



SCHEDULE OF SERVICES & FEES

2026

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MISSION STATEMENT

At American Assay Laboratories, we provide precise and reliable geochemical testing services. Located conveniently to service Nevada's mining hub, we use advanced technology and expert chemists to deliver top-tier quality and results. Our secure cloud-based system ensures efficient and accessible results. Committed to exceptional quality and customer convenience, we aim to be your trusted partner in decision-making.



ISO/IEC 17025:2017
ACCREDITED



ADMINISTRATION



ADMINISTRATION

Our staff follows precise operating procedures to manage the high volume of samples received on a day-to-day basis. This efficiency ensures quick reporting turnaround for quality assays including guaranteed turnarounds for rush orders. AAL provides an organized comprehensive system aimed at helping clients with every step of the process. We provide sample pick-up, set custom jobs, have a wide spectrum of geochemical testing, and provide warehouse storage. With a focus on swift responsiveness, our QC and operational staff provide dependable support, tailored to the specific challenges of each project.

CODE	NOTE	DESCRIPTION	PRICE	MINIMUM	SP MINIMUM
A-BC10	Batch Fee	Computer Batch Tracking and Paperwork Generation Fee	\$100		
A-MC11	*Minimum Order	Batch Fee (\$100) + Minimum Order (\$400)	\$500	\$500	
A-SP11	*Minimum Order Special Projects	Batch Fee (\$100) + Minimum Order (\$400) + Research (\$300) <i>All Special Projects orders require additional charge for setup and research.</i>	\$800	\$800	\$800
A-PU11	PICK-UP	Sample pickup from site	\$169.30 per hour		
A-GT02	TURNAROUND	Guaranteed 2 business days	7x book price	\$5,000	\$5,000
A-GT05	TURNAROUND	Guaranteed 5 business days	5x book price	\$3,000	\$3,500
A-GT10	TURNAROUND	Guaranteed 10 business days	3x book price	\$1,500	\$2,400
A-GT15	TURNAROUND	Guaranteed 15 business days	1.7x book price	\$1,000	\$1,600
A-LG11	LOG-IN	Barcode log in and weigh of samples	\$1.10 per sample		
A-LB11	LOG-IN	Log in, generate barcode and weigh of samples	\$1.60 per sample		
A-DW11	DISPOSAL	Disposal non-hazardous waste to approved land fill	\$1.20 per sample		
A-DW21	DISPOSAL	Disposal hazardous waste to approved waste facility	\$1.70 per sample		
A-SR11	RETURN/ RETRIEVAL	Return of pulp or reject to client and retrieval for further work	\$95.00 per hour		
P-LS11	STORAGE	Large (>1kg) storage in yard storage	\$0.40 per sample per month		
P-SS11	STORAGE	Small (<1kg) storage in AAL warehouse	\$0.60 per sample per month		
P-CS11	STORAGE	CoreBox Storage	\$1.70 per box per month		
ED-XRF	SCAN	Niton ED-XRF scan (up to 5 samples for min charge)	\$21.00 per sample	\$100	

*Payment by credit card will incur an additional 3% processing fee

SAMPLE PREPARATION



SAMPLE PREPARATION

Sample preparation is essential in processing raw material to homogenous fine dry powder suitable for chemical analysis. We have large-volume natural gas drying ovens with adjustable temperature controls to address volatile elements within sample material. The department includes core logging, jaw crush, roll crush, jones riffle split, rotary split, and ring mill pulverization. The extractors help maintain a clean and safe environment. Prep protocol enforces multiple quality checks to ensure representative sub-samples are produced in an organized and streamlined fashion.

CODE	NOTE	DESCRIPTION	PRICE
P-CL21	CORE LOG AREA	Lockable Core Logging Area Daytime/LED Lights Roller Table Area	\$80.00 per day
P-CP21	CORE PHOTOGRAPHY	Fixed Focus digital photograph of core as specified	\$5.50 per box
P-CC21	CORE CUT	Log, Cut and Bag to client specification	\$96.90 per hour + blade cost
P-CF21	CORE CUT	Friable Core sampled to client specification surcharge	\$6.50 per foot
P-ST11	DRY	Transfer plastic or broken bag samples to drying tray	\$1.70 per sample
P-HD11	DRY	Drying of excessively wet samples (>5% moisture) 105°C	\$5.40 + \$1 per kg
P-LD11	DRY	Drying of excessively wet samples (>5% moisture) 60°C	\$6.50 + \$1.50 per kg
P-CC11	CRUSH	Coarse Crush	\$3.80 + \$1 per kg
P-SC11	CRUSH	Fine Crushing of dried sample >70% -2mm	\$3.80 + \$1 per kg
P-SC21	CRUSH	Fine Crushing of dried sample >85% -2mm	\$4.40 + \$2 per kg
P-SC31	CRUSH	Fine Crushing of dried sample >90% -2mm	\$5.40 + \$2 per kg
P-SS11	SPLIT	Split Jones Riffle	\$2.40 + \$0.60 per kg
P-SR21	SPLIT	Split Rotary	\$4.40 + \$1.50 per kg
P-SP11	SPLIT	Split Pulp	\$1.20 per pulp
P-PZ11	PULVERIZE	Pulverize 300 grams >85% -75 micron	\$7.60 per sample
P-PZ21	PULVERIZE	Pulverize 1kg split >85% -75 micron	\$9.80 per sample
P-C7J3	DRILL, ROCK, CORE	Crush >70%-2mm, Jones Split 300g, Pulverize >85% -75µ	\$9.80 + \$1 per kg
P-C7B3	DRILL, ROCK, CORE	Crush >70%-2mm, Rotary Split 300g, Pulverize >85% -75µ	\$12.00 + \$1 per kg
P-C7J10	DRILL, ROCK, CORE	Crush >70%-2mm, Jones Split 1000g, Pulverize >85% -75µ	\$10.80 + \$1 per kg
P-C7B10	DRILL, ROCK, CORE	Crush >70%-2mm, Rotary Split 1000g, Pulverize >85% -75µ	\$13.00 + \$1 per kg
P-C9B10	HIGH GRADE/ COARSE GOLD	Crush >90%-2mm, Boyd Rotary Split 1000g, Pulverize >85% -75µ	\$18.80 + \$2 per kg
P-SP81	SOIL	Dry 60°C, sieve 80 mesh retain +80# and -80# fractions	\$6.30 + \$1 per kg
P-BW11	BARREN WASH	Barren Wash where specified	\$4.40 per wash
P-PH11	HOMOGENIZE	Pulp Homogenization	\$7.70 per sample
P-CV11	COMPOSITE	Volumetric Compositing	\$3.00 per pulp
P-CG11	COMPOSITE	Gravimetric Compositing	\$5.50 per pulp
P-CP11	CUSTOM PREP	Client Specific custom preparation	\$99.80 per hour

SPECIALIZED CODES



SPECIALIZED CODES

AAL has highly educated and experienced staff that collaborate with our clients to meet any specialized needs. We have advanced instrumentation aimed to serve a wide range of specialties. Our experienced technicians operate ICP-OES/MS, ELTRA, XRF, SEM, DMA, CIC, etc. Our staff and instruments allow us to meet our clients' needs for customized analysis with precise results and flexible methodologies. AAL is fundamentally committed to continual innovation of our geochemical testing and technological tools.

