

Appendix A-5-12 Vertical Distribution of Water Temperature at Tortum Lake in  
Summer

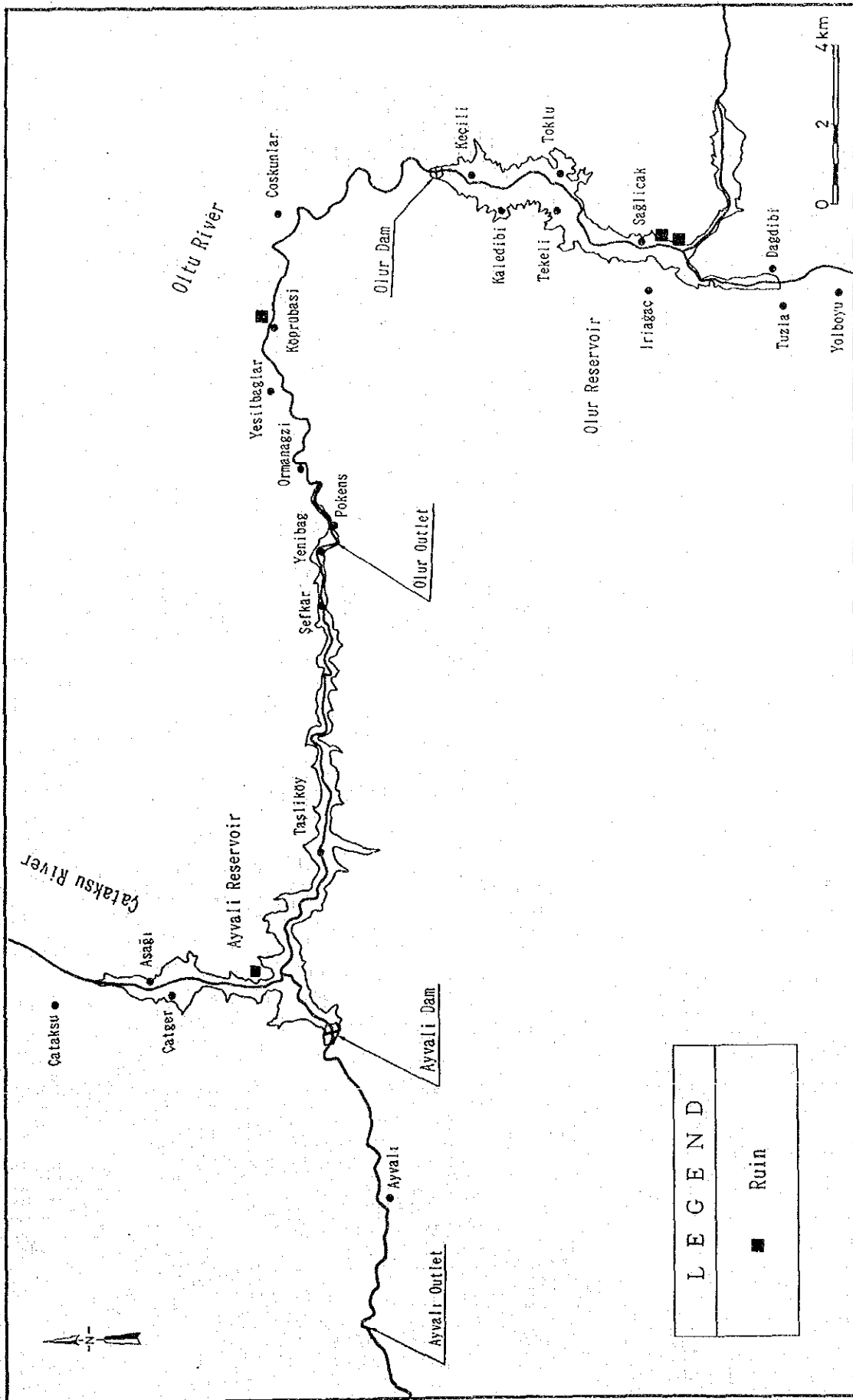
(Depth: 85 m )

Depth (m)	Tempreture (°C)
0	25.4
1	24.3
2	23.7
3	23.1
4	21.1
5	19.1
6	18.1
7	16.1
8	14.3
9	12.4
10	10.5
11	10.1
12	9.1
13	8.4
14	7.2
15	7.1
16	7.1
17	7.1

Appendix A-5-13 Distribution of Recreational Facilities <sup>5), 10)</sup>

(Number of Villages)

Item	Narman	Oltu	Olur	Senkaya	Tortum
Hunting Region	-	-	1	1	1
Available Forest to Tourists	-	-	-	1	-
Old Work of Art	1	1	7	21	-
Healing Lukwarm	-	-	-	5	2
Healing Mineral Spring	1	2	-	9	2
Visited Places	3	-	1	15	10
Others	1	-	-	3	6
Historical and Natural Places	5	3	8	40	18
Total Number of Villages	43	64	40	69	60



Appendix A-5-14 Distribution of Ruin

## Appendix A-5-15 Life Style of Residents (Result of Hearing Survey)

### 1. Survey Items

Hearing Survey was planned at the 4 villages in the project area.

Survey Items are shown as follows.

- 1) Agriculture
- 2) Stock raising
- 3) Other activities
- 4) Situation of labor power
- 5) General merchandise
- 6) Fuels
- 7) Electricity
- 8) Food and drinking water
- 9) Drainage
- 10) Education
- 11) Regional transportation

### 2. Survey Result

#### (1) Ormanagzi

- 1) No information about Agricultural Area.  
Kind of crops. For all information apply the map.
- 2) stock raising  
(Olur Agricultural Office)
- 3) Nothing only agricultural facilities.
- 4) 16% of the people working at abroad, especially Europe, nearly all off the people deal with agriculture.
- 5) The production is limited and they are taking goods from Oltu such as vegetation, milk and cheese.
- 6) coal and wood. Coal is supplied from Balkaya and wood is supplied from forest which is near to villages.
- 7) Electricity is present. The network is insufficient.
- 8) They are eating what they are producing. They are buying only milk and cheese from Oltu District.
- 9) No drainage system.
- 10) 100% Attendance. (176 student in elementary schools)

The 80% of student who finished the elementary schools are going to secondary school. They are very keen on education. Some of them go to University and others do the family jobs.

- 11) They have only one way road Oltu Artvin road.  
This is an international road which is connected to Iran.  
The number of cars crossing the road in one day is between 50-60.

(2) Koprubasi

- 1) Available from Olur Agriculture Office.
- 2) —
- 3) Api Culture. 20 hives. This is consumed by villagers. Kilm production for themselves.
- 4) The 20% of them are the workers an Ankesa, Amasya and Samsun. And the remains are dealing only agricultural works.
- 5) The productions, which they produce, are not sufficient to their needs. So they are taking their necessities from Olur and Yesilboglar by using road.
- 6) Wood cutting from forest. They buy gasoline from Coskinler.
- 7) They have electrification, but not sufficient.
- 8) They eat what they produce but they buy something from Olur and Yesilbeglar They are taking waters from 3 difference spring.
- 9) No treatment system.
- 10) The attendant to elementary schools is 100%.  
The attendant to the secondary school is not good. There are 10 students in elementary school and 4 students in secondary schools and 4 students in high school.
- 11) They are using same road. And number of car crossing this road is nearly about 100.

(3) Taslikoy

- 1) Olur Agriculture Office.
- 2) —
- 3) Honey production and kilim production are present but for only villager needs.
- 4) The 65% of the people are dealing with farming and 35% of them are dealing with feeding of animal. And subproducts of animals (milk, cheese, skin, fresh butter) are sold a near markets.

Only one person is dealing with fishing in this village.

- 5) The amount of selling things is greater than the amount of other necessities. And they sell good in Oltu.
- 6) They use wood as fuel coming from forest.
- 7) Electrification is present but not sufficient.
- 8) No drainage system.
- 9) They eat what they produce in village. But during recent years due to damage coming from insects the amount of product drops especially in fruits. (walnut and quince)

They are taking water from 5 different springs. But they have also water networks.

- 10) There are 5 elementary schools are 1 secondary schools. The attendance to elementary school is 100% whereas the attendance to secondary school is very low due to absence in teacher number.
- 11) One road but they have also another road which connects them to the upper quarters.

Number of cars crossing main road is 100.

#### (4) Çataksu

- 1) The agricultural area is approximately equal to 70000 de. Of which 250 he is irrigatable.

Every product (crops, fruits) is produced in Çataksu. (We observed apricots quince, clover, poplar, corn, oleaster, willow, apple) They gain 150-200 million TV / year from walnut trees.

- 2) Available from Olur Agriculture Office.
- 3) —
- 4) —
- 5) —
- 6) —
- 7) —
- 8) —
- 9) —
- 10) —
- 11) —

\* There is a mark on the road about "Hunting is prohibited in this Area" on the entrance of Çataksu road.

\* In tributaries of Çataksu the trout is present. But not in main river. In Çataksu river only Carps is present. (The villagers of Taslikoy gave this information)

Appendix A-5-16 Actual Condition of Population in 5 Districts <sup>1)</sup>

Item	Olur	Oltu	Tortum	Narman	Senkaya
Population	19,074	43,397	46,987	25,005	36,370
Increase Rate(%/y)	-8.85	11.46	5.34	-1.33	-11.70
Density (per km <sup>2</sup> )	23	31	24	29	25

Source: Population census in 1985

Appendix A-5-17 Movement of Population in Some Villages <sup>2)</sup>

Village	Year						
	1955	1960	1965	1970	1975	1980	1985
Ormanagzi	1,222	1,334	1,481	1,614	1,547	1,431	1,380
Köprübasi	174	193	203	211	201	224	168
Çataksu	673	861	918	978	962	990	915
Taslıköy	495	956	1,072	1,155	1,242	1,310	1,212

Source : State Institute of Statistics, Population Census in 1985



Appendix A-5-18 Population Distribution in Main Industries  
of Erzurum Province <sup>7)</sup>

Grope	Male	Femal	Total
Scientific and Technical	9,281	3,212	12,493
Goverment	1,461	26	1,487
Clerical	7,403	1,591	8,994
Sales	9,752	192	9,544
Service	13,293	588	13,881
Agriculturel, Forestry and Fisheries	117,252	144,891	262,143
Manufacturung and Transport	52,708	837	53,545
Unknown	1	46	47
Unemployed	11,034	897	11,931
Erzurum Total	222,230	152,235	374,465

Appendix A-5-19 Production Classified by Industry <sup>10)</sup>

(Million TL)

Industry	1975	1976	1977	1978
Agriculture	2,327.8	3,369.8	4,370.4	6,005.6
Plant and animal	2,290.5	3,330.6	4,290.6	5,890.1
Forestry	37.2	39.1	79.6	115.2
Fishery	0.1	0.1	0.2	0.3
Industry	476.9	523.2	685.3	1,124.1
Mining	45.6	55.5	74.5	99.7
Production Industry	375.8	295.5	509.2	871.6
Electricity, Gas, Water	55.5	72.2	101.6	152.8
Construction	250.7	294.0	437.0	666.4
Trade	528.4	660.2	861.7	1,315.5
Transportation and Communication	421.3	538.8	711.3	1,086.1
Financial	162.6	218.4	287.8	366.6
Income from Buildings	237.8	296.5	407.3	642.5
Services	250.7	313.6	403.4	612.0
Bank service expenses	- 81.0	- 108.5	- 148.9	- 183.6
Sum of Industries	4,575.2	6,106.0	8,021.3	11,635.2

Appendix A-5-20 Number of Livestock in 5 Districts

(Unit: head)

Kind of Livestock		Oltu	Olur	Narman	Senkaya	Tortum
Breeding in Pasture	Cattle	13,360	19,715	10,655	43,215	40,634
	Water buffalo	25	250	23	368	80
	Sheep	48,350	41,210	63,500	72,750	84,050
	Goat	24,310	16,853	3,210	25,625	10,520
Breeding in Barn	Cattle	—	1	—	—	—
	Apiculture	4,670	2,176	1,100	4,727	3,295
	Poultry	7,370	19,720	—	11,860	8,010

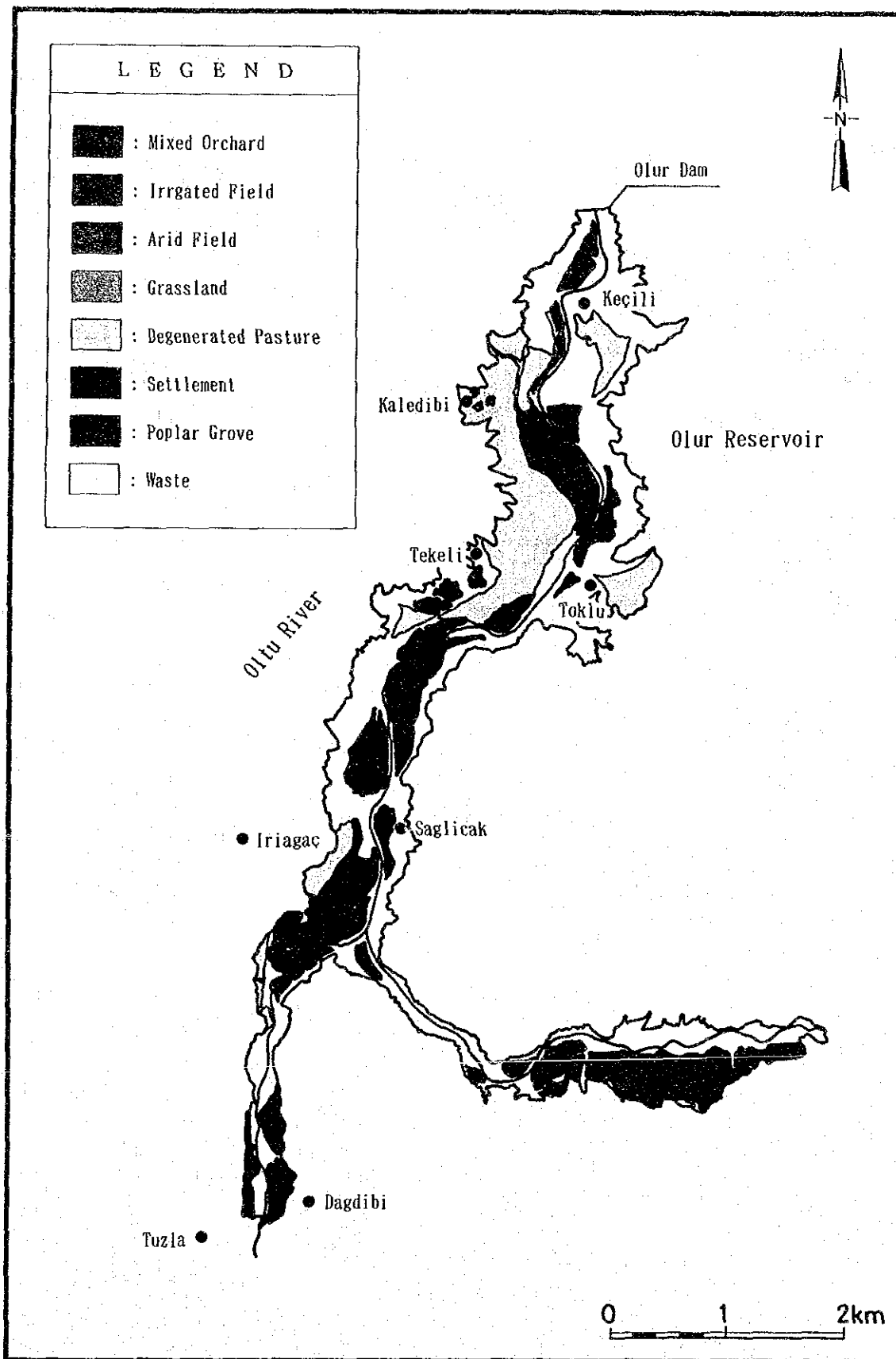
Appendix A-5-21 Catch of Fish in Erzurum Province. <sup>01</sup>

Fish	Quantity (Unit : t/year)
Trout	1.20
Black Fish	26.00
Rock Fish	4.80
Freshwater Grey Mullet	2.40
Rudd	0.75
Carp	111.90
Sheat Fish	8.50
Others	6.70

Appendix A-5-22 Situation of Land Utilization in 5 Districts <sup>(10)</sup>

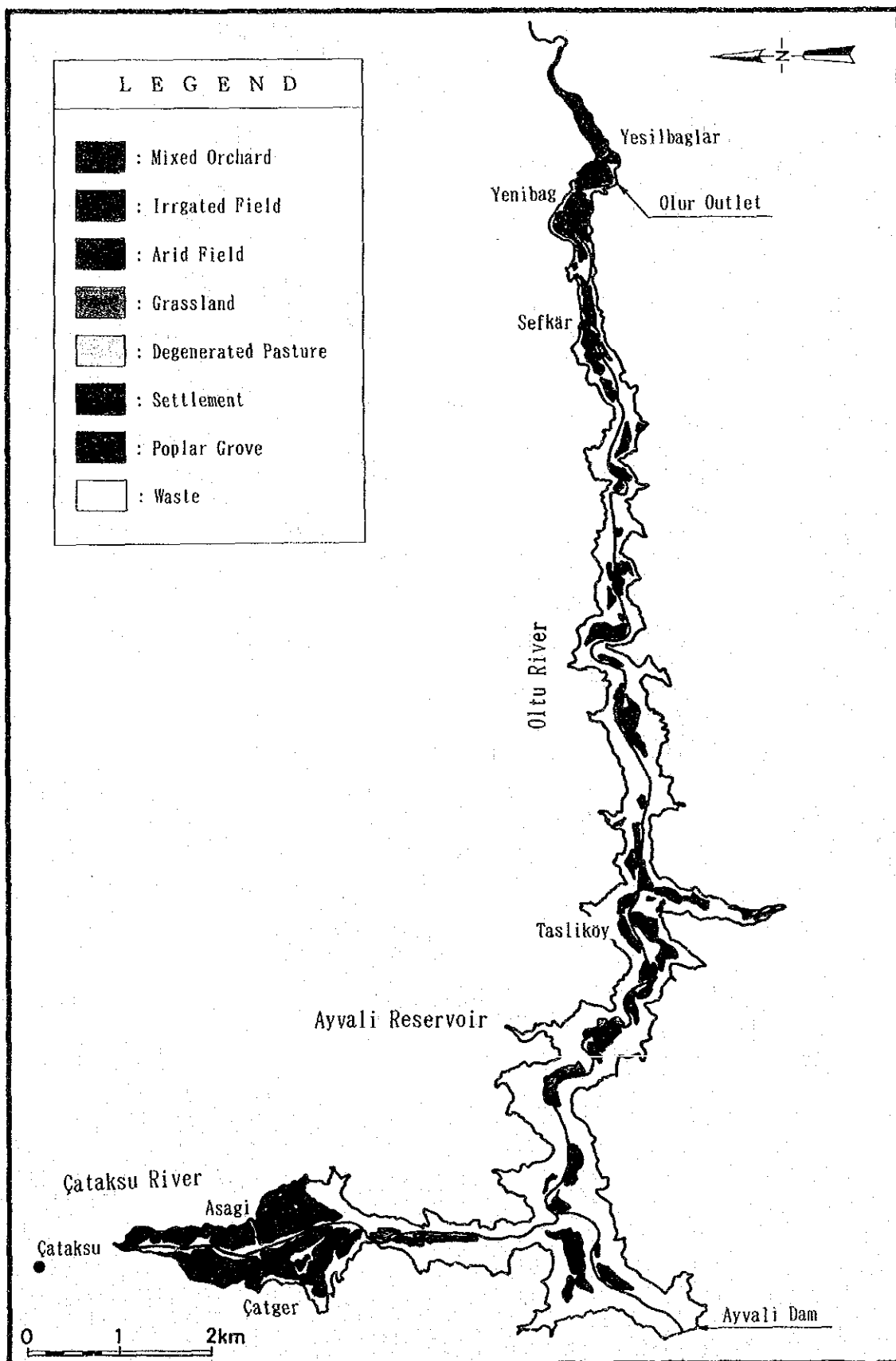
(Unit: ha)

