

مجلة الذكوات البيض المحمّدية  
العدد ١٨ المجلد الثالث

## الذكوات البيض

اسم مشتق من الذكوة وهي الجمرة الملتهبة والمراد بالذكوات  
الربوات البيض الصغيرة المحيطة بمقام أمير المؤمنين علي بن أبي  
طالب {عليه السلام}

شبهها لضياؤها وتوهجها عند شروق الشمس عليها لما فيها  
موضع قبر علي بن أبي طالب {عليه السلام}  
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{در النجف} فكأنها جمرات ملتهبة وهي المرتفع من الأرض، وهي ثلاثة  
مرتفعات صغيرة نتوءات بارزة في أرض الغري وقد سميت الغري باسمها،  
وكلمة بيض لبروزها عن الأرض. وفي رواية إنّها موضع خلوته أو إنّها  
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ماله ومقسم غنائم المسلمين مسجد السهلة وموضع خلوته  
الذكوات البيض

تُعدّ بالبحوث والدراسات الإنسانية والفكرية والاجتماعية  
تصدر عن دائرة البحوث والدراسات  
ديوان الوقف الشيعي



# الذكاء الأبيض



مجلة علمية فكرية فصلية محكمة تصدر عن  
دائرة البحوث والدراسات في ديوان الوقف الشيعي



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# الذَّكْوَاتُ الْبَيْضُ

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## دليل المؤلف

- ١- أن يتسم البحث بالأصالة والجدّة والقيمة العلمية والمعرفة الكبيرة وسلامة اللغة ودقة الوثيق.
- ٢- أن تحوي الصفحة الأولى من البحث على:
  - أ. عنوان البحث باللغة العربية .
  - ب. اسم الباحث باللغة العربي، ودرجته العلمية وشهادته.
  - ت. بريد الباحث الإلكتروني.
  - ث. ملخصان: أحدهما باللغة العربية والآخر باللغة الإنكليزية.
  - ج. تدرج مفاتيح الكلمات باللغة العربية بعد الملخص العربي.
- ٣- أن يكون مطبوعاً على الحاسوب بنظام (office Word) ٢٠٠٧ أو ٢٠١٠ وعلى قرص ليزري مدمج (CD) على شكل ملف واحد فقط (أي لا يُجزأ البحث بأكثر من ملف على القرص) وتُرَوَّد هيئة التحرير بثلاث نسخ ورقية وتوضع الرسوم أو الأشكال، إن وُجدت، في مكانها من البحث، على أن تكون صالحة من الناحية الفنيّة للطباعة.
- ٤- أن لا يزيد عدد صفحات البحث على (٢٥) خمس وعشرين صفحة من الحجم (A4).
٥. يلزم الباحث في ترتيب وتنسيق المصادر على الصيغة APA
- ٦- أن يلتزم الباحث بدفع أجرة النشر المحددة باللغة (٧٥,٠٠٠) خمسة وسبعين ألف دينار عراقي، أو ما يعادلها بالعملة الأجنبية.
- ٧- أن يكون البحث خالياً من الأخطاء اللغوية والنحوية والإملائية.
- ٨- أن يلتزم الباحث بالخطوط وأحجامها على النحو الآتي:
  - أ. اللغة العربية: نوع الخط (Arabic Simplified) وحجم الخط (١٤) للمتن.
  - ب. اللغة الإنكليزية: نوع الخط (Times New Roman) عناوين البحث (١٦). والملخصات (١٢)أما فقرات البحث الأخرى؛ فيحجم (١٤) .
- ٩- أن تكون هوامش البحث بالنظام الإلكتروني (تعليقات ختامية) في نهاية البحث. بحجم ١٢.
- ١٠- تكون مسافة الحواشي الجانبية (٢,٥٤) سم، والمسافة بين الأسطر (١) .
- ١١- في حال استعمال برنامج مصحف المدينة للآيات القرآنية يتحمل الباحث ظهور هذه الآيات المباركة بالشكل الصحيح من عدمه، لذا يفضل النسخ من المصحف الإلكتروني المتوافر على شبكة الانترنت.
- ١٢- يبلغ الباحث بقرار صلاحية النشر أو عدمها في مدّة لا تتجاوز شهرين من تاريخ وصوله إلى هيئة التحرير.
- ١٣- يلتزم الباحث بإجراء تعديلات المحكّمين على بحثه وفق التقارير المرسلّة إليه وموافاة المجلة بنسخة مُعدّلة في مدّة لا تتجاوز (١٥) خمسة عشر يوماً.
- ١٤- لا يحق للباحث المطالبة بمطالبات البحث كافة بعد مرور سنة من تاريخ النشر.
- ١٥- لاتعاد البحوث الى أصحابها سواء قبلت أم لم تقبل.
- ١٦- تكون مصادر البحث وهوامشه في نهاية البحث، مع كتابة معلومات المصدر عندما يرد لأول مرة.
- ١٧- يخضع البحث للنجوم السري من ثلاثة خبراء لبيان صلاحيته للنشر.
- ١٨- يشترط على طلبة الدراسات العليا فضلاً عن الشروط السابقة جلب ما يثبت موافقة الأستاذ المشرف على البحث وفق النموذج المعتمد في المجلة.
- ١٩- يحصل الباحث على مسهل واحد لبحثه، ونسخة من المجلة، وإذا رغب في الحصول على نسخة أخرى فعليه شراؤها بسعر (١٥) ألف دينار.
- ٢٠- تعبر الأبحاث المنشورة في المجلة عن آراء أصحابها لا عن رأي المجلة.
- ٢١- ترسل البحوث إلى مقر المجلة - دائرة البحوث والدراسات في ديوان الوقف الشيعي بغداد - باب المعظم )  
أو البريد الإلكتروني: (hus65in@Gmail.com) (off reserch@sed.gov.iq) بعد دفع الأجرور في مقر المجلة
- ٢٢- لا تلزم المجلة بنشر البحوث التي تُخلُّ بشروط من هذه الشروط .

