NATIONAL CONFERENCE ON IT USAGE IN GIS
10 – 11 November 2015 in Kabul, Afghanistan

DACAAR Integrated Field Data Collection Tools and Data Management System

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Hydrogeologist
Nov, 2015 (10 Min.)

Content

1. Objective
2. Standard format for field data collection
3. Field data collection tools and equipment
4. Data management tools and Software

1. Objective

- Characteristics and conditions of water resource.
- Source of water for water supply and irrigation.
- Sources of contamination (artificial/man made and natural contaminations).
- Seasonal/long term water table variation or continuing lowering water table.
- Causing the change of water table and water quality.
- Vulnerable area of water recourses.
- Recharge and discharge trend.

2. Standard format for field data collection

1. District survey
2. Village assessment
3. Geophysical field sheet
4. Job completion report (tube well)
5. Pipe Scheme (Pipe Network)
6. Pumping test field sheet
7. Bio sand filter
8. Operation and Maintenance
9. Water point inspection team
10. Mechanic
11. Groundwater Monitoring wells selection
12. GW monthly report
13. Water quality analysis
14. Well design
15. River flow measurement
16. And Others….

Standard format for field data collection….. Cont

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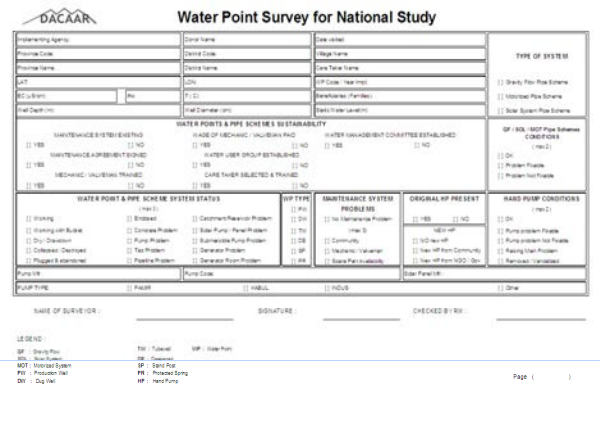
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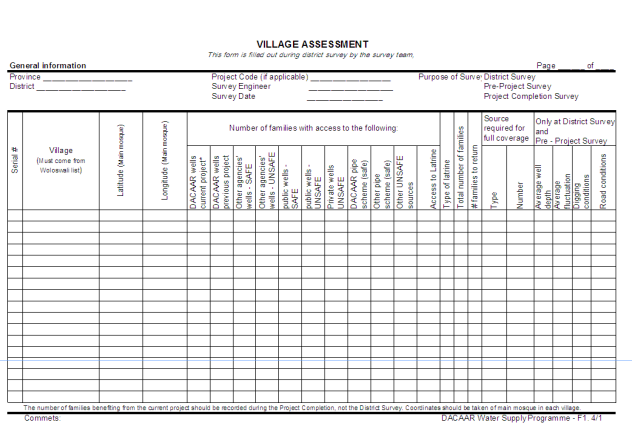
Water Point Survey for National Study


VILLAGE ASSESSMENT

This form is filed out during district survey by the survey team.

General information

Province _____ Project Code (if applicable) _____ Purpose of Survey: District Survey

District _____ Survey Engineer _____ Pre-Project Survey

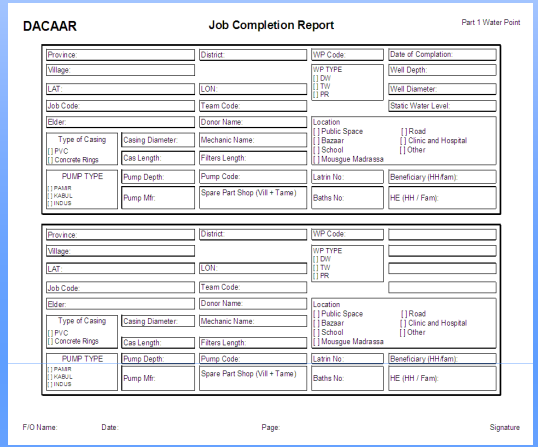
Survey Date _____ Project Completion Survey

