

فحص عينات مياه
Water Analysis Report

Contractor :	Saqqa & Khouday Contracting Company -SAK-	المقاول
Project:	Construction of Effluent Recovery and Irrigation Scheme of North Gaza Emergency Sewage Treatment - NGEST ICB 01-NGEST /2015 (First Stage) Lot (1 + 2)	المشروع
Owner	PWA	المالك
Consultant:	Joint Venture Association of the Center for Engineering & Planning (CEP) and the FCG International LTD	الاستشاري
Lab No	171029/29	رقم العينة
Sample Description	Water Sample from Well No. 24 (Pumping Stage)	وصف العينة
Receiving Date	29/10/2017	تاريخ الاستلام
Sampled By	Contractor in presence of Consultant	جهاز العينة
Testing Date	29/10/2017 to 06/11/2017	تاريخ الفحص

No	Test		Unit	Test Result of Samples	
				#1: 100m ³ /h	#2: 200m ³ /h
1	PH	Acidity	*	7.62	7.445
2	E.C.	Electric Conductivity	μS/cm	2340	2320
3	T.D.S.	Dissolved Solids	mg/l	1405	1390
4	T.A.	Total Alkalinity	mg/l	660	650
5	T.S.S.	Total Suspended Solids	mg/l	Nil	Nil
6	B.O.D.	Biochemical oxygen demand	mg/l	<10	<10
7	NO ₃	Nitrate	mg/l	37	35
8	NH ₃ -N	Ammonia-N	mg/l	Nil	Nil
9	NO ₂	Nitrite	mg/l	Nil	Nil
10	Cl	Chloride	mg/l	444	440
11	PO ₄ -P	Phosphate	mg/l	Nil	Nil
12	SO ₄	Sulfate	mg/l	60	60
13	Na	Sodium	mg/l	450	445
14	K	Potassium	mg/l	3	3

* The Samples was tested by Bir Zeit Laboratory for Environmental Testing- Gaza

Notes:

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- 2- No any reproduction of this report is allowed unless agreed in written permit

For/Laboratory Manager
Moh. Ghanem

Remaining Days to finish the project

47 Days

Date: 14-11-2017

Ref No: SAK-EFF-145/461

To: Center For Engineering and Planning. CEP & Finnish Consulting Group (FCG)

Attention: Mr. Hans Jürgen Matthiensen, Project Manager

Cc: Mr. Mohammed Nazik Rehan, Site Manager – PWA

Mr. Adel Gazzaz, Site Manager – CEP

Project: Effluent Recovery and Irrigation Scheme, First stage, Lot 1&2

Subject: Water Analysis Report for Recovery Wells no.24, 27, 28 & 29

Dear Sir

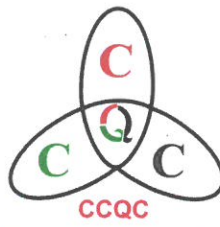
With reference to the above mentioned subject, please see the attached reports for the samples which taken during the pump test.

Best Regards

Suhail Omar

Construction Manager

Saqqa and Khoudary Co.Ltd



فحص عينات مياه
Water Analysis Report

Contractor :	Saqqa & Khouday Contracting Company -SAK-	المقاول
Project:	Construction of Effluent Recovery and Irrigation Scheme of North Gaza Emergency Sewage Treatment - NGEST ICB 01- NGEST /2015 (First Stage) Lot (1 + 2)	المشروع
Owner	PWA	المالك
Consultant:	Joint Venture Association of the Center for Engineering & Planning (CEP) and the FCG International LTD	الاستشاري
Lab No	171029/29	رقم العينة
Sample Description	Water Sample from Well No. 24 (Pumping Stage)	وصف العينة
Receiving Date	29/10/2017	تاريخ الاستلام
Sampled By	Contractor in presence of Consultant	جهاز العينة
Testing Date	29/10/2017 to 06/11/2017	تاريخ الفحص