مجلة علمية فكرية فصلية محكمة تصدر عن  
دائرة البحوث والدراسات في ديوان الوقف الشيعي



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فصلية محكمة تُعنى بالبحوث والدراسات العلمية والإنسانية والفكرية

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## The drinking water crisis and its impact on the activities of the city's residents in Al-Iraqah



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فصلية محكمة تُعنى بالبحوث والدراسات العلمية والإنسانية والفكرية





**Abstract:**

The goal of the current study was to evaluate and compare Iraq's water quality to WHO criteria and the diseases that are linked to it. Baghdad, Basra, and Mosul were chosen as the three sample regions. For every region, two water samples were collected. Questionnaires and laboratory analysis of the water samples were used to gather data. Groundwater quality was assessed using a number of physical and chemical measures, including total dissolved solids (TDS), electrical conductivity (EC), pH, hardness, and alkalinity (Alk). The findings show that Baghdad and Mosul's drinking water quality is declining. With 48%, 55%, and 41% of the population drinking brackish, mildly odorous, and diluted water, respectively, the situation was far worse than it was over two decades previously. Water parameter analysis in a lab furthermore demonstrated a high level of groundwater pollution. The WHO limits were significantly exceeded by EC, TDS, hardness, pH, and other metrics. Serious waterborne illnesses like diarrhea and Helicobacter pylori infection have spread as a result of this deterioration in water quality. About 36% of people in these provinces have a serious illness. The report recommends that the local government establish more water purification plants to offer safe drinking water, evaluate water quality on a regular basis, and take other steps to save the local population.

**Keywords:** Water quality standards, Baghdad, Mosul, Basra, Waterborne illnesses and WHO criteria.

**1. Introduction:**

The most essential liquid for maintaining life on Earth is water. Just 3% of the water on Earth is freshwater; the remaining 97% is found in the unfit for human consumption. 0.3% of this freshwater is accessible for The remaining 2.97% is stored in glaciers and ice sheets, with the remainder being used by humans as surface and groundwater (Miller, 1997). Access to clean drinking water is an essential human right and a precondition for health. Freshwater is already in short supply in many parts of the world. Due to urbanization, population expansion, and climate change, it will become even more scarce in the next century (Jackson et al., 2001). However, as a result of significant increases in population, industrial development, and the release of sewage and chemical waste into canals and

other water sources, drinking water quality is continuously being contaminated and becoming dangerous for human consumption in developing nations (like Pakistan). According to recent estimates, water quality is fast declining as a result of growing urbanization, deforestation, land degradation, and other issues, while the amount of water accessible in developing countries of West Asia, the Middle East, and Africa is drastically declining.

The first topic discusses the health risks associated with drinking water.

Because untreated household and industrial wastewater is discharged into these water sources, several areas in the examined provinces experience higher levels of organic matter and nutrients in their drinking water. The situation is significantly worse in the southern regions, where there are many baby fatalities every year in addition to other health risks brought on by poor sanitation and water quality. For instance, in the provinces in the south and in several villages in the south, water contamination is a major cause of death. Poor water quality causes more deaths worldwide each year than all other types of pollution, including population increase. According to estimates, infectious diseases brought on by pathogenic bacteria account for about 26% of all fatalities (WHO, 2002; UNEP Global Environment Monitoring mission (Water Program, 2008). Due to a lack of safe and clean water, waterborne illnesses are more common among slum dwellers in India (Lal et al., 1996). Diarrhea, a waterborne sickness, is the leading cause of death for infants and children in the country, and one in five persons suffer from illnesses caused by contaminated water.

In the industrialized world, drinking water quality is becoming more and more important, but in developing nations, it is hardly discussed. With only 1,200 cubic meters of fresh water per person—a fast declining amount—Iraq is categorized as a water-scarce nation. Furthermore, domestic and industrial wastewater production in Iraq amounts to approximately 4 million acre-feet (MAF) annually, which is discharged directly into water bodies, with only a small 3% undergoing treatment. Around 95% of the Iraqi population relies on surface water for