Serial #	Village (Must come from Woloswali list)	Latitude (Main mosque)	Longitude (Main mosque)	Number of families with access to the following: DACAAR wells current project*	DACAAR wells previous project	Other agencies' wells - SAFE	Other agencies' wells - UNSAFE	public wells - SAFE	public wells - UNSAFE	Private wells UNSAFE	DACAAR pipe scheme (safe)	Other pipe scheme (safe)	Other UNSAFE sources	Access to latrine	Type of latrine	Total number of families	# families to return	Source required for full coverage: Type	Number	Average well depth	Average fluctuation	Ongoing operations	Road conditions

Only at District Survey and Pre - Project Survey

The number of families benefiting from the current project should be recorded during the Project Completion, not the District Survey. Coordinates should be taken of main mosque in each village.

Comments: DACAAR Water Supply Programme - F1. 4/1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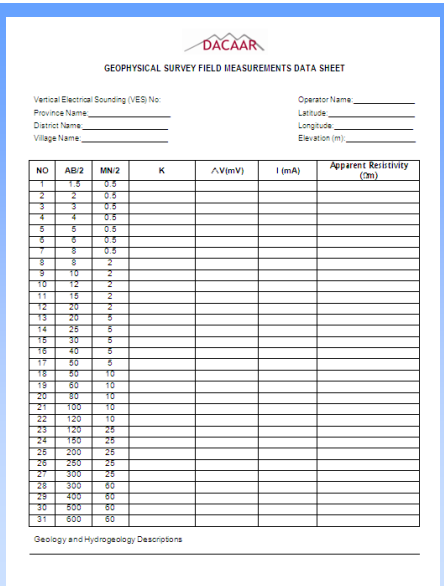
Job Completion Report

Part 1 Water Point

Province:	District:	WP Code:	Date of Completion:
Village:		WP TYPE [ ] DW [ ] TW [ ] PR	Well Depth:
LAT:	LON:		Well Diameter:
Job Code:	Team Code:		Static Water Level:
Elder:	Donor Name:	Location [ ] Public Space [ ] Bazaar [ ] School [ ] Mousque Madrassa [ ] Road [ ] Clinic and Hospital [ ] Other	
Type of Casing [ ] PVC [ ] Concrete Rings	Casing Diameter: / Cas Length:	Mechanic Name: / Filters Length:	
PUMP TYPE [ ] PAKAR [ ] KABUL [ ] INDUS	Pump Depth: / Pump Mfr:	Pump Code: / Spare Part Shop (Vill + Tame):	Latrin No: / Bathe No: / Beneficiary (HH/fam): / HE (HH / Fam):

F/O Name: Date: Page: Signature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GEOPHYSICAL SURVEY FIELD MEASUREMENTS DATA SHEET

Vertical Electrical Sounding (VES) No: Operator Name:

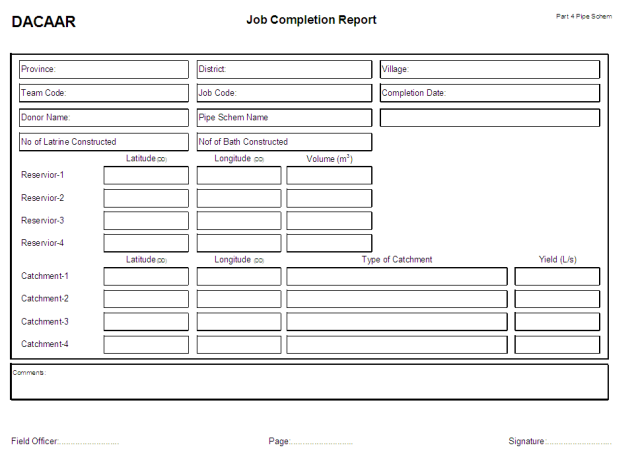
Province Name: Latitude:

District Name: Longitude:

Village Name: Elevation (m):

NO	AB/2	MN/2	K	ΔV(mV)	I (mA)	Apparent Resistivity (Ωm)
1	1.5	0.5				
2	2	0.5				
3	3	0.5				
4	4	0.5				
5	5	0.5				
6	6	0.5				
7	8	0.5				
8	8	2				
9	10	2				
10	12	2				
11	15	2				
12	20	2				
13	20	5				
14	25	5				
15	30	5				
16	40	5				
17	50	5				
18	50	10				
19	60	10				
20	80	10				
21	100	10				
22	120	10				
23	120	25				
24	150	25				
25	200	25				
26	250	25				
27	300	25				
28	300	50				
29	400	50				
30	500	50				
31	600	50				

Geology and Hydrogeology Descriptions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Job Completion Report

Part 4 Pipe Schem

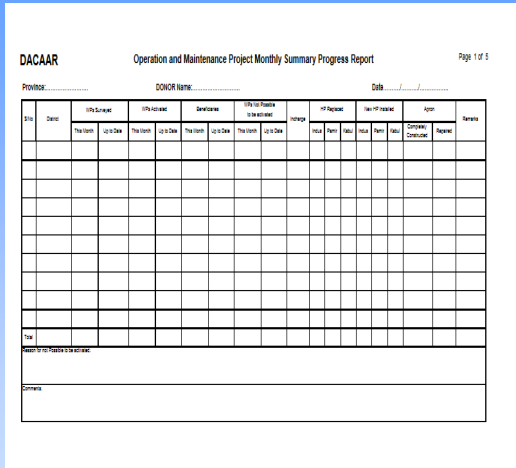
Province:	District:	Village:
Team Code:	Job Code:	Completion Date:
Donor Name:	Pipe Schem Name	
No of Latrine Constructed	Nof of Bath Constructed	

	Latitude (DD)	Longitude (DD)	Volume (m^3)
Reservior-1			
Reservior-2			
Reservior-3			
Reservior-4			

	Latitude (DD)	Longitude (DD)	Type of Catchment	Yield (L/s)
Catchment-1				
Catchment-2				
Catchment-3				
Catchment-4				

Comments:

Field Officer:..... Page:..... Signature:.....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Operation and Maintenance Project Monthly Summary Progress Report

Page 1 of 5

Province:..... DONOR Name:..... Date:...../...../.....

S.No	District	HPs Surveyed		HPs Activated		Beneficiaries		HPs Not Possible to be activated		Average	HP Replaced			New HP Installed			Agriculture		Remarks
		This Month	Up to Date	This Month	Up to Date	This Month	Up to Date	This Month	Up to Date		Indus	Pamir	Kabul	Indus	Pamir	Kabul	Completed Constructed	Repaired	
Total																			

Reason for not Possible to be activated:

Comments:

3. Field Data Collection Tools and Equipments

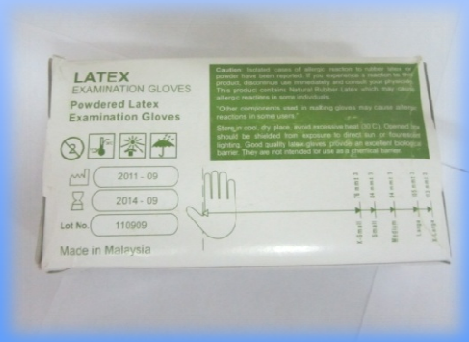
Devices and Tools using for Measuring and Recording GWMs and field pumping test data

Divers connection and Programming Tools

Modified Tube Wells for manual measurement

Diver/ Data logger for automatic recording of the groundwater level and temperature over a long time.

Sterilize bottle for taken water samples



Glove

Whirl-pak® bag
(from 120 to 720mL)

Single Use

Plastic Sample Bottles
(from 200mL to 1500mL)

Re-usable

0.5 μ Filter

Syringe

Physical parameters measurement devices

pH / Conductivity meter 340i
Form WTW German company

Turbidity meter?

