

Charges for Laboratory Services  
CHARGES FOR LABORATORY SERVICES PER SAMPLE

GST CHEMICAL LABORATORY				
NOTE: Each sample is considered to weigh not more than 500 grams.				
<b>i</b>	<b>Sample preparation (Rocks, soil, sediments, biological material etc.)</b>		<b>TZS</b>	<b>per sample</b>
	Crushing		8,000.00	
	Grinding	a) 180 microns	8,000.00	
		b) 106 microns	6,000.00	
	Drying	a) Infra red radiation	8,000.00	
		b) Oven	8,000.00	
		c) Air/sun-shine	6,000.00	
	Sieving		5,000.00	
<b>ii</b>	<b>Physico-chemical determination of samples</b>		<b>TZS</b>	<b>per sample</b>
	Loss on Ignition (LOI),		10,000.00	
	Moisture contents,		8,000.00	
<b>GEOLOGICAL/GEOCHEMICAL MATERIAL (ROCKS, SOILS &amp; SEDIMENTS)</b>				
<b>F-AAS</b>	<b>Determination of elements by Flame Atomic absorption Spectrometer (FAAS)</b>		<b>TZS</b>	<b>per sample</b>
1	<i>Ore analysis</i> -Extra dissolution by HCl and HNO <sub>3</sub> . Elements among Cu, Pb, Ag, Zn, Mn, Co, Cr, Ni, Fe and Cd (each addition element Tshs 3,500.00)	A Package of five (5) elements	40,000.00	
2	<i>Aqua regia dissolution</i> . Elements among Fe, Cu, Pb, Ag, Zn, Mn, Co, Cr, Ni, and Cd (each addition element Tshs 3,500.00)	A Package of five (5) elements	35,000.00	
3	MIBK extraction of Gold after aqua regia leach-AAS finish		45,000.00	
4	Fire assay for Gold with AAS Finish		45,000.00	

5	Fire assay for Gold with Gravimetric finish		40,000.00	
6	Aqua regia AAS finish		30,000.00	
7	Purification of raw gold using lead foil ≤25g		45,000.00	
8	Purification of raw gold using acids		30,000.00	
9	Lithium analysis		120,000.00	
<b>GF-AAS</b>	<b>Determination of elements by Graphite Furnace Atomic Absorption Spectrometer (GFAAS)</b>		<b>TZS</b>	<b>per sample</b>
1	Arsenic, As, Antimony, Sb, Selenium, Se, Mercury, Hg and Bismuth, Bi.	Each	25,000.00	
2	Platinum group elements: Platinum (Pt), Palladium (Pd), Iridium (Ir), Osmium (Os), Ruthenium (Ru) and Rhodium (Rh)	Each	45,000.00	
<b>ICP-OES</b>	<b>Determination of elements by Inductively Coupled Plasma-Optical Emission Spectrometer (ICP-OES)</b>		<b>TZS</b>	<b>per sample</b>
1	Ore analysis-Extra dissolution by HCl and HNO3. 25 elements	A Package of twenty-five (25)	200,000.00	
2	Platinum group elements: Platinum (Pt), Palladium (Pd), Iridium (Ir), Osmium (Os), Ruthenium (Ru) and Rhodium (Rh)	A Package of six (6)	180,000.00	
3	Arsenic, As, Antimony, Sb, Selenium, Se, Mercury, Hg and Bismuth, Bi.	A Package of five (5) elements	100,000.00	
<b>X-Ray Fluorescence (XRF)</b>	<b>Determination of elements by X-ray Fluorescence Spectrometer (XRF)</b>		<b>TZS</b>	<b>per sample</b>
1	25 elements X-ray scan (Geological material)	A Package of 25	50,000.00	
2	35 elements X-Ray Scan (Geological material)	A Package of 35	70,000.00	
3	Metal/Alloy X-Ray scan		45,000.00	