Type \ Districts	Districts				
	Olur	Narman	Oltu	Senkaya	Tortum
Pasture	24,540	54,750	25,990	68,411	59,280
Meadow	379,693	450,590	758,015	589,133	1,093,755
Forest	160,025	19,300	224,645	362,525	129,351
Brushwood	75,425	—	38,850	34,850	51,675
Dry Agriculture with Fallowing	73,477	127,684	46,483	123,270	104,093
Dry Agriculture without Fallowing	—	69,288	94,140	800	1,000
Irrigated Field	3,620	47,090	37,575	38,762	28,321
Garden	11,650	—	1,700	4,652	30,295
Vineyard	20	—	1,900	—	—
Housing Land	5,624	2,895	5,240	7,825	6,422
Water Surface Area	107	—	1,250	10	8,210
River Bed	2,634	3,270	12,525	5,664	8,976
Swamp	620	—	—	54	2,800
Rocky Place	57,105	36,000	123,110	17,615	140,520
Others	—	—	5,900	140,520	—
Uncultivated Area	66,090	42,165	148,025	31,172	166,928
Total Area	794,570	811,880	1,378,530	1,253,973	1,667,751



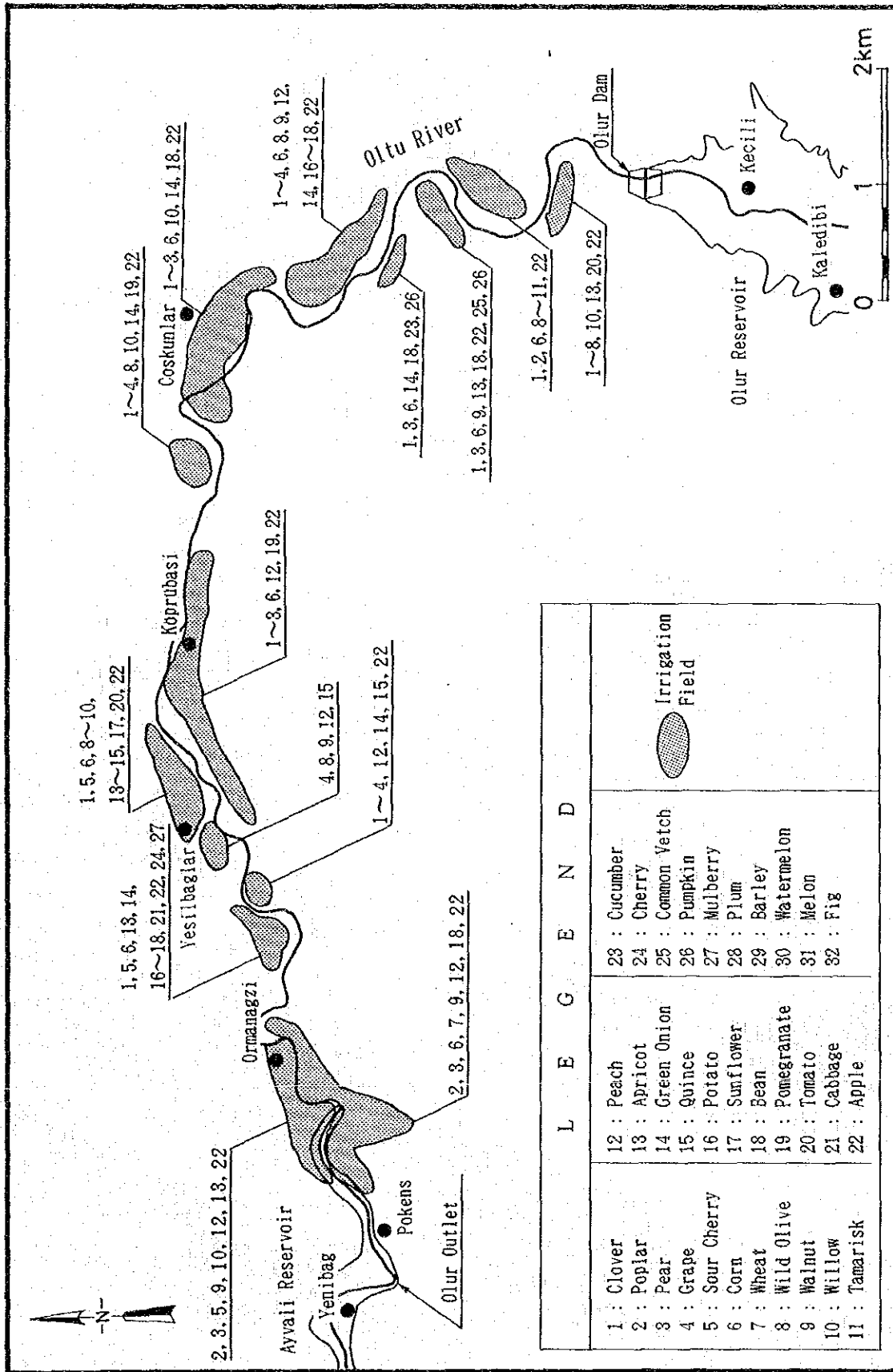
Appendix A-5-23(1) Situation of Land Utilization in Olur Area.

Source: Report on Expropriation Values for Power Stages of Olur Tributary of Çoruh River, 1991

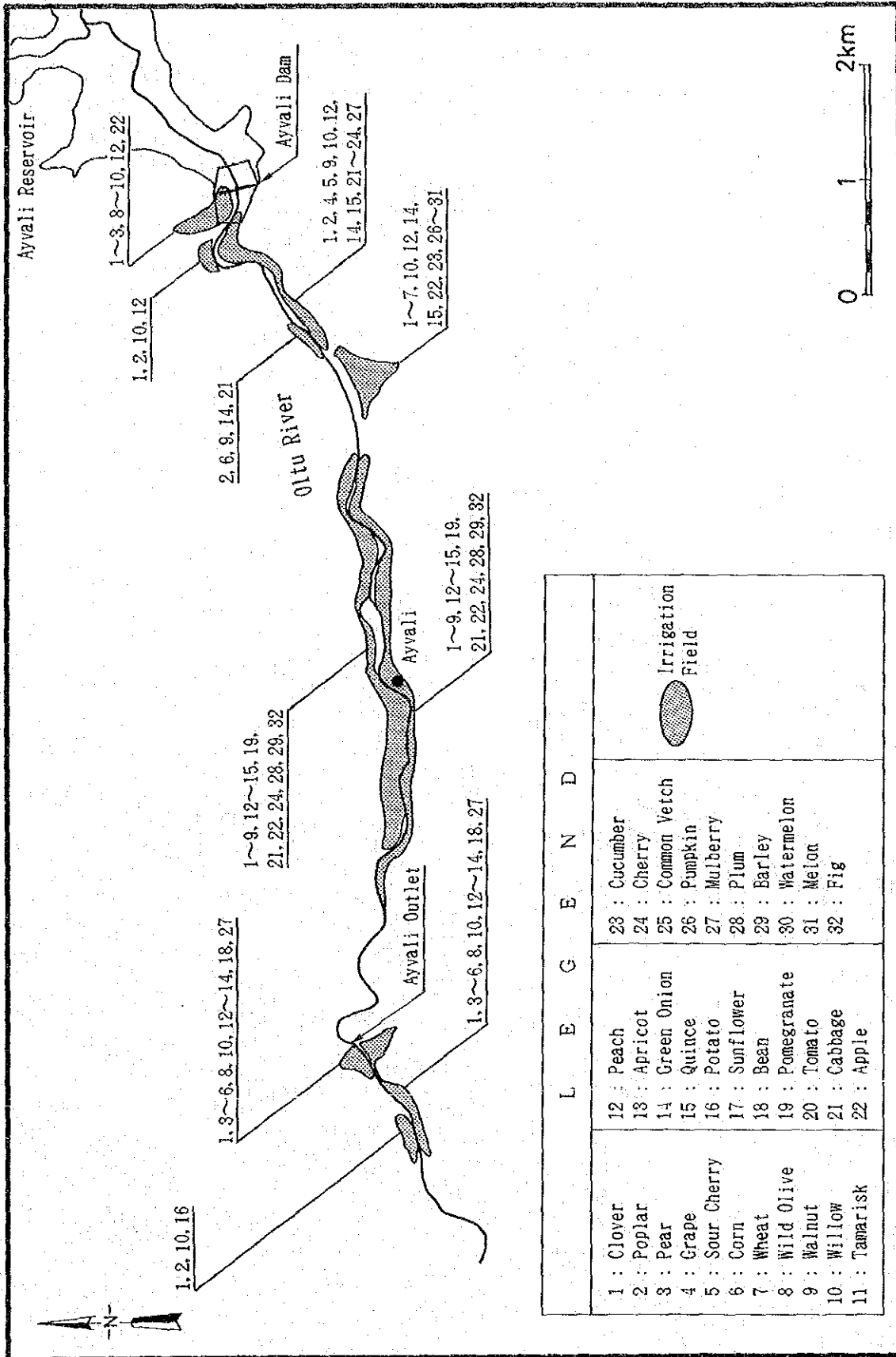


Appendix A-5-23(2) Situation of Land Utilization in Ayvali Area.

Source: Report on Expropriation Values for Power Stages of Oltu Tributary of Çoruh River, 1991



Appendix A-5-24(1) Agricultural Products at Water Reducing Area Between Olur Dam and Outlet



Appendix A-5-24(2) Agricultural Products at Water Reducing Area Between Ayvali Dam and Outlet



Appendix A-5-25 Distribution of Public Facilities in Plannd Area 10)

	School	Mosque	Post Office	Town Hall	Store	Petrol Office	Spring	Police Station	Grave	Ruin	Recreation Facilities	Health Center
Olur Reservoir Area												
Yolboyu	○	○	○	○	○	○					○	
Dagdibi	○	○	○	○	○				○		○	
Iriagac	○	○	○	○	○		○		○		○	○
Saglicak	○	○		○					○			
Tekeli	○	○	○	○			○		○			
Toklu	○	○		○			○		○			
Tuzla	○	○		○			○		○			
Kaledibi	○	○	○	○	○		○		○			
Olur Dam Site ~ P/S												
Coskunlar	○	○	○	○	○	○			○			○
Köprubasi	○	○	○	○	○		○		○	○		
Yasilbaglar	○	○	○	○	○		○		○	○		
Ormarazi	○	○	○	○	○		○		○	○		○
Ayvali Reservoir Area												
Taslikoy	○	○	○					○	○	○		○
Çataksu	○	○			○				○			○

○ : Public Facilities exist

Appendix A-5-26 Kind of Fuel in Daily Life of Residents <sup>10)</sup>

Administrative Sector	Erzurum		Oitu	
Total Number of Villages	1,034		64	
Choice	A	B	A	B
Coal	13	69	—	12
Wood	147	246	37	14
Petroleum	1	1	—	—
Dried Dunk	872	595	26	2
Others	1	3	1	2

A : First Choice  
B : Second Choice

## Reference

- 1) Soil Distribution Inventory Report of Erzurum Province
- 2) Known Ore and Mineral Resources of Turkey; General Directorate of Mineral and Exploration
- 3) City Woodland; Published by Prof. Dr. Ibrahim ATAY
- 4) Çoruh-Oltu River Master Plan Report, EIE, June-1990
- 5) Fresh Water Fish and Production Techniques; Published by Prof. Dr. Dogan ATAY, 1987
- 6) Hunting Seasons Between 1989 and 1990 with the decision of Main Hunting Commission
- 7) Census of Population in 1985 for the Province of Erzurum
- 8) Report on Expropriation Value for Power Stages of Oltu Tributary of Çoruh river; The Directorate of the Project Division of Dams and HPPs (1991)
- 9) Economical Investigation about Turkish Fresh Water Product (1983), Published by Ministry of Agriculture and Forestry
- 10) Inventory Study for the Subdistricts of Erzurum Province, Published by Ministry of Agriculture and Forestry
- 11) Turkey Fresh Water Fish Catalogue

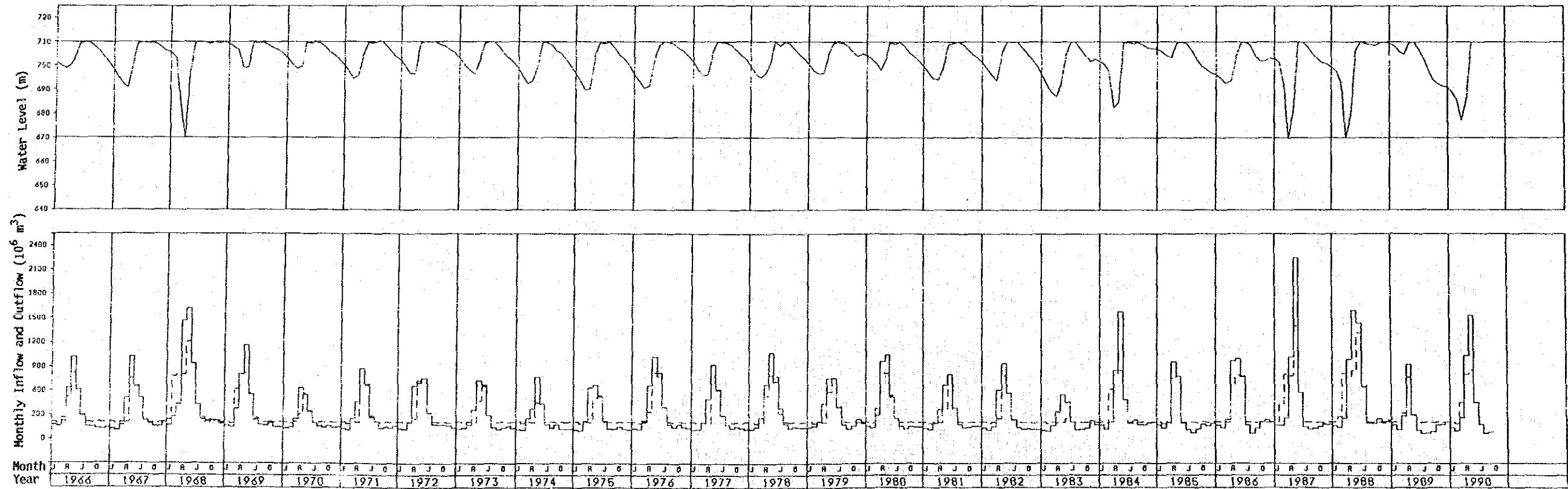
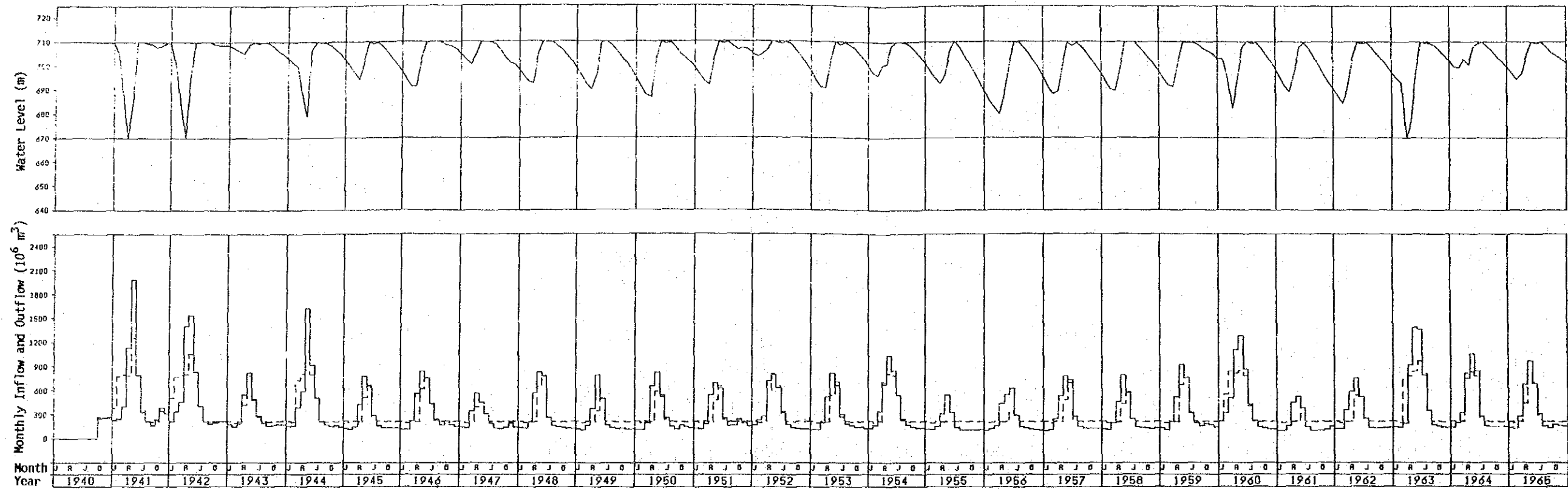
## **A-6 Reservoir Operation Study**



