THRUST BLOCK 45° BEND DN 100 TO DN 300mm



FINAL CONCRETE THRUST BLOCK FOR BLANK FLANGE DN 100 TO 300 mm



Section

FOR DN 150

Plan

DN 150

DN 150

DN 300



Section

1-2.5





YAYAYAYA

WORKING PRESSURE : 6.5 KG/cm2 TEST PRESSURE : 10.0 KG/CM2 SOIL PRESSURE : 0.40 KG/CM2 CONCRETE :

EXCAVATION FOR THE THRUST BLOCK

VOLUME OF CONCRETE

DN (mm)	100	150	200	250	300
VOLUME OF CONCRETE (m3)	0.25	0.50	0.65	1.05	1.70

					Y12	2 - 01	Y12	2 - 02	Y12	- 03	Y12	- 04	Y1:	2 - 05
DN mm	A mm	B	C	VOLUME OF CONCRETE	C	C - 100		24-200		200	C - 100		40 ⁹	100
					NO.	Length	NO.	Length	NO.	Length	NO.	Length	NO.	Length
100	300	0	600	0.46	- 4	1950	4	2220	4	1940	22	500	4	570
150	325	200	650	0.68	4	1950	4	2620	4	2040	24	550	4	670
200	350	600	700	0.80	5	1950	5	3420	4	2140	28	600	4	790
250	375	1000	750	1.04	5	1950	5	4220	4	2240	32	650	4	870
300	400	1700	800	1.45	6	1950	6	5620	4	2340	38	700	4	970
400	450	1700	850	1.57	6	1950	6	5620	4	2440	38	750	4	1070

	550					
Section	Section					
(SOURCE : BWA)						
jica	The Feasibility Study on Baghdad Water Supply System	IPPON KOEI CO.,LTD.	Title	THRUST BLOCK F	FOR VALVE & FLANGE	
Japan International Cooperation Agency	Improvement Project in the Republic of Iraq	Tokyo Engineering Consultant Co.,Ltd	Scale	As Shown Da	ate	DWG - 11

THRUST BLOCK FOR BLANK FLANGE&REDUCER DN 100 TO 400 mm



NOTES TEST PRESSURES +0 N/mm2 WORKING PRESSURES 0.65 N/mm2 SOIL PRESSURE 0.04 N/mm2 CONCRETE IS TO BE GRADE 25 COVER REINFORCEMENT 50mm

Section

CONCRETE IS TO BE GRADE 25 SHOULD BE MADE BY HAND

DN (mm)	100	150	200	250	300
VOLUME OF CONCRETE (m3)	0.25	0.50	0.65	1.05	1.70

Plan 100

FOR DN 100

DN 100



AIR VALVE PITS DN 150 TO DN 300

VALVE PITS DN 150 TO DN 300



PUMP WASH OUT



NOTE TAPER 250*400 COULD BE REPLACED BY REDUCING FLANGE



TYPICAL WASHOUT FOR DN 300 TO DN 500mm PIPELINE



jica	The Feasibility Study on Baghdad Water Supply System	INIPPON KOEI CO., LTD.	Title	HOUSE CONNECTION A	ND WASHOUT	
Japan International Cooperation Agency	Improvement Project in the Republic of Iraq	Tokyo Engineering Consultant Co.,Ltd.	Scale	As Shown	Date	DWG - 14







Ianan	International	connerstion Agency	
Japan	International	cooperation Agency	

Baghdad water Supply System Improvement Project in the Republic of Iraq

Scale 7777 Tokyo Engineering Consultant Co.,Ltd.

as shown

Date

DWG - 17

DATA BOOK 3 ENVIRONMENTS

- 1. IEE Report
- 2. EIA Report
- 3. Result of Screening
- 4. Letter for Elimination of old Asbestos Pipes

Ammant Baghdad

Solid waste and Environment Directorate

Department of Environment

Initial Environmental Exam for the Project Rehabitation Nets of Drinking Water in AL-Sadder City

Introduction:

The Initial Environmental Exam is a part of description of the proposed project, and it is the main report in determination which is the Environmental Impact Assessment needed or not.

The IEE checklist, to be accomplished and submitted before undertaking a project, consist of a series of question that deals with issues and concerns about the proposed project and it is environment.

In order to the estimation be successful should specify the positive and negative effects in basic of the importance of the aspects of influenced society. The main goal of this report is ensure that the economic social and environmental condition taken in consider from the decision makers.

This report prepared for the substitution the net of drinking water in AL-Sadder City, and Al-Sha'ab City from Asbestos pipes to ductile pipes because the corrosion of the net and it has been built since along time. This cause a lot of loses in the amount of the water that supplied to the citizens and has a negative effect on the quality of the water.

This report describes the existing environmental, social and economical condition. As a result from this conditions, the execution of the proposed project is very important for develop the Environmental conditions and health of consumers.

Also this report discusses the effects of this project upon the environment, the positive and negative effects upon the human and environment during and after the implementation of project.

This project has a highly economical value by reducing the spent money on the maintenance of old net. The new project creates new jobs during the work and operating the project.

This report made by special team from Department of Environment in Solid Waste and Environment Directorate in Ammant Baghdad to study the project from all its aspects, stages of execution, economical and environmental importance and its effects on the society, in additional to that the scientific evaluation for possible environmental effects.

1- Name of the project and the owner of project:

Name of project:

Rehabitation of Nets of Drinking Water in AL-Sadder City (R14, R3) and AL-Sha'ab City (R2).

Beneficiary Side:

Baghdad water Authority/ AL-Sadder 1 and 2 municipalities and AL-Sha'ab municipality.

2- Position and component of the project and the designing quality:

- Position: Baghdad Governorate AL-Sadder City and
 - AL-Sha'ab City.
- The existing and the designing maps of the drinking water nets are attached with this report in a 2 compact disc.

Components of the proposed project:

- Ductile pipes.
- Counters.

Quantity Designing for Project:

- -AL-Sha'ab City (R2): 90000 m³/day
- -AL-Sadder City (R3): 120000 m³/day
- -AL-Sadder City (R14): 110000 m³/day

3- Description of the Existing Environmental, social, and Economical conditions for the project location:

Sharq-Dijla project supply AL-Sadder city by potable water, also from AL-Orfaly storage tank in AL-Habibiya.

The biological and chemical laboratory testing was done currently for this project and in the net by laboratory sector belongs to Baghdad water authority.

And from looking on the tests results us notes a high percent of pollution in the drinking water for the city especially in quarters 556, 571, 567, 560, 569, and 562.

This pollution in water is due to the old net in the city (Asbestos pipes) and because of the breaking and leakage of the sewerage system which causes pollution in drinking water.

The city suffered generally from sewerage system and blocking in rain sewer especially in (AL-Dakhil street) and other quarters in the city due to small sewerage system (diameter 250mm).

Currently new sewerage system executes in this street with diameter 600mm to bearing the population increment in the city.

The management of solid west in AL-Sadder City is not enough because of poor number of solid waste container and poor municipality services.

The illegal water withdrawal comes from the main water pipes causes decreasing in pumping water for the consumers. The settlements in the streets of the city were appearing which cause due to old sewerage system.

The population of AL-Sadder city was approximately 3,250,000 people, which is a great reason to execute this project to comply the new demand of this consumer.

From the positive effects from this project it creates new jobs for a large layer of the community that suffering from poorness, additionally the execution of project leads to activate the economical movement in the city to increase the incomes of the people.

4- Probable negative Environmental and Social Effects of the Project:

A- Probable negative effect during execution the project:

During executing the constructional activities of the project, there are possible obstacles that effects upon quality of the drinking water supplied to the consumers which cause possible increasing the demand of water and may be polluted with sediments resulting from digging operations.

In additional to that, noises caused by using digging machines and vehicles which has negative effects on the general health, that may cause psychological and acoustic diseases and the difficulties in transportation of people can lead to change the style of life in the society by the blocking the roads.

B- Probable healthy negative effect by corrosion the Pipes:

Many of the metals used in making nets of distributing drinking water are not stable and corrode in the water by time. This case called (corrosion) and sometimes is fast or very slow it depends on the chemical and physical effecting factors. The result of this corrosion has negative effects, by generating spongy layer leads to reduce the quality of the drinking water and then effecting on the health of consumer.

- C- The proposed action in this project maybe effects negatively of the commercial businesses in that areas during digging and blocking the roads. It is better to study these effects carefully to reduce the effects on those areas.
- D- The proposed action may generate debris and solid waste resting from excavation activities during executing the project. It is important to collects and transformed to suitable places for dirt according to municipality regulations.

5- Environmental Legislations:

- Iraqi Standard specification for drinking water No. 417.
- Law of Protecting and improvement the environment no. (3) 1997.
- Environmental legislations, protecting and improvement the environment directorate, Ministry of Health. Republic of Iraq 1998.

References:

- الدكتور قحطان خلف محمد الخزرجي / الحديد الزهر / 1998.
- الدكتور حسين باقر رحمة الله / هندسة التأكل وحماية سطوح المعادن / 1989.
- د. المكتب الاقليمي للشرق الاوسط / دلائل جودة مياه الشرب / 1999 الجزء الاول

Ammant Baghdad

Solid waste and Environment Directorate

Department of Environment

Environmental Impact Assessment for the Project Rehabitation Nets of Drinking Water in AL-Sadder City

Introduction:

The environmental impact assessment can be identifying as a tool can specify and predict the profits and loses for any project going to be established. In order to the estimation be successful should specify the positive and negative effects in basic of the importance of the aspects of influenced society. The main goal of this report is ensure that the economic social and environmental condition taken in consider from the decision makers.

This report written for the substitution the net of drinking water in AL-Sadder City and Al-Sha'ab City from Asbestos pipes to Ductile pipes because the corrosion of the net and it has been built since long time. This cause a lot of loses in the amount of the water that supplied to the citizens and has a negative effect on the quality of the water.

The old net has established in 1960 by British company to cover the whole area in AL-Sadder City and the drinking water supplying by Sharq-Dijla Project Design output (540000 m³/day).

Because of the increasing of population in this city during last years that caused to reduce in the supplying of the drinking water, and because of the necessity and the need of establishing new drinking water net with high quality and can stay longer.

This report discusses the effects of this project upon the environment, the positive and negative effects upon the human and environment during and after the implementation of project.

This project has a highly economical value by reducing the spent money on the maintenance of old net. The new project creates new jobs during the work and operating the project.

As a result of digging and excavation of the project, there will be debris and solid waste which can be managed and transformed to special places.

This report made by special team from Department of Environment in Solid Waste and Environment Directorate in Ammant Baghdad to study the project from all its aspects, stages of execution, economical and environmental importance and its effects on the society, in additional to that the scientific evaluation for possible environmental effect.

First: Name of the project and the purpose:

Name of project: Rehabitation of Nets of Drinking Water in AL-Sadder City (R14, R3) and AL-Sha'ab City (R2).

Purpose:

- A- Changing the old nets of drinking water (Asbestos material) to new net (Ductile material) in that cities.
- B- Install devices of measuring the drainage (Flow Meter) on the transmitted lines and distributed lines to measure the wasting in drinking water and in the same time measure the amount of consuming water by consumers.
- C- Increase the quality of drinking water supplied to the consumers and reduces the pollutions caused by corrosion and broken in old net to the minimum level according to standard measures.
- D- Control the quantity of drinking water supplied to those areas, and eliminates the decreasing of drinking water in those areas.

Second: Position and the Name of Owner of this Project:

- Position: Baghdad Governorate AL-Sadder City and AL-Sha'ab City.
- Owner of the Project: Ammant Baghdad /Baghdad water directorate.

Third: Components of the Project and the Designing Quantity:

A- Components of the project.

- Ductile pipes.
- Counters.

B- Quantity Designing for Project:

AL-Sha'ab City (R2): 90000 m^3/day AL-Sadder City (R3): 120000 m^3/day AL-Sadder City (R14): 110000 m^3/day

Fourth: Discussion of the proposed Project:

1- Asbestos pipes (old net work):

Asbestos is refractory materials that have high thermal resistance & high melting points. The Aluminum oxide (Al_2O_3) & Magnesium oxide (MgO), silicon oxide (SiO₂), are with in the component of Asbestos and with different percentage.

Asbestos have ability to bear pressure, and it's hardness materials but it's brittle & broken by effect of strong impacts, and the materials corroded in water along time. With effect negative on the quality of drinking water. Additionally that the operation life rate for asbestos pipes are 30 years.

2- Ductile cast iron pipes (suggested net):

Which produced by heat treatment of melting cast iron alloy with magnesium or cerium or both, by adding magnesium with (0.1-0.07%) and adding (Ferro-silicon) and some inoculants materials such as titanium, lead and zinc, this kind of pipes have highly resistance to corrosion, so its life operation longer than the kind of pipes, it have high impact resistance and high ductility and moderate hardness and ability to resist loads and high weight permanent deformation and have ability for welding and very high tensile strength.

3- Glass-Reinforced plastic Pipes (substitution net):

They are made of plastic reinforced with glass and consist of glass resin layers and layer of sand, there is another kind, continues of twist fiber glass with solid urithen foam inside it which is within suggest substitute that used in this project.

This type of pipes have high corrosion resistance and impact resistance that result from drilling or vibration works and at the same time it have high elasticity that make it don't effect during bending due to soil movement.

Also it have high resistance to out side pressure (compression) & they have different diameters reach to 3meter & that bear inner pressure from water about 1000psi as well as have easy installation and constructions, maintains.

