic liners; (2) in sealed 55-gallon drums; or (3) on impermeable plastic sheeting (minimum 6-mil thick) with a berm around the perimeter of the stockpile and a plastic sheeting cover. The plastic sheeting and berm prevent the runoff of stockpiled soil/sludge contaminants to surrounding areas. The berm may be constructed with hay bales or other equivalent methods approved by the property owner. The bottom plastic sheeting should be lapped over the berm materials, and the soil/sludge stockpile within the berm should also be covered with plastic sheeting to prevent erosion or leaching of contaminants. The upper plastic sheeting covering the

soil/sludge stockpile should be secured using sandbags or equivalent. The upper plastic sheeting prevents the stockpiled soil/sludge from being exposed to precipitation and wind.

These soils/sludges may be temporarily managed on-site for no more than 30 days. If stockpiled soil/sludge must remain at the site longer than 30 days, a Solid Waste Letter of Authorization must be obtained from ODEQ. If soil/sludge stockpiles are to be exported offsite, testing of the stockpile to confirm appropriate disposition is required (see Section 3.3.2)

### 3.3.2 Characterization of Soil and Sludge to be Exported

Soil/sludge derived from the site shall be sampled following the guidance provided in the Interstate Technology & Regulatory Council (ITRC) Incremental Sampling Methodology (ISM) guidance document. Representative samples from temporary soil/sludge stockpiles will be collected using ISM, through which multiple “increments” (samples of equal mass) are collected across a targeted area, identified as a “decision unit” or DU. The increments from each DU are composited and processed to derive a statistically valid average concentration across the target area.

ISM subsamples will be collected using a decontaminated stainless-steel hand auger, stainless-steel hand shovel and/or excavator bucket (for large stockpiles). Sampling depths will depend on the volume and dimensions of the stockpile and will be selected to ensure that the upper, middle, and lower portions of the stockpile are equally represented, based on stockpile geometry. For the purposes of statistical quality control, two replicate samples may be collected from a stockpile, in addition to an initial sample. A total of 50 increment subsamples will be collected from each stockpile (along with 50 subsamples for each replicate sample, as applicable) and will be placed into their own dedicated laboratory-provided one-gallon glass sample jars, uniquely labelled, and immediately placed in cooled storage pending delivery to the laboratory. Sampling personnel will wear fresh Nitrile gloves, and all sampling equipment will be decontaminated prior to sampling each stockpile (and replicates, as applicable) to prevent cross-contamination between samples.

ISM samples will be submitted to a laboratory for processing in accordance with ITRC protocols, prior to analysis. Sampling shall be conducted by the Environmental Consultant.

### 3.3.3 Off-Site Disposal of Impacted Soil and Sludge

Unless otherwise directed by the Project Manager, the preferred method of excavation and disposal of impacted soil/sludge will be to load the material directly into transport vehicles for off-site disposal. Transport to a landfill authorized to accept contaminated materials will require a waste disposal permit. It is anticipated that disposal of impacted soil/sludge, if necessary, will be acceptable at a Resource Conservation and Recovery Act (RCRA) Subtitle D Landfill Facility. The data does not suggest the presence of hazardous waste at the site. If, however, hazardous waste is encountered, it will be properly characterized and profiled for disposal at a hazardous waste landfill.

Upon approval from the receiving facility, the stockpiled material can be loaded into trucks for transport. The contractor must exercise care during loading of the potentially contaminated soil/sludge to minimize spillage of the soil/sludge onto the ground surface. All trucks leaving the project site must be free of loose soil/sludge on the exterior of the trucks and may require covers. Contaminated soil/sludge loaded into trucks should be covered if weather conditions could cause soil/sludge to blow out (dry, warm, or windy conditions) during transport to the disposal facility. The contractor must use care not to track soil/sludge

onto city roads. Trucks will not be allowed to leave the site if liquids are draining from the load. Transport tracking tickets, an approved profile, or a permit may be required to document delivery to the approved disposal facility for each individual truck leaving the project site.

### 3.3.4 Off-Site Disposal of Soil and Sludge Containing Buried Debris

Soil/sludge containing buried debris have not been identified on site. Should soil/sludge containing buried debris be encountered, the intended landfill for soil/sludge disposal should be contacted prior to transport of soil/sludge.

## 3.4 Cultural Resources

Cultural or archaeological artifacts have not been identified at the project site. However, if cultural or archaeological resources are inadvertently discovered during excavation, work in the area must stop and the Legislative Commission on Indian Services shall be notified by calling (503) 986-1067. The Oregon State Historic Preservation Office should be contacted regarding discovery or potential damage to archaeological sites. The property owner should also be contacted so that modifications to the work scope may be discussed.

## 3.5 Import Fill Characterization

If the importation of fill soils, other than soil purchased from a commercial source (such as compost and/or aggregate) is required for this project, the Environmental Consultant will prepare a Sampling and Analysis Plan (SAP) to document that fill being imported meets ODEQ's CFLSLs, specifically testing for RCRA metals and petroleum hydrocarbons, to ensure concentrations in soil to be imported are not above established background concentrations in this area. The SAP for this testing will likely incorporate ISM and will be completed once the source for soil fill has been identified, if applicable. ODEQ must review this SAP and analytical results, and approve the import of materials used on site, prior to importation. Depending on the source and previous site use of the source material, analytical requirements may include contaminants beyond RCRA metals and total petroleum hydrocarbons. For example, if fill is to be sourced from an agricultural property, imported fill will also be tested for pesticide residues.

## 3.6 Protective Measures for Workers

The media-handling protocol described in this Plan is intended to minimize the risk to site workers during earthwork as well as to future occupants of the site. This section provides general measures to be taken to protect workers from impacted soil.

On-site workers may be exposed to contaminants through incidental:

- Ingestion of soil.
- Dermal contact (through the skin).
- Inhalation of impacted airborne dust and vapor.

To reduce exposure:

- All personnel will minimize their direct contact with soil, and wear project-specific personal protective equipment (PPE) identified by the HASP.



- Contaminated clothing should be washed with a strong detergent and hot water before reuse.
- Personnel will thoroughly wash their hands and other exposed body parts, as necessary, upon leaving the work area and before eating, drinking, or other activities.
- Release of dust and vapors to the air should be minimized, and all personnel will remain upwind of the work areas to the maximum extent practical.

### **3.7 Protective Measures for the Environment**

This section provides general measures to be taken to protect the environment from contaminants in soil. Depending on construction scope, federal, state, and local permits or other project approvals will provide the detailed protective measures required. The environment may be exposed to contaminants through incidental:

- Wind-borne dispersion.
- Transport by surface water.
- Transport by site equipment or workers.
- Contact by public or environmental receptors (e.g., birds and animals) that enter the work area.

To reduce exposure:

- Control access to earthwork area through fencing, signage, or other means.
- Implement dust-control methods, if needed.
- Prevent surface water from leaving the work area.

### **3.8 Record Keeping**

The general contractor is responsible for keeping a detailed daily record of all soil excavation, stockpiling, export, and disposal of stockpiled soil. This includes the purpose, origin, destination, and volume of soils generated from the project site. The general contractor is responsible for preparing a daily field report for distribution to the property owner and Environmental Consultant that identifies the amount of soil excavated, stockpiled, and/or transported off site and daily tonnage for each respective soil disposition. All soil excavation, handling, and disposal will be documented in these daily field reports by the general contractor, and all field screening, soil sampling, chemical analyses and disposal receipts shall be documented in a summary report to be furnished to the property owner. The following information must be submitted to the Environmental Consultant for all surface and subsurface work at the end of each week:

- Company performing work.
- Brief description and purpose of the subsurface work.
- Copies of executed version of Attachment A from all field personnel indicating that they have read and understood the content of this Plan.
- Documentation of the locations (aerial and vertical extents) where work has been conducted, and any impacted media encountered. A photo-documentation log of the field work and survey or high-accuracy GPS data is highly recommended.

- Documentation (including photographs, as appropriate) of the location of, method of collection, and analytical results of any samples collected and analyzed. Chain-of-custody documentation should also be retained with the analytical data.
- If any impacted media is stored on-site, dates and methods of storage.
- Disposition of any impacted media, including permit and disposal receipts, as appropriate. For any impacted media that is excavated and placed back on site, the date, location (both map and high accuracy GPS coordinates), volume of placement and confirmation of approval of onsite placement from Environmental Consultant (who contacted, date and time of contact and approval) as well as photo-documentation of the placed soil is required.

Based on these records, a post-development Plan may be prepared.

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## 4.0 WATER MANAGEMENT

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Ground water beneath the subject site has been encountered between approximately 10 and 17 feet bgs. Firms conducting any excavation work or trenching should be prepared to encounter ground water (which may or may not be impacted with hazardous substances). Additionally, surface water has the possibility of collecting in subsurface work areas and becoming impacted by residual soil contamination. Any water present during subsurface or surface work will need to be managed as described in this section. A description of known impacted ground water and surface on site is presented in Section 1.3.

### 4.1 Managing Removed Water

Any dewatering will require management using one of the following methods:

- Above-ground management in a temporary holding vessel prior to disposal. Temporary holding vessels prior to disposal may consist of a 55-gallon drum, a small above-ground storage tank (AST), or large ASTs (such as Baker or Frac-Tanks), or other suitable storage vessels, depending on the amount of water to be removed. During the dewatering process, care should be taken to minimize the uptake of soil and sediment.
- Direct transfer to a truck designed and permitted to transport such wastes.
- Disposal into a sewer system, *if allowed*, must be pre-approved by the City of West Linn/Clackamas County and pretreatment may be required.