4	Limestone Analysis (CaO, SiO <sub>2</sub> , MgO, Fe <sub>2</sub> O <sub>3</sub> , Al <sub>2</sub> O <sub>3</sub> , K <sub>2</sub> O, Na <sub>2</sub> O, MnO, SO <sub>3</sub> , P <sub>2</sub> O <sub>5</sub> and LOI)	A Package of 11	50,000.00	
5	Gypsum analysis ( % Purity, SiO <sub>2</sub> ,CaO, MgO, Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> and LOI)	A Package of 6	50,000.00	
6	Phosphate rock analysis (% Purity P <sub>2</sub> O <sub>5</sub> , SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> and LOI)	A Package of 5	50,000.00	
<b>UV-VIS SPEC</b>	<b>Determination of Anions by Ultra violet-Visible Spectrophotometer (UV-Vis Spec)</b>		<b>TZS</b>	<b>per sample</b>
	SO <sub>4</sub> , NO <sub>3</sub> , F and P <sub>2</sub> O <sub>5</sub>	Each	20,000.00	
<b>CS-3000 ANALYSER</b>	<b>Determination of elements by <i>Carbon-Sulfur Analyser (CS-3000 Analyser)</i></b>		<b>TZS</b>	<b>per sample</b>
1	Sulfur Analysis		25,000.00	
2	Carbon Analysis		25,000.00	
<b>ENVIRONMENTAL AND BIOLOGICAL MATERIAL</b>				
<b>A</b>	<b>Water &amp; waste water analysis</b>		<b>TZS</b>	<b>per sample</b>
1	COD, BOD and DO		25,000.00	
2	pH, TDS, EC		5,000.00	
	WAD Cyanide		25,000.00	
	FREE Cyanide		25,000.00	
	TOTAL cyanide		25,000.00	
3	Spectrophotometric determination of Chlorides, Cl <sup>-</sup> , and Fluorides, F <sup>-</sup>		20,000.00	
4	Spectrophotometric determination of Sulphates, SO <sub>4</sub> , Nitrates, NO <sub>3</sub> and Phosphates, P <sub>2</sub> O <sub>5</sub> , Fluoride, F, and ammonia, NH <sub>3</sub>		20,000.00	
5	Titrimetric determination of Carbonates, CO <sub>3</sub> , and Bicarbonates HCO <sub>3</sub> and Chlorides, Cl	A Package of two (2)	20,000.00	
6	Salinity		20,000.00	
7	Turbidity by spectrophotometer		20,000.00	
8	Mercury, Hg, by Cold Vapour AAS		25,000.00	
9	As, Sb, Se, Bi and Hg by ICP-OES	A Package of five	100,000.00	

		(5)		
10	Elements among Fe, Cu, Pb, Ag, Zn,Mn,Co,Cr, Ni, and Cd (each addition element Tshs 5,000.00)-FAAS Finish	A Package of five (5)	45,000.00	
11	Na, K, Ca and Mg By ICP-OES		60,000.00	
12	Elements among Fe, Cu,Pb,Ag,Zn,Mn,Co,Cr, Ni, and Cd (each addition element Tshs 5000.00)-GFAAS Finish	A Package of five (5)	60,000.00	
13	25 elements- ICP-OES finish	A Package of twenty five (25)	150,000.00	
14	Total Nitrogen analysis-Kjeldah digestion with titration finish		30,000.00	
15	Edible salt (NaCl) Analysis by Titration (% Purity, CO3, & HCO3), spectrophotometer (SO4 & NO3) and GFAAS (Ca & Mg)	A Package	150,000.00	
<b>B</b>	<b>Soil Analysis</b>		<b>TZS</b>	<b>per sample</b>
1	Water soluble cations		50,000.00	
2	Exchangeable bases		50,000.00	
3	Inorganic element composition-ICP-OES finish	A Package of 25	200,000.00	
4	Total As, Sb, Se and Hg by ICP-OES	A Package of four (4)	120,000.00	
5	Total As, Sb, Se and Hg by GFAAS	Each	25,000.00	
6	% Organic matter		15,000.00	
<b>C</b>	<b>Plant material and animal excretes/dung (Leaves, roots, seeds, guano etc.)</b>		<b>TZS</b>	<b>per sample</b>
<b>1</b>	As, Sb, Se, Bi and Hg by ICP-OES	A Package of four (4)	120,000.00	
<b>2</b>	As, Sb, Se and Hg by GFAAS	Each	25,000.00	
<b>3</b>	Elements among Fe, Cu, Pb, Ag, Zn, Mn, Co, Cr, Ni, and Cd (each addition element TZS 5,000.00)-GFAAS Finish	A Package of five (5) elements	75,000.00	

