



سلطة المياه الفلسطينية
PALESTINIAN WATER AUTHORITY

National Water Information System Overview

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Data Bank Department
2018



OVERVIEW OF MAIN PARAMETERS

1. Focus mainly on needs for **water resources** (including water quality, water supply, waste water where relevant for water resources)
2. Categories of data: (**essential**), high priority, medium priority
3. Most important Information ...
 - ⊙ Compilation of a **complete integral dataset** (combine recent & historic; quality assurance)
 - ⊙ Basic data operation **processing, display** and retrieval functionality



OVERVIEW OF MAINPARAMETERS

1. Compilation of a **complete integral dataset** (combine recent & historic; quality assurance)
2. Expanded data **storage** functionality of current NWIS information.
 - Add some additional attributes per well/spring record upon need.
 - monitoring location types plus time series: meteorological , rainfall, wadi flow, water quality, water supply.

Wells System

Governate (12)

Well Name

Well Code (30)

Well Details

Governate	
Well Name	Rujeeb well
Well Code	17-17/005

Operational screens.

- meteo/rainfall
- wadi flow
- water quality
- water supply (?)

Q	
Pumb Type	عمودية
Pumb Power (Horse)	
Pumb Settings	
Motor Type	كهربائي / عمودي
Motor Make	
Motor Power (Horse)	
Casing Type	
Casing Length	
Diameter	
X Coordinates	177007.000
Y Coordinates	176970.000
Z Coordinates	525.000

Some additional attributes required like for example...

- well test results/well design document uploads
- etc.



Date	Time	Reading	Static	Dynamic	Entered By	Pumb Q	Rest Time	Notes	Reviewed
2008-08-11	11:30:00	0.000	282.000		Anwar			مشروع جديد	<input type="checkbox"/>
2009-03-30	12:00:00	0.000	295.250		Hazem				<input type="checkbox"/>
2009-05-28	01:00:00	0.000	295.950		Anwar				<input type="checkbox"/>
2009-10-08	02:00:00	75859.000			Hazem	24.000			<input type="checkbox"/>
2009-11-17	01:00:00	100617.000			Anwar	240.000			<input type="checkbox"/>

FRIDAY, SEPTEMBER 07, 2018

Wells Report

Basin:

Governate:

Well:

From Date:

To Date:

Field Selection: Reading No
 Well Code
 Well Name
 Reading Date
 Meter Reading
 Reading Time
 Static Water Level
 Dynamic Water Level
 User
 Meter No

Reading No	Well Code	Well Name	Reading Date	Meter Reading	Reading Time	Static Water Level
6220	15-19/033	Al Khaduri Agricultural School	1998-07-08	311880.000		41.610
6221	15-19/033	Al Khaduri Agricultural School	1998-09-06	319500.000		42.520
6222	15-19/033	Al Khaduri Agricultural School	1998-11-04	327770.000		42.970
6223	15-19/033	Al Khaduri Agricultural School	1999-01-05	333.300		43.070
6224	15-19/033	Al Khaduri Agricultural School	1999-03-04	334610.000		42.870
6225	15-19/033	Al Khaduri Agricultural School	1999-05-05	337760.000		44.290
6226	15-19/033	Al Khaduri Agricultural School	1999-07-08	342570.000		45.260
6227	15-19/033	Al Khaduri Agricultural School	1999-09-06	347380.000		46.230
6228	15-19/033	Al Khaduri Agricultural School	1999-11-04	352190.000		47.200
5957						
3870						
5929						
6200						
5900						
6479						
5685	15-19/011	'Abed Al Jabbar Samarah	2000-01-03	59650.000		
6021	15-19/031	Faris & Rushdee Abu Sabhah	2000-01-03	63240.000		
5981	15-19/042	Muhammad 'Abed Al Razeq & Partners	2000-01-03	271630.000		
6001	15-20/006	Saqer Al Sa'ed	2000-01-03	98430.000		
6581	15-19/021	Haseeb Al'mous	2000-01-04	582330.000		

query screens

- Sorting functionality.
- Such query based on parameter value range



NWIS FUNCTIONALITY

1. Basic **processing** functionality.
 - validation support (range checks, visual checks → graphs!)
 - completion (linear interpolation)
 - time series (dis)aggregation (daily, monthly & yearly)
 - simple statistics for selected period (mean, min/max)
 - storage of raw, validated, transformed data side by side (?)
 - *Projects database: project indicator values (priority ?)*



NWIS FUNCTIONALITY

2. Basic time series **display** functionality...

- tables all ‘other’ data (WR: see ‘no regret’),
- graphs (single/multiple locations, variable display ranges, graph templates)
- data availability overviews

3. **Map based display** to access select locations (MWARED)...