# Summary of Operation Study of Yusufeli Reservoir

Unit:  $10^6 \text{ m}^3$

YEAR	INFLOW	POWER DISCHARGE	SPILL
1940	6283.12	5927.76	410.51
1941	6487.00	6168.84	268.82
1942	3593.27	3640.41	0.57
1943	5172.55	5143.96	8.69
1944	3246.60	3343.33	0.0
1945	3715.24	3715.24	1.07
1946	2910.08	3054.97	0.0
1947	3672.01	3588.06	0.0
1948	2863.86	2948.48	0.0
1949	3304.28	3267.49	0.0
1950	3318.27	3264.04	0.0
1951	4055.90	4080.88	0.0
1952	3430.30	3396.23	0.0
1953	4530.11	4501.70	0.12
1954	2302.39	2530.76	7.73
1955	2876.00	2746.33	0.0
1956	3345.85	3341.80	0.0
1957	3151.78	3132.71	1.33
1958	3686.87	3635.56	0.0
1959	5533.71	5244.00	2.20
1960	2404.40	2633.79	0.0
1961	3336.19	3188.01	0.0
1962	5821.22	5554.55	162.40
1963	4300.44	4372.81	0.0
1964	3884.91	3896.70	0.0
1965	3924.50	3910.69	0.0
1966	3928.19	3825.83	0.0
1967	6330.97	5768.37	538.48
1968	4469.17	4551.46	2.73
1969	3057.47	3110.27	0.0
1970	3603.56	3531.01	2.72
1971	3725.48	3720.47	1.57
1972	3230.54	3317.61	2.88
1973	3000.39	3003.78	0.0
1974	3141.90	3161.03	0.0
1975	4106.38	4029.15	0.0
1976	3564.48	3586.31	0.0
1977	4144.10	4122.86	0.0
1978	3594.01	3633.56	0.0
1979	4270.57	4268.54	0.0
1980	3462.89	3420.42	0.0
1981	3484.99	3542.37	0.0
1982	2556.08	2581.95	0.0
1983	4593.25	4454.94	0.0
1984	3349.78	3636.23	0.0
1985	4211.71	4141.88	0.0
1986	5520.15	4937.53	547.24
1987	6152.67	5443.66	530.62
1988	2847.99	3297.89	0.13
1989	4446.00	3943.20	3.91
AVERAGE	3920.29	3870.41	49.87



Yusufeli Reservoir Operation

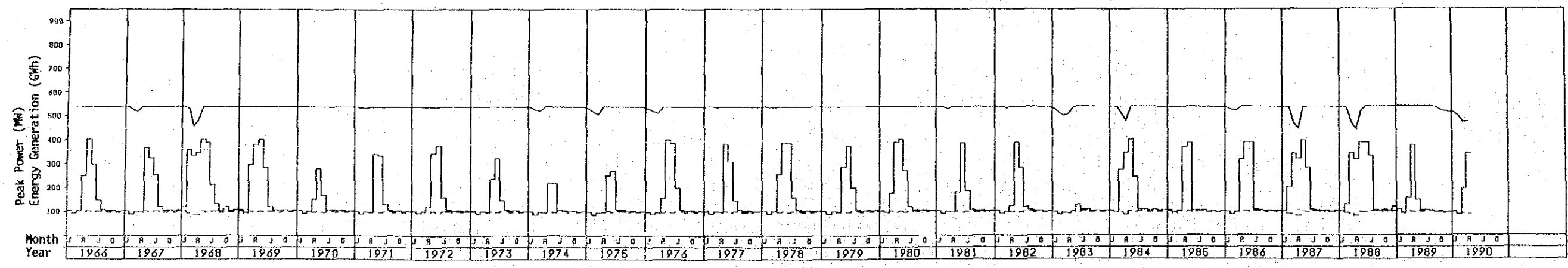
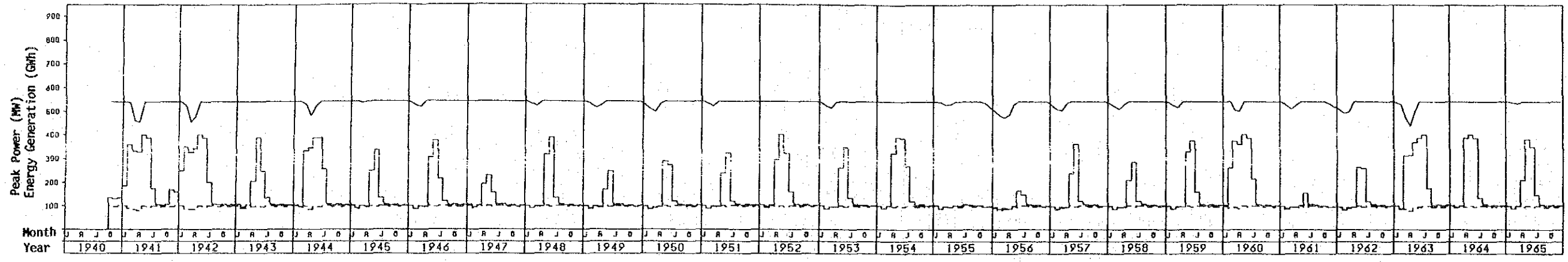












Energy Generation of Yusufell Project

Oltur Project

SITE : OLTU RIVER CLUR PROJECT (MASA210)

\* HMAX = 1105.00  
 \* HMIN = 1077.00  
 \* HMINL = 1095.67  
 \* HTWL = 929.00  
 \* GMAXO = 48.00  
 \* GMINO = 11.95

\* UNAXO = 0.20000E+09  
 \* VMINO = 0.31018E+00  
 \* SMAXO = 2314.81  
 \* SMINO = 0.00

\* KST = 1  
 \* KMAX = 600  
 \* DELTS = 50.00  
 \* DELTA = 1.00

\* NF = 1  
 \* NDAN = 1  
 \* TPEAK = 6.00  
 \* QMAX = 48.00  
 \* QMIN = 11.95  
 \* TPEAK = 0.0  
 \* QMAX = 0.0  
 \* QMIN = 0.0

\* WZN = 0.013  
 \* WZD = 4.600  
 \* WZL = 9600.0  
 \* TZN = 0.012  
 \* TZD = 3.600  
 \* TZL = 450.0  
 \* HLOSS = 12.00

\* MET = 2  
 \* NEG = 2  
 \* MEH = 3

Q/GMAX (EATERT) 0.0 1.00000 1.00000 1.00000

PT/PTMAX (EATERG) 0.0 1.00000 1.00000 1.00000

HE/HES (EATERH) 0.87929 0.88600 1.00000 0.89500 1.06032 0.89500

\* RANK = 4  
 1 -9999.00 -9999.00 0.0 0.3973667D+02 -0.4279639D+05  
 2 1080.00 119.21 0.1447774D+01 -0.3074309D+04 0.1631689D+07  
 3 1095.67 1303.39 0.3671791D+01 -0.7971996D+04 0.4328021D+07  
 4 9999.00 9999.00 0.0 0.0 0.0

\* RARE = 6  
 1 -9999.00 -9999.00 0.0 0.1660000D+02 -0.1701300D+05  
 2 1030.00 85.00 0.1290000D+01 -0.2618900D+04 0.1328991D+07  
 3 1050.00 1371.00 -0.9000001D-01 0.3064000D+03 -0.2211240D+06  
 4 1070.00 3683.00 -0.9550001D+00 0.2195450D+04 -0.2252069D+07  
 5 1090.00 6556.00 0.3610000D+01 -0.7637001D+04 0.4041625D+07

Olur Project

6 99999.00 99999.00 0.0 0.0 0.0  
\* EM = 67.70 13.00 0.0 0.0 0.0 6.70 57.80 96.90132.30171.00168.00129.20

Olur Project

表10 : OLTU RIVER OLUR 2003年3月31日時点のデータ

NO.	年	10月	11月	12月	1月	2月	3月	4月	5月	6月	7月	8月	9月
1	1940	13.82 (31)	13.26 (30)	11.05 (31)	9.91 (31)	10.63 (28)	15.53 (31)	57.26 (30)	114.03 (31)	40.30 (30)	20.12 (31)	11.29 (31)	8.17 (30)
2	1941	12.48 (31)	20.94 (30)	12.74 (31)	11.03 (31)	12.05 (28)	17.85 (31)	44.90 (30)	146.86 (31)	74.95 (30)	27.04 (31)	13.54 (31)	11.06 (30)
3	1942	13.05 (31)	12.92 (30)	11.54 (31)	9.93 (31)	9.57 (28)	10.42 (31)	27.22 (30)	69.72 (31)	33.52 (30)	17.36 (31)	9.95 (30)	6.57 (30)
4	1943	8.80 (31)	10.50 (30)	9.15 (31)	8.48 (31)	8.98 (29)	17.03 (31)	40.79 (30)	121.54 (31)	51.20 (30)	25.40 (31)	13.56 (31)	11.01 (30)
5	1944	11.62 (31)	12.53 (30)	9.58 (31)	9.08 (31)	8.42 (28)	9.60 (31)	21.64 (30)	68.08 (31)	66.47 (30)	20.95 (31)	10.23 (31)	7.64 (30)
6	1945	8.87 (31)	9.70 (30)	8.76 (31)	8.36 (31)	8.26 (28)	10.14 (31)	26.98 (30)	85.64 (31)	97.97 (30)	33.84 (31)	23.76 (31)	15.39 (30)
7	1946	20.48 (31)	17.11 (30)	15.56 (31)	12.74 (31)	12.42 (28)	21.42 (31)	39.82 (30)	38.06 (31)	31.58 (30)	17.61 (31)	7.91 (31)	8.66 (30)
8	1947	9.51 (31)	14.33 (30)	10.40 (31)	9.13 (31)	8.63 (29)	8.68 (31)	30.85 (30)	83.31 (31)	90.94 (30)	22.59 (31)	13.21 (31)	13.82 (30)
9	1948	11.90 (31)	11.23 (30)	10.11 (31)	8.54 (31)	8.21 (28)	10.04 (31)	18.45 (30)	89.88 (31)	43.45 (30)	12.55 (31)	8.52 (31)	8.12 (30)
10	1949	10.07 (31)	9.27 (30)	8.24 (31)	7.65 (31)	8.06 (28)	12.84 (31)	40.54 (30)	89.18 (31)	50.48 (30)	19.87 (31)	10.44 (31)	7.88 (30)
11	1950	14.38 (31)	12.25 (30)	10.51 (31)	9.95 (31)	9.28 (28)	14.55 (31)	34.49 (30)	75.81 (31)	59.20 (30)	21.65 (31)	11.50 (31)	13.43 (30)
12	1951	22.35 (31)	16.44 (30)	13.37 (31)	11.85 (31)	12.64 (29)	13.52 (31)	56.54 (30)	92.46 (31)	65.25 (30)	29.86 (31)	15.27 (31)	12.10 (30)
13	1952	11.07 (31)	11.52 (30)	11.29 (31)	10.33 (31)	10.59 (28)	11.64 (31)	32.55 (30)	88.00 (31)	64.05 (30)	26.58 (31)	15.41 (31)	11.10 (30)
14	1953	10.56 (31)	11.30 (30)	10.21 (31)	9.69 (31)	10.00 (28)	14.24 (31)	32.55 (30)	99.73 (31)	93.12 (30)	57.29 (31)	21.18 (31)	14.93 (30)
15	1954	14.36 (31)	12.80 (30)	11.54 (31)	9.83 (31)	9.04 (28)	10.72 (31)	22.62 (30)	63.15 (31)	32.06 (30)	7.25 (31)	3.79 (31)	3.81 (30)
16	1955	6.74 (31)	7.28 (30)	8.19 (31)	7.44 (31)	9.31 (29)	11.01 (31)	27.46 (30)	49.79 (31)	53.87 (30)	24.00 (31)	12.53 (31)	10.55 (30)
17	1956	12.13 (31)	10.50 (30)	10.09 (31)	9.32 (31)	10.15 (28)	16.42 (31)	37.40 (30)	61.98 (31)	49.02 (30)	21.65 (31)	9.76 (31)	9.73 (30)
18	1957	11.34 (31)	12.73 (30)	10.75 (31)	9.79 (31)	9.38 (28)	11.43 (31)	21.89 (30)	45.57 (31)	46.12 (30)	18.63 (31)	9.67 (31)	9.92 (30)
19	1958	10.21 (31)	9.58 (30)	8.89 (31)	9.04 (31)	8.03 (28)	11.40 (31)	32.31 (30)	74.64 (31)	49.27 (30)	18.16 (31)	14.36 (31)	12.44 (30)
20	1959	14.71 (31)	15.27 (30)	12.01 (31)	11.05 (31)	11.84 (29)	14.48 (31)	44.18 (30)	76.75 (31)	43.21 (30)	27.28 (31)	17.22 (31)	12.63 (30)
21	1960	8.15 (31)	7.47 (30)	7.30 (31)	6.20 (31)	5.88 (28)	6.29 (31)	13.72 (30)	28.92 (31)	15.52 (30)	3.57 (31)	1.74 (31)	1.22 (30)
22	1961	3.55 (31)	4.68 (30)	5.59 (31)	4.61 (31)	4.71 (28)	9.39 (31)	25.52 (30)	49.79 (31)	26.98 (30)	12.15 (31)	5.14 (31)	4.15 (30)
23	1962	4.11 (31)	5.05 (30)	4.44 (31)	5.03 (31)	4.81 (28)	6.36 (31)	50.96 (30)	122.94 (31)	88.28 (30)	46.27 (31)	31.03 (31)	10.91 (30)
24	1963	17.24 (31)	15.27 (30)	10.54 (31)	8.26 (31)	7.23 (29)	11.66 (31)	49.02 (30)	101.13 (31)	72.52 (30)	20.27 (31)	7.82 (31)	7.18 (30)
25	1964	7.40 (31)	7.23 (30)	7.21 (31)	5.52 (31)	5.36 (28)	14.17 (31)	40.06 (30)	52.83 (31)	34.24 (30)	18.27 (31)	9.22 (31)	6.70 (30)
26	1965	12.67 (31)	9.19 (30)	8.43 (31)	8.59 (31)	8.75 (28)	10.42 (31)	40.79 (30)	73.00 (31)	23.34 (30)	7.84 (31)	4.72 (31)	5.97 (30)
27	1966	7.51 (31)	6.91 (30)	5.82 (31)	5.45 (31)	4.56 (28)	6.03 (31)	16.24 (30)	84.49 (31)	32.79 (30)	35.25 (31)	16.00 (31)	9.22 (30)
28	1967	9.91 (31)	9.92 (30)	9.39 (31)	8.21 (31)	7.63 (29)	14.87 (31)	126.80 (30)	137.95 (31)	76.64 (30)	24.93 (31)	12.39 (31)	10.33 (30)
29	1968	10.84 (31)	12.44 (30)	8.87 (31)	6.69 (31)	6.11 (28)	12.74 (31)	55.08 (30)	103.48 (31)	24.31 (30)	7.37 (31)	7.09 (31)	6.70 (30)

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30	1969	11.29	8.34	8.28	6.81	6.37	9.32	43.45	34.55	11.88	9.06	4.58	5.66
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
31	1970	6.55	5.97	4.61	4.49	3.59	7.46	20.48	65.03	31.33	5.66	13.94	4.22
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
32	1971	6.22	6.87	6.62	5.54	6.12	7.68	41.76	55.65	43.45	14.59	6.65	9.73
		(31)	(30)	(31)	(31)	(29)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
33	1972	10.42	9.92	7.84	7.46	8.86	9.48	28.91	58.46	43.21	14.76	4.23	5.51
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
34	1973	9.41	9.07	6.10	4.79	4.84	8.48	16.20	59.87	18.93	5.24	4.84	9.75
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
35	1974	4.82	5.19	6.22	5.82	4.63	7.04	27.46	32.44	20.56	7.37	3.24	4.85
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
36	1975	7.25	6.94	3.85	4.53	4.65	11.43	41.03	97.38	50.24	20.95	8.99	8.95
		(31)	(30)	(31)	(31)	(29)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
37	1976	12.34	11.37	10.46	7.65	8.93	11.60	38.45	77.98	28.55	9.88	5.20	7.71
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
38	1977	9.06	8.50	7.24	7.18	9.64	14.53	39.44	100.90	35.16	7.08	3.90	5.08
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
39	1978	7.08	7.78	7.40	7.08	8.09	9.92	38.12	61.10	45.69	18.07	5.11	4.85
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
40	1979	11.92	17.13	11.73	9.50	8.97	14.66	67.74	58.55	10.05	3.32	5.30	4.68
		(31)	(30)	(31)	(31)	(29)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
41	1980	6.57	6.46	6.06	5.65	5.76	7.53	25.39	49.31	69.05	8.52	5.65	5.51
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
42	1981	6.73	8.27	7.28	5.68	5.13	6.57	45.91	56.75	10.22	3.55	2.63	5.29
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
43	1982	6.12	5.83	5.53	5.00	5.00	6.16	12.46	30.50	14.74	2.88	1.50	2.50
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
44	1983	7.50	13.19	8.25	7.17	6.39	10.64	47.84	93.58	27.01	11.20	13.40	9.45
		(31)	(30)	(31)	(31)	(29)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
45	1984	8.59	9.68	8.21	7.13	7.85	9.74	53.63	43.31	10.03	5.34	2.60	5.94
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
46	1985	9.22	7.29	7.77	6.72	7.77	12.88	54.78	56.00	43.60	9.41	1.93	6.60
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
47	1986	11.87	12.31	8.03	6.91	10.66	9.74	50.15	130.30	30.59	7.50	5.60	6.83
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
48	1987	7.63	8.98	6.93	6.47	7.81	11.44	50.28	89.82	81.87	38.08	11.18	10.88
		(31)	(30)	(31)	(31)	(29)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
49	1988	13.78	10.77	8.63	7.08	6.30	15.74	51.11	15.90	4.32	2.19	1.89	3.54
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
50	1989	8.88	8.47	8.55	5.44	5.48	13.99	58.44	86.65	24.70	10.63	4.37	5.17
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)

COEFFM= 0.4881345E-02 COEFFT= 0.7206392E-03 HLOSS= 0.1200000E+02

HEGMAX= 0.1546699E+03 PTMAX = 0.6511723E+05 PMAX= 0.6500000E+02

SHT = 0.1666699E+03 SHL = 0.1200000E+02 SHE = 0.1546699E+03 SETG = 0.8950000E+00 PINST= 0.6511722E+02



\*\*\* DYNAMIC PROGRAMMING OF RESERVOIR (INPUT DATA) \*\*\*

CASE \* OLTU RIVER FEASIBILITY STUDY

\* KST = 1  
 \* KMAX = 600  
 \* IMAX = 49  
 \* DELTS = 50.0 (TD)  
 \* LMAX = 38  
 \* DELTA = 1.0 (TD)  
 \* QMINO = 11.95 (TD)