4	Extra dissolution by HCl and HNO3 with ICP-OES finish	A Package of twenty five (25)	200,000.00	
<b>D</b>	<b>Biological samples (Urine, Hairs, Blood, nails, hoofs, horns etc)</b>		<b>TZS</b>	<b>per sample</b>
<b>1</b>	As, Sb, Se, Bi and Hg by ICP-OES	A Package of five (5)	100,000.00	
<b>2</b>	As, Sb, Se, Bi and Hg by GFAAS	Each	25,000.00	
<b>3</b>	Elements among Fe, Cu, Pb, Ag, Zn, Mn, Co, Cr, Ni, and Cd (each addition element TZS 3,500.00)-GFAAS Finish	A Package of five (5)	40,000.00	
4	Extra dissolution by HCl and HNO3 with ICP-OES finish	A Package of twenty-five (25)	150,000.00	
5	Graphite analysis by ignite using a muffle furnace		50,000.00	
6	Coal analysis		50,000.00	
<b>NOTE: SPECIAL REQUEST for ANALYSIS NOT IN THE LIST</b>				

<b>MINERALOGY / PETROLOGY (EXAMINATION OF SAND SIZE MATERIAL)</b>		
<b>SN</b>	<b>Description</b>	<b>Price (TZS)</b>
1.	Sample splitting for 1,000 gm	35,000.00
2.	Grain mounting(transparent)	35,000.00
3.	Preparation of pellets for optical studies (opaque) per specimen	35,000.00
4.	Optical examinations per thin section.	60,000.00

<b>MINERALOGY / PETROLOGY (STUDY OF GEMSTONES AND MINERALS)</b>		
<b>SN</b>	<b>Description</b>	<b>Price (TZS)</b>
1.	Identification of minerals using physical properties	15,000.00
2.	Identification of minerals using physical & optical properties	15,000.00
3.	Grading and certifications per 100 gm.	40,000.00
4.	Hand sorting per 100 gm.	30,000.00

<b>MINERALOGY / PETROLOGY (SAMPLE PREPARATIONS)</b>		
<b>SN</b>	<b>Description</b>	<b>Price (TZS)</b>
1.	Cutting of rock without further work	40,000.00
2.	Preparation of slide for studying transparent minerals. Standard size.	160,000.00
3.	Preparation of slide for studying transparent minerals. Large size.	180,000.00
4.	Preparation of slide for studying transparent minerals. Extra large.	200,000.00
5.	Preparation of polished thin sections and polished sections. Standard size.	160,000.00
6.	Preparation of polished thin sections and polished sections. Large size.	180,000.00
7.	Preparation of polished thin sections and polished sections. Extra large.	200,000.00
8.	Petrographic studies and report production	500,000.00
9..	Rock slabbing and polishing 15 cm x 15 cm (one side). Hard rock e.g. granites, gneiss, BIF.	80,000.00
10.	Rock slabbing and polishing 15 cm x 15 cm (one side). Soft rock e.g. marble, travertine.	50,000.00

MINERALOGY / PETROLOGY (SAMPLE PREPARATIONS)		
SN	Description	Price (TZS)
<i>N.B For every 1 cm extra width/length add 5,000.00/= TZS to the original price.</i>		
11.	Preparation of Polishing core samples for petrographic analysis	50,000.00
12.	Rock core cutting	25,000.00
13.	Color photo microscope (8 PCs each thin section)	25,000.00
14.	Rock core splitting	15,000.00
15.	Heavy liquid Separation	45,000.00
16.	Use of microscope without operator per hour	20,000.00
17.	Use of microscope with operator per hour	25,000.00
18.	Lending a microscope per day	120,000.00

XRD Analysis		
S/N	ITEM	TZS
1	Sample preparation for XRD analysis 100g.	35,000.00
2	XRD analysis and report production	210,000.00

Petrophysics		
SN	Description	Price (TZS)
1.	Sample preparation	10,000
2.	Density measurement	15,000
3.	Magnetic Susceptibility	15,000
4.	Remanent magnetization	15,000
5.	Q-ratio computation	8,000

	<b>Petrophysics</b>	
<b>SN</b>	<b>Description</b>	<b>Price (TZS)</b>
6.	Combination (from 1 to 5)	62,000
7.	Heavy liquid Separation	45,000