It's considered stable chemically materials and don't react with water along time, so it considered acceptable & good materials from all sides of healthy & environmental.

Because it bears hard weather condition so we use this kind of composite material in network and drinking water tanks in different places in the world.

Fifth: Probable negative Environmental and Social Effects of the Project:

A- Probable negative effect during execution the project:

During executing the constructional activities of the project, there are possible obstacles that effects upon quality of the drinking water supplied to the consumers which cause possible increasing the demand of water and may be polluted with sediments resulting from digging operations.

In additional to that, noises caused by using digging machines and vehicles which has negative effects on the general health , that may cause psychological and acoustic diseases and the difficulties in transportation of people can lead to change the style of life in the society by the blocking the roads.

B- Probable healthy negative effect by corrosion the Pipes:

Many of the metals used in making nets of distributing drinking water are not stable and corrode in the water by time. This case called (corrosion) and sometimes is fast or very slow it depends on the chemical and physical effecting factors. The result of this corrosion has negative effects, by generating spongy layer leads to reduce the quality of the drinking water and then effecting on the health of consumer.

- C- The proposed action in this project maybe effects negatively of the commercial businesses in that areas during digging and blocking the roads. It is better to study these effects carefully to reduce the effects on those areas.
- D- The proposed action may generate debris and solid waste resting from excavation activities during executing the project. It is important to collects and transformed to suitable places for dirt according to municipality regulations.

Sixth: Safety Procedures and Recommendations:

- Keep using old net (Asbestos pipes) in supplying drinking water to the consumer during executing of the project because of the position of the new net (Ductile pipes) beside the position of the old net till the end of new project.
- 2. Should execute the project according to the environmental legislations. And our suggestion is keeping the old asbestos pipes under ground to minimize the negative environmental effects to human health and environment, better than transporting to special dumping sites (landfill). We take agreement for this item from project owner (Baghdad Water Authority /BWA) and Ministry of Environment (MOE).
- Should specify the source of energy during and after executing the project to operate the machines and tools, from the national electricity or by special generators and controlling the noise generating from these machines.
- 4. Should put in emergency case appropriate number of tankers to transfer drinking water during the period of executing the project to prevent crisis in drinking water.
- 5. It is necessary to mark up the track of the new net which should be away from the sewers of sewerage to reduce the problems caused by breaking or drainage sewerage which pollutes the drinking water.
- 6. Make chemical and bacteriological tests for the old drinking water net continuously to prevent pollution in drinking water during construction and excavation process.

- 7. Ensure the movement of citizens and the style of their life in those areas which is not negatively effects on their daily life and their commercial works.
- Committing in safety procedures during executing the project as for workers in digging and pipes by wearing standard suits, hats and gloves with accessories of safety belongs to constructional sites.
- The excavation process maybe caused to raise the water table which is an obstacle in executing the stages of project. So it should be removed by special water pumping and drainages to nearest sewerage.

Seventh: Environmental Legislations:

- Iraqi Standard specification for drinking water No. 417.
- Law of Protecting and improvement the environment no. (3) 1997.
- Environmental legislations, protecting and improvement the environment directorate, Ministry of Health. Republic of Iraq 1998.

References:

- 1. الدكتور قحطان خلف محمد الخزرجي / الحديد الزهر / 1998.
- الدكتور حسين باقر رحمة الله / هندسة التأكل وحماية سطوح المعادن / 1989.
- المكتب الاقليمي للشرق الاوسط / دلائل جودة مياه الشرب / 1999 الجزء الاول

Results of screening

Check Items

Question 1 Address of a project site:

Water Distribution Zone of R2, R3 R14 in Rusafa area in Baghdad City.

Question 2 Outline of the project:

2-1 Does the project come under following sectors?

[x]Yes [] No

If yes, please mark the corresponding items.

- [] Mining development
- [] Industrial development
- [] Thermal power (including geothermal power)
- [] Hydropower, dams and reservoirs
- [] River/erosion control
- [] Power transmission and distribution lines
- [] Roads, railways and bridges
- [] Airports
- [] Ports and harbors
- [x] Water supply, sewage and waste treatment
- [] Waste management and disposal
- [] Agriculture involving large-scale land-clearing or irrigation
- [] Forestry
- [] Fishery
- [] Tourism
- 2-2 Does the project include any of the following items?
 - []Yes [x]No

If yes, please mark following items that the project includes.

[]	Involuntary resettlement (scale:	households	persons)
----	----------------------------------	------------	----------

[] Groundwater pumping (scale: m3/year)

[] Land reclamation, land development and land-clearing (scale: hectors)

[] Logging (scale: hectors)

2-3 Description of the Project:

(Scale and/or Basic Information)

As for the program for UFW reduction, replacement of the existing Asbestos Cement Pipe (ACP) and Cast Iron Pipe (CIP) and installation of water meters to all consumers in Water Distribution Zone of R2, R3 and R14 in Baghdad City is planned as follows.

Water Distribution Zone	Area	Population
	(km2)	(2004)
R2	30.74	360,859
R3	18.48	680,170
R14	16.40	495,972
Total	65.62	1,537,001

Amount of replacement of aged and deteriorated pipeline is assumed as follows, and it is assumed to employ Ductile Iron Pipes (DIP) for replacement of these pipelines.

ACP: Representative diameter 100mm, Length for replacement 1,070 km, and

CIP: Representative diameter 150mm, Length for replacement 230 km

New installation and replacement of water meters is assumed as follows.

Installation and replacement of meters: 164,000 sets

2-4 Is the project consistent with the higher program/policy?

[x]Yes: Please describe the higher program/policy.

Baghdad Treated Water Supply Systems Integration Study review (Final Report)

November 1984 Binnie & Partners London

[] No

2-5 Did the proponent consider alternatives before this request?

[] Yes: Please describe outline of the alternatives

[x] No

2-6 Did the proponent have meetings with related stakeholders before this request?

[x]Yes []No

If yes, please mark the corresponding stakeholders.

[x] Administrative body

[] Local residents

[] NGO

[] Others

Question 3

Is the project a new one or an on-going one? In case of an on-going one, have you received strong complaints, etc., from local residents?

[x] New [] On-going(there are complaints) [] On-going (there are no complaints)

[] Others

Question 4 Name(s) of laws or guidelines:

Environmental Legislations 1997

Ministry of Health, The Department of Environmental Protection and Improvement

Is Environmental Impact Assessment (EIA) including Initial Environmental Examination

(IEE) required for the project according to the laws or guidelines in the host country?

[x] Yes [] No

If yes, please mark corresponding items.

[] Required only IEE	(Implemented,	on going,	planning)
[x] Required both IEE and EIA	(Implemented,	on going,	planning)

[] Required only EIA (Implemented, on going, planning)

[] Others:

Question 5

In the case when EIA steps were taken, was the EIA approved by the relevant laws in the host country? If yes, please mark date of approval and the competent authority.

[] Approved: without a supplementary condition

[] Approved: with a supplementary condition

[] Under appraisal

(Date of approval: Competent authority:)

[x] Not yet started an appraisal process

[] Others:(

Question 6

If the project requires a certificate pertaining to the environment and society other than the EIA,

)

please indicate the title of that certificate.

[] Already certified [] Required a certificate but not yet done

Title of the certificate :(

[x] Not required

[] Others

Question 7

Are any of the following areas located inside or around the project site?

[] Yes [x]No []Not identified

If yes, please mark corresponding items.

)

- [] National park, protected area designated by the government (coast line, wetlands, reserved area for ethnic or indigenous people, cultural heritage), and areas being considered for national parks or protected areas
- [] Virgin forests, tropical forests
- [] Ecological important habitat areas (coral reef, mangrove wetland, tidal flats)
- [] Habitat of valuable species protected by domestic laws or international treaties
- [] Likely salts cumulus or soil erosion areas on a massive scale
- [] Remarkable desertification trend areas
- [] Archaeological, historical or cultural valuable areas
- [] Living areas of ethnic, indigenous people or nomads who have a traditional lifestyle or special socially valuable areas

Question 8

Does the project have adverse impacts on the environment and local communities?

[x] Yes [] No [] Not identified

Reason:

The project is installation of new Ductile Iron Pipes (DIP) for replacement of old Asbestos Cement Pipe (ACP). According to the WHO (2004), there is no consistent evidence that ingested asbestos is hazardous to health, and thus it is concluded that there is no need to establish a health based guideline value for asbestos in drinking water. However, there is possible to get health problems when the person engages in the removal or cuttings of asbestos pipes due to absorbing the fine particle of asbestos.

Question 9

Please mark related environmental and social impacts, and describe their outlines.

[] Air pollution
[] Involuntary resettlement
[] Water pollution
[] Local economy such as employment and livelihood etc.
[] Soil pollution
[] Land use and utilization of local resources

[x] Waste	[] Social institutions such as social infrastructure and local decision
	making institutions
[] Noise and vibration	[] Existing social infrastructures and services
[] Ground subsidence	[] The poor, indigenous of ethnic people
[] Offensive odors	[] Misdistribution of benefit and damage
[] Geographical features	[] Local conflict of interests
[] Bottom sediment	[] Gender
[] Biota and ecosystem	[] Children's rights
[] Water usage	[] Cultural heritage
[] Accidents	[] Infectious diseases such as HIV/AIDS etc.
[] Global warming	[] Others ()

Outline of related impacts:

Item: Waste Judgment: Category B

Note: Asbestos pipes

The project is installation of new Ductile Iron Pipes (DIP) for replacement of old Asbestos Cement Pipe (ACP). According to the WHO (2004), there is no consistent evidence that ingested asbestos is hazardous to health, and thus it is concluded that there is no need to establish a health based guideline value for asbestos in drinking water. However, there is possible to get health problems when the person engages in the removal or cuttings of asbestos pipes due to absorbing the fine particle of asbestos.

The Environmental Impact Assessment (EIA) level study is required to prevent the health problems cause by handling of the old asbestos pipes.

Question 10

Information disclosure and meetings with stakeholders

10-1 If environmental and social considerations are required, does the proponent agree on information disclosure and meetings with stakeholders in accordance with JICA Guidelines for Environmental and Social Considerations?

[x] Yes [] No

10-2 If no, please describe reasons below.

Letter for Elimination of old Asbestos Pipes

Republic of Iraq Ministry of Environment

Department of Planning & Technical Follow Up The General Manager Office No. T.Q/764 Date: July 6th 2006

To: Baghdad Mayoralty/ Solid Waste and Environment Department

Subject: Al Sadr City Water Project

Later to our letter No:(499) dated on May 22nd 2006, and reference to your letter No: (1514) dated on July 4th 2006, concerning the Project of Rehabilitation of Drinking Water Networks in Al Sadr city, We would like to inform you that we support the proposal in your above letter for the purpose of minimizing the costs and the project's execution duration, Taking into consideration in the future project, Asbestos Pipes shall be kept buried underground in their place.

With appreciation, Dr. Abbas Naji Balasem General Manager July 6'2006 200 3

Copies to:

- Baghdad Environment Department/ Urban Environment Section/ our letter previously mentioned with appreciation.
- Environmental Impact Evaluation Department/ with relevant correspondences.
- Documentation Department

Nadia 6/7

Postal Address- Kurrada Post- P.O.Box (10062) Email: <u>plan_tech2005@yahoo.com</u> land_useiraq@yahoo.comOr/

DATA BOOK 4 COST

- 1. Disbursement Schedule of Water Supply System Improvement Project
- 2. Project Cost for each WSZs
- 3. Quotation of Ductile Iron Pipe
- 4. Quotation of Valve, Meter and Saddle
- 5. Quotation of Air Valve
- 6. Quotation of Transportation (General)
- 7. Quotation of Transportation (Insurance and Guard)
- 8. Quotation of Local Contractor
- 9. Equipment for District Meter Area (DMA) pilot study in WSZ R3