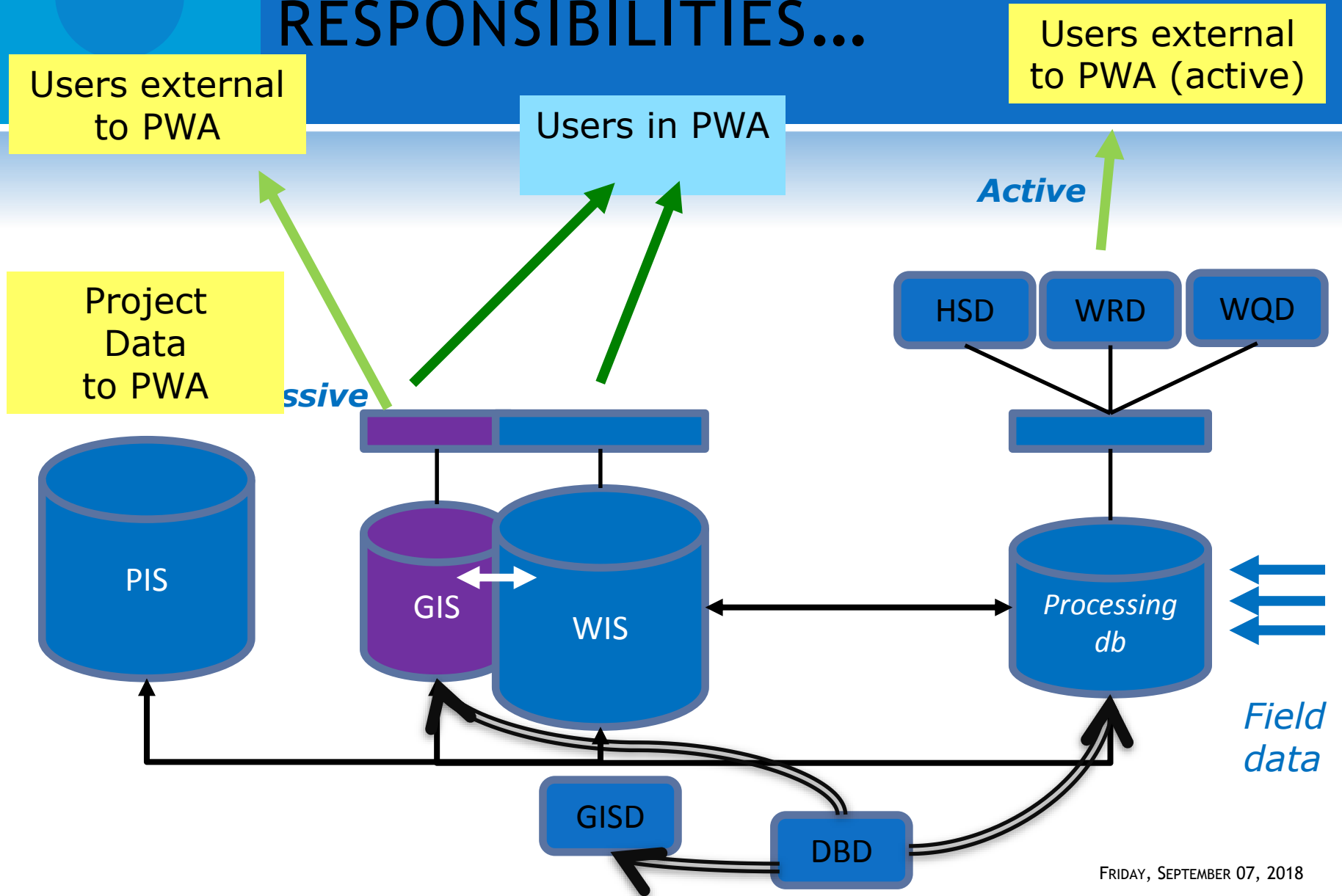
- map based location/time series selections for display & retrieval
- regular map navigation functionality (panning, zooming)
- upload and selection of background map



NWIS FUNCTIONALITY

1. Increase efficiency of **field data transmission** to database (data entry via apps & automatic transmission)
2. Storage of **derived time series** (generated by analyses/models: e.g. static groundwater levels, ungauged wadi flows, waste water outflow, pollution path and source)
3. Storage and display of **time dependent spatial data** (monthly/annual rainfall distribution, recharge, drawdown etc)

DATA FLOWS & RESPONSIBILITIES...