<b>MINERAL PROCESSING INVESTIGATIONS (EXAMINATION OF SAND SIZE MATERIAL) SAMPLE PREPARATION (BULK SAMPLES NOT MORE 5KG)</b>		
<b>SN</b>	<b>Description</b>	<b>Price (TZS)</b>
1.	Crushing (5kg)	20,000
2.	Cruhing every extra weight per Kg	2,000
3.	Grinding to 45gm (1kg)	20,000
4.	Grinding every extra weight per Kg	3,000
5.	Mixing and homogenizing (5kg)	5,000
6.	Mixing every extra weight per Kg	1,000
7.	Batch flotation tests (gold ore and base metals) per sample (Head, concentrates, tailings)	190,000
8.	Sieve analysis (1kg)	30,000
9.	Moisture content determination	4,000
10.	Specific gravity determination	5,000
11.	Leaching tests for gold per sample (Head, leachate, tailings)	190,000
12.	Dry magnetic separation	50,000
13.	Electrostatic separation	50,000
14.	Batch grinding in steel balls mill to 100 microns	100,000
15.	Batch grinding in porcelain balls mill to 100 microns	100,000
16.	Mechanical panning	20,000
17.	Sink/float tests	50,000
18.	Amalgamation in barrel	40,000
19.	Retorting for mercury	30,000
20.	Crushing in rolls for soft ore	40,000



<b>MINERAL PROCESSING INVESTIGATIONS (EXAMINATION OF SAND SIZE MATERIAL) SAMPLE PREPARATION (BULK SAMPLES NOT MORE 5KG)</b>		
<b>SN</b>	<b>Description</b>	<b>Price (TZS)</b>
21.	Grinding in porcelain mills (to avoid metal contamination) to 45 microns	50,000
22.	Pulp density measurement	15,000
23.	Concentration by shaking the table	40,000
24.	Concentration by tromel 2kg batch sample	40,000
25.	Bond work index	1,500,000

<b>TEACHING KITS FOR PRIMARY SCHOOLS CONTAINING 34 SAMPLES OF ROCKS AND MINERALS</b>		
<b>SN</b>	<b>Description</b>	<b>Price (TZS)</b>
1.	Unpacked samples with name labels	125,000
2.	Unpacked samples with name labels and locality	175,000
3.	Unpacked samples with name labels, locality and notes	250,000
4.	Packed samples into wooden boxes with name labels	200,000
5.	Packed samples into wooden boxes with name labels and locality	250,000
6.	Packed samples into wooden boxes with name labels, locality and notes	275,000
7.	Packed samples into the aluminum box with name labels	25,000
8.	Packed samples into aluminum boxes with name labels and locality	300,000
9.	Packed samples into the aluminum box with name labels, locality and notes	350,000
10.	Mineral occurrence map of Tanzania showing the location of minerals in the kit	20,000

<b>TEACHING KITS FOR SECONDARY SCHOOLS CONTAINING 34 SAMPLES OF ROCKS AND MINERALS</b>		
<b>SN</b>	<b>Description</b>	<b>Price (TZS)</b>
1.	Unpacked samples with name labels	150,000
2.	Unpacked samples with name labels and locality	220,000
3.	Unpacked samples with name labels, locality and notes	270,000

**TEACHING KITS FOR SECONDARY SCHOOLS CONTAINING 34 SAMPLES OF ROCKS AND MINERALS**

<b>SN</b>	<b>Description</b>	<b>Price (TZS)</b>
4.	Packed samples into wooden boxes with name labels	250,000
5.	Packed samples into wooden boxes with name labels and locality	265,000
6.	Packed samples into wooden boxes with name labels, locality and notes	275,000
7.	Packed samples into the aluminum box with name labels	375,000
8.	Packed samples into wooden boxes with name labels and locality	400,000
9.	Packed samples into the aluminum box with name labels, locality and notes	450,000
10.	Mineral occurrence map of Tanzania showing the location of minerals in the kit	25,000

**FORENSIC SAMPLES (EXCLUDING SAMPLE PREPARATION)**

<b>SN</b>	<b>Description</b>	<b>Price (TZS)</b>
1.	Identification of gold and or mercury and reporting charges	12,000
2.	Analyzing rock samples for gold and base metals including reporting charges	15,000
3.	Gemstone/mineral identification and reporting	10,000

<b>S/N</b>	<b>ITEM</b>	<b>SIZE</b>	<b>TZS (CIF)</b>
1	Crucible	D <sub>55</sub>	4,000.00
		D <sub>50</sub>	3,600.00
		D <sub>40</sub>	3,500.00
		D <sub>30</sub>	3,000.00
2	Set of 1000 crucibles with a box	D <sub>55</sub>	4,000,000.00
3	Set of 1000 crucibles with a box	D <sub>50</sub>	3,600,000.00

4	Set of 1000 crucibles with a box	D <sub>40</sub>	3,500,000.00
5	Set of 1000 crucibles without a box	D <sub>30</sub>	3,000,000.00

