Reference Text	Reference ID
“Memorandum of Understanding on Copper Mitigation in Watersheds and Waterways between U.S. Environmental Protection Agency and Motor & Equipment Manufacturers Association, Automotive Aftermarket Suppliers Association, Brake Manufacturers Council and Heavy Duty Manufacturers Association and Auto Care Association and Alliance of Automobile Manufacturers and Association of Global Automakers, Inc. and Truck and Engine Manufacturers Association and Environmental Council of the States.” 2015. Preprint. https://www.epa.gov/npdes/memorandum-understanding-copper-mitigation-watershed-and-waterways.	27XI297B
ASTM International. 2023. *ASTM-D5666	Standard Test Method for Rubber Chemical Antidegradants; Purity of p-Phenylenediamine (PPD) Antidegradants by High Performance Liquid Chromatography* . ASTM-D5666-95R23. https://www.document-center.com/standards/show/ASTM-D5666.	JGR7UE66
AcuTread. 2017. “Tire Wear	AcuTread Tire Service	Retreading Manufacturers.” *AcuTread* , February 28. https://acutread.com/resources/post/factors-influence-tire-wear/.	TTV33B74
Al Shoyaib, Abdullah, Sabrina Rahman Archie, and Vardan T. Karamyan. 2019. “Intraperitoneal Route of Drug Administration: Should It Be Used in Experimental Animal Studies?” *Pharmaceutical Research* 37 (1): 12. https://doi.org/10.1007/s11095-019-2745-x.	E4MBH586
Allen, Jonathan O., Olga Alexandrova, and Kamil E. Kaloush. 2006. *Tire Wear Emissions for Asphalt Rubber and Portland Cement Concrete Pavement Surfaces* . Arizona State University. https://azdot.gov/sites/default/files/2019/05/tire-wear-emissions-for-asphalt-rubber-portland-cement-concrete-April2006.pdf.	P4VNFFZD
Antonczak, Brittany, Tammy M. Thompson, Mindi W. DePaola, and Gregory Rowangould. 2023. “2020 Near-Roadway Population Census, Traffic Exposure and Equity in the United States.” *Transportation Research Part D: Transport and Environment* 125 (December): 103965. https://doi.org/10.1016/j.trd.2023.103965.	IETZJYHC
Armada, Daniel, Antia Martinez-Fernandez, Maria Celeiro, Thierry Dagnac, and Maria Llompart. 2023. “Assessment of the Bioaccessibility of PAHs and Other Hazardous Compounds Present in Recycled Tire Rubber Employed in Synthetic Football Fields.” *Science of the Total Environment* 857: 159485. https://doi.org/10.1016/j.scitotenv.2022.159485.	AHX5WWPV
Armada, Daniel, Maria Celeiro, Thierry Dagnac, and Maria Llompart. 2022. “Green Methodology Based on Active Air Sampling Followed by Solid Phase Microextraction and Gas Chromatography-Tandem Mass Spectrometry Analysis to Determine Hazardous Substances in Different Environments Related to Tire Rubber.” *Journal of Chromatography A* 1668: 462911. https://doi.org/10.1016/j.chroma.2022.462911.	XZYEATEB
Arnold, J. G., R. Srinivasan, R. S. Muttiah, and J. R. Williams. 1998. “Large Area Hydrologic Modeling and Assessment Part I: Model Development1.” *JAWRA Journal of the American Water Resources Association* 34 (1): 73–89. https://doi.org/10.1111/j.1752-1688.1998.tb05961.x.	2WHDKL8S
Baensch-Baltruschat, Beate, Birgit Kocher, Friederike Stock, and Georg Reifferscheid. 2020. “Tyre and Road Wear Particles (TRWP)—A Review of Generation, Properties, Emissions, Human Health Risk, Ecotoxicity, and Fate in the Environment.” *Science of the Total Environment* 733 (September): 137823. https://doi.org/10.1016/j.scitotenv.2020.137823.	SG7DEPVC
Baldauf, R., E. Thoma, A. Khlystov, et al. 2008. “Impacts of Noise Barriers on Near-Road Air Quality.” *Atmospheric Environment* 42 (32): 7502–7. https://doi.org/10.1016/j.atmosenv.2008.05.051.	5F9IGYHU
Baldauf, Richard W. 2016. *Recommendations for Constructing Roadside Vegetation Barriers to Improve Near-Road Air Quality* . No. 321772. https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=NRMRL&dirEntryId=321772&simpleSearch=1&searchAll=Recommendations+for+constructing+roadside+vegetation+barriers+to+improve+near+road+air+quality.	I5U5RA8E
Baldauf, Richard W. 2017. “Roadside Vegetation Design Characteristics That Can Improve Local, near-Road Air Quality.” *Transportation Research Part D: Transport and Environment* 52: 354–61. https://doi.org/10.1016/j.trd.2017.03.013.	JR7YD4FW
Baldauf, Richard W., Vlad Isakov, Parikshit Deshmukh, Akula Venkatram, Bo Yang, and K. Max Zhang. 2016. “Influence of Solid Noise Barriers on Near-Road and on-Road Air Quality.” *Atmospheric Environment* 129: 265–76. https://doi.org/10.1016/j.atmosenv.2016.01.025.	JF4ZB7DP
Benis, Khaled Zoroufchi, Ali Behnami, Shahab Minaei, Markus Brinkmann, Kerry N. McPhedran, and Jafar Soltan. 2023. “Environmental Occurrence and Toxicity of 6PPD Quinone, an Emerging Tire Rubber–Derived Chemical: A Review.” *Environmental Science & Technology Letters* , ahead of print, September 1. World. https://doi.org/10.1021/acs.estlett.3c00521.	XXB6GPKJ
Blair, Stephanie I., Clyde H. Barlow, and Jenifer K. McIntyre. 2021. “Acute Cerebrovascular Effects in Juvenile Coho Salmon Exposed to Roadway Runoff.” *Canadian Journal of Fisheries and Aquatic Sciences* , ahead of print, February. 1840 Woodward Drive, Suite 1, Ottawa, ON K2C 0P7. https://doi.org/10.1139/cjfas-2020-0240.	B647MUXL
Botelho, Marina Tenório, Gabriely Groto Militão, Markus Brinkmann, and Gisela de Aragão Umbuzeiro. 2023. “Toxicity and Mutagenicity Studies of 6PPD-Quinone in a Marine Invertebrate Species and Bacteria.” *Environmental and Molecular Mutagenesis* 64 (6): 335–41. https://doi.org/10.1002/em.22560.	WZC7F928
Boucher, Julien, and Damien Friot. 2017. *Primary Microplastics in the Oceans: A Global Evaluation of Sources* . IUCN.	KK2RJVQ6
Brinkmann, Markus, David Montgomery, Summer Selinger, et al. 2022. “Acute Toxicity of the Tire Rubber–Derived Chemical 6PPD-Quinone to Four Fishes of Commercial, Cultural, and Ecological Importance.” *Environmental Science & Technology Letters* , March 2, acs.estlett.2c00050. https://doi.org/10.1021/acs.estlett.2c00050.	QN6HYEV7
CalRecycle. 2023. “California Tire Derived Products Catalog.” https://www.e-productcatalog.com/TDPCatalog/.	9MZ55M8A
Calarnou, Laurie, Mounir Traïkia, Martin Leremboure, et al. 2023. “Assessing Biodegradation of Roadway Particles via Complementary Mass Spectrometry and NMR Analyses.” *Science of the Total Environment* 900 (November): 165698. https://doi.org/10.1016/j.scitotenv.2023.165698.	2RFJ5BLH
California Department of Fish and Wildlife. n.d. *Biogeographic Information and Observation System (BIOS)* . V. v5.99.22. Accessed April 9, 2019. https://apps.wildlife.ca.gov/bios/.	UQBR2QNX
Cao, Guodong, Jing Zhang, Wei Wang, Pengfei Wu, Yi Ru, and Zongwei Cai. 2022. “Mass Spectrometry Analysis of a Ubiquitous Tire Rubber–Derived Quinone in the Environment.” *TrAC Trends in Analytical Chemistry* , 116756. https://doi.org/10.1016/j.trac.2022.116756.	LT2AYSFX
Cao, Guodong, Wei Wang, Jing Zhang, et al. 2022. “New Evidence of Rubber-Derived Quinones in Water, Air, and Soil.” *Environmental Science & Technology* 56 (7): 4142–50. https://doi.org/10.1021/acs.est.1c07376.	VBAMJHA7
Cao, Guodong, Wei Wang, Jing Zhang, et al. 2023. “Occurrence and Fate of Substituted P-Phenylenediamine-Derived Quinones in Hong Kong Wastewater Treatment Plants.” *Environmental Science & Technology* , ahead of print, October 5. https://doi.org/10.1021/acs.est.3c03758.	D5FPK9YB
Carey, Andrea, Alex Gipe, William Hobbs, and Sandra O’Neill. 2023. *Investigating the Source of PBDE Contaminant Exposure in Steelhead Trout within the Major Tributaries of the Nisqually River Basin* . Final Contract Report Submitted to the Nisqually Indian Tribe WDFW Report Number FPT 23-02. Washington Department of Fish and Wildlife — Toxics Biological Observation System (TBiOS) and Washington Department of Ecology — Environmental Assessment Program. https://wdfw.wa.gov/sites/default/files/publications/02440/wdfw02440.pdf.	TADJGUPJ
Carlucci, Giovanni, Luisa Airoldi, Roberto Fanelli, and Biagio Laguzzi. 1984. “Quantitative Analysis of Aromatic Amines in Human Urine by Gas Chromatography—Mass Spectrometry—Selected-Ion Monitoring.” *Journal of Chromatography B: Biomedical Sciences and Applications* 311: 141–47. https://www.sciencedirect.com/science/article/abs/pii/S0378434700847003.	4TK2MX2U
Castan, Stephanie, Anya Sherman, Ruoting Peng, et al. 2023. “Uptake, Metabolism, and Accumulation of Tire Wear Particle–Derived Compounds in Lettuce.” *Environmental Science & Technology* 57 (1): 168–78. https://doi.org/10.1021/acs.est.2c05660.	3RBDETGD
Cataldo, Franco, Brad Faucette, Semone Huang, and Warren Ebenezer. 2015. “On the Early Reaction Stages of Ozone with N,N′-Substituted p-Phenylenediamines (6PPD, 77PD) and N,N′,N″-Substituted-1,3,5-Triazine ‘Durazone®’: An Electron Spin Resonance (ESR) and Electronic Absorption Spectroscopy Study.” *Polymer Degradation and Stability* 111 (January): 223–31. https://doi.org/10.1016/j.polymdegradstab.2014.11.011.	JFXS3CPR
Center for Sustainable Systems, University of Michigan. 2023. “Personal Transportation Factsheet.” Center for Sustainable Systems, July. https://css.umich.edu/publications/factsheets/mobility/personal-transportation-factsheet.	ZD76DM9U
Challis, J. K., H. Popick, S. Prajapati, et al. 2021. “Occurrences of Tire Rubber–Derived Contaminants in Cold-Climate Urban Runoff.” *Environmental Science & Technology Letters* 8 (11): 961–67. https://doi.org/10.1021/acs.estlett.1c00682.	T8TEWPCL
Chasar, DW, and R. W. Layer. 2010. “Basic Rubber Compounding.” In *The Vanderbilt Rubber Handbook* , 14th ed. M.F. Sheridan (Ed.). R.T. Vanderbilt Company.	HM7KYWSL
Chen, Xiaoli, Tao He, Xinlu Yang, et al. 2023. “Analysis, Environmental Occurrence, Fate and Potential Toxicity of Tire Wear Compounds 6PPD and 6PPD-Quinone.” *Journal of Hazardous Materials* 452 (June): 131245. https://doi.org/10.1016/j.jhazmat.2023.131245.	39YBXWMI
Chow, Michelle I., Jessica I. Lundin, Chelsea J. Mitchell, et al. 2019. “An Urban Stormwater Runoff Mortality Syndrome in Juvenile Coho Salmon.” *Aquatic Toxicology* 214 (September): 105231. https://doi.org/10.1016/j.aquatox.2019.105231.	7RMZ3UNQ
Cormier, Susan M., and Glenn W. Suter. 2008. “A Framework for Fully Integrating Environmental Assessment.” *Environmental Management* 42 (4): 543–56. https://doi.org/10.1007/s00267-008-9138-y.	J4YBWALW
Cunningham, W. L., and C. W. Schalk. 2011. *Groundwater Technical Procedures of the U.S. Geological Survey: U.S. Geological Survey Techniques and Methods 1–A1* . https://pubs.usgs.gov/tm/1a1/.	N2W34PYI