\* HLAST = 1105.00 (M) \* SLAST = 2314.8 (TD)  
 \* HSTAT = 1105.00 (M) \* SSTAT = 2314.8 (TD)

\* IMAX = 49 (TD,M)  
 1 0.0(1077.0) 2 50.0(1077.0) 3 100.0(1077.0) 4 150.0(1080.6) 5 200.0(1081.5)  
 6 250.0(1082.3) 7 300.0(1083.1) 8 350.0(1083.9) 9 400.0(1084.7) 10 450.0(1085.4)  
 11 500.0(1086.2) 12 550.0(1086.9) 13 600.0(1087.5) 14 650.0(1088.2) 15 700.0(1088.8)  
 16 750.0(1089.5) 17 800.0(1090.1) 18 850.0(1090.7) 19 900.0(1091.3) 20 950.0(1091.9)  
 21 1000.0(1092.4) 22 1050.0(1093.0) 23 1100.0(1093.5) 24 1150.0(1094.1) 25 1200.0(1094.6)  
 26 1250.0(1095.1) 27 1300.0(1095.6) 28 1350.0(1096.3) 29 1400.0(1096.9) 30 1450.0(1097.5)  
 31 1500.0(1098.0) 32 1550.0(1098.6) 33 1600.0(1099.1) 34 1650.0(1099.6) 35 1700.0(1100.1)  
 36 1750.0(1100.5) 37 1800.0(1101.0) 38 1850.0(1101.4) 39 1900.0(1101.8) 40 1950.0(1102.2)  
 41 2000.0(1102.7) 42 2050.0(1103.0) 43 2100.0(1103.4) 44 2150.0(1103.8) 45 2200.0(1104.2)  
 46 2250.0(1104.5) 47 2300.0(1104.9) 48 2314.8(1105.0) 49 2314.8(1105.0)

\* LMAX = 38 (TD)  
 1 11.9 2 12.0 3 13.0 4 14.0 5 15.0 6 16.0 7 17.0 8 18.0 9 19.0 10 20.0  
 11 21.0 12 22.0 13 23.0 14 24.0 15 25.0 16 26.0 17 27.0 18 28.0 19 29.0 20 30.0  
 21 31.0 22 32.0 23 33.0 24 34.0 25 35.0 26 36.0 27 37.0 28 38.0 29 39.0 30 40.0  
 31 41.0 32 42.0 33 43.0 34 44.0 35 45.0 36 46.0 37 47.0 38 48.0

Olur Project

\*\*\* OPTIMAL SCHEDULE \*\*\*

NO.	YEAR	MON	DAY	H (M)	S (M3/SD)	GIN (M3/SD)	QA (M3/SD)	GOUT (M3/SD)	P (MW)	E (GWH)	T (CH)	ETG (M3/S)	GCR (M3/S)	QUP (M3/S)	LOSS (M)	SUII (M)
1	1940	10	31	1104.9	2300.9	428.5	434.0	0.0	65.00	14.90	7.4	0.895	45.44	45.44	12.00	1104.95
2		11	30	1104.9	2307.3	397.9	370.4	0.0	65.00	13.40	6.9	0.895	45.40	45.40	12.00	1104.92
3		12	31	1104.7	2279.4	342.6	311.0	0.0	65.00	12.75	6.3	0.895	45.31	45.31	12.00	1104.85
4		1	31	1101.9	1904.5	307.1	282.0	0.0	65.00	23.27	11.5	0.895	45.72	45.72	12.00	1103.31
5		2	28	1091.8	942.0	297.5	126.0	0.0	65.00	41.17	22.6	0.895	47.74	47.74	12.00	1098.82
6		3	31	1077.0	0.0	481.5	1423.0	0.0	65.00	41.17	22.6	0.895	47.74	47.74	12.00	1098.82
7		4	30	1083.9	350.2	1717.8	1364.5	0.0	55.30	39.73	23.9	0.898	45.58	45.58	12.00	1090.47
8		5	31	1105.0	2314.8	3535.0	1482.2	81.8	64.32	47.85	24.0	0.894	47.81	47.81	12.00	1094.47
9		6	30	1104.9	2307.5	1209.0	1200.0	0.0	65.00	21.31	10.6	0.895	45.38	45.38	12.00	1104.89
10		11	31	1104.8	2290.4	623.8	620.0	0.0	65.00	12.77	6.3	0.895	45.44	45.44	12.00	1104.68
11		8	31	1104.5	2247.7	349.9	372.0	0.0	65.00	12.36	6.3	0.895	45.45	45.45	12.00	1104.04
12		9	30	1103.6	2117.1	245.1	360.0	0.0	65.00	26.96	6.3	0.894	1396.6	1396.6	12.00	1099.39
13	1941	10	31	1103.6	2124.1	386.9	372.0	0.0	65.00	12.73	6.3	0.895	45.58	45.58	12.00	1103.59
14		11	30	1104.9	2300.8	628.2	450.0	0.0	65.00	15.46	7.9	0.895	45.39	45.39	12.00	1104.26
15		12	31	1104.8	2292.8	395.0	403.0	0.0	65.00	13.90	6.9	0.895	45.22	45.22	12.00	1104.87
16		1	31	1101.0	1797.7	341.9	837.0	0.0	65.00	28.53	14.2	0.895	45.77	45.77	12.00	1102.90
17		2	28	1090.7	847.2	337.5	1288.0	0.0	65.00	41.97	23.1	0.895	47.87	47.87	12.00	1095.81
18		3	31	1077.0	0.0	553.5	1400.2	0.0	57.42	41.83	23.5	0.899	46.13	46.13	12.00	1083.83
19		4	30	1075.0	0.0	1347.1	1344.0	0.0	53.15	38.09	23.9	0.886	45.01	45.01	12.00	1077.00
20		5	31	1105.0	2314.8	4552.5	1465.4	767.1	62.03	46.18	24.0	0.895	45.19	45.19	12.00	1105.00
21		6	30	1105.0	2314.8	2248.4	1355.6	876.5	65.00	46.80	24.0	0.895	45.19	45.19	12.00	1105.00
22		7	31	1104.9	2295.1	838.3	837.0	0.0	65.00	28.73	14.3	0.895	45.45	45.45	12.00	1104.93
23		8	31	1104.8	2291.1	419.7	403.0	0.0	65.00	13.85	6.9	0.895	45.39	45.39	12.00	1104.85
24		9	30	1104.5	2248.5	331.7	358.5	0.0	65.00	12.35	6.3	0.895	45.29	45.29	12.00	1104.68
25	1942	10	31	1104.7	2274.3	1031.7	876.1	137.0	63.13	28.37	6.3	0.894	1393.9	1393.9	12.00	1098.56
26		11	30	1104.9	2300.4	404.6	370.4	0.0	65.00	12.76	6.3	0.895	45.29	45.29	12.00	1104.62
27		12	31	1104.8	2287.8	387.7	360.0	0.0	65.00	12.41	6.4	0.895	45.24	45.24	12.00	1104.81
28		1	31	1104.3	2223.6	357.9	370.4	0.0	65.00	12.78	6.3	0.895	45.23	45.23	12.00	1104.85
29		2	28	1103.8	2155.4	307.8	372.0	0.0	65.00	12.81	6.4	0.895	45.30	45.30	12.00	1104.58
30		3	31	1103.5	2105.5	322.9	336.0	0.0	65.00	11.54	6.3	0.895	45.44	45.44	12.00	1104.10
31		4	30	1098.6	1552.9	816.6	1362.4	0.0	65.00	12.74	6.3	0.895	45.56	45.56	12.00	1103.66
32		5	31	1105.0	2309.5	2161.2	1395.0	0.0	65.00	47.04	23.3	0.895	46.31	46.31	12.00	1101.04
33		6	30	1105.0	2308.8	1005.6	990.0	0.0	65.00	34.08	17.5	0.895	46.26	46.26	12.00	1101.79
34		7	31	1104.9	2298.9	538.2	527.0	0.0	65.00	18.14	9.0	0.895	45.32	45.32	12.00	1104.96
35		8	31	1104.3	2216.5	308.4	370.4	0.0	65.00	12.75	6.3	0.895	45.32	45.32	12.00	1104.92
36		9	30	1103.0	2039.5	197.3	358.5	0.0	65.00	12.27	6.3	0.895	45.57	45.57	12.00	1103.63
37	1943	10	31	1102.1	1934.1	589.6	598.7	0.0	65.00	20.43	6.3	0.895	1384.9	1384.9	12.00	1103.96
38		11	30	1101.7	1889.2	272.9	370.4	0.0	65.00	12.60	6.3	0.895	45.88	45.88	12.00	1102.54
39		12	31	1101.0	1800.9	315.0	358.5	0.0	65.00	12.14	6.2	0.895	46.05	46.05	12.00	1101.93
40		1	31	1100.0	1691.6	283.7	372.0	0.0	65.00	12.56	6.2	0.895	46.21	46.21	12.00	1101.36
41		2	29	1092.7	1024.1	262.7	228.0	0.0	65.00	12.49	6.2	0.895	46.47	46.47	12.00	1100.48
42		3	31	1080.5	146.8	260.4	928.0	0.0	65.00	30.35	15.1	0.895	47.71	47.71	12.00	1096.34
43		4	30	1077.0	0.0	528.0	1404.7	0.0	59.13	42.82	23.4	0.891	46.56	46.56	12.00	1086.61
44		5	31	1105.0	2314.8	1223.6	1350.0	0.0	54.24	38.79	23.8	0.897	45.30	45.30	12.00	1078.76
45		6	30	1105.0	2314.8	3767.6	1465.0	159.2	62.03	46.14	24.0	0.893	47.27	47.27	12.00	1091.00
46		7	31	1104.9	2306.5	1536.1	1360.1	0.0	65.00	46.80	24.0	0.895	45.34	45.34	12.00	1105.00
47		8	31	1104.9	2303.0	787.5	775.0	0.0	65.00	26.67	13.2	0.895	45.34	45.34	12.00	1104.97
48		9	30	1104.6	2258.9	420.4	403.0	0.0	65.00	13.86	6.9	0.895	45.35	45.35	12.00	1104.93
						330.3	311.0	0.0	65.00	12.36	6.3	0.895	45.25	45.25	12.00	1104.76
						832.4	793.1	13.3	63.37	25.63	6.3	0.894	1405.9	1405.9	12.00	1098.22

Olur Project

\*\*\* OPTIMAL SCHEDULE \*\*\*

Table with columns: NO., YEAR, MON, DAY, H (CM), S (M3/SD), GIN (M3/SD), QQ (M3/SD), QOUT (M3/SD), P (M3), E (GMH), T (CH), ETG (M3/S), QCR (M3/S), QUP (M3/S), LOSS (CM), SU11 (CM).























Oltur Project

\*\*\* OPTIMAL SCHEDULE \*\*\*

NO.	YEAR	MON	DAY	H (M)	S (M3/SD)	QIN (M3/SD)	QQ (M3/SD)	QOUT (M3/SD)	P (MM)	E (GWR)	T (CH)	ETG (M3/S)	GCR (M3/S)	GUP (M3/S)	LOSS (M)	SUII (M)
577	1988	10	31	1104.6	2252.5	427.2(13.77)	370.4(11.95)	0.0	65.00	12.74	6.3	0.895	45.36	45.36	12.00	1104.38
578		11	30	1104.3	2215.6	323.1(10.77)	358.5(11.95)	0.0	65.00	12.33	6.3	0.895	45.35	45.35	12.00	1104.42
579		12	31	1103.5	2112.6	267.5(8.63)	370.4(11.95)	0.0	65.00	12.70	6.3	0.895	45.49	45.49	12.00	1103.91
580		1	31	1102.3	1961.6	219.4(7.08)	370.4(11.95)	0.0	65.00	12.63	6.3	0.895	45.76	45.76	12.00	1102.93
581		2	28	1101.0	1803.4	176.4(6.30)	334.6(11.95)	0.0	65.00	11.32	6.2	0.895	46.12	46.12	12.00	1101.67
582		3	31	1102.0	1920.2	488.0(15.74)	370.4(11.95)	0.0	65.00	12.32	6.2	0.895	46.17	46.17	12.00	1101.50
583		4	30	1104.9	2307.0	1533.3(51.11)	1140.0(38.00)	0.0	65.00	38.99	20.0	0.895	45.61	45.61	12.00	1103.47
584		5	30	1104.8	2292.1	1492.9(15.90)	496.0(16.00)	0.0	65.00	17.05	8.5	0.895	45.39	45.39	12.00	1104.89
585		6	31	1103.0	2047.0	129.6(4.32)	358.5(11.95)	0.0	65.00	12.27	6.3	0.895	45.58	45.58	12.00	1103.93
586		7	31	1100.3	1724.7	67.9(2.19)	370.4(11.95)	0.0	65.00	12.53	6.2	0.895	46.13	46.13	12.00	1101.66
587		8	31	1096.8	1395.1	58.6(1.89)	370.4(11.95)	0.0	65.00	12.29	6.1	0.895	47.03	47.03	12.00	1098.57
588		9	30	1093.9	1130.8	106.2(3.54)	358.5(11.95)	0.0	64.70	11.65	6.0	0.895	47.95	47.80	12.00	1095.35
						357.5(11.77)	439.1(14.46)	0.0	64.98	14.92		0.895	1399.	1399.	12.00	1102.22
589	1989	10	31	1092.8	1029.8	275.2(8.88)	370.4(11.95)	0.0	63.55	11.86	6.0	0.894	47.63	47.63	12.00	1093.31
590		11	30	1091.6	924.3	254.1(8.47)	358.5(11.95)	0.0	62.80	11.59	6.0	0.893	47.45	47.45	12.00	1092.16
591		12	31	1090.3	818.9	265.0(8.55)	370.4(11.95)	0.0	61.99	11.66	6.1	0.893	47.26	47.26	12.00	1090.94
592		1	31	1087.8	817.1	168.6(5.44)	370.4(11.95)	0.0	60.76	11.50	6.1	0.892	46.96	46.96	12.00	1089.04
593		2	28	1085.2	436.0	153.5(5.48)	334.6(11.95)	0.0	59.12	10.20	6.2	0.891	46.56	46.56	12.00	1086.50
594		3	31	1086.1	498.8	433.7(13.99)	370.4(11.95)	0.0	58.60	11.22	6.2	0.890	46.43	46.43	12.00	1085.69
595		4	30	1093.3	1078.1	1733.2(58.44)	1170.0(39.00)	0.0	61.20	36.51	19.9	0.892	47.07	47.07	12.00	1099.72
596		5	31	1104.9	2299.2	2686.1(86.85)	1457.0(47.00)	0.0	65.00	48.27	24.0	0.895	47.09	47.09	12.00	1099.09
597		6	30	1105.0	2314.8	741.0(24.70)	709.1(23.64)	0.0	65.00	24.56	12.5	0.895	45.42	45.42	12.00	1104.94
598		7	31	1105.0	2314.8	339.5(10.63)	308.5(9.95)	0.0	56.90	10.58	6.0	0.895	45.46	45.46	12.00	1105.00
599		8	31	1105.0	2314.8	135.4(4.37)	114.7(3.70)	0.0	21.16	3.94	6.0	0.895	45.46	45.46	12.00	1105.00
600		9	30	1105.0	2314.8	155.1(5.17)	139.2(4.64)	0.0	26.53	4.78	6.0	0.895	45.46	45.46	12.00	1105.00
						612.5(20.06)	506.1(16.64)	0.0	55.22	16.36		0.895	1415.	1254.	12.00	1095.53

7588.5(248.76) 7898.9(239.84) 195.9 765.29 241.53 0.894 16879. 16798. 12.00 1099.42

N=1 PMAX= 65.00 E= 241.51 ESUM= 241.53  
 PF95= 15.25 PF95= 57.77 PF90= 60.88  
 EF100= 33.39 EF95= 126.51 EF90= 133.34  
 ES100= 208.12 ES95= 115.00 ES90= 108.18  
 UF = 42.339 (%) QUMAX = 47.986

\*\*\* SEMW \*\*\* N=1

1	65.00	2	65.00	3	65.00	4	65.00	5	65.00	6	65.00	7	65.00	8	65.00	9	65.00	10	65.00
11	65.00	12	65.00	13	65.00	14	65.00	15	65.00	16	65.00	17	65.00	18	65.00	19	65.00	20	65.00
21	65.00	22	65.00	23	65.00	24	65.00	25	65.00	26	65.00	27	65.00	28	65.00	29	65.00	30	65.00
31	65.00	32	65.00	33	65.00	34	65.00	35	65.00	36	65.00	37	65.00	38	65.00	39	65.00	40	65.00
41	65.00	42	65.00	43	65.00	44	65.00	45	65.00	46	65.00	47	65.00	48	65.00	49	65.00	50	65.00
51	65.00	52	65.00	53	65.00	54	65.00	55	65.00	56	65.00	57	65.00	58	65.00	59	65.00	60	65.00
61	65.00	62	65.00	63	65.00	64	65.00	65	65.00	66	65.00	67	65.00	68	65.00	69	65.00	70	65.00
71	65.00	72	65.00	73	65.00	74	65.00	75	65.00	76	65.00	77	65.00	78	65.00	79	65.00	80	65.00
81	65.00	82	65.00	83	65.00	84	65.00	85	65.00	86	65.00	87	65.00	88	65.00	89	65.00	90	65.00
91	65.00	92	65.00	93	65.00	94	65.00	95	65.00	96	65.00	97	65.00	98	65.00	99	65.00	100	65.00
101	65.00	102	65.00	103	65.00	104	65.00	105	65.00	106	65.00	107	65.00	108	65.00	109	65.00	110	65.00
111	65.00	112	65.00	113	65.00	114	65.00	115	65.00	116	65.00	117	65.00	118	65.00	119	65.00	120	65.00
121	65.00	122	65.00	123	65.00	124	65.00	125	65.00	126	65.00	127	65.00	128	65.00	129	65.00	130	65.00
131	65.00	132	65.00	133	65.00	134	65.00	135	65.00	136	65.00	137	65.00	138	65.00	139	65.00	140	65.00
141	65.00	142	65.00	143	65.00	144	65.00	145	65.00	146	65.00	147	65.00	148	65.00	149	65.00	150	65.00
151	65.00	152	65.00	153	65.00	154	65.00	155	65.00	156	65.00	157	65.00	158	65.00	159	65.00	160	65.00
161	65.00	162	65.00	163	65.00	164	65.00	165	65.00	166	65.00	167	65.00	168	65.00	169	65.00	170	65.00

