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RESEARCH ARTICLE

HYDROLOGICAL ANALYSIS OF THE WATER OF THE EUPHRATES RIVER IN THE AREA OF THE ABBASA AND ENVIRONMENTAL EFFECTS

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ABSTRACT

researcher studying and analyzing the Euphrates River in the same vast farmland area of the Abbasa, which is dominated by the cultivation of rice and wheat for the most part, and enters this river to the study area after Tafrah South rump city into two Shatt al-KufaAbbasa Shatt we are going to talk about it, has reached through the analysis of the physical and chemical properties of this water, they suffer from the pollution caused by the discharge of water Alambazl it, as well as the lack of water purity, an analyst from the water purification plant, which requires making a lot of chemical and biological efforts in this vital area to get to the water unusable human in the study area and to the first level of purity is Bumpass World Health acceptable for avoiding falling health and environmental problems affect the lives of the population and economic activities

INTRODUCTION

Interests the study and analysis of the water in this world of ours is of great significance in close to relate to the economic aspects of the industry and human daily, as it reveals the qualitative characteristics analysis and contrast ratios for the concordance between water quality and the extent of carrying agricultural crops in the area for some of dissolved elements in river water or the extent of even some objects Living Lahti depend on fish for food as well as its importance in the lives of the population requiring bug-free pure water in order to ensure not vulnerable to diseases, especially diarrhea disease in the absence of purification of pollutants flowing into the rivers also highlights the importance of research by knowing how much they are discharged from water contaminated as a result of excess water discharged from Alambazl or sewage so came Find highlights on the analysis of the change ratios in natural water physical and chemical properties for the period 2010-2014 to its importance in the development of treatments that will ease the environmental impact in the overall aspects of the economic life of the population in the study area. Varies hydrological characteristics of the water of the Euphrates River analysis in the study area anisotropic and this is due to several reasons, important of the climate study area is characterized by high temperatures and evaporation during the hot season of the year with the decline and increased humidity during the cold season of the year, as well as the nature of the water itself and the quality of the rock, which is being above the river itself on the one hand, and the aspirations of the human and economic activities of the discharge of excess water from these activities, both agricultural and industrial to the river on the other hand, are all factors that have helped in the different quality water and purity and suitability for use in genera. Take the problem of water quality in Iraq is the first two-dimensional quality of the water received from the source in the Euphrates River, which has no tributaries within Iraq. The second dimension is the contamination of water after entering Iraqi territory and this pollution is the result of the water Exchange agricultural, industrial(1) and sewage (civil) to downstream. The research aims to analyze the chemical properties of the waters of the Euphrates River in the area of the Abbasa through samples were taken from the Environment Directorate and the Directorate of Water Resources from different locations of to shed light on the Shatt Abbas a For their know proportions the changing during the months of the year. Link the area of the Abbasa city of Kufa, a town about (8 km) of freedom and villages region, which A town about (8 km) and which theCenter for maintaining holy city of najaf(2) Map(1).

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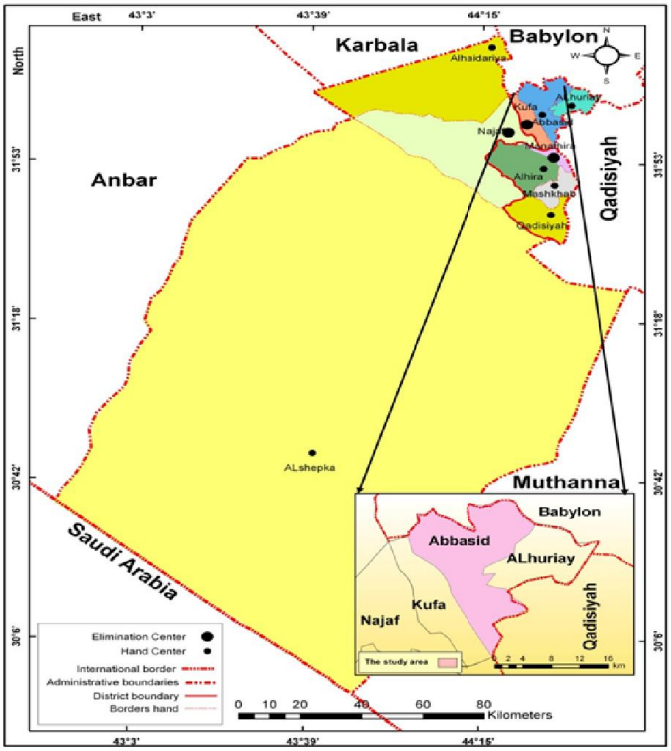
1.Mohammed Abdul Majeed Abdul Abbas, AqeelMajid star, Adel Mohammed Mohsen et al., Study the effect of Albrkih station for sewage treatment in the province of Najaf on the quality of the Euphrates River (Shatt al-Kufa), the Directorate of the Department of Environment, Department of Urban Environment, Najaf 0.2014, p. 2

2.Environment Directorate in the province of Najaf, the third report from the Abbasid city, 2012, p. 16



Map 1. Abbasa site area of the province of Najaf

Source: Republic of Iraq, General Authority of Survey, Map Najaf administrative 0.2014.