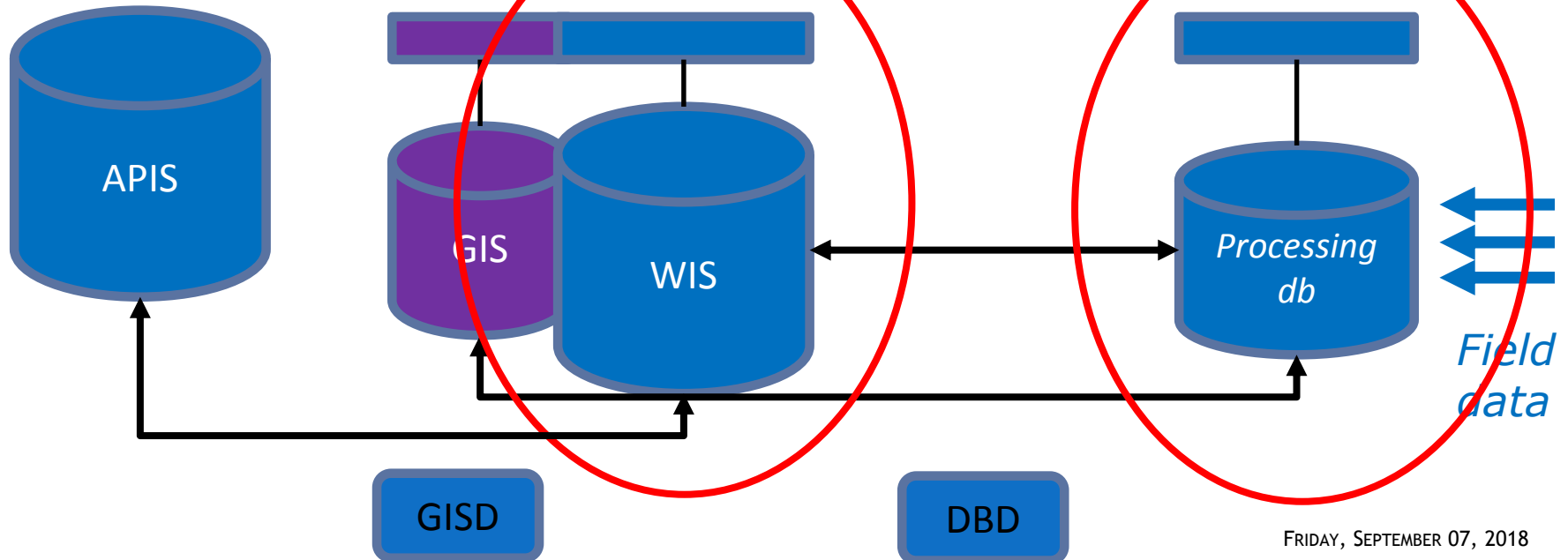
DATA FLOWS & RESPONSIBILITIES...

Users external to PWA

Project Data to PWA

Passive

Active



TABULAR WIS

Main Wells Springs Supply Consume Wells Reports Projects Licenses Wells & Springs

Water Information System | karel | عربي

Supply & Consume System

Governate Municipal / Council Information form of water for year

Municipal - Council Technical Produced & Purchased Resources Sold Quantity Served Communities Served Councils Losses Violations Tarrif Financial

Municipal - Council Information

Number	108
Municipal / Council	الشيوخ
Governate	
Head Of Municipal / Council	
Council Accountant	
Form Filled By	
Phone Number	02-2561002
Fax Number	02-2561002
Email	
Form Fill Date	

Addit Main Wells Springs Supply Consume Wells Reports Projects Licenses Wells & Springs