CODE	DESCRIPTION	ANALYTE	RANGE	PRICE
A-SP11	Batch Fee (\$100) + Minimum Order (\$400) + Research (\$300) <i>All Special Projects orders require additional charge for setup and research.</i>			\$800 minimum
A-SP21	Special Project research and development			\$300 per hour
A-CM11	Concentrates or Metallurgical samples			4x book price
A-BD11	Bulk Density by water displacement waxed	Density		\$23.80 per sample
A-SG11	Specific Gravity by pycnometer	Ratio		\$23.80 per sample
G-LOI1000	Sample is ignited air atmosphere at 1000°C GRAVIMETRIC	LOI	0.01-100%	\$15.60 per sample
DM-Hg11	Direct Mercury Analyzer, MA-3000	Mercury (Hg)	0.001-1ppm	\$18.10 per sample
IO-LIBRI	Lithium Brines Solution Assay ICP-OES	Lithium (Li)	0.01-1,000ppm	\$12.00 per sample
IO-HYDRO	Read as received on ICP-OES, values are provisional	Request		\$12.10 per sample +\$1 per analyte
IM-HYDRO	Read as received on ICP-OES+MS, values are provisional	Request		\$18.40 per sample +\$1 per analyte
IC-CIC11	Combustion Ion Chromatography (CIC)	Chloride (Cl) Fluoride (F)	10-10,000ppm 20-10,000ppm	\$98.30 per sample
IC-CIC21	Combustion Ion Chromatography (CIC)	Chloride (Cl)	10-10,000ppm	\$80.70 per sample
IC-CIC31	Combustion Ion Chromatography (CIC)	Fluoride (F)	20-10,000ppm	\$80.70 per sample
IS-AN02	Ion Selective Electrode (ISE)	Fluoride (F)	0.10-15%	\$71.00 per sample
H2O-	Moisture Content at 105°C	H2O-	0.01-100%	\$20.90 per sample
PS-MI11	Pulp Particle Size Analysis Microtrac S3500 (0.1-2000 µm)	Particle Size	0.1-2000 µm	\$70.30 per sample
XS-SEM	Scanning Electron Microscope Analysis (\$150 setup fee)			\$327.60 per sample

COPPER ORE

CODE	DESCRIPTION	ANALYTE	RANGE	PRICE
IO-LCu	H ₂ SO ₄ leach (CuOx), ICP-OES	Copper (Cu)	0.001-10%	\$17.40
IO-QLTCu	H ₂ SO ₄ /Fe ₂ (SO ₄) ₃ leach (CuQLT), ICP-OES	Copper (Cu)	0.001-10%	\$22.80
IO-CNCu	CN leach (CuCN), ICP-OES	Copper (Cu)	0.001-10%	\$23.80
IO-LCuS	Sequential Leach, ICP-OES (Stage 1 CuOx, Stage 2 CuCN, Stage 3 D4AB)	Copper (Cu)	0.001-10%	\$50.30
T-CuCon	Concentrate Titration	Copper (Cu)	10-60%	\$60.10

FIRE ASSAY



FIRE ASSAY

- FUSION** Sample is fused in a ceramic crucible with litharge, sodium carbonate, borax, and flour.
- CUPELLATION** The 25-50 gram lead button is cupelled in a magnesite cupel at 900°C for 60 minutes.
- PARTING** The silver bead is parted with nitric acid then hydrochloric acid.
- ANALYSIS** Gold, Palladium, and Platinum may be determined by this technique. ICP-OES reading of digestion. Parted prills can be weighed and reported as gold.
- LIMITATION** ICP readings typically have a +/- 3-5% variation. Gravimetric determinations for gold and silver are less accurate at low levels (<3 ppm) but more accurate (<1% variation) above 3 ppm than ICP. Gravimetric reported gold results include any palladium, platinum and retained silver

Overrange result will trigger a Gravimetric Fire Assay repeat
Results can be reported in client requested units

CODE FIRE ASSAY	DESCRIPTION	NAME	ANALYTE	RANGE	PRICE PER SAMPLE
IO-FAAu30	30g, ICP-OES, ppm	Gold	Au	0.003-10	\$23.10
IO-FAAu50	50g, ICP-OES, ppm	Gold	Au	0.003-10	\$28.40
IO-FAPGM30	30g, ICP-OES, ppm	Gold	Au	0.003-10	\$28.40
		Palladium	Pd	0.003-10	
		Platinum	Pt	0.005-10	

CODE GRAVIMETRIC	DESCRIPTION	NAME	ANALYTE	RANGE	PRICE PER SAMPLE
G-FAAu	30g, Au Gravimetric, ppm	Gold	Au	0.5-10,000	\$29.40
G-FAAg	30g, Ag Gravimetric, ppm	Silver	Ag	20-10,000	\$32.00
G-FAAuAg	30g, Au & Ag Gravimetric, ppm	Silver	Ag	20-10,000	\$37.20
		Gold	Au	0.5-10,000	

CODE SCREEN FIRES	DESCRIPTION	NAME	ANALYTE	RANGE	PRICE PER SAMPLE
IO-FASFAu11	1Kg screened at 100µ, Au ICP-OES, ppm	Gold	Au	0.05-10,000	\$78.80
G-FASFAu11	Au fire assay on +100µ and 2 -100µ assays and calculated head assay Gravimetric, ppm	Gold	Au	0.05-10,000	\$92.40

CODE CARBON	DESCRIPTION	NAME	ANALYTE	RANGE	PRICE PER SAMPLE
G-FAAuC11	Fire Assay Pulverized Carbon, Au Gravimetric, ppm	Gold	Au	1-10,000	\$53.60

CYANIDE DIGESTION



CYANIDE DIGESTION

DIGEST

Sample digested for 2 hours using 0.3% NaCN and 0.3% NaOH solution. Cyanide concentration can be changed upon request.

ANALYSIS

ICP-OES finish of digestion solution

LIMITATION

High concentrations of sulphides may negatively impact gold extraction. Heating cyanide increases possible extraction. Heating can be added upon request.