Serves the Euphrates River, located geographically Abbas a area within the district of Kufa in Najaf after the water storage and organization waters by the Abbas a helm located between latitudes (14 32) in the north and longitude (38 44) to the east [3] agricultural area of about (60 387 acres) planted mostly wheat estimated at (60 357 dunams), as well as barley estimated (30 without). [4] and quench these agricultural areas through irrigation projects branching from the right side of the Euphrates River and included (8) irrigation work projects discharge of (52 m3 / s) within the operational and low spells and other high. [5] and all these tables branching from the Euphrates River in the Abbas a influence in terms of the absolute amount of water being reserved or contribute to the supply of water Palmguennat agricultural areas, and this is inherently affect the hydrological characteristics of the river both quantitative and qualitative. After the study area equipped with clean water or other of the most important economic uses of the requirements of life, as there are in the Abbasa hand one project takes water from the Abbasa Shatt to serve its neighboring villages of the Abbasa city center, and is designed design capacity estimated at (450 m3 / h), and studies showed in so that the water supply and disposal of the harm caused to Aaijeri correctly and acceptable, and it became clear through the process of scanning the families in the study area that (6%) of them are suffering from the problem of drinking water supply. [6] and for that was selected study area as one of the most areas in the province of Najaf suffer from Mchkh lack of water first as distributed water to the Abbasa then to Al-shame in Diwaniya, so it was necessary to secure the needs of the regions which passes the river from which, as well as contamination of water drainage, which acted to by farmland, which requires the preparation of a comprehensive study of water Euphrates River in the study area to see how treatment and purification and identification of efficiency and quality manner that provides access to an acceptable level, compared with health and environmental standards

Second: the hydrological situation of the Euphrates River (Shatt al-Kufa) in the study area

Characterized collapsed Iraq in general Abbasa Shatt particularly uneven Tsarifaa of another year, and the separation of the last relying on water year properties, and the climatic and geological factors of the basin of the river and the quality of the soil and terrain and an abundance of natural vegetation and space pelvis, [7] all play an important role in determining the amount of Water and rates as well as the human factor and the role of money in excess guidance on agricultural crops need water to the river or drained and polluted water from industries guidance or other economic projectsDetermines the hydrological situation of the Abbasa Shatt know the amount of water and carries sediments during the runoff, Map (2) and this is associated with naturally water Inbound specified by the nape of the Indian helm and the work of other Alnoazem in the provinces of Babil, Karbala, as it determines the amount of running water in the river section and through Chapters of the year, the amount of the amount of pollutants in the water, in the cold season of the year, increasing the discharge of contaminated water rates even lower concentrations of the chemical and physical elements of the river and vice versa during the hot season of the year

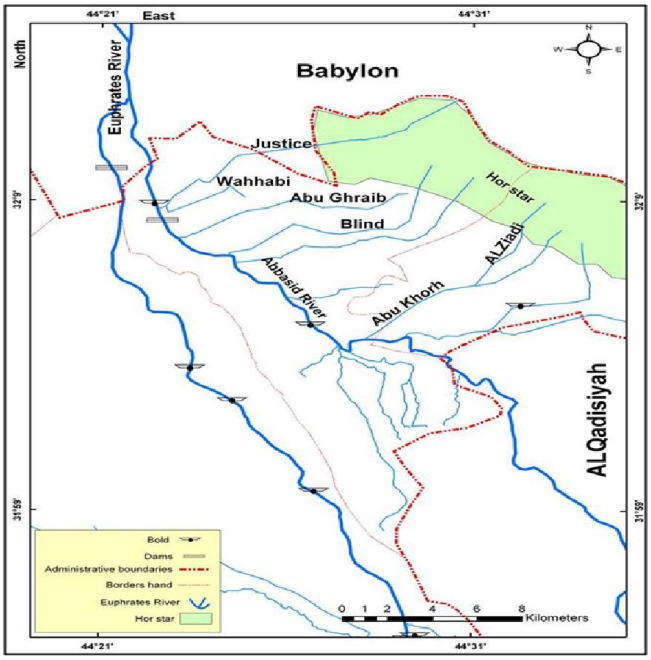
Shown in Table (1) Online water revenues have an important role in the variation amount of pollutants and water concentrations during the years (2010-2011) and (2011-2012), as it was the least of the Abbasa helm submitted during the month of March in the year 2010 about (63.23 m3 / tha) and nearly (20.50 m3 / s) during the month of July in the year of 2011 and approximately (23.9 m3 / s) during the month of July in the year of 2012. The form of (1) because of the drought experienced by most of the farmland surrounding agricultural area of the Abbasa and their need for water discharges. It appears from the form (1) that the highest level of the water provider Abbasa helm has been recorded in the study area during themonth of July in the year 2012, as it was about (24.76 m3 /s) . The total water elevations contrast the nape of the Abbasa ascend the lowest level during the month of January (about 20.41 m3 / s) and the highest level during the month of July, which was about (21.76 m3 / s) during

3. Mustafa Kamil Othman, the Euphrates River between the Indian helm stations and Nasiriyah (Hedrmorvomitrih study), doctoral dissertation, Faculty of Arts, University of Kufa 0.2014, p. 96.
4. The Department of Agriculture in the province of Najaf, planning and follow-up department, position the Winter Plan 2014-2015.
5.Water Resources Directorate in Najaf province, the operating section 0.2014 m.5
6.Environment Directorate in the province of Najaf, the third report from the Abbasid city, op. Cit., P. 38.
7. Abdullah cactus AbboudOjaili, geomorphological study of changes in the course of the Tigris River, between the cities and Essaouira, Master Thesis, Faculty of Arts, Baghdad University, 2000, p. 26.