Dissolved Oxygen Kit?

Bacteriological analysis devices

Chemical analysis measurement devices

Digital Arsenator Kit

Photo meter 8000

Spectro Flex 6600

Bacteriological
Pota test Kit

Lab Technician use
Pota test Kit

Lab Technician use
Photo meter 8000

Equipment and Tools for Geophysical Survey

Geophysical Well Logging Instrument

Flow Meter for Measurement of Surface Water Flow Rate

Filed data Collection by Flow Meter

Collection of Soil Samples for Soil Analysis

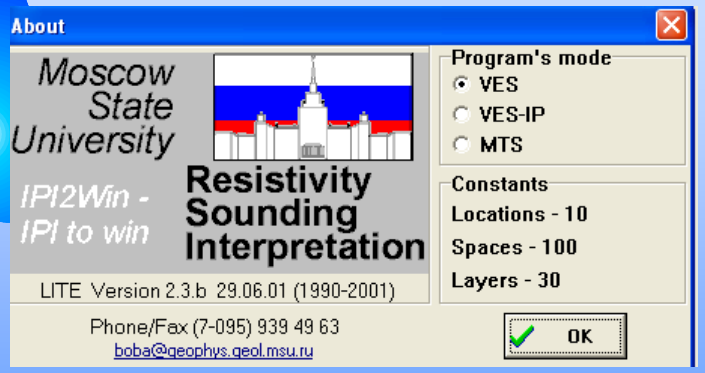
How to provide Water Samples for WQ analysis?

4. Data Management Tools and Software

National Groundwater Monitoring Wells Network Database (wsg_swl)

DACAAR Water Point Database (WIS-SQL)

Surface Geophysical data interpretation software



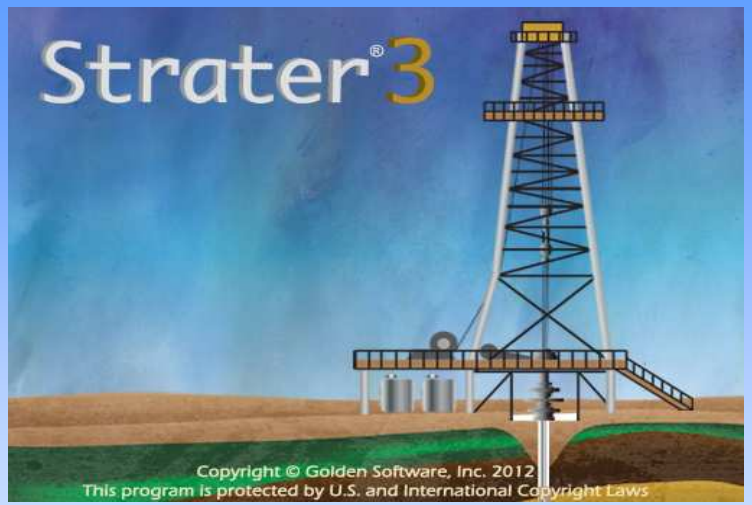
1. ***IP12 Win*** (Moscow State University)

2. **IRIS – Prosys II** (Franc)

3. **Geotomo Software** (Malaysia)