DTSC. 2021. *DTSC Tribal Consultations and Meetings: Summary of Input on Motor Vehicle Tires Containing 6PPD* . https://dtsc.ca.gov/wp-content/uploads/sites/31/2021/12/Summary-of-Tribal-Input-SCP-6PPD.pdf.	TIUY9CXL
DTSC. 2022. *Product-Chemical Profile for Motor Vehicle Tires Containing N-(1,3-Dimethylbutyl)-N′-Phenyl-p-Phenylenediamine (6PPD) from the California Department of Toxic Substances Control (DTSC)* . https://dtsc.ca.gov/wp-content/uploads/sites/31/2022/05/6PPD-in-Tires-Priority-Product-Profile_FINAL-VERSION_accessible.pdf.	2M3Z8Z4F
DTSC. 2022. *The Impact of California’s Brake Pad Law: Report to the Legislature. Department of Toxic Substances Control and State Water Resources Control Board* . https://dtsc.ca.gov/wp-content/uploads/sites/31/2023/08/Brake-Pad-Legislative-Report-Accessible.pdf.	MK5W6W3J
Dahl, Andreas, Arash Gharibi, Erik Swietlicki, et al. 2006. “Traffic-Generated Emissions of Ultrafine Particles from Pavement–Tire Interface.” *Atmospheric Environment* 40 (7): 1314–23. https://doi.org/10.1016/j.atmosenv.2005.10.029.	PTHCYGGU
Deng, Chengliang, Jialing Huang, Yunqing Qi, Da Chen, and Wei Huang. 2022. “Distribution Patterns of Rubber Tire–Related Chemicals with Particle Size in Road and Indoor Parking Lot Dust.” *Science of the Total Environment* 844: 157144. https://doi.org/10.1016/j.scitotenv.2022.157144.	Y9G3IQTU
Dennis, Nicole M., Audrey J. Braun, and Jay Gan. 2024. “A High-Throughput Analytical Method for Complex Contaminant Mixtures in Biosolids.” *Environmental Pollution* 345: 123517. https://doi.org/10.1016/j.envpol.2024.123517.	RNAS6357
Deshmukh, Parikshit, Vlad Isakov, Akula Venkatram, et al. 2019. “The Effects of Roadside Vegetation Characteristics on Local, near-Road Air Quality.” *Air Quality, Atmosphere, & Health* 12 (March): 259–70. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7339705/.	AZD7J8VP
Di, Shanshan, Zhenzhen Liu, Huiyu Zhao, et al. 2022. “Chiral Perspective Evaluations: Enantioselective Hydrolysis of 6PPD and 6PPD-Quinone in Water and Enantioselective Toxicity to *Gobiocypris Rarus* and *Oncorhynchus Mykiss* .” *Environment International* 166 (August): 107374. https://doi.org/10.1016/j.envint.2022.107374.	BLEFEP7S
Du, Bibai, Bowen Liang, Yi Li, Mingjie Shen, Liang-Ying Liu, and Lixi Zeng. 2022. “First Report on the Occurrence of *N* -(1,3-Dimethylbutyl)- *N′* -Phenyl- *p* -Phenylenediamine (6PPD) and 6PPD-Quinone as Pervasive Pollutants in Human Urine from South China.” *Environmental Science & Technology Letters* , ahead of print, November 21. World. https://doi.org/10.1021/acs.estlett.2c00821.	DWFYR89F
Du, Bowen, Jonathan M. Lofton, Katherine T. Peter, et al. 2017. “Development of Suspect and Non-Target Screening Methods for Detection of Organic Contaminants in Highway Runoff and Fish Tissue with High-Resolution Time-of-Flight Mass Spectrometry.” *Environmental Science: Processes & Impacts* 19 (9): 1185–96. https://doi.org/10.1039/C7EM00243B.	56E8Y27X
ECHA. 2021. “Substance Infocard: N-1,3-Dimethylbutyl-N′-Phenyl-p-Phenylenediamine. European Chemicals Agency (ECHA).” April 7. https://echa.europa.eu/substance-information/-/substanceinfo/100.011.222.	Y79Z3ZWV

Reference Text	Reference ID
ECHA. 2022. “6PPD: 1,4-Benzenediamine, N1-(1,3-Dimethylbutyl)-N4-Phenyl- Registration Dossier - European Chemicals Agency (ECHA).” Preprint, December 2. https://echa.europa.eu/registration-dossier/-/registered-dossier/15367/1/2.	Z9UAAF4F
Earthjustice. 2023. “U.S. Fishing Groups Sue Tire Manufacturers Over 6PPD Impacts on Salmon, Steelhead.” Earthjustice. https://earthjustice.org/press/2023/u-s-fishing-groups-sue-tire-manufacturers-over-6ppd-impacts-on-salmon-steelhead.	PB6HUXGY
Eastern Brook Trout Venture. 2024. “Eastern Brook Trout Health Map (Trout Unlimited).” https://easternbrooktrout.org/science-data/ebtjv-maps/copy_of_EBTJV%20Map%206_09_11.jpg/image_view_fullscreen.	6I74E3G5
Ettinger, A. K., E. R. Buhle, B. E. Feist, et al. 2021. “Prioritizing Conservation Actions in Urbanizing Landscapes.” *Scientific Reports* 11 (1): 818. https://doi.org/10.1038/s41598-020-79258-2.	HA49KGTT
Eurofins. 2023. *Research Summary for the Single-Laboratory Validation Study of a Draft EPA LC-MS-MS Isotope Dilution Method for 6PPD-Quinone* . https://www.epa.gov/system/files/documents/2024-01/final-research-summary-6ppd-q-11-30-23.pdf.	GZHAA9N4
Fang, Chanlin, Liya Fang, Shanshan Di, et al. 2022. “Not yet Peer Reviewed: Bioaccumulation of N-(1,3-Dimethylbutyl)-N′-Phenyl-p-Phenylenediamine (6PPD) and Its Potential Cardiotoxicity in Larval Zebrafish (Danio Rerio).” SSRN Scholarly Paper No. 4166691. Rochester, NY, July 19. https://papers.ssrn.com/abstract=4166691.	69WA3QCX
Fang, Chanlin, Liya Fang, Shanshan Di, et al. 2023. “Characterization of N-(1,3-Dimethylbutyl)- *N*′ -Phenyl- *p* -Phenylenediamine (6PPD)-Induced Cardiotoxicity in Larval Zebrafish (*Danio Rerio*).” *Science of the Total Environment* 882 (July): 163595. https://doi.org/10.1016/j.scitotenv.2023.163595.	FFFKR3MY
Fang, Jiacheng, Xiaoxiao Wang, Guodong Cao, et al. 2024. “6PPD-Quinone Exposure Induces Neuronal Mitochondrial Dysfunction to Exacerbate Lewy Neurites Formation Induced by α-Synuclein Preformed Fibrils Seeding.” *Journal of Hazardous Materials* 465 (March): 133312. https://doi.org/10.1016/j.jhazmat.2023.133312.	2L4QI2CG
Fang, Liya, Chanlin Fang, Shanshan Di, et al. 2023. “Oral Exposure to Tire Rubber–Derived Contaminant 6PPD and 6PPD-Quinone Induce Hepatotoxicity in Mice.” *Science of the Total Environment* 869 (April): 161836. https://doi.org/10.1016/j.scitotenv.2023.161836.	B66X64SI
Feißel, Toni, Miles Kunze, David Hesse, Valentin Ivanov, Klaus Augsburg, and Sebastian Gramstat. 2024. “On-Road Vehicle Measurement of Tire Wear Particle Emissions and Approach for Emission Prediction.” *Tire Science and Technology* 52 (1): 2–14. https://doi.org/10.2346/tire.22.21024.	L8SQWPUC
Feist, Blake E., Eric R. Buhle, David H. Baldwin, et al. 2017. “Roads to Ruin: Conservation Threats to a Sentinel Species across an Urban Gradient.” *Ecological Applications* 27 (8): 2382–96. https://doi.org/https://doi.org/10.1002/eap.1615.	4PSDP2BG
Field, R. D., and J. D. Reynolds. 2012. “Ecological Links between Salmon, Large Carnivore Predation, and Scavenging Birds.” *Journal of Avian Biology* 44: 9–16.	MSBZH2UY
Flores, Mugdha. 2023. “Saving Washington’s Salmon from Toxic Tire Dust.” January. https://ecology.wa.gov/blog/january-2023/saving-washington-s-salmon-from-toxic-tire-dust.	KYFH4S96
Foldvik, Anders, Fedor Kryuchkov, Eva Ulvan, Roar Sandodden, and Elii Kvingedal. 2024. “Acute Toxicity Testing of Pink Salmon (*Oncorhynchus gorbuscha*) with the Tire Rubber–Derived Chemical 6PPD-Quinone.” *Environmental Toxicology and Chemistry* , ahead of print. https://doi.org/https://doi.org/10.1002/etc.5875.	NFMULGUG
Foldvik, Anders, Fedor Kryuchkov, Roar Sandodden, and Silvio Uhlig. 2022. “Acute Toxicity Testing of the Tire Rubber–Derived Chemical 6PPD-Quinone on Atlantic Salmon (*Salmo Salar*) and Brown Trout (*Salmo Trutta*).” *Environmental Toxicology and Chemistry* 41 (12): 3041–45. https://doi.org/10.1002/etc.5487.	LQWXZHJA
Foscari, Aurelio, Bettina Seiwert, Daniel Zahn, Matthias Schmidt, and Thorsten Reemtsma. 2024. “Leaching of Tire Particles and Simultaneous Biodegradation of Leachables.” *Water Research* 253 (April): 121322. https://doi.org/10.1016/j.watres.2024.121322.	JBUK7E3P
Foscari, Aurelio, Natascha Schmidt, Bettina Seiwert, Dorte Herzke, Richard Sempéré, and Thorsten Reemtsma. 2023. “Leaching of Chemicals and DOC from Tire Particles under Simulated Marine Conditions.” *Frontiers in Environmental Science* 11 (June). https://doi.org/10.3389/fenvs.2023.1206449.	EHDIWG3V
French, B. F., D. H. Baldwin, J. Cameron, et al. 2022. “Urban Roadway Runoff Is Lethal to Juvenile Coho, Steelhead, and Chinook Salmonids, But Not Congeneric Sockeye.” *Environmental Science & Technology Letters* 9 (9): 733–38. https://doi.org/10.1021/acs.estlett.2c00467.	3GCU2L57
Gaga, Eftade O., Tom Harner, Ewa Dabek-Zlotorzynska, et al. 2019. “Polyurethane Foam (PUF) Disk Samplers for Measuring Trace Metals in Ambient Air.” *Environmental Science & Technology Letters* 6 (9): 545–50. https://doi.org/10.1021/acs.estlett.9b00420.	5HHJMIKX
Geosyntec Consultants, and Wright Water Engineers, Inc. 2009. *Urban Stormwater BMP Performance Monitoring* . https://static1.squarespace.com/static/5f8dbde10268ab224c895ad7/t/604926dae8a36b0ee128f8ac/1615406817379/2009MonitoringManualSingleFile.pdf.	BZIBLH7F
Gilbert, C.E., B.D. Beck, and E.J. Calabrese. 1990. *Ozone Risk Communication and Management* . Taylor & Francis.	DL5MC2ZL
Gradient. 2024. *Preliminary (Stage 1) Alternatives Analysis Report: Motor Vehicle Tires Containing N-(1,3-Dimethylbutyl)-N′-Phenyl-p-Phenylenediamine (6PPD)* . https://www.ustires.org/sites/default/files/2024-03/USTMA%20Consortium%206PPD%20AA%20Preliminary%20Report_3-25-24.pdf.	LHN7K744
Grasse, Nico, Bettina Seiwert, Riccardo Massei, Stefan Scholz, Qiuguo Fu, and Thorsten Reemtsma. 2023. “Uptake and Biotransformation of the Tire Rubber–Derived Contaminants 6-PPD and 6-PPD Quinone in the Zebrafish Embryo (*Danio rerio*).” *Environmental Science & Technology* 57 (41): 15598–607. https://doi.org/10.1021/acs.est.3c02819.	WJHX578U
Greenwald, Roby, Jeremy A. Sarnat, and Christina H. Fuller. 2024. “The Impact of Vegetative and Solid Roadway Barriers on Particulate Matter Concentration in Urban Settings.” *PLOS ONE* 19 (1): e0296885. https://doi.org/10.1371/journal.pone.0296885.	ECNMWXRZ
Greer, Justin B., Ellie M. Dalsky, Rachael F. Lane, and John D. Hansen. 2023. “Establishing an In Vitro Model to Assess the Toxicity of 6PPD-Quinone and Other Tire Wear Transformation Products.” *Environmental Science & Technology Letters* , ahead of print, May 2. https://doi.org/10.1021/acs.estlett.3c00196.	P6RF5UFR
Greer, Justin B., Ellie M. Dalsky, Rachael F. Lane, and John D. Hansen. 2023. “Tire-Derived Transformation Product 6PPD-Quinone Induces Mortality and Transcriptionally Disrupts Vascular Permeability Pathways in Developing Coho Salmon.” *Environmental Science & Technology* , ahead of print, July 19. https://doi.org/10.1021/acs.est.3c01040.	PSLHUQ22
Grigoratos, Theodoros, and Giorgio Martini. 2014. *Non-Exhaust Traffic Related Emissions. Brake and Tyre Wear PM* . EUR 26648 EN. European Commission Joint Research Centre Institute of Energy and Transport.	RA3SMLZL