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171	65.00	172	65.00	173	65.00	174	65.00	175	65.00	176	65.00	177	65.00	178	65.00	179	65.00	180	65.00
181	65.00	182	65.00	183	65.00	184	65.00	185	65.00	186	65.00	187	65.00	188	65.00	189	65.00	190	65.00
191	65.00	192	65.00	193	65.00	194	65.00	195	65.00	196	65.00	197	65.00	198	65.00	199	65.00	200	65.00
201	65.00	202	65.00	203	65.00	204	65.00	205	65.00	206	65.00	207	65.00	208	65.00	209	65.00	210	65.00
211	65.00	212	65.00	213	65.00	214	65.00	215	65.00	216	65.00	217	65.00	218	65.00	219	65.00	220	65.00
221	65.00	222	65.00	223	65.00	224	65.00	225	65.00	226	65.00	227	65.00	228	65.00	229	65.00	230	65.00
231	65.00	232	65.00	233	65.00	234	65.00	235	65.00	236	65.00	237	65.00	238	65.00	239	65.00	240	65.00
241	65.00	242	65.00	243	65.00	244	65.00	245	65.00	246	65.00	247	65.00	248	65.00	249	65.00	250	65.00
251	65.00	252	65.00	253	65.00	254	65.00	255	65.00	256	65.00	257	65.00	258	65.00	259	65.00	260	65.00
261	65.00	262	65.00	263	65.00	264	65.00	265	65.00	266	65.00	267	65.00	268	65.00	269	65.00	270	65.00
271	65.00	272	65.00	273	65.00	274	65.00	275	65.00	276	65.00	277	65.00	278	65.00	279	65.00	280	65.00
281	65.00	282	65.00	283	65.00	284	65.00	285	65.00	286	65.00	287	65.00	288	65.00	289	65.00	290	65.00
291	65.00	292	65.00	293	65.00	294	65.00	295	65.00	296	65.00	297	65.00	298	65.00	299	65.00	300	65.00
301	65.00	302	65.00	303	65.00	304	65.00	305	65.00	306	65.00	307	65.00	308	65.00	309	65.00	310	65.00
311	65.00	312	65.00	313	65.00	314	65.00	315	65.00	316	65.00	317	65.00	318	65.00	319	65.00	320	65.00
321	65.00	322	65.00	323	65.00	324	65.00	325	65.00	326	65.00	327	65.00	328	65.00	329	65.00	330	65.00
331	65.00	332	65.00	333	65.00	334	65.00	335	65.00	336	65.00	337	65.00	338	65.00	339	65.00	340	65.00
341	65.00	342	65.00	343	65.00	344	65.00	345	65.00	346	65.00	347	65.00	348	65.00	349	65.00	350	65.00
351	65.00	352	65.00	353	65.00	354	65.00	355	65.00	356	65.00	357	65.00	358	65.00	359	65.00	360	65.00
361	65.00	362	65.00	363	65.00	364	65.00	365	65.00	366	65.00	367	65.00	368	65.00	369	65.00	370	65.00
371	65.00	372	65.00	373	65.00	374	65.00	375	65.00	376	65.00	377	65.00	378	65.00	379	65.00	380	65.00
381	65.00	382	65.00	383	65.00	384	65.00	385	65.00	386	65.00	387	65.00	388	65.00	389	65.00	390	65.00
391	65.00	392	65.00	393	65.00	394	65.00	395	65.00	396	65.00	397	65.00	398	65.00	399	65.00	400	65.00
401	65.00	402	65.00	403	65.00	404	65.00	405	65.00	406	65.00	407	65.00	408	65.00	409	65.00	410	65.00
411	65.00	412	65.00	413	65.00	414	65.00	415	65.00	416	65.00	417	65.00	418	65.00	419	65.00	420	65.00
421	65.00	422	65.00	423	65.00	424	65.00	425	65.00	426	65.00	427	65.00	428	65.00	429	65.00	430	65.00
431	65.00	432	65.00	433	65.00	434	65.00	435	65.00	436	65.00	437	65.00	438	65.00	439	65.00	440	65.00
441	65.00	442	65.00	443	65.00	444	65.00	445	65.00	446	65.00	447	65.00	448	65.00	449	65.00	450	65.00
451	64.96	452	64.94	453	64.93	454	64.87	455	64.87	456	64.87	457	64.78	458	64.72	459	64.70	460	64.70
461	64.69	462	64.69	463	64.69	464	64.59	465	64.59	466	64.58	467	64.52	468	64.44	469	64.44	470	64.41
471	64.59	472	64.53	473	64.52	474	64.32	475	64.26	476	64.20	477	64.18	478	64.14	479	63.96	480	63.93
481	63.91	482	63.86	483	63.84	484	63.66	485	63.55	486	63.55	487	63.44	488	63.40	489	63.39	490	63.37
491	63.36	492	63.33	493	63.31	494	63.25	495	63.24	496	63.24	497	63.21	498	63.21	499	63.18	500	63.14
501	63.09	502	63.06	503	62.97	504	62.81	505	62.80	506	62.79	507	62.66	508	62.64	509	62.56	510	62.56
511	62.54	512	62.54	513	62.52	514	62.44	515	62.43	516	62.41	517	62.33	518	62.07	519	62.07	520	62.03
521	62.03	522	62.03	523	61.99	524	61.97	525	61.92	526	61.89	527	61.89	528	61.89	529	61.71	530	61.66
531	61.57	532	61.55	533	61.44	534	61.34	535	61.33	536	61.20	537	60.94	538	60.94	539	60.90	540	60.88
541	60.76	542	60.75	543	60.66	544	60.55	545	60.49	546	60.40	547	60.36	548	60.23	549	60.13	550	60.10
551	59.91	552	59.84	553	59.73	554	59.13	555	59.12	556	59.06	557	58.97	558	58.86	559	58.71	560	58.60
561	58.52	562	58.47	563	58.41	564	58.12	565	58.18	566	58.10	567	58.07	568	58.03	569	57.89	570	57.77
571	57.72	572	57.71	573	57.63	574	57.42	575	57.24	576	56.90	577	56.72	578	56.59	579	56.21	580	55.59
581	55.56	582	55.51	583	55.36	584	55.30	585	55.27	586	55.20	587	54.96	588	54.54	589	54.40	590	54.26
591	54.24	592	54.23	593	54.09	594	53.15	595	53.15	596	53.15	597	44.80	598	26.53	599	21.16	600	15.25





Olur Project

\* MONTHLY OUTFLOW (10\*\*6 M3) \*

NO. YEAR	< OCT >	< NOV >	< DEC >	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< TOTAL >
1	1940	37.50	33.70	58.92	108.86	122.95	117.99	135.14	103.68	53.57	32.14	31.10	867.45
2	1941	32.14	58.88	72.32	111.28	120.98	116.12	192.88	192.85	72.32	34.82	30.97	1050.38
3	1942	32.01	31.10	32.01	29.03	32.14	117.71	120.53	85.54	45.53	32.01	30.97	620.72
4	1943	32.01	30.97	32.14	80.18	121.37	116.64	126.57	131.27	66.96	34.82	30.97	836.04
5	1944	32.01	31.10	32.01	28.91	45.53	116.64	125.88	119.23	53.57	32.01	30.97	680.01
6	1945	32.01	30.97	32.14	29.03	117.85	117.03	124.31	157.60	91.07	61.60	36.88	864.63
7	1946	33.57	44.06	34.82	31.45	56.25	103.68	99.10	80.35	45.53	32.14	30.97	646.75
8	1947	32.14	31.10	32.01	47.61	126.89	113.59	124.14	133.30	58.92	34.82	33.70	800.55
9	1948	32.01	31.10	32.14	28.91	40.18	121.82	125.88	111.46	32.01	32.14	31.10	650.89
10	1949	32.01	31.10	32.01	28.91	77.67	121.82	125.95	114.05	51.02	32.01	30.97	709.66
11	1950	32.01	30.97	32.01	29.03	91.07	123.84	125.88	116.55	56.25	32.14	30.97	732.87
12	1951	58.92	41.47	34.82	61.60	115.26	116.64	125.88	119.23	77.70	40.18	31.10	944.89
13	1952	32.14	30.97	32.01	38.71	126.14	118.96	127.55	116.64	69.64	40.18	31.10	796.18
14	1953	32.01	31.10	32.14	84.67	125.88	112.56	127.55	181.50	151.63	56.25	41.47	1006.71
15	1954	32.32	33.70	32.01	29.03	32.14	88.13	120.98	80.69	32.01	32.01	30.97	576.13
16	1955	32.01	30.97	32.01	29.94	32.01	30.97	77.67	115.83	61.60	32.01	30.97	538.00
17	1956	32.01	31.10	32.01	29.03	50.89	116.28	123.21	114.18	56.25	32.01	30.97	680.08
18	1957	32.01	31.10	32.01	28.91	32.01	31.10	116.46	116.64	48.21	32.01	30.97	563.44
19	1958	32.01	30.97	32.01	29.03	32.14	116.64	123.10	115.76	45.56	37.50	30.97	657.70
20	1959	40.18	38.88	32.01	29.94	109.81	121.82	121.57	111.46	72.32	42.85	30.86	783.71
21	1960	31.07	30.84	32.01	28.91	31.98	30.51	31.20	29.68	30.28	30.43	29.88	368.76
22	1961	31.50	30.89	32.01	28.91	31.98	30.97	32.01	30.97	32.01	32.01	30.97	376.23
23	1962	32.01	30.97	32.14	28.91	52.46	116.67	143.94	227.40	122.11	83.03	31.10	932.75
24	1963	40.18	38.88	32.14	112.75	119.89	114.23	126.47	143.22	53.57	32.01	30.97	879.12
25	1964	32.01	30.97	32.01	28.91	32.01	33.70	117.85	95.90	40.18	32.01	30.97	538.52
26	1965	32.01	30.97	32.14	29.03	32.14	116.64	120.53	59.62	32.01	32.01	30.97	580.07
27	1966	32.01	30.97	32.01	28.91	32.01	30.97	93.74	82.94	93.74	40.18	30.97	560.47
28	1967	32.01	31.10	32.01	100.22	120.16	128.39	368.45	197.25	66.96	32.01	30.97	1171.68
29	1968	32.01	30.97	32.14	60.48	126.22	130.14	127.73	62.21	32.01	32.01	30.97	719.03
30	1969	32.01	30.97	32.01	28.91	32.01	33.70	69.68	30.97	32.01	32.01	30.97	417.25
31	1970	32.01	30.97	32.01	28.91	32.01	30.97	42.85	80.35	32.01	32.01	30.97	437.08
32	1971	32.01	30.97	32.01	29.94	32.01	30.97	101.78	111.46	37.50	32.01	30.97	533.63
33	1972	32.01	30.97	32.01	28.91	32.01	38.88	119.87	115.46	32.55	32.01	30.97	557.64
34	1973	32.01	30.97	32.01	28.91	32.01	30.97	56.25	44.82	32.01	32.01	30.97	414.94
35	1974	32.01	30.97	32.01	28.91	32.01	75.17	128.06	115.68	32.01	32.01	30.97	376.85
36	1975	32.01	30.97	32.01	29.94	32.01	30.97	32.01	30.97	32.01	32.01	30.97	624.40
37	1976	32.01	30.97	32.01	28.91	53.57	119.23	122.11	72.58	32.01	32.01	30.97	618.38
38	1977	32.01	30.97	32.01	28.91	77.67	119.23	125.88	90.72	32.01	32.01	30.97	664.39
39	1978	32.01	30.97	32.01	28.91	88.39	120.74	109.81	115.45	45.53	32.01	30.97	552.67
40	1979	32.01	30.97	32.01	29.94	88.39	120.74	120.49	30.97	32.01	32.01	30.97	612.51
41	1980	32.01	30.97	32.01	28.91	32.01	30.97	66.96	116.64	32.01	32.01	30.97	497.47
42	1981	32.01	30.97	32.01	28.91	32.01	30.97	105.75	25.09	7.14	20.99	29.66	407.52
43	1982	31.35	30.85	32.01	28.91	31.96	30.61	51.39	29.91	30.59	30.76	30.14	370.49
44	1983	31.60	30.90	32.01	29.94	31.98	54.43	125.88	67.39	32.01	32.01	30.97	531.13
45	1984	32.01	30.97	32.01	28.91	32.01	75.17	114.61	30.97	32.01	32.01	30.97	503.65
46	1985	32.01	30.97	32.01	28.91	32.01	51.84	116.52	111.46	32.01	32.01	30.97	562.71
47	1986	32.01	30.97	32.01	35.08	119.97	116.64	125.78	138.80	101.78	32.01	30.97	753.44
48	1987	32.01	30.97	32.01	28.91	32.01	98.50	125.88	30.97	32.01	32.01	30.97	828.04
49	1988	32.01	30.97	32.01	28.91	32.01	101.09	125.88	61.27	26.65	9.91	12.03	455.22
50	1989	32.01	30.97	32.01	28.91	32.01	101.09	125.88	61.27	26.65	9.91	12.03	524.74
TOTAL		1668.86	1602.21	1609.85	1704.66	2058.88	3166.09	4230.81	5895.94	4876.82	2495.90	1719.08	32377.28
AVE		33.38	32.04	32.20	34.09	41.18	63.32	84.62	113.92	97.54	34.38	30.96	647.55
MAX		58.92	44.06	34.82	72.32	115.26	126.89	128.39	168.45	227.40	151.63	83.03	1171.68
MIN		31.07	30.84	32.01	28.91	28.91	31.95	30.51	25.09	7.14	9.91	12.03	368.76



Olur Project

\* MONTHLY OUT (10\*\*6 M3) \*

NO. YEAR	< OCT >	< NOV >	< DEC >	< JAN >	< FEB >	< MAR >	< APR >	< MAY >	< JUN >	< JUL >	< AUG >	< SEP >	< TOTAL >
1 1940	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.07	0.0	0.0	0.0	0.0	7.07
2 1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.28	75.73	0.0	0.0	0.0	142.00
3 1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.76	0.0	0.0	0.0	13.76
5 1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.69	0.0	0.0	0.0	36.69
6 1945	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.09	0.0	0.0	0.0	12.09
7 1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 1947	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9 1948	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 1949	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13	0.0	0.0	0.13
11 1950	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 1951	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.0	0.0	0.02
13 1952	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 1953	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.36	30.58	0.0	0.0	92.94
15 1954	0.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.34	0.0	0.0	0.0	0.53
16 1955	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13	0.0	0.0	0.0	0.13
17 1956	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 1957	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 1958	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.0	0.0	0.03
20 1959	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 1960	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 1961	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23 1962	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.49	110.28	1.58	0.0	0.0	128.35
24 1963	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.67	0.0	0.0	0.0	24.67
25 1964	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 1965	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27 1966	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28 1967	0.0	0.0	0.0	0.0	0.0	0.0	0.0	247.42	79.41	0.0	0.0	0.0	332.69
29 1968	0.0	0.0	0.0	0.0	0.0	0.0	5.87	0.50	0.0	0.0	0.0	0.0	0.50
30 1969	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.04	0.0	0.0	0.0	0.0	0.04
31 1970	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32 1971	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33 1972	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.40	0.0	0.0	0.40
34 1973	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	0.0	0.0	0.0	0.76
35 1974	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36 1975	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37 1976	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38 1977	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39 1978	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40 1979	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41 1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42 1981	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.00
43 1982	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44 1983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45 1984	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46 1985	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47 1986	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.20	0.13	0.0	0.0	0.0	34.33
48 1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.02	0.0	0.0	0.0	19.02
49 1988	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50 1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
TOTAL	0.18	0.0	0.0	0.0	0.0	0.0	5.87	371.99	435.36	32.75	0.0	0.0	846.14
AVE	0.00	0.0	0.0	0.0	0.0	0.0	0.12	7.44	8.71	0.65	0.0	0.0	16.92
MAX	0.18	0.0	0.0	0.0	0.0	0.0	5.87	247.42	110.28	30.58	0.0	0.0	332.69
MIN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Ayvai Project

STILL : OLTU RIVER AYVALI PROJECT

YIYI SII (HMAX) : 930.00  
 YIYI SII (HMIN) : 908.00  
 #DNI SII (HNWL) : 922.67  
 #DNI SII (HTWL) : 700.00  
 YIYI #DNI (QMAX) : 67.00  
 YIYI #DNI (QMIN) : 16.62  
 YIYI #DNI (VMAX) : 0.15000E+09  
 YIYI #DNI (VMIN) : 0.0  
 YIYI #DNI (SMAX) : 1736.11  
 YIYI #DNI (SMIN) : 0.0

\* KST = 1  
 \* KMAX = 600  
 \* DELTS = 50.00  
 \* DELTQ = 2.00

\* NP = 1  
 \* NDAN = 1  
 \* TPEAK = 6.00  
 \* QMAX = 67.00  
 \* QMIN = 16.62  
 \* TPEAK = 0.0  
 \* QMAX = 0.0  
 \* QMIN = 0.0

\* WZN = 0.013  
 \* WZD = 5.200  
 \* WZL = 9100.0  
 \* TZN = 0.912  
 \* TZD = 4.100  
 \* TZL = 380.0  
 \* HLOSS = 11.00

\* MET = 2  
 \* MEG = 2  
 \* MEH = 3

Q/QMAX ( EATERT ) 0.0 1.00000 1.00000 1.00000  
 PT/PTMAX ( EATERG ) 0.0 1.00000 1.00000 1.00000

HE/HES ( EATERH ) 0.93069 0.88750 1.00000 0.89950 1.03462 0.89950

\* RANK = 3  
 1 -9999.00 -9999.00 0.7427475D+00 -0.1286080D+04 0.5553920D+06  
 2 920.00 859.95 -0.2698631D-03 0.8811525D+02 -0.7997766D+05  
 3 9999.00 9999.00 0.0 0.0 0.0

\* RARE = 8  
 1 -9999.00 -9999.00 -0.1599999D+00 0.2975999D+03 -0.1362400D+06  
 2 830.00 544.00 0.6000000D+00 -0.2647000D+03 0.3879050D+06  
 3 850.00 1410.00 0.1700000D+00 -0.2460000D+03 0.8768500D+05  
 4 870.00 2338.00 0.1740000D+01 -0.2987100D+04 0.1284109D+07  
 5 890.00 3844.00 0.8850000D+00 -0.1497050D+04 0.6352100D+06  
 6 910.00 5763.00 0.1230000D+01 -0.2140000D+04 0.9346000D+06

