Water Authority of Jordan

Laboratories & Quality Affairs

Water Analysis, Sampling, Historical Water Quality

Data, Training and other Services Price Lists

"Continued growth is surely expected with our exceptional facility

and dedicated and professional staff, building on our solid

history of accurate testing with trusted results."

Submitting Samples:

Samples should be submitted directly through Sample Reception Area at the Lab facility. We provide empty sampling containers, tools and technical assistance for collecting and preserving samples according to the requirements of the World Health Organization (Guidelines for Drinking Water Quality, Surveillance and Control of Community Supplies) and the Standard Methods for the Examination of Water and Wastewater 23rd edition.

Confidentiality:

WAJ Labs assumes full responsibility, through legally enforceable commitments, for the confidentiality of all information obtained or created during the performance of services for the customers unless released by customer written notification

Analytical Capabilities:

Laboratories and Quality Affairs employ state-of-the-art equipment capable of handling a wide range of analytical tasks; we have got accreditation from the Accreditation Unit / Jordanian accreditation System according to the International Standard IEC/ISO 17025, certificate number: **JAS Test - 097**

Refer to current Schedule of Accreditation for Sampling and analysis status of accreditation and water matrix details for each testing method available at:

http://www.au.gov.jo/AU/accreditationlaboratories/

Refer to current Water Analysis, Sampling, Historical Water Quality Data, Training and other Services Price Lists available at:

http://www.waj.gov.jo/sites/ar-jo/Documents/Labs/WAJ Labs Sevices Price Lists.pdf

A- Water and Wastewater Analysis Services Price List

1- Drinking Water Chemistry

Analysis	Method Used	SM Method Number	Result Release (day)	Unit Price (JD/Sample)
pH	Electrometric	4500 HB	3	2
Total Dissolved Solids	Calculation by Factor to EC Ratio	2540 C	3	2.5
Total Dissolved Solids (Ca, Mg, Na, K, NO3, Cl, SO4,SIO2,HCO3,CO3,F)	Calculation by Analysis and Summation	1030 E	3	80
Calcium, Magnesium, Potassium, Sodium	Ion Chromatography	In-house	6	11 each
Bromide, Chloride, Nitrite, Nitrate, Sulfate	Ion Chromatography	4110_B	6	11 each
Nitrate	Ion Chromatography	4110 NO3-B	6	11
Boron	Spectrophotometer Azomethine-H	Soil analysis Part 2/Second Edition 25-S	4	15
Iron, Manganese, Nickel, Lead, Cadmium, Cobalt, Chromium, Copper, Silver, Lithium, Aluminum, Beryllium, Zinc, Molybdenum, Antimony, Strontium, Barium, Vanadium, Tin, Boron	Inductively Coupled Plasma/Atomic Emission Spectroscopy.	3120 B	10	20 each
Sulfide	Iodomertic	4500 F	4	9
Electrical Conductivity	Laboratory Method (Orion)	2510 B	3	2.5
Electrical Conductivity	Laboratory Method (Hanna)	2510 B	3	2.5
Electrical Resistivity	Calculation from EC	2510 B	3	2.5
Silica	Molybdosilicate	4500 C	4	15
Turbidity	Nephelometric Method	2130 B	3	4
Total Organic Carbon (TOC)	Persulfate-Ultraviolet Oxidation	5310 C	4	20
Ammonium	Colorimetric Method	In- house	4	15
Ortho -Phosphate	Stannous Chloride/Agi	4500-P D	4	10
Ortho -Phosphate	Stannous Chloride	4500-P D	4	10
Carbonate, Bicarbonate, Hydroxide	Potentiometric Titrimetric	2320 B	4	10 each
Alkalinity	Potentiometric Titrimetric	2320 B	4	10
Hardness as $CaCO_3$	EDTA Titrimetric	2340 C	4	10

