



April 24, 2018
Project No. 8014.01.69

Madi Novak
Oregon Department of Environmental Quality
700 NE Multnomah Street, No. 600
Portland, Oregon 97232

Re: Environmental Management Documents
Zidell Waterfront Property (ECSI No. 689)

Dear Ms. Novak:

On behalf of ZRZ Realty Company, Zidell Marine Corporation, and Tube Forgings of America, Inc. (collectively referred to in this document as Zidell), Maul Foster & Alongi, Inc. (MFA) has summarized the legal obligations and documents guiding environmental management of the Zidell Waterfront Property (site) located at 3121 Southwest Moody Avenue in Portland, Oregon (ECSI No. 689). The containment-based site remedy manages non-hot-spot levels of contamination in soil and sediment beneath engineered caps, preventing human and ecological receptors' exposure to these impacts.¹ Because contamination remains in place, Zidell has the ongoing responsibility of satisfying the legal obligations and ensuring that the constructed remedy remains an effective barrier against exposure.

On April 14, 1995, Zidell entered into a voluntary agreement with the Oregon Department of Environmental Quality (DEQ) to conduct a remedial investigation (RI) and feasibility study (FS) at the site (DEQ No. WMCVC-NWR-94-23; ECSI No. 689). The RI was completed in 2003 (MFA, 2003), and the FS was completed in 2004 (MFA, 2004). The remedial action, documented in the record of decision (ROD) (DEQ, 2005), was selected by the DEQ in accordance with Oregon Revised Statutes 465.200 through 465.380 and Oregon Administrative Rules 340-122-0090. The remedy was performed by Zidell in accordance with the General Judgment on Stipulation and Consent, Case No. 0609-09344 (Consent Judgment) between the State of Oregon and Zidell entered into on September 12, 2006, and as amended in January 2011. A Certificate of Completion and No Further Action has been recommended for the site by the DEQ (DEQ, 2018) and is expected to be issued in 2018.

BACKGROUND

The site encompasses 29.67 acres on the west side of the Willamette River in Portland's South Waterfront District. In 2017, Zidell ceased their industrial operations (i.e., the construction of steel barges) at the site. Historically, the entire site was used for industrial activities related to

¹ Soil and sediment concentrations below site-specific cleanup levels do not require capping.

ships (building, dismantling, converting, repairing, salvaging), as well as scrap metal operations, wire burning, aluminum smelting, and modular housing construction. The historical industrial activities resulted in chemical and asbestos impacts to soil and Willamette River sediment at the site. The following contaminants of concern were identified at the site:

- Polychlorinated biphenyls (Aroclors 1242, 1254, and 1260)
- Polycyclic aromatic hydrocarbons (benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene)
- Metals (antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, nickel, silver, zinc)
- Asbestos (in soil and in bulk)
- Tributyltin (in sediment)

COMPLETED REMEDIAL ACTION

Remedial action was performed in multiple stages on the site and applicable areas in the right-of-way beneath the Ross Island Bridge between 2007 and 2016. The following work was completed:

- Areas of human health hot-spot soil identified in the uplands, the greenway, and the riverbank were excavated, treated (if necessary), and disposed of off site at a Subtitle D landfill.
- Remaining soils in the greenway and riverbank with contaminant concentrations exceeding ecological hot-spot levels were excavated and placed in non-greenway areas or disposed of off site.
- Asbestos-containing material in soil was segregated and disposed of off site.
- Demarcation fabric was placed over impacted soil remaining on site as a delineation boundary in areas where clean, imported fill had been placed as part of an engineered cap.
- Engineered caps were placed over existing infrastructure (cement, asphalt, steel plates) was determined to be an acceptable cap over contaminated soil (non-hot-spot) in all upland areas. Upland caps consist of vegetated soil (2 feet deep), gravel, asphalt, and concrete.
- The riverbank was stabilized through excavation of over-steepened, contaminated soils or placement of clean, imported fill at a stable slope.

- Riverbank soils were capped below the top of bank line with clean soil and, in some areas, rock armoring. All soil cap areas were planted with native vegetation to complete the vegetated soil cap.
- Hot-spot sediments were selectively dredged in the slipway to accommodate the low-profile cap (reactive core mat).
- In-water sediments were capped with an armored, clean sand cap or armored, low-profile cap.
- Upland sources associated with industrial operations were controlled through implementation of best management practices, cleaning and upgrades to existing infrastructure, construction of infiltration facilities, stabilization of riverbank slopes, and compliance with the site's 1200-Z stormwater permit.²

ONGOING SITE REQUIREMENTS

As described in the DEQ's staff memorandum supporting a certificate of completion and No Further Action determination (DEQ, 2018), the ROD requires ongoing inspections, monitoring, maintenance, reporting, controls, and reviews to ensure that the remedy remains effective. Obligations and documents are described as they apply to the entirety of the site, to the upland area only, and to the riverbank and sediment area only. The relationship between these guiding documents is depicted in the attached figure.

