Supplementary Materials

Table S1. Concentration Table of Environmental Factors at Each Monitoring Site.

	Soil Depth (m)	Benzene (μg/kg)	Ethylbenzene (μg/kg)	Chlorobenzene (μg/kg)	2-chlorophenol(μg/kg)	pH	Moisture Content (%)
	0.5	0.95	0.6	1350	30	8.14	23.9
T1	3	0.95	282	43000	560	8.42	25.1
	6	648	331	159000	600	8.76	20
	0.5	0.95	0.6	0.6	30	7.98	20.4
T2	3	4080	1000000	198000	30	7.94	21.4
	6	0.95	11700	1510	30	8.61	19.4
	0.5	0.95	3640	0.6	30	8.34	16
T3	3	182	1565	21600	30	8.62	21.45
	6	376	1350	5000	30	8.76	19.2
	0.5	0.6	0.6	7240	30	8.15	20.8
T4	3	482	3360	17300	120	8.7	76.2
	6	954	34200	1710	30	8.91	18.6
	0.5	0.95	0.6	732	30	7.9	22.4
T5	3	267	210.6	90800	760	8.29	21.6
	6	707.6	131	178400	480	8.64	19.6
	0.5	223	0.6	17500	140	8.72	19.8
T6	3	440	570	67400	1100	8.67	22.5
	6	464	0.6	113600	480	8.78	18.6
	0.5	0.95	0.6	0.6	30	7.98	20.2
T7	3	76.2	5580	72200	920	8.4	21
	6	179.6	617.8	67000	680	8.51	19.8
	0.5	17300	0.6	17300	200	8.52	19.8
T8	3	143	322	108600	980	7.94	75.95
	6	140.84	333.6	172200	680	8.89	26.8
	0.5	0.95	135	1200	30	8.39	19.9
T9	3	252	43000	35000	400	8.35	24.8
	6	454.5	7680	118800	380	8.68	19.3
	0.5	0.95	231	1890	30	8.15	19.7
T10	3	1910	2140000	64000	30	8.66	22.9
	6	424	34600	993	30	8.98	20.1

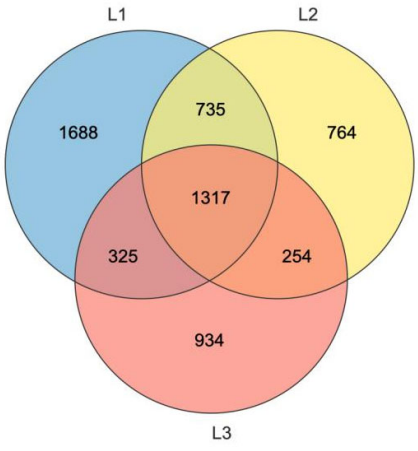


Figure S1. OTU-Level Venn Diagram (Surface-layer: L1; Intermediate-layer: L2; Deep-layer: L3).

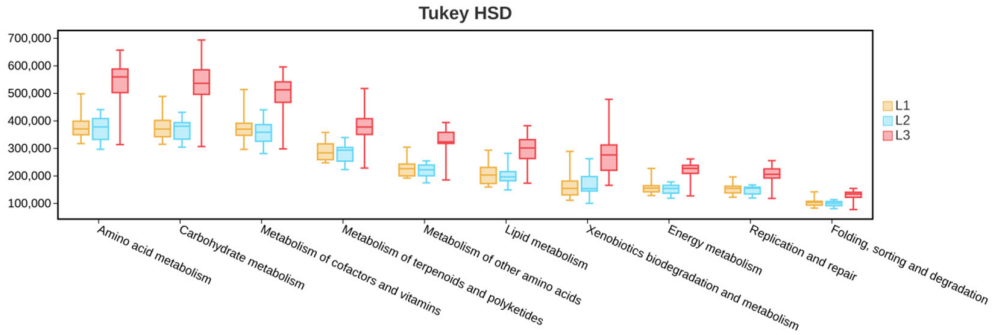


Figure S2. Differential Analysis of the Top Ten Metabolic Functional Genes Across Three Soil Layers (Surface-layer: L1; Intermediate-layer: L2; Deep-layer: L3).