Analysis	Method Used	SM Method Number	Result Release (day)	Unit Price (JD/Sample)
Hardness as $CaCO_3$	Ion Chromatography	2340 B	4	10
Color	Visual Comparison Color	2120 B	4	8
Odor	Threshold Odor Test	2150 B	4	7
Arsenic, Selenium	Atomic Absorption Spectrometric/Hydride Generation	3114 C	10	20 each
Mercury	Atomic Absorption Spectrometric/Hydride Generation-Cold Vapor	3112 B	10	20
Anionic Surfactants (ABS)	Colorimetric	Operating Manual	4	20
Bisphenol-A	BPA on LC/MS/MS (Mass&LC Symbiosis)	In-house	14	75
Cyanide	Colorimetric	Operation Manual Hach/Dr 2800	4	25
Fluoride	Colorimetric SPADNS Method	4500 F D	4	10
Volatile Organic Compounds Benzene , Ethyl Benzene, O-Xylene , P&M-Xylene , Tetrachloroethylen , Trichloroethylene	Gas Chromatography with head space / FID	In-house	10	140
Organo Chlorinated Pesticides Linden, A-BHC, B-BHC, D-BHC, Aldrin, Endosulfane 1, P,P-DDE, ieldrin, Endrin, P,P-DDD, Endosulfane 2, *P,P-DDT, Endrinaldehyde, Endosulfanesulfate, Methoxychlore, Endrinketone.	Solid Phase Extraction/Gas Chromatographic/Electron Capture Detector	6630 B	14	170
Organo Chlorinated Pesticides Linden, Aldrin, Dieldrin, Endrin, P,P-DDT		6630 B	14	100
Chlorophenoxy Herbicides 2,4,5-T (Herbicides) 2,4-D (Herbicides)	Solid Phase Extraction-HPLC Performance	LC Work Station class Vp Instruction Manual	14	100
Trihalomethanes (T.THM)	Head Space Trap Analyzer/Gas Chromatography/ECD	In-House Method British1984-1985	4	70

For the samples with EC≥30000 µS/cm, <u>10% extra cost</u> will be added to all drinking water tests prices

2- Environmental Isotope Analysis

Analysis	Method Used	SM Method Number	Result Release	Unit Price (JD/Sample)
Oxygen 18	LWIA EP- 45	LGR	10	50
Deuterium	LWIA EP- 45	LGR	10	30
Rn 222	Liquid Scintillation Spectrometry	Modified from SM (7500-Rn B)	5	50
	Quantulus (1220) 7500-Rn	Modified from SM (7500-RN)	5	50
Ra 228 in Water samples	Evaporative Enrichment and Gamma Spectroscopy	Modified from SM (7120)	10	100
Ra 228 in Water samples	ORTEC-Gamma Spectroscopy		10	100
Ra 226 in Water samples	ORTEC-Gamma Spectroscopy		30	70
Ra 226 in Water samples	Evaporation Enrichment & Counting by GammaSpectrometer	Evaporative Enrichment and Gamma Spectroscopy	40	100
Tritium	Electrolytic Tritium Enrichment	Modified from (IAEA), Technical Report Note No. 19	30	70
AU (Gold)	EPA-200.8 by ICPMS			35
Gross Alpha, Gross Beta	Evaporation and Liquid Scintilation Counting -Quantulus	Modified From SM (7110 B)	10	120
Gross Alpha, Gross Beta	Evaporation and Liquid Scintillation Counting		10	120
Lead 210 in Water Samples	Determination of Pb 210 by Resin Extraction and Liquid Scintillation Counter	Modified from Eichrom Analytical Procedure OTOW1 rev 2	20	120
Thorium in water sample	Determination by Inductively Coupled Plazma/Mass	Modified from Environmental Protection Agency (EPA)	10	50
Uranium in Water samples	Determination by Inductivity Coupled Plazma/Mass Spectrometry	Method 200.8	10	50
Carbon 14	Measurement of C-14 by Benzene Synthesis Line and Liquid Scintillation Counter	Modified from (IAEA) Technical Procedure #25 (1980)	30	200
Carbon 13	Measurement of C-13 by Picarro Isotopic CO2 Analyzer	In-house method derived from Picarro Catalogue	10	50
Potassium40 in Soil samples	Counting by Gamma Spectrometer HPGE-BE 5030	Modified from SM (7120)	10	50 each
Radium 226 in soil			30	
Thorium 232 in Soil as Radium 228			10	