Grigoratos, Theodoros, and Giorgio Martini. 2015. “Brake Wear Particle Emissions: A Review.” *Environmental Science and Pollution Research* 22 (4): 2491–504. https://doi.org/10.1007/s11356-014-3696-8.	M7P4CR2U
Gulliver, J. S., A. J. Erickson, and P. T. Weiss, eds. 2010. *Stormwater Treatment: Assessment and Maintenance* . University of Minnesota, St. Anthony Falls Laboratory. Minneapolis, MN. https://stormwaterbook.safl.umn.edu/.	7SGTZFB7
Hägg, Fanny, Dorte Herzke, Vladimir A. Nikiforov, et al. 2023. “Ingestion of Car Tire Crumb Rubber and Uptake of Associated Chemicals by Lumpfish (Cyclopterus Lumpus).” *Frontiers in Environmental Science* 11 (October): 1219248. https://doi.org/10.3389/fenvs.2023.1219248.	9C6TC8JJ
Ha, Jin U., Seok H. Bae, Yu J. Choi, et al. 2023. “Control of Tire Wear Particulate Matter through Tire Tread Prescription.” *Polymers* 15 (13): 2795. https://doi.org/10.3390/polym15132795.	PYHTRF8Y
Halama, Jonathan, Robert B. McKane, Bradley L. Barnhart, et al. 2024. “Watershed Analysis of Urban Stormwater Contaminant 6PPD-Quinone Hotspots and Stream Concentrations Using a Process-Based Ecohydrological Model.” *Frontiers in Environmental Science* 12 (March). https://doi.org/10.3389/fenvs.2024.1364673.	5UMEQW95
Halama, Jonathan, Robert McKane, Vivian Phan, et al. 2022. “VELMA Model Green Infrastructure Applications for Reducing 6PPD-Quinone Concentrations in Puget Sound Urban Stream.” EMCON 2021, March 25. https://www.ezview.wa.gov/Portals/_2001/Documents/Documents/HalamaMcKaneGISummitSalishSeaTalk25Mar2022_SWG30Mar2022_UpdateJJH.pdf.	6Z5EW4N9
Halle, Louise L., Annemette Palmqvist, Kristoffer Kampmann, and Farhan R. Khan. 2020. “Ecotoxicology of Micronized Tire Rubber: Past, Present and Future Considerations.” *Science of The Total Environment* 706 (March): 135694. https://doi.org/10.1016/j.scitotenv.2019.135694.	47UILE7G
Harris, Douglas C. 2008. “The Boldt Decision in Canada: Aboriginal Treaty Rights to Fish on the Pacific, in Alexandra Harmon, Ed.” In *The Power of Promises: Rethinking Indian Treaties In the Pacific Northwest* . University of Washington Press. https://commons.allard.ubc.ca/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1179&context=fac_pubs.	5X7TJCHU
He, Wenmiao, Aihua Gu, and Dayong Wang. 2023. “Four-Week Repeated Exposure to Tire-Derived 6-PPD Quinone Causes Multiple Organ Injury in Male BALB/c Mice.” *Science of the Total Environment* 894 (October): 164842. https://doi.org/10.1016/j.scitotenv.2023.164842.	6MPWVZGE
Hiki, Kyoshiro, Kenta Asahina, Kota Kato, et al. 2021. “Acute Toxicity of a Tire Rubber–Derived Chemical, 6PPD Quinone, to Freshwater Fish and Crustacean Species.” *Environmental Science & Technology Letters* 8 (9): 779–84. https://doi.org/10.1021/acs.estlett.1c00453.	WZF69GXC
Hiki, Kyoshiro, and Hiroshi Yamamoto. 2022. “Concentration and Leachability of N-(1,3-Dimethylbutyl)- *N*′ -Phenyl- *p*- Phenylenediamine (6PPD) and Its Quinone Transformation Product (6PPD-Q) in Road Dust Collected in Tokyo, Japan.” *Environmental Pollution* 302 (June): 119082. https://doi.org/10.1016/j.envpol.2022.119082.	VQ3M4AFW
Hiki, Kyoshiro, and Hiroshi Yamamoto. 2022. “The Tire-Derived Chemical 6PPD-Quinone Is Lethally Toxic to the White-Spotted Char *Salvelinus leucomaenis pluvius* but Not to Two Other Salmonid Species.” *Environmental Science & Technology Letters* 9 (12): 1050–55. https://doi.org/10.1021/acs.estlett.2c00683.	VQE4EZWI
Holtgrieve, G. W., and D. E. Schindler. 2011. “Marine-Derived Nutrients, Bioturbation, and Ecosystem Metabolism: Reconsidering the Role of Salmon in Streams.” *Ecological Society of America* 92: 375–85.	52CBYUQ3
Holzer, Katie, and Torrey Lindbo. 2018. “Pervious Pavement Pollutant Study.” Lower Willamette River Toxics Reduction Meeting, January 31. https://gaftp.epa.gov/region10/columbiariver/WWTRP/Meeting-2018-01-31/gresham-pervious-pavement-pollutant-study.pdf.	YE2TKX83
Howie, Douglas, and Brandi Lubliner. 2024. *Guidance on Using New High Performance Bioretention Soil Mixes* . Washington State Department of Ecology, Water Quality Program. https://apps.ecology.wa.gov/publications/documents/2110023.pdf.	ZMESPTJ8
Hu, Ximin, Haoqi (Nina) Zhao, Zhenyu Tian, Katherine T. Peter, Michael C. Dodd, and Edward P. Kolodziej. 2023. “Chemical Characteristics, Leaching, and Stability of the Ubiquitous Tire Rubber–Derived Toxicant 6PPD-Quinone.” *Environmental Science: Processes & Impacts* 25 (5): 901–11. https://doi.org/10.1039/D3EM00047H.	BFCN5BLS
Hu, Ximin, Haoqi Nina Zhao, Zhenyu Tian, Katherine T. Peter, Michael C. Dodd, and Edward P. Kolodziej. 2022. “Transformation Product Formation upon Heterogeneous Ozonation of the Tire Rubber Antioxidant 6PPD (*N* -(1,3-Dimethylbutyl)- *N*′ -Phenyl- *p*- Phenylenediamine).” *Environmental Science & Technology Letters* , ahead of print, April 12. https://doi.org/10.1021/acs.estlett.2c00187.	ZYXPMXFA
Hua, Xin, Xiao Feng, Geyu Liang, Jie Chao, and Dayong Wang. 2023. “Exposure to 6-PPD Quinone at Environmentally Relevant Concentrations Causes Abnormal Locomotion Behaviors and Neurodegeneration in *Caenorhabditis elegans* .” *Environmental Science & Technology* , ahead of print, March 13. https://doi.org/10.1021/acs.est.2c08644.	LJTX7EWE
Hua, Xin, Xiao Feng, Geyu Liang, Jie Chao, and Dayong Wang. 2023. “Long-Term Exposure to 6-PPD Quinone Reduces Reproductive Capacity by Enhancing Germline Apoptosis Associated with Activation of Both DNA Damage and Cell Corpse Engulfment in *Caenorhabditis elegans* .” *Journal of Hazardous Materials* 454 (July): 131495. https://doi.org/10.1016/j.jhazmat.2023.131495.	RJ86H9T3
Hua, Xin, and Dayong Wang. 2023. “Tire-Rubber Related Pollutant 6-PPD Quinone: A Review of Its Transformation, Environmental Distribution, Bioavailability, and Toxicity.” *Journal of Hazardous Materials* 459: 132265. https://doi.org/10.1016/j.jhazmat.2023.132265.	3FVXFWPE
Huang, Wei, Yumeng Shi, Jialing Huang, et al. 2021. “Occurrence of Substituted *p* -Phenylenediamine Antioxidants in Dusts.” *Environmental Science & Technology Letters* 8 (5): 381–85. https://doi.org/10.1021/acs.estlett.1c00148.	EZEWIV8E

Reference Text	Reference ID
Hunt, Kathy, Ralph Hindle, and Tarun Anumol. 2021. *Quantitation of Toxic Tire Degradant 6PPD-Quinone in Surface Water* . Application Note: Environmental. Agilent Technologies, Inc.	FI465BMH
Huntink, N.M., and Datta, R.N. 2003. “A Novel Slow Release Antidegradant for the Rubber Industry—Part 1: Migration Behavior of Newly Developed Anti-Ozonant Compared to Conventional Antidegradants.” *Kautschuk Gummi Kunststoffe* 56 (6): 310–15.	RTIIEIBC
Hur, Jin, Soobin Yim, and Mark A. Schlautman. 2003. “Copper Leaching from Brake Wear Debris in Standard Extraction Solutions. Electronic Supplementary Information (ESI) Available: Thermodynamic Equilibrium Speciation Results from the Geochemical Model MINTEQ. See Http://Www.Rsc.Org/Suppdata/Em/B3/B303820c/.” *Journal of Environmental Monitoring* 5 (5): 837. https://doi.org/10.1039/b303820c.	XN47T74F
Hyatt, K.D., and Godbout, L. 2000. “A Review of Salmon as Keystone Species and Their Utility as Critical Indicators of Regional Biodiversity and Ecosystem Integrity.” *L. M. Darling, Editor. Proceedings of a Conference on the Biology and Management of Species and Habitats at Risk, Kamloops, B.C., 15–19 Feb., 1999* (Victoria, B.C.) Two: 520. https://www.env.gov.bc.ca/wld/documents/fr02hyatt2.pdf.	5GZ6MNL3
ITRC. 2014. “Contaminated Sediments Remediation: Remedy Selection for Contaminated Sediments.” August. https://clu-in.org/download/contaminantfocus/sediments/Sediment-ITRC-CS-2.pdf.	YN4LSVHV
ITRC. 2018. “Stormwater Best Management Practices Performance Evaluation.” https://stormwater-1.itrcweb.org/.	MUH6ZPQV
ITRC. 2023. “Microplastics.” Preprint, Washington, D.C.: Interstate Technology & Regulatory Council, MP Team. https://mp-1.itrcweb.org.	LLWEHVCX
Ikarashi, Yoshiaki, and Masa-aki Kaniwa. 2000. “Determination of P-Phenylenediamine and Related Antioxidants in Rubber Boots by High Performance Liquid Chromatography. Development of an Analytical Method for N-(1-Methylheptyl)-N′-Phenyl-p-Phenylenediamine.” *Journal of Health Science* 46 (6): 467–73. https://doi.org/10.1248/jhs.46.467.	8KFPXSNG
Ji, Jiawen, Changsheng Li, Bingjie Zhang, et al. 2022. “Exploration of Emerging Environmental Pollutants 6PPD and 6PPDQ in Honey and Fish Samples.” *Food Chemistry* 396: 133640. https://doi.org/10.1016/j.foodchem.2022.133640.	LDBNLUJS
Ji, Jiawen, Jinze Huang, Niannian Cao, et al. 2022. “Multiview Behavior and Neurotransmitter Analysis of Zebrafish Dyskinesia Induced by 6PPD and Its Metabolites.” *Science of The Total Environment* 838: 156013. https://doi.org/10.1016/j.scitotenv.2022.156013.	QJ23CAKR
Jin, Ruihe, Yan Wu, Qun He, et al. 2023. “Ubiquity of Amino Accelerators and Antioxidants in Road Dust from Multiple Land Types: Targeted and Nontargeted Analysis.” *Environmental Science & Technology* 57 (28): 10361–72. https://doi.org/10.1021/acs.est.3c01448.	P9WXQJUR
Johannessen, Cassandra, Amandeep Saini, Xianming Zhang, and Tom Harner. 2022. “Air Monitoring of Tire-Derived Chemicals in Global Megacities Using Passive Samplers.” *Environmental Pollution* 314 (December): 120206. https://doi.org/10.1016/j.envpol.2022.120206.	RYBDCBV4
Johannessen, Cassandra, John Liggio, Xianming Zhang, Amandeep Saini, and Tom Harner. 2022. “Composition and Transformation Chemistry of Tire-Wear Derived Organic Chemicals and Implications for Air Pollution.” *Atmospheric Pollution Research* 13 (9): 101533. https://doi.org/10.1016/j.apr.2022.101533.	YXQSYBCM
Johannessen, Cassandra, Paul Helm, Brent Lashuk, Viviane Yargeau, and Chris D. Metcalfe. 2022. “The Tire Wear Compounds 6PPD-Quinone and 1,3-Diphenylguanidine in an Urban Watershed.” *Archives of Environmental Contamination and Toxicology* 82 (2): 171–79. https://doi.org/10.1007/s00244-021-00878-4.	E9K7U5U3
Johannessen, Cassandra, Paul Helm, and Chris D. Metcalfe. 2021. “Detection of Selected Tire Wear Compounds in Urban Receiving Waters.” *Environmental Pollution* 287 (October): 117659. https://doi.org/10.1016/j.envpol.2021.117659.	U9BWIDJ5
Johannessen, Cassandra, and Chris D. Metcalfe. 2022. “The Occurrence of Tire Wear Compounds and Their Transformation Products in Municipal Wastewater and Drinking Water Treatment Plants.” *Environmental Monitoring and Assessment* 194 (10): 731. https://doi.org/10.1007/s10661-022-10450-9.	6AEMVTD8