CODE CN LEACH	DESCRIPTION	NAME	ANALYTE	RANGE	PRICE PER SAMPLE
IO-CNAu215	15g cyanide leach 2 hour, ICP-OES, ppm	Silver	Ag	0.01-300	\$8.70 + \$6.00 per element
		Gold	Au	0.01-100	
		Copper	Cu	0.1-2,000	
IO-CNAu230	30g cyanide leach 2 hour, ICP-OES, ppm	Silver	Ag	0.01-300	\$13.00 + \$6.00 per element
		Gold	Au	0.01-100	
		Copper	Cu	0.1-2,000	
IO-CNAu260	50g cyanide leach 2 hour, ICP-OES, ppm	Silver	Ag	0.01-300	\$15.20 + \$6.00 per element
		Gold	Au	0.01-100	
		Copper	Cu	0.1-2,000	

H is suffixed to codes with heated cyanide solution

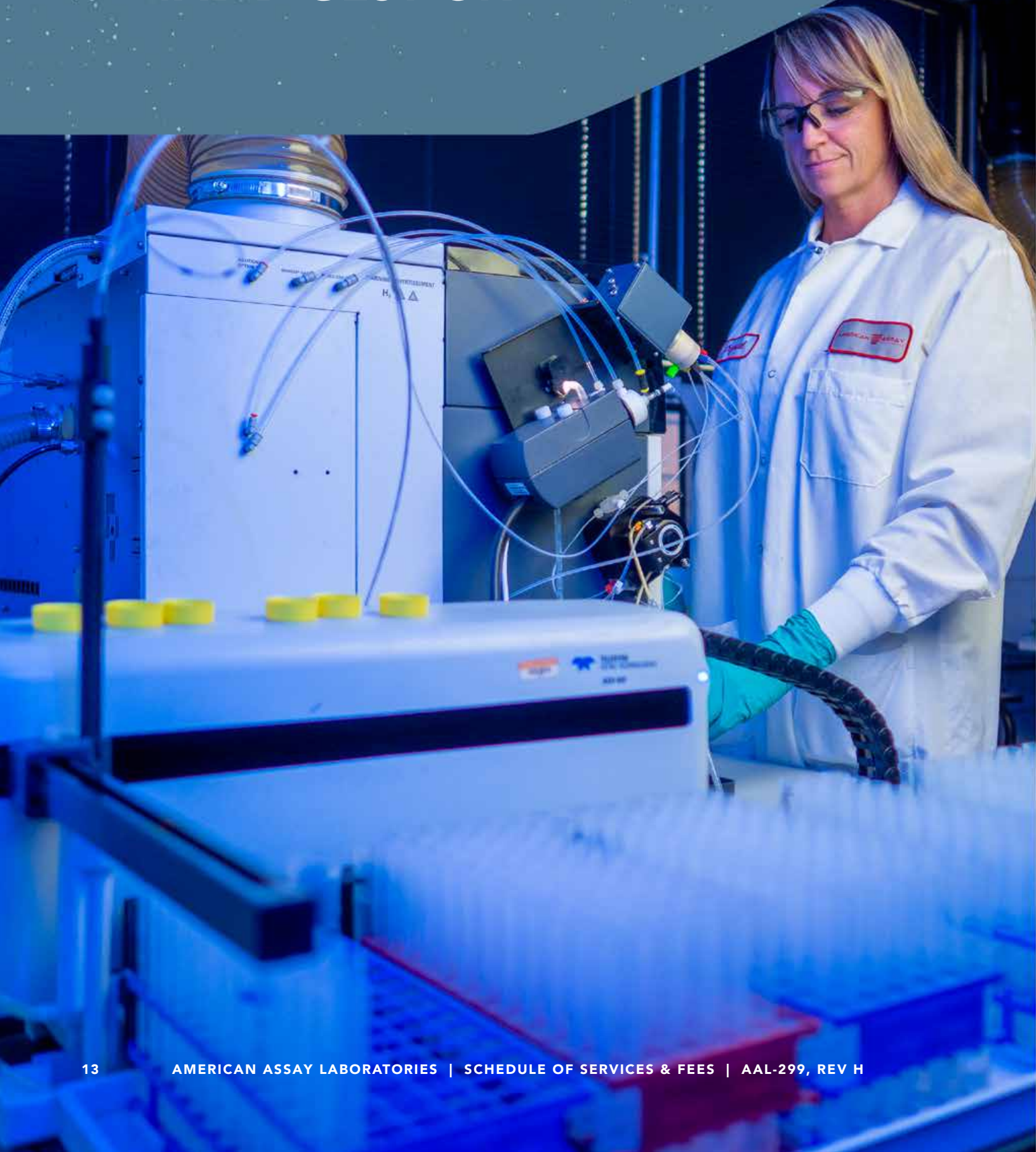
CODE CN BLEG	DESCRIPTION	NAME	ANALYTE	RANGE	PRICE PER SAMPLE
IO-CNBLEGI	1kg cyanide leach 24 hour, ICP-OES, ppm	Gold	Au	0.0001-10	\$50.30

CODE CN PREG ROB	DESCRIPTION	NAME	ANALYTE	RANGE	PRICE PER SAMPLE
IO-CNAu210 +PREG	10g cyanide leach 2 hour roll. Leach hasknown amount of Au. ICP-OES, ppm	Gold	Au	0.01-100	\$33.20

CODE CN PROCESS SOLUTION	DESCRIPTION	NAME	ANALYTE	RANGE	PRICE PER SAMPLE
IO-CNAuSOL	Cyanide solution assay, ICP-OES	Gold	Au	0.001-2,000 mg/L	\$29.10

CODE CN Cu LEACH	DESCRIPTION	NAME	ANALYTE	RANGE	PRICE PER SAMPLE
IO-CNCu	Cyanide leach, ICP-OES	Copper	Cu	0.001-10%	\$23.80

4AB DIGESTION



4AB DIGESTION

DIGEST 4AB Sample is digested with HNO₃, HF, HClO₄, HCl and H₃BO₃

ANALYSIS Agilent5110/Agilent7900

LIMITATION 4AB is a near total digest (resistant phases e.g. Corundum, Ilmenite, Rutile et al., are not digested)
For 4AB digest rare earth >10000ppm will cause double fluoride precipitation

CODE	DESCRIPTION	ANALYTE	PRICE PER SAMPLE
IO-4ABEx	4 acid + Boric acid ICP-OES	Any analyte from IO-4AB51	\$13.20 + \$1 per element
IM-4ABEx	4 acid + Boric acid ICP-OES+MS	Any analyte from IM-4AB61	\$19.70 + \$1 per element
IO-4ABOR	4 acid + Boric acid Ore Grade analysis for overrange elements ICP-OES	Any analyte from IO-4AB51	\$16.50 + \$1 per element