Dewatered fluids may require sampling and testing, dependent upon the disposal method(s) to be used. Additionally, sampling can be conducted to show that dewatered fluids are not impacted (and can be disposed in an agency-approved manner). Contact the Environmental Consultant to ensure correct sampling protocol and methods are used.

### 4.2 Record-Keeping for Removed Water

The following information must be submitted to the Environmental Consultant for each batch of water:

- Company performing work.
- Batch Identification.

## CONTAMINATED MEDIA MANAGEMENT PLAN

*Former Blue Heron Paper Mill Aerated Stabilization Basin, West Linn, Oregon*

- Batch laboratory results.
- Documentation of approval for discharge or waste manifest/receipt of trucking company.
- Date discharged/transported.
- Total gallons discharged/transported.

Once work is complete, this information will be summarized for all occurrences and submitted to the appropriate agencies by the Environmental Consultant.

## *Tables*

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Table 1 - Summary of Analytical Data, Soil

Location ID	B1-3	B1	B2A	B2B	B3	B4	CS-1	CS-2	CS-3
Sample ID	B1-12	B1-13	B2A-2	B2B-2	B3-13	B4-21	CS-1	CS-2	CS-3
Date Sampled	2/2/2012	2/2/2012	2/2/2012	2/2/2012	2/2/2012	2/2/2012	3/27/2013	3/27/2013	3/27/2013
Depth Sampled (feet)	8	12	2	2	13	21	Surface	Surface	Surface
Sampled By	CDM	CDM	CDM	CDM	CDM	CDM	CDM	CDM	CDM
Constituent of Interest	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)
<b>Volatile Organic Constituents</b>									
Acrylonitrile									
Benzene	c, v								
Bromochloromethane	c, v								
Bromodom	c, v								
Bromomethane	nc, v								
Carbon tetrachloride	c, v								
Chlorobenzene	nc, v								
Chlorobromomethane (dibromodichloromethane)									
Chloroethane (ethyl chloride)	nc, v								
Chloroform	c, v								
Chloropentane	nc, v								
1,2-Dichlorobenzene	c, v								
1,4-Dichlorobenzene	c, v								
1,1-Dichloroethane	nc, v								
1,1,1-Trichloroethane	nc, v								
1,1,2-Trichloroethane	nc, v								
1,1,2,2-Tetrachloroethane	nc, v								
1,1,2,2-Tetrachloroethane (Freon 11)	nc, v								
1,2,4-Trimethylbenzene	nc, v								
1,3,5-Trimethylbenzene	nc, v								
Vinyl chloride	c, v								
Xylenes	nc, v								
<b>Semi-Volatile Organic Constituents</b>									
Polychlorinated biphenyls (Total PCBs)									
Styrene	nc, v								
2,3,7,8-TCDF (dioxin equivalents)	c, v								
<b>Total Petroleum Hydrocarbons</b>									
Generic Gasoline (GRO)									
Generic Diesel / Heating Oil (DRO)									
Generic Mineral Insulating Oil (RRO)									

Notes:

mg/Kg = milligram per kilogram or parts per million (ppm).

<f (ND) = not detected at or above the laboratory method reporting limit.

nc, v = non-detectable.

nv = not established.

NP = not present at or above the laboratory method reporting limit: shown (HCD analysis).

— = not analyzed or not applicable.

c = carbonogenic

v = volatile organic

nc = non-detectable

GRO = gasoline-range organics.

DRO = diesel-range organics.

RRO = residual-range organics.

Shaded concentrations exceed screening level risk-based concentrations and/or background concentrations/Clean Fill Screening Levels, as applicable.

\* Lowest Risk-Based Concentration for soil (screening level assumes residential use, from ODEQ HCD called May 2016).

† Method used for analysis not detected, but detection limit is above screening concentration.

Note: Ba/P equivalents is calculated using Toxicity Equivalent Factors for all carcinogenic PAHs, per ODEQ guidance.

Table 1 - Summary of Analytical Data, Soil

Location ID	Sample ID	Maximum Soil Concentration (reporting soil)	Soil Matrix Cleanup Level	ODECs Screening-Level Risk-Based Concentrations (Soil)	Background Concentrations (Reporting Default)	Clean Fill Screening Levels or Background Concentrations (as applicable)	Exceeds ODECs Screening-Level Risk-Based Concentrations (Clean Fill Screening Level)
Date Sampled	Depth Sampled (feet)	Sample Bt	Note	mg/kg (ppm)			
<b>Volatile Organic Constituents</b>							
Acrylonitrile	c,v	<0.0057 (ND)	NE	0.00036	---	0.00036	(Y)
Benzene	c,v	0.0016	NE	0.023	---	0.023	N
Bromochloromethane	c,v	<0.001 (ND)	NE	0.002	---	0.002	N
Bromobenzene	c,v	<0.001 (ND)	NE	0.046	---	0.046	N
Bromomethane	nc,v	<0.001 (ND)	NE	0.053	---	0.053	N
Carbon tetrachloride	c,v	<0.001 (ND)	NE	0.013	---	0.013	N
Chlorobenzene	nc,v	<0.001 (ND)	NE	3.8	---	2.4	N
Chlorobromomethane (dibromochloromethane)	c,v	<0.001 (ND)	NE	0.0024	---	0.0024	N
Chloroethane (ethyl chloride)	nc,v	<0.001 (ND)	NE	3.0	---	3.0	N
Chloroform	c,v	<0.001 (ND)	NE	0.0034	---	0.0034	N
Chloromethane	nc,v	<0.001 (ND)	NE	2.2	---	2.2	N
1,2-Dichloroethane	c,v	<0.001 (ND)	NE	0.36	---	0.36	N
1,1-Dichloroethane	c,v	<0.001 (ND)	NE	0.047	---	0.047	N
1,1,1-Trichloroethane	nc,v	<0.001 (ND)	NE	0.27	---	0.27	N
trans-1,2-Dichloroethene	nc,v	<0.001 (ND)	NE	0.62	---	0.62	N
Dichloromethane	nc,v	<0.001 (ND)	NE	2.0	---	2	N
Diethylamine	c,v	0.0033	NE	0.14	---	0.14	N
EDB (1,2-dibromoethane)	c,v	<0.001 (ND)	NE	0.0012	---	0.0012	(Y)
EDG (1,2-dichloroethane)	c,v	<0.001 (ND)	NE	0.0028	---	0.0028	N
Ethylbenzene	c,v	<0.001 (ND)	NE	0.22	---	0.22	N
Heptachlorocyclopentadiene	c,v	<0.001 (ND)	NE	0.077	---	0.077	N
Isopropylbenzene (cumene)	nc,v	<0.001 (ND)	NE	96	---	96	N
Tetrahaloethene (PCE)	c,v	<0.001 (ND)	NE	0.46	---	0.18	N
Toluene	nc,v	<0.001 (ND)	NE	63	---	23	N
1,1,2-Trichloro-2,2-difluoroethane (Freon 113)	nc,v	<0.002 (ND)	NE	8100	---	1600	N
1,1,1-Trichloroethane	nc,v	<0.001 (ND)	NE	190	---	190	N
Trichloroethene	c,v	<0.001 (ND)	NE	0.093	---	0.093	N
Trichlorofluoromethane (Freon 11)	NA,v	<0.001 (ND)	NE	0.013	---	0.013	N
1,2,4-Trimethylbenzene	nc,v	<0.001 (ND)	NE	81	---	52	N
1,3,5-Trimethylbenzene	nc,v	<0.001 (ND)	NE	10	---	10	N
Vinyl chloride	nc,v	<0.001 (ND)	NE	11	---	11	N
Xylenes	c,v	<0.001 (ND)	NE	0.00057	---	0.00057	(Y)
	nc,v	<0.002 (ND)	NE	23	---	1.4	N
<b>Semivolatile Organic Constituents</b>							
Polychlorinated biphenyls (Total PCBs)	c,v	<0.033 (ND)	NE	0.23	---	0.23	N
Styrene	nc,v	<0.001 (ND)	NE	170	---	1.2	N
2,3,7,8-TCDF (dioxin) equivalents	c,v	0.0000295	NE	4.74E-06	---	2.90E-07	(Y)
<b>Total Petroleum Hydrocarbons</b>							
Generic Gasoline (GRO)	nc,v	<20 (NP)	80	31	---	520	N
Generic Diesel / Heating Oil (DRO)	nc,v	390	500	1100	---	90	Y
Generic Mineral Insulating Oil (MRO)	nc, nv	1200	2800	2800	---	140,000	N

Notes:

mg/kg = milligram per kilogram or parts per million (ppm).  
 <R (ND) = not detected at or above the laboratory method reporting limit  
 NA,v = non-volatile  
 NE = not established  
 NP = not present at or above the laboratory method reporting limit  
 shown (HCD analysis).  
 --- = not analyzed or not applicable.  
 nc = noncarcinogenic  
 nc,v = volatile noncarcinogenic  
 nv = volatile  
 nv = non-volatile  
 GRO = gasoline-range organics.  
 DRO = diesel-range organics.  
 MRO = mineral insulating oil-range organics.  
 Shaded concentrations exceed screening level risk-based concentrations and/or background concentrations/Clean Fill Screening Levels, as applicable.  
 1. Lowest Risk-Based Concentration for soil (screening level assumes worst case use, from ODEQ PCBs called May 2018).  
 (Y) indicates analyte not detected, but detection limit is above screening concentration.  
 Note: B1e1P equivalents is calculated using Toxicity Equivalent Factors for all carcinogenic PAHs, per ODEQ guidance.