Ayvati Project

7 930.00 8227.00 -0.15450000+01 0.30834500+04 -0.15231110+07  
8 9999.00 9999.00 0.0 0.0 0.0 7.60 60.10100.90138.60176.00171.80131.90  
9 \* EM = 66.80 13.60 0.0 0.0 0.0

Ayvali Project

AYVALI : OLTU RIVER AYVALI YILDIZLIYUZE 7"-3

NO.	70	100	110	120	130	20	30	40	50	60	70	80	90
1	1940	3.45 (31)	3.31 (30)	2.76 (31)	1.48 (31)	2.66 (28)	3.88 (31)	14.32 (31)	28.51 (30)	10.08 (30)	5.03 (31)	2.82 (31)	2.04 (30)
2	1941	3.12 (31)	3.24 (30)	3.18 (31)	2.76 (31)	3.01 (28)	4.46 (31)	11.23 (31)	36.72 (30)	18.74 (30)	6.76 (31)	3.38 (31)	2.77 (30)
3	1942	3.26 (31)	3.23 (30)	2.89 (31)	2.48 (31)	2.39 (28)	2.61 (31)	6.81 (31)	17.43 (30)	8.38 (30)	4.34 (31)	2.49 (31)	1.64 (30)
4	1943	2.20 (31)	2.62 (30)	2.29 (31)	2.12 (31)	2.25 (28)	4.26 (31)	10.20 (30)	30.38 (30)	12.80 (30)	6.35 (31)	3.39 (31)	2.75 (30)
5	1944	2.90 (31)	3.13 (30)	2.39 (31)	2.27 (31)	2.10 (28)	2.40 (31)	5.41 (30)	17.02 (30)	16.62 (30)	5.24 (31)	2.56 (31)	1.91 (30)
6	1945	2.22 (31)	2.43 (30)	2.19 (31)	2.09 (31)	2.07 (28)	2.54 (31)	6.74 (30)	21.42 (30)	24.69 (30)	8.46 (31)	5.94 (31)	3.85 (30)
7	1946	5.12 (31)	4.28 (30)	3.39 (31)	3.18 (31)	3.10 (28)	5.35 (31)	9.95 (30)	9.52 (30)	7.89 (30)	4.41 (31)	1.98 (31)	2.16 (30)
8	1947	2.37 (31)	3.58 (30)	2.60 (31)	2.28 (31)	2.16 (28)	2.17 (31)	7.71 (30)	20.83 (30)	22.74 (30)	5.65 (31)	3.30 (31)	3.45 (30)
9	1948	2.98 (31)	2.81 (30)	2.53 (31)	2.14 (31)	2.05 (28)	2.51 (31)	4.61 (30)	22.47 (30)	10.86 (30)	3.14 (31)	2.13 (31)	2.03 (30)
10	1949	2.52 (31)	2.31 (30)	2.06 (31)	1.91 (31)	2.01 (28)	3.21 (31)	10.14 (30)	22.29 (30)	12.62 (30)	4.97 (31)	2.61 (31)	1.97 (30)
11	1950	3.60 (31)	3.06 (30)	2.63 (31)	2.49 (31)	2.32 (28)	3.64 (31)	8.62 (30)	18.95 (30)	14.80 (30)	5.41 (31)	2.87 (31)	3.36 (30)
12	1951	5.59 (31)	4.11 (30)	3.34 (31)	2.96 (31)	3.16 (28)	3.38 (31)	14.13 (30)	23.11 (30)	16.32 (30)	7.46 (31)	3.82 (31)	3.02 (30)
13	1952	2.77 (31)	2.83 (30)	2.82 (31)	2.58 (31)	2.60 (28)	2.91 (31)	8.14 (30)	22.00 (30)	16.01 (30)	6.64 (31)	3.85 (31)	2.78 (30)
14	1953	2.64 (31)	2.82 (30)	2.55 (31)	2.42 (31)	2.50 (28)	3.56 (31)	8.14 (30)	24.93 (30)	23.28 (30)	14.32 (31)	5.29 (31)	3.73 (30)
15	1954	3.59 (31)	3.20 (30)	2.89 (31)	2.46 (31)	2.26 (28)	2.68 (31)	5.65 (30)	15.79 (30)	8.02 (30)	1.81 (31)	0.94 (31)	0.95 (30)
16	1955	1.68 (31)	1.82 (30)	2.05 (31)	1.86 (31)	2.33 (28)	2.75 (31)	6.86 (30)	12.45 (30)	13.47 (30)	6.00 (31)	3.13 (31)	2.64 (30)
17	1956	3.03 (31)	2.62 (30)	2.52 (31)	2.33 (31)	2.53 (28)	4.11 (31)	9.35 (30)	15.49 (30)	12.26 (30)	5.41 (31)	2.44 (31)	2.43 (30)
18	1957	2.83 (31)	3.18 (30)	2.69 (31)	2.45 (31)	2.34 (28)	2.86 (31)	5.47 (30)	11.39 (30)	11.53 (30)	4.66 (31)	2.42 (31)	2.48 (30)
19	1958	2.55 (31)	2.40 (30)	2.23 (31)	2.26 (31)	2.01 (28)	2.85 (31)	8.07 (30)	18.66 (30)	12.31 (30)	4.54 (31)	3.59 (31)	3.11 (30)
20	1959	3.68 (31)	3.82 (30)	3.00 (31)	2.76 (31)	2.96 (28)	3.62 (31)	11.05 (30)	19.19 (30)	10.80 (30)	6.82 (31)	4.30 (31)	3.16 (30)
21	1960	2.03 (31)	1.87 (30)	1.83 (31)	1.55 (31)	1.47 (28)	1.57 (31)	3.43 (30)	7.23 (30)	3.88 (30)	0.89 (31)	0.44 (31)	0.30 (30)
22	1961	0.89 (31)	1.17 (30)	1.40 (31)	1.15 (31)	1.18 (28)	2.35 (31)	6.38 (30)	12.45 (30)	6.74 (30)	3.04 (31)	1.28 (31)	1.04 (30)
23	1962	1.03 (31)	1.26 (30)	1.11 (31)	1.26 (31)	1.20 (28)	1.59 (31)	12.74 (30)	30.73 (30)	22.07 (30)	11.57 (31)	7.76 (31)	5.00 (30)
24	1963	4.31 (31)	3.82 (30)	2.64 (31)	2.06 (31)	1.81 (28)	2.92 (31)	12.26 (30)	25.28 (30)	18.13 (30)	5.07 (31)	1.95 (31)	1.79 (30)
25	1964	1.85 (31)	1.81 (30)	1.80 (31)	1.38 (31)	1.34 (28)	3.54 (31)	10.02 (30)	13.21 (30)	8.56 (30)	4.57 (31)	2.31 (31)	1.67 (30)
26	1965	3.17 (31)	2.30 (30)	2.11 (31)	2.15 (31)	2.19 (28)	2.61 (31)	10.20 (30)	18.25 (30)	5.84 (30)	1.96 (31)	1.18 (31)	1.49 (30)
27	1966	1.88 (31)	1.73 (30)	1.46 (31)	1.36 (31)	1.14 (28)	1.51 (31)	4.06 (30)	21.12 (30)	8.20 (30)	8.81 (31)	4.00 (31)	2.30 (30)
28	1967	2.48 (31)	2.48 (30)	2.35 (31)	2.05 (31)	1.91 (28)	3.72 (31)	31.70 (30)	34.49 (30)	19.16 (30)	6.24 (31)	3.10 (31)	2.58 (30)
29	1968	2.71 (31)	3.11 (30)	2.22 (31)	1.67 (31)	1.53 (28)	3.18 (31)	13.77 (30)	25.87 (30)	6.08 (30)	1.84 (31)	1.77 (31)	1.67 (30)

Ayvali Project

30	1969	2.82	2.09	2.07	1.70	1.59	2.33	10.86	8.64	2.97	2.27	1.15	1.41
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
31	1970	1.64	1.49	1.15	1.12	0.90	1.87	5.12	16.26	7.84	1.42	3.48	1.06
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
32	1971	1.56	1.72	1.65	1.39	1.53	1.92	10.44	13.91	10.86	3.65	1.66	2.43
		(31)	(30)	(31)	(31)	(29)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
33	1972	2.61	2.48	1.96	1.87	2.22	2.37	7.23	14.62	10.80	3.69	1.06	1.38
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(30)	(30)
34	1973	2.35	2.27	1.53	1.20	1.21	2.12	4.05	14.97	4.73	1.31	1.21	2.44
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
35	1974	1.20	1.30	1.56	1.46	1.16	1.76	6.86	8.11	5.14	1.84	0.81	1.22
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
36	1975	1.81	1.74	0.96	1.14	1.16	2.86	10.26	24.35	12.56	5.24	2.25	2.24
		(31)	(30)	(31)	(31)	(29)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
37	1976	2.56	2.41	2.24	1.75	2.02	2.43	7.08	13.87	5.37	2.14	1.33	1.78
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
38	1977	1.99	1.91	1.68	1.67	2.14	2.94	7.25	17.82	6.51	1.65	1.11	1.32
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
39	1978	1.65	1.79	1.71	1.65	1.87	2.14	7.02	10.96	8.32	3.55	1.31	1.28
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
40	1979	2.49	3.40	2.46	2.09	2.01	2.96	12.12	10.52	2.18	1.01	1.35	1.26
		(31)	(30)	(31)	(31)	(29)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
41	1980	1.57	1.56	1.48	1.41	1.47	1.73	4.82	8.93	12.35	1.90	1.41	1.40
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
42	1981	1.59	1.88	1.31	2.17	2.31	2.31	16.20	28.75	12.58	3.19	0.88	1.81
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
43	1982	1.72	1.43	1.12	1.27	1.90	2.35	4.82	3.25	3.70	0.29	0.29	2.56
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
44	1983	1.72	2.72	1.85	1.67	1.56	2.27	8.68	16.88	5.09	2.36	2.74	2.08
		(31)	(30)	(31)	(31)	(29)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
45	1984	1.53	1.97	1.31	2.84	2.27	2.84	6.94	0.75	0.85	1.35	0.88	1.47
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
46	1985	0.75	2.04	1.38	1.87	2.56	2.09	7.33	10.07	6.56	2.05	1.96	0.35
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
47	1986	0.71	2.57	1.68	2.87	2.40	3.14	9.07	25.01	9.14	5.68	0.19	1.62
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
48	1987	1.75	1.99	1.63	1.55	1.81	2.40	9.10	15.88	14.53	6.99	2.36	2.32
		(31)	(30)	(31)	(31)	(29)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
49	1988	2.80	2.30	1.92	1.65	1.56	3.14	9.24	3.17	1.19	0.81	0.76	1.06
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)
50	1989	1.96	1.91	1.90	1.37	1.42	2.84	10.50	15.34	4.70	2.26	1.19	1.34
		(31)	(30)	(31)	(31)	(28)	(31)	(30)	(31)	(30)	(31)	(31)	(30)

COEFFW= 0.2406213E-02 COEFFT= 0.3041271E-03 HLOSS= 0.1100000E+02

HEGMAX= 0.2116699E+03 PTMAX = 0.1250147E+06 PMAX= 0.1250000E+03

SHT = 0.2226699E+03 SHL = 0.1100000E+02 SHE = 0.2116699E+03 SETG = 0.8995000E+00 PINST= 0.1250147E+03

Ayvahi Project

\*\*\* DYNAMIC PROGRAMING OF RESERVOIR (INPUT DATA) \*\*\*

CASE \* OLTU RIVER FEASIBILITY STUDY

\* KST = 1  
 \* KMAX = 600  
 \* IMAX = 37  
 \* DELTS = 50.0 (TD)  
 \* LMAX = 27  
 \* DELTG = 2.0 (TD)  
 \* QMINO = 16.62 (TD)

\* HLAST = 930.00 (M) \* SLAST = 1736.1 (TD)  
 \* HSTAT = 930.00 (M) \* SSTAT = 1736.1 (TD)

Iteration	0.0 (908.0)	2	50.0 (908.8)	3	100.0 (909.6)	4	150.0 (910.3)	5	200.0 (911.1)
1	0.0 (908.0)	2	50.0 (908.8)	3	100.0 (909.6)	4	150.0 (910.3)	5	200.0 (911.1)
6	250.0 (911.8)	7	300.0 (912.5)	8	350.0 (913.3)	9	400.0 (914.0)	10	450.0 (914.6)
11	500.0 (915.3)	12	550.0 (916.0)	13	600.0 (916.7)	14	650.0 (917.3)	15	700.0 (918.0)
16	750.0 (918.6)	17	800.0 (919.3)	18	850.0 (919.9)	19	900.0 (920.5)	20	950.0 (921.0)
21	1000.0 (921.6)	22	1050.0 (922.2)	23	1100.0 (922.7)	24	1150.0 (923.3)	25	1200.0 (923.9)
26	1250.0 (924.5)	27	1300.0 (925.0)	28	1350.0 (925.6)	29	1400.0 (926.2)	30	1450.0 (926.7)
31	1500.0 (927.3)	32	1550.0 (927.9)	33	1600.0 (928.4)	34	1650.0 (929.0)	35	1700.0 (929.6)
36	1736.1 (930.0)	37	1736.1 (930.0)						

\* LMAX = 27 (TD)  
 1 16.6 2 18.0 3 20.0 4 22.0 5 24.0 6 26.0 7 28.0 8 30.0 9 32.0 10 34.0  
 11 36.0 12 38.0 13 40.0 14 42.0 15 44.0 16 46.0 17 48.0 18 50.0 19 52.0 20 54.0  
 21 56.0 22 58.0 23 60.0 24 62.0 25 64.0 26 66.0 27 67.0



Ayvali Project

\*\*\* OPTIMAL SCHEDULE \*\*\*

NO.	YEAR	MON	DAY	H (M)	S (M3/SD)	GIN (M3/SD)	GG (M3/SD)	GOUT (M3/SD)	P (MM)	E (GMW)	T (H)	ETG (M3/S)	GCR (M3/S)	GUP (M3/S)	LOSS (M)	SUII (M)
1	1940	10	31	929.7	1712.8	541.1	( 17.45)	558.0	( 18.00)	125.00	24.99	0.897	67.00	67.00	11.00	929.87
2		11	30	928.5	1600.9	489.4	( 16.31)	600.0	( 20.00)	125.00	26.87	0.897	67.00	67.00	11.00	929.10
3		12	31	927.3	1499.0	456.1	( 14.71)	558.0	( 18.00)	125.00	24.99	0.896	67.00	67.00	11.00	927.88
4		1	31	929.6	1699.8	759.7	( 24.48)	558.0	( 18.00)	125.00	24.99	0.899	67.00	67.00	11.00	928.44
5		2	28	929.5	1690.2	1334.4	( 47.68)	1344.0	( 48.00)	125.00	62.14	0.899	64.89	64.89	11.00	929.53
6		3	31	925.6	1534.8	1543.4	( 49.79)	1798.0	( 58.00)	125.00	82.55	0.899	65.34	65.34	11.00	928.02
7		4	30	925.1	1503.4	1794.0	( 59.80)	1920.0	( 64.00)	125.00	87.26	0.899	66.01	66.01	11.00	925.81
8		5	31	930.0	1736.1	2447.9	( 78.96)	2001.9	( 64.58)	4.5	91.71	0.899	65.49	65.49	11.00	927.53
9		6	30	925.1	1305.2	1502.3	( 50.08)	1920.0	( 64.00)	125.00	85.97	0.896	67.00	67.00	11.00	927.54
10		7	31	927.4	1507.9	776.0	( 25.03)	558.0	( 18.00)	125.00	24.99	0.894	67.00	67.00	11.00	926.24
11		8	31	926.1	1393.8	459.5	( 14.82)	558.0	( 18.00)	125.00	24.99	0.894	67.00	67.00	11.00	926.74
12		9	30	924.6	1263.4	421.3	( 14.04)	540.0	( 18.00)	125.00	24.18	0.894	67.00	67.00	11.00	925.35
						1043.7	( 34.43)	1076.2	( 35.55)	125.00	48.80	0.897	2022.	2022.	11.00	927.67
13	1941	10	31	923.5	1168.4	488.8	( 15.12)	558.0	( 18.00)	125.00	24.99	0.894	67.00	67.00	11.00	924.06
14		11	30	924.3	1234.3	607.1	( 20.26)	540.0	( 18.00)	125.00	24.18	0.893	67.00	67.00	11.00	923.90
15		12	31	921.5	992.1	501.7	( 16.18)	744.0	( 24.00)	125.00	33.31	0.892	67.00	67.00	11.00	922.89
16		1	31	924.3	1232.5	922.4	( 29.74)	682.0	( 22.00)	125.00	30.54	0.895	67.00	67.00	11.00	922.88
17		2	28	918.4	734.9	1372.4	( 49.01)	1869.9	( 66.78)	123.69	83.11	0.898	66.79	66.79	11.00	921.34
18		3	31	911.6	235.2	1538.5	( 49.63)	2037.6	( 65.73)	117.47	87.53	0.893	65.78	65.78	11.00	915.01
19		4	30	908.0	0.0	1680.8	( 56.03)	1911.9	( 63.73)	112.45	79.47	0.889	64.93	64.93	11.00	909.80
20		5	31	925.4	1329.8	3370.7	( 108.73)	2034.4	( 65.63)	116.79	86.84	0.893	65.66	65.66	11.00	916.68
21		6	30	930.0	1736.1	2794.2	( 93.14)	2010.0	( 67.00)	125.00	90.00	0.895	67.00	67.00	11.00	927.68
22		7	31	929.7	1712.0	1046.6	( 33.76)	1054.0	( 34.00)	125.00	47.19	0.897	67.00	67.00	11.00	929.86
23		8	31	929.0	1645.5	507.9	( 16.38)	558.0	( 18.00)	125.00	24.99	0.897	67.00	67.00	11.00	929.34
24		9	30	927.7	1594.7	441.5	( 14.72)	540.0	( 18.00)	125.00	24.18	0.896	67.00	67.00	11.00	928.33
						1271.0	( 41.89)	1411.6	( 40.07)	125.00	53.01	0.894	2026.	2026.	11.00	922.65
25	1942	10	31	926.6	1442.2	471.6	( 15.21)	558.0	( 18.00)	125.00	24.99	0.896	67.00	67.00	11.00	927.17
26		11	30	925.7	1357.9	456.9	( 15.23)	540.0	( 18.00)	125.00	24.18	0.896	67.00	67.00	11.00	926.16
27		12	31	924.6	1259.8	459.9	( 14.84)	558.0	( 18.00)	125.00	24.99	0.894	67.00	67.00	11.00	925.12
28		1	31	923.3	1150.7	449.0	( 14.48)	558.0	( 18.00)	125.00	24.99	0.894	67.00	67.00	11.00	923.94
29		2	28	922.2	1049.6	403.9	( 14.35)	504.0	( 18.00)	125.00	22.57	0.895	67.00	67.00	11.00	922.74
30		3	31	921.4	986.6	458.8	( 14.61)	515.2	( 16.62)	119.28	22.32	0.895	66.08	66.08	11.00	921.80
31		4	30	924.2	1228.2	1566.6	( 52.22)	1820.0	( 44.00)	125.00	59.10	0.894	67.00	67.00	11.00	922.82
32		5	31	922.8	1108.9	1955.3	( 62.43)	2046.0	( 66.00)	125.00	91.61	0.892	67.00	67.00	11.00	923.52
33		6	30	929.3	1678.6	1241.4	( 41.38)	660.0	( 22.00)	125.00	29.55	0.894	67.00	67.00	11.00	926.09
34		7	31	929.6	1703.6	661.5	( 21.34)	620.0	( 20.00)	125.00	27.76	0.897	67.00	67.00	11.00	929.49
35		8	31	928.2	1576.9	447.5	( 14.44)	558.0	( 18.00)	125.00	24.99	0.897	67.00	67.00	11.00	928.91
36		9	30	926.5	1432.5	407.8	( 13.59)	540.0	( 18.00)	125.00	24.18	0.896	67.00	67.00	11.00	927.36
						746.1	( 24.51)	748.1	( 24.55)	124.52	33.43	0.895	2036.	2036.	11.00	925.43
37	1943	10	31	925.1	1307.2	438.6	( 14.15)	558.0	( 18.00)	125.00	24.99	0.897	67.00	67.00	11.00	925.82
38		11	30	923.9	1203.2	437.2	( 14.57)	540.0	( 18.00)	125.00	24.18	0.897	67.00	67.00	11.00	924.51
39		12	31	922.6	1088.1	442.7	( 14.29)	558.0	( 18.00)	125.00	24.99	0.897	67.00	67.00	11.00	923.26
40		1	31	921.7	1010.5	437.6	( 14.12)	515.2	( 16.62)	122.37	22.76	0.898	66.62	66.48	11.00	922.16
41		2	29	927.6	1521.7	993.2	( 34.35)	482.0	( 16.62)	125.00	21.78	0.899	66.39	66.39	11.00	924.64
42		3	31	928.1	1569.7	1536.6	( 49.57)	1488.0	( 48.00)	125.00	68.26	0.899	65.40	65.40	11.00	927.83
43		4	30	925.0	1300.0	1655.9	( 55.20)	1920.0	( 64.00)	125.00	87.56	0.899	65.78	65.78	11.00	926.56
44		5	31	929.7	1714.1	2406.9	( 77.64)	1984.0	( 64.00)	125.00	90.83	0.899	65.53	65.53	11.00	927.39
45		6	30	929.4	1684.3	1903.4	( 63.45)	1820.0	( 64.00)	125.00	85.97	0.897	67.00	67.00	11.00	929.58
46		7	31	929.7	1709.6	971.9	( 31.35)	930.0	( 30.00)	125.00	41.64	0.897	67.00	67.00	11.00	929.55
47		8	31	929.4	1686.2	508.1	( 16.39)	515.2	( 16.62)	122.06	22.76	0.897	67.00	67.00	11.00	929.56
48		9	30	928.6	1616.2	441.0	( 14.70)	498.6	( 16.62)	122.19	21.99	0.897	67.00	66.48	11.00	929.03
						1014.4	( 33.31)	992.4	( 32.54)	124.30	44.80	0.898	2030.	2027.	11.00	926.66