						(Ui	nit: Million US	5\$)
Project Area	Total				Year			
Item	10.01	2006	2007	2008	2009	2010	2011	2012
WSZ: R3, R14 and R2		(F/S)	D/D	R3	R14	R2		
1. Direct Construction Cost (2007 to 2011)	56.756		0.000	7.643	18.233	22.179	8.701	
1.1 Material Procurement and Supply	35.354		0.000	7.643	13.371	14.340	0.000	
1) Ductile Cast Iron Pipes (DIP) with Fittings	18.588		0.000	2.481	6.814	9.293	0.000	
2) Gate Valves, Air Valves and Others	3.694		0.000	0.721	1.890	1.083	0.000	
3) Fire Hydrants	2.967		0.000	0.396	1.182	1.389	0.000	
4) Water Consumption Meters with Service Connection Pipes	9.976		0.000	3.916	3.485	2.575	0.000	
5) Equipment for DMA Pilot Study in WSZ R3	0.129		0.000	0.129	0.000	0.000	0.000	
1.2 Civil Works	21.402		0.000	0.000	4.862	7.839	8.701	
1) Pipe Replacement Works	15.983		0.000	0.000	3.422	5.351	7.210	
2) House Connection Works	5.404		0.000	0.000	1.425	2.488	1.491	
Meter Chambers for DMA Pilot Study in WSZ R3	0.015		0.000	0.000	0.015	5.576	2.384	
2. Administration Cost	13.403		0.000	1.468	3.895	5.656	2.384	
3. Tax and Duty	8.783		0.000	1.163	2.783	3.464	1.374	
4. Engineering Cost Total	8.513		2.909	0.673	1.677	2.191	1.063	l
Engineering Cost (11% of Direct Cost)	6.242		2.326	0.540	1.252	1.545	0.579	l
Price Escalation (9.0% of LC, 1.7% of FC)	0.852		0.098	0.021	0.146	0.279	0.308	
Physical Contingency (20% of LC & FC)	1.419		0.485	0.112	0.279	0.367	0.176	
5. Price Escalation	14.528		0.000	0.319	2.564	5.124	6.521	
(9.0% of LC, 1.7% of FC of Item 1 and 2)								
6. Physical Contingency	16.937		0.000	1.886	4.938	6.592	3.521	
(20% of LC & FC of Item 1 and 2)								
Total of R3, R14 and R2	118.920		2.909	13.152	34.091	45.205	23.564	
Project Area	m . 1	1			Year			
Item	Total	2006	2007	2008	2009	2010	2011	2012
		(F/S)	D/D	Procureemer	ıt			
WSZ: R3 (2008 to 2010)								
					Construc	ction		
1. Direct Construction Cost (2008 to 2011)	11.607		0.000	7.643	3.543	0.421	0.000	
1.1 Material Procurement and Supply	7.514		0.000	7.643	0.000	0.000	0.000	
1) Ductile Cast Iron Pipes (DIP) with Fittings	2.481		0.000	2.481	0.000	0.000	0.000	
2) Gate Valves, Air Valves and Others	0.721		0.000	0.721	0.000	0.000	0.000	
3) Fire Hydrants	0.396		0.000	0.396	0.000	0.000	0.000	
4) Water Consumption Meters with Service Connection Pipes	3.916		0.000	3.916	0.000	0.000	0.000	
5) Equipment for DMA Pilot Study in WSZ R3	0.129		0.000	0.129	0.000	0.000	0.000	
1.2 Civil Works	3.964		0.000	0.000	3.543	0.421	0.000	
1) Pipe Replacement Works	2.156		0.000	0.000	2.156	0.000	0.000	
2) House Connection Works	1.793		0.000	0.000	1.3/2	0.421	0.000	
3) Meter Chambers for DMA Pilot Study in WSZ R3	0.015		0.000	0.000	0.015	0.000	0.000	
2. Administration Cost	2.229		0.000	1.408	0.680	0.081	0.000	

0.000

0.593

0.475

0.019

0.099

0.000

0.000

0.593

1.766

1.667

1.276

0.113

0.278

1.694

3.106

22.069

3. Tax and Duty

5. Price Escalation

6. Physical Contingency

4. Engineering Cost Total

Engineering Cost (11% of Direct Cost)

Price Escalation (9.0% of LC, 1.7% of FC)

Physical Contingency (20% of LC & FC)

(9.0% of LC, 1.7% of FC of Item 1 and 2)

Total of R3

(20% of LC & FC of Item 1 and 2)

Disbursement Schedule of Water Supply System Improvement Project (1/2)

0.539

0.349

0.228

0.063

0.058

1.184

1.081

7.376

1.163

0.673

0.540

0.021

0.112

0.319

1.886

13.152

0.064

0.052

0.033

0.010

0.009

0.191

0.139

0.948

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

						(Ui	nit: Million U	S\$)
Project Area	Total				Year			
Item		2006	2007	2008	2009	2010	2011	2012
		(F/S)	D/D	Procureemen	nt			
WSZ: R14								
						Construc	tion	
1. Direct Construction Cost (2009 to 2010)	21.674		0.000	0.000	14.691	6.983	0.000	
1.1 Material Procurement and Supply	13.371		0.000	0.000	13.371	0.000	0.000	
1) Ductile Cast Iron Pipes (DIP) with Fittings	6.814		0.000	0.000	6.814	0.000	0.000	
2) Gate Valves, Air Valves and Others	1.890		0.000	0.000	1.890	0.000	0.000	
3) Fire Hydrants	1.182		0.000	0.000	1.182	0.000	0.000	
4) Water Consumption Meters with Service Connection Pipes	3.485		0.000	0.000	3.485	0.000	0.000	
1.2 Civil Works	8.303		0.000	0.000	1.320	6.983	0.000	
1) Pipe Replacement Works	6.237		0.000	0.000	1.266	4.971	0.000	
2) House Connection Works	2.066		0.000	0.000	0.054	2.012	0.000	
2. Administration Cost	4.743		0.000	0.000	3.215	1.528	0.000	
3. Tax and Duty	3.310		0.000	0.000	2.244	1.066	0.000	
4. Engineering Cost Total	3.219		1.112	0.000	1.328	0.779	0.000	
Engineering Cost (11% of Direct Cost)	2.384		0.889	0.000	1.024	0.471	0.000	
Price Escalation (9.0% of LC, 1.7% of FC)	0.298		0.038	0.000	0.083	0.177	0.000	
Physical Contingency (20% of LC & FC)	0.537		0.185	0.000	0.221	0.131	0.000	
5. Price Escalation	4.830		0.000	0.000	1.380	3.450	0.000	
(9.0% of LC, 1.7% of FC of Item 1 and 2)								
6. Physical Contingency	6.249		0.000	0.000	3.857	2.392	0.000	
(20% of LC & FC of Item 1 and 2)								
	1							
Total of R14	44.025		1.112	0.000	26.715	16.198	0.000	
Project Area Itom	Total	Year 2006	2007	2008	Year 2009	2010	2011	2012
nem		2000 (F/S)	2007	2008	Drocureemer	2010	2011	2012
WSZ: R2		(175)			1 locurcemer			
			•	1			Construc	tion
1. Direct Construction Cost (2010 to 2011)	23.475		0.000	0.000	0.000	14.774	8.701	
1.1 Material Procurement and Supply	14.340		0.000	0.000	0.000	14.340	0.000	
1) Ductile Cast Iron Pipes (DIP) with Fittings	9.293		0.000	0.000	0.000	9.293	0.000	
2) Gate Valves, Air Valves and Others	1.083		0.000	0.000	0.000	1.083	0.000	
3) Fire Hydrants	1.389		0.000	0.000	0.000	1.389	0.000	
4) Water Consumption Meters with Service Connection Pipes	2.575		0.000	0.000	0.000	2.575	0.000	
1.2 Civil Works	9.135		0.000	0.000	0.000	0.434	8.701	
1) Pipe Replacement Works	7.590		0.000	0.000	0.000	0.380	7.210	
2) House Connection Works	1.545		0.000	0.000	0.000	0.054	1.491	
2. Administration Cost	6.431		0.000	0.000	0.000	4.047	2.384	
3. Tax and Duty	3.707		0.000	0.000	0.000	2.333	1.374	
4. Engineering Cost Total	3.627		1.204	0.000	0.000	1.360	1.063	
Engineering Cost (11% of Direct Cost)	2.582		0.962	0.000	0.000	1.041	0.579	
Price Escalation (9.0% of LC, 1.7% of FC)	0.441		0.041	0.000	0.000	0.092	0.308	
Physical Contingency (20% of LC & FC)	0.604		0.201	0.000	0.000	0.227	0.176	
5. Price Escalation	8.004		0.000	0.000	0.000	1.483	6.521	
(9.0% ot LC, 1.7% ot FC ot Item 1 and 2)			0.000	0.000	0.000			
6. Physical Contingency	7.582	1	0.000	0.000	0.000	4.061	3.521	
(200/aft C R EC after 1 c - 12)								
(20% of LC & FC of Item 1 and 2)								
(20% of LC & FC of Item 1 and 2)	52 826		1 204	0.000	0.000	28.059	23 564	

Disbursement Schedule of Water Supply System Improvement Project (2/2)

Cost Itom		Total			Scheme: R3		S	Scheme: R14			Scheme: R2	
	L.C.	F.C	Total	L.C.	F.C	Total	L.C.	F.C	Total	L.C.	F.C	Total
1 Direct Construction Cost	21,402	35,354	56,756	3,964	7,643	11,607	8,303	13,371	21,674	9,135	14,340	23,475
1.1 Material Procurement and Supply	0	35,354	35,354	0	7,643	7,643	0	13,371	13,371	0	14,340	14,340
1) Ductile Cast Iron Pipes (DIP) with Fittings	0	18,588	18,588	0	2,481	2,481	0	6,814	6,814	0	9,293	9,293
2) Gate Valves, Air Valve and Others	0	3,694	3,694	0	721	721	0	1,890	1,890	0	1,083	1,083
3) Fire Hydrants	0	2,967	2,967	0	396	396	0	1,182	1,182	0	1,389	1,389
4) Water Comsumption Meters with Service Connection Pipes	0	9,976	9,976	0	3,916	3,916	0	3,485	3,485	0	2,575	2,575
5) Equipment for DMA Pilot Study in WSZ R3	0	129	129	0	129	129						
1.2 Civil Works	21,402	0	21,402	3,964	0	3,964	8,303	0	8,303	9,135	0	9,135
1) Pipe Replacement Works	15,983	0	15,983	2,156	0	2,156	6,237	0	6,237	7,590	0	7,590
2) House Connection Works	5,404	0	5,404	1,793	0	1,793	2,066	0	2,066	1,545	0	1,545
3) Meter Chambers for DMA Pilot Study in WSZ R3	15	0	15	15	0	15						
2 Administration Cost	6,951	6,452	13,403	974	1,255	2,229	2,350	2,393	4,743	3,627	2,804	6,431
3 Tax and Duty	8,783	0	8,783	1,766	0	1,766	3,310	0	3,310	3,707	0	3,707
4 Engineering Cost	3,655	4,858	8,513	630	1,037	1,667	1,385	1,834	3,219	1,640	1,987	3,627
1)Engineering Cost 11% of Direct cost	2,354	3,888	6,242	436	840	1,276	913	1,471	2,384	1,005	1,577	2,582
2)Price Contingency (Escaration)	692	160	852	89	24	113	241	57	298	362	79	441
(9.0% of LC, 1.7% of FC)												
3)Physical Contingency	609	810	1,419	105	173	278	231	306	537	273	331	604
(20.0% of LC and FC of 1) & 2) of Item 4)												
5 Price Escalation	12,163	2,365	14,528	1,378	316	1,694	3,996	834	4,830	6,789	1,215	8,004
(9.0% of LC, 1.7% of FC of Item 1and 2)												
6 Physical Contingency	8,103	8,834	16,937	1,263	1,843	3,106	2,930	3,319	6,249	3,910	3,672	7,582
(20.0% of LC and FC of Item 1, 2 & 5)												
Total	61,057	57,863	118,920	9,975	12,094	22,069	22,274	21,751	44,025	28,808	24,018	52,826

Project Cost for each WSZs

(Unit: US\$ 1,000)

Quotation of Ductile Iron Pipe

		Ductile I	ron Pi	pe C	o. Ltd.	
	0	uotation No.: 3673				
				Da	ate: 17.05.20	06
то	:					
PROJ	ECT : Questionaire for Water s	supply material				
ITEM	DESCRIPTION		U.O.M	QTY.	UNIT PRICE	TOTAL
No.	DCIP Puch on Pine K0	0100 J=6.0m	м	(PC)	(USD)	USD
1	DCIP Fush-on Fipe, K9	φ100, L=0.0m	M	6	17.00	102.00
2	DCIP Push on Pine K0	φ130, L=0.0m	M	6	25.5	153.00
3	DCIP Push on Pine K0	φ250, L=6.0m	M	6	31.5	189.00
4	DCIP Push-on Pine K9	$\varphi 250, L=0.011$ $\varphi 300, L=6.0m$	м	6	41.1	246.60
5	DCIP Push-on Pine, K9	φ 350, L=0.011	м	6	51.6	309.60
6	DCIP Push-on Pine K9	φ390, E 0.0m	м	6	68.3	409.80
7	DCIP Push-on Pine K9	φ400, E 0.0m	м	6	81.2	487.20
8	DCIP Push-on Pine K9	φ600, E=6.0m	м	6	110.6	663.60
9		φ000, Ε΄ 0.011		6	144.2	865.20
10	Duble Socket - 90deg Bends per ø80mm	per 1.0kg	PC	4	22.00	22.00
10	Duble Socket - 90deg Bends per @100mm	per 1.0kg	PC	1	32.00	32.00
11	Duble Socket - 90deg Bends per @150mm	per 1.0kg	PC	1	42.00	42.00
12	Duble Socket - 90deg Bends per @200mm	per 1.0kg	PC	1	105.00	10.00
13	Duble Socket - 90deg Bends per @250mm	per 1.0kg	PC	1	207.00	207.00
14	Duble Socket - 90deg Bends per @300mm	per 1 0kg	PC	1	207.00	207.00
15	Duble Socket - 90deg Bends per @350mm	per 1 0kg	PC	1	400.00	400.00
10	Duble Socket - 90deg Bends per @400mm	per 1 0kg	PC	1	509.00	509.00
1/	Duble Socket - 90deg Bends per \$500mm	per 1.0kg	PC	1	702.00	702.00
10	Duble Socket - 90deg Bends per @600mm	per 1 0kg	PC	1	1 150 00	1 150 00
19		r ti timb			1,130.00	1,130.00
20	Duble Socket - 45deg Bends per ø80mm	per 1.0kg	PC	1	30.00	30.00
20	Duble Socket - 45deg Bends per ø100mm	per 1.0kg	PC	1	30.00	30.00
21	Duble Socket - 45deg Bends per ϕ 150mm	per 1.0kg	PC	1	67.00	67.00
22	Duble Socket - 45deg Bends per φ200mm	per 1.0kg	PC	1	99.00	99.00
23	Duble Socket - 45deg Bends per ϕ 250mm	per 1.0kg	PC	1	170 00	170.00
25	Duble Socket - 45deg Bends per φ300mm	per 1.0kg	PC	1	232.00	232.00
26	Duble Socket - 45deg Bends per φ350mm	per 1.0kg	PC	1	302.00	302.00
23	Duble Socket - 45deg Bends per φ400mm	per 1.0kg	PC	1	374.00	374.00
28	Duble Socket - 45deg Bends per φ500mm	per 1.0kg	PC	1	612.00	612.00
29	Duble Socket - 45deg Bends per φ600mm	per 1.0kg	PC	1	887.00	887.00
_/						
30	Duble Socket - 22.5deg Bends per ø80mm	per 1.0kg	PC	1	27.00	27.00
31	Duble Socket - 22.5deg Bends per ø100mm	per 1.0kg	PC	1	34.00	34.00
32	Duble Socket - 22.5deg Bends per q150mm	per 1.0kg	PC	1	55.00	55.00
33	Duble Socket - 22.5deg Bends per φ200mm	per 1.0kg	PC	1	84.00	84.00
34	Duble Socket - 22.5deg Bends per ø250mm	per 1.0kg	PC	1	136.00	136.00
	!					