Table 2 - Summary of Analytical Data, ASB Sludge

Location ID	P6C0526-02	PQC0371-02	D11		A10			C8		F11		
Sample ID	P6C0526-02	PQC0371-03	D11-6	D11-0-4	A10-6	A10-0-4	A10-4-8	C8-1	C8-0-4	F11-4	F11-0-4	
Date Sampled	3/13/2006	3/8/2007	2/6/2012	2/6/2012	2/6/2012	2/6/2012	2/6/2012	2/6/2012	2/6/2012	2/6/2012	2/6/2012	
Depth Sampled (feet)	--	--	6	0-4	6	0-4	4-8	1	0-4	4	0-4	
Sampled By	MF	MF	CDM	CDM	CDM	CDM	CDM	CDM	CDM	CDM	CDM	
Constituent of Interest	Note	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	
<b>Metals</b>												
Arsenic	c, nv	---	---	---	---	---	---	---	---	---	---	
Cadmium	nc, nv	---	---	---	---	---	---	---	---	---	---	
Chromium (III)	nc, nv	---	---	---	---	---	---	---	---	---	---	
Copper	nc, nv	---	---	---	---	---	---	---	---	---	---	
Lead	NA, nv	---	---	---	---	---	---	---	---	---	---	
Mercury	nc, nv	---	---	---	---	---	---	---	---	---	---	
Nickel	c, nv	---	---	---	---	---	---	---	---	---	---	
<b>Semivolatile Organic Constituents</b>												
Polychlorinated biphenyls (Total PCBs)	c, v	---	---	---	<b>0.41</b>	---	<b>0.48</b>	<b>0.39</b>	---	<b>0.48</b>	---	<b>0.294</b>
2,3,7,8-TCDD (dioxin) equivalents	c, v	<0.0000005 (ND)	<0 (ND)	---	<b>2.19E-05</b>	---	<b>1.96E-05</b>	<b>1.13E-05</b>	---	<b>4.28E-05</b>	---	<b>5.95E-06</b>
<b>Total Petroleum Hydrocarbons</b>												
Generic Gasoline (GRO)	nc, v	---	---	<42 (NP)	---	---	---	---	---	<36 (NP)	---	
Generic Diesel / Heating Oil (DRO)	nc, v	---	---	<100 (NP)	---	<b>2200</b>	---	---	---	<90 (NP)	---	
Generic Mineral Insulating Oil (RRO)	nc, nv	---	---	<210 (NP)	---	<b>3400</b>	---	---	---	<180 (NP)	---	

Notes:  
 mg/Kg = milligram per kilogram or parts per million (ppm).  
 <# (ND) = not detected at or above the laboratory method reporting limit shown.  
 NE = not established  
 NP = not present at or above the laboratory method reporting limit shown (HCID analysis).  
 --- = not analyzed or not applicable  
 c = carcinogenic  
 nc = noncarcinogenic  
 v = volatile  
 nv = nonvolatile  
 GRO = gasoline-range organics  
 DRO = diesel-range organics  
 RRO = residual-range organics

Purple shaded and bolded concentrations exceed screening level risk-based concentrations and/or background concentrations/Clean Fill Screening Levels, as applicable.

<sup>1</sup> Lowest Risk-Based Concentration for soil (screening level assumes residential use, from ODEQ RBCs dated May 2018).  
 (Y) indicates analyte not detected, but detection limit is above screening concentration.  
 J = The result is below method reporting limits. The value reported is an estimate  
 Note, B(a)P equivalents is calculated using Toxicity Equivalent Factors for all carcinogenic PAHs, per ODEQ guidance.

Table 2 - Summary of Analytical Data, ASB Sludge

Location ID		E2			A10C8E2F11	A10C8F11	F5		F7			
Sample ID	F11-4-8	E2-1.5	E2-0-4.5	A10C8E2F11-0-4	A10C8F11-4-8	F5-2	F5-0-4	F7-0.5	F7-0-4	F7-4-8	C5-1	
Date Sampled	2/6/2012	2/6/2012	2/6/2012	2/6/2012	2/6/2012	2/7/2012	2/7/2012	2/7/2012	2/7/2012	2/7/2012	2/7/2012	
Depth Sampled (feet)	8-Apr	1.5	0-4.5	0-4	4-8	2	0-4	0.5	0-4	4-8	1	
Sampled By	CDM	CDM	CDM	CDM	CDM	CDM	CDM	CDM	CDM	CDM	CDM	
Constituent of Interest	Note	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	
<b>Metals</b>												
Arsenic	c, nv	---	--	---	<10 (ND)	<50 (ND)	--	---	--	---	---	
Cadmium	nc, nv	---	---	---	<0.6 (ND)	<2 (ND)	---	---	---	---	---	
Chromium (III)	nc, nv	---	---	---	20	6	---	---	---	---	---	
Copper	nc, nv	---	---	---	90.3	69	---	---	---	---	---	
Lead	NA, nv	---	---	---	8	<20 (ND)	---	---	---	---	---	
Mercury	nc, nv	---	---	---	0.08	0.09	---	---	---	---	---	
Nickel	c, nv	---	--	---	12	<10 (ND)	---	---	---	---	---	
<b>Semivolatile Organic Constituents</b>												
Polychlorinated biphenyls (Total PCBs)	c, v	0.201	--	0.141	--	---	--	0.14	--	0.41	0.37	
2,3,7,8-TCDD (dioxin) equivalents	c, v	<b>3.91E-06</b>	--	<b>1.37E-05</b>	--	---	--	<b>3.08E-05</b>	--	<b>9.05E-05</b>	<b>1.85E-05</b>	
<b>Total Petroleum Hydrocarbons</b>												
Generic Gasoline (GRO)	nc, v	---	<20 (NP)	---	---	---	<b>63</b>	---	<b>310 J</b>	---	<b>320 J</b>	
Generic Diesel / Heating Oil (DRO)	nc, v	---	<b>670</b>	---	---	---	<b>6700</b>	---	<b>18000</b>	---	<b>7400</b>	
Generic Mineral Insulating Oil (RRO)	nc, nv	---	<b>910</b>	---	---	---	<b>11000</b>	---	<b>32000</b>	---	<b>12000</b>	

Notes:  
 mg/Kg = milligram per kilogram or parts per million (ppm).  
 <# (ND) = not detected at or above the laboratory method reporting limit shown.  
 NE = not established  
 NP = not present at or above the laboratory method reporting limit shown (HCID analysis).  
 --- = not analyzed or not applicable  
 c = carcinogenic  
 nc = noncarcinogenic  
 v = volatile  
 nv = nonvolatile  
 GRO = gasoline-range organics  
 DRO = diesel-range organics  
 RRO = residual-range organics

Purple shaded and bolded concentrations exceed screening level risk-based concentrations and/or background concentrations/Clean Fill Screening Levels, as applicable.

<sup>1</sup> Lowest Risk-Based Concentration for soil (screening level assumes residential use, from ODEQ RBCs dated May 2018).  
 (Y) indicates analyte not detected, but detection limit is above screening concentration.  
 J = The result is below method reporting limits. The value reported is an estimate  
 Note, B(a)P equivalents is calculated using Toxicity Equivalent Factors for all carcinogenic PAHs, per ODEQ guidance.



Table 2 - Summary of Analytical Data, ASB Sludge

Location ID		C5		E2C5F5F7	C5F5F7	Maximum Sludge Concentration (remaining soil)	Soil Matrix Cleanup Level	ODEQs Screening-Level Risk-Based Concentrations SLRBCs <sup>1</sup> (Soil)	Background Concentrations (Regional Default)	Clean Fill Screening Levels or Background Concentrations (as applicable)	Exceeds ODEQs Screening-Level SLRBCs (Soil) and/or Soil Matrix Cleanup Level	
Sample ID		C5-7	C5-0-4	E2C5F5F7-0-4	C5F5F7-4-8							
Date Sampled		2/7/2012	2/7/2012	2/7/2012	2/7/2012							
Depth Sampled (feet)		7	0-4	0-4	4-8							
Sampled By		CDM	CDM	CDM	CDM							
Constituent of Interest		Note	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	TRUE OR Y FALSE OR N
<b>Metals</b>												
Arsenic	c, nv	---	---	<10 (ND)	<20 (ND)	<50 (ND)	NE	0.43	14	14	(Y)	
Cadmium	nc, nv	---	---	<0.5 (ND)	<0.8 (ND)	<2 (ND)	NE	78	0.69	0.69	N	
Chromium (III)	nc, nv	---	---	32	16	32	NE	120000	190	190	N	
Copper	nc, nv	---	---	95.4	112	112	NE	3100	120	120	N	
Lead	NA, nv	---	---	15	8	20	NE	30	21	21	N	
Mercury	nc, nv	---	---	0.06	0.08	0.09	NE	23	1.4	1.4	N	
Nickel	c, nv	---	---	21	7	21	NE	1500	92	92	N	
<b>Semivolatile Organic Constituents</b>												
Polychlorinated biphenyls (Total PCBs)	c, v	---	0.47	--	--	0.48	NE	0.23	--	0.23	Y	
2,3,7,8-TCDD (dioxin) equivalents	c, v	---	6.85E-05	--	--	0.0000905	NE	4.74E-06	--	2.90E-07	Y	
<b>Total Petroleum Hydrocarbons</b>												
Generic Gasoline (GRO)	nc, v	---	---	---	---	320 J	80	31	--	520	Y	
Generic Diesel / Heating Oil (DRO)	nc, v	1800	---	---	---	18000	500	1100	--	90	Y	
Generic Mineral Insulating Oil (RRO)	nc, nv	2700	---	---	---	32000		2800	--	140,000	(mineral oil)	

Notes:

mg/Kg = milligram per kilogram or parts per million (ppm).