\*\*\* OPTIMAL SCHEDULE \*\*\*

Ayvali Project

NO.	YEAR	MON	DAY	H (M)	S (M3/SD)	GIN (M3/SD)	QG (M3/SD)	GOUT (M3/SD)	P (MW)	E (GWH)	T (H)	ETG (M3/S)	QCR (M3/S)	GUP (M3/S)	LOSS (CM)	SUII (CM)	
49	1944	10	31	927.5	1555.3	460.5( 14.85)	515.2( 16.62)	0.0	122.73	22.83	6.0	0.898	67.00	66.48	11.00	928.28	
50		11	30	927.4	1509.6	454.0( 15.13)	498.6( 16.62)	0.0	123.43	22.22	6.0	0.899	67.00	66.48	11.00	927.67	
51		12	31	926.6	1438.8	444.6( 14.74)	515.2( 16.62)	0.0	124.28	23.12	6.0	0.899	66.87	66.27	11.00	926.19	
52		1	31	925.6	1366.0	442.4( 14.27)	515.2( 16.62)	0.0	125.00	23.32	6.0	0.899	66.27	66.27	11.00	925.37	
53		2	28	925.0	1394.1	393.5( 14.05)	465.4( 16.62)	0.0	125.00	21.10	6.0	0.899	66.15	66.15	11.00	925.44	
54		3	31	925.9	1379.7	691.4( 19.40)	515.2( 16.62)	0.0	125.00	55.01	14.7	0.899	65.44	65.44	11.00	927.68	
55		4	30	929.4	1686.8	1512.4( 50.41)	1800.0( 40.00)	0.0	125.00	89.31	23.0	0.899	66.65	66.65	11.00	929.39	
56		5	31	929.3	1677.8	1984.5( 64.02)	1984.0( 64.00)	0.0	125.00	83.28	22.2	0.897	67.00	67.00	11.00	929.37	
57		6	30	929.4	1683.2	1878.5( 62.62)	1860.0( 62.00)	0.0	125.00	33.31	8.6	0.897	67.00	67.00	11.00	929.52	
58		7	31	929.6	1705.1	782.4( 25.24)	744.0( 24.00)	0.0	122.46	22.78	6.0	0.898	67.00	66.48	11.00	929.18	
59		8	31	928.7	1623.3	449.7( 14.51)	515.2( 16.62)	0.0	123.20	22.18	6.0	0.898	67.00	66.48	11.00	928.17	
60		9	30	927.6	1528.2	415.8( 13.86)	498.6( 16.62)	0.0	124.26	16.82	6.0	0.899	2027.	2020.	11.00	927.77	
						818.3( 26.89)	818.9( 26.91)	0.0									
61	1945	10	31	926.7	1446.1	439.2( 14.17)	515.2( 16.62)	0.0	124.18	23.10	6.0	0.899	66.92	66.48	11.00	927.16	
62		11	30	925.9	1377.6	431.3( 14.58)	498.6( 16.62)	0.0	125.00	23.53	6.0	0.899	66.39	66.39	11.00	926.30	
63		12	31	925.0	1302.2	439.8( 14.19)	515.2( 16.62)	0.0	125.00	23.38	6.0	0.899	66.12	66.12	11.00	925.48	
64		1	31	924.2	1233.8	436.8( 14.09)	515.2( 16.62)	0.0	125.00	23.28	6.0	0.899	66.39	66.39	11.00	924.60	
65		2	28	923.5	1152.3	393.9( 14.07)	465.4( 16.62)	0.0	124.67	20.95	6.0	0.899	66.65	66.48	11.00	923.74	
66		3	31	927.8	1540.3	1442.6( 46.54)	1094.0( 34.00)	0.0	125.00	47.84	12.3	0.899	66.09	66.09	11.00	925.55	
67		4	30	923.1	1129.5	1556.8( 51.89)	1962.1( 65.40)	0.0	125.00	89.01	23.7	0.899	66.13	66.13	11.00	925.42	
68		5	31	923.5	1146.6	2102.6( 67.82)	2077.0( 67.00)	0.0	125.00	93.00	24.0	0.895	67.00	67.00	11.00	926.17	
69		6	30	929.4	1683.8	2558.8( 85.29)	2010.0( 67.00)	0.0	125.00	90.00	24.0	0.894	67.00	67.00	11.00	926.34	
70		7	31	924.4	1247.5	1316.3( 42.46)	1736.0( 56.00)	0.0	125.00	77.73	20.1	0.895	67.00	67.00	11.00	926.91	
71		8	31	928.1	1571.8	897.1( 28.94)	538.0( 18.00)	0.0	125.00	24.99	6.4	0.895	67.00	67.00	11.00	926.27	
72		9	30	927.6	1525.2	565.5( 18.85)	600.0( 20.00)	0.0	125.00	26.87	7.2	0.896	67.00	67.00	11.00	927.86	
						1048.4( 34.39)	1042.2( 34.21)	0.0	124.90	46.89		0.898	2027.	2025.	11.00	925.75	
73	1946	10	31	929.3	1677.8	778.7( 25.12)	620.0( 20.00)	0.0	125.00	27.76	7.2	0.897	67.00	67.00	11.00	928.46	
74		11	30	929.8	1714.9	638.4( 21.28)	600.0( 20.00)	0.0	125.00	26.87	7.2	0.898	67.00	67.00	11.00	929.55	
75		12	31	929.7	1707.7	508.1( 16.39)	515.2( 16.62)	0.0	124.21	23.46	6.0	0.899	66.90	66.48	11.00	929.72	
76		1	31	929.5	1694.2	501.7( 16.18)	515.2( 16.62)	0.0	125.00	23.34	6.0	0.899	66.24	66.24	11.00	929.60	
77		2	28	929.4	1679.8	450.9( 16.10)	465.4( 16.62)	0.0	125.00	21.26	6.1	0.899	65.66	65.66	11.00	929.44	
78		3	31	929.5	1690.0	817.0( 26.35)	806.0( 26.00)	0.0	125.00	36.65	9.5	0.899	65.97	65.97	11.00	929.42	
79		4	30	923.9	1203.0	1498.6( 49.95)	1980.0( 66.00)	0.0	125.00	88.66	23.6	0.897	67.00	67.00	11.00	926.69	
80		5	31	922.6	1086.4	1442.0( 46.52)	1550.0( 50.00)	0.0	125.00	69.40	17.9	0.893	67.00	67.00	11.00	923.25	
81		6	30	929.6	1701.7	1166.8( 38.89)	540.0( 18.00)	0.0	125.00	24.18	6.4	0.895	67.00	67.00	11.00	926.10	
82		7	31	929.9	1728.6	663.6( 21.61)	620.0( 20.00)	0.0	125.00	27.76	7.2	0.898	67.00	67.00	11.00	929.76	
83		8	31	928.8	1630.4	433.3( 13.98)	515.2( 16.62)	0.0	123.38	22.95	6.0	0.899	67.00	66.48	11.00	929.35	
84		9	30	927.8	1542.9	423.4( 14.11)	498.6( 16.62)	0.0	124.36	22.38	6.0	0.899	66.82	66.48	11.00	928.29	
						776.0( 25.52)	768.8( 25.26)	0.0	124.75	34.53		0.898	2029.	2026.	11.00	928.30	
85	1947	10	31	926.9	1467.2	445.6( 14.37)	515.2( 16.62)	0.0	125.00	23.31	6.0	0.899	66.30	66.30	11.00	927.36	
86		11	30	926.6	1434.8	467.4( 15.58)	498.6( 16.62)	0.0	125.00	22.67	6.0	0.899	65.99	65.99	11.00	926.75	
87		12	31	925.8	1370.6	451.0( 14.55)	515.2( 16.62)	0.0	125.00	23.46	6.1	0.899	65.90	65.90	11.00	926.19	
88		1	31	925.0	1298.1	442.7( 14.28)	515.2( 16.62)	0.0	125.00	23.57	6.0	0.899	66.13	66.13	11.00	925.41	
89		2	29	926.5	1429.7	613.6( 21.16)	482.0( 16.62)	0.0	125.00	21.90	6.0	0.899	66.03	66.03	11.00	925.75	
90		3	31	929.9	1724.9	1335.8( 49.54)	1240.0( 40.00)	0.0	125.00	56.98	14.7	0.899	65.29	65.29	11.00	928.19	
91		4	30	926.9	1465.3	1346.1( 51.54)	1800.0( 60.00)	0.0	125.00	82.78	22.1	0.899	65.23	65.23	11.00	928.39	
92		5	31	927.2	1492.7	2082.5( 67.18)	2046.0( 66.00)	0.0	125.00	91.61	24.0	0.897	67.00	67.00	11.00	927.06	
93		6	30	929.5	1695.0	2324.8( 74.16)	2010.0( 67.00)	0.0	125.00	90.00	24.0	0.896	67.00	67.00	11.00	928.38	
94		7	31	929.9	1729.5	857.1( 27.65)	806.0( 26.00)	0.0	125.00	36.09	9.3	0.897	67.00	67.00	11.00	929.75	
95		8	31	929.6	1703.4	505.4( 16.30)	515.2( 16.62)	0.0	122.87	22.85	6.0	0.898	67.00	66.48	11.00	929.78	
96		9	30	929.4	1685.9	493.6( 16.45)	498.6( 16.62)	0.0	123.87	22.30	6.0	0.899	67.00	66.48	11.00	929.53	
						972.1( 31.90)	953.5( 31.28)	0.0	124.73	43.11		0.899	2023.	2020.	11.00	927.71	

\*\*\* OPTIMAL SCHEDULE \*\*\*

Ayvali Project

NO.	YEAR	MON	DAY	H	S	QIN	Gd	GOUT	P	E	T	ETG	GCR	GUP	LOSS	SUII
				(M)	(M3/SD)	(M3/SD)	(M3/SD)	(M3/SD)	(MW)	(GWH)	(H)	(M3/S)	(M3/S)	(M)	(M)	(M)
97	1948	10	31	928.8	1627.1	462.7	(14.93)	515.2	(16.62)	23.21	6.0	0.899	66.59	66.48	11.00	929.09
98		11	30	928.1	1571.4	442.3	(14.81)	498.6	(16.62)	22.64	6.0	0.899	66.06	66.06	11.00	928.44
99		12	31	927.4	1509.6	450.4	(14.53)	515.2	(16.62)	23.50	6.0	0.899	65.43	65.43	11.00	927.75
100		1	31	926.5	1429.6	438.2	(14.14)	515.2	(16.62)	23.54	6.1	0.899	65.67	65.67	11.00	926.94
101		2	28	925.7	1356.3	392.1	(14.00)	485.4	(16.62)	21.18	6.1	0.899	65.93	65.93	11.00	926.08
102		3	31	926.0	1383.3	542.9	(17.51)	515.2	(16.62)	23.42	6.0	0.899	66.01	66.01	11.00	925.82
103		4	30	928.5	1606.3	1548.3	(51.61)	1320.0	(44.00)	60.39	16.1	0.899	65.57	65.57	11.00	927.25
104		5	31	930.0	1736.1	2153.5	(69.47)	2042.6	(64.92)	91.69	23.7	0.899	65.85	65.85	11.00	929.26
105		6	30	929.8	1718.8	1615.9	(53.86)	1680.0	(54.00)	72.54	19.3	0.899	67.00	67.00	11.00	929.90
106		7	31	929.1	1654.7	467.8	(15.09)	515.2	(16.62)	22.77	6.0	0.898	67.00	66.48	11.00	929.44
107		8	31	928.0	1561.5	438.1	(14.13)	515.2	(16.62)	22.89	6.0	0.898	67.00	66.48	11.00	928.54
108		9	30	927.0	1471.8	421.0	(14.03)	498.6	(16.62)	22.32	6.0	0.899	67.00	66.48	11.00	927.49
						781.3	(25.68)	792.2	(26.04)	35.85		0.899	2015.	2011.	11.00	928.00
109	1949	10	31	926.2	1399.0	448.5	(14.47)	515.2	(16.62)	23.26	6.0	0.899	66.46	66.46	11.00	926.57
110		11	30	925.3	1328.6	429.4	(14.31)	498.6	(16.62)	22.65	6.0	0.899	66.03	66.03	11.00	925.75
111		12	31	924.4	1247.7	434.3	(14.01)	515.2	(16.62)	23.31	6.0	0.899	66.30	66.30	11.00	924.89
112		1	31	923.5	1163.8	431.3	(13.91)	515.2	(16.62)	23.21	6.0	0.899	66.59	66.48	11.00	923.95
113		2	28	922.6	1089.4	391.0	(13.96)	465.4	(16.62)	20.88	6.0	0.899	66.87	66.48	11.00	923.04
114		3	31	928.1	1571.9	998.4	(32.21)	515.2	(16.62)	23.37	6.0	0.899	66.15	66.15	11.00	925.57
115		4	30	928.5	1600.5	1714.1	(57.14)	1680.0	(56.00)	77.23	20.6	0.899	65.26	65.26	11.00	928.29
116		5	31	929.5	1693.9	2148.8	(69.32)	2046.0	(66.00)	91.75	23.7	0.899	66.90	66.90	11.00	928.99
117		6	30	928.2	1579.4	1698.6	(54.62)	1800.0	(60.00)	80.60	21.5	0.897	67.00	67.00	11.00	928.86
118		7	31	929.4	1681.6	744.4	(24.01)	620.0	(20.00)	22.78	7.2	0.896	67.00	66.48	11.00	928.83
119		8	31	928.5	1607.5	451.4	(14.56)	515.2	(16.62)	22.14	6.0	0.897	67.00	66.48	11.00	928.99
120		9	30	927.5	1514.4	417.6	(13.92)	498.6	(16.62)	22.15	6.0	0.898	67.00	66.48	11.00	928.00
						859.0	(28.20)	848.7	(27.91)	38.24		0.899	2024.	2020.	11.00	926.79
121	1950	10	31	927.0	1475.0	481.9	(15.55)	515.2	(16.62)	23.06	6.0	0.899	67.00	66.48	11.00	927.24
122		11	30	926.5	1425.4	450.3	(15.01)	498.6	(16.62)	22.44	6.0	0.899	66.66	66.48	11.00	926.74
123		12	31	925.7	1362.1	451.9	(14.58)	515.2	(16.62)	23.37	6.0	0.899	66.15	66.15	11.00	926.09
124		1	31	925.0	1296.0	449.1	(14.49)	515.2	(16.62)	23.36	6.0	0.899	66.15	66.15	11.00	925.35
125		2	28	924.2	1231.6	400.9	(14.32)	485.4	(16.62)	21.03	6.0	0.899	66.38	66.38	11.00	924.61
126		3	31	929.8	1715.6	1166.7	(37.64)	682.0	(22.00)	31.17	8.0	0.899	65.65	65.65	11.00	927.00
127		4	30	929.8	1722.0	1692.1	(56.40)	1680.0	(56.00)	77.77	20.7	0.899	64.81	64.81	11.00	929.80
128		5	31	929.7	1710.9	2044.5	(65.95)	2046.0	(66.00)	91.77	23.7	0.899	66.89	66.89	11.00	929.78
129		6	30	927.1	1480.8	1793.0	(59.77)	2040.0	(67.00)	90.00	24.0	0.896	67.00	67.00	11.00	928.40
130		7	31	928.5	1601.7	818.8	(26.41)	682.0	(22.00)	30.54	7.9	0.896	67.00	67.00	11.00	927.78
131		8	31	927.2	1488.9	461.1	(14.87)	588.0	(18.00)	24.99	6.4	0.896	67.00	67.00	11.00	927.82
132		9	30	926.1	1398.1	459.2	(15.31)	540.0	(18.00)	24.18	6.4	0.897	67.00	67.00	11.00	926.85
						889.1	(29.19)	892.3	(29.34)	40.30		0.898	2022.	2020.	11.00	927.27
133	1951	10	31	929.4	1687.5	855.3	(27.59)	588.0	(18.00)	24.99	6.4	0.898	67.00	67.00	11.00	927.78
134		11	30	929.5	1689.5	603.3	(20.11)	600.0	(20.00)	26.87	7.2	0.899	67.00	67.00	11.00	929.46
135		12	31	929.4	1680.8	506.6	(16.34)	515.2	(16.62)	23.12	6.0	0.899	66.86	66.48	11.00	929.42
136		1	31	929.4	1679.8	804.8	(25.96)	806.0	(26.00)	36.42	9.4	0.899	66.39	66.39	11.00	929.36
137		2	29	929.7	1713.3	1425.7	(49.16)	1392.0	(48.00)	62.99	17.4	0.899	66.29	66.29	11.00	929.35
138		3	31	929.4	1680.2	1517.7	(48.96)	1550.0	(48.00)	69.69	18.0	0.899	66.73	66.73	11.00	929.55
139		4	30	926.6	1498.3	1774.0	(59.13)	2010.0	(67.00)	90.00	24.0	0.897	67.00	67.00	11.00	929.58
140		5	31	927.6	1528.0	2173.6	(70.11)	2077.0	(67.00)	93.00	24.0	0.895	67.00	67.00	11.00	927.10
141		6	30	926.2	1402.9	1869.5	(62.32)	1980.0	(66.00)	88.66	23.6	0.895	67.00	67.00	11.00	926.90
142		7	31	929.7	1711.9	1130.6	(36.47)	800.0	(26.00)	36.09	9.3	0.896	67.00	67.00	11.00	927.96
143		8	31	929.8	1721.0	583.4	(18.82)	588.0	(18.00)	24.99	6.4	0.898	67.00	67.00	11.00	929.78
144		9	30	929.1	1660.6	450.7	(15.02)	498.6	(16.62)	22.23	6.0	0.899	67.00	66.48	11.00	929.48
						1141.2	(37.50)	1112.6	(36.60)	49.92		0.898	2039.	2037.	11.00	928.69



