**Attachment C3** 

Cost Estimate Worksheets

# Temperance Flat Reservoir at RM 274 (Chapter 3)

CODE: D-8170 FEATURE:

PLANT

ACCT.

PAY

ITEM

RM274 Dam Site Elev. 800

Spillway

Excavation for Spillway

**ESTIMATE WORKSHEET** SHEET\_\_1\_\_ OF \_\_3 PROJECT: **USJRBSI** DIVISION: Concrete Faced Rockfill Dam (CFR) FILE: P:\US\_Bureau\_Reclamation\IDIQ\_01CS20210B\Upper\_San\_Joaqu \_Phase\_1\Documents\Surface Storage Option TMs\TM Temperance\Interpolated Costs\[MP274 CFRF.xis]MP274\_1100 UNIT DESCRIPTION CODE QUANTITY UNIT PRICE AMOUNT 1 Diversion and care of river \$24,602,500 Upstream Cofferdam (Crest @ El. 635) 1,892,500 CY \$13.00 **Excavation for Left Abutment Diversion Tunnel** 141,300 CY \$145.00 \$20,488,500 CY Concrete Liner for Left Abutment Diversion Tunnel 31,300 \$260.00 \$8,138,000 Rock Bolts - Left Abt. Div. Tunnel 3.270 Bolts \$500.00 \$1,635,000 Total Drilling - Left Abt. Div. Tunnel 58,860 LF \$20.00 \$1,177,200 Excavation for Right Abutment Diversion Tunnel 281,700 CY \$140.00 \$39,438,000 Concrete Liner for Right Abutment Diversion Tunnel 48,900 CY \$260.00 \$12,714,000 Rock Bolts - Right Abt. Div. Tunnel 3,050 Bolts \$600.00 \$1,830,000 Total Drilling - Right Abt. Div. Tunnel \$1,403,000 70,150 LF \$20.00 Furnishing and Handling Cement 22,620 TONS \$100.00 \$2,262,000 Furnishing and Handling Reinforcement 12,030,000 LBS \$0.60 \$7,218,000 Diversion and Care of River Subtotal \$120,906,200 5,296,800 CY \$7.50 \$39,726,000 Concrete in spillway crest 7,670 CY \$180.00 \$1,380,600 Concrete in spillway training walls and Apron CY 7.500 \$210.00 \$1,575,000 Furnishing and Handling Cement 4,280 TONS \$110.00 \$470,800 Furnishing and Handling Reinforcement 2,275,500 LBS \$0.65 \$1,479,075 Spillway subtotal \$44,631,475

		QI	UANTITIES		PRIC	ES		
BY			CHECKED	BY		CHECKED		
	S. Higinbot	tham			R. Baumgarten			
DATE P	PREPARED		APPROVED	DATE		PRICE LEVI	EL .	
	7/1/20	03					Appraisal 03	

### **ESTIMATE WORKSHEET**

SHEET\_2\_\_ OF \_3\_\_\_

CODE:D-817			ESTIMATE WORKSHEI	<u> </u>			SHEET_2 OF _	<u></u>
FEATU	IRE:			PROJE	CT:			
	Elev. 80	-		DIVISIO	ON:			
	Concre	te Faced Ro	ockfill Dam (CFR)	FILE:	P:\US_Bureau_Rea _Phase_1\Docume Temperance\Interp	nts\Surface S	torage Option	TMs\TM
PLANT ACCT.	PAY ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		OutletWor	ks					
		Concrete in	n Outlet Works Intake Structure		3,110	CY	\$265.00	\$824,15
		Excavatioo	n of Outlet Shaft and Gate Structure		14,730	CY	\$280.00	\$4,124,40
		Rock Bolt S			600	Bolts	\$360.00	\$216,00
			ng for Rock Bolts		7,200	LF	\$20.00	\$144,00
			Outlet Shaft and Gate Structure		6,530	CY	\$450.00	\$2,938,50
			and Handling Cement		2,720	TONS	\$120.00	\$326,40
			and Handling Reinforcement		1,446,000	LBS	\$0.65	\$939,90
		Outlet Wor	ks Trashracks		495,000	LBS	\$2.50	\$1,237,50
			Outlet Works subtotal					\$10,750,85
			ouse and Powerplant		44 705 000	1.00	04.50	<b>#47.000.00</b>
		Steel Pipe	0: 17		11,735,300	LBS	\$1.50	\$17,602,95
			Sizes and Types		4,340,000	LBS	\$4.00	\$17,360,00
			Control System		120,000	LBS	\$10.00	\$1,200,00
			Control House & Powerplant		42,350	CY	\$350.00	\$14,822,50
			for Powerplant		426,800	CY	\$12.00	\$5,121,60
			and Handling Cement and Handling Reinforcement		11,945	TONS LBS	\$100.00	\$1,194,50
		Turbines	and Handling Reinforcement		2,666,000 1,956,000	LBS	\$0.60	\$1,599,60 \$12,714,00
_		Generators			1,500,000	LBS	\$6.50 \$8.00	\$12,714,00
			, Motors, etc.		3-Units	LBS	\$6.00	\$12,000,00
		Governors	Powerplant subtotal		3-Units	LS		\$87,215,15
			- Consequence					ψο., <u>-</u> .ο,.ο
		Q	UANTITIES		PRIC			
BY	e Hinink	otham	CHECKED	ву	P Raumcorton	CHECKED		
	S. Higinb REPARE		APPROVED	DATE	R. Baumgarten	PRICE LEV		
DAIEP			AFFROVED	DATE		PRICE LEV	Appraisal 03	
	7/1/2	2003	l .			<u> </u>	Appraisar US	