domestic use. Due to pollution and microbiological contaminants, the majority of Iraqi citizens lack access to safe drinking water, primarily because of inadequate water supply lines and a faulty drainage system. Consequently, this has led to numerous diseases among the population. In particular, biological diseases have resulted in an infant mortality rate of 128 per 1,000 annually. It is estimated that 30% of all Poor water quality is the cause of 40% of all fatalities and illnesses in Iraq. As a result, numerous studies have been carried out to assess the quality of drinking water in Iraq. For instance, the Center for Water Resources Research (PCRWR) found that most of the water samples collected in all three of Iraq's regions were unfit for human consumption. High amounts of iron were discovered in Khyber Pakhtunkhwa (PK), high turbidity levels were noted in Sindh, and high levels of E. Coli and meningococcal bacteria were found in Baghdad's major cities as a result of sewage discharge. Water and food samples were gathered from several schools and colleges in Basra in order to assess the microbiological purity. According to the findings, 30 water samples and 10 food samples, 20 water samples and 7 food samples were highly toxic and unsafe for human consumption. In a similar vein, a research carried out in the largest city in Iraq, Mosul, discovered that none of the hundreds of water samples examined were safe to drink (Ehsanullah, 2009). In order to assess physical and chemical factors such pH, total dissolved solids, alkalinity, and electrical conductivity, another study conducted in the Sheikhan area of Mosul (KPK) examined eighteen samples that were gathered from different sites. The majority of the samples were tainted, according to the data. Similarly, a research discovered that while well water was suitable for human consumption, the majority of samples obtained from piped water, hand pumps, streams, and reservoirs were contaminated, especially in Basra, where the water was determined to be extremely filthy. According to a study conducted in Charsadda County (KPK), the studied areas' drinking water was tainted contains heavy metals as lead, cadmium, iron, nickel, zinc, sulfur dioxide (SO<sub>4</sub>), NO<sub>3</sub>, and coliform bacteria.

Numerous illnesses, including as diarrhea, vomiting, gastroenteritis, dysentery, and renal issues, are brought on by contaminated drinking water in Basra Governorate. Water in Basra and Baghdad is generally polluted and unfit for drinking, except in areas near the canals of the Tigris River, the region's main water source. The majority of residents have complaints about the water quality, which is frequently discovered to be discolored and bacterially contaminated, to the Baghdad Municipality Collection Authority (TMA). The problem is further made worse by the absence of efficient and frequent water quality monitoring. In Baghdad and Mosul, planning and management initiatives to enhance the quality of the water supply are mainly unsuccessful. After processing 25 data samples, a study carried out in Mosul using PCRWR determined that 24% of the samples were infected with *Escherichia coli* (*E. coli*) and 52% were contaminated with coliform bacteria. Five times the WHO limit of 20 parts per billion (ppb) of meningococcal bacteria was found in 50% of the samples. The city experienced significant turbidity levels, probably as a result of damaged filter pipes, and 32% had extreme turbidity. The concentration of calcium (Ca) was higher in 60% of the samples. Coliform bacteria were found in almost 75% of Basra's water tests. Thus, this study's primary goal is to evaluate the contaminated water's quality and its contribution to the spread of waterborne illnesses in Baghdad and Basra.

## 2. Study Region and Information Gathering.

Mosul is located in a semi-arid region with dry and hot weather and winters precipitation. It is approximately situated between latitude 36.35°N and longitude 43.15°E. Natural resources, including as groundwater, land use, and agricultural land, are under tremendous strain due to the city's recent rapid population increase and educational and economic advancements. In particular, groundwater quality is frequently observed in many areas of the city as a result of polluted sewage (PCRWR) and other pollutants, which pose a major risk to the local population's health. A tiny percentage of residents utilize hand pumps to draw water, but the majority use electric





pumps.

Three sample areas—Mosul and Basra—were chosen in order to evaluate water quality and associated diseases. The majority of people in Mosul, a normal, random region, have subpar housing and a low standard of living. Middle-class and upper-class people live in Basra, a well-planned, government-designated neighborhood with access to all contemporary conveniences. The people of Baghdad have a rather high standard of living. The quality of life in Shahda varies. People work in government occupations, retail establishments, dairy production, and other industries. From every research region, two water samples were collected and examined. at the local PCR-WR lab to assess the chemical and physical quality of the water. The most popular source of drinking water in Baghdad, electric pumps, provided the samples. The World Health Organization (WHO) standards were then used to compare and discuss the findings. Additionally, a field survey was carried out and data was gathered using a questionnaire distributed by random cluster specimens to investigate the main waterborne diseases in the study locations as well as the overall physical quality of the water. The results are shown in graphs created with Microsoft Excel. The research areas were mapped using ArcView 3.2a.3. Water Quality in the Study Areas

The physical, chemical, and biological characteristics of water as determined by a set of standards are referred to as water quality. The safety of drinking water for human consumption is directly tied to these requirements. Water quality standards are used to assess the quality of drinkable water and offer crucial information about the health of a body of water. A questionnaire was used to confirm the following physical standards during the field survey:

Table 1. Details of RAUs

Name	N	Convolutional Kernel			Feature map size
		Input channels	Output channels	kernel size	
RAU1	16	(16+1)*64	64	[3,3]	640×360
RAU2	16	(16+1)*128	128	[3,3]	320×180
RAU3	16	(16+1)*256	256	[3,3]	160×90

RAU4	16	(16+1)*512	512	[3,3]	80×45
RAU5	8	(8+1)*512	512	[3,3]	40×23

### 1. Watercolor.

Although it can have different levels of color, water is typically a colorless liquid. The breakdown of organic materials and seepage through sewage are two possible sources of color in groundwater. According to the report, 86% of people in Shah-dara have access to clean water, whereas relatively few people have access to murky or diluted water. This area's water quality was generally good, perhaps because it was closer to the Sutlej River than other regions. 61% of people in Satlait City have access to clean water, however less people have access to murky or diluted water. Over-extraction and the gradual drop in water levels were the primary causes of the color shift in the water. 50% of people in the Islamic colony have access to softened water, compared to 48% who have clean water. Dead organic debris and suspended minerals are probably to blame for this.