Water Information System | karel | عربي

Supply & Consume System

Governate Municipal / Council Information form of water for year

Municipal - Council Technical Produced & Purchased Resources Sold Quantity Served Communities Served Councils Losses Violations Tarrif Financial

The amount of water sold to citizens through the Council

Total Water in Cube Meter	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Total
كمية المياه المنتجة من أبار البلدية													0.000
كمية المياه المنتجة من الينابيع													0.000
كمية المياه المشتراة من دائرة المياه													393550.000
كمية المياه المشتراة أو المنتجة من أي مصدر آخر													0.000

SPATIAL INFORMATION

Palestinian Water Authority
Data Bank Department

Enter address

Data Extract

Extract data and download zip file

1. Select area

Clear

2. Select layers to extract

Incident Points

Incident Lines

Incident Areas

3. Select file format

File Geodatabase (.gdb)

Latitude:32.005576 Longitude:36.090461

	A	B	C	D	E	F	G	H	I	J	K	L
1	WELL_ID	POINT_NAME	LOCALITY	GOVERNA	WATER_U	CORRECTE	BASIN_GK	ELEVATIO	Latitude	Longitude		
2	18-13/001	MIZPE JERICO No.2	WADI AL	JERICO	Israeli	UC	Eastern		31.8013	35.40259		
3	18-13/002	MIZPE JERICO No.5	WADI AL	JERICO	Israeli	LC	Eastern		31.83196	35.40245		
4	18-13/003	MIZPE JERICO No.6	WADI AL	JERICO	Israeli	UC	Eastern		31.83916	35.41197		
5	19-13/071	JERICO No.2	AQBAT JA	JERICO	Israeli	PL	Eastern		31.84797	35.42911		
6	19-14/101	JERICO No.1	AQBAT JA	JERICO	Israeli	UC	Eastern		31.85924	35.43103		
7	17-14/001	MUKHMAS	MUKHMA	JERUSALE	Agricultur	LC	Eastern	17474000.	31.87088	35.26029		
8	19-13/005	KAMEL I'RAIQAT NO.2	JERICO	JERICO	Agricultur	PL	Eastern	19517000	31.84941	35.47612		
9	19-13/006	SBEERU HANHAN & RANTISI	JERICO	JERICO	Agricultur	PL	Eastern	19550000	31.84877	35.47961		
10	19-13/010	KAMEL I'RAIQAT	JERICO	JERICO	Abandone	PL	Eastern	19858000	31.84247	35.51213		
11	19-13/011	MUSTAFA ABU ZAID	JERICO	JERICO	Agricultur	PL	Eastern	19890000.	31.8385	35.5155		
12	19-13/012T	JERICO TAHAL NO. 12	JERICO	JERICO	Abandone	PL	Eastern	19600000	31.84263	35.48487		
13	19-13/014	MUSTAFA ABU ZAID	JERICO	JERICO	Abandone	PL	Eastern	19834000	31.84356	35.5096		
14	19-13/015	FAHED HISHMAH	JERICO	JERICO	Agricultur	PL	Eastern	19610000	31.84812	35.48595		
15	19-13/015A	JAWAD AL MASRI	JERICO	JERICO	Agricultur	PL	Eastern*	19610000	31.84812	35.48595		
16	19-13/017	'ALI HUSAINI	JERICO	JERICO	Abandone	PL	Eastern	19326000	31.84647	35.45594		
17	19-13/018	BASEL HUSAINI	JERICO	JERICO	Agricultur	PL	Eastern	19377000	31.85034	35.46134		
18	19-13/020	BASEL HUSAINI	JERICO	JERICO	Agricultur	PL	Eastern	19432000.	31.84789	35.46714		
19	19-13/021	BASEL HUSAINI	JERICO	JERICO	Agricultur	PL	Eastern	19496000	31.83958	35.47388		
20	19-13/022	BASEL HUSAINI	JERICO	JERICO	Abandone	PL	Eastern	19425000	31.83906	35.46638		
21	19-13/024	AL AWQAF WELL NO.1	JERICO	JERICO	Agricultur	PL	Eastern	19768000	31.83853	35.50261		
22	19-13/024A	C.P.T	JERICO	JERICO	Abandone	PL	Eastern	19679000	31.83855	35.49321		
23	19-13/025	AL AWQAF WELL NO.2	JERICO	JERICO	Agricultur	PL	Eastern	19820000.	31.84212	35.50811		
24	19-13/025A	MAZIN SUNUKROT	JERICO	JERICO	Abandone	PL	Eastern	19820000.	31.84212	35.50811		
25	19-13/026	AI AWOAF WELL NO.3	JERICO	JERICO	Agricultur	PL	Eastern	19560000	31.82352	35.48059		