CODE: D-8170 FEATURE:

PLANT

ACCT.

RM274 Dam Site Elev. 800 Embankment

30 Proctor, 2 mile haul) Toe slab imperv. Cap

Excavation - common (removal of alluvium, rock slope 20 cleaning by dozer to sound rock, minimal ripping.)

PAY

ITEM

# **ESTIMATE WORKSHEET**

ESTIMATE WORKSHEET				SHEET_3 OF _	3
	PROJE	CT:			
am Site					
	DIVISIO	ON:			
nent					
	FILE:	P:\US_Bureau_Rec _Phase_1\Documer Temperance\Interpo	nts\Surface \$	Storage Option	TMs\TM
DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
CFRF Dam					
Excavation - common (removal of alluvium, rock slope					
cleaning by dozer to sound rock, minimal ripping.)	8313	177,000	CY	\$6.50	\$1,150,50
Zone 1A - Exc, haul, & place (CL, SM, GM in 6" lifts to 98%					
Proctor, 2 mile haul) Toe slab imperv. Cap	8313	12,000	CY	\$11.00	\$132,00
Zone 1B - Exc, haul, & place (random in 18" lifts to 95%					
Proctor, 0.5 mile haul) Shell for Zone 1A	8313	68,000	CY	\$6.50	\$442,00
Zone 2 - Exc, haul, & place processed SM, GM in 18" lifts to 98% Proctor, 0.5 mile haul) Deck foundation	8313	93,200	CY	\$20.00	\$1,864,00
Zone 3A - Exc, haul, & place (processed GP in 18" lifts to	ĺ				
95% Proctor, 0.5 mile haul) Transition to Shell	8313	93,200	CY	\$19.50	\$1,817,40
Zone 3B - Exc, haul, & place (rockfill, 18" max in 3' lifts,	ĺ				
blasting operation 0.5 mile away) Upstream Shell	8313	2,352,000	CY	\$9.00	\$21,168,00
Zone 3C - Exc, haul, & place (rockfill, 4' max in 4' lifts,					
blasting operation 0.5 mile away) Downstream Shell	8313			\$8.75	\$21,000,00
Concrete deck (3,000 psi strength, 0.4% reinforcing)	8313	31,500		\$240.00	\$7,560,00
Concrete toe slab (3,000 psi strength, 0.3% reinforcing	8313	2,170		\$240.00	\$520,80
Anchor bars for toe slab (4' deep grouted into granite)	8313		anchors	\$40.00	\$390,00
Parapet Wall (3,000 psi, 0.4% reinforcing)	8313	2,000		\$460.00	\$920,00
Drilling for grout program (setup, drill, test), setups=455	8313	28,000		\$33.00	\$924,00
Grouting (grout injection into competent granite.	8313	21,000		\$27.00	\$567,00
Unwatering	8313	1	LS		\$1,500,00
Subtotal, CFRF Dam					\$59,955,700
SUMMATION OF COSTS					
Diversion and Care of River					\$120,900,000
Spillway					\$44,600,000
Outlet Works					\$10,800,000
Control House and Powerplant				1	\$87,200,000
CFRF Dam					\$60,000,000
Mobilization - 5%					\$16,000,000
Subtotal					\$339,500,000
Unlisted Items - 15%					\$50,500,000
Contract Cost					\$390,000,000
Contingencies - 30%					\$117,000,000
Field Cost					\$507,000,000