Ayvali Project

\*\*\* OPTIMAL SCHEDULE \*\*\*

NO.	YEAR	MON	DAY	H	S	GIN	QA	QOUT	P	E	T	ETG	GCR	GUP	LOSS	SUII
				(M)	(M3/SD)	(M3/SD)	(M3/SD)	(M3/SD)	(MW)	(GMH)	(H)		(M3/S)	(M3/S)	(M)	(M)
193	1956	10	31	927.6	1521.5	466.4	515.2	0.0	124.79	23.21	6.0	0.899	66.59	66.48	11.00	927.88
194		11	30	926.9	1460.4	438.7	498.6	0.0	125.00	22.71	6.1	0.899	65.85	65.85	11.00	927.20
195		12	31	926.1	1393.9	448.7	515.2	0.0	123.00	23.49	6.1	0.899	65.81	65.81	11.00	926.47
196		1	31	925.3	1332.9	444.2	498.6	0.0	125.00	23.40	6.0	0.899	66.05	66.05	11.00	925.69
197		2	28	924.6	1284.5	406.9	465.4	0.0	125.00	23.06	6.0	0.899	66.28	66.28	11.00	924.95
198		3	31	924.6	1284.5	716.3	515.2	0.0	125.00	23.41	6.0	0.899	66.03	66.03	11.00	925.76
199		4	30	929.7	1705.8	1626.3	1380.0	0.0	123.00	63.44	16.9	0.899	65.26	65.26	11.00	928.28
200		5	31	929.4	1680.6	1906.3	1922.0	0.0	125.00	86.68	22.4	0.899	66.52	66.52	11.00	929.51
201		6	30	928.0	1556.8	1689.2	1800.0	0.0	125.00	80.60	21.5	0.896	67.00	67.00	11.00	928.66
202		7	31	930.0	1736.1	818.8	620.0	3.3	125.00	27.76	7.2	0.897	67.00	67.00	11.00	928.98
203		8	31	929.0	1650.7	466.1	515.2	0.0	122.57	22.80	6.0	0.898	67.00	66.48	11.00	929.51
204		9	30	928.1	1571.2	431.4	488.6	0.0	123.38	22.21	6.0	0.899	67.00	66.48	11.00	928.57
205						819.8	813.4	0.3	124.65	36.73		0.899	2019.	2016.	11.00	927.62
206	1957	10	31	927.4	1508.1	458.3	515.2	0.0	124.51	23.16	6.0	0.899	66.74	66.48	11.00	927.76
207		11	30	926.9	1463.7	455.5	498.6	0.0	125.00	22.63	6.0	0.899	66.10	66.10	11.00	927.14
208		12	31	926.2	1402.3	453.8	515.2	0.0	125.00	23.49	6.1	0.899	65.79	65.79	11.00	926.54
209		1	31	925.4	1333.3	446.3	465.4	0.0	125.00	23.41	6.0	0.899	66.02	66.02	11.00	925.80
210		2	28	924.7	1268.2	400.2	465.4	0.0	125.00	21.07	6.0	0.899	66.25	66.25	11.00	925.03
211		3	31	924.0	1211.3	459.0	515.2	0.0	125.00	23.25	6.0	0.899	66.47	66.47	11.00	924.33
212		4	30	924.2	1231.7	524.1	498.6	0.0	124.90	22.48	6.0	0.899	66.53	66.48	11.00	924.15
213		5	31	921.6	1002.1	1701.1	1923.0	0.0	125.00	86.06	22.2	0.896	67.00	67.00	11.00	922.93
214		6	30	928.5	1606.6	1695.8	1080.0	0.0	125.00	48.36	12.9	0.894	67.00	67.00	11.00	925.07
215		7	31	930.0	1734.6	702.3	558.0	0.0	125.00	24.99	6.4	0.897	67.00	66.48	11.00	929.25
216		8	31	929.0	1648.4	445.3	515.2	0.0	122.80	22.84	6.0	0.898	67.00	66.48	11.00	929.49
217	1958	10	31	927.3	1498.6	449.6	515.2	0.0	124.65	23.17	6.0	0.899	66.72	66.48	11.00	927.70
218		11	30	926.5	1429.2	430.4	498.6	0.0	125.00	22.61	6.0	0.899	66.16	66.16	11.00	926.89
219		12	31	925.6	1353.4	439.4	515.2	0.0	125.00	23.44	6.0	0.899	65.93	65.93	11.00	926.06
220		1	31	924.8	1278.6	440.5	465.4	0.0	125.00	23.35	6.0	0.899	66.20	66.20	11.00	925.20
221		2	28	923.9	1205.5	392.2	465.4	0.0	125.00	21.01	6.0	0.899	66.46	66.46	11.00	924.36
222		3	31	923.3	1150.1	460.4	465.4	0.0	124.61	23.18	6.0	0.899	66.69	66.48	11.00	923.63
223		4	30	929.8	1717.2	1592.2	1020.0	0.0	125.00	46.51	12.4	0.899	65.79	65.79	11.00	926.55
224		5	31	929.9	1726.9	2003.2	1984.0	0.0	125.00	89.40	23.1	0.899	66.58	66.58	11.00	929.84
225		6	30	929.4	1683.0	1709.3	1740.0	0.0	125.00	77.91	20.8	0.897	67.00	67.00	11.00	929.64
226		7	31	929.8	1714.5	668.0	620.0	0.0	125.00	27.76	7.2	0.897	67.00	67.00	11.00	929.57
227		8	31	929.4	1685.4	545.2	558.0	0.0	125.00	24.99	6.4	0.897	67.00	67.00	11.00	929.59
228		9	30	928.3	1584.8	451.8	540.0	0.0	125.00	24.18	6.4	0.898	67.00	67.00	11.00	928.85
229	1959	10	31	928.9	1642.4	798.5	790.6	0.0	124.93	35.62		0.899	2024.	2023.	11.00	927.32
230		11	30	929.7	1707.1	579.0	515.2	0.0	123.24	22.92	6.0	0.899	67.00	66.48	11.00	928.60
231		12	31	928.1	1655.4	564.6	498.6	0.0	124.38	22.39	6.0	0.899	66.81	66.48	11.00	929.30
232		1	31	928.6	1596.3	463.5	515.2	0.0	125.00	23.32	6.0	0.899	66.29	66.29	11.00	929.37
233		2	29	927.8	1546.7	456.1	465.4	0.0	125.00	23.37	6.0	0.899	66.15	66.15	11.00	928.74
234		3	31	929.5	1689.2	432.4	482.0	0.0	125.00	22.14	6.1	0.899	65.31	65.31	11.00	928.12
235		4	30	929.4	1684.9	1383.2	1240.0	0.0	125.00	57.10	14.7	0.899	65.15	65.15	11.00	928.65
236		5	31	929.5	1692.4	1711.4	1740.0	0.0	125.00	80.41	21.4	0.899	64.92	64.92	11.00	929.44
237		6	30	924.8	1683.4	2001.9	1984.8	0.0	125.00	91.08	23.5	0.899	65.38	65.38	11.00	929.46
238		7	31	929.5	1696.6	1614.1	2010.0	0.0	125.00	90.00	24.0	0.896	67.00	67.00	11.00	927.17
239		8	31	930.0	1736.1	1048.5	620.0	0.0	125.00	27.76	7.2	0.895	67.00	67.00	11.00	927.19
240		9	30	930.0	1736.1	629.4	573.7	0.0	108.42	19.52	6.6	0.898	67.00	67.00	11.00	929.77
						942.0	439.4	0.0	123.42	42.14	6.0	0.898	67.00	66.48	11.00	930.00
						927.2	927.8	0.0	123.42	42.14		0.898	2024.	1998.		928.82

Ayvali Project

\*\*\* OPTIMAL SCHEDULE \*\*\*

NO.	YEAR	MON	DAY	H (M)	S (M3/SD)	GIN (M3/SD)	QR (M3/SD)	ROUT (M3/SD)	P (MW)	E (GWH)	T (H)	ETG (M3/S)	GCR (M3/S)	GUP (M3/S)	LOSS (CM)	SUII (CM)
241	1960	10	31	930.0	1736.1	422.7	416.3	0.0	100.62	18.72	6.0	0.899	66.74	53.72	11.00	930.00
242		11	30	930.0	1736.1	413.0	413.7	0.0	104.11	18.74	6.0	0.899	65.90	54.89	11.00	930.00
243		12	31	930.0	1736.1	427.0	427.0	0.0	105.99	19.74	6.0	0.899	64.98	55.10	11.00	930.00
244		1	31	929.3	1674.3	418.5	415.4	0.0	119.44	22.22	6.0	0.899	64.85	61.97	11.00	929.65
245		2	28	928.3	1584.6	375.7	375.4	0.0	125.00	21.44	6.1	0.899	65.11	65.11	11.00	928.78
246		3	31	927.2	1487.9	418.5	414.5	0.0	125.00	23.59	6.1	0.899	65.43	65.43	11.00	927.72
247		4	30	926.7	1445.3	456.0	493.2	0.0	125.00	22.53	6.0	0.899	65.67	65.67	11.00	926.92
248		5	31	927.5	1515.3	585.2	506.2	0.0	122.71	22.82	6.0	0.899	66.53	65.31	11.00	927.08
249		6	30	927.0	1476.5	459.8	486.0	0.0	118.02	21.24	6.0	0.895	67.00	64.80	11.00	927.26
250		7	31	925.5	1339.5	378.2	499.3	0.0	116.70	21.71	6.0	0.895	67.00	64.43	11.00	926.26
251		8	31	923.8	1190.0	365.7	500.1	0.0	117.67	21.89	6.0	0.896	67.00	64.53	11.00	924.62
252		9	30	922.1	1046.4	355.0	487.4	0.0	119.75	21.56	6.0	0.898	67.00	64.98	11.00	922.95
253	1961	10	31	920.7	923.3	392.2	509.7	0.0	121.86	22.67	6.0	0.898	66.80	65.77	11.00	921.43
254		11	30	919.5	817.4	392.7	497.5	0.0	121.88	21.96	6.0	0.897	66.59	66.33	11.00	920.10
255		12	31	918.2	715.9	413.7	515.2	0.0	121.20	22.57	6.0	0.896	66.39	66.39	11.00	918.83
256		1	31	916.8	606.8	406.1	515.2	0.0	119.87	22.40	6.0	0.895	66.17	66.17	11.00	917.47
257		2	28	915.5	509.0	367.6	465.4	0.0	118.33	20.07	6.0	0.894	65.95	65.95	11.00	916.11
258		3	31	914.5	436.7	442.9	514.7	0.0	117.42	22.05	6.1	0.893	65.77	65.77	11.00	914.96
259		4	30	915.2	488.0	549.9	494.3	0.0	117.28	21.16	6.0	0.893	65.75	65.75	11.00	914.82
260		5	31	918.4	729.1	756.3	507.9	0.0	112.87	21.16	6.0	0.889	65.00	65.00	11.00	916.76
261		6	30	919.1	791.4	580.8	487.9	0.0	111.75	20.19	6.0	0.888	64.81	64.81	11.00	918.75
262		7	31	918.5	740.8	464.7	501.4	0.0	111.56	20.75	6.0	0.888	64.81	64.76	11.00	918.82
263		8	31	917.1	635.8	410.3	501.9	0.0	111.68	20.77	6.0	0.888	64.95	64.95	11.00	916.42
264		9	30	915.7	526.9	389.6	488.6	0.0	112.57	20.32	6.0	0.889	64.95	64.95	11.00	916.42
265		10	31	914.1	413.9	462.2	500.0	0.0	116.55	21.34	6.0	0.893	1997.	1995.	11.00	917.69
266	1962	10	31	914.1	413.9	402.3	510.3	0.0	113.45	21.34	6.1	0.890	65.10	65.10	11.00	914.92
267		11	30	912.7	311.7	396.3	497.6	0.0	114.45	20.94	6.1	0.891	65.27	65.27	11.00	913.43
268		12	31	911.1	202.8	406.4	515.2	0.0	114.47	21.69	6.1	0.891	65.28	65.28	11.00	911.91
269		1	31	909.5	97.1	409.5	515.2	0.0	112.95	21.48	6.1	0.889	65.02	65.02	11.00	910.32
270		2	28	908.0	0.0	368.3	465.4	0.0	111.47	19.22	6.2	0.888	64.76	64.76	11.00	908.76
271		3	31	910.2	140.7	656.3	515.2	0.0	111.78	21.33	6.2	0.888	64.82	64.82	11.00	909.09
272		4	30	908.0	0.0	1732.5	1869.2	0.0	111.78	77.37	23.1	0.888	64.82	64.82	11.00	909.09
273		5	31	916.5	588.8	2618.8	2025.5	126.4	125.00	85.34	24.0	0.891	65.33	65.33	11.00	912.26
274		6	30	930.0	1736.1	3294.0	2010.0	0.0	125.00	90.00	24.0	0.897	67.00	67.00	11.00	923.26
275		7	31	928.8	1631.2	1771.9	1860.0	0.0	125.00	83.28	21.5	0.897	67.00	67.00	11.00	929.40
276		8	31	929.6	1700.7	1201.5	1116.0	0.0	125.00	49.97	12.9	0.897	67.00	67.00	11.00	929.20
277		9	30	928.3	1590.1	441.8	540.0	0.0	125.00	24.18	6.4	0.897	67.00	67.00	11.00	928.96
278		10	31	929.2	1667.4	1141.6	1036.5	10.5	117.10	44.68	6.0	0.892	1998.	1998.	11.00	916.72
279	1963	10	31	929.2	1667.4	598.7	515.2	0.0	123.23	22.92	6.0	0.899	67.00	66.48	11.00	928.77
280		11	30	930.0	1732.1	564.6	498.6	0.0	124.89	22.48	6.0	0.899	66.54	66.48	11.00	929.58
281		12	31	929.3	1670.6	453.7	515.2	0.0	125.00	23.46	6.1	0.899	65.88	65.88	11.00	929.60
282		1	31	928.7	1622.4	467.0	515.2	0.0	125.00	23.67	6.1	0.899	65.31	65.31	11.00	929.17
283		2	29	929.6	1703.8	1357.4	1276.0	0.0	125.00	58.89	16.2	0.899	65.00	65.00	11.00	929.22
284		3	31	928.8	1631.0	1478.0	1550.0	0.0	125.00	71.17	18.4	0.899	65.34	65.34	11.00	929.11
285		4	30	925.4	1335.3	1689.9	1980.0	0.0	125.00	89.64	23.9	0.899	66.26	66.26	11.00	927.11
286		5	31	927.3	1497.0	2247.6	2077.0	0.0	125.00	93.00	24.0	0.899	67.00	67.00	11.00	926.35
287		6	30	929.3	1676.0	2201.6	2010.0	0.0	125.00	90.00	24.0	0.897	67.00	67.00	11.00	928.29
288		7	31	929.5	1692.5	777.1	744.0	0.0	125.00	33.31	8.6	0.897	67.00	67.00	11.00	929.41
289		8	31	928.4	1592.1	431.0	515.2	0.0	122.11	22.71	6.0	0.897	67.00	66.48	11.00	928.93
290		9	30	927.2	1493.6	412.5	498.6	0.0	122.59	22.07	6.0	0.898	67.00	66.48	11.00	927.79
291		9	30	927.2	1493.6	1056.6	1057.9	0.0	124.40	47.78	6.0	0.899	2024.	2020.	11.00	928.60