12. Pumping Test

Pumping test results conducted during JICA M/P and F/S are fully utilized for the Project. Supplemental test results conducyed under the Study are shown here.

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Pumptest data recorded at Borehole D2

Pumping test : *Yield test - Steps draw down test - Constant yield test*
Area : *EaDRăng township -EaHleo - Đaklak province*
Project :
Co-ordinate : X : Y :
Borehole depth (m) : 120 m
Staic water level (BGL) : 14.5 m
Diameter of discharged water pipe : 70 mm
Depth of pump setting 72 m
Features of water bearing layer :
Started date : 2005/2/11 Completed date : 2005/5/11

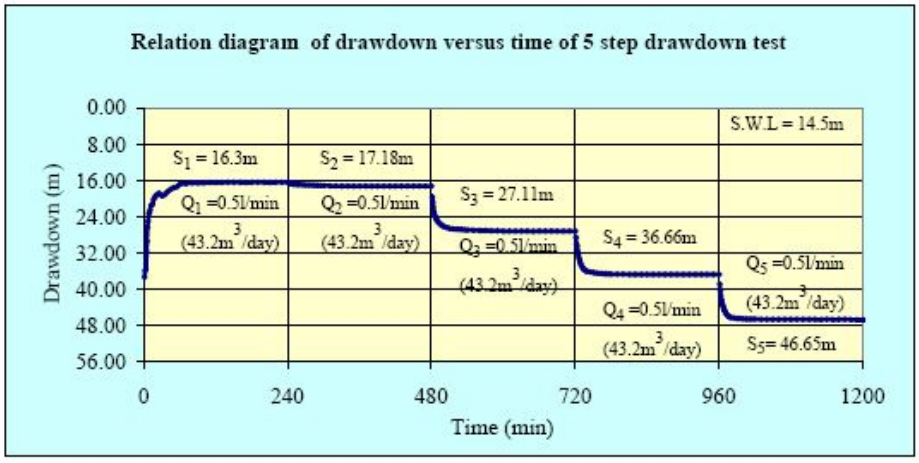
Summary of test pumping :

Notations of water bearing layer	Pumping test order	Pumping rate Q (l/s)	Draw down S (m)	static water level (m)	specific discharge q (l/sm)	Pumping duration (h)	Recovery time (h)	Quantity & sampling taken
	Yield test	2.50	47.67	14.50	0.052	4		
	Step1	0.50	16.3		0.031	4		
	Step 2	1.00	17.18		0.058	4		
	Step 3	1.50	27.11		0.055	4		
	Step 4	2.00	36.66		0.055	4		
	Step 5	2.50	46.65		0.054	4		01 bacterium sampling
	Constant yield test	2.00	44.32	14.50	0.045	24	2	01 chemical sampling.

General evaluation

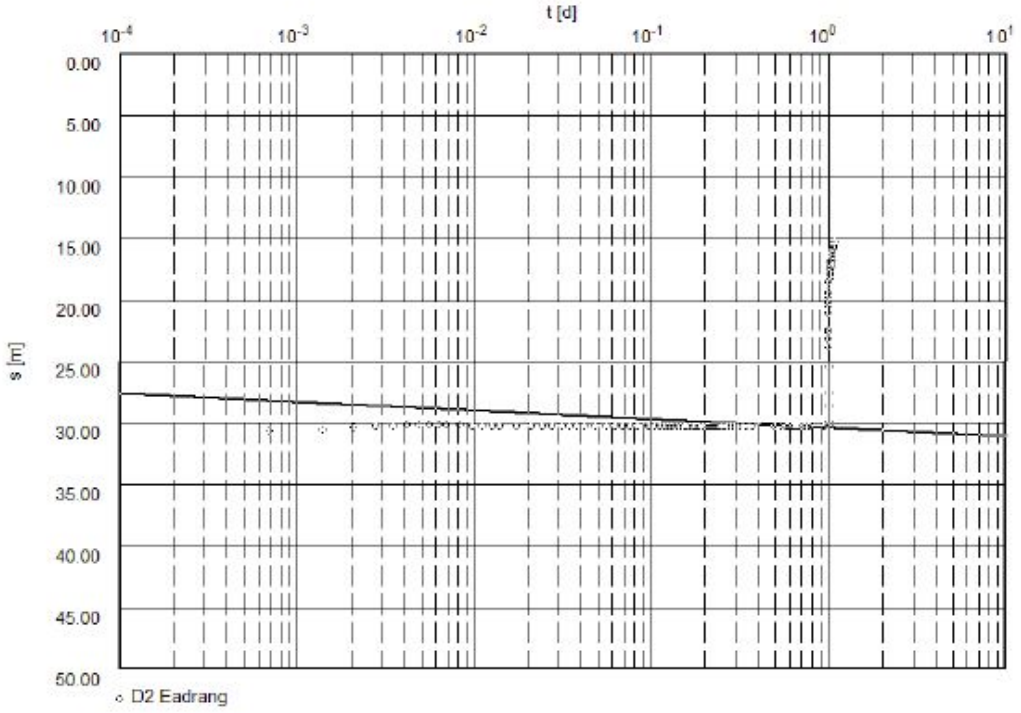
The capacity of this well is not considered the affection of the other two wells. Safe yield is 2.5 L/s (without pumping of other 02 wells)