3- Microbiological Analysis for Drinking and Waste Water

Analysis	Method Used	SM Method Number	Result Release	Unit Price (JD/Sample)
Total Coliforms	Multiple Tube Fermentation	9221 A, B	4	20
Escherichia coli		9221 F(1)	4	17
Fecal Coliforms (Total Thermotolerant Coliforms)		9221 E (1)	4	18
Total Coliforms and *Escherichia coli (Presence/Absence)*	Enzyme Substrate Test Colilert From IDEXX	9223 B	4	28
Total Coliforms and Escherichia coli (Quantitative)			4	35
Total Coliforms and *Escherichia coli (Presence/Absence)*	Colitag Test / ATP D05-0035	User Manual	4	22
Pseudomonas aeruginosa	Multiple Tube Technique	9213 F	5	20
Pseudomonas aeruginosa (Presence/Absence)	Bacterial Enzyme Detection Technology "Pseudolert" From IDEXX	User Manual	4	45
Pseudomonas aeruginosa (Quantitative)			4	50
Bacterial Identification to species/Aerobic Bacteria	Vitek 2 Compact 15 by Biomerieux System	User Manual	5	50
Bacterial Identification to species/Anaerobic Bacteria			5	55
Bacterial Identification to species/Fungi			5	60
Vibrio Cholerae	Standard Method 21th Edition 2005 9260 H	9260 H	7	40
Cryptosporidium and *Giardia*	Method 1623/*Cryptosporidium*& Giardia in Water by Filtration/IMS/FA	EPA 1623	10	400
Chlorophyll-a	Fluorometric Determination	10200 H 1, 3	6	25
Fungi	Membrane Filtration	9610 A, D	9	25
Heterotrophic Plate Count	Membrane Filtration/Spread Plate/Pour Plate	9215 A,B,C,D	4	20
Free Living Nematodes	Membrane Filtration	(AWWA) Manual Ch5 & 10200C2	4	20
Amoebae	Membrane Filtration	User Manual	4	20

Analysis	Method Used	SMMethod Number	Result Release	Unit Price (JD/Sample)
Sulfate-Reducing Bacteria	Membrane Filtration/Culture	9240 D4	23	35
Clostridium perfringens	Membrane Filtration	The Microbiology of Drinking Water 2010part 6	4	32
Iron Bacteria	Membrane Filtration/direct microscopy	9240 B	4	25
Fecal Streptococcus & Enterococcus	Multiple Tube Fermentation	9230 A,B	6	30
Enterococcus	Presence/Absence Fluorogenic Test by Enterolert by IDEXX	9230 D	4	45
	Quantitative Fluorogenic Test by Enterolert by IDEXX	9230 D	4	50
Salmonella	General Qualitative Isolation & Identification	9260 B	10	40
Helminth Eggs Count and Identification	Sedimentation-Floatation/Schwartzbroad	WHO 1989	5	45
Shigella	SM 21th Edition 2005 9260 E	9260 E	10	40
Algae	Sedimentation Technique	10200 F	5	20
Campylobacter jejuni	Membrane filtration Technique	9260G	7	50
Legionella spp.	Membrane filtration Technique	9260J	12	110
Diarrheagenic*Escherichia coli O157:H7*	Fermentation Technique	9260F	5	40
Sulfur Oxidizing Bacteria	Mutiple Tube Fermentation (Ref: MIC-TFC-R003)	9240 D/59, 9240 D/5C	10	40
Seven Hours Fecal coliform test	Membrane filtration Technique	9211B	2	30
Total Coliforms	Multiple Tube Fermentation	9221 A, B	4	50
Pseudomonas aeruginosa	Multiple Tube Technique	9213 F	5	
Fungi	Membrane Filtration	9610 A, D	9	