<# (ND) = not detected at or above the laboratory method reporting limit shown.

NE = not established

NP = not present at or above the laboratory method reporting limit shown (HCID analysis).

--- = not analyzed or not applicable

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

GRO = gasoline-range organics

DRO = diesel-range organics

RRO = residual-range organics

Purple shaded and bolded concentrations exceed screening

level risk-based concentrations and/or background concentrations/Clean Fill Screening Levels, as applicable.

<sup>1</sup> Lowest Risk-Based Concentration for soil (screening level assumes residential use, from ODEQ RBCs dated May 2018).

(Y) indicates analyte not detected, but detection limit is above screening concentration.

J = The result is below method reporting limits. The value reported is an estimate

Note, B(a)P equivalents is calculated using Toxicity Equivalent Factors for all carcinogenic PAHs, per ODEQ guidance.



Table 3 - Summary of Analytical Data, Ground Water and Surface Water

Constituent of Interest	Location ID	GW-1 (Recommissance)		GW-2 (Recommissance)		GW-4 (Recommissance)		BH-1 (Monitoring Well)		BH-2 (Monitoring Well)		BH-2 Dup	
		Sample ID	Date Sampled	Sample ID	Date Sampled	Sample ID	Date Sampled	Sample ID	Date Sampled	Sample ID	Date Sampled		
Total or Dissolved Metals													
Constituent of Interest		GW-1	GW-2	GW-4	BH-1	BH-2	BH-2 Dup	GW-1	GW-2	GW-4	BH-1	BH-2	BH-2 Dup
		CDM	CDM	CDM	CDM	CDM	CDM	CDM	CDM	CDM	CDM	CDM	CDM
		Dissolved	Dissolved	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total
		µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)
<b>Volatiles Organic Constituents</b>	<b>Note</b>												
Acrylonitrile	C, V	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	C, V	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	C, V	---	---	---	---	---	---	---	---	---	---	---	---
Bromofom	C, V	---	---	---	---	---	---	---	---	---	---	---	---
Bromodibromomethane	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
Carbon tetrachloride	C, V	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
Chlorodibromomethane (dibromochloromethane)	C, V	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane (ethyl chloride)	C, V	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	C, V	---	---	---	---	---	---	---	---	---	---	---	---
Chloromethane	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	C, V	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethane	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethane	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
Dichloromethane	C, V	---	---	---	---	---	---	---	---	---	---	---	---
EDB (1,2-dibromoethane)	C, V	---	---	---	---	---	---	---	---	---	---	---	---
EDC (1,2-dichloroethane)	C, V	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	C, V	---	---	---	---	---	---	---	---	---	---	---	---
MTBE (methyl t-butyl ether)	C, V	---	---	---	---	---	---	---	---	---	---	---	---
iso-Propylbenzene (cumene)	C, V	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachloroethene (PCE)	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	C, V	---	---	---	---	---	---	---	---	---	---	---	---
Toluene	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	C, V	---	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	NA, v	---	---	---	---	---	---	---	---	---	---	---	---
Trichlorofluoromethane (Freon 11)	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	C, W	---	---	---	---	---	---	---	---	---	---	---	---
1,2,4-Trimehylbenzene	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
1,3,5-Trimehylbenzene	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl chloride	C, V	---	---	---	---	---	---	---	---	---	---	---	---
Xylenes	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
<b>Pesticides</b>													
Heptachlorobenzene	C, V	---	---	---	---	---	---	---	---	---	---	---	---
<b>Metals</b>													
Arsenic	C, W	2.9	1.2	0.6	1.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1
Cadmium	nc, W	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)
Chromium (III)	nc, W	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Copper	nc, W	0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Lead	NA, W	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)
Manganese	nc, W	9750	2840	422	284	250	397	405	379	408	408	408	408
Mercury	nc, W	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)
Nickel	C, W	90	94	1.8	<10 (ND)	<10 (ND)	90	90	90	90	90	90	90
<b>Semivolatile Organic Constituents</b>													
3,3-Dichlorobenzidine	C, W	---	---	---	---	---	---	---	---	---	---	---	---
Pentachlorophenol	C, W	---	---	---	---	---	---	---	---	---	---	---	---
Polychlorinated biphenyls (Total PCBs)	C, V	---	---	---	---	<0.01 (ND)	---	<0.01 (ND)	---	<0.01 (ND)	---	<0.01 (ND)	---
<b>Polyyclic Aromatic Hydrocarbons</b>													
Acenaphthene	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
Anthracene	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
Benzo[a]anthracene	C, V	---	---	---	---	---	---	---	---	---	---	---	---
Benzo[e]pyrene (BaP equivalents)	C, W	---	---	---	---	---	---	---	---	---	---	---	---
Benzo[b]fluoranthene	C, W	---	---	---	---	---	---	---	---	---	---	---	---
Benzo[k]fluoranthene	C, W	---	---	---	---	---	---	---	---	---	---	---	---
Chrysene	C, W	---	---	---	---	---	---	---	---	---	---	---	---
Dibenz[a,h]anthracene	C, W	---	---	---	---	---	---	---	---	---	---	---	---
Fluoranthene	nc, W	---	---	---	---	---	---	---	---	---	---	---	---
Fluorene	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
Indeno[1,2,3-cd]pyrene	C, W	---	---	---	---	---	---	---	---	---	---	---	---
Pyrene	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
Styrene	C, V	---	---	---	---	---	---	---	---	---	---	---	---
2,3,7,8-TCDD (dioxin equivalents)	C, V	---	---	---	---	---	---	---	---	3.80E-07	---	---	---
<b>Total Petroleum Hydrocarbons</b>													
Generic Gasoline (GRO)	nc, v	---	---	---	---	---	---	---	---	---	---	---	---
Generic Diesel / Heating Oil (DRO)	nc, v	---	---	---	---	---	---	---	---	<100 (ND)	---	---	---
Generic Mineral Insulating Oil (MRO)	nc, W	---	---	---	---	---	---	---	---	<200 (ND)	---	---	---

Notes:  
 µg/L = micrograms per liter or parts per billion (ppb),  
 <4F (ND) = not detected at or above the laboratory method reporting limit  
 C = constituent of interest  
 W = well  
 NP = not present,  
 NE = not established,  
 NP = not present at or above the laboratory method reporting limit shown (HCD analysis),  
 1. Lowest Risk-Based Concentration for ground water (screening level) assumes residential use, from ODEQ REC's dated May 2018),  
 --- = not analyzed or not applicable,  
 c = carcinogenic  
 nc = noncarcinogenic  
 v = volatile  
 W = well  
 GRO = gasoline-range organics,  
 DRO = diesel-range organics,  
 BRG = residual-range organics,  
 HRO = heavy-range organics  
**Bolded and shaded** concentrations exceed screening level risk-based concentrations and/or background concentrations, as applicable.  
 1. Lowest Risk-Based Concentration for ground water (screening level),  
 (W) indicates analyte not detected, but detection limit is above screening concentration.

Table 3 - Summary of Analytical Data, Ground Water and Surface Water

Constituent of Interest	BH-3 (Monitoring Well)		BH-4 (Monitoring Well)		BH-5 (Monitoring Well)		ASB-1		Wetlands-1		Wetlands-2		Wetlands-3	
	Sample ID	Date Sampled	Sample ID	Date Sampled	Sample ID	Date Sampled	Sample ID	Date Sampled	Sample ID	Date Sampled	Sample ID	Date Sampled	Sample ID	Date Sampled
<b>Volatile Organic Constituents</b>														
Acrylonitrile														
Benzene														
Bromochloromethane														
Bromodrom														
Bromotribane														
Carbon tetrachloride														
Chlorobenzene														
Chlorobromomethane (dibromochloromethane)														
Chloroethane (60% chloride)														
Chloroform														
Chloromethane														
1,2-Dichlorobenzene														
1,1-Dichloroethane														
1,1,1-Trichloroethane														
1,1,2-Dichloroethane														
trans-1,2-Dichloroethane														
Dichloromethane														
EDB (1,2-dibromoethane)														
EDC (1,2-dichloroethane)														
Ethylbenzene														
MTBE (methyl tert-butyl ether)														
iso-Propylbenzene (cumene)														
Tetrachloroethene (PCE)														
Toluene														
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)														
1,1,1-Trichloroethane														
1,1,2-Trichloroethane														
Trichloroethene														
Trichlorofluoromethane (Freon 11)														
2,4,6-Trichlorophenol														
1,2,4-Trimethylbenzene														
1,3,5-Trimethylbenzene														
Vinyl chloride														
Xylenes														
<b>Pesticides</b>														
Heptachlorobenzene														
<b>Metals</b>														
Arsenic		1.5		1.2		16		15.8		0.5		0.6		0.8
Cadmium		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv
Chromium (II)		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv
Copper		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv
Lead		NA, nv		NA, nv		5200		5320		1020		820		65
Manganese		1160		1110		5200		5320		1020		820		41
Mercury		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv
Nickel		20		10		160		160		40		<10 (ND)		<10 (ND)
<b>Semivolatile Organic Constituents</b>														
3,3-Dichlorobenzidine		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv
Penachlorophenol		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv
Polychlorinated biphenyls (Total PCBs)		<0.01 (ND)		<0.01 (ND)		<0.01 (ND)		<0.01 (ND)		<0.01 (ND)		<0.01 (ND)		<0.01 (ND)
<b>Polyyclic Aromatic Hydrocarbons</b>														
Acenaphthene		nc, v		nc, v		nc, v		nc, v		nc, v		nc, v		nc, v
Anthracene		nc, v		nc, v		nc, v		nc, v		nc, v		nc, v		nc, v
Benzo[a]anthracene		nc, v		nc, v		nc, v		nc, v		nc, v		nc, v		nc, v
Benzo[b]pyrene (BaP equivalents)		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv
Benzo[e]pyrene		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv
Benzo[k]fluoranthene		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv
Chrysene		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv
Dibenz[a,h]anthracene		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv
Fluoranthene		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv
Fluorene		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv
Indeno[1,2,3-cd]pyrene		nc, v		nc, v		nc, v		nc, v		nc, v		nc, v		nc, v
Pyrene		nc, v		nc, v		nc, v		nc, v		nc, v		nc, v		nc, v
Styrene		nc, v		nc, v		nc, v		nc, v		nc, v		nc, v		nc, v
2,3,7,8-TCDD (dioxin) equivalents		3.80E-07		3.80E-07		3.80E-07		3.80E-07		6.15E-06		2.21E-06		2.21E-06
<b>Total Petroleum Hydrocarbons</b>														
Generic Gasoline (GRO)		nc, v		nc, v		650		650		1100		1100		1100
Generic Diesel / Heating Oil (DRO)		<120 (ND)		<120 (ND)		<240 (ND)		<240 (ND)		<300 (ND)		<300 (ND)		<300 (ND)
Generic Mineral Insulating Oil (MRO)		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv		nc, nv