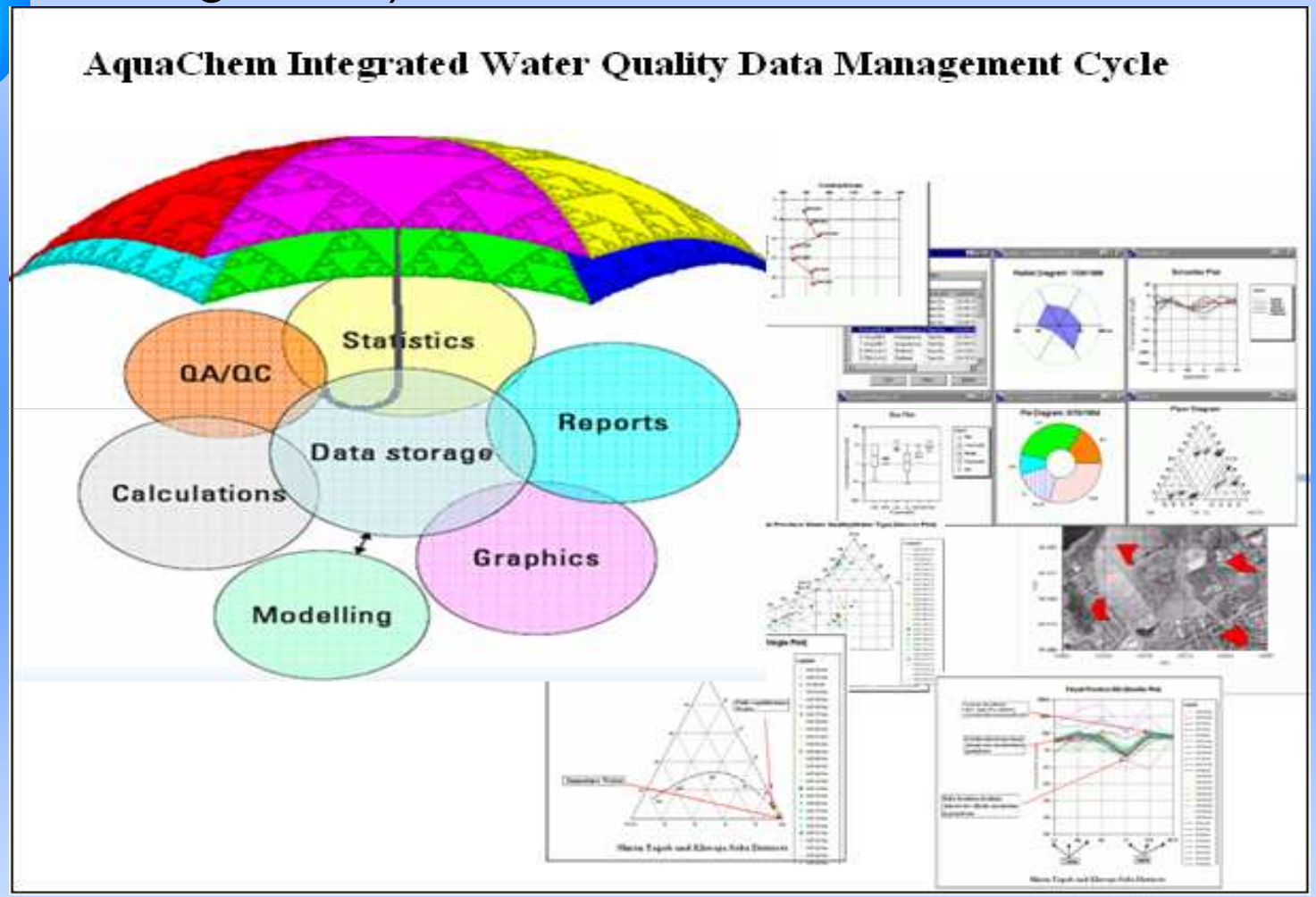
Geophysical Well logging data interpretation software

1. ***Stack Logging*** (Geo Vista UK)