Table 1. Euphrates River water levels in the area of the Abbasa in the water years(2010-2012)

water levels 2012		water levels 2011		water levels 2010		Month
Nape of the dam	Submitted dam	Nape of thedam	Submitted dam	Nape of the dam	Submitted dam	
20.98	23.9	20.41	23.05	20.65	23.65	January
20.96	24.23	60.00	20.80	21.16	24.01	February
20.91	23.84	20.85	24.17	21.09	23.63	March
20.91	23.84	70.00	21.58	20.93	23.86	April
20.12	23.73	21.28	24.20	20.52	23.43	May
21.25	24.49	22.95	21.15	21.34	24.12	June
21.85	24.76	24.85	20.50	21.76	24.07	July
21.14	24.65	25.20	21.30	21.12	23.85	August
21.31	24.31	24.88	21.65	21.17	24.26	September
21.03	24.46	24.80	21.60	20.93	23.96	October
21.08	24.31	24.68	21.10	20.79	24.08	November
20.82	24.13	23.95	21.15	20.89	23.49	December
21.03	24.22	30.32	21.85	21.03	23.87	Rate

Source: based on the work of researcher
Water Resources Directorate in Najaf province, the Department of Water (operating), unpublished data 0.2013



Map(2). Ramifications of the Euphrates River in the Shatt al-Abbasa Abbasa area

Source: Republic of Iraq, Ministry of Water Resources, the operatin section 0.2014

the year 2010, but the water level rose slightly in 2011, reaching elevation nape of the Abbasa helm below about (20.41 m3 / s) during the month of January and (70 m3 / s) during the month of April, and it was due to increased water share by what dedicated to him by the Indian helm, which reflected the reality of water discharge through months a year, which amounted to above and in the month of August of about (103.33 m 3 / s) and this is due to the nature of the climate of rising temperature and reflected on the increased evaporation rates and increased water Aldaúat, Table (2) and (Figure 2).As can be seen from Figures (1) and (2) of the year 2011 has been monopolized for the past two Almaúatin 2010 and 2012, up Mnasebha provider and nape of the Abbasa, and this has an impact obviously great in Increase the percentage of contaminated concentrations and of elements of chemical and physical formed in water It is clear from Table 2 and Figure 3 that there is a clear divergence within months a year in determining the amount of water revenue and its impact in determining the concentrations of pollutants in the determination of the amount of sediment transported, [8] When water revenue increases in the river section rises Altsariv which in turn works to reduce concentrations of pollutants in it, and vice versa in the case of low water revenue that helps to reduce Altsariv thus increasing the concentration of pollutants in the river water. Water discharge rate in 2010 (about 75.15 m3 / s), while decreased significantly in 2011 to around (34.20 m3 / s), but it increased significantly during the year 2012 to around (84.61 m3 / s), and varied monthly averages Also during these three years in high and low, in the year 2010 emerged as the month of July at the top Tbarva has averaged about (139.2 m3 / s) while we find in the year 2011 has been reduced to about (21.88 m3 / s) and returned to rise to about (158.23 m 3 / s) in the year 2012, which confirms that the water contained in the

Table 2. River discharges rate in the area of the Abbasa Years 2010-2012

Discharge2012	Discharge2011	Discharg2010	Month
65.17	38.2	52.5	January
52.17	20.60	68	February
52.33	43.4	40.2	March
52.33	21.05	52.5	April
66.03	55.00	36	May
120.73	20.78	104.1	June
158.23	21.88	139.2	July
111.29	103.33	102.42	August
112.33	21.95	105.83	September
			October
97.26	21.68	89.19	
71.83	21.80	65.67	November
55.65	20.70	46.13	December
84.61	34.20	75.15	Rate

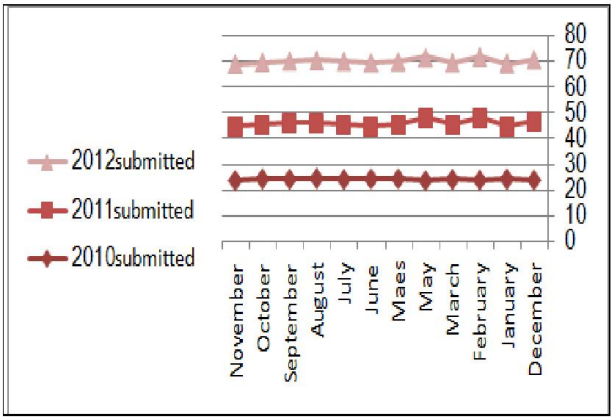
Source: based on the work of researcher
Water Resources Directorate in Najaf province, the Department of Water (operating), unpublished data 0.2014

study area is exposed to the variability within months a year and this is due to reasons including that the water contained in the Iraq controls determined by countries from outside Iraq, as well as Iraq's climate characteristics of rising temperaturesduring the hot season and fall during the cold season and reflection on the evaporation rates in the region and thus a water Aldaúat effect until the amount of the

8. Ahmed MaysKhan Dam, Euphrates River water pollution in the province of DhiQar environmental geographic study, Master Thesis, Faculty of Education, University of Basra, 2007, p 37.

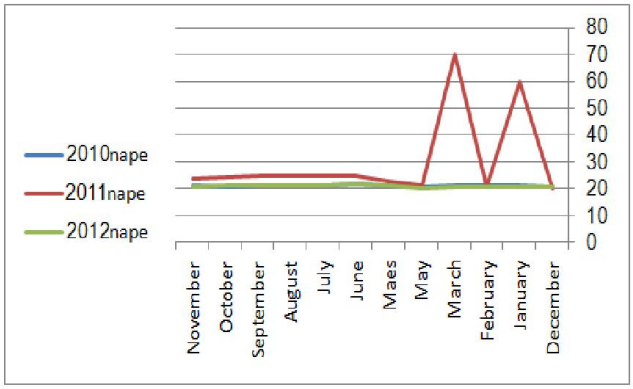
finalDischarge rates, and this is reflected in the increase in the concentration of salts and increased deposition amount of muds in the study area Figure (3).