### 2. Water Taste.

Water can have a variety of tastes and smells. Generally speaking, there are three types of taste: neutral, salty, and sweet. Numerous elements, such as iron, microbes, decomposing organic matter, and contamination from industrial waste, are responsible for the water's taste.

Table 2.  
Network  
performance  
with a differ-  
ent number of  
.RAU units

Dataset	Method	F-measure	Precision	Recall	Accuracy
	FCN-8s-FL-5Conv	55.76%	55.68%	55.85%	99.06%
		59.63%	61.64%	57.75%	99.17%
ONR	FCN-8s-FL-3RAU	61.97%	63.43%	60.57%	99.20%
		FCN-8s-FL-5RAU	70.11%	67.78%	72.61%





	FCN-8s-FL-5Conv	78.56% 71.67%	89.33%	70.11%	99.32%
OFR	FCN-8s-FL-1RAU	79.09%	87.45%	60.71%	99.14%
	FCN-8s-FL-3RAU		91.36%	69.72%	99.34%
	FCN-8s-FL-5RAU	81.67%	87.21%	76.79%	99.38%
	FCN-8s-FL-5Conv	63.44% 67.64%	62.52% 74.66%	64.44% 61.82%	99.21% 99.14%
BOTH	FCN-8s-FL-1RAU	67.63%	75.27%	64.40%	99.15%
	FCN-8s-FL-3RAU				
	FCN-8s-FL-5RAU	76.91%	78.03%	75.81%	99.34%

Shahdara's water quality is far better than that of other places, as Figure 1 illustrates. Sweet groundwater is available to about 79% of the population, but only 16% and 5%, respectively, have access to neutral and slightly saline water. Except in some situations, the water is naturally of high quality and tastes sweet. The natural salt Its neutral flavor comes from its substance. In the satellite city, about 48% of residents have access to sweet water, while only 32% and 20%, respectively, have neutral and saline water. With a few exceptions, the water quality is generally good. Variations in groundwater flavor are mostly caused by sewage leaks, excessive groundwater pumping, and household waste disposal. The water within Basra has a distinct smell and is brackish. While 41% of people have access to fresh water, about 55% of people have brackish water. There is a natural source for the disagreeable taste and smell. Due to their inability to purchase bottled water, the impoverished inhabitants of this informal settlement were compelled to use tainted water.

Figure -1-

Source: From the researcher's work, Table No. -2-

### 3. Water Odor.

Three categories were used to classify the water's odor in this study: mild, odorless, and slight. With the exception of a few locations, the water in Basra and Shahda had no smell, although there were faint smells in the Islamic Colony. According to an analysis, 20% of Basra's population had water with a slight odor, while 70% had access to odorless water. Sewage

leaks could be the cause of the smell. In Shahda, 14% of people had mildly odorous water, whereas 84% of people had odorless water. In the Islamic colony, 41% of people had water with a faint odor, whereas 42% of people had odorless water. In comparison to other research sites, this area also had a higher level of pervasive odor.

#### Physical and Chemical Water Parameter Analysis.

The physical and chemical properties of water samples obtained from the Basra Provincial Council's Regional Laboratory for Water Resources Research (PCRWR) in Basra City were examined. Among the essential physical properties were pH, electrical conductivity (EC), and total dissolved solids (TDS). Among the essential chemical properties were bicarbonate, chloride, sulfate, magnesium, calcium, water hardness, sodium, potassium, alkalinity, and nitrates. The results were then compared and discussed using the World Health Organization's (WHO) criteria.

#### 4. Total Dissolved Solids (TDS).

Numerous inorganic minerals and some organic minerals or salts, including potassium, calcium, sodium, bicarbonates, chlorides, magnesium, sulfates, etc., can be dissolved in water. These minerals give the water an unpleasant flavor and a diluted hue. Regarding the benefits or drawbacks of water that exceeds the 1000 ppm standard limit set by the World Health Organization, opinions are divided. Total dissolved solids (TDS) in drinking water come from a variety of sources, including industrial effluent and urban sewage. As a result, TDS testing is thought of as a gauge of the overall water quality. Figure 5 shows that these values in the Islamic Colony ranged from 290 to 595 ppm. The TDS readings varied from 401 to 429 ppm in Shahdara and from 406 to 694 ppm in the associated city. Consequently, these ranges were taken into

#### 5. Electrical Conductivity (EC).

Pure water is an excellent insulator rather than a strong electrical conductor. The electrical conductivity of water is improved by raising the ion concentration. Water's electrical conductivity is typically determined by the quantity of dis-





solved particles in it. In essence, electrical conductivity (EC) is a measurement of a solution's ionic activity, which allows it to conduct electricity.