Attribute Table

PWA.Wells 1 PWA.Reservoirs

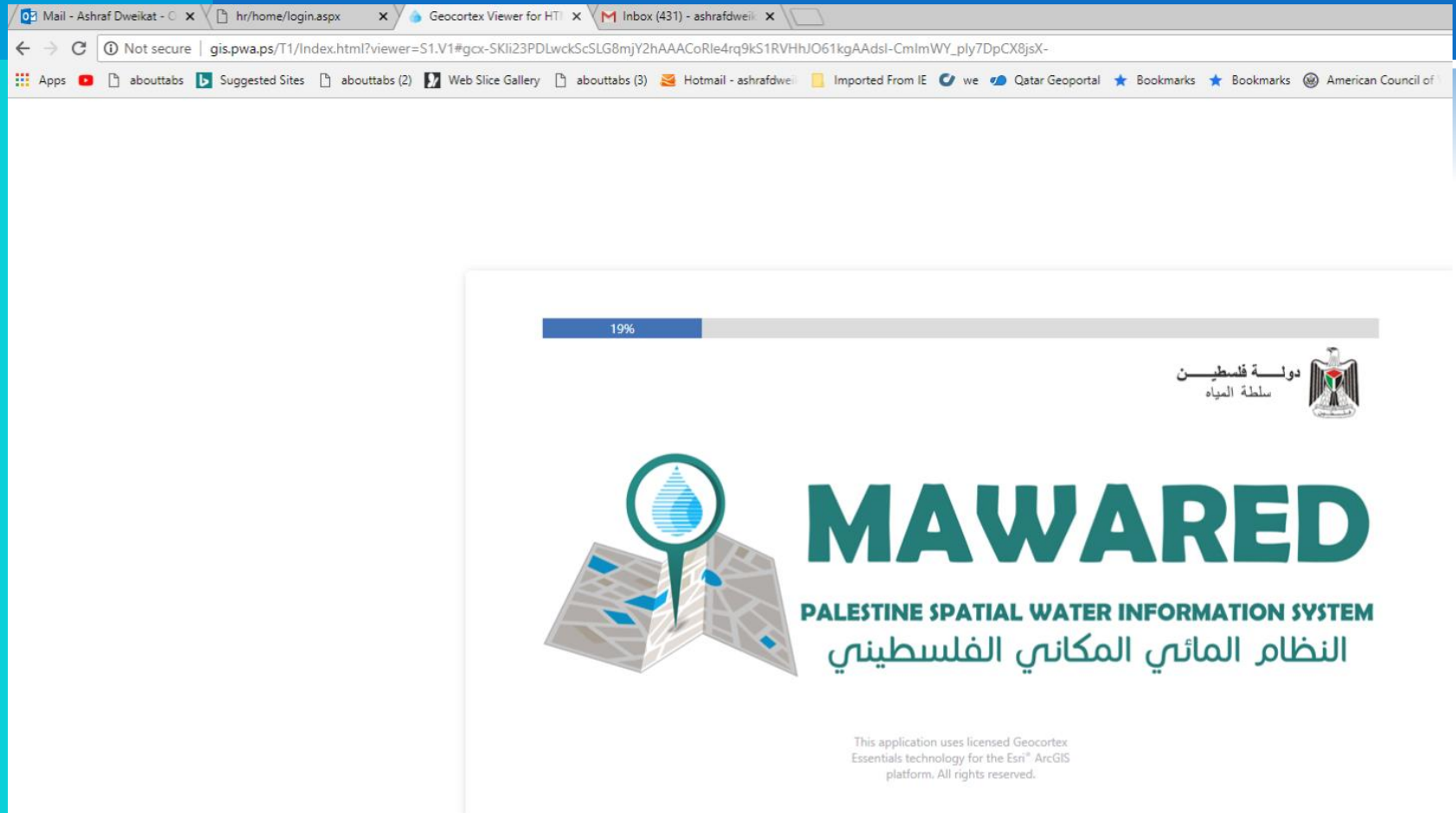
WELL_ID	POINT_NAME
18-13/001	MIZPE JERIC
18-13/002	MIZPE JERIC
18-13/003	MIZPE JERIC
19-13/071	JERICO No.
19-14/101	JERICO No.