35	Duble Socket - 22.5deg Bends per φ300mm	per 1.0kg	PC	1	177.00	177.00
36	Duble Socket - 22.5deg Bends per ø350mm	per 1.0kg	PC	1	238.00	238.00
37	Duble Socket - 22.5deg Bends per φ400mm	per 1.0kg	PC	1	292.00	292.00
38	Duble Socket - 22.5deg Bends per φ500mm	per 1.0kg	PC	1	456.00	456.00
39	Duble Socket - 22.5deg Bends per φ600mm	per 1.0kg	PC	1	649.00	649.00
40	Duble Socket - 11.25deg Bends per φ80mm	per 1.0kg	PC	1	28.00	28.00
41	Duble Socket - 11.25deg Bends per ø100mm	per 1.0kg	PC	1	35.00	35.00
42	Duble Socket - 11.25deg Bends per ø150mm	per 1.0kg	PC	1	57.00	57.00
43	Duble Socket - 11.25deg Bends per ø200mm	per 1.0kg	PC	1	82.00	82.00
44	Duble Socket - 11.25deg Bends per ø250mm	per 1.0kg	PC	1	129.00	129.00
45	Duble Socket - 11.25deg Bends per ø300mm	per 1.0kg	PC	1	166.00	166.00
46	Duble Socket - 11.25deg Bends per ø350mm	per 1.0kg	PC	1	222.00	222.00
47	Duble Socket - 11.25deg Bends per ø400mm	per 1.0kg	PC	1	267.00	267.00
48	Duble Socket - 11.25deg Bends per φ500mm	per 1.0kg	PC	1	411.00	411.00
49	Duble Socket - 11.25deg Bends per \000mm	per 1.0kg	PC	1	559.00	559.00
50	Duble Flanged - 90deg Bends per ø80mm	PN10 - per 1.0kg	PC	1	43.00	43.00
51	Duble Flanged - 90deg Bends per φ 100mm	PN10 - per 1.0kg	PC	1	53.00	53.00
52	Duble Flanged - 90deg Bends per φ 150mm	PN10 - per 1.0kg	PC	1	94.00	94.00
53	Duble Flanged - 90deg Bends per φ200mm	PN10 - per 1.0kg	PC	1	154.00	154.00
54	Duble Flanged - 90deg Bends per q250mm	PN10 - per 1.0kg	PC	1	238.00	238.00
55	Duble Flanged - 90deg Bends per φ300mm	PN10 - per 1.0kg	PC	1	341.00	341.00
56	Duble Flanged - 90deg Bends per φ350mm	PN10 - per 1.0kg	PC	1	530.00	530.00
57	Duble Flanged - 90deg Bends per ϕ 400mm	PN10 - per 1.0kg	PC	1	682.00	682.00
58	Duble Flanged - 90deg Bends per φ500mm	PN10 - per 1.0kg	PC	1	1,179.00	1,179.00
59	Duble Flanged - 90deg Bends per ø600mm	PN10 - per 1.0kg	PC	1	1,770.00	1,770.00
60	Duble Flanged - 45deg Bends per φ80mm	PN10 - per 1.0kg	PC	1	40.00	40.00
61	Duble Flanged - 45deg Bends per \u00f6100mm	PN10 - per 1.0kg	PC	1	50.00	50.00
62	Duble Flanged - 45deg Bends per \u00f6150mm	PN10 - per 1.0kg	PC	1	86.00	86.00
63	Duble Flanged - 45deg Bends per ø200mm	PN10 - per 1.0kg	PC	1	127.00	127.00
64	Duble Flanged - 45deg Bends per φ250mm	PN10 - per 1.0kg	PC	1	214.00	214.00
65	Duble Flanged - 45deg Bends per φ 300mm	PN10 - per 1.0kg	PC	1	296.00	296.00
66	Duble Flanged - 45deg Bends per φ 350mm	PN10 - per 1.0kg	PC	1	411.00	411.00
67	Duble Flanged - 45deg Bends per ø400mm	PN10 - per 1.0kg	PC	1	546.00	546.00
68	Duble Flanged - 45deg Bends per	PN10 - per 1.0kg	PC	1	916.00	916.00
69	Duble Flanged - 45deg Bends per φ600mm	PN10 - per 1.0kg	PC	1	1,392.00	1,392.00
70	Duble Flanged - 22.5deg Bends per φ80mm	PN10 - per 1.0kg	PC	1	37.00	37.00
71	Duble Flanged - 22.5deg Bends per φ100mm	PN10 - per 1.0kg	PC	1	45.00	45.00
72	Duble Flanged - 22.5deg Bends per φ 150mm	PN10 - per 1.0kg	PC	1	75.00	75.00
73	Duble Flanged - 22.5deg Bends per φ200mm	PN10 - per 1.0kg	PC	1	111.00	111.00
74	Duble Flanged - 22.5deg Bends per φ250mm	PN10 - per 1.0kg	PC	1	183.00	183.00
75	Duble Flanged - 22.5deg Bends per φ 300mm	PN10 - per 1.0kg	PC	1	242.00	242.00
76	Duble Flanged - 22.5deg Bends per φ350mm	PN10 - per 1.0kg	PC	1	349.00	349.00
77	Duble Flanged - 22.5deg Bends per φ400mm	PN10 - per 1.0kg	PC	1	464.00	464.00
78	Duble Flanged - 22.5deg Bends per φ500mm	PN10 - per 1.0kg	PC	1	764.00	764.00
79	Duble Flanged - 22.5deg Bends per ø600mm	PN10 - per 1.0kg	PC	1	1,166.00	1,166.00

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80	Duble Socket Tees with Flanged Branch ø80x80mm	PN10 - per 1.0kg	PC	1	53.00	53.00
81	Duble Socket Tees with Flanged Branch \u00f6100x100mm	PN10 - per 1.0kg	PC	1	79.00	79.00
82	Duble Socket Tees with Flanged Branch \u00f6150x150mm	PN10 - per 1.0kg	PC	1	152.00	152.00
83	Duble Socket Tees with Flanged Branch φ 200x200mm	PN10 - per 1.0kg	PC	1	187.00	187.00
84	Duble Socket Tees with Flanged Branch \u03c6250x250mm	PN10 - per 1.0kg	PC	1	300.00	300.00
85	Duble Socket Tees with Flanged Branch φ 300x300mm	PN10 - per 1.0kg	PC	1	402.00	402.00
86	Duble Socket Tees with Flanged Branch φ 350x350mm	PN10 - per 1.0kg	PC	1	493.00	493.00
87	Duble Socket Tees with Flanged Branch \u00f6400x400mm	PN10 - per 1.0kg	PC	1	641.00	641.00
88	Duble Socket Tees with Flanged Branch φ 500x500mm	PN10 - per 1.0kg	РС	1	1,014.00	1,014.00
89	Duble Socket Tees with Flanged Branch φ600x600mm	PN10 - per 1.0kg	PC	1	1,503.00	1,503.00
90	Flange Tee φ80x80mm	PN10 - per 1.0kg	PC	1	63.00	63.00
91	Flange Tee ϕ 100x100mm	PN10 - per 1.0kg	PC	1	78.00	78.00
92	Flange Tee φ150x150mm	PN10 - per 1.0kg	PC	1	144.00	144.00
93	Flange Tee φ200x200mm	PN10 - per 1.0kg	PC	1	209.00	209.00
94	Flange Tee φ250x250mm	PN10 - per 1.0kg	PC	1	341.00	341.00
95	Flange Tee φ300x300mm	PN10 - per 1.0kg	PC	1	472.00	472.00
96	Flange Tee ø350x350mm	PN10 - per 1.0kg	PC	1	653.00	653.00
97	Flange Tee φ400x400mm	PN10 - per 1.0kg	PC	1	854.00	854.00
98	Flange Tee φ500x500mm	PN10 - per 1.0kg	PC	1	1,417.00	1,417.00
99	Flange Tee φ600x600mm	PN10 - per 1.0kg	PC	1	2,131.00	2,131.00
100	Socket Tee φ80x80mm	per 1.0kg	PC	1	51.00	51.00
101	Socket Tee φ100x100mm	per 1.0kg	PC	1	66.00	66.00
102	Socket Tee φ150x150mm	per 1.0kg	PC	1	115.00	115.00
103	Socket Tee φ200x200mm	per 1.0kg	PC	1	177.00	177.00
104	Socket Tee φ250x250mm	per 1.0kg	PC	1	294.00	294.00
105	Socket Tee φ300x300mm	per 1.0kg	PC	1	272.00	272.00
	Socket 1 ee \$45000000000000000000000000000000000000	ner 1.0kg	PC			
106	DN350)	per nong		1	735.00	735.00
107	Socket Tee ϕ 400x400mm	per 1.0kg	PC	1	637.00	637.00
108	Socket Tee φ 500x500mm	per 1.0kg	PC	1	949.00	949.00
109	Socket Tee φ600x600mm	per 1.0kg	PC	1	1,335.00	1,335.00
110	Double Socket Reducers ø100x80mm	per 1.0kg	PC	1	33.00	33.00
111	Double Socket Reducers	per 1.0kg	PC	1	49.00	49.00
112	Double Socket Reducers	per 1.0kg	PC	1	72.00	72.00
113	Double Socket Reducers	per 1.0kg	PC	1	119.00	119.00
114	Double Socket Reducers	per 1.0kg	PC	1	154.00	154.00
115	Double Socket Reducers	per 1.0kg	PC	1	220.00	220.00
116	Double Socket Reducers φ400x350mm	per 1.0kg	PC	1	267.00	267.00
117	Double Socket Reducers φ500x400mm	per 1.0kg	PC	1	341.00	341.00
118	Double Socket Reducers φ600x500mm	per 1.0kg	PC	1	530.00	530.00
119	Flange Reducers φ80x65mm	PN16 - per 1.0kg	PC	1	38.00	38.00
120	Flange Reducers ø100x80mm	PN16 - per 1.0kg	PC	1	39.00	39.00
121	Flange Reducers ϕ 150x100mm	PN16 - per 1.0kg	PC	1	64.00	64.00
122	Flange Reducers $\varphi 200 \times 150 \text{mm}$	PN16 - per 1.0kg	PC	1	97.00	97.00