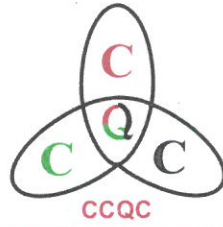
No	Test		Unit	Test Result of Samples	
				#1: 100m ³ /h	#2: 200m ³ /h
1	PH	Acidity	*	7.62	7.445
2	E.C.	Electric Conductivity	μS/cm	2340	2320
3	T.D.S.	Dissolved Solids	mg/l	1405	1390
4	T.A.	Total Alkalinity	mg/l	660	650
5	T.S.S.	Total Suspended Solids	mg/l	Nil	Nil
6	B.O.D.	Biochemical oxygen demand	mg/l	<10	<10
7	NO ₃	Nitrate	mg/l	37	35
8	NH ₃ -N	Ammonia-N	mg/l	Nil	Nil
9	NO ₂	Nitrite	mg/l	Nil	Nil
10	Cl	Chloride	mg/l	444	440
11	PO ₄ -P	Phosphate	mg/l	Nil	Nil
12	SO ₄	Sulfate	mg/l	60	60
13	Na	Sodium	mg/l	450	445
14	K	Potassium	mg/l	3	3

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For/Laboratory Manager
Moh. Ghanem



فحص عينات مياه
Water Analysis Report

Contractor :	Saqqa & Khouday Contracting Company -SAK-	المقاول
Project:	Construction of Effluent Recovery and Irrigation Scheme of North Gaza Emergency Sewage Treatment - NGEST ICB 01- NGEST /2015 (First Stage) Lot (1 + 2)	المشروع
Owner	PWA	المالك
Consultant:	Joint Venture Association of the Center for Engineering & Planning (CEP) and the FCG International LTD	الاستشاري
Lab No	171022/5	رقم العينة
Sample Description	Water Sample from Well No. 27 (Pumping Stage)	وصف العينة
Receiving Date	22/10/2017	تاريخ الاستلام
Sampled By	Contractor in presence of Consultant	جهاز العينة
Testing Date	22/10/2017 to 31/10/2017	تاريخ الفحص

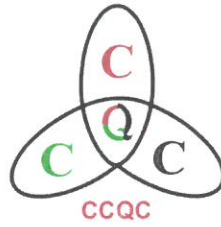
No	Test		Unit	Test Result of Samples	
				#1	#2
1	PH	Acidity	*	7.461	7.451
2	E.C.	Electric Conductivity	μS/cm	2020	2000
3	T.D.S.	Dissolved Solids	mg/l	1212	1200
4	T.A.	Total Alkalinity	mg/l	644	638
5	T.S.S.	Total Suspended Solids	mg/l	Nil	Nil
6	B.O.D.	Biochemical oxygen demand	mg/l	<10	<10
7	NO ₃	Nitrate	mg/l	62	63
8	NH ₃ -N	Ammonia-N	mg/l	Nil	Nil
9	NO ₂	Nitrite	mg/l	Nil	Nil
10	Cl	Chloride	mg/l	444	425
11	PO ₄ -P	Phosphate	mg/l	Nil	Nil
12	SO ₄	Sulfate	mg/l	50	50
13	Na	Sodium	mg/l	380	385
14	K	Potassium	mg/l	10	10

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For/Laboratory Manager
Moh. Chanem
CCQC



فحص عينات مياه
Water Analysis Report

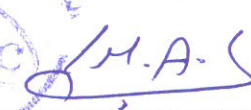
Contractor :	Saqqa & Khouday Contracting Company -SAK-	المقاول
Project:	Construction of Effluent Recovery and Irrigation Scheme of North Gaza Emergency Sewage Treatment - NGEST ICB 01- NGEST /2015 (First Stage) Lot (1 + 2)	المشروع
Owner	PWA	المالك
Consultant:	Joint Venture Association of the Center for Engineering & Planning (CEP) and the FCG International LTD	الاستشاري
Lab No	171021/44	رقم العينة
Sample Description	Water Sample from Well No. 28 (Pumping Stage)	وصف العينة
Receiving Date	21/10/2017	تاريخ الاستلام
Sampled By	Contractor in presence of Consultant	جهاز العينة
Testing Date	21/10/2017 to 29/10/2017	تاريخ الفحص