Periodic Review. Once every five years, DEQ will review the remedy to ensure that it remains protective of public health, safety, and welfare and the environment. Periodic reviews will include evaluation of monitoring data, progress reports, inspection and maintenance reports, land and water uses, compliance with institutional controls, and other relevant information. As part of the five-year review, DEQ will coordinate with the Oregon Department of Human Services on the continued use of institutional controls in the form of fish advisories for the lower Willamette River. The baseline year for DEQ's periodic review will be the issuance of the Certificate of Completion, 2018.

Upland Site Restrictions. An Easement and Equitable Servitude (EES) is filed with the Multnomah County Clerk (recorded on October 24, 2006, as Document No. 2006-197624) in compliance with the Consent Judgment. The EES was amended on January 31, 2011, as Document No. 2011-014620, to update the description of the site, reflecting property transactions. The EES requires the following site restrictions:

- Groundwater may not be used for consumption.

² The industrial stormwater permit (NPDES 1200-Z) was terminated in August 2017 after it was demonstrated that the industrial operations had been closed and that remnants had been removed.

- The soil cap must be maintained consistent with the DEQ-approved Upland Cap Inspection and Maintenance Plan (IMP) and Upland Site Management Plan (SMP) (MFA, 2018a,b).
- Food crops may not be grown on site.
- The site may not be occupied unless the above controls are maintained and continue to protect public health and the environment.
- Reports on the maintenance and efficacy of the controls listed above are required annually for the first ten years after remediation completion, and every five years thereafter.
- DEQ must be notified, in advance, of any transfer of interest in or occupancy of the site.
- DEQ must be notified 30 days in advance of filing any document initiating a rezone of the site that would change the base zone of the site.

Upland Engineering and Institutional Controls Maintenance and Monitoring. Specific requirements are provided in the following two plans:

- The IMP (MFA, 2018a) specifies the long-term inspection and maintenance requirements for the cap and other engineering controls.
- The SMP (MFA, 2018b) documents contaminant distribution and guides future excavation activities that could potentially encounter impacted soil and groundwater; the SMP outlines specific requirements for managing soil and groundwater as part of future redevelopment.

Bank and Sediment Restrictions and Requirements. By terms of the Submerged and Submersible Land Lease, 45591-ML, Zidell leases the state-owned submerged lands in the Willamette River (adjacent to the property Zidell owns) on which the bank and sediment cap was constructed. The land lease identifies Division of State Lands-approved uses and restrictions:

- Following completion of sediment cap construction, the area was returned to public entry for recreational and other transient uses, except where the cap had been constructed, which remains closed to anchoring, grounding, and vessels equipped with a propeller or motor of any kind.
- Maintain the cap in good repair through compliance with the ROD.
- Respond immediately to the release of hazardous substances attributable to failure of the sediment cap function as designed or from damage, regardless of cause.

The perimeter of the cap has been established as a Regulated Navigation Area (RNA) in order to prohibit commercial activities that may damage the cap, including restrictions on anchoring, dredging, and dragging. Zidell placed three buoys flanking the cap RNA after receiving permission from the U.S. Coast Guard and the Oregon Marine Board to place Private Aids to Navigation.

Bank and Sediment Engineering and Institutional Controls Maintenance and Monitoring. An operations, maintenance, and monitoring plan (OMMP) (MFA, 2013) was developed to address elements required in the ROD. The OMMP describes required routine cap performance monitoring, an emergency response plan to be implemented should an environmental release occur, and a contingency plan that will identify actions to be taken if the cap fails to meet performance criteria. The OMMP requires visual inspections and bathymetric surveys of the cap and monitoring of the natural recovery of low-level sediment contamination outside the cap boundary.

Future Development Activities. Future development activities for the site must be protective of human health and the environment in a manner that is consistent with the ROD and the SMP. Zidell's Programmatic Environmental Work Plan (programmatic plan) (MFA, 2018c [forthcoming]) documents the company's standard environmental strategies relating to upland construction site management, waste characterization and treatment, construction and oversight protocols, and responsibilities for addressing health and safety when managing site soils. DEQ's approval of the standard structure of future project-specific environmental work plans and environmental strategies that will be implemented allows for a streamlined process of generating project-specific plans and reduced effort for DEQ's review and approval of those future projects. Conformance with the programmatic plan is not a ROD requirement.