Form 1. shows the levels of the Euphrates River provider Abbassa helm water in the study area



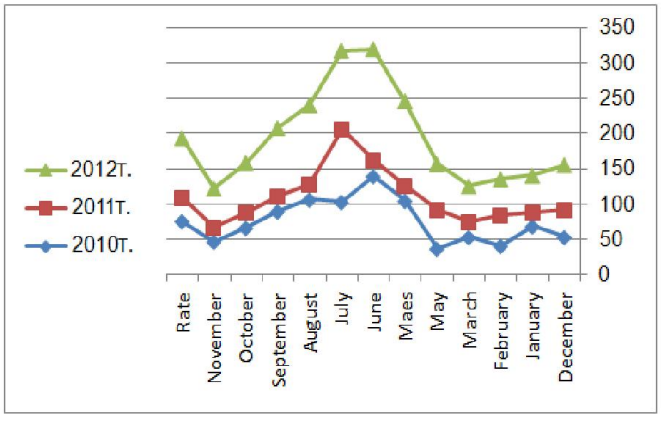
Source: Table (1)

Form 2. Euphrates River water levels varied nape of the Abbasa the helm in the study area



Source: Table (2)

Form 3 Flow rates of variation of the Euphrates River in the area of the Abbasa period 2010-2012



Source: Table (2)

Third: chemical and physical characteristics of the water of the Euphrates River in the area of the Abbasa

Water has a natural characteristics are indicative of her in terms of purity of impurities, but change these attributes mean that the water has been subjected to pollution and changes in its properties, which include chemical and other physical, and include the latest;

- Color: clean water in transparent colorless
- turbidity or turbid: any free water from the suspended matter in which
- Taste: clean water is tasteless to her tastes have changed as a result of exposure to external influences
- Smell: that regular clean water does not smell her presence odor proof pollution
- Temperature: It means that regular water for drinking be acceptable degree Hrarthabiyn (8-11m)

The chemical characteristics of water in the world it must include:

1. The degree of alkalinity or acidity: called factor pH or (PH) and limited value in the waters between (0-14) and measurement equal to (7) and less than (7) means an increase of acidity in the water either over (7) Vdleil alkaline increase, Water is the preferred drink is the degree (PH) sand wished between (7-8.5).
2. And for safe drinking water and, in general, most of the natural water tend to base a little bit because there Alcarbonat and bicarbonates which it and drop the PH values in the water affects the balance Alcarbonat and bicarbonates and the resulting edit dioxide carbon and this affects the lives of aquatic biology, as well as lower (PH) to less than (4.5).
3. of water leads to the melting of some of the material in the bottom such as iron, aluminum, magnesium and increases the concentrations in the water.

So you must know the value of the PH of the water before and after entering the treatment plants and during the treatment phases because the value of PH affect direct impact on the conduct of operations within the terminals and pipeline delivery[9], and in general the number of low (pH) and high adverse impact on the aquatic biology and bio-chemical events in the water and these types of water lead to corrosion. Disolvedoxygen (DO): The presence of water is essential and very important for the continuation of the life of aquatic organisms, and the rate of concentration in river water should not be less than (5 mg / L). Other such as calcium, potassium, magnesium, chloride, nitrate chemicalproperties ... etc. [10]It is thus clear that these natural properties of water and specific globally are important when studied and analyzed in our research, and linked to the values of these properties are within the range of variation in the water rising and falling, in the cold season of the year, the water level rises a way that eases somewhat the amount of focus in the proportions of the

9.Safaa Mohammed Hassan, a study on the reality of water resources in the province of Najaf to 2014, the Ministry of Environment, circuit protection and improvement of the environment in the Middle Euphrates, the Directorate of Najaf province environment 0.2014, p. 5.
10.Mohamed Mahmoud Suleiman, geographical environment, library Assad, Damascus, 2009, p. 2611.

number of those elements and the opposite happens during the hot season of the year, and most of the pollution that occurs on the water, whether the user for agriculture, drinking or industry comes from the same use any of the waste water from homes and Agriculture (drainage) and commercial and industrial enterprises as well. Was obtained on the natural properties of water from the Euphrates River data by the authorities concerned of Water Resources Directorate and the Directorate of Environment, which had a big role in taking samples of the water in every month of the year to see concentrations of elements in the Abbasa Shatt and their suitability for consumption of water population.

Vary the environmental determinants of contaminated water from the Euphrates River (Shatt Abbasa) in the study area and their suitability depending on the impact of a number of geographical factors, whether natural or human, that have impact in the temporal environmental changes and the degree of focus, and compared (Table 3), which represents the Iraqi determinants of the quality of potable water the aquatic environment with the Table (4), which represents water testing during the period (2010-2012), we find that all the chemical and physical elements have recorded relative variability in values, and this explains the extent of the lack of transparency and clarity of the water from the contaminated material that is concentrated in it.

Table 3. Iraqi determinants of the quality of potable water the water environment

maximum allowable concentration (mg / L, except in front of the cursor	Property
6.5-9	(PH)
0.4 Desmenz / m	(EC) Electrical conductivity
160-480	(TH)College Intractability
NTU() 10-18	(TUR)Turbidity
1500 PPM	Solid college(TDS)
200	Chlorides(CL)
200	Sulphates(SO4)
50	Nitrate(NO3)
3	Phosphate PO4
200	Calcium Ca 200
50	Magnesium Mg
170	Bicarbonates(Hco3)
At least 4	Dissolved oxygen(DO)
10	Silica(SIO2)
-	Transparency(TRAN)
◌̊35 m	Temperature
200	Sodium Na 200

Source: based on the work of researcher

1. Ahmed Mays Sdjan, Euphrates River water pollution in the province of DhiQar environmental geographic study, Master Thesis, College of Education, Basra University, 2007, p. 127.