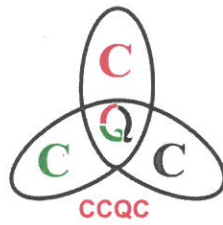
No	Test	Unit	Test Result of Sample
1	PH	Acidity	*
2	E.C.	Electric Conductivity	μS/cm
3	T.D.S.	Dissolved Solids	mg/l
4	T.A.	Total Alkalinity	mg/l
5	T.S.S.	Total Suspended Solids	mg/l
6	B.O.D.	Biochemical oxygen demand	mg/l
7	NO ₃	Nitrate	mg/l
8	NH ₃ -N	Ammonia-N	mg/l
9	NO ₂	Nitrite	mg/l
10	Cl	Chloride	mg/l
11	PO ₄ -P	Phosphate	mg/l
12	SO ₄	Sulfate	mg/l
13	Na	Sodium	mg/l
14	K	Potassium	mg/l

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For/Laboratory Manager
Moh. Ghanem




فحص عينات مياه
Water Analysis Report

Contractor :	Saqqa & Khouday Contracting Company -SAK-	المقاول
Project:	Construction of Effluent Recovery and Irrigation Scheme of North Gaza Emergency Sewage Treatment - NGEST ICB 01- NGEST /2015 (First Stage) Lot (1 + 2)	المشروع
Owner	PWA	المالك
Consultant:	Joint Venture Association of the Center for Engineering & Planning (CEP) and the FCG International LTD	الاستشاري
Lab No	171029/30	رقم العينة
Sample Description	Water Sample from Well No. 29 (Pumping Stage)	وصف العينة
Receiving Date	29/10/2017	تاريخ الاستلام
Sampled By	Contractor in presence of Consultant	جهاز العينة
Testing Date	29/10/2017 to 06/11/2017	تاريخ الفحص

No	Test		Unit	Test Result of Samples	
				#1: 11.30 A.M 100m ³ /h	#2: 16.00 P.M 200m ³ /h
1	PH	Acidity	*	8.021	7.461
2	E.C.	Electric Conductivity	μS/cm	2140	2130
3	T.D.S.	Dissolved Solids	mg/l	1285	1278
4	T.A.	Total Alkalinity	mg/l	605	560
5	T.S.S.	Total Suspended Solids	mg/l	Nil	Nil
6	B.O.D.	Biochemical oxygen demand	mg/l	<10	<10
7	NO ₃	Nitrate	mg/l	92	90
8	NH ₃ -N	Ammonia-N	mg/l	Nil	Nil
9	NO ₂	Nitrite	mg/l	Nil	Nil
10	Cl	Chloride	mg/l	386	452
11	PO ₄ -P	Phosphate	mg/l	Nil	Nil
12	SO ₄	Sulfate	mg/l	64	60
13	Na	Sodium	mg/l	422	420
14	K	Potassium	mg/l	3	3

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For Laboratory Manager
Moh. Ghannam

فحص عينات مياه
Water Analysis Report

Contractor :	Saqqa & Khouday Contracting Company -SAK-	المقاول
Project:	Construction of Effluent Recovery and Irrigation Scheme of North Gaza Emergency Sewage Treatment - NGEST ICB 01- NGEST /2015 (First Stage) Lot (1 + 2)	المشروع
Owner	PWA	المالك
Consultant:	Joint Venture Association of the Center for Engineering & Planning (CEP) and the FCG International LTD	الاستشاري
Lab No	171012/38	رقم العينة
Sample Description	Water Sample from Well No. 26 (Pumping Stage)	وصف العينة
Receiving Date	12/10/2017	تاريخ الاستلام
Sampled By	Contractor in presence of Consultant	جهاز العينة
Testing Date	12/10/2017 to 19/10/2017	تاريخ الفحص