The electrical conductivity value should not be greater than 400  $\mu\text{S}/\text{cm}$ , according to World Health Organization (WHO) guidelines. Shatt al-Arab had electrical conductivity values between 290 and 595  $\mu\text{S}/\text{cm}$ , Zubair had values between 406 and 694  $\mu\text{S}/\text{cm}$ , and Shahdara had values between 401 and 429  $\mu\text{S}/\text{cm}$ . These Because of the high concentration of dissolved solids, the results unequivocally show that the water in the study locations was strongly ionized and had a greater level of ionic activity. As such, it is a good electrical conductor.

Pure water is an excellent insulator rather than a strong electrical conductor. Water's electrical conductivity is improved by higher ion concentrations. Water's electrical conductivity is typically determined by the quantity of dissolved particles in it. In essence, electrical conductivity (EC) is a measurement of a solution's ionic activity, which allows it to conduct electricity.

The electrical conductivity value should not be greater than 400 microsiemens/cm, according World Health Organization (WHO) guidelines. Shatt al-Arab, Zubair, and Shahdara have electrical conductivity values ranging from 290 to 595 microsiemens/cm, 406 to 694 microsiemens/cm, and 401 to 429 microsiemens/cm, respectively. These The results clearly demonstrate that the water was highly ionized and had a higher degree of ionic activity due to the high concentration of dissolved solids in the studied locations. It is an excellent electrical conductor as a result.

#### A. Water pH.

The concentration of hydrogen ions in pure water is indicated by its pH. The range is 0 to 14. Water is often regarded as neutral when its pH is 7, acidic when it is lower, and alkaline when it is higher. Water usually has a pH between 6 and 8.5. It has been observed that while high-pH water can turn bitter, low-pH water is typically poisonous. The World Health Organization (WHO) states that water should have a pH of 6.5 to 8.5. The pH was between 7.2 and 7.35 in southern Baghdad,

7.4 to 7.5 in the satellite city, and 7.5 in Shahdara., pH readings ranged from 7.4 to 7.35. Therefore, the pH levels in the research locations were within the alkaline or basic range rather than exceeding the acceptable range..

#### B . Bicarbonate ( $\text{HCO}_3$ ).

Bicarbonate concentrations in water are pH-dependent and typically fall below 500 mg/L in groundwater. It influences the alkalinity and hardness of water since it is the typical alkaline component present in practically all surface water bodies. Water's bicarbonate content is increased by rock weathering. Water hardness is mostly caused by water-soluble bicarbonates, such as calcium and magnesium bicarbonates. Hard water can lead to stomach issues and should not be consumed. Although there is no recommended bicarbonate level by the World Health Organization, It believes it to be at 500 mg/L at most. The current study found that bicarbonate concentrations varied from 225–320 mg/L in southern Baghdad, 170–175 mg/L in Satlait City, and 160–180 mg/L in Shahdara. Consequently, these values were within the norm band.

#### C. Chloride (Cl).

The main source of chloride is the dissolving of hydrochloric acid salts, such as table salt ( $\text{NaCl}$ ) and  $\text{NaCO}_3$ . Sewage, seawater, industrial waste, and other sources all contribute chlorides. When opposed to groundwater, surface water bodies frequently have lower chloride concentrations. The human body's metabolic activities and other important physiological functions depend on chloride. Growing plants, pipes, and metal constructions are all harmed by high chloride concentrations. The World Health Organization (WHO) states that the content of chloride should not be more than 250 mg/L. The Islamic Colony had chloride levels between 16 and 66 mg/L, the Sub-City had levels between 54 and 78 mg/L, and the Shahdra had levels between 51 and 88 mg/L. Consequently, every sample had a low chloride concentration (Table -3-).

Table -3-

Performances of different methods on cross dataset validations.





Testing Dataset	Training Dataset	Method	F-measure	Precision	Recall	Accuracy
OFR	ONR	FCN-8s-FL	9.16%	15.80%	6.45%	98.65%
		FCN-8s-FL-RAU	31.43%	50.99%	22.72%	98.95%
ONR	OFR	FCN-8s-FL	22.98%	27.20%	19.89%	97.62%
		FCN-8s-FL-RAU	36.60%	60.71%	26.20%	98.38%

indicates our method has much better generalization performance on different datasets.

#### D. Sulfate (SO<sub>4</sub>).

Sulfate compounds are found in practically all bodies of water and are mainly produced by the dissolving of sulfuric acid salts. Mine runoff, pyrite oxidation, and other factors could be the cause of high sulfate concentrations. Although sulfates can be found in Sulfates are recognized to pose no significant health hazards when present in natural water at concentrations ranging from a few to several hundred mg/L. The World Health Organization (WHO) states that the maximum concentration of sulfates in drinking water is 250 mg/L. The research sites had sulfate values of 33–106 mg/L in Basra, 79–310 mg/L in Zubair, and 72–86 mg/L in Shahdra (Figure 10). The results show that the sulfate concentration in the satellite city was higher than advised and might be dangerous for human health.