4- Wastewater Chemistry

Analysis	Method Used	SM Method Number	Result Release	Unit Price (JD/Sample)
pH	Electrometric	4500 H+B	3	2
Turbidity	Nephelometric	2130 B	3	4
Biological Oxygen Demand (BOD)	5 day BOD Test / LUM	5210 B	7	28
Biological Oxygen Demand (BOD)	5 day BOD Test / Titration	5210 B	7	28
Biochemical Oxygen Demand/Filtered	5 day BOD Test	5210 B	7	30
Biological Oxygen Demand (BOD7)	7 day BOD Test / LUM	5210 B	9	30
Biological Oxygen Demand (BOD7)	7 day BOD Test/ Titration	5210 B	9	30
Chemical Oxygen Demand (COD)	Closed Reflux/Potentiometric Titration	5220 C	5	25
	Closed Reflux/Manual Titration	5220 C	5	25
Total Solids/TS	Drying at 103 - 105 ^{o}C	2540 B	5	12
Total Suspended Solids/TSS	Drying at 103 - 105 ^{o}C	2540 D	5	12
Total Dissolved Solids/TDS	Drying at 180 ^{o}C	2540 C	5	12
Total Fixed Solids/TFS	Ignition at 550 ^{o}C	2540 E	5	16
Total Volatile Solids/TVS	Ignited at 550 ^{o}C	2540 E	5	16
Fixed Total Dissolved Solids	Ignited at 550 ^{o}C	2540 E	5	16
Total Volatile Suspended Solids	Ignited at 550 ^{o}C	2540 E	5	16
Fixed Total Suspended Solids	Ignited at 550 ^{o}C	2540 E	5	16
Volatile Total Dissolved Solids	Ignited at 550 ^{o}C	2540 E	5	16
Nitrate	Ion Chromatography	4110 B	6	11
Nitrite	Ion Chromatography	4110 B	6	11
Kjeldahl Nitrogen	Calculation	User Manual		30
Fluoride	Ion Chromatography	4110 B	5	11

Analysis	Method Used	SM Method Number	Result Release	Unit Price (JD/Sample)
Sulfide	Iodometric	4500 F	5	10
Free Cyanide	Ion Selective electrode	4500-CN-F	4	25
Total Cyanide (TCN)	Ion Selective electrode	4500-CN-F	4	40
Calcium, Potassium, Magnesium, Sodium	Ion Chromatography	In-house Method	6	11 each
Iron, Manganese, Nickel, Zinc, Cadmium, Cobalt, Lead, Chromium, Copper, Silver, Aluminum, Barium, Beryllium, Lithium, Molybdenum, Stannous, Vanadium, Boron, arsenic, Selenium	Inductively coupled Plasma/Atomic Emission Spectroscopy	3120 B	10	25 each
Oil and Grease	Total by Gravimetric method	5520 B	6	25
	Indicative by Gravimetric method	5520 B	6	25
	Partition-infrared Method	5520 C	6	35
Anionic Surfactants (ABS)	Surfactants MBAS Kit	User Manual	5	15
Total Alkalinity: Carbonate, Bicarbonate, Hydroxide	Potentiometric Titration	2320 & User Manual	6	10 each
Total Nitrogen	Catalytic Combustion	User Manual	10	20
Total Nitrogen/Filtered	Catalytic Combustion	User Manual	10	22
Chloride	Ion Chromatographymg	4110 B	5	11
Chloride	Potentiometric Argentometric	4500 B	5	10
Phosphate	Ion Chromatography	4110 B	5	11
Phosphate	Stannous Chloride		5	11
Sulfate	Ion Chromatography	4110 B	5	11
Sodium Adsorption Ratio SAR# (Na,Ca,Mg)	by calculation	In-house Method	5	33
Ammonium	Ion Chromatography	In-house Method	5	11

The listed price if the customer requested the SAR only and not its constituents, i.e. the Na,Ca& Mg