CODE	ANALYTE	RANGE	PRICE PER SAMPLE
IO-4ABAg	Silver, ppm (Ag)	0.3-100	\$14.10
IO-4ABORAg	Silver Ore Grade, ppm (Ag)	10-1500	\$17.50

CODE	DESCRIPTION	PRICE PER SAMPLE
IO-4AB12	0.5g, 4 acid + Boric acid hot block, ICP-OES, ppm	\$18.10

NAME	ANALYTE	LDL	UDL
Silver	Ag	0.3	100
Arsenic	As	2	10,000
Calcium	Ca	300	200,000
Copper	Cu	1	10,000
Iron	Fe	300	250,000

NAME	ANALYTE	LDL	UDL
Lithium	Li	5	8,000
Lead	Pb	3	10,000
Antimony	Sb	2	10,000
Zinc	Zn	3	10,000

CODE	DESCRIPTION	PRICE PER SAMPLE
IO-4AB28	0.5g, 4 acid + Boric acid hot block, ICP-OES, ppm	\$24.00

NAME	ANALYTE	LDL	UDL
Silver	Ag	0.3	100
Aluminum	Al	300	200,000
Arsenic	As	2	10,000
Bismuth	Bi	5	10,000
Calcium	Ca	300	200,000
Cerium	Ce	1	1,000
Cobalt	Co	1	10,000
Copper	Cu	1	10,000
Iron	Fe	300	250,000
Gallium	Ga	5	10,000
Potassium	K	300	100,000
Lanthanum	La	1	1,000
Lithium	Li	5	8,000
Magnesium	Mg	100	200,000

NAME	ANALYTE	LDL	UDL
Manganese	Mn	5	50,000
Sodium	Na	100	40,000
Nickel	Ni	2	10,000
Lead	Pb	3	10,000
Sulfur	S	30	200,000
Antimony	Sb	2	10,000
Scandium	Sc	1	1,000
Strontium	Sr	5	10,000
Titanium	Ti	30	100,000
Thallium	Tl	10	100
Vanadium	V	3	5,000
Yttrium	Y	1	1,000
Zinc	Zn	3	10,000

CODE	DESCRIPTION	PRICE PER SAMPLE
IO-4AB51	0.5g, 4 acid + Boric acid hot block, ICP-OES, ppm	\$35.00

NAME	ANALYTE	LDL	UDL
Silver	Ag	0.3	100
Aluminum	Al	300	200,000
Arsenic	As	2	10,000
Barium	Ba	2	5,000
Beryllium	Be	0.1	500
Bismuth	Bi	5	10,000
Calcium	Ca	300	200,000
Cadmium	Cd	0.5	1,000
Cerium	Ce	1	1,000
Cobalt	Co	1	10,000
Chromium	Cr	1	5,000
Copper	Cu	1	10,000
Dysprosium	Dy	1	1,000
Erbium	Er	1	1,000
Europium	Eu	1	1,000
Iron	Fe	300	250,000
Gallium	Ga	5	10,000
Gadolinium	Gd	1	1,000
Hafnium	Hf	1	1,000
Holmium	Ho	1	1,000
Potassium	K	300	100,000
Lanthanum	La	1	1,000
Lithium	Li	5	8,000
Lutetium	Lu	1	1,000
Magnesium	Mg	100	200,000

NAME	ANALYTE	LDL	UDL
Manganese	Mn	5	50,000
Molybdenum	Mo	1	10,000
Sodium	Na	100	40,000
Niobium	Nb	1	10,000
Neodymium	Nd	1	1,000
Nickel	Ni	2	10,000
Phosphorous	P	20	100,000
Lead	Pb	3	10,000
Praseodymium	Pr	1	1,000
Sulfur	S	30	200,000
Antimony	Sb	2	10,000
Scandium	Sc	1	1,000
Samarium	Sm	1	1,000
Tin	Sn	1	10,000
Strontium	Sr	5	10,000
Terbium	Tb	1	1,000
Thorium	Th	20	10,000
Titanium	Ti	30	100,000
Thallium	Tl	10	100
Thulium	Tm	1	1,000
Vanadium	V	3	5,000
Tungsten	W	2	10,000
Yttrium	Y	1	1,000
Ytterbium	Yb	1	1,000
Zinc	Zn	3	10,000



CODE	DESCRIPTION	PRICE PER SAMPLE
IM-4AB28	0.5g, 4 acid + Boric acid hot block, ICP-OES+MS, ppm	\$30.70

NAME	ANALYTE	LDL	UDL
Silver	Ag	0.3	100
Aluminum	Al	300	200,000
Arsenic	As	0.5	10,000
Bismuth	Bi	0.02	10,000
Calcium	Ca	300	200,000
Cadmium	Cd	0.02	1,000
Cobalt	Co	0.2	10,000
Copper	Cu	0.5	10,000
Iron	Fe	300	250,000
Gallium	Ga	0.05	10,000
Magnesium	Mg	100	200,000
Manganese	Mn	5	50,000
Molybdenum	Mo	0.2	10,000
Sodium	Na	100	40,000

NAME	ANALYTE	LDL	UDL
Neodymium	Nd	1	500
Nickel	Ni	0.5	10,000
Phosphorous	P	20	100,000
Lead	Pb	3	10,000
Rhenium	Re	0.003	1,000
Sulfur	S	30	200,000
Antimony	Sb	0.05	10,000
Selenium	Se	0.05	1,000
Tellurium	Te	0.03	100
Thallium	Tl	0.008	100
Uranium	U	0.05	10,000
Vanadium	V	3	5,000
Zinc	Zn	3	10,000

CODE	DESCRIPTION	PRICE PER SAMPLE
IM-4AB52	0.5g, 4 acid + Boric acid hot block, ICP-OES+MS, ppm	\$40.40

NAME	ANALYTE	LDL	UDL
Silver	Ag	0.3	100
Aluminum	Al	300	200,000
Arsenic	As	0.5	10,000
Barium	Ba	2	5,000
Beryllium	Be	0.02	500
Bismuth	Bi	0.02	10,000
Calcium	Ca	300	200,000
Cadmium	Cd	0.02	1,000
Cerium	Ce	0.2	1,000
Cobalt	Co	0.2	10,000
Chromium	Cr	0.2	5,000
Cesium	Cs	0.2	1,000
Copper	Cu	0.5	10,000
Iron	Fe	300	250,000
Gallium	Ga	0.05	10,000
Germanium	Ge	0.02	100
Hafnium	Hf	0.03	1,000
Indium	In	0.008	1,000
Potassium	K	300	100,000
Lanthanum	La	0.1	1,000
Lithium	Li	5	8,000
Magnesium	Mg	100	200,000
Manganese	Mn	5	50,000
Molybdenum	Mo	0.2	50,000

