

Ecological PRG Table 5a
Gasco OU Riverbank Seep COCs and PRGs – Source Control
Upland to Willamette Riverbank Pathway

Gasco OU Ecological Fill WBZ Wildlife Groundwater Contaminants of Concern¹	Analyte Group	Ecological Fill WBZ Groundwater COCs (Wildlife)¹	Portland Harbor ROD Table 17 Surface Water CUL/PRGs^{2,3} in µg/L
Cyanide, available	CONV	X	--
Cyanide, free	CONV	X	--
Total Dioxin/Furan TEQ	DIOXFUR	X	5.10E-10
Aluminum	Metals	X	--
Vanadium	Metals	X	--
Benzo(a)pyrene	PAH	X	0.00012
Naphthalene	PAH	X	12
4,4'-DDD (p,p'-DDD)	PEST	X	--
Total DDx	PEST	X	0.01

Notes:

1. COCs listed have at least one exceedance ratio greater than 1 in Fill WBZ groundwater at the Gasco OU.
2. Per Portland Harbor ROD Table 17, January 2020 Errata #2 (EPA 2020).
3. Source control PRGs per Wyatt 2023.

--: not applicable

µg/L: microgram per liter

COC: contaminant of concern

CONV: conventional

CUL: cleanup level

DDD: dichlorodiphenyldichloroethane

DDE: dichlorodiphenyldichloroethylene

DDT: dichlorodiphenyltrichloroethane

DDx: sum of DDT, DDD, and DDE

DIOXFUR: dioxin/furan

OU: operable unit

PAH: polycyclic aromatic hydrocarbon

PEST: pesticide

PRG: preliminary remediation goal

ROD: Record of Decision

TEQ: toxic equivalents quotient

WBZ: water-bearing zone

References:

EPA (U.S. Environmental Protection Agency), 2020. Errata #2 for Portland Harbor Superfund Site Record of Decision ROD Table 17. January 14, 2020.

Wyatt, Robert, 2023. Regarding: NWN Gasco. Email to: Hunter Young, Elizabeth McKenna, and Stephanie Ebright (U.S. Environmental Protection Agency); Wesley Thomas, Kevin Parrett, and Paul Seidel (Oregon Department of Environmental Quality); Patty Dost (Pearl Legal Group); Michael Zevenbergen (U.S. Department of Justice); and Gary Vrooman (Oregon Department of Justice). Attachment to email: "NW Natural's Framework for EPA Sediment Design and DEQ Source Control Measure FFS and IRAM Design." July 21, 2023

Ecological PRG Table 5b
Gasco OU Ecological Riverbank Seep COCs and PRGs – Hot Spot Evaluations
Upland to Willamette Riverbank Pathway

Gasco OU Ecological Fill WBZ Wildlife Groundwater Contaminants of Concern ¹	Analyte Group	Ecological Fill WBZ Groundwater COCs (Wildlife) ¹	DEQ Proposed Wildlife Water Ingestion PRGs for Riverbank Seeps (DEQ 2020, ² 2021 ³) in µg/L ⁴	Notes
Cyanide, available	CONV	X	22	2
Cyanide, free	CONV	X	22	2
Total Dioxin/Furan/PCB TEQ	DIOXFUR	X	0.044	3
Aluminum	Metals	X	86,000	2
Vanadium	Metals	X	45,000	2
Benzo(a)pyrene	PAH	X	44,000	2
Naphthalene	PAH	X	570	2
4,4'-DDD (p,p'-DDD)	PEST	X	--	--
Total DDx	PEST	X	5,300	3

Notes:

1. COCs listed have at least one exceedance ratio greater than 1 in Fill WBZ groundwater at the Gasco OU.
2. Per *Conducting Ecological Risk Assessments* (DEQ 2020); Table 1b.
3. Per *Contaminants of Concern, Risk-Based Criteria, and Preliminary Remediation Goals*, Former Gasco Manufactured Gas Plant Operable Unit (DEQ 2021); Table B.
4. Source control PRGs per Wyatt 2023.

--: not applicable

µg/L: microgram per liter

COC: contaminant of concern

CONV: conventional

DDD: dichlorodiphenyldichloroethane

DDE: dichlorodiphenyldichloroethylene

DDT: dichlorodiphenyltrichloroethane

DDx: sum of DDT, DDD, and DDE

DEQ: Oregon Department of Environmental Quality

DIOXFUR: dioxin/furan

OU: operable unit

PAH: polycyclic aromatic hydrocarbon

PCB: polychlorinated biphenyl

PEST: pesticide

PRG: preliminary remediation goal

TEQ: toxic equivalents quotient

WBZ: water-bearing zone

References:

DEQ (Oregon Department of Environmental Quality), 2020. Appendices for: *Conducting Ecological Risk Assessments*. September 14, 2020.

DEQ, 2021. *Contaminants of Concern, Risk-Based Criteria, and Preliminary Remediation Goals*. Former Gasco Manufactured Gas Plant Operable Unit. December 16, 2021.

Wyatt, Robert, 2023. Regarding: NWN Gasco. Email to: Hunter Young, Elizabeth McKenna, and Stephanie Ebright (U.S. Environmental Protection Agency); Wesley Thomas, Kevin Parrett, and Paul Seidel (Oregon Department of Environmental Quality); Patty Dost (Pearl Legal Group); Michael Zevenbergen (U.S. Department of Justice); and Gary Vrooman (Oregon Department of Justice). Attachment to email: "NW Natural's Framework for EPA Sediment Design and DEQ Source Control Measure FFS and IRAM Design." July 21, 2023