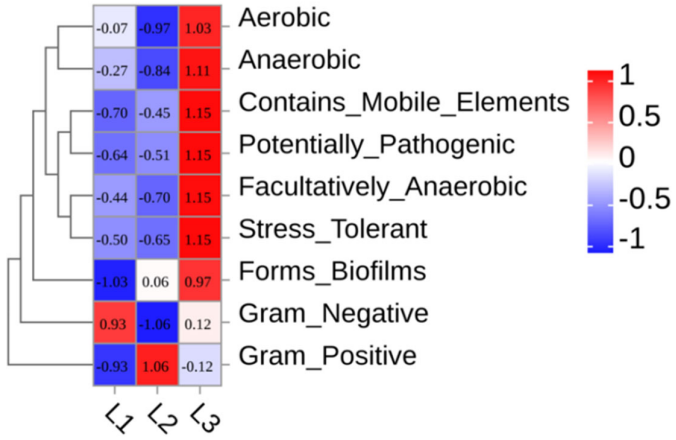


Figure S3. Heatmap of predicted prokaryotic phenotypic abundance across different soil layers based on Bugbase (Surface-layer: L1; Intermediate-layer: L2; Deep-layer: L3).

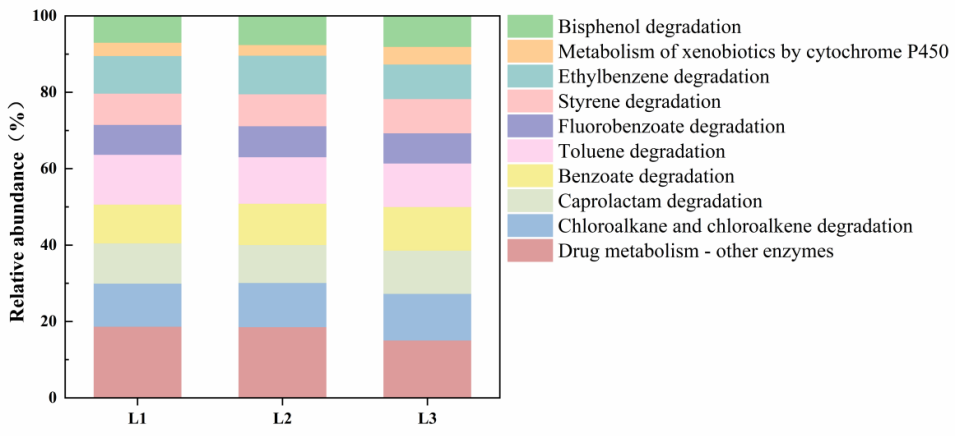


Figure S4. Top ten most abundant functional genes related to heterotrophic biomass biodegradation and metabolism predicted by PICRUSt2 (Surface-layer: L1; Intermediate-layer: L2; Deep-layer: L3).

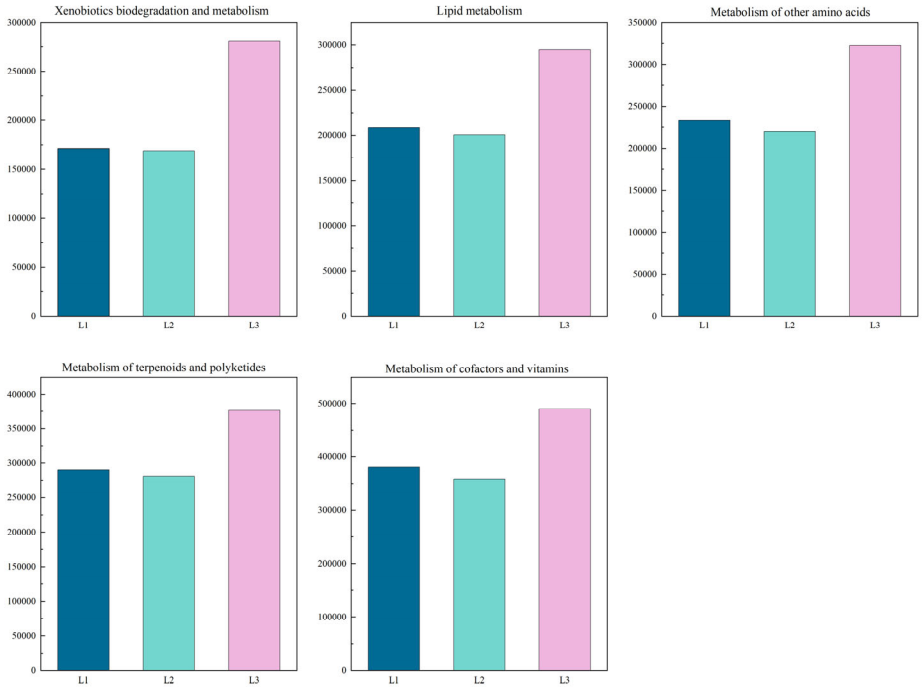


Figure S5. Relative abundances of selected functional pathways predicted by PICRUSt2 across different soil layers, including xenobiotic biodegradation and metabolism, lipid metabolism, metabolism of other amino acids, metabolism of terpenoids and polyketides, and metabolism of cofactors and vitamins. (Surface-layer: L1; Intermediate-layer: L2; Deep-layer: L3).