



Long Beach **Water**

Exceptional Water • Exceptional Service

Inductively Coupled Plasma Mass Spectrometer systems (ICP/MS)

Board of Water Commissioners

May 12, 2022

Water Quality Monitoring

Long Beach Water Distribution System Schematic

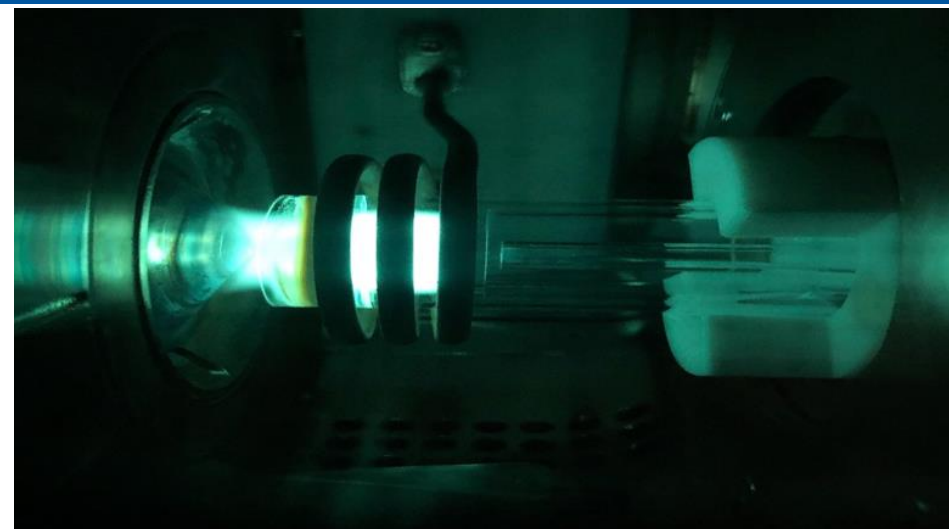


- 60,000-70,000 tests/annually to monitor:

- Biological
- Physical
- Chemical-Inorganic and organic
- Radioactive



Inductively Coupled Plasma Mass Spectrometer (ICP/MS)



Periodic Table of the Elements

1 IA																		18 VIIIA		
1	H																	2	He	
2	Li																	10	Ne	
3	Na																	18	Ar	
4	K	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	36	Kr	
5	Rb	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	54	Xe	
6	Cs	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	Rn	
7	Fr	87	88	89-103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	Og
		57	58	59	60	61	62	63	64	65	66	67	68	69	70	71				
		La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu				
		Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr				

- Analyze multiple elements rapidly
- Very low detection limits (parts per billion level)
- Ionizes chemical species and sort the ions based on mass/charge ratio

Current ICP/MS



- Purchased in 2005
- Mainly used to monitor inorganic contaminant, e.g., lead and copper
- Parts and support will not be available next year



Bid Procedures

- ITB posted on 1/27/22, due on 4/21/22
- 2 bids received, both conforming

Vendor	Total Bid
Thermo Electron North America LLC	\$228,692
Agilent Technologies	\$238,931



Staff Recommendation

- Adopt Specifications WD-43-22 and authorize the General Manager to execute an agreement with Thermo Electron North America LLC to furnish, deliver and install one (1) Inductively Coupled Plasma Mass Spectrometer (ICP/MS) system with autosampler in an amount not to exceed \$228,692.





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