Notes:  
 ug/L = micrograms per liter or parts per billion (ppb).  
 <= (ND) = not detected at or above the laboratory method reporting limit  
 nc = noncarcinogenic  
 nv = volatile  
 v = volatile  
 GRO = gasoline-range organics.  
 DRO = diesel-range organics.  
 MRO = mineral insulating oil.  
 BOLD and SHADDED concentrations exceed screening level risk-based concentrations and/or background concentrations, as applicable.  
 1. Lowest Risk-Based Concentration for ground water (screening level) assumes residential use, from ODEQ RBCs dated May 2019.  
 — = not analyzed or not applicable.  
 nc = noncarcinogenic  
 nv = volatile  
 v = volatile  
 GRO = gasoline-range organics.  
 DRO = diesel-range organics.  
 MRO = mineral insulating oil.  
 BOLD and SHADDED concentrations exceed screening level risk-based concentrations and/or background concentrations, as applicable.  
 1. Lowest Risk-Based Concentration for ground water (screening level) assumes residential use, from ODEQ RBCs dated May 2019.  
 (\*) indicates analyte not detected, but detection limit is above screening concentration.

Table 3 - Summary of Analytical Data, Ground Water and Surface Water

Location ID	Maximum Ground Water Concentration (for metals, only data was used)	Maximum ASB Water Concentration	Maximum Surface Water Concentration	OEDs Screening-Level Background Concentrations (SLRBCs)	Background Concentrations (Metals)	Exceeds SLRBC of Background Concentration, as applicable (Ground Water)	Exceeds SLRBC of Background Concentration, as applicable (Surface Water)	TRUE OR Y FALSE OR N
Sample ID Date Sampled By	Total or Dissolved Metals							
Constituent of Interest	Note	µg/L (ppb)						
<b>Volatiles Organic Constituents</b>								
Acrylamide	c, v	<5 (ND)	---	0.052	NE	(Y)	---	---
Benzene	c, v	<0.2 (ND)	---	0.46	NE	(Y)	---	---
Bromochloromethane	c, v	<1 (ND)	---	0.13	NE	(Y)	---	---
Bromodrom	c, v	<1 (ND)	---	3.3	NE	(Y)	---	---
Bromomethane	nc, v	<1 (ND)	---	7.5	NE	(Y)	---	---
Carbon tetrachloride	c, v	<1 (ND)	---	0.46	NE	(Y)	---	---
Chlorobenzene	nc, v	<1 (ND)	---	77	NE	(Y)	---	---
Chlorodibromomethane (dibromochloromethane)	c, v	<1 (ND)	---	0.17	NE	(Y)	---	---
Chloroethane (ethyl chloride)	nc, v	<1 (ND)	---	21000	NE	(Y)	---	---
Chloroform	c, v	<1 (ND)	---	0.22	NE	(Y)	---	---
Chloromethane	nc, v	<1 (ND)	---	190	NE	(Y)	---	---
1,2-Dichlorobenzene	nc, v	<1 (ND)	---	300	NE	(Y)	---	---
1,4-Dichlorobenzene	c, v	<1.04 (ND)	---	0.48	NE	(Y)	---	---
1,1-Dichloroethane	c, v	<1 (ND)	---	2.8	NE	(Y)	---	---
cis-1,2-Dichloroethane	nc, v	<1 (ND)	---	280	NE	(Y)	---	---
trans-1,2-Dichloroethane	nc, v	<1 (ND)	---	.36	NE	(Y)	---	---
Dichloromethane	nc, v	<1 (ND)	---	360	NE	(Y)	---	---
EDB (1,2-dibromoethane)	c, v	<20 (ND)	---	11	NE	(Y)	---	---
EDC (1,2-dichloroethane)	c, v	<1 (ND)	---	0.0075	NE	(Y)	---	---
Ethylbenzene	c, v	<1 (ND)	---	0.17	NE	(Y)	---	---
MTBE (methyl t-butyl ether)	c, v	<1 (ND)	---	1.5	NE	(Y)	---	---
Naphthalene	c, v	0.07	---	14	NE	(Y)	---	---
iso-Propylbenzene (cumene)	nc, v	<1 (ND)	---	440	NE	(Y)	---	---
Tetrahydrofuran (PCE)	c, v	<1 (ND)	---	12	NE	(Y)	---	---
Toluene	nc, v	<1 (ND)	---	40	NE	(Y)	---	---
1,1,2-Trichloro-1,2,2-fluoroethane (Freon 113)	nc, v	<0.2 (ND)	---	55000	NE	(Y)	---	---
1,1,1-Trichloroethane	nc, v	<1 (ND)	---	8000	NE	(Y)	---	---
1,1,2-Trichloroethane	c, v	<1 (ND)	---	0.28	NE	(Y)	---	---
Trichloroethane	NA, v	<1 (ND)	---	0.49	NE	(Y)	---	---
Trichlorofluoroethane (Freon 11)	nc, v	<1 (ND)	---	1100	NE	(Y)	---	---
2,4,6-Trichlorophenol	c, v	<5.21 (ND)	---	4.4	NE	(Y)	---	---
1,2,4-Trimethylbenzene	nc, v	<1 (ND)	---	54	NE	(Y)	---	---
1,3,5-Trimethylbenzene	nc, v	<1 (ND)	---	59	NE	(Y)	---	---
Vinyl chloride	c, v	<1 (ND)	---	0.027	NE	(Y)	---	---
Xylenes	nc, v	<1 (ND)	---	190	NE	(Y)	---	---
<b>Pesticides</b>								
Heptachlorbenzene	c, v	<1.04 (ND)	---	0.0088	NE	(Y)	---	---
<b>Metals</b>								
Arsenic	c, iv	15.8	0.7	0.052	2	(Y)	BKG	BKG
Cadmium	nc, iv	<0.1 (ND)	---	20	1	(Y)	---	---
Chromium (III)	nc, iv	<0.5 (ND)	---	30000	1	(Y)	---	---
Copper	nc, iv	0.8	---	800	9	(Y)	---	---
Lead	NA, iv	<0.1 (ND)	---	15	13.3	(Y)	---	---
Manganese	nc, iv	9750	65	480	NE	(Y)	N	N
Mercury	nc, iv	<0.1 (ND)	---	6	0.1	(Y)	---	---
Nickel	c, iv	180	20	400	5.5	(Y)	---	---
<b>Semivolatile Organic Constituents</b>								
3,3-Dichloropropidine	c, iv	<5.21 (ND)	---	0.17	NE	(Y)	---	---
Pentachlorophenol	c, iv	<5.21 (ND)	---	0.044	NE	(Y)	---	---
Polychlorinated biphenyls (Total PCBs)	c, v	<0.01 (ND)	<0.01 (ND)	0.006	NE	(Y)	(Y)	(Y)
<b>Polycyclic Aromatic Hydrocarbons</b>								
Acenaphthene	nc, v	<0.05 (ND)	---	510	NE	(Y)	---	---
Anthracene	nc, v	<0.05 (ND)	---	>S	NE	(Y)	---	---
Benzo[a]anthracene	c, v	<0.05 (ND)	---	0.03	NE	(Y)	---	---
Benzo[b]pyrene (BaP equivalents)	c, iv	0.06	---	0.025	NE	(Y)	---	---
Benzo[e]fluoranthene	c, iv	0.06	---	0.25	NE	(Y)	---	---
Benzo[k]fluoranthene	c, iv	<0.05 (ND)	---	2.5	NE	(Y)	---	---
Chrysene	c, iv	<0.05 (ND)	---	25	NE	(Y)	---	---
Dibenz[a,h]anthracene	c, iv	0.06	---	800	NE	(Y)	---	---
Fluoranthene	nc, iv	0.06	---	280	NE	(Y)	---	---
Fluorene	nc, v	<0.05 (ND)	---	0.25	NE	(Y)	---	---
Indeno[1,2,3-cd]pyrene	c, iv	<0.05 (ND)	---	110	NE	(Y)	---	---
Pyrene	nc, v	<1 (ND)	---	1200	NE	(Y)	---	---
2,3,7,8-TCDD (dioxin) equivalents	c, v	<3.8E-07 (ND)	6.15E-05	2.21E-06	NE	(Y)	(Y)	(Y)
<b>Total Petroleum Hydrocarbons</b>								
Generic Gasoline (GRO)	nc, v	<250 (NP)	---	110	NE	(Y)	---	---
Generic Diesel / Heating Oil (DRO)	nc, v	650	320	<100 (ND)	100	(Y)	(Y)	(Y)
Generic Mineral Insulating Oil (MRO)	nc, iv	1100	390	<200 (ND)	300	(Y)	(mineral oil)	(mineral oil)