The OMMP does not address requirements for future development over the riverbank and sediment cap. Environmental work plans will be required for proposed development activities over these caps. The development of these work plans is expected to be based, in part, on the bank and sediment design report (MFA, 2012a), the construction completion report (MFA, 2012b), the SMP, and the programmatic plan. Zidell will work with DEQ to prepare studies that may be necessary to ensure that the remedy remains protective during and after construction.

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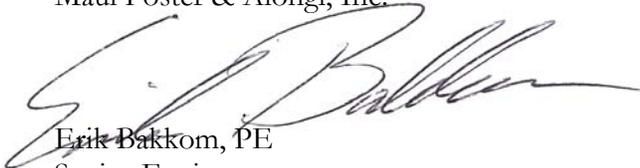
Project No. 8014.01.69

SCHEDULE

A 20-year schedule of inspection and monitoring events is attached. The schedule identifies a baseline year of 2011 and extends through 2031. The monitoring schedule will be updated as necessary or at least every ten years.

Sincerely,

Maul Foster & Alongi, Inc.



Erik Bakkom, PE
Senior Engineer

Attachments: Limitations
References
Figure—Environmental Management
Schedule of Environmental Inspection and Monitoring

cc: Jay Zidell, ZRZ Realty
Kathryn Silva, ZRZ Realty
Alan Park, ZRZ Realty

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

REFERENCES

DEQ. 2005. Remedial action record of decision, Zidell waterfront property, ECSI No. 689. Oregon Department of Environmental Quality, Northwest Region—Voluntary Cleanup Program. June.

DEQ. 2018. Memorandum (re: Zidell waterfront property ECSI # 689; staff memorandum in support of a certificate of completion and no further action determination) to file, from M. Novak, Oregon Department of Environmental Quality, Northwest Region—Voluntary Cleanup Program. February 1.

MFA. 2003. Remedial investigation and risk assessment, Zidell waterfront property, 3121 SW Moody Avenue, Portland, Oregon. Maul Foster & Alongi, Inc., Portland, Oregon. July 11.

MFA. 2004. Feasibility study report. Zidell waterfront property, 3121 SW Moody Avenue, Portland, Oregon. ECSI #689. Prepared for ZRZ Realty Company, Portland, Oregon. Maul Foster & Alongi, Inc., Portland, Oregon. December 2.

MFA. 2012a. Final bank and sediment remedial design report, Zidell waterfront property, 3121 SW Moody Avenue, Portland, Oregon, ECSI No. 689. Prepared for ZRZ Realty Company. Maul Foster & Alongi, Inc., Portland, Oregon. February 21.

MFA. 2012b. Construction completion report, Zidell bank and sediment remediation project, Zidell waterfront property, 3121 SW Moody Avenue, Portland, Oregon, ECSI No. 689. Prepared for ZRZ Realty Company. Maul Foster & Alongi, Inc., Portland, Oregon. April 26.

MFA. 2013. Bank and sediment remedy operations, maintenance, and monitoring plan, Zidell waterfront property, Portland, Oregon. Maul Foster & Alongi, Inc., Portland, Oregon. June 12.

MFA. 2018a. Upland cap inspection & maintenance plan, Zidell waterfront property, 3121 SW Moody Avenue, Portland, Oregon, ECSI No. 689. Maul Foster & Alongi, Inc., Portland, Oregon. February 27.

MFA. 2018b. Upland site management plan, Zidell waterfront property, 3121 SW Moody Avenue, Portland, Oregon, ECSI No. 689. Maul Foster & Alongi, Inc., Portland, Oregon. February 27.

MFA. 2018c. Programmatic environmental work plan, Zidell waterfront property, 3121 SW Moody Avenue, Portland, Oregon, ECSI No. 689. Maul Foster & Alongi, Inc., Portland, Oregon. Forthcoming.