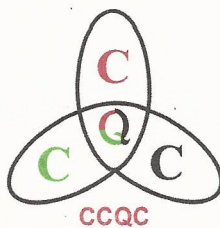
No	Test		Unit	Test Result of Samples	
				#1: after 1 hour 100m ³ /h	#2: at 6.30 p.m. 200m ³ /h
1	PH	Acidity	*	8.386	8.123
2	E.C.	Electric Conductivity	μS/cm	2120	2130
3	T.D.S.	Dissolved Solids	mg/l	1272	1278
4	T.A.	Total Alkalinity	mg/l	688	682
5	T.S.S.	Total Suspended Solids	mg/l	Nil	Nil
6	B.O.D.	Biochemical oxygen demand	mg/l	<10	<10
7	NO ₃	Nitrate	mg/l	25	20
8	NH ₃ -N	Ammonia-N	mg/l	1	1
9	NO ₂	Nitrite	mg/l	Nil	Nil
10	Cl	Chloride	mg/l	444	386
11	PO ₄ -P	Phosphate	mg/l	Nil	Nil
12	SO ₄	Sulfate	mg/l	42	43
13	Na	Sodium	mg/l	404	406
14	K	Potassium	mg/l	10	11

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For Laboratory Manager
Moh/ Ghanem



فحص عينات مياه
Water Analysis Report

Contractor :	Saqqa & Khouday Contracting Company -SAK-	المقاول
Project:	Construction of Effluent Recovery and Irrigation Scheme of North Gaza Emergency Sewage Treatment - NGEST ICB 01- NGEST /2015 (First Stage) Lot (1 + 2)	المشروع
Owner	PWA	المالك
Consultant:	Joint Venture Association of the Center for Engineering & Planning (CEP) and the FCG International LTD	الاستشاري
Lab No	171022/5	رقم العينة
Sample Description	Water Sample from Well No. 27 (Pumping Stage)	وصف العينة
Receiving Date	22/10/2017	تاريخ الاستلام
Sampled By	Contractor in presence of Consultant	جهاز العينة
Testing Date	22/10/2017 to 31/10/2017	تاريخ الفحص

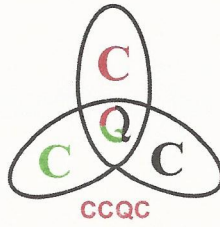
No	Test		Unit	Test Result of Samples	
				#1	#2
1	PH	Acidity	*	7.461	7.451
2	E.C.	Electric Conductivity	$\mu\text{S/cm}$	2020	2000
3	T.D.S.	Dissolved Solids	mg/l	1212	1200
4	T.A.	Total Alkalinity	mg/l	644	638
5	T.S.S.	Total Suspended Solids	mg/l	Nil	Nil
6	B.O.D.	Biochemical oxygen demand	mg/l	<10	<10
7	NO ₃	Nitrate	mg/l	62	63
8	NH ₃ -N	Ammonia-N	mg/l	Nil	Nil
9	NO ₂	Nitrite	mg/l	Nil	Nil
10	Cl	Chloride	mg/l	444	425
11	PO ₄ -P	Phosphate	mg/l	Nil	Nil
12	SO ₄	Sulfate	mg/l	50	50
13	Na	Sodium	mg/l	380	385
14	K	Potassium	mg/l	10	10

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For/Laboratory Manager
Moh. Ghanem
M.A.S



فحص عينات مياه
Water Analysis Report

Contractor :	Saqqa & Khouday Contracting Company -SAK-	المقاول
Project:	Construction of Effluent Recovery and Irrigation Scheme of North Gaza Emergency Sewage Treatment - NGEST ICB 01- NGEST /2015 (First Stage) Lot (1 + 2)	المشروع
Owner	PWA	المالك
Consultant:	Joint Venture Association of the Center for Engineering & Planning (CEP) and the FCG International LTD	الاستشاري
Lab No	171021/44	رقم العينة
Sample Description	Water Sample from Well No. 28 (Pumping Stage)	وصف العينة
Receiving Date	21/10/2017	تاريخ الاستلام
Sampled By	Contractor in presence of Consultant	جهاز العينة
Testing Date	21/10/2017 to 29/10/2017	تاريخ الفحص