Notes:  
 ug/L = micrograms per liter or parts per billion (ppb).  
 <# (ND) = not detected at or above the laboratory method reporting limit  
 NP = not present  
 NE = not established.  
 NP = not present at or above the laboratory method reporting limit shown (HCB analysis).  
 1. Lowest Risk-Based Concentration for ground water (screening level) assumes residential use, from ODEQ RBCs dated May 2018).  
 --- = not analyzed or not applicable.  
 nc = noncarcinogenic  
 c = carcinogenic  
 iv = vadialite  
 v = vadialite  
 GRO = gasol/range organics.  
 DRO = diesel-range organics.  
 MRO = residual-range organics.  
 BKG = constituent exceeded its SLRBC, however, was not detected above background concentrations.  
**Bolded and shaded** concentrations exceed screening level risk-based concentrations and/or background concentrations, as applicable.  
 1. Lowest Risk-Based Concentration for ground water (screening level).  
 (Y) indicates analyte not detected, but detection limit is above screening concentration.

Table 4. Further Evaluation of COPCs in Surface Soil

Contaminated Medium	SOIL mg/Kg (ppm)														Maximum Detected Concentration	Lowest Applicable RBC (Soil)	Constituent of Concern (COC)?			
	Soil Ingestion, Dermal Contact, and Inhalation								Volatilization to Outdoor Air				Vapor Intrusion into Buildings							
	RBC <sub>ss</sub>				RBC <sub>so</sub>				RBC <sub>si</sub>											
Receptor Scenario	Residential		Occupational		Construction Worker		Excavation Worker		Residential		Occupational		Residential		Occupational					
Direct or Indirect Pathway (see notes)	DC		DC		DC		DC		IVS		IVS		IVS		IVS					
Contaminant of Concern	Note		Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note				
<b>Semivolatile Organic Constituents</b>																				
2,3,7,8-TCDD (dioxin) equivalents	c, v	4.7441E-06		0.000016		0.00017		0.0048		0.01		0.13	>Csat	0.01		0.13	>Csat	0.0000905	4.74411E-06	Y

Notes:  
 mg/Kg = milligrams per Kilogram or parts per million (ppm).  
 c = carcinogenic  
 v = volatile  
 >Csat = This soil RBC exceeds the limit of three-phase equilibrium partitioning.  
 >Max = The constituent RBC for this pathway is greater than 100,000 mg/kg. The Department believes it is highly unlikely that such concentrations will ever be encountered.

Table 5. Further Evaluation of COPCs in ASB Sludge

Contaminated Medium		ASB SLUDGE mg/Kg (ppm)														Maximum Detected Concentration	Lowest Applicable RBC (ASB Sludge)	Constituent of Concern (COC)?		
		Soil Ingestion, Dermal Contact, and Inhalation								Volatilization to Outdoor Air				Vapor Intrusion into Buildings						
Exposure Pathway		RBC <sub>ss</sub>								RBC <sub>so</sub>				RBC <sub>si</sub>						
Receptor Scenario		Residential		Occupational		Construction Worker		Excavation Worker		Residential		Occupational		Residential		Occupational				
Direct or Indirect Pathway (see notes)		DC		DC		DC		DC		IVS		IVS		IVS		IVS				
Contaminant of Concern		Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	mg/Kg (ppm)	mg/Kg (ppm)	Y/N
<b>Semivolatile Organic Constituents</b>																				
Polychlorinated biphenyls (Total PCBs)		c, v	0.23	0.59	4.9	>Csat	140	>Csat	130	>Csat	1600	>Csat	130	>Csat	1600	>Csat	0.48	0.23	Y	
2,3,7,8-TCDD (dioxin) equivalents		c, v	4.74411E-06	0.000016	0.00017		0.0048		0.01		0.13	>Csat	0.01		0.13	>Csat	0.0000905	4.74411E-06	Y	
<b>Total Petroleum Hydrocarbons</b>																				
Generic Gasoline (GRO)		nc, v	1200	20000	9700	-	>Max	5900		69000		94		-	>Max	320 J	94	Y		
Generic Diesel / Heating Oil (DRO)		nc, v	1100	14000	4600	-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	18000	1100	Y		

Notes:  
 — = not analyzed or not applicable.  
 mg/Kg = milligrams per Kilogram or parts per million (ppm).  
 c = carcinogenic  
 nc = noncarcinogenic  
 v = volatile  
 GRO = gasoline-range organics.  
 DRO = diesel-range organics.  
 J = indicates the internal standard associated with the analyte is out of control limits; the reported concentration is an estimate.  
 >Csat = This soil RBC exceeds the limit of three-phase equilibrium partitioning.  
 >Max = The constituent RBC for this pathway is greater than 100,000 mg/kg. The Department believes it is highly unlikely that such concentrations will ever be encountered.

Table 6. Further Evaluation of COPCs, Ground Water

Contaminated Medium		GROUND WATER µg/L (ppb)										Maximum Detected Concentration	Lowest Applicable RBC (Ground Water) <sup>1</sup>	Constituent of Concern (COC)?
Exposure Pathway		Volatilization to Outdoor Air RBC <sub>wo</sub>				Vapor Intrusion into Buildings RBC <sub>wi</sub>				GW in Excavation RBC <sub>we</sub>				
Receptor Scenario		Residential		Occupational		Residential		Occupational		Construction & Excavation Worker				
Direct or Indirect Pathway (see notes)		IVW		IVW		IVW		IVW		DS				
Contaminant of Concern	Note		Note		Note		Note		Note		Note	µg/L (ppb)	µg/L (ppb)	Y/N
<b>Metals</b>														
Arsenic	c, nv	-	NV	-	NV	-	NV	-	NV	6300		15.8	6,300	N
Copper	nc, nv	-	NV	-	NV	-	NV	-	NV	5400000		0.8	5,400,000	N
Lead	NA, nv	-	NV	-	NV	-	NV	-	NV	-	>S	0.1	-	N
Manganese	nc, nv	-	NV	-	NV	-	NV	-	NV	3200000		9750	3,200,000	N
Nickel	c, nv	-	NV	-	NV	-	NV	-	NV	1.3E+07	>S	160	13,446,802	N
<b>Semivolatile Organic Constituents</b>														
<b>Polycyclic Aromatic Hydrocarbons</b>														
Benzo[a]pyrene (BaP equivalents)	c, nv	-	NV	-	NV	-	NV	-	NV	-	>S	0.06	-	N
Dibenz[a,h]anthracene	c, nv	-	NV	-	NV	-	NV	-	NV	-	>S	0.06	-	N
<b>Total Petroleum Hydrocarbons</b>														
Generic Diesel / Heating Oil (DRO)	nc, v	-	>S	-	>S	-	>S	-	>S	-	>S	650	-	N

Notes:

— = not analyzed or not applicable.

ug/L = micrograms per Liter or parts per billion (ppb).

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

DRO = diesel-range organics.

<sup>1</sup> Lowest Risk-Based Concentration for groundwater (screening

>S = This groundwater RBC exceeds the solubility limit.



Table 7. Further Evaluation of COPCs, ASB Water

Contaminated Medium		ASB WATER µg/L (ppb)												Maximum Detected Concentration	Lowest Applicable RBC (ASB Water) <sup>1</sup>	Constituent of Concern (COC)?					
		Ingestion & Inhalation from Tapwater / Direct Contact RBC <sub>tw</sub>			Volatilization to Outdoor Air RBC <sub>wo</sub>		Vapor Intrusion into Buildings RBC <sub>wi</sub>		Water in Excavation RBC <sub>we</sub>		Ingestion & Inhalation from Recreational Use / Direct Contact RBC <sub>rw</sub>										
Exposure Pathway		Residential		Occupational		Residential		Occupational		Residential		Occupational		Construction & Excavation Worker		Residential					
Receptor Scenario		Residential		Occupational		Residential		Occupational		Residential		Occupational		Construction & Excavation Worker		Residential					
Direct or Indirect Pathway (see notes)		DS		DS		IVW		IVW		IVW		IVW		DS		DS					
Contaminant of Concern		Note		Note		Note		Note		Note		Note		Note		Note					
Units																	µg/L (ppb)	µg/L (ppb)	Y/N		
<b>Semivolatile Organic Constituents</b>																					
2,3,7,8-TCDD (dioxin) equivalents		c, v	9.12E-08		4.21E-07		0.022		0.11		0.0083		0.11		0.00045		9.9E-06		6.15E-06	9.9E-06	N
<b>Total Petroleum Hydrocarbons</b>																					
Generic Diesel / Heating Oil (DRO)		nc, v	100		430		-	>S	-	>S	-	>S	-	>S	-	>S	450		320	>S	N

Notes:  
 — = not analyzed or not applicable,  
 ug/L = micrograms per Liter or parts per billion (ppb),  
 c = carcinogenic  
 nc = noncarcinogenic  
 v = volatile  
 DRO = diesel-range organics.