		1				
123	Flange Reducers φ 250x200mm	PN16 - per 1.0kg	PC	1	136.00	136.00
124	Flange Reducers ϕ 300x250mm	PN16 - per 1.0kg	PC	1	177.00	177.00
125	Flange Reducers ϕ 350x300mm	PN16 - per 1.0kg	PC	1	439.00	439.00
126	Flange Reducers ϕ 400x350mm	PN16 - per 1.0kg	PC	1	460.00	460.00
127	Flange Reducers ϕ 500x400mm	PN16 - per 1.0kg	PC	1	678.00	678.00
128	Flange Reducers ϕ 600x500mm	PN16 - per 1.0kg	PC	1	871.00	871.00
129	Blank Flanges φ80mm	PN10 - per 1.0kg	PC	1	16.00	16.00
130	Blank Flanges φ100mm	PN10 - per 1.0kg	PC	1	20.00	20.00
131	Blank Flanges φ150mm	PN10 - per 1.0kg	PC	1	33.00	33.00
132	Blank Flanges φ200mm	PN10 - per 1.0kg	PC	1	68.00	68.00
133	Blank Flanges φ250mm	PN10 - per 1.0kg	PC	1	78.00	78.00
134	Blank Flanges φ300mm	PN10 - per 1.0kg	PC	1	126.00	126.00
135	Blank Flanges φ350mm	PN10 - per 1.0kg	PC	1	181.00	181.00
136	Blank Flanges φ400mm	PN10 - per 1.0kg	PC	1	236.00	236.00
137	Blank Flanges φ500mm	PN10 - per 1.0kg	PC	1	464.00	464.00
138	Blank Flanges φ600mm	PN10 - per 1.0kg	PC	1	825.00	825.00
139	Flange Socket Pcø80mm	PN10 - per 1.0kg	PC	1	35.00	35.00
140	Flange Socket Pcφ100mm	PN10 - per 1.0kg	PC	1	38.00	38.00
141	Flange Socket Pcq150mm	PN10 - per 1.0kg	PC	1	62.00	62.00
142	Flange Socket Pcφ200mm	PN10 - per 1.0kg	PC	1	86.00	86.00
143	Flange Socket Pcφ250mm	PN10 - per 1.0kg	PC	1	144.00	144.00
144	Flange Socket Pcφ300mm	PN10 - per 1.0kg	PC	1	183.00	183.00
145	Flange Socket Pcq350mm	PN10 - per 1.0kg	PC	1	242.00	242.00
146	Flange Socket Pcq400mm	PN10 - per 1.0kg	PC	1	283.00	283.00
147	Flange Socket Pcφ500mm	PN10 - per 1.0kg	PC	1	402.00	402.00
148	Flange Socket Pcq600mm	PN10 - per 1.0kg	PC	1	612.00	612.00
149	Flange Spigot Pcq80mm	PN10 - per 1.0kg	PC	1	33.00	33.00
150	Flange Spigot Pcq100mm	PN10 - per 1.0kg	PC	1	41.00	41.00
151	Flange Spigot Pcq150mm	PN10 - per 1.0kg	PC	1	70.00	70.00
152	Flange Spigot Pcq200mm	PN10 - per 1.0kg	PC	1	99.00	99.00
153	Flange Spigot Pcq250mm	PN10 - per 1.0kg	PC	1	136.00	136.00
154	Flange Spigot Pcq300mm	PN10 - per 1.0kg	PC	1	185.00	185.00
155	Flange Spigot Pcq350mm	PN10 - per 1.0kg	PC	1	238.00	238.00
156	Flange Spigot Pcq400mm	PN10 - per 1.0kg	PC	1	304.00	304.00
157	Flange Spigot Pcq500mm	PN10 - per 1.0kg	PC	1	480.00	480.00
158	Flange Spigot Pcq600mm	PN10 - per 1.0kg	PC	1	694.00	694.00
100				-		
159	Double Flanged DI Short Pieces 80 1=250mm	PN10 - per 1.0kg	PC	1	113.00	113.00
160	Double Flanged DI Short Pieces 100 l=250mm	PN10 - per 1.0kg	PC	1	128.00	128.00
161	Double Flanged DI Short Pieces 150 l=250mm	PN10 - per 1.0kg	PC	1	179.00	179.00
162	Double Flanged DI Short Pieces 200 l=250mm	PN10 - per 1.0kg	PC	1	248.00	248.00
163	Double Flanged DI Short Pieces 250 l=250mm	PN10 - per 1.0kg	PC	1	358.00	358.00
164	Double Flanged DI Short Pieces 300 l=250mm	PN10 - per 1.0kg	PC	1	485.00	485.00
165	Double Flanged DI Short Pieces 350 l=250mm	PN10 - per 1.0kg	PC	1	591 00	591 00
166	Double Flanged DI Short Pieces 400 l=250mm	PN10 - per 1.0kg	PC	1	743.00	743.00
167	Double Flanged DI Short Pieces 500 l=250mm	PN10 - per 1.0kg	PC	1	1 00/ 00	1 00/ 00
107		· · · · · · · · · · · · · · · · · · ·	-	1	1,004.00	1,004.00

168	Double Flanged DI Short Pieces 600 l=250mm	PN10 - per 1.0kg	PC	1	1,297.00	1,297.00
169	Double Flanged DI Short Pieces 80 l=500mm	PN10 - per 1.0kg	PC	1	118.00	118.00
170	Double Flanged DI Short Pieces 100 l=500mm	PN10 - per 1.0kg	PC	1	135.00	135.00
171	Double Flanged DI Short Pieces 150 l=500mm	PN10 - per 1.0kg	PC	1	186.00	186.00
172	Double Flanged DI Short Pieces 200 l=500mm	PN10 - per 1.0kg	PC	1	257.00	257.00
173	Double Flanged DI Short Pieces 250 l=500mm	PN10 - per 1.0kg	PC	1	369.00	369.00
174	Double Flanged DI Short Pieces 300 l=500mm	PN10 - per 1.0kg	PC	1	501.00	501.00
175	Double Flanged DI Short Pieces 350 l=500mm	PN10 - per 1.0kg	PC	1	609.00	609.00
176	Double Flanged DI Short Pieces 400 l=500mm	PN10 - per 1.0kg	PC	1	767.00	767.00
177	Double Flanged DI Short Pieces 500 l=500mm	PN10 - per 1.0kg	PC	1	1,034.00	1,034.00
178	Double Flanged DI Short Pieces 600 l=500mm	PN10 - per 1.0kg	PC	1	1,338.00	1,338.00
179	Double Flange with puddle φ80 l=600mm	PN10 - per 1.0kg	PC	1	173.00	173.00
180	Double Flange with puddle φ 100 l=600mm	PN10 - per 1.0kg	PC	1	197.00	197.00
181	Double Flange with puddle φ150 l=600mm	PN10 - per 1.0kg	PC	1	271.00	271.00
182	Double Flange with puddle φ200 l=600mm	PN10 - per 1.0kg	PC	1	377.00	377.00
183	Flange Spigot with puddle φ 250 l=1000mm	PN10 - per 1.0kg	PC	1	397.00	397.00
184	Flange Spigot with puddle φ 300 l=1000mm	PN10 - per 1.0kg	PC	1	538.00	538.00
185	Flange Spigot with puddle φ 350 l=1000mm	PN10 - per 1.0kg	PC	1	660.00	660.00
186	Flange Spigot with puddle φ 400 l=1000mm	PN10 - per 1.0kg	PC	1	825.00	825.00
187	Flange Spigot with puddle φ 500 l=1000mm	PN10 - per 1.0kg	PC	1	1,112.00	1,112.00
188	Flange Spigot with puddle φ600 l=1000mm	PN10 - per 1.0kg	PC	1	1,441.00	1,441.00
189	Collars (using express joint)	φ80	PC	1	50.00	50.00
190	Collars (using express joint)	φ100	PC	1	80.00	80.00
191	Collars (using express joint)	φ150	PC	1	107.00	107.00
192	Collars (using express joint)	φ200	PC	1	135.00	135.00
193	Collars (using express joint)	φ250	PC	1	194.00	194.00
194	Collars (using express joint)	φ300	PC	1	224.00	224.00
195	Collars (using express joint)	φ350	PC	1	315.00	315.00
196	Collars (using express joint)	φ400	PC	1	410.00	410.00
197	Collars (using express joint)	φ500	PC	1	521.00	521.00
198	Collars (using express joint)	φ600	PC	1	1,137.00	1,137.00
199	Coupling	φ80	PC	1	63.00	63.00
200	Coupling	φ100	PC	1	72.00	72.00
201	Coupling	φ150	PC	1	100.00	100.00
202	Coupling	φ200	PC	1	137.00	137.00
203	Coupling	φ250	PC	1	177.00	177.00
204	Coupling	φ300	PC	1	219.00	219.00
205	Coupling	φ350	PC	1	271.00	271.00
206	Coupling	φ400	PC	1	294.00	294.00
207	Coupling	φ500	PC	1	366.00	366.00
208	Coupling	φ600	PC	1	436.00	436.00
209	Bolt PN10 zinc coated steel per 8nos	φ80	PC	8	3.00	24.00
210	Bolt PN10 zinc coated steel per 8nos	φ100	PC	8	3.00	24.00

211	Bolt PN10 zinc coated steel per 8nos	φ150	PC	8	5.00	40.00
212	Bolt PN10 zinc coated steel per 8os	φ200	PC	8	5.00	40.00
213	Bolt PN10 zinc coated steel per 8os	φ250	PC	8	7.00	56.00
214	Bolt PN10 zinc coated steel per 12nos	φ300	PC	12	11.00	132.00
215	Bolt PN10 zinc coated steel per 12nos	φ350	PC	12	11.00	132.00
216	Bolt PN10 zinc coated steel per 16nos	φ400	PC	16	11.00	176.00
217	Bolt PN10 zinc coated steel per 20nos	φ500	PC	20	15.00	300.00
218	Bolt PN10 zinc coated steel per 20nos	φ600	PC	20	17.00	340.00
219	Plain Flat gasket PN16	φ80	PC	1	3.00	3.00
220	Plain Flat gasket PN16	φ100	PC	1	3.00	3.00
221	Plain Flat gasket PN16	φ150	PC	1	5.00	5.00
222	Plain Flat gasket PN16	φ200	PC	1	9.00	9.00
223	Plain Flat gasket PN16	φ250	PC	1	10.00	10.00
224	Plain Flat gasket PN16	φ300	PC	1	14.00	14.00
225	Plain Flat gasket PN16	φ350	PC	1	16.00	16.00
226	Plain Flat gasket PN16	φ400	PC	1	18.00	18.00
227	Plain Flat gasket PN16	φ500	PC	1	23.00	23.00
228	Plain Flat gasket PN16	φ600	PC	1	27.00	27.00
229	Lubricant for RR joint	per 18kg	KG	1	43.00	43.00
				Gran	d Total USD	76,783.00

Specification: Ductile Iron Pipes and Fittings manufactured according to ISO2531

Pipes are coated externally by pure metallic zinc at the rate of 200 gm/m^2 , then by Bituminous paint of 120 microns as per ISO 8179 - 1

Fittings are coated externally by zinc rich paint at the rate of 150 gm/m^2 , then by Bituminous paint of 120 microns as per ISO 8179 - 2

Pipes and Fittings are coated Internally by cement mortar lining (Sulphate resistant Type V) as per ISO4179 Flange Prices are based on PN10 or PN16 (Upon our choice), excluding Bolts, Nuts, Washers, and Flange Gaskets.

Delivery Time within: To be agreed upon placing order.

Quotation Validity : 30 Days.

Best Regards,

The Feasibility Study on Baghdad Water Supply System Improvement Project in Republic of Iraq