FIGURE



ZIDELL WATERFRONT PROPERTY

ENVIRONMENTAL MANAGEMENT

SITE REMEDY
 Record of Decision 2005
 Consent Judgment 2006
 Certificate of Completion 2018*
 *pending

UPLAND

SEDIMENT & RIVERBANK

LEGAL DOCUMENTS

Easement & Equitable Servitudes
 [Multnomah County
 Doc. Nos., 2006-197624
 & 2011-014620]

Submerged and Submersible Lands Lease
 [DSL No. ML-45591]

MONITORING & INSPECTION

Upland Inspection & Monitoring Plan
 [IMP]

Operations, Maintenance, & Monitoring Plan [OMMP]

Section 2 - Physical
 Section 3 - Chemical

Section 4

Section 6

REPORTING

Upland Site Management Plan [SMP]

Section 6

Section 5

Section 3 - Soil
 Section 4 - Groundwater/
 Stormwater

Section 6

SITE CONTROLS

MEDIA MANAGEMENT

REPAIRS, MODS, & FUTURE DEVELOPMENT

Programmatic & Future Project-Specific Environmental Work Plans

Future Project-Specific Environmental Work Plans

SCHEDULE OF ENVIRONMENTAL INSPECTION AND MONITORING



**Environmental Inspection and Monitoring Schedule
Zidell Waterfront Property**

Event Type	Source Document	Baseline Year	2012 Year 1	2013 Year 2	2014 Year 3	2015 Year 4	2016 Year 5	2017 Year 6	2018 Year 7	2019 Year 8	2020 Year 9	2021 Year 10	Report Due Date	Insp. After Design Event ¹	Submit Report To ²
Upland Cap Visual Inspection	IMP	2012	Sept	Sept	Sept	Sept	Sept	Sept	Sept	Sept	Sept	Sept	With Annual Report	NS	Zidell/DEQ
Visual Inspection of Bank and Shore	OMMP	2011	Monthly	Quarterly	Quarterly	Quarterly	Quarterly	Sept	Sept	Sept	Sept	Sept	With Annual Report	Immed. Following	Zidell/DEQ
In-water Multibeam Bathymetric Survey	OMMP	2012	Feb ³		Oct		Oct					Oct	45 Days After	Immed. Following	DEQ
Natural Recovery Monitoring	OMMP	2012	May				May					May	45 Days After	October Following	DEQ
Habitat Monitoring for BiOp	404 Permit	2011	Oct	Oct	Oct		Oct					Oct	90 Days After	October Following	COE/NOAA
Quantitative Vegetative Coverage	404 Permit	2012	Sept	Sept	Sept	Sept	Sept						NS	NA	COE/City
Annual Report	EES	2012	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Feb 28	NA	DEQ
Five-Year DEQ Remedy Review	EES	2018											NS	NA	NA
Event Type	Source Document	2022 Year 11	2023 Year 12	2024 Year 13	2025 Year 14	2026 Year 15	2027 Year 16	2028 Year 17	2029 Year 18	2030 Year 19	2031 Year 20	Interval Beyond 2031	Report Due Date	Insp. After Design Event ²	Submit Report To ³
Upland Cap Visual Inspection	IMP	Sept	Sept	Sept	Sept	Sept	Sept	Sept	Sept	Sept	Sept	Annual	With Annual Report	NS	Zidell/DEQ
Visual Inspection of Bank and Shore	OMMP	Sept	Sept	Sept	Sept	Sept	Sept	Sept	Sept	Sept	Sept	Annual	With Annual Report	Immed. Following	Zidell/DEQ
In-water Multibeam Bathymetric Survey	OMMP										Oct	10 Year	45 Days After	Immed. Following	DEQ
Natural Recovery Monitoring	OMMP					?					?	TBD	45 Days After	October Following	DEQ
Habitat Monitoring for BiOp	404 Permit											NA	90 Days After	October Following	COE/NOAA
Quantitative Vegetative Coverage	404 Permit											NA	NS	NA	COE/City
Annual Report	EES	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Annual	Feb 28	NA	DEQ
Five-Year DEQ Remedy Review	EES		Review					Review				5-Year	NS	NA	NA

NOTES:
 ? = event may be required by agency.
 COE = U.S. Army Corps of Engineers.
 DEQ = Oregon Department of Environmental Quality.
 EES = Easement & Equitable Servitudes (2006, 2011).
 IMP = Upland Cap Inspection and Maintenance Plan (MFA, 2018).
 NA = not applicable.
 NOAA = National Oceanic and Atmospheric Administration.
 NS = not specified.
 OMMP = Operation Monitoring and Maintenance Plan (MFA, 2013).
 TBD = requirement to be determined by agency.

¹A design event is an event that the cap was not designed to accommodate (e.g., a greater than 100-year flood, local seismic event in excess of magnitude 6, or grounding of vessels more than 30 feet in length). The design event for habitat gravel surfacing is a 20-year (or larger) flood event that occurs within ten years of cap construction.

²Copies of all reports are submitted to DEQ.

³Initial hydrographic survey was completed in February 2012 (four months following construction completion) and represents baseline conditions.