<b>PRICE LIST FOR MATERIAL TESTS AT GEOTECHNICAL LABORATORY GST – DODOMA</b>			
<b>S/N</b>	<b>Test Description</b>	<b>Unit</b>	<b>Price (TZS)</b>
	<b>SOIL TESTING</b>		
1.	Particle size distribution by wet Sieve analysis Bs or ESTM Standards down to sieve no 200	Ea	20,000.00
2.	Particle size distribution by dry Sieve analysis Bs or ESTM Standards down to sieve no 200	Ea	15,000.00
3.	Sedimentation by hydrometer analysis	Ea	18,000.00
4.	Sieve and hydrometer together	Ea	25,000.00
5.	Liquid and Plastic limits (Atterberg limits) by cone penetrometer	Ea	17,000.00
6.	Liquid and Plastic limits (Atterberg limits) by casagrande method	Ea	17,000.00
7.	Linear Shrinkage	Ea	10,000.00
8.	Moisture content	Ea	5,000.00
9.	Bulk/wet density and dry density of soil	Ea	15,000.00
10.	Standard Proctor	Ea	18,000.00
11.	Permeability (falling head method)	Ea	30,000.00
12.	Permeability (constant head method)	Ea	30,000.00
13.	Consolidation by front-loading oedometer	Ea	50,000.00
14.	Direct shear test	Ea	40,000.00
15.	Triaxial test (Unconsolidated-Undrained) UU	Ea	60,000.00
16.	Triaxial test Consolidated-Undrained (CU) and Consolidated-Drained (CD)	Ea	150,000.00
	<b>AGGREGATE TESTING</b>		
17.	Sieve analysis (dry) down to sieve No 200	Ea	20,000.00
18.	Sieve analysis (wet) down to sieve No 200	Ea	20,000.00

19.	Flakiness index	Ea	15,000.00
20.	Elongation index	Ea	15,000.00
21.	Moisture content	Ea	5,000.00
22.	Specific gravity/relative density, aggregate greater than 4.75mm	Ea	20,000.00
23.	Specific gravity/relative density, aggregate less than 4.75mm	Ea	20,000.00
24.	Water absorption, aggregate greater than 4.75mm	Ea	20,000.00
25.	Water absorption, aggregate less than 4.75mm	Ea	20,000.00
26.	Loss Angeles abrasion test, LAA (Rock sample)	Ea	70,000.00
27.	Loss Angeles abrasion test, LAA (Aggregate sample)	Ea	30,000.00
28.	Aggregate Impact value, AIV(Rock sample)	Ea	65,000.00
29.	Aggregate Impact value, AIV(Aggregate sample)	Ea	15,000.00
30.	Aggregate crushing value, ACV (Rock sample)	Ea	65,000.00
31.	Aggregate crushing value, ACV (Aggregate sample)	Ea	30,000.00
32.	Ten percent fines, 3 specimens (Rock sample)	Ea	150,000/=
33.	Ten percent fines, 3 specimens (Aggregate sample)	Ea	35,000.00
34.	Sodium Sulphate Soundness Test	Ea	80,000.00
	<b>ROCK TESTING</b>		
35.	Determination of natural water content of rock material	Ea	7,000.00
36.	Rock material dry density	Ea	20,000.00
37.	Rock material bulk density	Ea	20,000.00
38.	Specific gravity of rock sample	Ea	20,000.00
39.	Determination of Voids ratio	Ea	55,000.00
40.	Determination of porosity	Ea	55,000.00
41.	Permeability of Core by flowing water	Ea	132,000.00
42.	Point load strength index, 10 specimens (rock sample)	Ea	250,000.00
43.	Point load strength index of rock (one specimen)	Ea	30,000.00
44.	Uniaxial Compressive strength of blocks and bricks	Ea	15,000.00

45.	Uniaxial Compressive strength of concrete cubes	Ea	17,000.00
46.	Uniaxial Compressive strength, 5 specimens (rock core sample)	Ea	150,000.00
47.	Uniaxial Compressive strength of rock cores (one specimen)	Ea	50,000.00
48.	Triaxial compressive strength, 5 specimens ( rock core sample)	Ea	450,000.00
49.	Tensile strength, 10 specimens (rock core sample)	Ea	300,000.00
50.	Tensile strength of rock cores (one specimen)	Ea	40,000.00
51.	Determination of Young's modulus	Ea	187,000.00
52.	Determination of Poisson's ratio	Ea	297,000.00

CARBON ANALYSIS			
S/N	ITEM	Unit	Price (TZS)
1	Analysis of loaded carbon	-	30,000.00
2	Carbon activity	-	40,000.00