Quotation of Valve, Meter and Saddle

	No	Items	Size	Unit	Price (US\$)	Pamark	
v	NO.	Cata Value BN1(Toma EUDO20	5120	Pos	126 71	EURO20 Turne 22	Saint Cohain DAM
V	1	Gate Valve PN16 Type EURO20	φ50mm	F CS	120.71	EURO20, Type 23.	Saint Gobain PAM
V	2	Gate Valve PN16 Type EURO20	<u> 00</u>	PCS	142.23	EURO20, Type 23.	Saint Gobain PAM
V	3	Gate Valve PN16 Type EURO20	φ80mm	PCS	1/0./0	EURO20, Type 23.	Saint Gobain PAM
V	4	Gate Valve PN16 Type EURO20	φ100mm	Pes	203.40	EURO20, Type 23.	Saint Gobain PAM
V	5	Gate Valve PN16 Type EURO20	φ150mm	Pes	3/5.90	EURO20, Type 23.	Saint Gobain PAM
V	6	Gate Valve PN16 Type EURO20	φ200mm	Pcs	663.69	EURO20, Type 23.	Saint Gobain PAM
V	/	Gate Valve PN16 Type EURO20	φ250mm	Pcs	1,107.70	EURO20, Type 23.	Saint Gobain PAM
V	8	Gate Valve PN16 Type EURO20	φ300mm	Pcs	1,442.68	EURO20, Type 23.	Saint Gobain PAM
v		Butterfly Valve PN16 Type EUROSTOP BBX-	@400mm	_			
Ľ	9	JPA	φτοσπιπ	Pcs	3,729.89		
v		Butterfly Valve PN16 Type EUROSTOP BBX-	@500mm				
Ľ	10	JPA	φουυππ	Pcs	6,487.78		
v		Butterfly Valve PN16 Type EUROSTOP BBX-	a600mm				
Ľ	11	JPA	φουσιμμ	Pcs	8,646.36		
v		Puttorfly Volyo DN16 Typo IMC WAFED	a100mm			for air valve with side	
v	12	Butterily valve FN10 Type JMC WAFER	φτουππ	Pcs	214.18	stop lever	
v		Button for Value DN1 (True IMC WAFED				for air valve with side	
v	13	Butterny valve PN16 Type JMC WAFER	φ150mm	Pcs	252.65	stop lever	
* *		Fire Protection pillar (refer:Atlas/Hermes	00 1 0 /			above ground	Saint Gobain PAM
V	14	France)	φ80mm x 1 outlet	Set	1,150.79	abt 666mm-1000mm	
V	15	Extension Spindle with operation cap	18x18x1000mm	Unit	55.40		1
v	16	Spindle gidline cover by steel extrenal dia 90mm)	φ90mm x 1 10m	Unit	7.18		t
L.		Surface Boxes (height adjustable model dia					t
V	17	150mmv200mm denth)	1	Unit	28.22	casting with lock	Saint Gobain PAM
v	18	RBA Ferrule Service connection with ston valve	(015mm	Unit	47.58	SE 402	Huot
L.	10	Wide range Saddle for installation on AC UPVC	ψισπιπ	Omt	47.50	51 402.	Tuot
	19 D	DI Dime			25.65	1099	Unot
v	10 D	DI Pipe		Unit	47.59	SE 402	Huot
<u> </u>	19	Wide renge Seddle for installation on AC UDVC	φ20mm	Umt	47.38	SE 402.	пиог
	10 D	wide range Saddle for installation on AC, UPVC,			45.52	1 0 00	TT
	19 B	DI Pipe		X X	45.53	LP 88	Huot
V	20	RBA Ferrule Service connection with stop valve	φ25mm	Unit	57.20	SE 402.	Huot
	2 0 D	wide range Saddle for installation on AC, UPVC,			(2.10)	r D 00	**
	20 B	DI Pipe			63.10	LP 88	Huot
V	21	Flanged branch on mecanial double socket PN16	φ50mm	Unit	100.73	with bolt and gasket	
V	22	Flanged branch on mecanial double socket PN16	φ80mm	Unit	132.88	with bolt and gasket	
V	23	Flanged branch on mecanial double socket PN16	φ100mm	Unit	158.99	with bolt and gasket	
V	24	Air Valves double orifice PN16	VENTEX DN100	Set	1,070.63		Saint Gobain PAM
V	25	Air Valves double orifice PN17	VENTEX DN150	Set	1,876.68		Saint Gobain PAM
V	26	Cast iron manhole cover with lock Hevy duty	Dia 600m	Set	147.49	Paved trfic	Saint Gobain PAM
V	27	Cast iron manhole cover with lock Medium duty	Dia 700m	Set	147.49	Paved trfic	Saint Gobain PAM
V	28	Cast iron manhole cover with lock Hevy duty	Dia 150mm	Set	147.49	Unpaved trfic	Saint Gobain PAM
V	29	Cast iron manhole cover with lock Medium duty	Dia 150mm	Set	147.49	Unpaved trfic	Saint Gobain PAM
V	30	Cast iron manhole cover with lock Hevy duty	600 x 600mm	Set	147.49	Paved trfic	Saint Gobain PAM
V	31	Cast iron manhole cover with lock Medium duty	600 x 600mm	Set	147.49	Paved trfic	Saint Gobain PAM
v	32	T type Spindle for valve opener	T handle	No	179.55	ΙΤ	1
V	33	Water meter with male in/outlet	15mm (1/2in)	No	35.91	EEC Class C 75/33	Sensus 820
v	34	Water meter with male in/outlet	20mm (3/4in)	No	42.32	EEC Class B75/33	Sensus 405 S
v	35	Water meter with male in/outlet	25mm (1.0in)	No	57.71	EEC Class B75/33	Sensus 405 S
v	36	Water meter with double flange PN16	50mm (2.0in)	No	338 58	ditto double flange	Sensus WP Dynamic
v	37	Water meter with double flange PN16	80mm (3.0in)	No	379.62	ditto double flange	Sensus WP Dynamic
v	38	Water meter with double flange PN16	100mm (4 0in)	No	437.08	ditto double flange	Sensus WP Dynamia
1V	20	All stainless steel nermanent renair clamps	@200mm	No	206.48	ashestos to DCIP	Sensus wr Dynallic
V	40	All stainless steel permanent repair clamps	φ200mm	No	238 55	ashestos to DCIP	ł
V	40	All stainless steel permanent repair clamps	φ2300mm	No	320.00	ashestos to DCIP	ł
V	41	All stainless steel permanent repair clamps	φ300mm	No	621.01	asbestos to DCII	ł
$\frac{v}{v}$	42	All stainless steel permanent repair clamps	φ+00mm	No	021.01 856.00	asbestos to DCIP	ł
V V	43	All stainless steel permanent repair clamps	φ500mm	INO Na	002.02	aspestos to DCIP	ł
<u>V</u>	44	All stallless steel permanent repair clamps	φουυmm	INO Cut	902.03	aspesios to DCIP	ł
HV.	45	Polyetnylene Sleeving 250micron	φ100mm x 1,000m	Set	0.83	with adhesive tapes	ł
V	46	Polyethylene Sleeving 250micron	φ150mm x 1,000m	Set	1.23	with adhesive tapes	ł
V	47	Polyethylene Sleeving 250micron	φ200mm x 1,000m	Set	1.66	with adhesive tapes	ł
V	48	Polyethylene Sleeving 250micron	φ250mm x 1,000m	Set	2.15	with adhesive tapes	ł
V	49	Polyethylene Sleeving 250micron	φ300mm x 1,000m	Set	2.74	with adhesive tapes	ļ
V	50	Polyethylene Sleeving 400micron	φ400mm x 1,000m	Set	4.29	with adhesive tapes	ļ
V	51	Polyethylene Sleeving 400micron	φ500mm x 1,000m	Set	5.88	with adhesive tapes	ļ
IV	52	Polyethylene Sleeving 400micron	φ600mm x 1.000m	Set	7.63	with adhesive tapes	1

Conditions;

All the prices shall be quoted in US dollar or Euro.
 All prices shall not include taxes such as VAT, import tax, commodity tax, and so on.
 Prices of materials shall include FOB costs such as packing, loading/unloading, and transportation to port.

Quotation of Air Valve

				ven	tou	ses			1 AM
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	1								
		ENTO	USE 1	ROIS	FONC	TIONS	A GRA	10 - 16	- 25 BAR
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n ¹⁶ Désignation	raccordemen	nt _{kg}	Référence	€ E	Réfé	rence	e	100-a	40. F
D 4060	60	15	RCA60DSAH RCA65DSAH	339,8	0 RCA6	5DSDH ·	398,60		
or D 6080	80	25	RCABODSAH	1 * 544,4	O RCAS	ODSDH /	633,80		
po D 9010	100	38	RCB10DSAH	835,0	0 RCB1	ODSDH	963,40	1 25	E CONTRACTOR OF
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	v	ENTO	USE 7	FROIS	FON	TIONS	À GR	AND DÉBI	t d'Air 🎆
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DN	Masse	Référence	PFA 10 bar	Référence	PFA 16 bar	Référence	PFA 25 bar	S. Florent	Page
80*	kg 24	PCAGOCARH	Prix en € 643.30	RCAEOCAAH	Prix en € 665.50	RCAEOCADH	Prix en € 688.70	N	Section 2
80	40 1	RCA80CABH	687,90	RCABOCAAH	712,10	RCASOCADH	736,90	North State	
100	40 1	RCB10CABH RCB15CABH	806,20 1414.10	RCB10CAAH RCB15CAAH	834,80	RCB10CADH RCB15CADH	1514,90		
200	170	RCB20CABH	2044,30	RCB20CAAH	2115,80	RCB20CADH	2189,80		C.L.
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Local port cleara	nce/han	dling(1)	Inland trans	port (1)		Insurance and guard of truck/trailer convoy (1)				
Turke	y port		Turkey to Ba	aghdad		Turl	key to Bagh	dad		
Content	Unit	Price (US\$)	Content	Unit	Price (US\$)	Content	Unit	Ratio(%)	Discription	
general (20ft container)	VAN	\$.140 + \$.35	general (20ft container)	VAN	\$.3000	Insurance (Turkey to Baghdad)	%	see below	CIF Turkey port	
general (40ft container)	VAN	\$.140 + \$.35	general (40ft container)	VAN	\$.3500	Insurance (in Turkey)	%	see below	If possible	
case	F/T	\$.6 + \$.3,5	material, pipe, fittings etc,	F/T	\$135-\$150	Insurance (in Baghdad)	%	N/A	If possible	
crate	F/T	\$.6 + \$.3,5	material,pipe,fittings etc,	F/T	\$135-\$150	Guard of convoy (as a whole)	time	N/A	If necessary	
pallet	F/T	\$.6 + \$.3,5	material,pipe,fittings etc,	F/T	\$135-\$150	Guard of convoy (in Turkey)	time	N/A	If necessary	
skid	F/T	\$.6 + \$.3,5	material, pipe, fittings etc,	F/T	\$135-\$150	Guard of convoy (in Iraq)	time	N/A	Turkey to Baghdad	
bundle	F/T	\$.6 + \$.3,5	material,pipe,fittings etc,	F/T	\$135-\$150	Guard of convoy (return)	time	N/A	Baghdad to Turkey	
bear	F/T	\$.6 + \$.3,5	equipment,pipe,fittings etc,	F/T	\$135-\$150					
custom clearance	time	\$1500-\$3000								
documentation fee	time	\$.100/per bl								
re-export permisin	time	\$.200 / per bl								
other necessary fee	time									
Local port cleara	nce/hand	dling(2)	Inland trans	oort (2)		Insurance and gu	ard of trucl	k/trailer con	voy (2)	
Turke	y port		Turkey to Ba	aghdad		Turł	key to Bagh	dad		
Content	Unit	Price (US\$)	Content	Unit	Price (US\$)	Content	Unit	Ratio(%)	Price (US\$)	
general (20ft container)	VAN	\$.140 + \$.35	general (20ft container)	VAN	\$.3000	Insurance (Turkey to Baghdad)	%	see below	CIF Turkey port	
general (40ft container)	VAN	\$.140 + \$.35	general (40ft container)	VAN	\$.3500	Insurance (in Turkey)	%	see below	If possible	
case	F/T	\$.6 + \$.3,5	material,pipe,fittings etc,	F/T	\$.180	Insurance (in Baghdad)	%	N/A	If possible	
crate	F/T	\$.6 + \$.3,5	material,pipe,fittings etc,	F/T	\$.180	Guard of convoy (as a whole)	time	N/A	If necessary	
pallet	F/T	\$.6 + \$.3,5	material,pipe,fittings etc,	F/T	\$.180	Guard of convoy (in Turkey)	time	N/A	If necessary	
skid	F/T	\$.6 + \$.3,5	material, pipe, fittings etc,	F/T	\$.180	Guard of convoy (in Iraq)	time	N/A	Turkey to Baghdad	
bundle	F/T	\$.6 + \$.3,5	material,pipe,fittings etc,	F/T	\$.180	Guard of convoy (return)	time	N/A	Baghdad to Turkey	
bear	F/T	\$.6 + \$.3,5	equipment,pipe,fittings etc,	F/T	\$.180					
custom clearance	time	\$1500-\$3000								
documentation fee	time	\$100/per bl								
re-export permisin	time	\$.200 / per bl								
other necessary fee	time									

Questionnair Sheet of Inland Transportation

Note:

1. Material,pipe and fittings are 1000-2000 F/T per time

2. Each cargo 5 F/T up to 10 F/T,equipment may be 15tons/no max.

3. Container 20 F/T is 18.6 M/T 20m3 min.

4. Container 40 F/T is 20.5 M/T 40m3 min.

5. Transportation insurance makes an all risk (to loading and unloading on)

6. Inland transport (1) : In 25 grosstonnage by truck and tarilers.

7. Inland transport (2) :Over 25 grosstonnage by heavy equipment and material.

Note:None of the Insurance Companies could give us a rate. We are still investigatring.

Note: Insurance for Baghdad should be contracted abroad as per Local Insurers' statement.

Note: (Inland Transport -2-) Weight ranging fm 25 to 50 ts being considered as low bed trailer's cargo increasing the rate as shown above.

Local port clearance	ce/handling	g (1)	Inland transp		Insurance and guard of truck/trailer convoy (1)				
Turkey	port		Turkey to Ba		Turkey to Baghdad				
Content	unit	Price(US\$)	Content	unit	Price(US\$)	Content	unit	Ratio (%)	Discription
general (20ft container)	VAN	290.00	general (20ft container)	VAN	9,000.00	Insurance (Turky to Baghdad	%	3.5	CIF Turkey port
general (40ft container)	VAN	500.00	general (40ft container)	VAN	14,000.00	Insurance (in Turky)	%	3.5	If possible
case	F/T	21.00	material, pipe, fittings etc,	F/T	360.00	Insurance (in Baghdad)	%	3.5	If possible
crate	F/T	21.00	material, pipe, fittings etc,	F/T	360.00	Guard of convoy (as a whole	time	-	If necessary
pallet	F/T	21.00	material, pipe, fittings etc,	F/T	360.00	Guard of convoy (in Turky)	time	-	If necessary
skid	F/T	21.00	material, pipe, fittings etc,	F/T	360.00	Guard of convoy (in Iraq)	time	47,000	Turky to Baghdad
bundle	F/T	21.00	material, pipe, fittings etc,	F/T	360.00	Guard of convoy (return)	time	31,000	Baghdad to Turky
bear	F/T	21.00	equipment, pipe, fittings etc,	F/T	360.00				
custom clearance	F/T	7.00							
documentation fee	F/T	7.00							
re-export permisin	F/T	-							
other necessary fee	F/T	7.00							

Questionnair Sheet of Inland Transportation

Note:

1. Material, pipe and fittings are 1000-2000F/T per time

2. Each cargo 5 F/T up to 10 F/T, equipment may be 15tons/no max,

3. Conteiner 20ft is 18.6M/T 20m3 min,

4. Conteinre40ft is 20.5M/T 40m3 min,

5. Transportation insurance makes an all risk (to loading and unloading on Baghdad)

6.Inland transport (1): In 25 grosstonnage by trucks and trailers.