Pumping leader **Project manager**



Waterloo Hydrogeologic 180 Columbia St. W. Waterloo,Ontario,Canada ph.(519)746-1798	Pumping test analysis Time-Drawdown-method after COOPER & JACOB Unconfined aquifer	Date: 17.11.2005	TS, Page 1
		Project: JiCa	
		Evaluated by: Mr Nguyen Luu	

Pumping Test No. 24h	Test conducted on: 3/11-4/11/05
D2 EaDrang	
Discharge 172.80 m³/d	



Transmissivity [m²/d]: 4.55×10^{1}

Hydraulic conductivity [m/d]: 6.51×10^{-1}

Aquifer thickness [m]: 70.000

Hydrogeological Engineering Geological
Union Division 704
Director

Mr. Nguyen Luu

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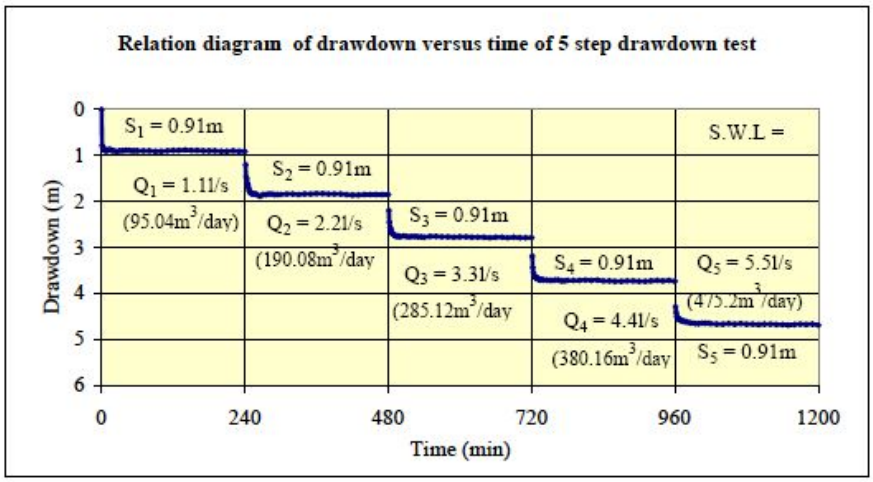
Pumptest data recorded at Borehole G3

Pumping test : *Yield test - Steps drawdown test - Constant yield test*
Area : *Chu Ty township- Duc Co-Gia Lai province*
Project :
Co-ordinate : X : Y :
Borehole depth (m) : 120 m
Staic water level (BGL) : 10 m
Diameter of discharged water pipe : 73 mm
Depth of pump setting 44 m
Features of water bearing layer :
Started date : Wednesday, May 11, 2005 Completed date : Monday, July 11, 2005

Summary of test pumping :

