



Asia Pacific Mercury
Monitoring Network



National Atmospheric
Deposition Program



Ministry of
Environment

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Present Status of Mercury Monitoring Activities in Sri Lanka

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In Collaboration with

Environmental Pollution Control & Chemical Management Division, Ministry of Environment, SRI LANKA

National mercury monitoring center, Sri Lanka established in 2019



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Central Province, Sri Lanka

Site: **APLK01**

Site Name: **U of Peradeniya**

Latitude: **7.2518**

Longitude: **80.5946**

Elevation: **481**

Status: **Active**

Type: **Wet**

[Site Photos](#)

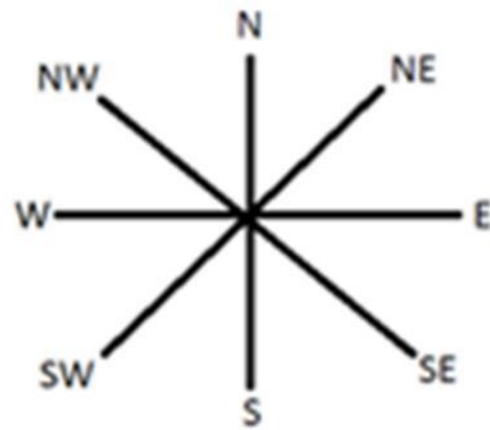


Progress of atmospheric mercury monitoring activities in Sri Lanka

- Wet deposition sampler was installed at University of Peradeniya. 24Hr Gold Amalgamation Trap air sampling and MerPAS sampling at the same location



Wet deposition sampler and Air Sampling Location at University of Peradeniya



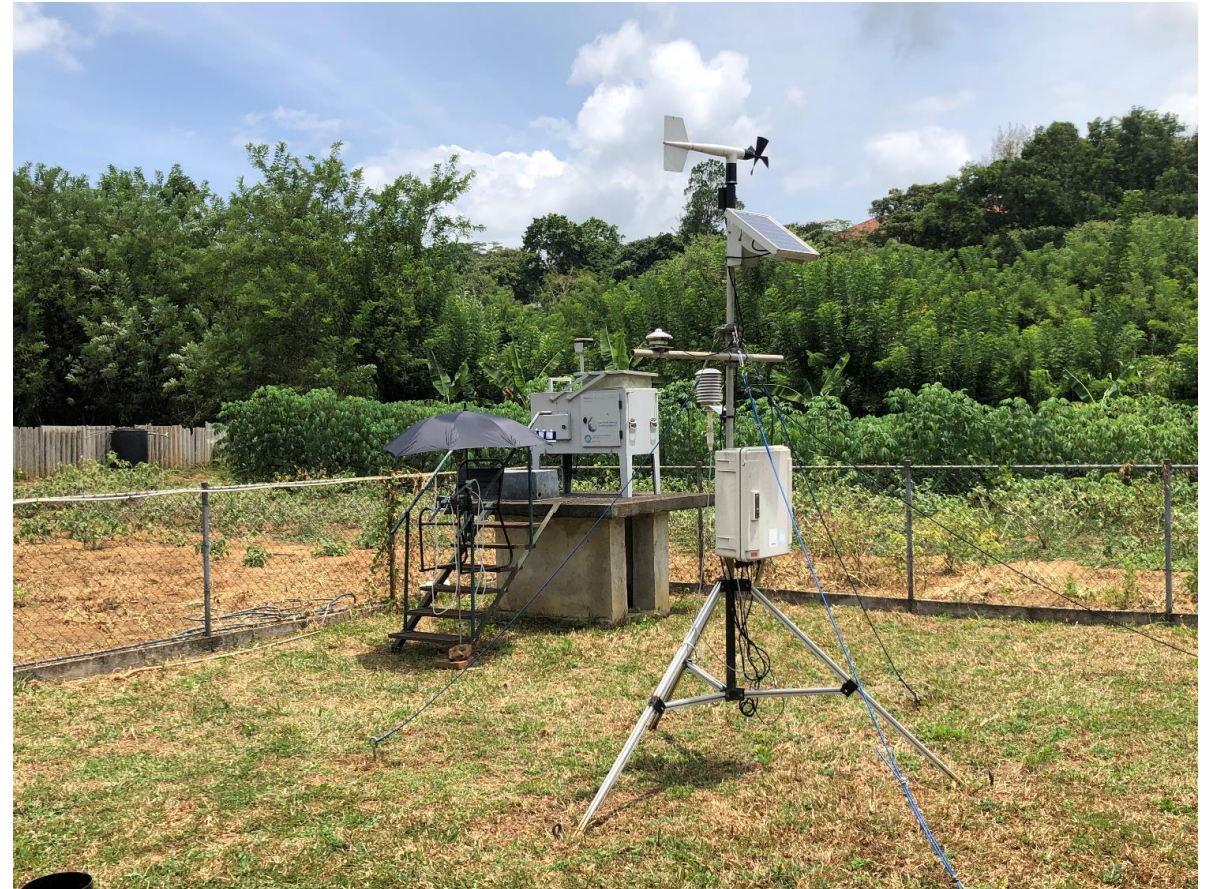
Passive air sampler pilot study in 2023 (MerPAS)- RESULTS