Latitude:31.875182 Longitude:35.44

19-14/101 JERICO No.

FRIDAY, SEPTEMBER 07, 2018

SPATIAL WATER INFORMATION SYSTEM



The screenshot shows a web browser window with the following elements:

- Browser Tabs:** Mail - Ashraf Dweikat, hr/home/login.aspx, Geocortex Viewer for HT, Inbox (431) - ashrafdwei.
- Address Bar:** Not secure | gis.pwa.ps/T1/Index.html?viewer=S1.V1#gcx-SKIi23PDLwckScSLG8mjY2hAAACoRle4rq9kS1RVHhJO61kgAAAdl-CmImWY_ply7DpCX8jsX-
- Navigation Bar:** Apps, abouttabs, Suggested Sites, abouttabs (2), Web Slice Gallery, abouttabs (3), Hotmail - ashrafdwei, Imported From IE, we, Qatar Geoportal, Bookmarks, American Council of.
- Progress Bar:** 19%
- Logo:** دولة فلسطين سلطنة المياه (State of Palestine Water Authority) with the national emblem.
- Main Title:** MAWARE
- Subtitle:** PALESTINE SPATIAL WATER INFORMATION SYSTEM
- Arabic Title:** النظام المائي المكاني الفلسطيني
- Image:** A stylized map with a water drop icon and a location pin.
- Disclaimer:** This application uses licensed Geocortex Essentials technology for the Esri® ArcGIS platform. All rights reserved.

SPATIAL WATER INFORMATION SYSTEM

The screenshot displays the MAWARED (Palestine Spatial Water Information System) web application. The browser address bar shows the URL `gis.pwa.ps/T1/Index.html?viewer=S1.V1#`. The application header includes the logo and title in Arabic: "النظام المائي المكاني الفلسطيني". A search bar and a "Sign out" button are located in the top right. The main interface features a menu bar with options like "Start", "Navigate", "Identify", "Measure", "Sketch", "Print", "Import/Export", "Google/Bing", "Analyze", "Edit", "Go Offline", and "Manual". Below the menu is a toolbar with various search and map tools, including "Pan", "Zoom In", "Zoom Out", "Identify", "Reservoir Search", "Pump Search", "Wells Search", "Spring Search", "XY Search", "Station Search", "Service Provider Search", "Parcel Search", "Query", and "Filter".

The central map area shows an aerial view of a residential area with a large octagonal structure. A blue arrow points to a specific location on the map. The map is overlaid with several data layers, which are listed in the "Layers" panel on the left:

- Wells | آبار المياه
- Extraction License | حالة ترخيص استخراج المياه
- Reservoirs | خزانات المياه
- Pump Stations | محطات الضع
- Springs | الينابيع
- WasteWater Data | بيانات الصرف الصحي
- Water Meters | عدادات المياه
- Water Providers Connections | نقاط ربط مزودي المياه
- Palestinian Connections | نقاط الربط الفلسطينية
- Filling Points | نقاط التعبئة
- Palestinian Transmission Lines | الخطوط الناقلة الفلسطينية
- Weather Stations | محطات الرصد الجوي
- Parcels | قطع الأراضي

The bottom of the interface shows a coordinate display (X: 172166.69, Y: 131706.30), a scale of 1:1,000, and a scale bar indicating 0, 15, and 30 meters.