2. DawdJassim al-Rubaie, the spatial and temporal variation of the pollution of the Euphrates River and piped water, mineral elements in the city of Samawah and its health effects, geographical research magazine, Issue (19) 0.2014

Acomparison of the tests contained in the Table (4) that the ratio (PH) may be varied in two years (2010 and 2011) ranged from (7.75 - 8.80 mg / L) and between (7.5 - 8.13 mg / l) for each of them in a row, it which confirms that the water is close to the grassroots in the study area, and increase to around (9 mg / liter) during the year 2012, and when you compare it with the amount of water that have been analyzed again when they arrive to the water purification plant in the area of the Abbasa, we find that the ratio of (PH) has remained the same as when she was in the river, as it amounted to (8.48 mg / L) in the year 2012, and that this indicates that something, it means that the amount of water Alambazl that goes back to the river have caused an increase in the base rate, as well as for the water purification process is not at the required level, which could affect the environmentally various human life and events. And varied the amount of salt concentration (TDS) in the study area are the other because the amount of salt has an inverse relationship the amount of water discharge, as Tertqa concentration ratio of salt in the dry seasons and down in the wet season [11] and this is evident through the hydrological analysis of water Abbasa Shatt in the study area, the varied during the year (2010) to about (921.5, 882.75 PPM) during the months of August and July while it was about (990 PPM) in October during the year (2011), but this ratio is different in a year (2012) as it increased the amount of salt concentration in the study area between (709-918 PPM) with the exception ofthe month of August which decreased the amount of salt concentration to about (580 PPM), while the figure rose during the month of September, reaching about (748PPM) in the filter station and not in the raw water, Table (5) . This is evidence that the concerned authorities the ability to use advanced scientific methods in order to maintain an appropriate amount of salts and valid for all Asthlakiat water rightsCation in the Euphrates River water is concentrated in the study area within varying ratios for the period (2010-2012), represented by (calcium, magnesium, sodium, potassium) Calcium is the most positive elements of the ions alkaline and the source of concentrated minerals within the rocks and sediments of clay, has encouraged deposited in the form of calcium carbonate on the growth of bacteria in the water[12]. And therefore not treated can cause diseases of the young residents of the study area, as well as the case of sodium, which cause a high value on the water as it was scheduled in the incidence of health problems such as high blood pressure and increase the salinity of the water. As it hit each ratio within acceptable water-Iraqi border somewhat drinking and each uses free the years 2010.2011 and 2012, but the calcium component was rates close to some sort to alkaline during the year 2011, which ranged between (96-168 mg / L), which confirms down rate during the cold season and during the height of the hot season, especially during the month of August Sodium is a component of the actors in the health of organisms and this is evident in the chemical analysis in the study area, in the month of December remained elevated rate of overland Ikham during the years 2010 and 2011, Table (5). Because of the lack of a high potential for treatment and purification according to the Iraqi standard of clean water, amounting to increase after analyzing waters of the river to about (170 185 139 mg / L) in each of 2010.2011 and 2012 respectively Table (4), and nearly

[11] 11.Hussein GobainOribi, evaluate the qualitative characteristics of the waters of the Tigris River in Maysan province for the period 2004-2005, Basra Arts Magazine, Issue 47, 2008, p 233

[12]David Jassim al-Rubaie, the spatial and temporal variation pollution waters of the Euphrates River and piped water, mineral elements in the city of Samawah and its health effects, geographical research magazine, Issue (19) 0.2014, p. 182 .

Table 4. Chemist and physicist for the water of the Euphrates River in the analysis area of the Abbas

Po4	Do	Tamp م°	k	Na	No3	So4	Cl	Mg	Ca	T.S.S	T.D.S	E.C	Ph	*year*	*Month/River*
0.00	7.5	16.8	8.2	139.45	8.35	385	192.5	50.75	122.8	15	446.036	1.364	8.5	*2010*	January
0.00	0.29	7.50	16.50	8.90	110	7.90	250	34.90	104	13	912	1.170	8.30	*2011*	
0.00	9.75	12.9	4.1	113.7	5.3	268.7	154.8	48.8	96	5	781	9.86	7.25	*2012*	
0.1	7.4	17.3	8.75	154.72	8.	377.5	200.75	51.72	129.4	11.5	223.554	1.48	8.5	*2010*	February
0.42	7.20	15.20	9.09	71.60	6.80	360	132.20	58.50	108	15	913	1.143	8.20	*2011*	
0.03	8.06	18.2	5.9	131	4.03	292.26	168.5	57.52	122.4	3	9.7	1.394	7	*2012*	
15	8.10	14.60	5.45	178	11.10	-	180.30	45.90	160.80	9	957	1.180	7.80	*2010*	March
0.00	7.90	20.80	5.73	122.40	7.39	95.50	156.76	41.21	120	15	866	1.228	8.60	*2011*	
0.03	7.08	20.4	4.7	69	5.5	335.35	137.17	41.48	124	6	825	1.269	8.15	*2012*	
0.36	8.10	24	8.10	111.40	7.80	-	169.70	37.50	134.40	42	899	1.362	7.70	*2010*	April
0.13	7.10	20	8.10	122	8.50	337	137	58.56	132	1	674	1.346	7.74	*2011*	
0.03	7.2	27.7	4.8	101.6	3.4	249.6	137.1	45.3	84	13	709	1.079	8.12	*2012*	
0.19	7.30	27	8.10	178	8.40	-	246.90	29.20	152	3	999	1.610	7.70	*2010*	May
0.06	8.1	21	16	170	7.70	-	300.60	52.2	130	42	1.084	1.55	7.72	*2011*	
0.03	5	24	6.2	114	4.29	220.24	135.2	43.92	96	16	740	1.190	8.3	*2012*	
0.12	6.40	32	6.70	144.20	9.03	-	135.20	62.40	145.60	40	844	1.548	7.80	*2010*	June
0.00	5.44	30	7	110	7.2	365	151.8	36.6	124	22	756	1.284	7.6	*2011*	
0.61	4.9	29.7	5.7	101.2	3.8	159.33	107.7	53.6	93.6	12	626	1.120	8.4	*2012*	
0.155	6.85	29.5	7.4	161.1	8.715	-	191.05	45.8	148.8	17	921.5	1.579	7.80	*2010*	July
0.0	6.6	30	3.6	51.7	5.6	390	117.5	29.2	120	34	549	970	8.13	*2011*	
0.15	10.9	21.4	5.4	94.1	2.43	240.35	132.3	51.2	100.8	45	776	1.311	7.25	*2012*	
0.13	6.625	30.75	7.05	152.65	8.872	-	163.125	54.1	145.7	28.5	882.75	1.563	7.80	*2010*	August
0.02	11.5	31.1	4.2	84.4	8.5	346.3	127.3	12.2	168	54	900	1.447	7.5	*2011*	
0.00	9.43	33	4	84.9	1.72	178.78	88.18	33.67	81.6	44	580	1.157	9	*2012*	
0.00	6.60	31.90	8.02	151.50	7.70	-	197.90	50.70	164.80	22.7	902.125	2.327	8.50	*2010*	
															September
0.06	6.2	26.9	4.2	88.2	2.93	230.857	137.17	54.16	89.6	-	748	1.195	7.5	*2012*	
0.00	6.61	31.32	7.53	152.07	8.28	-	180.51	52.4	155.25	25.6	892.437	1.94	8.15	*2010*	October
0.00	8.30	24	4.5	101	-	449	156	52	141	19	990	1.501	8.4	*2011*	
0.09	8.29	28.18	4.6	116.8	2.5	218.2	122.47	40.99	99.2	26	752	1.227	8.26	*2012*	
0.20	7.80	15.80	7.10	108.90	7.10	400	176	48.80	109.60	22	891	1.132	8.40	*2010*	November
0.00	10	21.5	6.7	132.5	-	445.1	205	68.6	168	23	1.054	1.515	7	*2011*	
0.09	10.37	27	5.5	132.6	2.74	245.54	122.47	56.12	92	19	745	1.146	7.41	*2012*	
0.00	7.30	17.80	9.30	170	9.60	370	209	52.70	136	8	1.072	1.597	8.60	*2010*	December
0.01	7.80	15.30	9.50	185	8.40	460	191.07	41.40	96	14	900	1.130	8.10	*2011*	
0.09	8.36	19.5	5.3	139.1	3.94	235.96	149.9	49.7	101.6	18	824	1.280	7.1	*2012*	