DATE	7/1/2003		APPROVED	DATE		PRICE LEV	EL Appraisal 03	
вү	Mark Pab		CHECKED Mark Pabst	BY	R. Baumgarten	CHECKED		
DV.			QUANTITIES	DV.	D. Darrisan and an	PRICES		
			OLIANITITIES.			DD1050		
	1							
	1	Field Cost						\$507,000,000
	1	Contingend						\$117,000,000
	1	Contract C				İ	† †	\$390,000,000
	1	Unlisted Ite	ems - 15%					\$50,500,000
		Subtotal	0,0					\$339,500,000
		Mobilizatio						\$16,000,000
		CFRF Dam					†	\$60,000,000
	1		use and Powerplant	1				\$87,200,000
	+	Outlet Wor	ks	+			1	\$10,800,000
	+	Spillway	Ga. G. 1 (170)	+			<del>                                     </del>	\$44,600,000
	+		and Care of River	+			<del> </del>	\$120,900,000
	-	SUMMATI	ON OF COSTS	_				
			Subtotal, CFRF Dam					\$59,955,700
	150	Unwatering		8313	1	LS		\$1,500,000
			grout injection into competent granite.	8313			\$27.00	\$567,000
			grout program (setup, drill, test), setups=455	8313			\$33.00	\$924,000
			all (3,000 psi, 0.4% reinforcing)	8313			\$460.00	\$920,000
			rs for toe slab (4' deep grouted into granite)	8313		anchors	\$40.00	\$390,000
			oe slab (3,000 psi strength, 0.3% reinforcing	8313	2,170	CY	\$240.00	\$520,800
	90	Concrete d	leck (3,000 psi strength, 0.4% reinforcing)	8313			\$240.00	\$7,560,000
	80		peration 0.5 mile away) Downstream Shell	8313	2,400,000	CY	\$8.75	\$21,000,000
	70		eration 0.5 mile away) Upstream Shell  Exc. haul, & place (rockfill, 4' max in 4' lifts,	8313	2,352,000	CY	\$9.00	\$21,168,000
	60		or, 0.5 mile haul) Transition to Shell Exc, haul, & place (rockfill, 18" max in 3' lifts,	8313	93,200	CY	\$19.50	\$1,817,400
		Zone 3A - I	Exc, haul, & place (processed GP in 18" lifts to		00,000	OV	040.50	P4 047 400
	50		xc, haul, & place processed SM, GM in 18" lifts or, 0.5 mile haul) Deck foundation	s to 8313	93,200	CY	\$20.00	\$1,864,000
	40	Proctor, 0.5	5 mile haul) Shell for Zone 1A	8313	68,000	CY	\$6.50	\$442,000
		Zone	Exc, haul, & place (random in 18" lifts to 95%					

PLANT

S. Osgood 11/20/03

APPROVED

B. Foster

11/10/200

DATE PREPARED

**ESTIMATE WORKSHEET** SHEET\_\_1\_\_ OF \_\_3\_\_ FEATURE: PROJECT: USJRBSI RM274 Dam Site Elev. 865 (Interpolated) DIVISION: Concrete Faced Rockfill Dam (CFR) FILE: P:\US\_Bureau\_Reclamation\IDIQ\_01CS20210B\Upper\_San\_Jos n\_Phase\_1\Documents\Surface Storage Option TMs\TM Temperance\Interpolated Costs\[MP274 CFRF.xls]MP274\_800 PAY UNIT ACCT. ITEM DESCRIPTION QUANTITY CODE UNIT PRICE AMOUNT 1 Diversion and care of river CY Upstream Cofferdam (Crest @ El. 635) 1,892,500 \$13.00 \$24,602,500 **Excavation for Left Abutment Diversion Tunnel** 141,300 CY \$145.00 \$20,488,500 \$8,138,000 Concrete Liner for Left Abutment Diversion Tunnel 31,300 CY \$260.00 Rock Bolts - Left Abt. Div. Tunnel 3,270 Bolts \$500.00 \$1,635,000 Total Drilling - Left Abt. Div. Tunnel 58,860 LF \$20.00 \$1,177,200 Excavation for Right Abutment Diversion Tunnel 281,700 CY \$140.00 \$39,438,000 CY \$12,714,000 Concrete Liner for Right Abutment Diversion Tunnel \$260.00 48,900 Rock Bolts - Right Abt. Div. Tunnel 3,050 Bolts \$600.00 \$1,830,000 Total Drilling - Right Abt. Div. Tunnel 70,150 \$20.00 \$1,403,000 LF \$100.00 \$2,262,000 Furnishing and Handling Cement 22.620 TONS 12,030,000 Furnishing and Handling Reinforcement LBS \$0.60 \$7,218,000 **Diversion and Care of River Subtotal** \$120,906,200 Spillway **Excavation for Spillway** 4,481,267 CY \$7.72 \$34,580,441 Concrete in spillway crest 7,670 CY \$180.00 \$1,380,600 \$210.00 Concrete in spillway training walls and Apron 7,500 CY \$1,575,000 Furnishing and Handling Cement 4,280 TONS \$110.00 \$470,800 Furnishing and Handling Reinforcement 2,275,500 LBS \$0.65 \$1,479,075 \$39,485,916 Spillway subtotal QUANTITIES **PRICES** CHECKED ΒY CHECKED