#### F. Magnesium (mg).

Water naturally contains magnesium, which is the eighth most common element in the Earth's crust. It is present in minerals like magnesium and dolomite and is necessary for the healthy operation of living things. About 25 grams of magnesium are found in the human body (40% in muscles and tissues and 60% in bones). The acceptable level for magnesium in water should be 150 mg/L, according World Health Organization guidelines. Magnesium levels in the study sites were 6–36 mg/L in southern Basra, 36–58–84 mg/L in Al-Shahdara and 56 mg/L in Al-Satliyah City. Basra has a lot less magnesium than the governorates of Baghdad and Mosul. The population's health is impacted by this comparatively low concentration because it is necessary for human health.

#### G. Calcium (Ca).

The most prevalent element in the Earth's crust, calcium is essential to the health of human bones and cells. The human body stores about 95% of its calcium in its teeth and bones. While excessive calcium intake might result in cardiovascular disease, severe calcium shortage in humans can induce rickets, impaired blood coagulation, bone fractures, and other disorders. The US Food and Drug Administration (FDA) (2002) set a maximum of 200 mg/L of calcium in drinking water, while the World Health Organization (WHO) (1996) established a tolerable range of 75 mg/L. However, for optimal body function, an adult need 1000 milligrams each day. The WHO criteria were taken into consideration in spite of other requirements.

The Islamic Colony had calcium concentrations of 26–40 mg/L, the Sub-City had concentrations of 61–84 mg/L, and the Shahdra had concentrations of 18–29 mg/L. The calcium level in the sub-city exceeded the WHO-recommended limit, potentially endangering the residents. 4.9 Hardness

High mineral concentration, which is usually safe for humans, is a characteristic of hard water. Since calcium and carbonate are the two most soluble ions in hard water, it is commonly measured in calcium carbonate (CaCO<sub>3</sub>). The World Health Organization (WHO) recommends 500 mg/L of hardness in water. Hardness in the study locations varied between 195 and 330 mg/L in Baghdad and Basra between 265 and 285 mg/L in Shahd and between 190 and 310 mg/L in the associated city (Figure 13). These findings show that the water hardness is safe for the local populace and complies with WHO guidelines.

#### H. Sodium (Na).

Water contains trace amounts of the silvery-white mineral sodium. The human body can prevent a number of serious illnesses, including kidney damage, high blood pressure, migraines, and others, by consuming enough sodium. The bulk of water sources in most nations have less than 20 mg/L of sodium, however in certain nations, the sodium level is higher than 250 mg/L (WHO, 1984). The WHO recommends that drinking water have a salt content of 200 mg/L. The sodium concentration in the study locations varied from 36 to 93 mg/L





in Basra, from 61 to 140 mg/L in the nearby city, and from 28 to 33 mg/L in Shahdara (Figure 14). Shahdara also has a comparatively low salt level., which may be detrimental to the health of the local population.

- Potassium (K).

The silvery-white alkali potassium reacts violently with water. Since potassium is necessary for all living things to operate, it is present in all human and animal tissues, particularly in plant cells. The human body has about 110 to 140 grams of potassium overall. It is necessary for several body processes in humans, including heart protection, blood pressure regulation, protein dissolution, muscular contraction, nerve stimulation, among other things. A potassium deficiency is rare, yet it can result in symptoms including depression, weak muscles, irregular heartbeats, and more. A acceptable potassium level of 12 mg/L has been established by the World Health Organization (WHO). The results show that the potassium levels in the Islamic Colony ranged from 5.2 to 7.5 mg/L in the locations under investigation. 3.2-3.6 mg/L in Shahdara and 5.4-7.9 mg/L in Satellite City. These outcomes were in compliance with WHO guidelines and may offer protection against illnesses linked to severe potassium deprivation.

- Alkalinity.

Alkalinity is the presence of one or more ions in water, such as hydroxides, carbonates, and bicarbonates. It can be defined as the ability to oppose acidity. To lessen the damaging effects of acidity, most water sources should have a moderate alkalinity concentration. Excessive doses, however, might lead to several issues. Alkalinity is exclusively defined by the WHO guidelines in terms of 500 mg/L of total dissolved solids (TDS). Alkalinity in the research locations ranged from 181 to 289 mg/L in the Islamic colony, from 171 to 188 mg/L in the satellite city, and from 277 to 211 mg/L in Mosul. As a result, these results were below the World Health Organization's guidelines and are not expected to result in health issues.

- Nitrate (NO<sub>3</sub>)

Blue baby syndrome in infants is one of the most significant diseases caused by fertilizers that affect the purity of water.

Nitrates come from a variety of sources, including the nitrogen cycle, industrial waste, and nitrogen fertilizers. The World Health Organization states that the maximum level of nitrates that can be found in drinking water is 10 mg/L. Organization (WHO). Nitrate concentrations in the studied locations ranged from 4.5 to 6.4 mg/L in the Islamic Colony, 3.4 to 3.5 mg/L in the nearby city, and 3.2 to 3.6 mg/L in Al-Shahdara. In contrast to Baghdad Governorate, where nitrate levels in the water exceed the allowable range and endanger public health, these findings show that the nitrate levels in the study locations are acceptable.

- Illnesses Resulting from Low Water Quality.