5- Mobile Laboratory / Drinking Water

Analysis	Method Used	SM Method Number	Unit Price (JD/Sample)
Ammonia	Nessler - Coloromitric	User Manual	7
Hardness	Titration	2340 C	7
PH	Electrometric	4500 H B	3
Iron	HACH / Spectrophotometer Single Beam	User Manual	12
Fluoride	SPANDS	4500 F D	10
Electrical Conductivity	Laboratory Method	2510 B	3
Total Coliforms and *Escherichia coli (Presence/Absence)*	Enzyme Substrate Test Colilert From IDEXX	9223 B	28
Turbidity	Nephelometric	2130 B	3
Nitrate	Spectrophotometer	4500 C	12
Langerlier Saturated Index (LSI) (pH,Temperature,TDS,HCO3,Total Hardness)	Calculation	1030 E	30

6- Field Analysis / Drinking Water

Analysis	Method Used	SM Method Number	Unit Price (JD/Sample)
Ammonia	Colorimetric	User Manual	7
Residual Chlorine	DPD Colorimetric	4500-Cl G	2
PH	Electrometric	4500 H B	3
Electrical Conductivity	Laboratory Method	2510 B	3
Turbidity	Nephelometric	2130 B	3
Oxidation Reduction Potential (Eh)	Electrometric	2580 A	7
Temperature	Laboratory Method	2550 B	2
Dissolved Oxygen	Membrane Electrode	4500-O G	7

7- Field Analysis / Waste Water

Analysis	Method Used	SM Method Number	Unit Price (JD/Sample)
PH	Electrometric	4500 H B	3

SM : Standard Methods 23rd edition

B- Field Trips & Sampling Services Price List

1-Sampling Water by lab personnel & vehicles

No of samples collected	Destination	Price (JD/Trip/day) vehicle	Price (JD/Trip/day) personnel
< 4	Within Greater Amman Directorate	30	20
> 4		30	30
< 4	Outside Greater Amman Directorate	50	45
> 4		50	60

2- Sampling Waste Water by lab personnel & vehicles

Description (Wastewater)	No of samples collected	Destination	Price (JD/Trip/day) vehicle	Price (JD/Trip/day) personnel
Grab Samples	< 4	Within Greater Amman Directorate	30	25
	> 4		30	35
	< 4	Outside Greater Amman Directorate	50	50
	> 4		50	70
Composite samples	< 3	Within Greater Amman Directorate	60	30
	>3		60	50
	< 3	Outside Greater Amman Directorate	100	60
	>3		100	100

3- Mobile Unit Accompanied by Lab personnel

Destination	Price (JD/Trip/day) vehicle	Price (JD/Trip/day) personnel
Within Greater Amman Directorate	200 [1]	50 [1]
Outside Greater Amman Directorate	300[1]	100[1]

[1] The prices of analysis conducted by the mobile unit are added to the listed price and according to the main laboratory price list.

SM : Standard Methods 23rd edition

C- Historical Water Quality Data Services Price List

أجور البيانات التراكمية لنوعية المياه

- يتوفر لدى شؤون المختبرات والنوعية النتائج الخاصة بالمياه والمياه العادمة منذ عام 1995 ولغاية تاريخه وتتضمن النتائج؛ نتائج العينات التي تم جمعها من قبل الأقسام الرقابية في مديرية النوعية وكذلك النتائج للعينات التي تم جمعها من قبل الجهات المختلفة في وزارة المياه والري.
- تتوفر المعلومات في ثلاث قواعد للبيانات تتوزع حسب الفترات الزمنيه التاليه:

أ. من عام 1995–2002 : ويوجد صعوبة في استخراج هذه البيانات حيث لم ترد العينات في ذلك الوقت بأرقام ورموز تشير الى المصدر بالتحديد وهذا يستوجب دراسة البيانات وتبويبها قبل اصدار نتائجها الأمر الذي يحتاج لوقت وجهد كبيرين.

ب. من عام 2002 ولغاية تاريخه وهي سهلة الإستخراج.