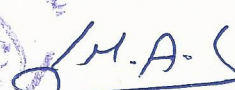
No	Test	Unit	Test Result of Sample
1	PH	Acidity	*
2	E.C.	Electric Conductivity	μS/cm
3	T.D.S.	Dissolved Solids	mg/l
4	T.A.	Total Alkalinity	mg/l
5	T.S.S.	Total Suspended Solids	mg/l
6	B.O.D.	Biochemical oxygen demand	mg/l
7	NO ₃	Nitrate	mg/l
8	NH ₃ -N	Ammonia-N	mg/l
9	NO ₂	Nitrite	mg/l
10	Cl	Chloride	mg/l
11	PO ₄ -P	Phosphate	mg/l
12	SO ₄	Sulfate	mg/l
13	Na	Sodium	mg/l
14	K	Potassium	mg/l

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For/Laboratory Manager
Moh. Ghanem



فحص عينات مياه
Water Analysis Report

Contractor :	Saqqa & Khouday Contracting Company -SAK-	المقاول
Project:	Construction of Effluent Recovery and Irrigation Scheme of North Gaza Emergency Sewage Treatment - NGEST ICB 01- NGEST /2015 (First Stage) Lot (1 + 2)	المشروع
Owner	PWA	المالك
Consultant:	Joint Venture Association of the Center for Engineering & Planning (CEP) and the FCG International LTD	الاستشاري
Lab No	171029/30	رقم العينة
Sample Description	Water Sample from Well No. 29 (Pumping Stage)	وصف العينة
Receiving Date	29/10/2017	تاريخ الاستلام
Sampled By	Contractor in presence of Consultant	جهاز العينة
Testing Date	29/10/2017 to 06/11/2017	تاريخ الفحص

No	Test		Unit	Test Result of Samples	
				#1: 11.30 A.M 100m ³ /h	#2: 16.00 P.M 200m ³ /h
1	PH	Acidity	*	8.021	7.461
2	E.C.	Electric Conductivity	μS/cm	2140	2130
3	T.D.S.	Dissolved Solids	mg/l	1285	1278
4	T.A.	Total Alkalinity	mg/l	605	560
5	T.S.S.	Total Suspended Solids	mg/l	Nil	Nil
6	B.O.D.	Biochemical oxygen demand	mg/l	<10	<10
7	NO ₃	Nitrate	mg/l	92	90
8	NH ₃ -N	Ammonia-N	mg/l	Nil	Nil
9	NO ₂	Nitrite	mg/l	Nil	Nil
10	Cl	Chloride	mg/l	386	452
11	PO ₄ -P	Phosphate	mg/l	Nil	Nil
12	SO ₄	Sulfate	mg/l	64	60
13	Na	Sodium	mg/l	422	420
14	K	Potassium	mg/l	3	3

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For/Laboratory Manager
Moh. Ghanem

Remaining Days to finish the project

18 Days

Date: 13-12-2017

Ref No: SAK-EFF-145/496

To: Center For Engineering and Planning. CEP & Finnish Consulting Group (FCG)

Attention: Mr. Hans Jürgen Matthiensen, Project Manager

Cc: Mr. Mohammed Nazik Rehan, Site Manager – PWA

Mr. Adel Gazzaz, Site Manager – CEP

Project: Effluent Recovery and Irrigation Scheme, First stage, Lot 1&2

Subject: Water Analysis Report for Recovery Wells no.14 & 23

Dear Sir

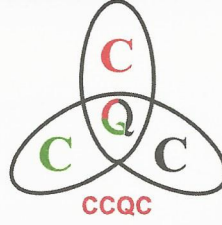
With reference to the above mentioned subject, please see the attached reports for the samples which taken during the pump test.