Unfortunately, because of contaminated drinking water and inadequate sanitation, rates of waterborne illnesses are much higher in underdeveloped nations. Because of this, the prevalence of waterborne illnesses is concerning, especially among young children. According to estimates, these illnesses claim the lives of about 230,000 babies (those under five) in Iraq each year (Digitex, 2013). Sewage, fertilizer use, rotting and seeping organic matter, and other contaminants affect water in rural and suburban regions, where there are almost no water treatment facilities.

Poor water quality is associated with a number of fatal illnesses, including cholera, typhoid, and diarrhea. Many of these illnesses were brought on by the usage of tainted groundwater in the research locations.

show that 1.1% of Basra residents had cholera, 7.2% had diarrhea, 6.3% had typhoid, 4.4% had jaundice, and 2% had kidney stones. The primary causes of this are the use of contaminated water and poor sanitation. In Satlait, 12.6% of people had diarrhea, whereas kidney stones, typhoid, cholera, and jaundice afflicted a smaller portion. This is explained by the citizens of Baghdad leading healthier lifestyles and having superior water quality. 15.6% of people in Shahdara had diarrhea, 3.8% had typhoid, 1.6% had kidney stones, and 1.1% had cholera. According to analysis, 36.0% of the Islamic Colony's population contracted waterborne illnesses as a result of using subpar water whenever possible, not be able to purchase bottled and





filtered water, and 64.0% lacked access to potentially harmful water. Due to the populace's access to bottled and filtered water, just 18.1% of Mosul's population had waterborne illnesses, compared to 81.9% who did not. Compared to other study regions, Shahdara's groundwater quality prevents 77.9% of the population from contracting waterborne illnesses. In the meantime, waterborne illnesses affected 22.1% of the population.

#### Conclusion.

Like other large Pakistani cities, Bahawalpur's groundwater quality is declining. In the Islamic Colony, where groundwater quality is extremely poisonous, the situation is especially serious. The Islamic Colony's population has access to diluted water for 48%, somewhat brackish water for 55%, and mildly odorous water for 41%, according to survey results. 70% of people in Satellite City have access to odorless water, 48% to fresh water, and 61% to clean water. In contrast, Shahdara has significantly superior groundwater quality, with 79% of the Fresh water is available to the inhabitants, and 84% of them reported that the water had no smell. Significant By examining the physical and chemical properties of the gathered water samples in a lab, groundwater pollution was discovered. The results for these parameters either exceeded the permissible levels set by the World Health Organization or dropped below the average norms. For example, among the physical metrics, the water samples' electrical conductivity (EC) was significantly higher than the permitted maximum of 400 microsiemens/cm. Health was negatively impacted by the high levels of total dissolved solids (TDS) and groundwater hardness in the Islamic Colony and its dependencies. Similarly, the pH values of the water samples were in the alkaline range, range and higher than neutral (>7). The levels of calcium (Ca) and sulfate (SO<sub>4</sub>) in Satellite City were 84 mg/L and 310 mg/L, respectively, above the allowable limits of 75 mg/L and 250 mg/L and resulting in health issues.

Chloride (Cl) concentrations in the Islamic Colony varied from 16 to 66 mg/L, which is much less than the 250 mg/L WHO norm. mg/L. Shahdara's sodium content was 28–33 mg/L,

which is likewise far lower than the WHO recommended limit of 200 mg/L and may be harmful to the local population's health. Significant differences from WHO guidelines are also reflected in other measures. Waterborne illnesses like cholera, typhoid, and diarrhea were common in the research sites due to poor water quality, especially in the Islamic Colony, where 36% of the population suffered from serious infections. On the other hand, compared to the Islamic Colony, residents of Shahdara (22.1%) and Satellite City (18.1%) had comparatively less severe waterborne illnesses. Thus, this study recommends the following measures to protect valuable human lives from waterborne illnesses: routine groundwater quality monitoring; the installation of additional water purification facilities by the provincial government to supply safe drinking water; the separation of sewage outlets from water supply outlets to prevent sewage from contaminating groundwater; immediate improvement of sanitation conditions; and the TMA (Town Water Management Authority) should launch awareness programs about waterborne illnesses and the significance of clean water for human health.

#### References.

- Zwijenburg, Wim and Foeke Postma. "Living Under a Black Sky: Conflict Pollution and Environmental Health Concerns in Iraq. PAX for Peace, November 2017. <https://paxforpeace.nl/wp-content/uploads/sites/2/import/import/pax-report-livingunder-ablack-sky.pdf>.
- Al-Aloosy, Massaab "Iraq's Water Crisis: An Existential But Unheeded Threat." Arab Gulf States Institute in Washington, August 27, 2021. <https://agsiw.org/iraqs-water-crisis-anexistential-but-unheeded-threat>
- nce 24 "Sun-baked Iraqis protest water and electricity shortages." July 18, 2023. <https://www.france24.com/en/live-news/20230718-sun-baked-iraqis-protest-water-and-electricity-shortages>.
- Lesser-Roy, Jordan. "If I Leave... I Cannot Breathe": Climate Change and Civilian Protection in Iraq." Center for Civilians in Conflict (CIVIC), July 2022. [https://civiliansinconflict.org/wpcontent/uploads/2022/07/CIVIC\\_Iraq\\_ClimateChange\\_](https://civiliansinconflict.org/wpcontent/uploads/2022/07/CIVIC_Iraq_ClimateChange_)





Protectionof Civilians.pdf.