Kahl, Michael D., Daniel L. Villeneuve, Kyle Stevens, et al. 2014. “An Inexpensive, Temporally Integrated System for Monitoring Occurrence and Biological Effects of Aquatic Contaminants in the Field: Novel System for *in Situ* Testing.” *Environmental Toxicology and Chemistry* 33 (7): 1584–95. https://doi.org/10.1002/etc.2591.	X5ZATENS
Kendra, Will, and Roger Willms. 1990. *Recurrent Coho Salmon Mortality at Maritime Heritage Fish Hatchery, Bellingham: A Synthesis of Data Collected from 1987–1989*. Washington State Department of Ecology, Environmental Services Program, Surface Water Investigations Section. https://apps.ecology.wa.gov/publications/documents/90e54.pdf.	BQ4XP54V
Klöckner, Philipp, Bettina Seiwert, Paul Eisentraut, Ulrike Braun, Thorsten Reemtsma, and Stephan Wagner. 2020. “Characterization of Tire and Road Wear Particles from Road Runoff Indicates Highly Dynamic Particle Properties.” *Water Research* 185 (October): 116262. https://doi.org/10.1016/j.watres.2020.116262.	9B7NCVNZ
Klöckner, Philipp, Bettina Seiwert, Steffen Weyrauch, Beate I. Escher, Thorsten Reemtsma, and Stephan Wagner. 2021. “Comprehensive Characterization of Tire and Road Wear Particles in Highway Tunnel Road Dust by Use of Size and Density Fractionation.” *Chemosphere* , ahead of print. https://doi.org/https://doi.org/10.1016/j.chemosphere.2021.130530.	DDXBMPC5
Klöckner, Philipp, Bettina Seiwert, Stephan Wagner, and Thorsten Reemtsma. 2021. “Organic Markers of Tire and Road Wear Particles in Sediments and Soils: Transformation Products of Major Antiozonants as Promising Candidates.” *Environmental Science & Technology* 55 (17): 11723–32. https://doi.org/10.1021/acs.est.1c02723.	Y49MVKMM
Klauschies, Toni, and Jana Isanta-Navarro. 2022. “The Joint Effects of Salt and 6PPD Contamination on a Freshwater Herbivore.” *Science of the Total Environment* 829: 154675. https://doi.org/10.1016/j.scitotenv.2022.154675.	B9C96GRR
Klun, Barbara, Ula Rozman, and Gabriela Kalčíková. 2023. “Environmental Aging and Biodegradation of Tire Wear Microplastics in the Aquatic Environment.” *Journal of Environmental Chemical Engineering* 11 (5): 110604. https://doi.org/10.1016/j.jece.2023.110604.	VS4VQ4A6
Kole, Pieter Jan, Ansje J. Löhr, Frank G. A. J. Van Belleghem, and Ad M. J. Ragas. 2017. “Wear and Tear of Tyres: A Stealthy Source of Microplastics in the Environment.” *International Journal of Environmental Research and Public Health* 14 (10): 1265. https://doi.org/10.3390/ijerph14101265.	NZZMY6WC
Kreider, Marisa L., Julie M. Panko, Britt L. McAtee, Leonard I. Sweet, and Brent L. Finley. 2010. “Physical and Chemical Characterization of Tire-Related Particles: Comparison of Particles Generated Using Different Methodologies.” *Science of the Total Environment* 408 (3): 652–59. https://doi.org/10.1016/j.scitotenv.2009.10.016.	QCJY4JI9
Kuczkowski, J. A. 1990. “Effects of Ozone on Tires and the Control of These Effects.” In *Ozone Risk Communication and Management* , Gilbert, C. E., Beck, B. D., Calabrese, E. J. (eds.). Taylor & Francis.	GJD3TURD
Kuczkowski, J.A. 1989. “The Inhibition of Oxidative and Ozonic Processes in Elastomers.” In *Oxidation Inhibition in Organic Materials* , J. Pospisil and P.P Klemchuk (eds.). Taylor & Francis. https://books.google.com/books?id=HEOnh9bgu0IC.	IDS6JDJZ
Kuraishi, Takashi, Kenji Takizawa, and Tayfun E. Tezduyar. 2019. “Tire Aerodynamics with Actual Tire Geometry, Road Contact and Tire Deformation.” *Computational Mechanics* 63 (6): 1165–85. https://doi.org/10.1007/s00466-018-1642-1.	MJP3IDF9
Lane, Rachael F., Kelly L. Smalling, Paul M. Bradley, et al. 2024. “Tire-Derived Contaminants 6PPD and 6PPD-Q: Analysis, Sample Handling, and Reconnaissance of United States Stream Exposures.” *Chemosphere* , July 11, 142830. https://doi.org/10.1016/j.chemosphere.2024.142830.	Q3DSSIIU
Larson, Chad A., Glenn Merritt, Jack Janisch, et al. 2019. “The First Statewide Stream Macroinvertebrate Bioassessment in Washington State with a Relative Risk and Attributable Risk Analysis for Multiple Stressors.” *Ecological Indicators* 102 (July): 175–85. https://doi.org/10.1016/j.ecolind.2019.02.032.	UMIHZC75
Lattimer, R. P., E. R. Hooser, R. W. Layer, and C. K. Rhee. 1983. “Mechanisms of Ozonation of N-(1,3-Dimethylbutyl)-N′-Phenyl-p-Phenylenediamine.” *Rubber Chemistry and Technology* 56 (2): 431–39. https://doi.org/10.5254/1.3538136.	3WW4X5AB
Levin, Phillip S., Emily R. Howe, and James C. Robertson. 2020. “Impacts of Stormwater on Coastal Ecosystems: The Need to Match the Scales of Management Objectives and Solutions.” *Philosophical Transactions of the Royal Society B: Biological Sciences* 375 (1814): 20190460. https://doi.org/10.1098/rstb.2019.0460.	28SGXBLF
Li, Chenguang, Yanlei Zhang, Shiqi Yin, et al. 2023. “First Insights into 6PPD-Quinone Formation from 6PPD Photodegradation in Water Environment.” *Journal of Hazardous Materials* 459 (October): 132127. https://doi.org/10.1016/j.jhazmat.2023.132127.	3EFLHAGA
Liang, Bowen, Jiali Ge, Qing Deng, et al. 2024. “Occurrence of Multiple Classes of Emerging Synthetic Antioxidants, Including *p* -Phenylenediamines, Diphenylamines, Naphthylamines, Macromolecular Hindered Phenols, and Organophosphites, in Human Milk: Implications for Infant Exposure.” *Environmental Science & Technology Letters* 11 (3): 259–65. https://doi.org/10.1021/acs.estlett.4c00010.	BL32NURZ
Liang, Bowen, Jiehua Li, Bibai Du, Zibin Pan, Liang-Ying Liu, and Lixi Zeng. 2022. “E-Waste Recycling Emits Large Quantities of Emerging Aromatic Amines and Organophosphites: A Poorly Recognized Source for Another Two Classes of Synthetic Antioxidants.” *Environmental Science & Technology Letters* , June 30, acs.estlett.2c00366. https://doi.org/10.1021/acs.estlett.2c00366.	SZPLJY9T
Liu, Runzeng, Yiling Li, Yongfeng Lin, Ting Ruan, and Guibin Jiang. 2019. “Emerging Aromatic Secondary Amine Contaminants and Related Derivatives in Various Dust Matrices in China.” *Ecotoxicology and Environmental Safety* 170 (April): 657–63. https://doi.org/10.1016/j.ecoenv.2018.12.036.	TL9MEY5E
Lo, Bonnie P., Vicki L. Marlatt, Xiangjun Liao, et al. 2023. “Acute Toxicity of 6PPD-Quinone to Early Life Stage Juvenile Chinook (*Oncorhynchus tshawytscha*) and Coho (*Oncorhynchus kisutch*) Salmon.” *Environmental Toxicology and Chemistry* 42 (4): 815–22. https://doi.org/10.1002/etc.5568.	LA4CEWYX
Lokesh, Srinidhi, Siththarththan Arunthavabalan, Elie Hajj, Edgard Hitti, and Yu Yang. 2023. “Investigation of 6PPD-Quinone in Rubberized Asphalt Concrete Mixtures.” *ACS Environmental Au* , ahead of print, July 26. https://doi.org/10.1021/acsenvironau.3c00023.	LBXMIT5W
Müller, Kathrin, Daniel Hübner, Sven Huppertsberg, Thomas P. Knepper, and Daniel Zahn. 2022. “Probing the Chemical Complexity of Tires: Identification of Potential Tire-Borne Water Contaminants with High-Resolution Mass Spectrometry.” *Science of The Total Environment* 802: 149799. https://doi.org/10.1016/j.scitotenv.2021.149799.	QJXVBLCK
Mahoney, Hannah, Francisco C. da Silva Junior, Catherine Roberts, et al. 2022. “Exposure to the Tire Rubber-Derived Contaminant 6PPD-Quinone Causes Mitochondrial Dysfunction In Vitro.” *Environmental Science & Technology Letters* 9 (9): 765–71. https://doi.org/10.1021/acs.estlett.2c00431.	V5HSELRG
Maji, Usha Jyoti, Kyuhyeong Kim, In-Cheol Yeo, Kyu-Young Shim, and Chang-Bum Jeong. 2023. “Toxicological Effects of Tire Rubber–Derived 6PPD-Quinone, a Species-Specific Toxicant, and Dithiobisbenzanilide (DTBBA) in the Marine Rotifer *Brachionus koreanus* .” *Marine Pollution Bulletin* 192 (July): 115002. https://doi.org/10.1016/j.marpolbul.2023.115002.	D8QNSW4K
Mantua, Nathan, Ingrid Tohver, and Alan Hamlet. 2010. “Climate Change Impacts on Streamflow Extremes and Summertime Stream Temperature and Their Possible Consequences for Freshwater Salmon Habitat in Washington State.” *Climatic Change* 102 (1–2): 187–223. https://doi.org/10.1007/s10584-010-9845-2.	ZHLUKQ2D
Mao, Weili, Hangbiao Jin, Ruyue Guo, Ping Chen, Songyang Zhong, and Xilin Wu. 2024. “Occurrence of *p* -Phenylenediamine Antioxidants in Human Urine.” *Science of the Total Environment* 914 (March): 170045. https://doi.org/10.1016/j.scitotenv.2024.170045.	MJI3WKBH
Marques dos Santos, Mauricius, and Shane Allen Snyder. 2023. “Occurrence of Polymer Additives 1,3-Diphenylguanidine (DPG), *N* -(1,3-Dimethylbutyl)- *N′* -Phenyl-1,4-Benzenediamine (6PPD), and Chlorinated Byproducts in Drinking Water: Contribution from Plumbing Polymer Materials.” *Environmental Science & Technology Letters* , ahead of print, September 6. https://doi.org/10.1021/acs.estlett.3c00446.	GEI8HFLB
Masset, Thibault, Benoit J. D. Ferrari, William Dudefoi, et al. 2022. “Bioaccessibility of Organic Compounds Associated with Tire Particles Using a Fish In Vitro Digestive Model: Solubilization Kinetics and Effects of Food Coingestion.” *Environmental Science & Technology* 56 (22): 15607–16. https://doi.org/10.1021/acs.est.2c04291.	UGNACB4V
Maurer, Loïc, Eric Carmona, Oliver Machate, Tobias Schulze, Martin Krauss, and Werner Brack. 2023. “Contamination Pattern and Risk Assessment of Polar Compounds in Snow Melt: An Integrative Proxy of Road Runoffs.” *Environmental Science & Technology* 57 (10): 4143–52. https://doi.org/10.1021/acs.est.2c05784.	TJQR62IC

Reference Text	Reference ID
Mayer, Paul, Kelly Moran, Ezra Miller, et al. 2024. “Where the Rubber Meets the Road: Emerging Environmental Impacts of Tire Wear Particles and Their Chemical Cocktails.” *Science of The Total Environment* 927 (June): 171153. https://doi.org/10.1016/j.scitotenv.2024.171153.	ZTAVFS9G
McHugh, Chris. 2023. *Wastewater Sampling* . LSASDPROC-306-R6 042223. Region 4 U.S. Environmental Protection Agency Laboratory Services & Applied Science Division. https://www.epa.gov/sites/default/files/2017-07/documents/wastewater_sampling306_af.r4.pdf.	ZITFDETV
McIntyre, J. K., J. W. Davis, J. P. Incardona, John D. Stark, B. F. Anulacion, and N. L. Scholz. 2014. “Zebrafish and Clean Water Technology: Assessing Soil Bioretention as a Protective Treatment for Toxic Urban Runoff.” *Science of the Total Environment* 500: 173–80. https://doi.org/10.1016/j.scitotenv.2014.08.066.	G79YZJGX