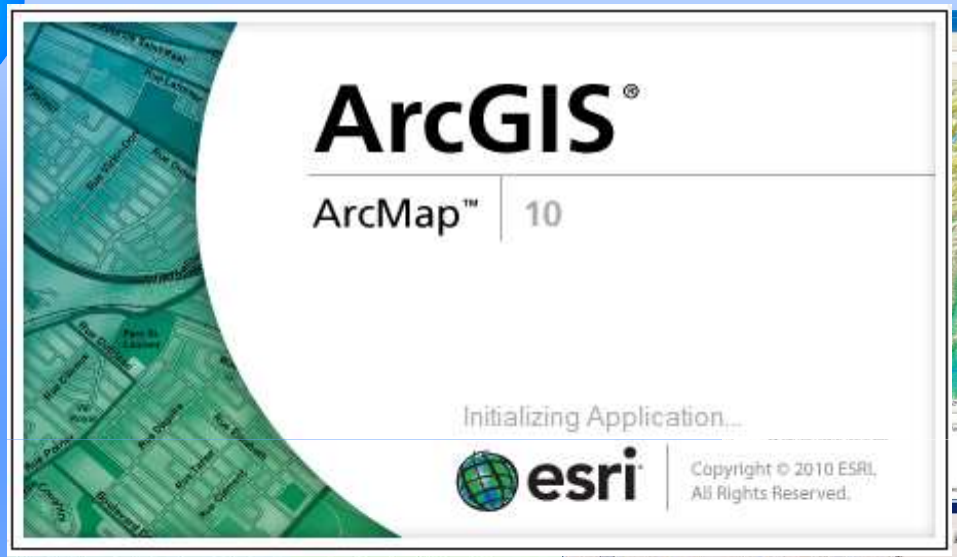


2. ***Strater 3*** (US)

AquaChem (Integrated Water Quality Data Management)