Orange shaded cells indicate this exposure pathway was used as a surrogate for potential direct exposure to a future resident and/or occupational worker as a future drinking water source, which it is not. Further evaluation assuming recreational exposure is considered a more applicable exposure pathway.

<sup>1</sup> Lowest Risk-Based Concentration for groundwater (screening)  
 >S = This groundwater RBC exceeds the solubility limit.

Table 8. Further Evaluation of COPCs, Wetland Surface Water

Contaminated Medium		WETLANDS SURFACE WATER µg/L (ppb)												Maximum Detected Concentration	Lowest Applicable RBC (Wetland Surface Water) <sup>1</sup>	Constituent of Concern (COC)?		
		Ingestion & Inhalation from Tapwater, Direct Contact RBC <sub>tw</sub>				Volatilization to Outdoor Air RBC <sub>wo</sub>		Vapor Intrusion into Buildings RBC <sub>wi</sub>		Surface Water in Excavation RBC <sub>we</sub>		Ingestion & Inhalation from Recreational Use / Direct Contact RBC <sub>rw</sub>						
Exposure Pathway		Residential		Occupational		Residential		Occupational		Residential		Occupational		Construction & Excavation Worker		Residential		
Receptor Scenario		Residential		Occupational		Residential		Occupational		Residential		Occupational		Construction & Excavation Worker		Residential		
Direct or Indirect Pathway (see notes)		DS		DS		IVW		IVW		IVW		IVW		DS		DS		
Contaminant of Concern		Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	µg/L (ppb)	µg/L (ppb)	Y/N
<b>Semivolatile Organic Constituents</b>																		
2,3,7,8-TCDD (dioxin) equivalents		c, v	9.12E-08	4.21E-07	0.022	0.11	0.0083	0.11	0.00045	9.9E-06	2.21E-06	9.9E-06	N					

Notes:

— = not analyzed or not applicable.  
 µg/L = micrograms per Liter or parts per billion (ppb).  
 c = carcinogenic  
 v = volatile

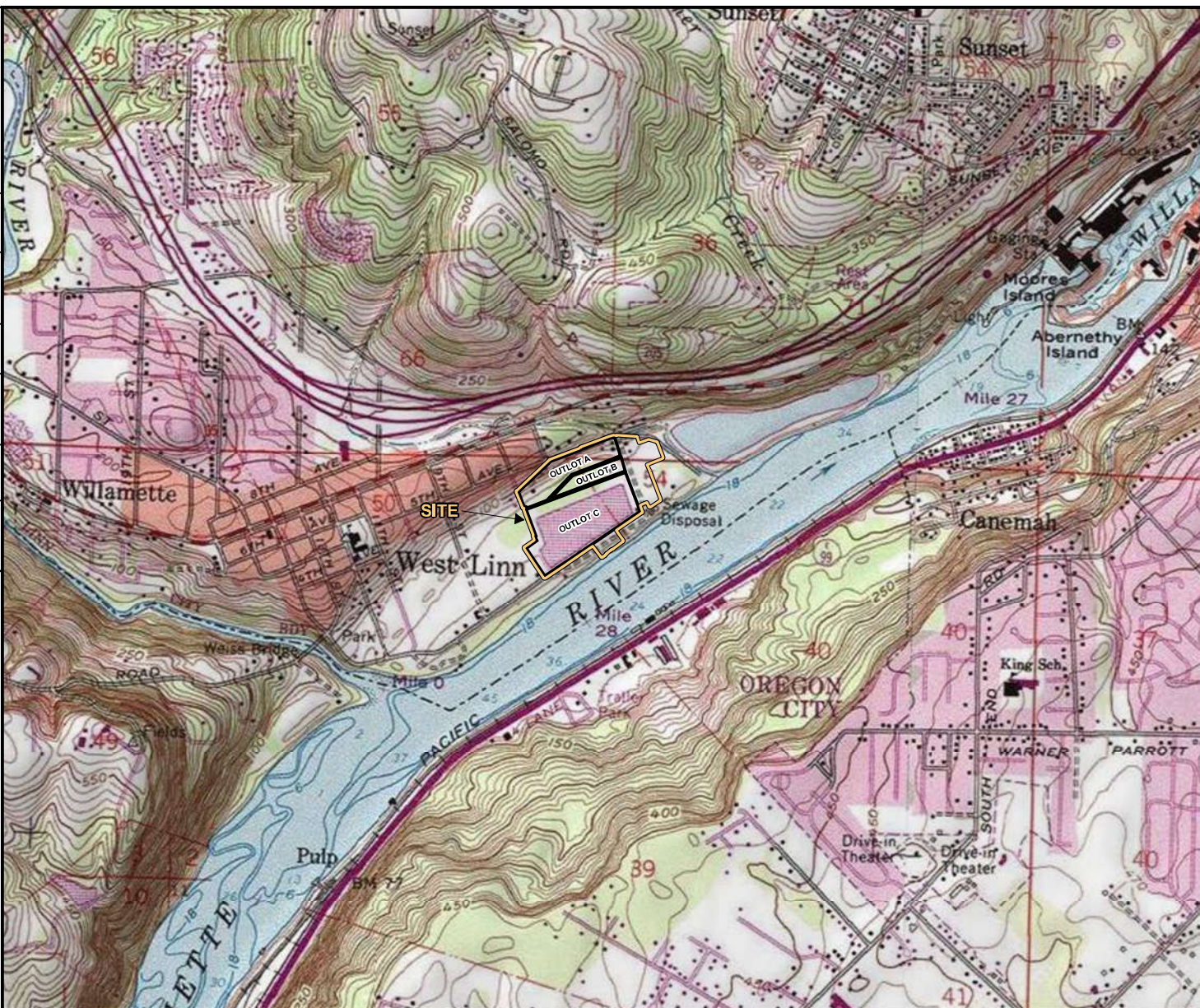
Orange shaded cells indicate this exposure pathway was used as a surrogate for potential direct exposure to a future resident and/or occupational worker as a future drinking water source, which it is not. Further evaluation assuming recreational exposure is considered a more applicable exposure pathway.

<sup>1</sup> Lowest Risk-Based Concentration for groundwater (screening)  
 >S = This groundwater RBC exceeds the solubility limit.

## Figures

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DRAWN BY: H. ROMER 2/22/2024  
 CHECKED BY: T. BENNETT 2/22/2024  
 APPROVED BY: L. GREEN 2/22/2024  
 DRAWING NUMBER: 927-2005(V01)