McIntyre, Jenifer K., Jasmine Prat, James Cameron, et al. 2021. “Treading Water: Tire Wear Particle Leachate Recreates an Urban Runoff Mortality Syndrome in Coho but Not Chum Salmon.” *Environmental Science & Technology* 55 (17): 11767–74. https://doi.org/10.1021/acs.est.1c03569.	MVL2LKBM
McIntyre, Jenifer, Jessica Lundin, James Cameron, et al. 2018. “Interspecies Variation in the Susceptibility of Adult Pacific Salmon to Toxic Urban Stormwater Runoff.” *Environmental Pollution* 238: 196–203. https://doi.org/https://doi.org/10.1016/j.envpol.2018.03.012.	G7QW7PSD
McIntyre, Jenifer, Julann Spromberg, James Cameron, John P. Incardona, Jay W. Davis, and Nathaniel L. Scholz. 2023. “Bioretention Filtration Prevents Acute Mortality and Reduces Chronic Toxicity for Early Life Stage Coho Salmon (*Oncorhynchus kisutch*) Episodically Exposed to Urban Stormwater Runoff.” *Science of the Total Environment* 902 (December): 165759. https://doi.org/10.1016/j.scitotenv.2023.165759.	F7NAIVJ4
Milani, M., F. P. Pucillo, M. Ballerini, M. Camatini, M. Gualtieri, and S. Martino. 2004. “First Evidence of Tyre Debris Characterization at the Nanoscale by Focused Ion Beam.” *Materials Characterization* 52 (4–5): 283–88. https://doi.org/10.1016/j.matchar.2004.06.001.	6N5I8G73
Mitchell, Chelsea J., and Anand D. Jayakaran. 2024. “Mitigating Tire Wear Particles and Tire Additive Chemicals in Stormwater with Permeable Pavements.” *Science of the Total Environment* 908 (January): 168236. https://doi.org/10.1016/j.scitotenv.2023.168236.	TKDFS24E
Monaghan, Joseph, Angelina Jaeger, Alon R. Agua, et al. 2021. “A Direct Mass Spectrometry Method for the Rapid Analysis of Ubiquitous Tire-Derived Toxin *N* -(1,3-Dimethylbutyl)- *N′* -Phenyl- *p* -Phenylenediamine Quinone (6-PPDQ).” *Environmental Science & Technology Letters* 8 (12): 1051–56. https://doi.org/10.1021/acs.estlett.1c00794.	RKMTS6DI
Monsanto Company. 1965. Preservation of Diene Rubbers (Great Britain Patent No. 1035262A). Patent 1035262A, issued 1965.	I3PYYL4M
Monsanto Company. 1979. *Dynamic Toxicity of Santoflex 13 to Fatheads Minnows (* Pimephales promelas *). Curated Toxicity Data Were Retrieved from the ECOTOXicology Knowledgebase, U.S. Environmental Protection Agency. Http:/Www.Epa.Gov/Ecotox/ (November 10, 2023).* Nos. 21850-A/AB-780121B. St. Louis, Missouri.	QBCWTBKB
Montgomery, David, Xiaowen Ji, Jenna Cantin, et al. 2023. “Not Yet Peer Reviewed: Toxicokinetic Characterization of the Inter-Species Differences in 6PPD-Quinone Toxicity Across Seven Fish Species: Metabolite Identification and Semi-Quantification.” Preprint, bioRxiv, August 20. https://doi.org/10.1101/2023.08.18.553920.	X3FANIWH
Moran, Kelly, Alicia Gilbreath, Miguel Mendez, Diana Lin, and Rebecca Sutton. 2023. *Tire Wear: Emissions Estimates and Market Insights to Inform Monitoring Design* . SFEI Technical Report SFEI Contribution #1049. San Francisco Estuary Institute.	9FSZ84KX
More, Sharlee L., Julie V. Miller, Stephanie A. Thornton, Kathy Chan, Timothy R. Barber, and Kenneth M. Unice. 2023. “Refinement of a Microfurnace Pyrolysis-GC–MS Method for Quantification of Tire and Road Wear Particles (TRWP) in Sediment and Solid Matrices.” *Science of the Total Environment* 874 (May): 162305. https://doi.org/10.1016/j.scitotenv.2023.162305.	28DQ7TYQ
NOAA Fisheries. 2022. “In the Spotlight: Southern Resident Killer Whale.” January 4. https://www.fisheries.noaa.gov/species/killer-whale/spotlight.	P3KT2TMB
NOAA Fisheries. 2023. “Ecosystem Interactions and Pacific Salmon	NOAA Fisheries.” NOAA, August 31. https://www.fisheries.noaa.gov/west-coast/sustainable-fisheries/ecosystem-interactions-and-pacific-salmon.	BVP2RCVL
NOAA Fisheries. 2023. “Laws & Policies: Magnuson-Stevens Act	NOAA Fisheries.” NOAA, December 6. https://www.fisheries.noaa.gov/topic/laws-policies.	WT3GYCT8
NOAA Fisheries. 2023. “Magnuson-Stevens Fishery Conservation and Management Act	NOAA Fisheries.” NOAA, June 15. https://www.fisheries.noaa.gov/resource/document/magnuson-stevens-fishery-conservation-and-management-act.	59W6MRDF
NOAA Fisheries. 2023. “Sovereign Relations on the West Coast	NOAA Fisheries.” NOAA, October 24. https://www.fisheries.noaa.gov/west-coast/partners/sovereign-relations-west-coast.	2SAX845N
NOAA Fisheries. 2023. “Steelhead Trout	NOAA Fisheries.” NOAA, February 9. https://www.fisheries.noaa.gov/species/steelhead-trout.	97J7UAAD
NOAA Fisheries. 2024. “Coho Salmon (Protected)	NOAA Fisheries.” NOAA, January 17. https://www.fisheries.noaa.gov/species/coho-salmon-protected.	BMKXPEDP
NOAA Fisheries. 2024. “Endangered Species Action Consultations	NOAA Fisheries.” NOAA, January 22. https://www.fisheries.noaa.gov/topic/consultations.	IPJKS2XB
Naiman, Bilby, Schindler, and Helfield. 2002. “Pacific Salmon, Nutrients, and the Dynamics of Freshwater and Riparian Ecosystems.” *Ecosystems* 5: 399–417.	7UB96QLR
Nair, Pranav, Jianxian Sun, Linna Xie, et al. 2023. “In Process: Synthesis and Toxicity Evaluation of Tire Rubber–Derived Quinones.” Preprint. Chemistry, June 20. https://doi.org/10.26434/chemrxiv-2023-pmxvc.	9V5ES4MI
National Toxicology Program, Public Health Service U.S. Department of Health and Human Services. 2019. *NTP Research Report on the Chemical and Physical Characterization of Recycled Tire Crumb Rubber* . Research Report No. 11. https://ntp.niehs.nih.gov/go/rr11abs.	SAUIHJFK
Navickis-Brasch, Aimee, Mark Maurer, Taylor Hoffman-Ballard, Susan Bator, and Jerry Diamond. 2022. *Stormwater Treatment of Tire Contaminants Best Management Practices Effectiveness* . https://fortress.wa.gov/ecy/ezshare/wq/Permits/Flare/2019SWMMWW/Content/Resources/DocsForDownload/2022_SWTreatmentOfTireContaminants-BMPEffectiveness.pdf.	MT6MFFH8
Nedrich, Sara. 2022. *Preliminary Investigation of the Occurrence of 6PPD-Quinone in Michigan’s Surface Water* . https://doi.org/10.13140/RG.2.2.34478.59204.	7LRY36T6
Neilson, Leighanne. 2021. “SGS AXYS Measures the Major Antiozonant Degradation Product 6-PPD Quinone and 6-PPD.” SGS AXYS, December 14. https://www.sgsaxys.com/2021/12/14/new-sgs-axys-is-pleased-to-measure-the-major-antiozonant-degradation-product-6-ppd-quinone-and-its-parent-compound-6-ppd-at-sub-ng-l-reporting-limits/.	HWAFMKHN
OECD. 2004. *SIDS Initial Assessment Report for N-(1,3-Dimethylbutyl)-N´-Phenyl-1,4-Phenylenediamine (6PPD), Organisation for Economic Co-Operation and Development (OECD)* . https://hpvchemicals.oecd.org/UI/handler.axd?id=5e1a446c-5969-479c-9270-7ced8726952e.	FCJPCPVW
OECD. 2021. “Mitigation Technologies and Best Practices.” In *Policies to Reduce Microplastics Pollution in Water* . OECD. https://doi.org/10.1787/156bdfa5-en.	85YRE5NG
OSPAR Commission. 2006. *Hazardous Substances Series 4-(Dimethylbutylamino)Diphenylamine (6PPD) 2005 (2006 Update)* . Publication Number: 271/2006. https://www.ospar.org/documents?v=7029.	SVMKJM7X
Ofner, Robert. 1967. *Information Sources on Rubber for Engineers and Designers* . U.S. Army Weapons Command. Rock Island Arsenal: Research and Engineering Division. https://apps.dtic.mil/sti/tr/pdf/AD0660315.pdf.	R8ATIUAM
Olubusoye, Boluwatife S., James V. Cizdziel, Matthew Bee, et al. 2023. “Toxic Tire Wear Compounds (6PPD-Q and 4-ADPA) Detected in Airborne Particulate Matter Along a Highway in Mississippi, USA.” *Bulletin of Environmental Contamination and Toxicology* 111 (6): 68. https://doi.org/10.1007/s00128-023-03820-7.	R8HSVPUG
Panko, Julie M., Jennifer Chu, Marisa L. Kreider, and Ken M. Unice. 2013. “Measurement of Airborne Concentrations of Tire and Road Wear Particles in Urban and Rural Areas of France, Japan, and the United States.” *Atmospheric Environment* 72 (June): 192–99. https://doi.org/10.1016/j.atmosenv.2013.01.040.	UQNTNRM4
Panko, Julie M., Kristen M. Hitchcock, Gary W. Fuller, and David Green. 2019. “Evaluation of Tire Wear Contribution to $PM_{2.5}$ in Urban Environments.” *Atmosphere* 10 (2): 99. https://doi.org/10.3390/atmos10020099.	H57M387X
Park, Inyong, Hongsuk Kim, and Seokhwan Lee. 2018. “Characteristics of Tire Wear Particles Generated in a Laboratory Simulation of Tire/Road Contact Conditions.” *Journal of Aerosol Science* 124 (October): 30–40. https://doi.org/10.1016/j.jaerosci.2018.07.005.	HIY3Z76P
Peter, Katherine T., Fan Hou, Zhenyu Tian, et al. 2020. “More than a First Flush: Urban Creek Storm Hydrographs Demonstrate Broad Contaminant Pollutographs.” *Environmental Science & Technology* 54 (10): 6152–65. https://doi.org/10.1021/acs.est.0c00872.	5CPFCBQT
Philibert, Danielle, Ryan S. Stanton, Christine Tang, et al. 2024. “The Lethal and Sublethal Impacts of Two Tire Rubber–Derived Chemicals on Brook Trout (*Salvelinus fontinalis*) Fry and Fingerlings.” *Chemosphere* , ahead of print, May 10. https://doi.org/10.1016/j.chemosphere.2024.142319.	2M74ZR52
Poldushova, G. A., K. L. Kandyrin, and S. V. Reznichenko. 2016. “The Effect of the Structure of *p* -Phenylenediamine Antiagers on the Physicomechanical and Hysteresis Properties of Filled Rubber Compounds.” *International Polymer Science and Technology* 43 (2): 19–22. https://doi.org/10.1177/0307174X1604300205.	6S6C5F9Z
Prosser, R. S., A. J. Bartlett, D. Milani, et al. 2017. “Variation in the Toxicity of Sediment-Associated Substituted Phenylamine Antioxidants to an Epibenthic (*Hyalella azteca*) and Endobenthic (*Tubifex tubifex*) Invertebrate.” *Chemosphere* 181 (August): 250–58. https://doi.org/10.1016/j.chemosphere.2017.04.066.	N22D9LHY
Prosser, R. S., J. Salole, and S. Hang. 2023. “Toxicity of 6PPD-Quinone to Four Freshwater Invertebrate Species.” *Environmental Pollution* , September 4, 122512. https://doi.org/10.1016/j.envpol.2023.122512.	X2FC6LV6
Prosser, R. S., P. L. Gillis, E. A. M. Holman, et al. 2017. “Effect of Substituted Phenylamine Antioxidants on Three Life Stages of the Freshwater Mussel *Lampsilis siliquoidea* .” *Environmental Pollution* 229: 281–89. https://doi.org/10.1016/j.envpol.2017.05.086.	L96F85XM
Prosser, Ryan S., Joanne L. Parrott, Melissa Galicia, et al. 2017. “Toxicity of Sediment-Associated Substituted Phenylamine Antioxidants on the Early Life Stages of *Pimephales promelas* and a Characterization of Effects on Freshwater Organisms.” *Environmental Toxicology and Chemistry* 36 (10): 2730–38. https://doi.org/10.1002/etc.3828.	G5HZ4XYX
PubChem. 2021. “N-(1,3-Dimethylbutyl)-N′-Phenyl-p-Phenylenediamine.” January. https://pubchem.ncbi.nlm.nih.gov/compound/13101.	H3YIMDF9