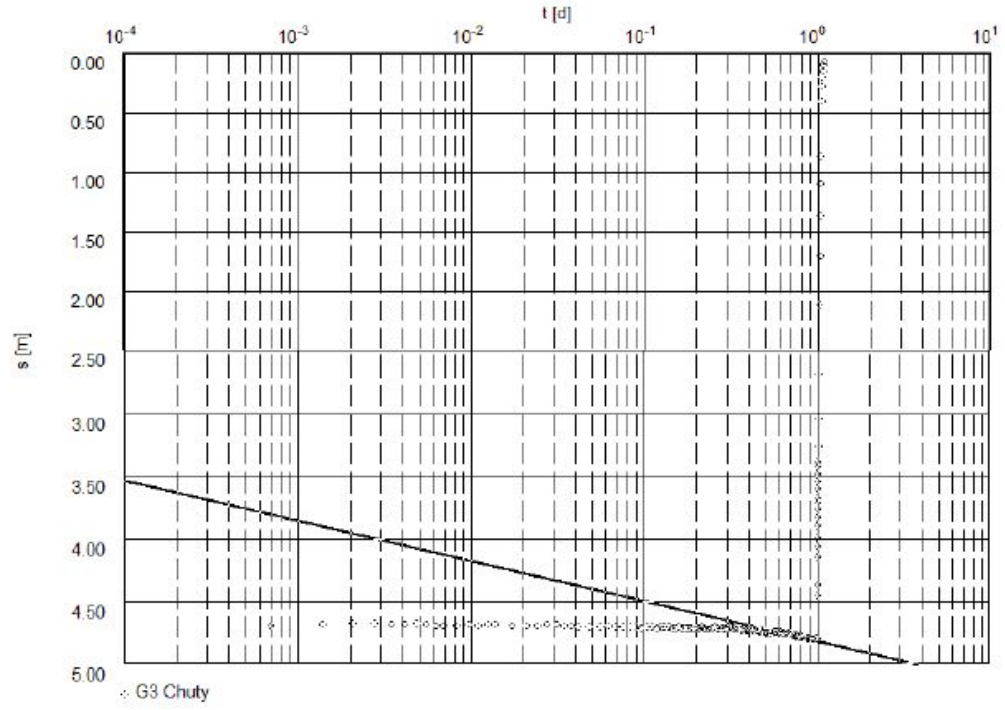
Notations of water bearing layer	Pumping test order	Pumping rate Q (l/s)	Drawdown S (m)	static water level (m)	specific discharge q (l/sm)	Pumping duration (h)	Recovery time (h)	Quantity & sampling taken
	Yield test	5.50	4.72	10.00	1.165	4	1	
	Step1	1.10	0.91		1.209	4		
	Step 2	2.20	1.85		1.189	4		
	Step 3	3.30	2.79		1.183	4		
	Step 4	4.40	3.74		1.176	4		
	Step 5	5.50	4.69		1.173	4		01 bacterium sampling
	Constant yield test	5.50	4.8	10	1.146	24	2	01 chemical sampling.

General evaluation



Waterloo Hydrogeologic 180 Columbia St. W. Waterloo, Ontario, Canada ph.(519)746-1798	Pumping test analysis Time-Drawdown-method after COOPER & JACOB Confined aquifer	Date: 17.11.2005	TS, Page 1
		Project: Jica	
		Evaluated by: En Nguyen Luu	

Pumping Test No. 24h	Test conducted on: 6/11-7/11/2005
G3 Chu Ty	
Discharge 475.20 m³/d	



Transmissivity [m²/d]: 2.71×10^{2}

Hydraulic conductivity [m/d]: 3.39×10^{0}

Aquifer thickness [m]: 80.000

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Mr. Nguyen Luu

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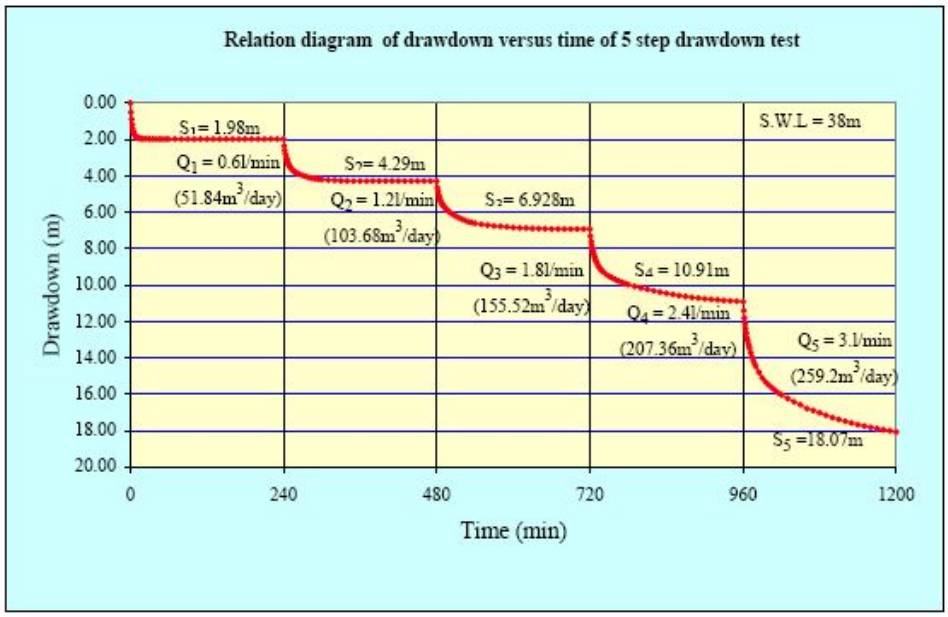
Pumptest data recorded at Kien Duc Borehole