Source: based on the work of researcher

Environment Directorate in the province of Najaf, Department of laboratory analysis (chemical laboratory), unpublished data. 2013 -

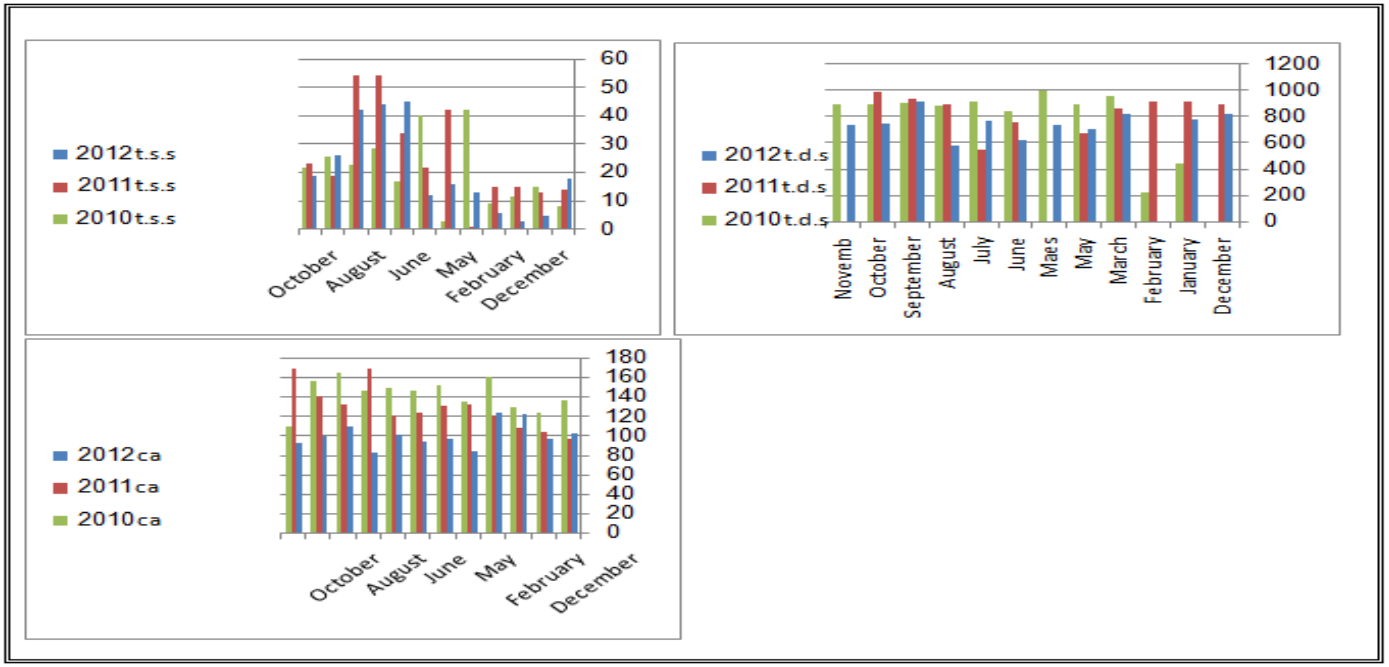
Environment Directorate in the province of Najaf, Urban Environment Section, unpublished data. 2013