Puget Soundkeeper. 2022. “Puget Sound Municipalities Fail to Address 6PPD-Quinone, Putting Salmon at Risk.” Puget Soundkeeper Alliance, June 16. https://pugetsoundkeeper.org/2022/06/16/6ppd-mukilteo-burien-seatac-normandy-park-seattle/.	4FJMQ2WI
Pulford, C. 1983. *Antioxidant Effects during Blade Abrasion of Natural Rubber* . 28: 709–13.	RFZN73MA
Qian, Yiguang, Ziyu Chen, Jiahui Wang, et al. 2023. “H/D Exchange Coupled with 2H-Labeled Stable Isotope–Assisted Metabolomics Discover Transformation Products of Contaminants of Emerging Concern.” *Analytical Chemistry* 95 (33): 12541–49. https://doi.org/10.1021/acs.analchem.3c02833.	KRT88TMQ
Rødland, Elisabeth S., Mats Gustafsson, David Jaramillo-Vogel, et al. 2023. “Analytical Challenges and Possibilities for the Quantification of Tire-Road Wear Particles.” *TrAC Trends in Analytical Chemistry* 165: 117121. https://doi.org/10.1016/j.trac.2023.117121.	SGXM45KB
Rauert, Cassandra, Jasmin K. Schuster, Anita Eng, and Tom Harner. 2018. “Global Atmospheric Concentrations of Brominated and Chlorinated Flame Retardants and Organophosphate Esters.” *Environmental Science & Technology* 52 (5): 2777–89. https://doi.org/10.1021/acs.est.7b06239.	Q65D2KZM
Rauert, Cassandra, Nathan Charlton, Elvis D. Okoffo, et al. 2022. “Concentrations of Tire Additive Chemicals and Tire Road Wear Particles in an Australian Urban Tributary.” *Environmental Science & Technology* , ahead of print, January 31. World. https://doi.org/10.1021/acs.est.1c07451.	9WERCXNS
Rauert, Cassandra, Suzanne Vardy, Benjamin Daniell, Nathan Charlton, and Kevin V. Thomas. 2022. “Tyre Additive Chemicals, Tyre Road Wear Particles and High Production Polymers in Surface Water at 5 Urban Centres in Queensland, Australia.” *Science of The Total Environment* 852: 158468. https://doi.org/10.1016/j.scitotenv.2022.158468.	LAH96NFL

Reference Text	Reference ID
Razumovskii, S. D., and L. S. Batashova. 1970. “Mechanism of Protection against Ozone by N-Phenyl-N′-Isopropyl- *p*- Phenylenediamine.” *Rubber Chemistry and Technology* 43 (6): 1340–48. https://doi.org/10.5254/1.3547334.	JRUTALHF
Redman, Zachary C., Jessica L. Begley, Isabel Hillestad, et al. 2023. “Reactive Oxygen Species and Chromophoric Dissolved Organic Matter Drive the Aquatic Photochemical Pathways and Photoproducts of 6PPD-Quinone under Simulated High-Latitude Conditions.” *Environmental Science & Technology* 57 (49): 20813–21. https://doi.org/10.1021/acs.est.3c05742.	YJE933XT
Roberts, Catherine, Junyi Lin, Evan Kohlman, et al. 2024. “Acute and Sub-Chronic Toxicity of 6PPD-Quinone to Early-Life Stage Lake Trout (*Salvelinus namaycush*).” Preprint, bioRxiv, April 3. https://doi.org/10.1101/2024.03.26.586843.	FMG8VP7Y
Rodgers, Timothy F. M., Yanru Wang, Cassandra Humes, et al. 2023. “Bioretention Cells Provide a 10-Fold Reduction in 6PPD-Quinone Mass Loadings to Receiving Waters: Evidence from a Field Experiment and Modeling.” *Environmental Science & Technology Letters* , ahead of print, June 16. https://doi.org/10.1021/acs.estlett.3c00203.	LZXSW5WM
Rossomme, Elliot, William M. Hart-Cooper, William J. Orts, Colleen M. McMahan, and Martin Head-Gordon. 2023. “Computational Studies of Rubber Ozonation Explain the Effectiveness of 6PPD as an Antidegradant and the Mechanism of Its Quinone Formation.” *Environmental Science & Technology* , March 24, acs.est.2c08717. https://doi.org/10.1021/acs.est.2c08717.	AXGUT6MJ
Rowangould, G. M. 2013. “A Census of the US Near-Roadway Population: Public Health and Environmental Justice Considerations.” *Transportation Research, Part D: Transport and Environment* 2013 (25): 59–67. https://doi.org/10.1016/j.trd.2013.08.003.	9KKD6N4U
Saifur, Sumaiya, and Courtney M Gardner. 2023. “Evaluation of Stormwater Microbiomes for the Potential Biodegradation of Tire Wear Particle Contaminants.” *Journal of Applied Microbiology* 134 (5): lxad086. https://doi.org/10.1093/jambio/lxad086.	9WDMIAY3
Saini, Amandeep, Tom Harner, Sita Chinnadhurai, et al. 2020. “GAPS-Megacities: A New Global Platform for Investigating Persistent Organic Pollutants and Chemicals of Emerging Concern in Urban Air.” *Environmental Pollution* 267 (December): 115416. https://doi.org/10.1016/j.envpol.2020.115416.	2B4BLHGY
Santoso, M., U. Giese, and R. H. Schuster. 2007. *Investigations on Initial Stage of Aging of Tire Rubbers by Chemiluminescence Spectroscopy* . 80: 762–76. https://hero.epa.gov/hero/index.cfm/reference/details/reference_id/5714930.	GZL3D5KN
Schönenberger, Urs, Michael Patrick, Simon Wullschleger, and Christian Stamm. 2020. “A Water-Level Proportional Water Sampler for Remote Areas.” *Zenodo* . https://zenodo.org/records/4280534.	6Q9QTYR8
Schneider, Klaus, Manfred De Hoogd, Maria Pelle Madsen, Pascal Haxaire, Anne Bierwisch, and Eva Kaiser. 2020. “ERASSTRI — European Risk Assessment Study on Synthetic Turf Rubber Infill — Part 1: Analysis of Infill Samples.” *Science of The Total Environment* 718: 137174. https://doi.org/10.1016/j.scitotenv.2020.137174.	QN7GCPX2
Schneider, Klaus, Manfred De Hoogd, Pascal Haxaire, Arne Philipps, Anne Bierwisch, and Eva Kaiser. 2020. “ERASSTRI — European Risk Assessment Study on Synthetic Turf Rubber Infill — Part 2: Migration and Monitoring Studies.” *Science of The Total Environment* 718: 137173. https://doi.org/10.1016/j.scitotenv.2020.137173.	7AVSU3G7
Scholz, Nathaniel L., Mark S. Myers, Sarah G. McCarthy, et al. 2011. “Recurrent Die-Offs of Adult Coho Salmon Returning to Spawn in Puget Sound Lowland Urban Streams.” *PLOS ONE* 6 (12): e28013. https://doi.org/10.1371/journal.pone.0028013.	S8ASEIXU
Scott, Gerald. 1985. “A Review of Recent Developments in the Mechanisms of Antifatigue Agents.” *Rubber Chemistry and Technology* 58 (2): 269–83. https://doi.org/10.5254/1.3536065.	6SJ7VVGU
Seebacher, Lizbeth Ann, Brianna Pierce, and Rob Turner. 2023. “Floating Treatment Wetland and Biomedia Module for Stormwater Treatment and 6ppd Quinone Removal.” Preprint. https://doi.org/10.2139/ssrn.4471002.	AZ6MCQ8J
Seiwert, Bettina, Maolida Nihemaiti, Mareva Troussier, Steffen Weyrauch, and Thorsten Reemtsma. 2022. “Abiotic Oxidative Transformation of 6-PPD and 6-PPD Quinone from Tires and Occurrence of Their Products in Snow from Urban Roads and in Municipal Wastewater.” *Water Research* 212: 118122. https://doi.org/10.1016/j.watres.2022.118122.	QDRRVWMW
Seiwert, Bettina, Philipp Klöckner, Stephan Wagner, and Thorsten Reemtsma. 2020. “Source-Related Smart Suspect Screening in the Aqueous Environment: Search for Tire-Derived Persistent and Mobile Trace Organic Contaminants in Surface Waters.” *Analytical and Bioanalytical Chemistry* 412 (20): 4909–19. https://doi.org/10.1007/s00216-020-02653-1.	XRNTFZ69
Shankar, Prarthana, Ellie M. Dalsky, Joanne E Salzer, et al. 2024. “Evaluation of Lethal and Sublethal Effects of 6PPD-Q on Coastal Cutthroat Trout (Oncorhynchus Clarkii Clarkii).” Preprint, U.S. Geological Survey. Csv,xml. https://doi.org/10.5066/P16SMKIJ.	FBNQNIWI
Shelton, Larry R. 1994. *Field Guide for Collecting and Processing Stream-Water Samples for the National Water-Quality Assessment Program* . USGS Numbered Series Open-File Report Nos. 94–455. U.S. Geological Survey.	7NMALZXW
Sherman, Anya, Luzian Elijah Hämmerle, Evyatar Ben Mordechay, Benny Chefetz, Thorsten Hüffer, and Thilo Hofmann. 2024. “Uptake of Tire-Derived Compounds in Leafy Vegetables and Implications for Human Dietary Exposure.” *Frontiers in Environmental Science* 12 (May). https://doi.org/10.3389/fenvs.2024.1384506.	QBL568VF
Sherman, Anya, Thibault Masset, Lukas Wimmer, et al. 2024. “The Invisible Footprint of Climbing Shoes: High Exposure to Rubber Additives in Indoor Facilities.” Preprint. https://chemrxiv.org/engage/api-gateway/chemrxiv/assets/orp/resource/item/65b74ca0e9ebbb4db9311694/original/the-invisible-footprint-of-climbing-shoes-high-exposure-to-rubber-additives-in-indoor-facilities.pdf.	NGSQ8TR4
Shetye, Sugandha S., and Satish N. Ambare. 2018. “Pyrolysis Gas Chromatography Mass Spectrometry: A Efficient Technique for Identification and Quantification of Rubber Antioxident P-Phenylene Diamine (6PPD).” *International Journal of Research and Analytical Reviews* 5 (2): 949–54. http://ijrar.com/upload_issue/ijrar_issue_920.pdf.	YK73YHYB
Sieber, Ramona, Delphine Kawecki, and Bernd Nowack. 2020. “Dynamic Probabilistic Material Flow Analysis of Rubber Release from Tires into the Environment.” *Environmental Pollution* 258: 113573. https://doi.org/10.1016/j.envpol.2019.113573.	LENES5UC
Skoczyńska, Ewa, Pim E. G. Leonards, Maria Llompart, and Jacob de Boer. 2021. “Analysis of Recycled Rubber: Development of an Analytical Method and Determination of Polycyclic Aromatic Hydrocarbons and Heterocyclic Aromatic Compounds in Rubber Matrices.” *Chemosphere* 276: 130076. https://doi.org/10.1016/j.chemosphere.2021.130076.	THG8LDSG
Smith, Albert K., and Dann Sklarew. 2013. “A Mid Atlantic Brook Trout (*Salvelinus fontinalis*) Stream Sustainability Statistic for Rating Non-Tidal Streams.” *Sustainability of Water Quality and Ecology* 1–2 (December): 68–81. https://doi.org/10.1016/j.swaqe.2013.08.001.	EGWKDGVU
Snover, A.K., C.L. Raymond, H.A. Roop, and H. Morgan. 2019. *No Time to Waste. The Intergovernmental Panel on Climate Change's Special Report on Global Warming of 1.5°C and Implications for Washington State* . Briefing Paper Prepared by the Climate Impacts Group, University of Washington, Seattle. https://cig.uw.edu/wp-content/uploads/sites/2/2019/02/NoTimeToWaste_CIG_Feb2019.pdf.	UN9SA5AK
Spromberg, Julann A, and Nathaniel L Scholz. 2011. “Estimating the Future Decline of Wild Coho Salmon Populations Resulting from Early Spawner Die-Offs in Urbanizing Watersheds of the Pacific Northwest, USA.” *Integrated Environmental Assessment and Management* 7 (4): 648–56. https://doi.org/10.1002/ieam.219.	CT5HUEEI
Spromberg, Julann A., David H. Baldwin, Steven E. Damm, et al. 2016. “Coho Salmon Spawner Mortality in Western US Urban Watersheds: Bioinfiltration Prevents Lethal Storm Water Impacts.” *Journal of Applied Ecology* 53 (2): 398–407. https://doi.org/https://doi.org/10.1111/1365-2664.12534.	GI97QYN4
Sustainable Chemistry Catalyst. 2023. *Collaborative Innovation Forum: Functional Substitutes to 6PPD in Tires. Meeting Report* . https://static1.squarespace.com/static/633b3dd6649ed62926ed7271/t/63ee6cd15eb30a0fd4f0630d/1676569810601/6PPD-in-Tires-Innovation-Forum-Meeting-Report.pdf.	8F7X8M2J