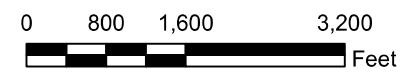



**LEGEND:**

-  SUBJECT PROPERTY BOUNDARY
-  OUTLOT

**NOTES:**

1. BASE MAP DEVELOPED BY USGS, 1:24000, 2013

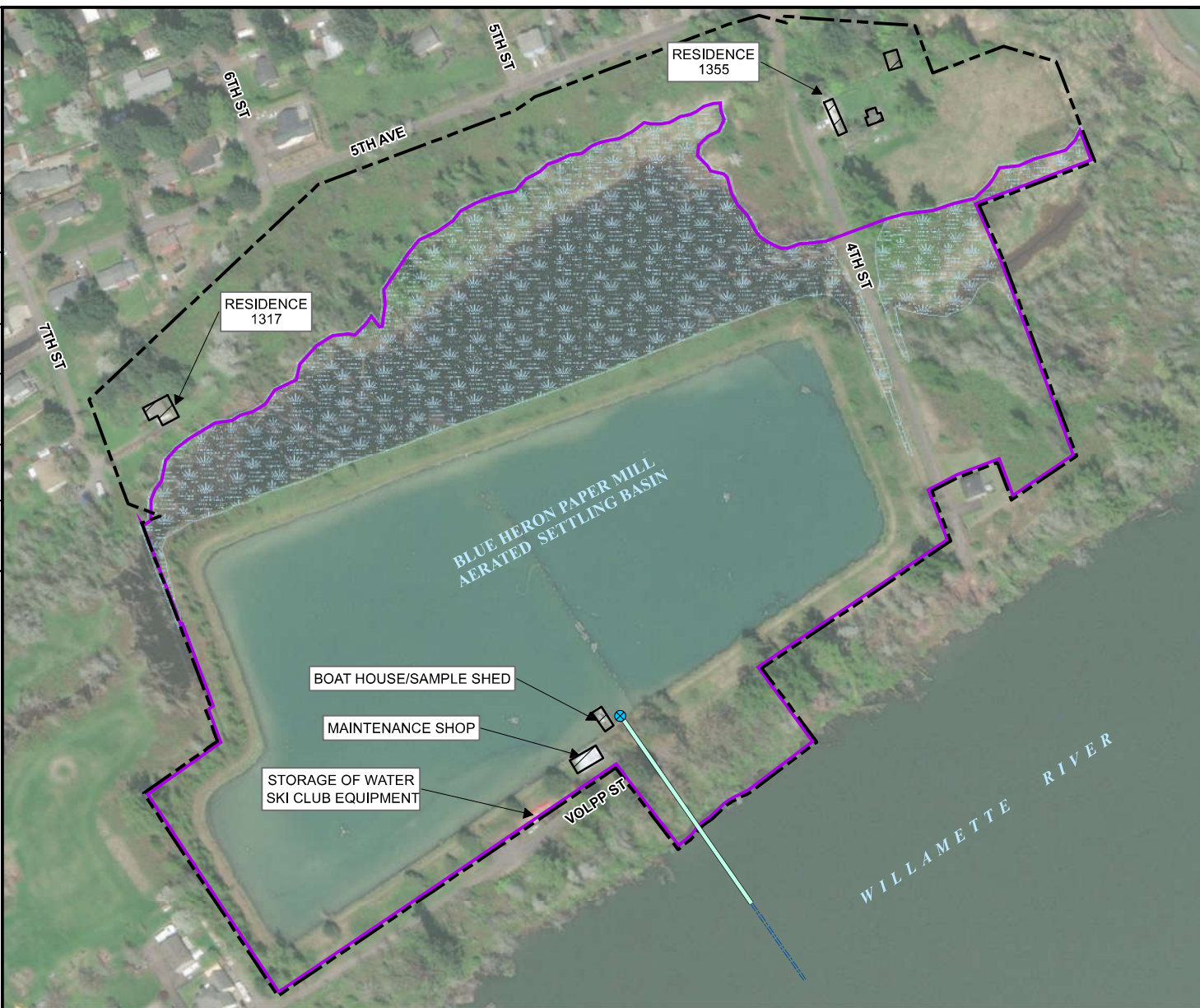



**FIGURE 1**

**SITE VICINITY MAP**

**FORMER BLUE HERON PAPER MILL**  
 1317 WILLAMETTE FALLS DRIVE  
 WEST LINN, OREGON

DRAWN BY: H. ROMER 2/5/2024  
 CHECKED BY: T. BENNETT 2/5/2024  
 APPROVED BY: L. GREEN 2/5/2024  
 DRAWING NUMBER: 927-20005(V01)



**LEGEND:**

- SUBJECT PROPERTY BOUNDARY
- LOCALITY OF FACILITY
- DELINEATED WETLAND (TURNSTONE, 2021)
- SUBJECT BUILDING
- DIFFUSER
- EFFLUENT PIPE
- OUTFALL

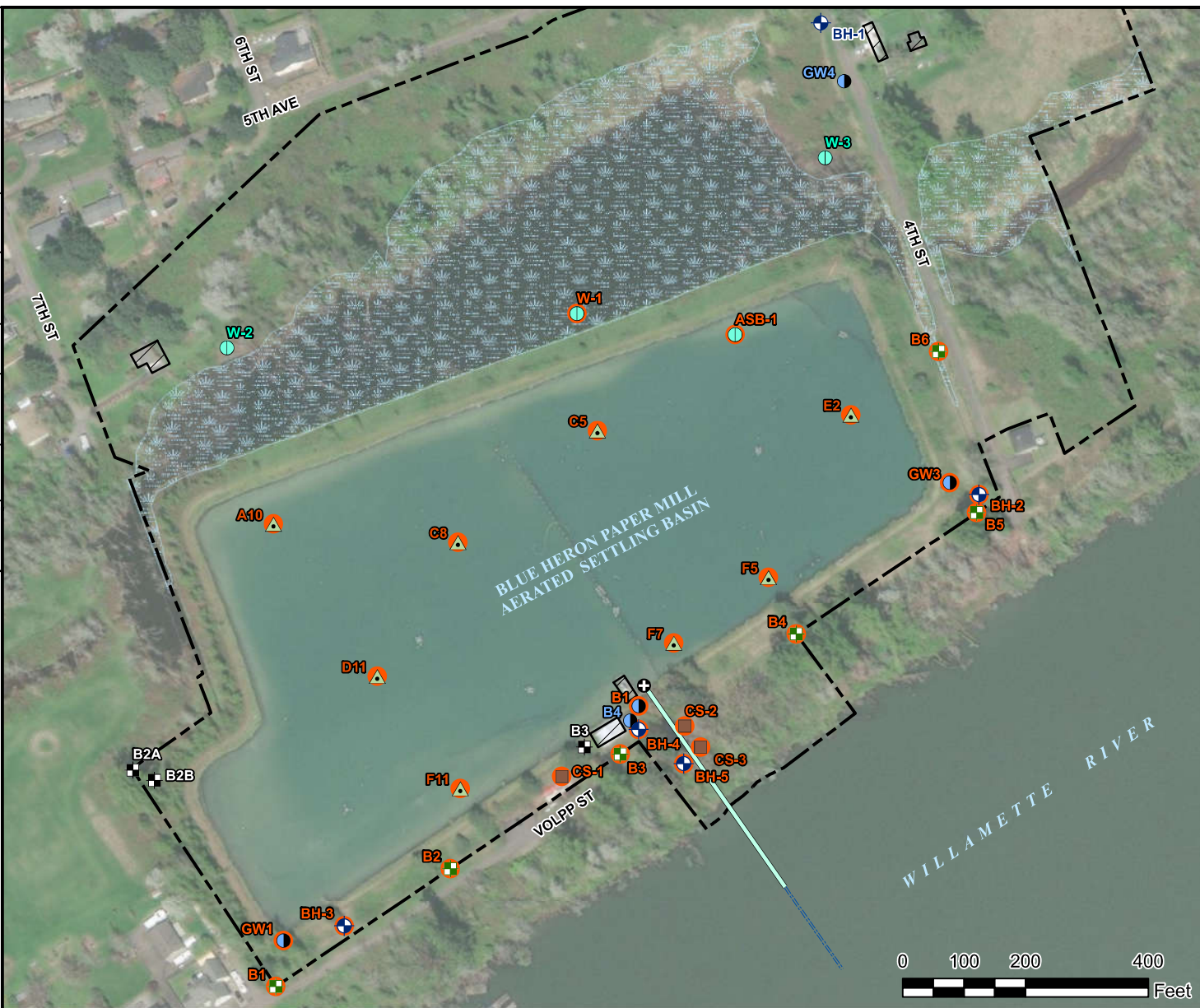
**NOTES:**

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2023 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION

0 120 240 480 Feet

**FIGURE 2**  
**SITE PLAN**  
 FORMER BLUE HERON PAPER MILL  
 1317 WILLAMETTE FALLS DRIVE  
 WEST LINN, OREGON

DRAWN BY: H. ROMER 2/5/2024  
 CHECKED BY: T. BENNETT 2/5/2024  
 APPROVED BY: L. GREEN 2/5/2024  
 DRAWING NUMBER: 927-20005(V01)





**LEGEND:**


- SUBJECT PROPERTY BOUNDARY
- DELINEATED WETLAND (TURNSTONE, 2021)
- SUBJECT BUILDING
- DIFFUSER
- EFFLUENT PIPE
- OUTFALL
- SOIL BORING LOCATION, 2013 <sup>4</sup>
- SLUDGE SAMPLING LOCATION <sup>4</sup>
- GROUNDWATER SAMPLE LOCATION <sup>4</sup>
- MONITORING WELL LOCATION <sup>5</sup>
- SURFACE WATER SAMPLE LOCATION <sup>5</sup>
- COMPOSITE SURFACE SOIL SAMPLE COCATION <sup>5</sup>
- SOIL BORING/GROUND WATER LOCATION, 2008 <sup>6</sup>
- DETECTED CONCENTRATION EXCEEDS APPLICABLE ODEQ SLRBCS BACKGROUND CONCENTRATIONS, AND/OR CLEAN FILL SCREENING LEVELS

**NOTES:**

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2023 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION.
4. PER CDM SMITH, PHASE II ESA SAMPLE LOCATIONS (2012).
5. PER CDM SMITH, MONITORING WELL AND SAMPLE LOCATIONS (2013).
6. PER MAUL FOSTER ALONGI INC. (2008).







**FIGURE 3**

**SAMPLE LOCATION DIAGRAM AND EXTENT OF IMPACTS**

**FORMER BLUE HERON PAPER MILL**  
**1317 WILLAMETTE FALLS DRIVE**  
**WEST LINN, OREGON**

## *Attachment A*

### Acknowledgement Signature Form

Copy and use the following form to document review and understanding of the Contaminated Media Management Plan. Any person responsible for or conducting subsurface work at the site must sign this form.

Contaminated Media  
Management Plan

**Acknowledgement Signature Form**

**To be signed by all personnel responsible for, or involved in subsurface work:**

I have read this Contaminated Media Management Plan, and I agree to abide by these measures and safety rules and all applicable safety regulations while working at this site. I understand that any violation of these rules will result in my removal from the work area.

Brief Description of Scope of Work

Signature / Title - Project Role	Date



## *Attachment B*

### Site Contacts

Site contacts should be reviewed and updated prior to each scope of work at the site.

# Contaminated Media Management Plan

## Site Contacts

Client	Environmental Consultant*
<p><b>SDG-2, LLC</b>                      Bob Schultz                      Email: <a href="mailto:duke.pdx@gmail.com">duke.pdx@gmail.com</a>                      Phone: (971) 732-0347</p>	<p><b>EVREN Northwest, Inc.</b>                      Evan Bruggeman, RG                      Email: <a href="mailto:evanb@evren-nw.com">evanb@evren-nw.com</a>                      Phone: (503) 452-5561</p>

Site Project Manager*	Geotechnical Engineer*
<p>Name:                      Company:                      Email:                      Office:</p>	<p>Name:                      Company:                      Email:                      Cell:</p>
Architect	Civil Engineer
<p>Name:                      Company:                      Email:                      Cell:</p>	<p>Name:                      Company:                      Email:                      Cell:</p>

Contractor Office / Field Contacts
<p>Name:                      Company:                      Email:                      Cell:</p> <p>Name:                      Company:                      Email:                      Cell:</p>

*Add additional contacts as appropriate for the scope of work. This may include subcontractors, the Oregon Department of Environmental Quality and/or the City of West Linn/Clackamas County.*