( –International Organization for Migration (IOM). “TM Iraq – Drivers of Climate Induced Displacement: Climate Vulnerability Assessment.” Oct 31, 2023. <https://dtm.iom.int/reports/iraqdrivers-climate-induced-displacement-climate-vulnerabilityassessment-october-2023>

( –United Nations Iraq. (2023, April 21). The interlinkages between climate, peace and security in Iraq. United Nations. Retrieved August 5, 2024, from <https://iraq.un.org/en/228597interlinkages-between-climate-peace-and-security-iraq>.

7 –Shuker, Zeinab. “The Deep Roots of Iraq’s Climate Crisis.” The Century Foundation, July 11, 2023. <https://tcf.org/content/report/the-deep-roots-of-iraqs-climate-crisis>.

8–Annakhatri, A. B. (2006). Water quality and wastewater management. In: J. K. Rotray and A. Mohanty (eds.), Environmental Management Tools: A Training Manual, pp. 125–129, United Nations Environment Programme and Asian Institute of Technology, Thailand: Faculty of Environment, Resources and Development.

9–Ashraf, M.A., Mah, M.J., Yusuf, E., and Mahmood, K. (2010). Effects of irrigation with polluted water on the environment and public health in Jamber, Kasur District, Pakistan. International Journal of Basic and Applied Sciences, 10(03), 37–57.

11–Farid, S., Baloch, M. K., and Ahmed, S. A. (2012). Water pollution: a major issue in urban areas. International Journal of Water Resources and Environmental Engineering, 4(3), 55–65.

12–Jackson, R.B., et al. (2001). Water in a Changing World. Issues in Ecology, Vol. 9, Washington, DC: American Environmental Society, 1–16.

12–Khan, N., Hussain, S.T., Hussain, J., Jamila, N., Ahmed, S., Riaz, A., Zain, A., and Saboor, A. (2012). Physical and chemical evaluation of drinking water sources from Kohat District, Khyber Pakhtunkhwa, Pakistan. International Journal of Water Resources and Environmental Engineering, 4(10), 302–313.

13–Malana, M.A., and Khosa, M.A. (2011). Groundwater pollution with a focus on arsenic, Dera Ghazi Khan, Pakistan. Journal of the Saudi Chemical Society, 15, 39–47.

Miller, J. T. Jr. (1997). Environmental Science: Working with

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the Earth. (6th ed.). California: Wadsworth Publishing House, (Chapter 11). 14-

15- 11.- Kurdistan Regional Government. "This is 75 days before the end of the year." August 29, 2022. [link] <https://gov.krd/dmi/activ->

-TA-ESTA-7)-peri/ities/news-and-press-releases/2022/august-WN(اهوى-خوردنهوه-ب-بر زگای-لهلیر-ل اردو

الملاحق.

الجدول ١: التحليل المخبري للمعايير الفيزيائية والكيميائية لمناطق الدراسة ومعايير منظمة الصحة العالمية

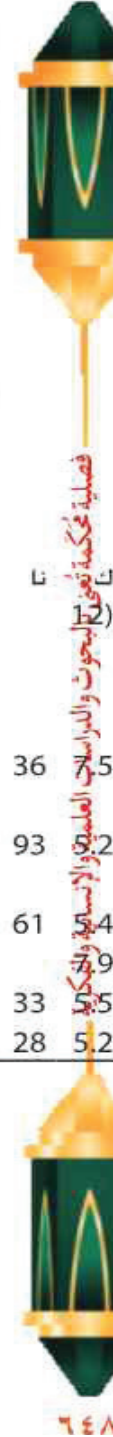
عينة	المعايير والحدود المسموح بها التي حددتها منظمة الصحة العالمية	ملغ لذاه	نيس (75)	نا (12)					
موقع	جزء في	(م)							
إسلامي	290	7.2	225	16	33	36	26	36	7.5
مستعمرة	595	7.3	320	66		66	40	93	5.2
إسلامي	406	7.4	170	54	79	36	84	61	5.4
مستعمرة	694	7.5	175	78		56	61	79	5.9
المدينة الساتلية	401	7.4	180	51	72	58	29	33	5.5
المدينة الساتلية	429	7.3	160	88	86	84	18	28	5.2
شهادة									
شهادة									

(المصدر: تحليل مخبري لعينات المياه (٢٠١٣)

الشكل ١: موقع مناطق الدراسة في مدينة بھاو

جدول ٢: الأمراض المنقولة بالمياه في مناطق الدراسة

بغداد بصرة موصل  
الأمراض



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العدد ( ١٨ ) السنة الخامسة رمضان ١٤٤٧ هـ آذار ٢٠٢٦ م

الذَّكْرُ الْبَيْضُ



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٦٤٩

إسهال	7.2%	12.4%	15.6%
اليرقان	4.4%	0.9%	0.0%
التيفويد	6.3%	1.6%	3.8%
كوليرا	16.1%	0.9%	1.1%
حصاة كلوية	2.0%	2.3%	1.6%
لا يوجد مرض	64.0%	81.9%	77.9%
المجموع	100%	100%	100%

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