Tamis, Jacqueline E., Albert A. Koelmans, Rianne Dröge, et al. 2021. “Environmental Risks of Car Tire Microplastic Particles and Other Road Runoff Pollutants.” *Microplastics and Nanoplastics* 1 (1): 10. https://doi.org/10.1186/s43591-021-00008-w.	MPU4FIFJ
Testimony of David Troutt (2021). https://democrats-naturalresources.house.gov/imo/media/doc/2021_07_15_Written%20Testimony_David%20Troutt.pdf.	Q4K9HZHT
Tian, Nancy, Jianping Xue, and Timothy M. Barzyk. 2013. “Evaluating Socioeconomic and Racial Differences in Traffic-Related Metrics in the United States Using a GIS Approach.” *Journal of Exposure Science & Environmental Epidemiology* 23 (2): 215–22. https://doi.org/10.1038/jes.2012.83.	JKKV3HH3
Tian, Zhenyu, Haoqi Zhao, Katherine T. Peter, et al. 2021. “A Ubiquitous Tire Rubber–Derived Chemical Induces Acute Mortality in Coho Salmon.” Report. *Science* 371 (6525): 185–89. https://doi.org/10.1126/science.abd6951.	X8BRFG3P
Tian, Zhenyu, Melissa Gonzalez, Craig A. Rideout, et al. 2022. “6PPD-Quinone: Revised Toxicity Assessment and Quantification with a Commercial Standard.” *Environmental Science & Technology Letters* , January 11, acs.estlett.1c00910. https://doi.org/10.1021/acs.estlett.1c00910.	BICQHLBC
Tiwari, Arvind, Prashant Kumar, Richard Baldauf, et al. 2019. “Considerations for Evaluating Green Infrastructure Impacts in Microscale and Macroscale Air Pollution Dispersion Models.” *Science of the Total Environment* 672: 410–26. https://doi.org/10.1016/j.scitotenv.2019.03.350.	A2URNURS
Tonegawa, Yoshio, and Sousuke Sasaki. 2021. “Development of Tire-Wear Particle Emission Measurements for Passenger Vehicles.” *Emission Control Science and Technology* 7 (1): 56–62. https://doi.org/10.1007/s40825-020-00181-z.	9NME6IST
ToxServices, LLC. 2021. *N-(1,3-Dimethylbutyl)-N′-Phenyl-p-Phenylenediamine (6PPD) (CAS #793-24-8) Greenscreen® for Safer Chemicals (Greenscreen®) Assessment* . GS-1204. ToxServices Toxicology Risk Assessment Consulting. https://www.ezview.wa.gov/Portals/_1962/Documents/6ppd/GreenScreenExecutiveSummaryFor6PPD.pdf.	IDJRCJR2
USEPA, Region 10. 2017. “NPDES Stormwater Permit for Joint Base Lewis-McChord MS4 in Washington.” Reports and Assessments. September 29. https://www.epa.gov/npdes-permits/npdes-stormwater-permit-joint-base-lewis-mcchord-ms4-washington.	W3Z5GUCI
USEPA. 1975. *Environmental Aspects of Chemical Use in Rubber Processing Operations* . EPA-560/1-75-002; Office of Toxic Substances. https://nepis.epa.gov/Exe/ZyPDF.cgi/2000IUPB.PDF?Dockey=2000IUPB.PDF.	9GIVZ872
USEPA. 2002. *Guidance on Choosing a Sampling Design for Environmental Data Collection for Use in Developing a Quality Assurance Project Plan* . EPA QA/G-5S. Office of Environmental Information. https://www.epa.gov/sites/default/files/2015-06/documents/g5s-final.pdf.	AP7FTC43
USEPA. 2002. *Guidelines for Reviewing TMDLs under Existing Regulations Issued in 1992* . https://www.epa.gov/sites/default/files/2015-10/documents/2002_06_04_tmdl_guidance_final52002.pdf.	F6FA44IC
USEPA. 2004. *NPDES Compliance Inspection Manual* . EPA 305-X-04-001. Office of Enforcement and Compliance Assurance. https://www.epa.gov/sites/default/files/2013-09/documents/npdesinspect_0.pdf.	3JZH9WJS
USEPA. 2004. *Understanding the Safe Drinking Water Act* . June.	EPLXS8IM
USEPA. 2011. “Exposure Factors Handbook 2011 Edition (Final Report).” U.S. Environmental Protection Agency, Washington, DC.	PL79ZTRH
USEPA. 2012. *7. Estimating Persistence, Bioaccumulation, and Toxicity Using the PBT Profiler* . EPA-748-B12-001. Sustainable Futures / P2 Framework Manual. https://www.epa.gov/sites/default/files/2015-05/documents/07.pdf.	METDU9H5
USEPA. 2015. “Resource Conservation and Recovery Act (RCRA) Overview.” Other Policies and Guidance. August 18. https://www.epa.gov/rcra/resource-conservation-and-recovery-act-rcra-overview.	K9FCXZZ2
USEPA. 2015. “Stormwater Discharges from Municipal Sources—Developing an MS4 Program.” Overviews and Factsheets. November 2. https://www.epa.gov/npdes/stormwater-discharges-municipal-sources.	RS4CLFUU
USEPA. 2015. “Stormwater Discharges from Transportation Sources.” Overviews and Factsheets. November 3. https://www.epa.gov/npdes/stormwater-discharges-transportation-sources.	52GNBRV5
USEPA. 2017. “Living Close to Roadways: Health Concerns and Mitigation Strategies.” Overviews and Factsheets. January 10. https://www.epa.gov/sciencematters/living-close-roadways-health-concerns-and-mitigation-strategies.	DPMSMEZ9
USEPA. 2017. *NPDES Compliance Inspection Manual Chapter 5 — Sampling* . Interim Revised Version. https://www.epa.gov/sites/default/files/2017-03/documents/npdesinspect-chapter-05.pdf.	PFTF5ZRM

Reference Text	Reference ID
USEPA. 2021. *Industrial Stormwater Monitoring and Sampling Guide* . EPA 832-B-09-003. https://www.epa.gov/sites/default/files/2015-11/documents/msgp_monitoring_guide.pdf.	HSPCRKFU
USEPA. 2022. “Superfund: CERCLA Overview.” U.S. Environmental Protection Agency, February. https://www.epa.gov/superfund/superfund-cercla-overview.	DURCCUKN
USEPA. 2023. “6PPD-Quinone.” Overviews and Factsheets. August 9. https://www.epa.gov/chemical-research/6ppd-quinone.	E43MRZ92
USEPA. 2023. “Air Data: Air Quality Data Collected at Outdoor Monitors Across the US.” Collections and Lists. November 9. https://www.epa.gov/outdoor-air-quality-data.	7MLIS2WE
USEPA. 2023. “Chemicals under the Toxic Substances Control Act (TSCA).” Collections and Lists. August 16. https://www.epa.gov/chemicals-under-tsca.	4X7Q2I9W
USEPA. 2023. “EPA Grants Tribal Petition to Protect Salmon from Lethal Chemical.” News Release. November 2. https://www.epa.gov/newsreleases/epa-grants-tribal-petition-protect-salmon-lethal-chemical.	EUYBKVIF
USEPA. 2023. *Draft Method 1634: Determination of 6PPD-Quinone in Aqueous Matrices Using Liquid Chromatography with Tandem Mass Spectrometry (LC/MS/MS)* . EPA 821-D-24-001. Office of Water (4303T), Office of Science and Technology. https://www.epa.gov/system/files/documents/2024-01/draft-method-1634-for-web-posting-1-23-24_508.pdf.	7AAJEWWG
USEPA. 2023. *Estimation Programs Interface Suite™ for Microsoft® Windows, v 4.11 (EPISuite)* . V. v 4.11. Released. https://www.epa.gov/tsca-screening-tools/epi-suitetm-estimation-program-interface.	8EAETLIA
USEPA. 2024. “Heat Islands and Equity.” July 16. https://www.epa.gov/heatislands/heat-islands-and-equity.	2P8GQ97U
USEPA. n.d. “CompTox Chemicals Dashboard: 6PPD - Chemical Details.” https://comptox.epa.gov/dashboard/chemical/details/DTXSID9025114.	NU4F8BLR
USEPA. n.d. “CompTox Chemicals Dashboard: 6PPD-Quinone - Chemical Details.” https://comptox.epa.gov/dashboard/chemical/details/DTXSID301034849.	H2B8TI2W
USFWS, NOAA, and Washington State University. 2019. “Predicted Mean Annual Coho Runoff Mortality Syndrome Rates Across the Puget Sound.” https://www.arcgis.com/apps/webappviewer/index.html?id=53ea11d4125146628026b80241716962.	ZBMYH66Y
USFWS. 1998. “ESA Section 7 Consultation.” Fish, March 1. https://www.fws.gov/service/esa-section-7-consultation.	FL8Z44ZV
USFWS. 2000. “Rainbow Trout (*Oncorhynchus mykiss*)	U.S. Fish & Wildlife Service.” July 10. https://www.fws.gov/species/rainbow-trout-oncorhynchus-mykiss.	W2Z72ERF
USGS. 2023. “Brook Trout (*Salvelinus fontinalis*) — Species Profile. United States Geological Survey (USGS).” USGS Nonindigenous Aquatic Species Database. https://nas.er.usgs.gov/queries/factsheet.aspx?SpeciesID=939.	BHT5YTKH
USGS. 2023. “Coho Salmon (*Oncorhynchus kisutch*) — Species Profile.” USGS Nonindigenous Aquatic Species Database. https://nas.er.usgs.gov/queries/factsheet.aspx?SpeciesID=908.	DT5PXSCQ
USTMA, U. S. Tire Manufacturers Association. 2022. “2021 US Scrap Tire Management Summary.” October 25. https://www.ustires.org/sites/default/files/21%20US%20Scrap%20Tire%20Management%20Report%20101722.pdf.	WYGSX5UU
USTMA. 2024. *USTMA Consortium Preliminary (Stage 1) Alternatives Analysis Report for CA DTSC* . https://www.ustires.org/sites/default/files/2024-03/USTMA%20Consortium%206PPD%20AA%20Preliminary%20Report_3-25-24.pdf.	372BNAEP
Unice, K. M., Jennifer Bare, Marisa Kreider, and Julie Panko. 2015. “Experimental Methodology for Assessing the Environmental Fate of Organic Chemicals in Polymer Matrices Using Column Leaching Studies and OECD 308 Water/Sediment Systems: Application to Tire and Road Wear Particles.” *Science of the Total Environment* 533 (July): 476–87. https://doi.org/10.1016/j.scitotenv.2015.06.053.	NS59BGK2
Unice, K. M., M. P. Weeber, M. M. Abramson, et al. 2019. “Characterizing Export of Land-Based Microplastics to the Estuary — Part I: Application of Integrated Geospatial Microplastic Transport Models to Assess Tire and Road Wear Particles in the Seine Watershed.” *Science of the Total Environment* 646: 1639–49. https://doi.org/10.1016/j.scitotenv.2018.07.368.	TLVMH289
Unice, K.M., Marisa L. Kreider, and Julie M. Panko. 2013. “Comparison of Tire and Road Wear Particle Concentrations in Sediment for Watersheds in France, Japan, and the United States by Quantitative Pyrolysis GC/MS Analysis.” *Environmental Science & Technology* 47 (15): 8138–47. https://doi.org/10.1021/es400871j.	EU6MQU9K
Varshney, Shubham, Adnan H. Gora, Prabhugouda Siriyappagouder, Viswanath Kiron, and Pål A. Olsvik. 2022. “Toxicological Effects of 6PPD and 6PPD Quinone in Zebrafish Larvae.” *Journal of Hazardous Materials* 424 (February): 127623. https://doi.org/10.1016/j.jhazmat.2021.127623.	APRMZJBS
Verschoor, A. J., and E. De Valk. 2018. *Potential Measures against Microplastic Emissions to Water* . RIVM. https://rivm.openrepository.com/rivm/handle/10029/622058, DOI:10.21945/RIVM-2017-0193.	Z9893S5Z
WA Ecology. n.d. “6PPD - Washington State Department of Ecology.” Accessed July 25, 2024. https://ecology.wa.gov/waste-toxics/reducing-toxic-chemicals/addressing-priority-toxic-chemicals/6ppd.	IHA5X6FP
Wagner, Stephan, Thorsten Hüffer, Philipp Klöckner, Maren Wehrhahn, Thilo Hofmann, and Thorsten Reemtsma. 2018. “Tire Wear Particles in the Aquatic Environment — A Review on Generation, Analysis, Occurrence, Fate and Effects.” *Water Research* 139 (August): 83–100. https://doi.org/10.1016/j.watres.2018.03.051.	4UCJI65Q