NAME	ANALYTE	LDL	UDL
Sodium	Na	100	40,000
Niobium	Nb	0.03	10,000
Nickel	Ni	0.5	10,000
Phosphorous	P	20	100,000
Lead	Pb	3	10,000
Rubidium	Rb	0.8	1,000
Rhenium	Re	0.003	1,000
Sulfur	S	30	200,000
Antimony	Sb	0.05	10,000
Scandium	Sc	0.05	1,000
Selenium	Se	0.05	1,000
Tin	Sn	0.05	10,000
Strontium	Sr	5	10,000
Tantalum	Ta	0.03	1,000
Tellurium	Te	0.03	100
Thorium	Th	0.08	100
Titanium	Ti	30	100,000
Thallium	Tl	0.008	100
Uranium	U	0.05	10,000
Vanadium	V	3	5,000
Tungsten	W	0.07	10,000
Yttrium	Y	0.05	1,000
Zinc	Zn	3	10,000
Zirconium	Zr	0.3	1,000

CODE	DESCRIPTION			PRICE PERSAMPLE			
IM-4AB61	0.5g, 4 acid + Boric acid hot block, ICP-OES+MS, ppm			\$50.90			
NAME	ANALYTE	LDL	UDL	NAME	ANALYTE	LDL	UDL
Silver	Ag	0.05	100	Sodium	Na	100	40,000
Aluminum	Al	300	200,000	Niobium	Nb	0.03	10,000
Arsenic	As	0.5	10,000	Neodymium	Nd	0.05	1,000
Barium	Ba	2	5,000	Nickel	Ni	0.5	10,000
Beryllium	Be	0.02	500	Phosphorous	P	20	100,000
Bismuth	Bi	0.02	10,000	Lead	Pb	3	10,000
Calcium	Ca	300	200,000	Praseodymium	Pr	0.05	1,000
Cadmium	Cd	0.02	1,000	Rubidium	Rb	0.8	1,000
Cerium	Ce	0.2	1,000	Rhenium	Re	0.003	1,000
Cobalt	Co	0.2	10,000	Sulfur	S	30	200,000
Chromium	Cr	0.2	5,000	Antimony	Sb	0.05	10,000
Cesium	Cs	0.2	1,000	Scandium	Sc	0.05	1,000
Copper	Cu	0.5	10,000	Selenium	Se	0.05	1,000
Dysprosium	Dy	0.05	1,000	Samarium	Sm	0.05	1,000
Erbium	Er	0.05	1,000	Tin	Sn	0.05	10,000
Europium	Eu	0.05	1,000	Strontium	Sr	5	10,000
Iron	Fe	300	250,000	Tantalum	Ta	0.03	1,000
Gallium	Ga	0.05	10,000	Terbium	Tb	0.2	1,000
Gadolinium	Gd	0.05	1,000	Tellurium	Te	0.03	100
Germanium	Ge	0.02	100	Thorium	Th	0.08	10,000
Hafnium	Hf	0.03	1,000	Titanium	Ti	30	100,000
Holmium	Ho	0.05	1,000	Thallium	Tl	0.008	100
Indium	In	0.008	1,000	Thulium	Tm	0.05	1,000
Potassium	K	300	100,000	Uranium	U	0.05	10,000
Lanthanum	La	0.1	1,000	Vanadium	V	3	5,000
Lithium	Li	5	8,000	Tungsten	W	0.07	10,000
Lutetium	Lu	0.05	1,000	Yttrium	Y	0.05	1,000
Magnesium	Mg	100	200,000	Ytterbium	Yb	0.05	1,000
Manganese	Mn	5	50,000	Zinc	Zn	3	10,000
Molybdenum	Mo	0.2	10,000	Zirconium	Zr	5	1,000

2A DIGESTION

DIGEST 2A

Sample is digested with HNO₃+HCl

ANALYSIS

Agilent5110/Agilent7900

LIMITATION

Partial digest with many resistant phases that are not digested.

CODE	DESCRIPTION	ANALYTE	PRICE PER SAMPLE
IO-2AEx	ICP-OES	Any analyte from IO-2A12	\$8.20 + \$1 per element
IM-2AEx	ICP-OES+MS	Any analyte from IM-2A16	\$14.10 + \$1 per element
IO-2AOR	2 acid Ore Grade analysis for overrange elements ICP-OES	Any analyte from IO-2A12	\$11.40 + \$1 per element

CODE	NAME	ANALYTE	RANGE	PRICE PER SAMPLE
IO-2AAg	Silver	Ag	0.3-100 ppm	\$9.20
IM-2AHg	Mercury	Hg	0.01-500 ppm	\$15.20

CODE	DESCRIPTION	PRICE PER SAMPLE
IO-2A12	0.5g, 2 acid hot block, ICP-OES, ppm	\$11.80

NAME	ANALYTE	LDL	UDL	NAME	ANALYTE	LDL	UDL
Silver	Ag	0.3	100	Molybdenum	Mo	1	10,000
Arsenic	As	2	10,000	Lead	Pb	3	10,000
Calcium	Ca	300	200,000	Sulfur	S	30	200,000
Copper	Cu	1	10,000	Antimony	Sb	2	10,000
Iron	Fe	300	250,000	Uranium	U	8	10,000
Mercury	Hg	0.5	500	Zinc	Zn	3	10,000

CODE	DESCRIPTION	PRICE PER SAMPLE
IM-2A16	0.5g, 2 acid hot block, ICP-OES+MS, ppm	\$20.00

NAME	ANALYTE	LDL	UDL	NAME	ANALYTE	LDL	UDL
Silver	Ag	0.3	100	Lead	Pb	3	10,000
Arsenic	As	0.5	10,000	Sulfur	S	30	200,000
Bismuth	Bi	0.02	10,000	Antimony	Sb	0.05	10,000
Calcium	Ca	300	200,000	Selenium	Se	0.05	1,000
Copper	Cu	1	10,000	Tellurium	Te	0.03	100
Iron	Fe	300	250,000	Thallium	Tl	0.08	100
Mercury	Hg	0.01	500	Uranium	U	0.05	10,000
Molybdenum	Mo	0.2	10,000	Zinc	Zn	3	10,000

ELTRA CARBON & SULFUR ANALYSIS



ELTRA

DIGEST ELTRA CS is an induction furnace, heating samples to >2000°C to generate CO₂ and SO₂ that are analyzed by infrared emitters and detectors

ANALYSIS ELTRA C/S Analyzer CSi

LIMITATION Samples with barite and celestite may affect results.