- آلية إحتساب الأجور للخدمات الفنية المتعلقه بالبيانات التراكمية لنوعية المياه:

1. يتم احتساب التكلفة الإجماليه الحقيقيه للبيانات التراكمية وفقاً لما هو وارد في قائمة أسعار التحاليل المعتمدة من سلطة المياه.

2. النسبة المئوية المطلوبة من التكلفة الإجمالية الحقيقية هي 20%.

3. التكلفة الإجماليه للبيانات التراكميه المطلوبه = التكلفة الإجماليه الحقيقيه للبيانات التراكمية X 20%.

D- Other Services Price List

خدمات أخرى

الرقم	الخدمة	الأجور
1	اعداد خريطة من معلومات مملوكة لسلطة المياه	30 د
2	اعداد خريطة من معلومات خاصة بالزبون	20 د
3	استخدام احداثيات من GPS مملوك لسلطة المياه و اعداد الخريطة	40 د
4	استخدام احداثيات من GPS مملوك لسلطة المياه	20 د
5	اعداد وصف هيدروجيولوجي لمنطقة الدراسة من لوحة خريطة جيولوجية واحده	100 د
7	كشوفات اعادة الترخيص للشركات والمقالع والتعدين واي منشآت لها أثار بيئية على مصادر المياه	200 د

الإستثناءات و الخصومات الممنوحه فيما يتعلق بالبنود (A, B, C, D)

- **الإستثناءات الممنوحه:**

1- **يستثنى من بدل خدمات التحاليل والخدمات المخبرية القوات المسلحة والأجهزة الأمنية والديوان الملكي على ان لا يتجاوز عشرة عينات شهريا.**

2- **هناك استثناءات فيما يخص الحالات الدراسية ومشاريع البحث العلمي والتي تعود نتائجها بالمنفعة على سلطة المياه ويتم ذلك من خلال تقديم خصم 35٪عن طريق ابرام مذكرات تفاهم مع هذه الجهات، بشرط إشراك المختصين من سلطة المياه في هذه الدراسات والمشاريع وتزويد سلطة المياه بنتائج البحث والتقارير النهائي للدراسات للإستفادة منها وعكسها على تحسين عمليات سلطة المياه.**

- **الخصومات الممنوحه**

1- **تقديم خصم 50 ٪ لطلاب الجامعات والدراسات العليا والمدارس وكليات المجتمع .**

2- **بالنسبه للاتفاقيات السنوية والتي تبرم مع القطاع الخاص :**

⋆ **منح خصم 20٪ اذا تجاوزت القيمة الإجمالية للمبالغ المستحقة ألف دينار أردني خلال السنة التعاقدية.**

⋆ **منح خصم 25٪ اذا تجاوزت القيمة الإجمالية للمبالغ المستحقة خمسه آلاف دينار أردني خلال السنة التعاقدية.**

⋆ **منح خصم 30٪ اذا تجاوزت القيمة الإجمالية للمبالغ المستحقة عشره ألاف دينار أردني خلال السنة التعاقدية.**

E- Training Services Price List

اجور خدمات التدريب

- **المتدربين من داخل الاردن : خمسون دينار اردني (50) للشخص الواحد في اليوم الواحد .**

- **المتدربين من خارج الاردن : مائة و خمسون دينار اردني (150) للشخص الواحد في اليوم الواحد.**

- **الإستثناءات و الخصومات المنوحه فيما يتعلق بالبند (E)**

1- **يستثنى من أجور التدريب موظفي سلطة المياه، سلطة وادي الاردن، وزارة المياه والري، خريجي الجامعات و الكليات الجدد، طلبة الجامعات، المتدربين من النقابات المهنيه.**

2- **تقديم خصم 20 ٪ للمجموعات من المتدربين و التي تتجاوز خمس متدربين للمجموعه.**

- **مرفق (1) يتضمن كشف بكافة الدورات التدريبيه التي تعقد في شؤون المختبرات والنوعية**