Walsh, Christopher J., Allison H. Roy, Jack W. Feminella, Peter D. Cottingham, Peter M. Groffman, and Raymond P. Morgan. 2005. “The Urban Stream Syndrome: Current Knowledge and the Search for a Cure.” *Journal of the North American Benthological Society* 24 (3): 706–23. https://doi.org/10.1899/04-028.1.	CQ74T2RQ
Wang, Wei, Guodong Cao, Jing Zhang, et al. 2022. “Beyond Substituted *p* -Phenylenediamine Antioxidants: Prevalence of Their Quinone Derivatives in $PM_{2.5}$.” *Environmental Science & Technology* , July 14, acs.est.2c02463. https://doi.org/10.1021/acs.est.2c02463.	TMV9VLRS
Wang, Wei, Guodong Cao, Jing Zhang, et al. 2022. “ *p* -Phenylenediamine-Derived Quinones as New Contributors to the Oxidative Potential of Fine Particulate Matter.” *Environmental Science & Technology Letters* , August 10, acs.estlett.2c00484. https://doi.org/10.1021/acs.estlett.2c00484.	77EKBKUV
Wang, Xiaoliang, Steven Gronstal, Brenda Lopez, et al. 2023. “Evidence of Non-Tailpipe Emission Contributions to $PM_{2.5}$ and PM_{10} near Southern California Highways.” *Environmental Pollution* 317: 120691. https://doi.org/10.1016/j.envpol.2022.120691.	MVLEXF2I
Wang, Yuxing, Xin Hua, and Dayong Wang. 2023. “Exposure to 6-PPD Quinone Enhances Lipid Accumulation through Activating Metabolic Sensors of SBP-1 and MDT-15 in *Caenorhabditis elegans* .” *Environmental Pollution* 333 (September): 121937. https://doi.org/10.1016/j.envpol.2023.121937.	PMPW53J5
Washington State Department of Ecology. 2018. “Technical Guidance Manual for Evaluating Emerging Stormwater Treatment Technologies.” Washington State Department of Ecology, September. https://apps.ecology.wa.gov/publications/documents/1810038.pdf.	8VMVK98Y
Washington State Department of Ecology. 2021. “Technical Memo: Assessment of Potential Hazards of 6PPD and Alternatives.” November 29. https://www.ezview.wa.gov/Portals/_1962/Documents/6ppd/6PPD%20Alternatives%20Technical%20Memo.pdf.	2UEJGNJ2
Washington State Department of Ecology. 2022. *6PPD in Road Runoff Assessment and Mitigation Strategies* . Nos. 22-03–020. Environmental Assessment and Water Quality Programs. https://apps.ecology.wa.gov/publications/documents/2203020.pdf.	K2CG7KTE
Washington State Department of Ecology. 2023. “Municipal Stormwater Permit Reissuance—Washington State Department of Ecology.” https://ecology.wa.gov/regulations-permits/permits-certifications/stormwater-general-permits/municipal-stormwater-general-permits/municipal-stormwater-permit-reissuance.	TX3IER4R
Washington State Department of Ecology. 2023. “Standard Operating Procedure (SOP): Extraction and Analysis of 6PPD-Quinone (Mel730136, Version 1.2).” June 3.	HJQ3HEWU
Washington State Department of Ecology. 2023. *6PPD Alternatives Assessment Hazard Criteria* . Nos. 23-04–036. https://apps.ecology.wa.gov/publications/SummaryPages/2304036.html.	3NJSEXIP
Washington State Department of Ecology. 2023. *6PPD Alternatives Assessment Hazard Criteria* . Nos. 23-04–036. https://apps.ecology.wa.gov/publications/documents/2304036.pdf.	M64YC38F
Washington State Department of Ecology. 2024. *Safer Products for Washington 2024 Report* . Seattle, Washington. https://ecology.wa.gov/waste-toxics/reducing-toxic-chemicals/washingtons-toxics-in-products-laws/safer-products.	A9RGZ5XI
Weyrauch, Steffen, Bettina Seiwert, Milena Voll, Stephan Wagner, and Thorsten Reemtsma. 2023. “Accelerated Aging of Tire and Road Wear Particles by Elevated Temperature, Artificial Sunlight and Mechanical Stress — A Laboratory Study on Particle Properties, Extractables and Leachables.” *Science of the Total Environment* 904 (December): 166679. https://doi.org/10.1016/j.scitotenv.2023.166679.	T89H6LNJ
Woudneh, Million. 2023. “Best Practices in the Analysis of 6PPD-Quinone.” ITRC Tire Anti-Degradants 6PPD Team Meeting, May 16.	6S8L3YFK
Wu, Jiabin, Guodong Cao, Feng Zhang, and Zongwei Cai. 2023. “A New Toxicity Mechanism of *N*- (1,3-Dimethylbutyl)- *N*′ -Phenyl- *p*- Phenylenediamine Quinone: Formation of DNA Adducts in Mammalian Cells and Aqueous Organisms.” *Science of the Total Environment* 866: 161373. https://doi.org/10.1016/j.scitotenv.2022.161373.	PYQQU7AG
Wu, Yan, Marta Venier, and Ronald A. Hites. 2020. “Broad Exposure of the North American Environment to Phenolic and Amino Antioxidants and to Ultraviolet Filters.” *Environmental Science & Technology* 54 (15): 9345–55. https://doi.org/10.1021/acs.est.0c04114.	F7XN9GAC
Xu, Qiao, Gang Li, Li Fang, et al. 2023. “Enhanced Formation of 6PPD-Q during the Aging of Tire Wear Particles in Anaerobic Flooded Soils: The Role of Iron Reduction and Environmentally Persistent Free Radicals.” *Environmental Science & Technology* , ahead of print, March 29. https://doi.org/10.1021/acs.est.2c08672.	4P2E4JLJ
Xu, Qiao, Wei Wu, Zufei Xiao, et al. 2023. “Responses of Soil and Collembolan (*Folsomia candida*) Gut Microbiomes to 6PPD-Q Pollution.” *Science of the Total Environment* 900 (November): 165810. https://doi.org/10.1016/j.scitotenv.2023.165810.	WDVQCW7M
Zeng, Lixi, Yi Li, Yuxin Sun, Liang-Ying Liu, Mingjie Shen, and Bibai Du. 2023. “Widespread Occurrence and Transport of *p* -Phenylenediamines and Their Quinones in Sediments across Urban Rivers, Estuaries, Coasts, and Deep-Sea Regions.” *Environmental Science & Technology* , January 31, acs.est.2c07652. https://doi.org/10.1021/acs.est.2c07652.	TK5YR8WJ
Zhang, Hai-Yan, Zheng Huang, Yue-Hong Liu, et al. 2023. “Occurrence and Risks of 23 Tire Additives and Their Transformation Products in an Urban Water System.” *Environment International* 171 (January): 107715. https://doi.org/10.1016/j.envint.2022.107715.	JWRBWTKN
Zhang, Jing, Guodong Cao, Wei Wang, et al. 2024. “Stable Isotope-Assisted Mass Spectrometry Reveals in Vivo Distribution, Metabolism, and Excretion of Tire Rubber-Derived 6PPD-Quinone in Mice.” *Science of the Total Environment* 912 (February): 169291. https://doi.org/10.1016/j.scitotenv.2023.169291.	BZQEGEXI
Zhang, Qijun, Tiange Fang, Zhengyu Men, et al. 2024. “Direct Measurement of Brake and Tire Wear Particles Based on Real-World Driving Conditions.” *Science of the Total Environment* 906: 167764. https://doi.org/10.1016/j.scitotenv.2023.167764.	V4RZKMVQ
Zhang, Ruiling, Shizhen Zhao, Xin Liu, et al. 2023. “Aquatic Environmental Fates and Risks of Benzotriazoles, Benzothiazoles, and *p*- Phenylenediamines in a Catchment Providing Water to a Megacity of China.” *Environmental Research* 216 (January): 114721. https://doi.org/10.1016/j.envres.2022.114721.	D6T6D4JP
Zhang, Shu-Yun, Xiufeng Gan, Baoguo Shen, et al. 2023. “6PPD and Its Metabolite 6PPDQ Induce Different Developmental Toxicities and Phenotypes in Embryonic Zebrafish.” *Journal of Hazardous Materials* 455 (August): 131601. https://doi.org/10.1016/j.jhazmat.2023.131601.	3FCHDXBN
Zhang, Yanhao, Caihong Xu, Wenfen Zhang, et al. 2022. “ *p* -Phenylenediamine Antioxidants in $PM_{2.5}$: The Underestimated Urban Air Pollutants.” *Environmental Science & Technology* 56 (11): 6914–21. https://doi.org/https://doi.org/10.1021/acs.est.1c04500.	G77DTKD6

Reference Text	Reference ID
Zhang, Ying-Jie, Ting-Ting Xu, Dong-Min Ye, Ze-Zhao Lin, Fei Wang, and Ying Guo. 2022. “Widespread *N* -(1,3-Dimethylbutyl)- *N*′ -phenyl- *p* -phenylenediamine Quinone in Size-Fractioned Atmospheric Particles and Dust of Different Indoor Environments.” *Environmental Science & Technology Letters* 9 (5): 420–25. https://doi.org/https://doi.org/10.1021/acs.estlett.2c00193.	GHLGNCHV
Zhang, Zhuxia, Xijin Xu, Ziyi Qian, et al. 2024. “Association between 6PPD-Quinone Exposure and BMI, Influenza, and Diarrhea in Children.” *Environmental Research* 247: 118201. https://doi.org/10.1016/j.envres.2024.118201.	ZQPREK6H
Zhao, Feng, Jingzhi Yao, Xinyu Liu, et al. 2024. “Occurrence and Oxidation Kinetics of Antioxidant *p* -Phenylenediamines and Their Quinones in Recycled Rubber Particles from Artificial Turf.” *Environmental Science & Technology Letters* 11 (4): 335–41. https://doi.org/10.1021/acs.estlett.3c00948.	LZFSSS5F
Zhao, Haoqi Nina, Sydney P. Thomas, Mark J. Zylka, Pieter C. Dorrestein, and Wenxin Hu. 2023. “Urine Excretion, Organ Distribution, and Placental Transfer of 6PPD and 6PPD-Quinone in Mice and Potential Developmental Toxicity through Nuclear Receptor Pathways.” *Environmental Science & Technology* 57 (36): 13429–38. https://doi.org/10.1021/acs.est.3c05026.	GZZX9DMJ
Zhao, Haoqi Nina, Ximin Hu, Melissa Gonzalez, et al. 2023. “Screening P-Phenylenediamine Antioxidants, Their Transformation Products, and Industrial Chemical Additives in Crumb Rubber and Elastomeric Consumer Products.” *Environmental Science & Technology* , ahead of print, February 9. https://doi.org/10.1021/acs.est.2c07014.	NMVDB224
Zhao, Haoqi Nina, Ximin Hu, Zhenyu Tian, et al. 2023. “Transformation Products of Tire Rubber Antioxidant 6PPD in Heterogeneous Gas-Phase Ozonation: Identification and Environmental Occurrence.” *Environmental Science & Technology* 57 (14): 5621–32. https://doi.org/10.1021/acs.est.2c08690.	ENE6F3HC
Zhou, Yangjian, Lacuo Yixi, Qingqing Kong, et al. 2023. “Sunlight-Induced Transformation of Tire Rubber Antioxidant *N* -(1,3-Dimethylbutyl)- *N*′ -Phenyl- *p*- Phenylenediamine (6PPD) to 6PPD-Quinone in Water.” *Environmental Science & Technology Letters* 10 (9): 798–803. https://doi.org/10.1021/acs.estlett.3c00499.	QGKYMZ6J
Zhu, Jianqiang, Ruyue Guo, Fangfang Ren, Shengtao Jiang, and Hangbiao Jin. 2024. “Occurrence and Partitioning of *p* -Phenylenediamine Antioxidants and Their Quinone Derivatives in Water and Sediment.” *Science of the Total Environment* 914 (March): 170046. https://doi.org/10.1016/j.scitotenv.2024.170046.	3FETIQAB
Zhu, Jianqiang, Ruyue Guo, Shengtao Jiang, Pengfei Wu, and Hangbiao Jin. 2024. “Occurrence of *p* -Phenylenediamine Antioxidants (PPDs) and PPDs-Derived Quinones in Indoor Dust.” *Science of the Total Environment* 912: 169325. https://doi.org/10.1016/j.scitotenv.2023.169325.	WEPL88BC
Ziajahromi, Shima, Hsuan-Cheng Lu, Darren Drapper, Andy Hornbuckle, and Frederic D. L. Leusch. 2023. “Microplastics and Tire Wear Particles in Urban Stormwater: Abundance, Characteristics, and Potential Mitigation Strategies.” *Environmental Science & Technology* 57 (34): 12829–37. https://doi.org/10.1021/acs.est.3c03949.	YZAD6ZJV
Ziontz, Jacob. n.d. “Far-Reaching Rights: An Era of Innovation in Treaty Law in Washington State That Impacted the Rights of Aboriginal Peoples Worldwide.” Accessed July 15, 2024. https://www.historylink.org/File/10085.	ZW5F8CK3