CODE	DESCRIPTION	ANALYTE	RANGE	PRICE PER SAMPLE
E-CS	0.3g, ELTRA CSi (Total)	Carbon (C)	0.01-15%	\$28.10
		Sulfur (S)	0.01-15%	
E-CSL	0.3g, HCl Leach, ELTRA CSi (Leach)	Organic Carbon	0.01-15%	\$37.90
		Sulfide	0.01-15%	
		Inorganic Carbon*	0.01-15%	
		Sulfate*	0.01-15%	
E-CSR	0.3g, Roast 500C, ELTRA CSi (Roast)	Inorganic Carbon	0.01-15%	\$48.70
		Sulfate	0.01-15%	

*Analytes results are calculated values from E-CS & E-CSL

PACKAGE CODE	DESCRIPTION	PRICE PER SAMPLE
E-CS +E-CSL	Total and Leach ELTRA analysis (recommended package) Includes analytes: Total C, Total S, Organic C, Sulfide, Inorganic C*, Sulfate*	\$65.90
E-CS +E-CSR	Total and Roast ELTRA analysis Includes analytes: Total C, Total S, Organic C*, Sulfide*, Inorganic C, Sulfate	\$76.80
E-CS +E-CSL +E-CSR	Total, Leach and Roast ELTRA analysis Includes analytes: Total C, Total S, Organic C, Sulfide, Inorganic C, Sulfate	\$114.60

*Analytes results are calculated values

SODIUM PEROXIDE (Na_2O_2) FUSION



SODIUM PEROXIDE (Na₂O₂) FUSION

DIGEST Sample is fused with Sodium Peroxide flux for total digestion in carbon crucible.

ANALYSIS Agilent5110/Agilent7900

LIMITATION Sulfide (S>10%) and/or Carbon (C>10%) samples may explode during fusion.

CODE	DESCRIPTION	ANALYTE	PRICE PER SAMPLE
IO-NFEx	Sodium Peroxide Fusion, ICP-OES	Any analyte from IO-NF27	\$20.60 + \$1 per element
IM-NFEx	Sodium Peroxide Fusion, ICP-OES+MS	Any analyte from IM-NF43	\$26.80 + \$1 per element

CODE	DESCRIPTION	PRICE PER SAMPLE
IO-NF27	0.5g, Sodium Peroxide, ICP-OES, ppm	\$31.40

NAME	ANALYTE	LDL	UDL
Boron	B	30	100,000
Barium	Ba	5	5,000
Calcium	Ca	1,000	350,000
Cerium	Ce	2	50,000
Dysprosium	Dy	2	50,000
Erbium	Er	2	50,000
Europium	Eu	2	50,000
Iron	Fe	500	500,000
Gadolinium	Gd	5	50,000
Holmium	Ho	2	50,000
Lanthanum	La	2	50,000
Lithium	Li	2	50,000
Lutetium	Lu	2	50,000
Niobium	Nb	5	100,000

NAME	ANALYTE	LDL	UDL
Neodymium	Nd	2	50,000
Phosphorous	P	50	100,000
Praseodymium	Pr	5	50,000
Scandium	Sc	2	50,000
Samarium	Sm	2	50,000
Strontium	Sr	5	100,000
Terbium	Tb	3	50,000
Thorium	Th	50	100,000
Titanium	Ti	10	100,000
Thulium	Tm	2	50,000
Yttrium	Y	2	50,000
Ytterbium	Yb	2	50,000
Zirconium	Zr	2	100,000

PACKAGE CODE	DESCRIPTION	PRICE PER SAMPLE
IM-NF5	15g, Sodium Peroxide, ICP-OES+MS, ppm	\$97.30

NAME	ANALYTE	LDL	UDL
Iridium	Ir	0.001	1,000
Palladium	Pd	0.001	1,000
Platinum	Pt	0.001	1,000

NAME	ANALYTE	LDL	UDL
Rhodium	Rh	0.001	1,000
Ruthenium	Ru	0.001	1,000

CODE	DESCRIPTION	PRICE PER SAMPLE
IM-NF43	0.5g, Sodium Peroxide, ICP-OES+MS, ppm	\$50.70

NAME	ANALYTE	LDL	UDL
Aluminum	Al	500	400,000
Boron	B	30	100,000
Barium	Ba	5	5,000
Beryllium	Be	0.2	10,000
Calcium	Ca	1,000	350,000
Cerium	Ce	2	50,000
Chromium	Cr	5	100,000
Copper	Cu	10	100,000
Dysprosium	Dy	2	50,000
Erbium	Er	2	50,000
Europium	Eu	2	50,000
Iron	Fe	500	500,000
Gadolinium	Gd	5	50,000
Holmium	Ho	2	50,000
Potassium	K	300	100,000
Lanthanum	La	2	50,000
Lithium	Li	2	50,000
Lutetium	Lu	2	50,000
Magnesium	Mg	300	300,000
Manganese	Mn	20	250,000
Molybdenum	Mo	5	50,000
Niobium	Nb	5	100,000

NAME	ANALYTE	LDL	UDL
Neodymium	Nd	2	50,000
Nickel	Ni	5	100,000
Phosphorous	P	50	100,000
Praseodymium	Pr	5	50,000
Sulfur	S	200	200,000
Scandium	Sc	2	50,000
Samarium	Sm	2	50,000
Tin	Sn	20	200,000
Strontium	Sr	5	100,000
Tantalum	Ta	10	100,000
Terbium	Tb	3	50,000
Thorium	Th	50	100,000
Titanium	Ti	10	100,000
Thulium	Tm	2	50,000
Uranium	U	50	100,000
Vanadium	V	15	100,000
Tungsten	W	20	100,000
Yttrium	Y	2	50,000
Ytterbium	Yb	2	50,000
Zinc	Zn	20	100,000
Zirconium	Zr	2	100,000



XRF-LITHIUM BORATE



XRF-LITHIUM BORATE

DIGEST

Sample is fluxed with LiBorate/LiNO₃ flux in automatic fusion equipment
 Sample is fused in a Pt/Au crucible at 1050°C and poured into Pt/Au mold
 Multi-Temperature LOI available on request

ANALYSIS

Zetium WD-XRF

LIMITATION

High Sulfide (S>10%) samples may not oxidize and fuse quantitatively

CODE	DESCRIPTION	NAME	RANGE	PRICE PER SAMPLE
XW-CI11	Lithium Borate Fusion, XRF-WD	Chlorine (Cl)	0.01-10%	\$25.20
XW-F11	Lithium Borate Fusion, XRF-WD (Not Suitable for Fe >10% samples)	Fluorine (F)	0.01-10%	\$25.20