7. Inland transport (2) : Over 25 grosstonnage by heavy equipment and material.

The Feasibility Study on Baghdad Water Supply System Improvement Project in Republic of Iraq Quotation of Local Contractor

Company outline	
Name of company:	
Year established:	2000
Capital (US\$):	20000000 ID
Main business:	General Contracts
Number of permanent employees:	75
Address of head office:	
Location of branch offices:	
Contract Manager;	Sign:
Cost Valid Period;	

Annual amount of work completed in the past 5 years:

Year	Amount of work completed (US\$)
2005	220,000
2004	400000+220000
2003	63,000
2002	75000+129000+56000
2001	700,000

Company experience of bridge construction project in the past 10 years:

Name of project	Location	Client	Duration	Contract amount (US\$)
none				

N	lo.	Assortment	Wages & Sala	ry(US\$ or ID)	Domost
			per day	per month	кетаек
А	1	Foreman for Cvil Work	39.36		
А	2	Special Technical Worker	32.80		
А	3	Common Worker	16.40		
А	4	Common Worker (Light Job)	13.12		
А	5	Scaffolding / Structural Steel Work	36.08		
А	6	Reinforcing steel fixer	32.80		
А	7	Construction Machine Operator	36.08		
А	8	Driver	26.24		
А	9	Carpenter	26.24		
А	10	Plasterer	26.24		
А	11	Mason	26.24		
А	12	Painter	26.24		
А	13	Electtrician	29.52		
А	14	Electrician for high voltage	78.72		
A	15	Foreman for Electrical Work	45.92		
А	16	Mechanician	36.08		
А	17	Pipe Fitter (Plumber)	26.24		
А	18	Welder	45.92		
А	19	Foreman for Mechanical Work	59.04		
А	20	Security, Watch Man	16.40		
А	21	Traffic. Watch Man			
А	22	Civil Engineer (20Years Experience)		1,968.00	
А	23	Civil Engineer (15Years Experience)		1,640.00	
А	24	Civil Engineer (10Years Experience)		1,312.00	
Α	25	Civil Engineer (5Years Experience)		787.20	
А	26	Architecture Engineer (20Years Experience)		1,968.00	
А	27	Architecture Engineer (15Years Experience)		1,640.00	
А	28	Architecture Engineer (10Years Experience)		1,312.00	
А	29	Architecture Engineer (5Years Experience)		787.20	
А	30	Mechnical Engineer (20Years Experience)		1,968.00	
А	31	Mechnical Engineer (15Years Experience)		1,640.00	
А	32	Mechnical Engineer (10Years Experience)		1,312.00	
А	33	Mechnical Engineer (5Years Experience)		787.20	
А	34	Electrical Engineer (20Years Experience)		1,968.00	
А	35	Electrical Engineer (15Years Experience)		1,640.00	
А	36	Electrical Engineer (10Years Experience)		1,312.00	
А	37	Electrical Engineer (5Years Experience)		787.20	
А	38	Surveyor		1,049.60	
А	39	Assitant Surveyor		393.60	
А	40	Drafting technician		984.00	
А	41	Assitant Drafting technician		787.20	
А	42	Accountant		787.20	
А	43	Secretary		393.60	
А	44	Clerk		787.20	
А	45	Driver		656.00	
А	46	Security, Watch Man		410.00	
А	47	Stoor Keeper		410.00	
А	48	Office Boy		328.00	

Personnel Fee

Condition;

1. The above price should not include site expense, overhead expence, profit and taxes such as V.A.T.

2. The above prices are including holiday allowance, midnight allowance transportation, and accomodation expense.

					Rental Rate /day	
1	No.	Description		Unit	(US\$ or ID)	Remarks
В	1	Buckhore(82ps)	0.35m3	8hrs/day	165.75	
В	2	Buckhore(141ps)	0.6m3	8hrs/day	279.50	
В	3	Buckhore(223ps)	1.0m3	8hrs/day	422.50	
В	4	Rock Breaker with buckhore 141ps	1300kg	8hrs/day	188.50	
В	5	Truck Crane	10-11t	8hrs/day	292.50	
В	6	Truck Crane	15-16t	8hrs/day	357.50	
B	7	Truck Crane	20-22t	8hrs/day	422.50	
B	8	Bulldozer(106ps)	11t	8hrs/day	2/9.50	
B	10	Buildozer(136ps)	150	8hrs/day	357.50	
D	11	Tractor Shovel(/5ps)	1.0m3	8hrs/day	117.00	
D	12	Tractor Shovel(124ps)	2.1m3	8hrs/day	130.00	
D	12	Tintruck (Dumptruck)	2.11115 7t	8hrs/day	227.50	
B	14	Tiptruck (Dumptruck)	10t	8hrs/day	227.50	
B	15	Water Tunk Truck	6 000lit	8hrs/day	195.00	
В	16	Fuel Tunk Truck	6.000lit	8hrs/day	227.50	
В	17	Truck	4t	8hrs/day	117.00	
В	18	Truck	8t	8hrs/day	162.50	
В	19	Truck	11t	8hrs/day	338.00	
В	20	Truck with 2.9t Crane	4t	8hrs/day	227.50	
В	21	Trailer	25t	8hrs/day	422.50	
В	22	Compressor	3.5-3.7m3/min	8hrs/day	42.25	
В	23	Concrete Breaker (breaker only)	30kg	8hrs/day	16.25	
В	24	Prate Compactor	70-80kg	8hrs/day	5.85	
B	25	Tamping Rammer	60-100kg	8hrs/day	9.43	
B	26	Vibrating Steel Roller	0.8-1.1t	8hrs/day	32.50	
B	27	Vibrating Steel Roller	2.5-2.8t	8hrs/day	11.70	
B	20	Vibrating Steel Koller	101 8 20t	8hrs/day	304.00	
D	30	I yle Koller Maaadam Ballar	8-201 10t	8hrs/day	188.30	
B	31	Concrete Mixer by engine	0.2m3	8hrs/day	130.00	
B	32	Concrete Mixer by engine	0.5m3	8hrs/day	292.50	
B	33	Truck Mixer	3.0m3	8hrs/day	195.00	
В	34	Truck Mixer	4.5m3	8hrs/day	227.50	
В	35	Concrete Pump Truck	20m3/hr	8hrs/day	292.50	
В	36	Concrete Pump Truck	40m3/hr	8hrs/day	455.00	
В	37	Concrete Plant	15m3/hr	8hrs/day	279.50	
В	38	Concrete Plant	30m3/hr	8hrs/day	507.00	
В	39	Concrete bucktet	1.0m3	8hrs/day	33.15	
В	40	Water Tank	10m3	8hrs/day	6.50	
В	41	Welding Machine	300A	8hrs/day	22.10	
B	42	Concrete Vibrator	38-40mm,0.7kw	8hrs/day	7.80	
B	43	Submersible Pump, dia50mm	1.5kW	8hrs/day	4.55	
В	44	Submersible Pump, dia80mm	5./KW	onrs/day	6.50	
В	43	Submersible Pump, dia 100mm	3.3KW	onis/day	8.45	
B	40	Generator	1 5kVA	8hrs/day	10.40	
B	48	Generator	10kVA	8hrs/day	5.65 27 75	
B	49	Generator	20kVA	8hrs/day	35 75	
В	50	Generator	60kVA	8hrs/day	52.00	
В	51	Moval Lighting Unit 400W×2	with Generator	8hrs/day	39.00	
В	52	Motar Grader	3.1m	8hrs/day	325.00	
В	53	Asphalt Finisher	1.4-3.0m	8hrs/day	422.50	
В	54	Asphalt Cutter	100mm	8hrs/day	5.85	
В	55	Asphalt engine sprayer	25lit/min	8hrs/day	13.00	
В	56	Grass cutter hand-guide type	160cm	8hrs/day	52.00	
В	57	Bar-bender	upto32mm	8hrs/day	16.25	
В	58	Bar-cutter	upto32mm	8hrs/day	16.25	
B	59	Engine pipe cuttre	max 500mm	8hrs/day	19.50	L
В	60	Asphalt kettle	2001it	8hrs/day	13.00	
В	61	Vehicle 2000ac	2000cc	8hrs/day	/8.00	
В	62	Vehicle 2000cc	2000cc	onrs/day	/1.50	
B	03 64	Pickup Truck	2000cc 1top	onis/day 8hrs/day	38.30	
R	65	Chainsaw	50cm	8hrs/day	4 55	incl_cutter_meintenace
Ĕ	05			om 5/ uu y	1.55	, cutter memtenaet

Equipment Hire

Conditions; 1. Excluding fuel and operator 2. Excluding transportation to the site 3. Excluding site expense, overhead expense, profit and taxes such as V.A.T. 4. Normal rental hour of the equipment per day : 8hrs

N	No.	Items	Specification	Unit	Price(US\$ or ID)	Remark
С	1	Normal Portland Cement		ton	210.00	
С	2	High-early strength Portland Cement		ton	231.00	
С	3	Sulphate Resistance Portland Cement		ton	231.00	
С	4	Crashed Stone for concrete 5-25mm		m3	33.54	
С	5	Crashed Stone for concrete 5-40mm		m3	33.40	
С	6	Fine aggregate(sand) for concrete		m3	20.00	
С	7	Fine sand for mortor plastering		m3	20.00	
С	8	Rubble Stone	Dia200-300	m3	24.60	
С	9	Crushed Stone for Base Course	C-40	m3	20.80	
С	10	Mechanically stabilized Crushed Stone	M-40	m3	27.00	
С	11	Ordinary Sand	backfilling sandy soil	m3	16.00	
С	12	mixed concrete 18Mpa Slump 8cm-12cm	on plant	m3	110.96	
С	13	mixed concrete 21Mpa Slump 8cm-12cm	on plant	m3	115.00	
С	14	mixed concrete 25Mpa Slump 8cm-12cm	on plant	m3	120.04	
С	15	mixed concrete 35Mpa Slump 8cm-12cm	on plant	m3	131.14	
С	16	Water Reducing Plasticiser	Admixture	kg	4.71	
С	17	Deformed Re-bar BS4449 Grade460	\sim D10	ton	1,345.00	
С	18	Deformed Re-bar BS4449 Grade460	D12-25	ton	1,304.65	
С	- 19	Concrete Block	150x200x400	Ea	1.35	
С	20	Concrete Block	200x200x400	Ea	1.65	
С	21	Brick	225x100x65	Ea	0.74	
С	22	Agent for Water proof mortar		kg	6.59	
С	23	Plywood (Rough Surface)	1200x2400 t12mm	pc	39.00	
С	24	Plywood (Rough Surface)	1200x2400 t18mm	pc	48.75	
С	25	Timber	38x50	m3	575.00	
С	26	Timber	100×100	m3	563.50	
С	27	Tierod for Form Work	φ12mm x 300mm	Ea	0.61	
С	28	L-shaped Steel Angle	L40~100	ton	1,546.75	
С	29	H-shaped Steel		ton	1,479.50	
С	30	C-Channel Shaped Steel		ton	1,681.25	
С	31	Steel Plate	t>10	ton	1,412.25	
С	32	Steel Plate	t<6	ton	1,546.75	
С	33	Steel Checkered Plate		ton	1,883.00	
С	34	Steel Fablicated Product (for ex. Steel Stair)	Gulvernized	ton	5,043.75	
С	35	Asphalt Emulsion (Prime Coat)		kl	1.01	
С	36	Asphalt Emulsion (Tack Coat)		kl	0.83	
С	37	Asphalt Concrete (for Binder Course)	on plant	ton	85.25	
С	38	Asphalt Concrete (for Wearing Course)	on plant	ton	93.50	
С	- 39	Straight Asphalt	80/100	ton	375.00	
С	40	Timber for building work		m3	510.00	
С	41	Welded steel Net	φ5.0 □100mm x 100mm	m ²	4.37	
С	42	Folded Galvanized Iron Sheet	t=0.25mm	m ²	13.11	
С	43	Corrgated Galvanized Iron Sheet	t=0.25mm	m ²	12.11	
С	44	Plane Galvanized Iron Sheet	t=0.25mm	m ²	114.33	
С	45	Steel Wire	3mm or Equivalent	kg	2.02	
С	46	Steel Wire for Tieing ReBar	0.8mm	kg	2.02	
С	47	Crimped Wire	3.2mm	m	2.15	
С	48	Nail	50mm	kg	2.35	
С	49	Bolt & Nut	M20 85mm	ea	1.24	
С	50	Mechanical Anchor Bolt	M20	ea	3.36	

Construction Material (1/2)

С	51	Stainless Mechanical Anchor Bolt	M16	ea	14.12	
С	52	Welding Rod		kg	5.04	
С	53	Asphalt Primer for Roof Water Proofing		m2	2.32	
С	54	Asphalt Roof Water Proofing		m2	1.68	
Ċ	55	Rustproof Paint		kg	5.78	
С	56	Aluminum Paint		kg	16.81	
Ċ	57	Oil Paint		kg	2.69	
С	58	Thinner		Lit.	2.02	
Č	59	Varnish		kg	5.04	
С	60	Vynil Paint		kg	5.72	
C	61	Acril Emulsion Paint		kg	6.05	
С	62	Chemical Resistance Epoxy Coating		kg	10.09	
Ċ	63	Shellac Varnish		kg	5.04	
С	64	Polysulpahete Sealant		kg	16.81	
Ċ	65	Silicone Sealant		kg	16.81	
С	66	Glass	t5mm	m2	21.86	
Ċ	67	Putty		kg	1.21	
С	68	Cement Board	t4mm	m2	32.62	
Ċ	69	Steel Gate	1.2mH	m	144.59	
С	70	Steel Gate	1.8mH	m	215.20	
C	71	Steel Flush Door (Single Open) paint finish	1000x2000 t:3	unit		
-	71	including Accesaries			235.38	
С	70	Steel Flush Door (Double Open) paint finish	2000x2000 t:3	unit		
	12	including Accesaries			437.13	
С	73	Hinge for steel flush door		ea	94.15	
С	74	Lock Set	Cylinder Type	ea	37.66	
С	75	Wooden Flush Door (Single Open)	1000x2000	unit	147.95	
С	76	Wooden Flush Door (Double Open)	2000x2000	unit	269.00	
С	77	Woodn Industrial Type, window	1445 x 987	unit	134.50	
С	78	Woodn Industrial Type, window	1910 x 1302	unit	235.38	
С	79	Aluminium Window	incuding glasses	m2	110.96	
С	80	Aluminum Louver		m2	161.40	
С	81	Manhole Cover	HD, dia 600, cast iron	unit	1,345.00	
С	82	Acetylene Gas	195cu.ft / 5.52cu.m	cly	110.96	
С	83	Acetylene Cylinder		cly	121.05	
С	84	Oxygen Gas	220cu.ft / 6.23cu.m	cly	43.71	
С	85	Oxygen Cylinder		cly	121.05	
С	86	Petrol for Car		Lit.	1.18	
С	87	Diesel		Lit.	0.80	
С	88	Kerosene		Lit.	0.72	
С	89	lubricant	5gal pail	unit	51.50	
С	90	Grease	5gal pail	unit	62.50	
С	91	Woodn peg for survy	50mmx50mm, 700mm	pc	0.80	
С	92	Bricade for construction	width 1.8m, height 1m	unit	22.50	
С	93	Sngn board	1m×2m	m	160.00	
С	94	Barbed Wire		m	3.20	
C	95	Fire Extinguisher	ABC 3kg	pc	75.00	
С	96	Container (Second Hand)	20 feet	unit	1,850.00	
С	97	Temporary Toilet	2 persons	unit	340.00	
С	98	Temporary Shower room	6persons	unit	360.50	
С	99	Temporay Container Office	20feet	unit	2,000.00	
С	100	Safty rope		m	0.50	
С	101	Safty rubber boot	Rubber boot	unit	22.50	
С	102	Working glove		unit	0.75	
С	103	Working wear		unit	15.00	
С	104	Safty helmet		pc	10.00	
С	105	Water Stop	PVC W=230mm	m	14.30	

Construction Material (2/2)

Conditions; Excluding overhead expence, profit and taxes such as V.A.T.