Date on	Date off	Sample type	Hg (ng/m ³)
2-Jan	31-Mar	Blank	-
2-Jan	31-Mar	Sample	0.206
2-Jan	31-Mar	Sample	0.163
1-Apr	7-Jul	Blank	-
1-Apr	7-Jul	Sample	0.180
1-Apr	7-Jul	Sample	0.189
1-Jul	6-Oct	Blank	-
1-Jul	6-Oct	Sample	1.231
1-Jul	6-Oct	Sample	1.293
6-Oct	1-Jan	Blank	-
6-Oct	1-Jan	Sample	1.715
6-Oct	1-Jan	Sample	2.002



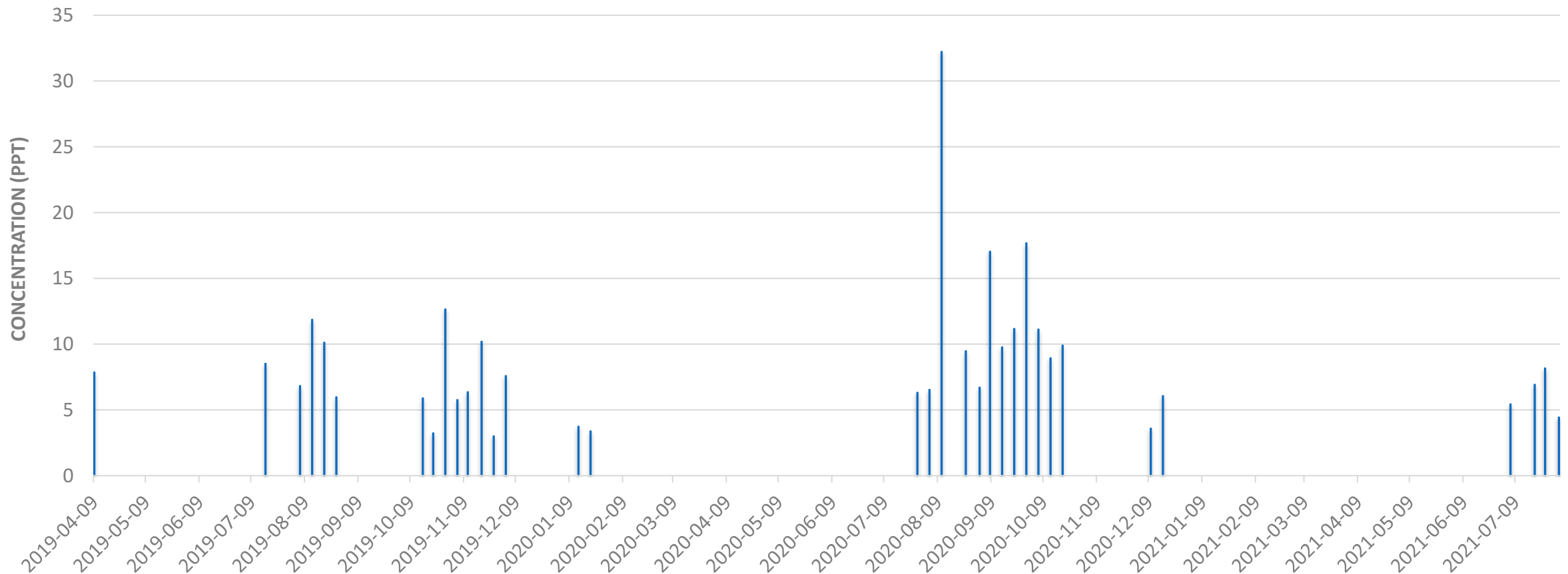
Atmospheric Air monitoring

- Atmospheric air sampling equipment from MoEJ
- Collected samples are analyzed at (Gold cartridge) at **Institute of Environmental Ecology, IDEA Consultants, Inc. Japan.**
- Sampling started from October 2020 and continuing; however, interrupted due to Covid-19 issue and economic crisis.



Progress of wet deposition (Mercury in rainwater) monitoring at UoP

Analyzed at Central Analytical Lab, National Central University, Taiwan



24-hour air sampling (2 replicates)/ each month

Institute of Environmental Ecology, IDEA Consultants, Inc. Japan

No.	column No.	sample name	Result [unit: ng/m ³]	Sampling date (start)	Sampling date (End)
1	No.1	No.1 (10/2-10/3)	1.4	2-Oct-2020	3-Oct-2020
2	No.2	No.2 (10/2-10/3 dup.)	1.3	2-Oct-2020	3-Oct-2020
3	TBL01	TBL01	n.d.		
4	TBL02	TBL02	n.d.		
5	TBL03	TBL03	n.d.		
1	LKA-11	No.1 (11/10-11/11)	1.8	10-Nov-2020	11-Nov-2020
2	LKA-12	No.2 (11/10-11/11 dup.)	1.9	10-Nov-2020	11-Nov-2020
3	LKA-13	TBL01	n.d.		
4	LKA-14	TBL02	n.d.		
5	LKA-15	TBL03	n.d.		

Mercury exposure assessment - Small scale jewellery manufacturers