CODE	DESCRIPTION	PRICE PER SAMPLE
XW-LiB16	0.5g, LiBorate, Zetium WD-XRF + LOI, %	\$45.90

NAME	ANALYTE	LDL	UDL	NAME	ANALYTE	LDL	UDL
Aluminum Oxide	Al2O3	0.01	100	Sodium Oxide	Na2O	0.01	10
Barium Oxide	BaO	0.01	10	Phosphorous Pentoxide	P2O5	0.005	10
Calcium Oxide	CaO	0.01	40	Sulfur Trioxide	SO3	0.01	10
Chromium Oxide	Cr2O3	0.005	10	Silicon Dioxide	SiO2	0.01	100
Iron Oxide	Fe2O3	0.01	100	Strontium Oxide	SrO	0.005	2
Potassium Oxide	K2O	0.005	10	Titanium Dioxide	TiO2	0.01	30
Magnesium Oxide	MgO	0.01	50	Vanadium Oxide	V2O5	0.005	10
Manganese (II) Oxide	MnO	0.005	30	Loss of Ignition	LOI 1000C	0.01	50

CODE	DESCRIPTION	PRICE PER SAMPLE
XW-LiB28	0.5g, LiBorate, WD-XRF + LOI, %	\$56.80

NAME	ANALYTE	LDL	UDL	NAME	ANALYTE	LDL	UDL
Aluminum Oxide	Al2O3	0.01	100	Phosphorous Pentoxide	P2O5	0.005	10
Barium Oxide	BaO	0.01	10	Praseodymium Oxide	Pr6O11	0.01	10
Calcium Oxide	CaO	0.01	40	Rubidium Oxide	Rb2O	0.01	10
Cerium (IV) Oxide	CeO2	0.01	10	Sulfur Trioxide	SO3	0.01	10
Chromium Oxide	Cr2O3	0.005	10	Silicon Dioxide	SiO2	0.01	100
Iron Oxide	Fe2O3	0.01	100	Samarium Oxide	Sm2O3	0.01	10
Gadolinium Oxide	Gd2O3	0.01	10	Strontium Oxide	SrO	0.005	2
Potassium Oxide	K2O	0.005	10	Thorium Dioxide	ThO2	0.005	5
Lanthanum (III) Oxide	La2O3	0.02	10	Titanium Dioxide	TiO2	0.01	30
Magnesium Oxide	MgO	0.01	50	Vanadium Oxide	V2O5	0.005	10
Manganese (II) Oxide	MnO	0.005	30	Yttrium Oxide	Y2O3	0.005	10
Sodium Oxide	Na2O	0.01	10	Zinc Oxide	ZnO	0.005	5
Niobium Pentoxide	Nb2O5	0.005	5	Zirconium Oxide	ZrO2	0.05	5
Neodymium Oxide	Nd2O3	0.01	10	Loss of Ignition	LOI 1000C	0.01	50

XRF-WHOLE ROCK

DESCRIPTION Whole Rock analysis encompasses a variety of analysis. Different analytes will require different analyses for the optimal results.

ANALYSIS Zetium WD-XRF, LOI, ELTRA CSi, Direct Mercury Analyzer (DMA), ICP-OES

LIMITATION Refer to limitations from other analysis pages.

CODE	DESCRIPTION	PRICE PER SAMPLE
XW-WR	0.5g, LiBorate, Zetium WD-XRF + LOI, %	\$61.20

NAME	ANALYTE	LDL	UDL	NAME	ANALYTE	LDL	UDL
Aluminum Oxide	Al2O3	0.01	100	Phosphorous Pentoxide	P2O5	0.005	10
Barium Oxide	BaO	0.01	10	Praseodymium Oxide	Pr6O11	0.01	10
Calcium Oxide	CaO	0.01	40	Rubidium Oxide	Rb2O	0.01	10
Cerium (IV) Oxide	CeO2	0.01	10	Sulfur Trioxide	SO3	0.01	10
Chromium Oxide	Cr2O3	0.005	10	Silicon Dioxide	SiO2	0.01	100
Iron Oxide	Fe2O3	0.01	100	Samarium Oxide	Sm2O3	0.01	10
Gallium (III) Oxide	Ga2O3	0.01	10	Tin (IV) Oxide	SnO2	0.02	5
Gadolinium Oxide	Gd2O3	0.01	10	Strontium Oxide	SrO	0.005	2
Potassium Oxide	K2O	0.005	10	Thorium Dioxide	ThO2	0.005	5
Lanthanum (III) Oxide	La2O3	0.02	10	Titanium Dioxide	TiO2	0.01	30
Magnesium Oxide	MgO	0.01	50	Vanadium Oxide	V2O5	0.005	10
Manganese (II) Oxide	MnO	0.005	30	Tungsten Oxide	WO3	0.01	10
Sodium Oxide	Na2O	0.01	10	Yttrium Oxide	Y2O3	0.005	10
Niobium Pentoxide	Nb2O5	0.005	5	Zinc Oxide	ZnO	0.005	5
Neodymium Oxide	Nd2O3	0.01	10	Zirconium Oxide	ZrO2	0.05	5
Nickel (III) Oxide	NiO	0.01	10	Loss of Ignition	LOI 1000C	0.01	50

PACKAGE CODE	DESCRIPTION	PRICE PER SAMPLE	
XW-WRC	Includes XW-WR and ELTRA	\$77.60	
ANALYSIS	ANALYTE	LDL	UDL
XW-WR	All analytes from XW-WR (%)	N/A	N/A
ELTRA	Carbon (C) and Sulfur (S) (%)	0.01	15

PACKAGE CODE	DESCRIPTION	PRICE PER SAMPLE	
XW-WRC+DMA	Includes XW-WR, ELTRA and DMA	\$95.60	
ANALYSIS	ANALYTE	LDL	UDL
XW-WR	All analytes from XW-WR (%)	N/A	N/A
ELTRA	Carbon (C) and Sulfur (S) (%)	0.01	15
DMA	Mercury (Hg) (ppm)	0.001	1.0

PACKAGE CODE	DESCRIPTION	PRICE PER SAMPLE	
XW-WRC+ DMA + IO-4AB28	Includes XW-WR package, ELTRA, DMA and the analytes from IO-4AB28	\$120.80	
ANALYSIS	ANALYTE	LDL	UDL
XW-WR	All analytes from XW-WR (%)	N/A	N/A
ELTRA	Carbon (C) and Sulfur (S) (%)	0.01	15
DMA	Mercury (Hg) (ppm)	0.001	1.0
IO-4AB28	Analytes from code IO-4AB28, ICP-OES, see page 14	N/A	N/A