SPATIAL WATER INFORMATION SYSTEM

The screenshot displays the MAWARED Palestine Spatial Water Information System web application. The browser address bar shows the URL: `gis.pwa.ps/T1/Index.html?viewer=S1.V1#`. The application header includes the logo and name in English and Arabic, along with a search bar and a 'Sign out' button. The main toolbar contains various search and map tools such as Pan, Zoom In, Zoom Out, Identify, Reservoir Search, Pump Search, Wells Search, Spring Search, XY Search, Station Search, Service Provider Search, Parcel Search, Query, and Filter. A 'Layers' panel on the left lists various data layers with checkboxes, including Pump Stations, Springs, WasteWater Data, WasteWater Treatment Plants, Pollution Paths, Pollution Sources, WasteWater Paths, Water Meters, Water Providers Connections, Palestinian Connections, Filling Points, Palestinian Transmission Lines, and Weather Stations. A search popup window is open, displaying details for 'Al Abeidya (Wadi Nar/Wadi Kidron) WWTP'. The popup text includes: 'Community: العبيدية', 'Governorate: Bethlehem بيت لحم', 'JWC Approval: Pending JWC approval', 'Donor: none (possibly Al)', and 'Fund State: Possible Funding تمويل محتمل'. A large blue arrow points to the location on the map, which is labeled 'العبيدية' in pink. The map shows a topographic view with a blue line representing a water path and a black outline of the WWTP area. The bottom status bar shows the map scale as 1:16,000 and a scale bar from 0 to 0.4 km.

SPATIAL WATER INFORMATION SYSTEM

MAWARED
PALESTINE SPATIAL WATER INFORMATION SYSTEM
النظام المائي المكاني الفلسطيني

Search... Sign out

Start Navigate Identify Measure Sketch Print Import/Export Google/Bing Analyze Edit Go Offline Manual

Map Search Query Data

Identify Results (9)

- TERRA ROSSA SOILS (Soil | التربة)
- Eastern Basin الشرقي الحوض (Water Basins | الأحواض المائية)
- Auja-Tamaseeh العوجة تماسيح (Catchment Areas | مناطق تجميع المياه)
- Al Mazra'a ash Sharqiya المزعة الشرقية (Locality Border | حدود البلدة)
- Area B ب منطقة (Land Classification According to Oslo Agreement حسب اتفاقية أوسلو)
- Lands of Palestinian Administration Control and Israeli Security Control (اراضي تتبع اداريا دولة فلسطين واسبان الجانب الاخر)
- High Sensitivity عالية حساسية (Land Sensitivity | حساسية الأرض)
- Upper Cenomanian العلوي سينومانان (Formation Age | عصر التشكل)
- Ramallah and Albireh رام الله والبيرة (Governorates Borders | حدود المحافظات)

Displaying 1 - 9 (Total: 9)

Weather Stations | محطات الرصد الجوي Identify Results (9)

I want to...

Mazra AL Sharqiya المزعة الشرقية

Station ID: MZSHAQ14 رمز المحطة
Community: Al Mazra'a ash Sharqiya البلد: المزعة الشرقية
Governorate: Ramallah and Al Bireh المنطقة: رام الله والبيرة

نوع المحطة: مطرية
وقت عمل المحطة: على مدار اليوم
وقت الصيانة: كل 24 ساعة فقط
طريقة التشغيل: يدوية
ممثل المحطة: مدرسة
ارتفاع المحطة:
الهاتف:
تاريخ الانفتاح: 1/1/2007
ملاحظات:

[Remove from Results](#) [View Additional Details](#)

Orthoph... Default WGS: 28191 X/Y X: 173361.24 Y: 154962.70 Scale 1: 32,000 0 0.5 1km

SPATIAL WATER INFORMATION SYSTEM

MAWARED PALESTINE SPATIAL WATER INFORMATION SYSTEM
النظام المائي المكاني الفلسطيني

Water Quality Indicators | مؤشرات جودة المياه

Water Quality Indicators	مؤشرات جودة المياه
T	23.5
PH	8.3
Turbidity	0.98
EC	499
HCO3	172
CL	32
SO4	11.4
NO3	17
Hardness	196
TDS	299
Flouride	

Ein Samia No. 33
بئر عين سامية رقم 33
Status: **Active**
Motor:
Pump:
Meter:

Dynamic Level | مستوى الماء المتغير
Static Level | مستوى الماء الثابت
Pumping Quantity | كمية الضخ



SHARING NWIS KNOWLEDGE

1. Increase efficiency of **field data transmission** to database (data entry via apps & automatic transmission)
2. Improve Storage of **derived time series** (generated by different analyses/models /insitiution)
3. Storage and display of **time dependent spatial data** (monthly/annual rainfall distribution, recharge, drawdown etc)
4. Improve Automatic ingestion and storage of data from **automatic monitoring stations** (higher frequency data)
5. Improve big Data Analysis techniques.

THANK YOU

Ashraf Dweikat
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