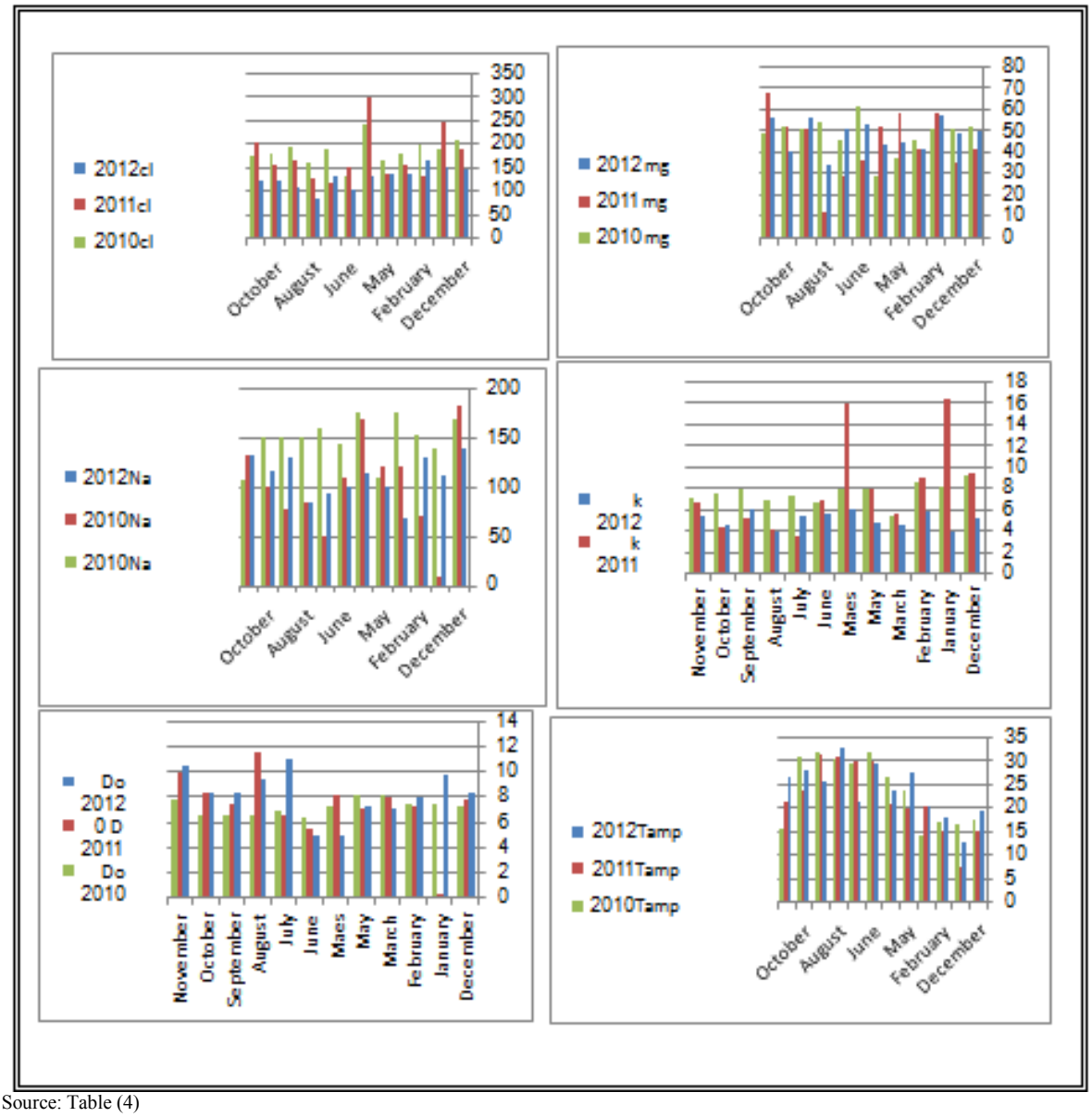
Table 5. Chemical and physical analysis of raw water in the water purification plant in the Abbasid for a number of months in the study area2011-2012

Po4	Do	Tamp M°	K	Na	No3	So4	Cl	Mg	Ca	T.S.S	T.D.S	E.C	Ph	month/network	
0.00	9.1	164.5	7.4	164.5	9.3	356.8	176.3	78.08	132	-	1.031	1.343	7.07	*2011*	December
0.06	7.35	17.5	5	142.6	1.52	142.6	143.05	46.84	105.6	-	860	1.136	6.06	*2012*	
0.06	8.1	18.2	6.7	105.1	7.5	374.8	154.8	44.4	156.8	-	927	1.426	7.6	*2012*	February
0.09	6.09	28.7	5.3	100.2	3.49	215.785	139.13	45.87	112	-	752	1.305	8.48	*2012*	June
								321.3	-	-	-	-	7.7	*2011*	September
0.06	6.2	26.9	4.2	88.2	2.93	230.857	137.17	54.16	89.6	-	748	1.195	7.5	*2012*	
						342.80					890	-	7.5	*2011*	October
0.03	10.6	27	4.3	77.1	1.99	209.3	82.3	37.5	88.8	-	606	1.161	7.6	*2012*	
0.00	9.2	23	4.6	101.9	-	416.6	156.7	46.3	128	-	816	1.204	6.8	*2012*	November

Source: based on the work of researcher
Water Directorate in the province of Najaf, Department of laboratory analyzes, unpublished data 0.2013

Form 4. Chemical contrast ratios in the area of the Abbasa for 2010-2012





Source: Table (4)

(164.5 and 142.6 mg / L) for each of the years 2010 and 2011 respectively as drinking water, which is close ratios with water have as their estimated about (200 mg / liter) Software (3), note that the increase rate affect the qualities of the soil and the quality of agricultural crops.