Pipe	Mat	erial
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ſ	No	Items	Size	Unit	Price(US\$ or ID)	Remark
C	1	Reinforced Concrete Pipe	φ300mm	m	24.50	Remark
С	2	Reinforced Concrete Pipe	φ400mm	m	38.70	
С	3	Reinforced Concrete Pipe	φ500mm	m	64.80	
C	4	Reinforced Concrete Pipe	φ600mm	m	77.10	
5	2	GALVANIZED STEEL PIPE (GSP)	$1/2\ln L = 6.0 \text{ m}$	m		
S	2	GALVANIZED STEEL PIPE (GSP)	$\frac{5}{4}$ L = 6.0 m	m		
S	3	GALVANIZED STEEL PIPE (GSP)	1^{111} in L= 6.0 m	m		
S	4	GALVANIZED STEEL PIPE (GSP)	$1^{1/2}$ in L= 6.0 m	m		
S	5	GALVANIZED STEEL PIPE (GSP)	2in L= 6.0 m	m		
S	6	GALVANIZED STEEL PIPE (GSP)	3in L= 6.0 m	m		
S	/	GALVANIZED STEEL PIPE (GSP)	41n L= 6.0 m	m Pc		
S	9	Nipple	3/4in	Pc		
S	10	Nipple	lin	Pc		
S	11	Nipple	1 ^{1/4} in	Pc		
S	12	Nipple	1 ^{1/2} in	Pc		
S	13	Nipple	2in	Pc		
S	14	Nipple	3in	Pc		
S	15	Nipple	4in	Pc		
S	16	Straight Chack Valve	1/2in	Pc		
S	17	Straight Chack Valve	3/4in	Pc		
S	18	Straight Chack Valve	lin	Pc		
S	19	Straight Chack Valve	1 ^{1/4} in	Pc		
S	20	Straight Chack Valve	1 ^{1/2} in	Pc		
S	21	Straight Chack Valve	2in	Pc		
S	22	Straight Chack Valve	3in	Pc		
S	23	Straight Chack Valve	4in	Pc		
S	24	Brass Ball Valve	1/2in	Pc		
S	25	Brass Ball Valve	3/4in	Pc		
S	26	Brass Ball Valve	1in	Pc		
S	27	Brass Ball Valve	1 ^{1/4} in	Pc		
S	28	Brass Ball Valve	1 ^{1/2} in	Pc		
S	29	Brass Ball Valve	21n	Pc		
5	30	Brass Ball Valve	31n	PC		
<u></u> 5	22	HDDE (High Dongity Polyothlong) 12D A D	410 OD16mm	PC		
H	32	HDPE (High Density Polyethlene)10BAR	OD20mm	m		
H	34	HDPE (High Density Polyethlene)10BAR	OD25mm	m		
H	35	HDPE (High Density Polyethlene)10BAR	OD32mm	m		
Н	36	HDPE (High Density Polvethlene)10BAR	OD40mm	m		
Η	37	HDPE (High Density Polyethlene)10BAR	OD50mm	m		
Н	38	HDPE (High Density Polyethlene)10BAR	OD63mm	m		
Н	39	HDPE (High Density Polyethlene)10BAR	OD90mm	m		
Н	40	HDPE (High Density Polyethlene)10BAR	OD110mm	m		
		Ferrule RBA, connection with push-in fitting for	φ15mm-			
Η	41	PVC or HDPE pipe	OD20mm	Set		
H	42	ditto	φ20mm-	Set		
H	43	ditto	φ25mm-	Set		
H	44	ditto	φ32mm-	Set		
п	43	ulluo Cast iron manhala aquar — Uguru dutu	φ40mm- Dia 150mm	Set		Paved trfic
н	40 <u>4</u> 7	ditto	Dia 500mm	Set		Paved trfic
H	48	Cast iron manhole cover Medium duty	Dia 150mm	Set		Unpaved trfic
H	49	ditto	Dia 500mm	Set		Unpaved trfic
Н	50	Cast iron manhole cover Hevy duty	400 x 400mm	Set		Paved trfic
Н	51	ditto	500 x 500mm	Set		Paved trfic
Н	52	Cast iron manhole cover Medium duty	400 x 400mm	Set		Unpaved trfic
H	53	ditto	500 x 500mm	Set		Unpaved trfic
Н	54	T type Spindle for valve	T handle	No		Т

Conditions; Excluding overhead expence, profit and taxes such as V.A.T.

N	lo.	Items	Specification	Unit	Price(US\$ or ID)	Remark
Η	1	Water Supply Connection Charge	3/4inchi PE pipe	pl		for Example
Η	2	Water Supply Basic Charge		Unit		by BWA
Н	3	Water Supply Unit Rate		m3		by BWA
Н	4	Power Supply Connection Charge	100m 3phase3wire 22squ cable	Unit		for Example
Η	5	Electricity Unit Rate per 10000kwhr	charge of temporary camp yard	kwh		for Example
Η	6	Electricity Basic Charge		Unit		by
Η	7	Electricity Basic Charge		kwh		by
Η	8	Mobile Phone		Unit		by
Η	9	Mobilephone Line Basic Charge		Unit		by
Η	10	Mobilephone Line unit rate	International to Japan	min		by
Η	11	Mobilephone Line unit rate	International to Amman	min		by
Η	12	Mobilephone Line unit rate	Domestic	min		by
Η	13	Telephone Line Connection Charge	100m	Unit		for Example
Η	14	Telephone Line unit rate	International to Japan	min		by
Η	15	Telephone Line unit rate	International to Amman	min		by
Η	16	Telephone Line unit rate	In-city	min		by
Н	17	Telephone Line unit rate	Out-city	min		by
Н	18	Diesel for Truck		lit		
Н	19	Petrol for car		lit		
Н	20	DHL	to Japan 500g	time		
Н	21	DHL	to Amman 500g	time		
Η	8	GAS Cylinder Initial Cost	30kg	Unit	14.50	
Η	9	GAS Cylinder Charging Fee	30kg	Unit	30.00	
Η	19	House Rental Fee	3 bed rooms	month	1,500.00	
Η	20	Hotel in Baghdad	nomal class	day	66.00	
Н	21	Warehouse Rental Fee	200m2	m2/month	3.75	
Н	22	Land Rental Fee	1000m2	m2/month	0.50	
Н	23	Car Insurance Rate	Private car	%/year		
		Employer's Laiability Insurance	for employer	%/wage		Natuonai Insurance &
н	24	r ji i na ji ina ii	for emlloyee			social Security Act?
Н	25	Rent Car 4WD	2500cc.driver and fuel included	month	2,190,00	inclded meitenance
Н	26	Rent Car sedan	1500cc.driver and fuel included	month	1.770.00	inclded meitenance
Н	27	Pick up Truck	2500cc,driver and fuel included	month	2,415.00	inclded meitenance
Н	28	Car 4WD (for purchase price)	2500cc	Unit	17,000.00	secondhand class
Н	29	Car (for purchase price)	1500cc	Unit	13,500.00	secondhand class
Н	30	Pick up Truck (for purchase price)	2500cc	Unit	14,250.00	secondhand class
		· · · · · · /			<i>(</i>	

Miscellaneous Fee

Conditions;

Excluding overhead expence, profit and taxes such as V.A.T.

	Y.				
No.	Items	Specification	UNITE	Price(US\$ or ID)	Remark by USD
1 1	Pipe Trench Excavation (Soil Manual)	excluding disposal	m3	دينار عرافي2000	12.50
x o			-	10000 11 11	13.56
1 2	Pipe Trench Excavation (Soil Maccinary)	excluding disposal	m3	دينار عراقي 10000	(70)
			2	1 (0 0 0 1 1	6.78
1 3	Transportation of Excavated Soil and Unsuitable		m3	دينار عرافي 16000	10.05
	Soil to disposal place 10km away from the site			41 1. A = 0.00	10.85
1 4	Back Filling of trench with imported sand for pipe	including material cost	m3	7000 ادينار عراقي	11.50
	trench including compaction and leveling				11.52
I 5	Back Filling of trench for pipe trench including	excavated material shall be	m3	دينار عراقي7000	
	compaction and leveling	used			4.74
I 6	Back Filling around Structure with including	excavated material shall be	m3	دينار عراقي 180000	
	compaction and leveling	used			12.2
I 7	Back Filling around Structure with imported	including material cost	m3	دينار عراقي 25000	
	materialincluding compaction and leveling				16.95
I 8	Cutting of asphalt pavement	t=50mm	m	دينار عراقي 6000	4.07
I 9	Removal of aspalt pavement		m3	دينار عراقي 16000	10.85
I 10	Base cource including material	t=100mm	m2	دينار عراقي 25000	16.95
I 11	Asphalt Concrete Pavement over piping trench			22000 51	21.00
	<wearing (t="50mm)" course=""></wearing>		mz	ليبر عراقي 32000	21.69
I 12	Concrete Form Work including material		m2	دينار. 30000	20.34
I 13	Re-Bar Work including material		ton	دينار 2500000	1694.61
I 14	Concrete Casting Work including material	21Mpa, by Manual	m3	دينار 300000	203.35
I 15	Stone Masonry Work on Wall	Hollow block T=150mm	m2	دينار 80000	54.23
I 16	Mortar Plastering	t=2cm	m2	دينار عراقي 12000	8.13
I 17	Shot Mortar	t=2cm	m2	دينار عراقي 16000	10.85
I 18	Site office wooden		m2	دينار 600000	406.71
I 19	Storage shed woodn	roof & woodn column	m2	دينار عراقي 550000	372.82
I 20	Toilet for staff (2 toilet)		UNIT	دينار عراقي 300000	203.35
I 21	Toilet for workers (6 toilts & 6 shower)		UNIT	دينار عراقي 1000000	677.85
I 22	Work shop		m2	دينار عراقي 200000	135.57
I 23	Guard box	15 x 1.5 x 2.5m	UNIT	دينار عراقي 700000	474.49
I 24	Gate	wooden 3.0 x 1.8 m	UNIT	دينار عراقي000 300	203.35
I 25	Water connection from outsid pipe	insite only 20m length	UNIT	دينار عراقي20000	135.57
I 26	Construction Sign Board	$1.2 \times 2.4 \text{m}$ wooden	nc	دينار عراقي 300000	203.35
1 20	construction organization		- P2		

Main Construction Work

Conditions;

Above cost shall include all the material(except concrete work), equipment, manpower, and other expences

Labor capacity data

1.	Excavation	Work (10m3	by	Man	Powe	er)
			teme	nif	-		

nemsonit	Number of worker
Common Worker Man x day	2.0

2. Form Work (for 100m2)

ItemsUnit	Number of worker			
Forman Man x day	2.0			
Form Worker Man x day	6.0			
Common Worker Man x day	8.0			

3. Pipe Connection Work (for OD160mm uPVC pipe x 100m)

ItemsUnit	Number of worker		
Plumber Man × day	1.0		
Common Worker Man x day	4.0		

Equipment for pilot DMA in WSZ R3 (list of leak detection system equipment)

							(Unit : USD)
	Description	Unit	Q'ty	Unit Price(USD)	Amount(USD)	Note	Converted : ID 1,000
А	Material Cost					1USD=ID 1,475.26	
1	Portable ultra sonic flow meters with accessories	Unit	5	11,282.49	56,412.45		83,223
2	Portable pressure gage	Unit	10	2,612.99	26,129.90		38,548
3	Electronic leakage detector	Unit	10	3,192.09	31,920.90		47,092
4	Magnetic locator	Unit	10	279.66	2,796.60		4,126
5	Acoustic rod	Unit	10	1,186.44	11,864.40		17,503
	Sub total				129,124.25	for F.C. in R3	
В	Construction of meter chambers						
1	Construction cost	pls	10	1,481.78	14,817.80		21,860
	Sub total				14,817.80	for LC. in R3	
	Total				143,942.05		212,352