Arc GIS 10.0


ArcGIS®
ArcMap™ 10
Initializing Application...
esri
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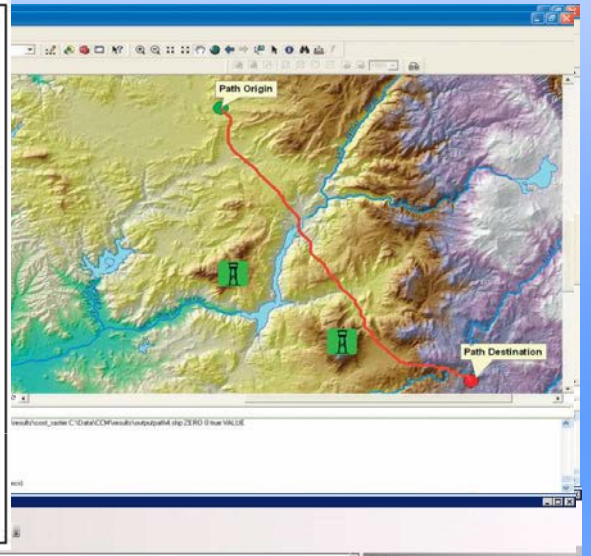
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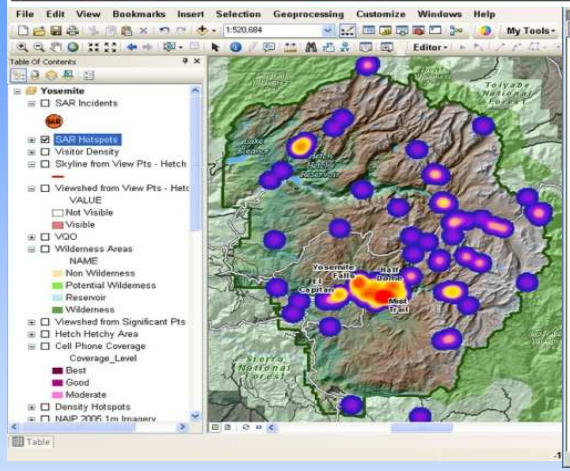
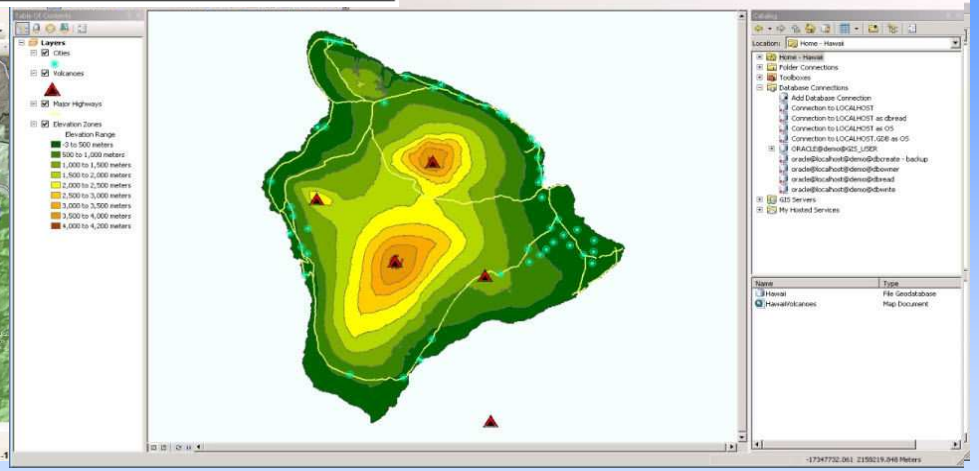
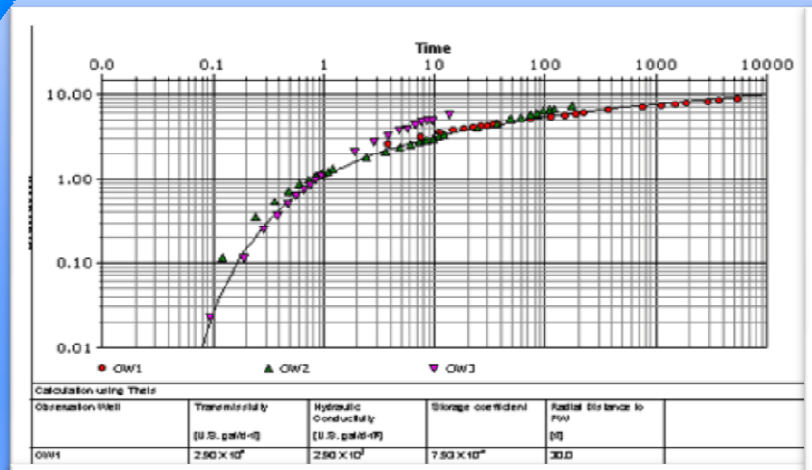
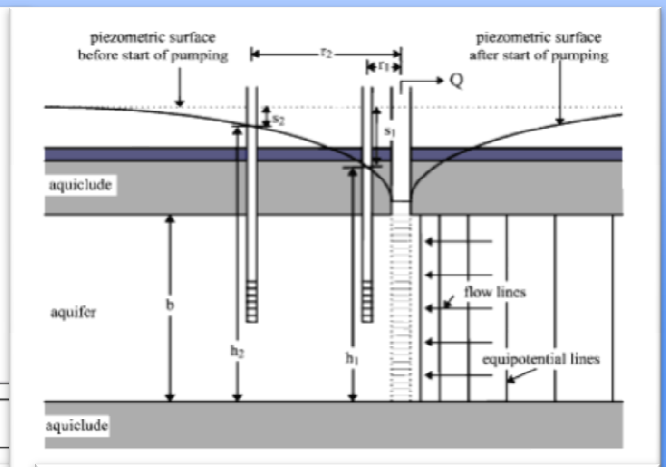
Path Destination