- Pilot study on “Exposure assessment of mercury in small scale jewellery manufactures in Sri Lanka through Bio-chemical investigation”
- Conducted by Gem and Jewellery Research and Training Institute with University of Peradeniya
- Some individuals (3/50) working in jewellery industry (waste gold separators) having higher urine mercury (Alert/ High levels)

	Urine Mercury Concentration (ug Hg/ g creatinine)		
	Mean	Min	Max
Exposed group (n=50)	3.3	0.09	82.7
Medium exposed group – Gold technicians (n=41)	0.5	0.09	3.95
High exposed group – Waste gold separators (n=9)	15.7	0.26	82.7
Non-exposed control group (n=34)	0.54	0.09	3.65
	Hg urine(μg/l)	Hg urine (μg/g creatinine)	Status
Below HBM I	0–7	0–5	Normal
HBM I to HBM II	7–25	5–20	Alert level
Over HBM II	> 25	>20	High level
BAT for metallic and inorganic Hg	>100		Workplace limit
HBM = Human Biomonitoring (Commission Human-Biomonitoring of the Federal Environmental Agency Berlin, 1999).			
BAT = Biological Tolerance Value (German Research Foundation, 1999).			

Future works

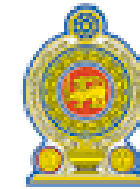
Resume wet precipitation collection from September 2024

Send all collected Air samples to Japan for analysis
(Sampled on scheduled dates)

Planning to start research work on atmospheric mercury monitoring in hotspots (Waste dumpsites, industrial zones, major cities)

Exposure assessment of mercury in small scale Jewelry Industry
(Larger sample size, ~ 120)

Share and analyze data in local, regional and global scale



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Thank you.