A lot of agricultural waste discharged into the sewers or home affect them to the river on the natural elements of water, fertilizer urea, Nitrogen or phosphorus or vehicle. [13] That they were the calcium ratio is much lower than the water it was scheduled and estimated about (200 mg / liter), either Magnesium has all the lineage came every few months more of water specified of about (50 mg / liter), the highest proportion has reached during the month of June 2010 and to around (62.40 mg / L) in the month of June 2010 and to around (68.6 mg / L) in November 2011 a month, while a bit rate dropped to around (57.52 mg / L) during the month of February 2012, and this percentage is the same after purification as drinking water, which confirms that the laboratory analysis of water marks a major threat to the health, agricultural and economic situation in the study area.This is because, in contrast to sulfates and chlorides to the nature of the water drainage discharged into rivers branching and tables from the Abbasa Shatt in the study area first, and to the nature of the gypsum rocks that are a direct cause of sulfate dissolved in natural water, so record the highest rate him overland ore (about 400 mg / L) During the November month to about (460 mg / liter) during the month of December and to about (235 mg / L) for the same month in the past (2010.2011 and 2012), and each of them in a row, and this does not apply with select him from the standard Ksalahih the use of water and of about (200 mg / liter), and does not comply with what has been purified water for drinking purposes in the study area, amounting to about (356.8 mg / L) during the month of December 2011, and (416 mg / liter) during the

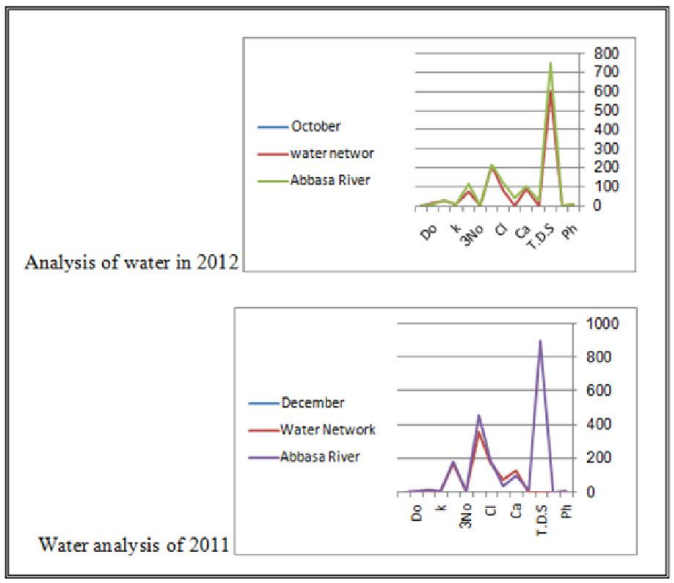
13.Sadeq KazimZurfi and his colleagues, the study of some physical and chemical characteristics of the water Kufa River, the University of Babylon Journal, Journal of Pure and Applied Sciences, Issue 4, Volume (18) 0.2010, p. 1404.

month of November 2012. Which confirms the existence of a great danger in the growing proportion of this element, which causes serious disease in humans and damage to agricultural crops to increasing rate during the years of research for a reasonable limit. Chlorides highest incidence were recorded during the month of February to around (200.75 mg / L) in the year 2010, and to about (168.5 mg / L) for the same month in 2012, and was the highest incidence has reached about (300.60 mg / L) during the month of May 2011, and this does not apply with the Iraqi determinants of the quality of potable water for the environment, water, amounting to about (200 mg / liter), and also applies to the ratio of what has been analyzed from the water in the network (liquidation) station, amounting to about (176.3, 156.7 mg / L) in each of the Monthly (December 2011) and (November 2012), respectively.

Which explains the high proportion of salts in the water allocated to the residents in the study area by the Euphrates River (Shatt Abbasa). The oxygen availability (DO) is very important for the growth of phytoplankton, as well as other organisms have laboratory analyzes indicated the increase rate is higher than it was scheduled international standard and deep (less than 4 mg / L), as the increase rate to about (7.80 mg / L) in November 2010 a month to (8.30 mg / L) for the month of October 2011 and to about (9.75 mg / L) during the month of January, and the same proportions or convergence with what has been analyzed as drinking water in the filter station, which points to the existence of a significant risk affects in the death of large numbers of organisms first and a greater concentration of nitrates and possibly oxidation of nitrite to nitrate, and the reason for this is due to the amount of raises from agricultural waste by Alambazl to the river and probably contain Alamonah vehicles or because of the leaked material from the drainage of water pipe authoritarian downstream and heavy water that comes from homes that inhabit them [(14)], which leads to the death of a large number of fish as a result of contamination by heavy water, and the rise in the water leads to a significant threat to human life in the study area not only of Fisheries Is evident from Figure 5 contrast values elements that form in river water with water purification of the filter station in the study area, which explains the high contamination rates in the rivers for drinking water during the hot season of the year and vice versa during the cold season of the year, which requires precision in water analysis in both cases for their investment in accordance with the needs of humans and that will ensure safety in all economic uses.

It is thus clear that the Euphrates River in the area of the Abbasa and according to laboratory analyzes suffer from the pollution in the waters first, and in the water purification plant a second, so it shall be done water purification outstanding sedimentation material process or filtration that occurs second nature in rivers, reservoirs and layered ground, through Add sterile materials from chlorine, ozone or UV or activated carbon in order to get rid of bacteria and some dissolved organic matter harmful, and if Kat this method is not sufficient prefers the use of research and scientific studies, which focused on the study and analysis of the Euphrates River water and suffering from pollution, whether by natural or human factor for the development of control measures Awatakaz represented by;

Form 5. Model for change ratios natural elements of water from the Euphrates River in the area of the Abbasa



Source: Table (4) and(5)

- Do not be backward discharge water from the shop or factory, but on holiday, in accordance with instructions issued by the Directorate of Water Resources
- impose healthy control cafes and tourist shops that are throwing dirt and waste water in the Abbasa Shatt al.
- Select doing an ad hoc committee by the authorities concerned for their doing a set of instructions that will guide the farmers should not discharge water into rivers Alambazl.
- Refrain by departments of water resources or water for granted leave to drain water wasted public water in the nearby shops of water pumping sites or public swimming pools or money raising fish or any site designated by whether the harm to public health

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