Best Regards

Suhail Omar

Construction Manager

Saqqa and Khoudary Co.Ltd



فحص عينات مياه
Water Analysis Report

Contractor :	Saqqa & Khouday Contracting Company -SAK-	المقاول
Project:	Construction of Effluent Recovery and Irrigation Scheme of North Gaza Emergency Sewage Treatment - NGEST ICB 01-NGEST /2015 (First Stage) Lot (1 + 2)	المشروع
Owner	PWA	المالك
Consultant:	Joint Venture Association of the Center for Engineering & Planning (CEP) and the FCG International LTD	الاستشاري
Lab No	171205/15	رقم العينة
Sample Description	Water Sample from Well No. 14 (Pumping Stage)	وصف العينة
Receiving Date	05/12/2017	تاريخ الاستلام
Sampled By	Contractor in presence of Consultant	جهاز العينة
Testing Date	05/12/2017 to 11/12/2017	تاريخ الفحص

No	Test		Unit	Test Result of Samples	
				#1: 11.30 A.M 100m ³ /h	#2: 16.00 P.M 200m ³ /h
1	PH	Acidity	*	7.517	7.01
2	E.C.	Electric Conductivity	μS/cm	2570	2560
3	T.D.S.	Dissolved Solids	mg/l	1593	1587
4	T.A.	Total Alkalinity	mg/l	396	400
5	T.S.S.	Total Suspended Solids	mg/l	Nil	Nil
6	B.O.D.	Biochemical oxygen demand	mg/l	<10	<10
7	NO ₃	Nitrate	mg/l	33	33
8	NH ₃ -N	Ammonia-N	mg/l	Nil	Nil
9	NO ₂	Nitrite	mg/l	Nil	Nil
10	Cl	Chloride	mg/l	512	520
11	PO ₄ -P	Phosphate	mg/l	Nil	Nil
12	SO ₄	Sulfate	mg/l	112	113
13	Na	Sodium	mg/l	460	460
14	K	Potassium	mg/l	0.5	0.5

* The Samples was tested by Bir Zeit Laboratory for Environmental Testing- Gaza

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For Laboratory Manager
Mon. Ghanem

فحص عينات مياه
Water Analysis Report

Contractor :	Saqqa & Khouday Contracting Company -SAK-	المقاول
Project:	Construction of Effluent Recovery and Irrigation Scheme of North Gaza Emergency Sewage Treatment - NGEST ICB 01- NGEST /2015 (First Stage) Lot (1 + 2)	المشروع
Owner	PWA	المالك
Consultant:	Joint Venture Association of the Center for Engineering & Planning (CEP) and the FCG International LTD	الاستشاري
Lab No	171205/16	رقم العينة
Sample Description	Water Sample from Well No. 23 (Pumping Stage)	وصف العينة
Receiving Date	05/12/2017	تاريخ الاستلام
Sampled By	Contractor in presence of Consultant	جهاز العينة
Testing Date	05/12/2017 to 11/12/2017	تاريخ الفحص

No	Test		Unit	Test Result of Samples	
				#1: 100m ³ /h	#2: 200m ³ /h
1	PH	Acidity	*	7.392	7.448
2	E.C.	Electric Conductivity	μS/cm	2310	2320
3	T.D.S.	Dissolved Solids	mg/l	1432	1438
4	T.A.	Total Alkalinity	mg/l	525	530
5	T.S.S.	Total Suspended Solids	mg/l	Nil	Nil
6	B.O.D.	Biochemical oxygen demand	mg/l	<10	<10
7	NO ₃	Nitrate	mg/l	47	42
8	NH ₃ -N	Ammonia-N	mg/l	Nil	Nil
9	NO ₂	Nitrite	mg/l	Nil	Nil
10	Cl	Chloride	mg/l	385	385
11	PO ₄ -P	Phosphate	mg/l	Nil	Nil
12	SO ₄	Sulfate	mg/l	70	70
13	Na	Sodium	mg/l	440	440
14	K	Potassium	mg/l	1.5	1.5

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For/Laboratory Manager
Moh. Chanem