Pumping test : *Yield test - Steps draw down test - Constant yield test*
Area : *Kien Duc township - DakR'lap district - Dak Nong province*
Project :
Co-ordinate : X : Y :
Borehole depth (m) : 143 m
Staic water level (BGL) : 38 m
Diameter of discharged water pipe : 60 mm
Depth of pump setting 70 m
Features of water bearing layer :
Started date : 3/11/2005 Completed date : 6/11/2005

Summary of test pumping :

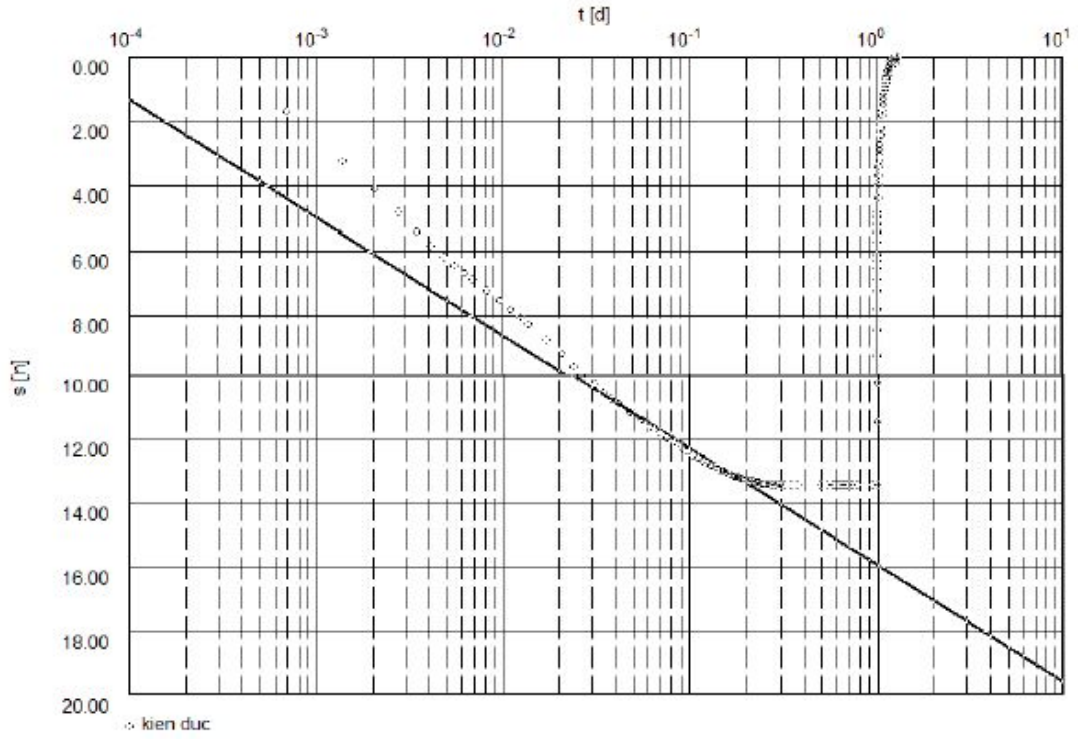
Notations of water bearing layer	Pumping test order	Pumping rate Q (l/s)	Draw down S (m)	static water level (m)	specific discharge q (l/sm)	Pumping duration (h)	Recovery time (h)	Quantity & sampling taken
	Yield test	3.10	17.21	38.00	0.180	4	4	
	Step1	0.60	1.98	38.00	0.303	4		
	Step 2	1.20	4.29	38.00	0.280	4		
	Step 3	1.80	6.92	38.00	0.260	4	5	
	Step 4	2.40	10.91	38.00	0.220	4		
	Step 5	3.00	18.07	38.00	0.166	4		
	Constant yield test	2.40	14.78	38.00	0.162	24	7	

General evaluation



Waterloo Hydrogeologic 180 Columbia St. W. Waterloo,Ontario,Canada ph.(519)746-1798	Pumping test analysis Time-Drawdown-method after COOPER & JACOB Unconfined aquifer	Date: 17.11.2005	TS, Page 1
		Project: JiCa	
		Evaluated by: Mr Nguyen Luu	

Pumping Test No. 24h	Test conducted on: 4/11-5/11/2005
D6 KienDuc	
Discharge 207.36 m³/d	



Transmissivity [m²/d]: 1.03×10^{1}

Hydraulic conductivity [m/d]: 1.29×10^{-1}

Aquifer thickness [m]: 80.000

Hydrogeological Engineering Geological
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Director

Mr. Nguyen Luu