**Note: if Hg exceeds 1ppm you can request to replace DMA with IM-2AHg (0.01-500ppm)*



OVERVIEW: PLATINUM GROUP METALS

NOTE: UNIT IS PPM UNLESS INDICATED OTHERWISE

PALLADIUM (Pd)

CODE	LL	UL
IM-NF5	0.001	1,000
IO-FAPGM30	0.003	10

PLATINUM (Pt)

CODE	LL	UL
IM-NF5	0.001	1,000
IO-FAPGM30	0.005	10

IRIDIUM (Ir)

CODE	LL	UL
IM-NF5	0.001	1,000

RHODIUM (Rh)

CODE	LL	UL
IM-NF5	0.001	1,000

RUTHENIUM (Ru)

CODE	LL	UL
IM-NF5	0.001	1,000



OVERVIEW: METALS

NOTE: UNIT IS PPM UNLESS INDICATED OTHERWISE

LITHIUM (Li)

CODE	LL	UL
IO-4AB12	5	8,000
IO-4AB28	5	8,000
IO-4AB51	5	8,000
IM-4AB52	5	8,000
IM-4AB61	5	8,000
IO-LIBRI	0.01	1,000
IO-NF27	2	50,000
IM-NF43	2	50,000

SILVER (Ag)

CODE	LL	UL
IO-4AB12	0.3	100
IO-4AB28	0.3	100
IO-4AB51	0.3	100
IM-4AB52	0.3	100
IM-4AB61	0.3	100
IM-4AB26	0.3	100
IO-4ABAg	0.3	100
IO-2AAg	0.3	100
IO-2A12	0.3	100
IM-2A16	0.3	100
G-FAAuAg	20	10,000
IO-CNAu215	0.01	300
IO-CNAu230	0.01	300
IO-CNAu260	0.01	300

GOLD (Au)

CODE	LL	UL
IO-FAAu30	0.003	10
IO-FAAu50	0.003	10
IO-FAPGM30	0.003	10
G-FAAu	0.5	10,000
G-FAAuAg	0.5	10,000
IO-FASFAu11	0.05	10,000
G-FASFAu11	0.05	10,000
G-FAAuC11	1	10,000
IO-CNBLEG1	0.0001	10
IO-CNAu210+PREG	0.01	100
IO-CNAuSOL*	0.001	2,000
IO-CNAu215	0.01	100
IO-CNAu230	0.01	100
IO-CNAu260	0.01	100

*Method reports values in mg/L

OVERVIEW: RARE EARTH ELEMENTS

NOTE: UNIT IS PPM UNLESS INDICATED OTHERWISE

DYSPROSIUM (Dy)

CODE	LL	UL
IO-4AB51	1	1,000
IM-4AB61	0.05	1,000
IO-NF27	2	50,000
IM-NF43	2	50,000

ERBIUM (Er)

CODE	LL	UL
IO-4AB51	1	1,000
IM-4AB61	0.05	1,000
IO-NF27	2	50,000
IM-NF43	2	50,000

EUROPIUM (Eu)

CODE	LL	UL
IO-4AB51	1	1,000
IM-4AB61	0.05	1,000
IO-NF27	2	50,000
IM-NF43	2	50,000

GADOLINIUM (Gd)

CODE	LL	UL
IO-4AB51	1	1,000
IM-4AB61	0.05	1,000
IO-NF27	2	50,000
IM-NF43	2	50,000

HOLMIUM (Ho)

CODE	LL	UL
IO-4AB51	1	1,000
IM-4AB61	0.05	1,000
IO-NF27	2	50,000
IM-NF43	2	50,000

LUTETIUM (Lu)

CODE	LL	UL
IO-4AB51	1	1,000
IM-4AB61	0.05	1,000
IO-NF27	2	50,000
IM-NF43	2	50,000

NEODYMIUM (Nd)

CODE	LL	UL
IO-4AB51	1	1,000
IM-4AB61	0.05	1,000
IO-NF27	2	50,000
IM-NF43	2	50,000
IM-4AB26	1	500

PRASEODYMIUM (Pr)

CODE	LL	UL
IO-4AB51	1	1,000
IM-4AB61	0.05	1,000
IO-NF27	5	50,000
IM-NF43	5	50,000

SAMARIUM (Sm)

CODE	LL	UL
IO-4AB51	1	1,000
IM-4AB61	0.05	1,000
IO-NF27	2	50,000
IM-NF43	2	50,000

TERBIUM (Tb)

CODE	LL	UL
IO-4AB51	1	1,000
IM-4AB61	0.2	1,000
IO-NF27	3	50,000
IM-NF43	3	50,000

THULIUM (Tm)

CODE	LL	UL
IO-4AB51	1	1,000
IM-4AB61	0.05	1,000
IO-NF27	2	50,000
IM-NF43	2	50,000

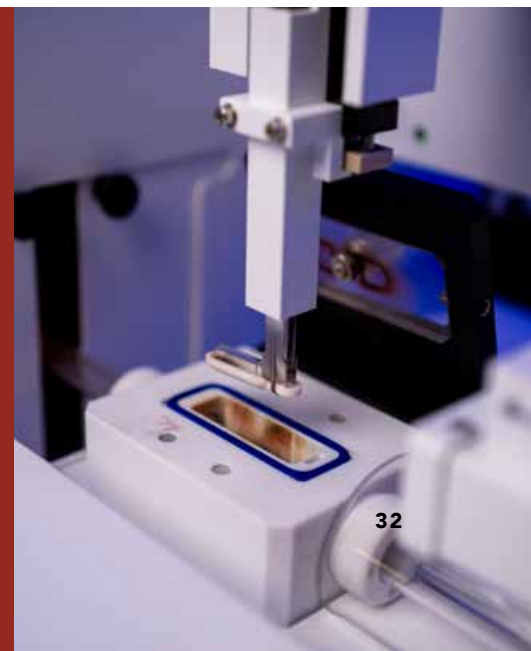
YTTERBIUM (Yb)

CODE	LL	UL
IO-4AB51	1	1,000
IM-4AB61	0.05	1,000
IO-NF27	2	50,000
IM-NF43	2	50,000



ADVANCEMENT IN TECHNOLOGY

The IT team is engaged in the in-house development of our Laboratory Information Management System (LIMS) and Client Portal. Our digital tools are tailored to streamline how we identify, analyze, and report sample data in an efficient and timely fashion. With decades of experience, our team understands the technological landscape and industry-specific challenges needed to continually improve on quality assurance. Our software is custom designed to be user-friendly for our internal and external operations. Our commitment to developing dynamic program solutions is grounded in a systematic approach, ensuring that the tools we create are robust and adaptable to the evolving needs of the industry.



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