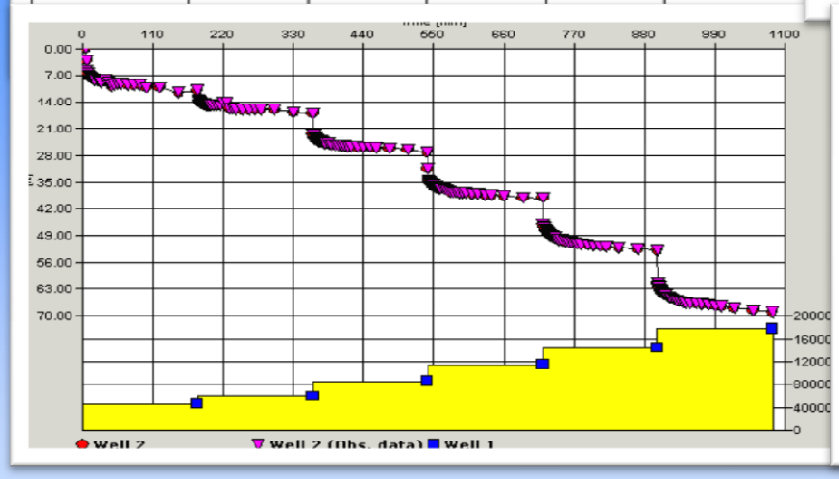

File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help
Table Of Contents
Yosemite
SAR Incidents
SAR Hotspots
Visitor Density
Skyline from View Pts - Hetch
Viewshed from View Pts - Hetc
VALUE
Not Visible
Visible
VQO
Wilderness Areas
NAME
Non Wilderness
Potential Wilderness
Reservoir
Wilderness
Viewshed from Significant Pts
Hetch Hetchy Area
Cell Phone Coverage
Coverage_Level
Best
Good
Moderate
Density Hotspots

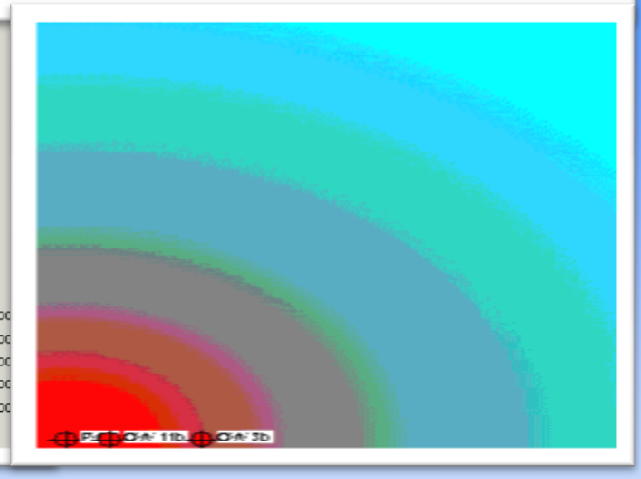

Layers
Cities
Volcanoes
Major Highways
Elevation Zones
Elevation Range
0 to 500 meters
500 to 1,000 meters
1,000 to 1,500 meters
1,500 to 2,000 meters
2,000 to 2,500 meters
2,500 to 3,000 meters
3,000 to 3,500 meters
3,500 to 4,000 meters
4,000 to 4,200 meters
Location: Home - Hawaii
Home - Hawaii
Folder Connections
Toolboxes
Database Connections
Add Database Connection
GIS Servers
My Hosted Services
Name
Type
Hawaii
File Geodatabase
HawaiiVolcanoes
Map Document

Aquifer test is use for pumping test data interpretation and reporting

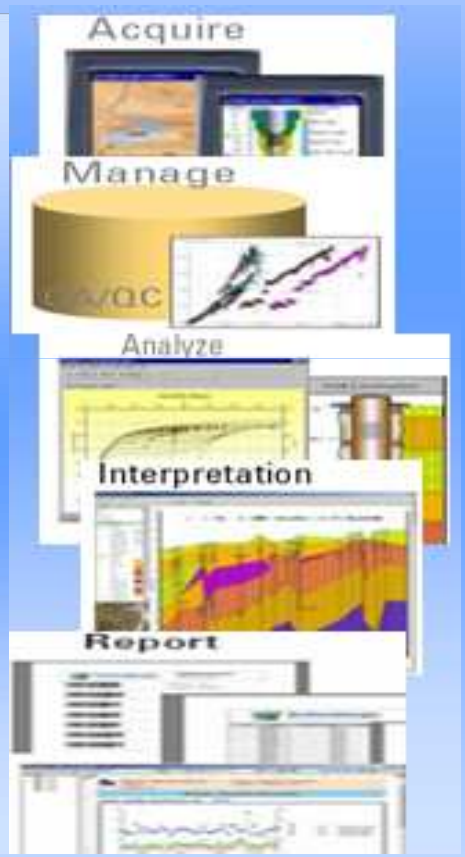








Hydro Geo Analyst Integrated Data Management Cycle



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THANK YOU

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