B. Foster

11/10/03

DATE

S. Osgood 11/20/03

Appraisal 03

PRICE LEVEL

CO	DE:	D-81	70

### **ESTIMATE WORKSHEET**

SHEET	2	OE	3	

FEATURE:		PROJE	CT:						
	Elev.	4 Dam Site 865 (Interpolated) rete Faced Rockfill Dam (CFR)	DIVISIO	DIVISION:					
			FILE:	ase_1\Documen	ts\Surface S	torage Option	210B\Upper_San_Joa TMs\TM FRF.xls]MP274 800		
PLANT ACCT.	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
		OutletWorks Concrete in Outlet Works Intake Structure Excavatioon of Outlet Shaft and Gate Structure		3,110 14.730	CY CY	\$265.00 \$280.00	\$824,150 \$4.124.400		
		Rock Bolt Supports Total Drilling for Rock Bolts Concrete in Outlet Shaft and Gate Structure		600 7,200 6,530	Bolts LF CY	\$360.00 \$20.00 \$450.00	\$216,000 \$144,000 \$2,938,500		
		Furnishing and Handling Cement Furnishing and Handling Reinforcement Outlet Works Trashracks		2,720 1,446,000 495.000	TONS LBS LBS	\$120.00 \$0.65 \$2.50	\$326,400 \$939,900 \$1,237,500		
		Outlet Works subtotal  Powerplant				, , ,	\$10,750,850		
		Steel Pipe Valves, all Sizes and Types Hydraulic Control System		15,645,753 4,749,280 136,000	LBS LBS LBS	\$1.50 \$4.53 \$10.00	\$23,468,630 \$21,530,069 \$1,360,000		
		Concrete in Powerplant Excavation for Powerplant Furnishing and Handling Cement		42,350 426,800 11,945	CY CY TONS	\$350.00 \$12.00 \$100.00	\$14,822,500 \$5,121,600 \$1,194,500		
		Furnishing and Handling Reinforcement Turbines Generators		4,632,133 1,920,800 1,948,000	LBS LBS	\$0.60 \$6.50 \$8.00	\$2,779,280 \$12,485,200 \$15,584,000		
		Governors, Motors, etc.  Powerplant subtotal		3-Units	LS		\$3,600,000 <b>\$101,945,779</b>		
вү		QUANTITIES CHECKED	ВҮ		CES CHECKED				
DATE F	B. Fost		DATE	B. Foster 11/10/03	PRICE LEV	S. Osgood 11 EL Appraisal 03	/20/03		

CODE:D-8170 FEATURE:

PLANT PAY

ACCT. ITEM

**ESTIMATE WORKSHEET** SHEET\_3\_ OF \_3\_ PROJECT: USJRBSI RM274 Dam Site Elev. 865 (Interpolated) DIVISION: Embankment FILE: P:\US\_Bureau\_Reclamation\IDIQ\_01CS20210B\Upper\_San\_Joaqui n\_Phase\_1\Documents\Surface Storage Option TMs\TM
Temperance\Interpolated Costs\[MP274 CFRF.xls]MP274\_800 UNIT DESCRIPTION CODE QUANTITY UNIT PRICE AMOUNT CFRF Dam Excavation - common (removal of alluvium, rock slope 292,050 CY \$1,803,409 20 cleaning by dozer to sound rock, minimal ripping.) 8313 \$6.18 Zone 1A - Exc, haul, & place (CL, SM, GM in 6" lifts to 98% 30 Proctor, 2 mile haul) Toe slab imperv. Cap 8313 23,483 CY \$10.35 \$243,053 Zone 1B - Exc, haul, & place (random in 18" lifts to 95% 137,767 CY \$6.39 \$880,559 8313 40 Proctor, 0.5 mile haul) Shell for Zone 1A Zone 2 - Exc, haul, & place processed SM, GM in 18" lifts to 146,457 CY \$19.13 \$2,802,204 50 98% Proctor, 0.5 mile haul) Deck foundation 8313 Zone 3A - Exc, haul, & place (processed GP in 18" lifts to 146,457 CY 60 95% Proctor, 0.5 mile haul) Transition to Shell 8313 \$18.63 \$2,728,976 Zone 3B - Exc, haul, & place (rockfill, 18" max in 3' lifts, \$41,<u>545,153</u> 70 blasting operation 0.5 mile away) Upstream Shell 4,789,067 CY \$8.68 8313 Zone 3C - Exc, haul, & place (rockfill, 4' max in 4' lifts, 80 blasting operation 0.5 mile away) Downstream Shell 8313 4,887,333 CY \$8.43 \$41,175,783 60,696 CY \$229.17 \$13,909,462 90 Concrete deck (3,000 psi strength, 0.4% reinforcing) 8313 2,783 CY \$229 17 \$637 809 100 Concrete toe slab (3,000 psi strength, 0.3% reinforcing 8313 110 Anchor bars for toe slab (4' deep grouted into granite) 8313 13,052 anchors \$40.00 \$522,080 120 Parapet Wall (3,000 psi, 0.4% reinforcing) 2,568 CY \$443.75 \$1,139,402 8313 130 Drilling for grout program (setup, drill, test), setups=1165 37,425 LF \$32.57 \$1,218,808 8313 28,074 bags \$25.92 140 Grouting (grout injection into competent granite. 8313 \$727,589 150 Unwatering 8313 1 LS \$1,695,000 Subtotal, CFRF Dam \$111,029,286 SUMMATION OF COSTS \$120,900,000 Diversion and Care of River Spillway \$39,500,000 **Outlet Works** \$10,800,000 Powerplant \$93,100,000 CFRF Dam \$111.000.000 Mobilization - 5% \$19,000,000

	11/10/	2003	11/	10/03	Appraisal 03	1
DATE	PREPARED	APPROVED	DATE	PRICE LEV	/EL	
	B. Foster	S. Osgood 11/20/03	B. Foster		S. Osgood 1	11/20/03
BY		CHECKED	BY	CHECKED		
		QUANTITIES		PRICES	3	
	Field C	Cost				\$590,000,000
	Conting	gencies - 30%				\$140,000,000
	Contra	act Cost				\$450,000,000
	Unliste	d Items - 15%				\$55,700,000
	Subtot	tai				\$394,300,000

SHEET\_1\_ OF \_3\_

CODE: D-8170

### **ESTIMATE WORKSHEET**

FEATURE: PROJECT: **USJRBSI** RM274 Dam Site DIVISION: Elev. 960 (Interpolated) Concrete Faced Rockfill Dam (CFR) P:\US Bureau Reclamation\IDIQ 01CS20210B\Upper San Joaqu ase\_1\Documents\Surface Storage Option TMs\TM Temperance\Interpolated Costs\[MP274 CFRF.xls]MP274\_800 PLANT PAY UNIT ACCT DESCRIPTION CODE QUANTITY PRICE **AMOUNT** 1 Diversion and care of river 1,892,500 CY \$13.00 \$24,602,500 Upstream Cofferdam (Crest @ El. 635) Excavation for Left Abutment Diversion Tunnel 141,300 CY \$145.00 \$20,488,500 CY \$260.00 \$8,138,000 Concrete Liner for Left Abutment Diversion Tunnel 31,300 Rock Bolts - Left Abt. Div. Tunnel 3,270 Bolts \$500.00 \$1,635,000 Total Drilling - Left Abt. Div. Tunnel 58.860 ΙF \$20.00 \$1,177,200 **Excavation for Right Abutment Diversion Tunnel** 281,700 CY \$140.00 \$39,438,000 Concrete Liner for Right Abutment Diversion Tunnel 48,900 CY \$260.00 \$12,714,000 Rock Bolts - Right Abt. Div. Tunnel 3,050 Bolts \$600.00 \$1,830,000 Total Drilling - Right Abt. Div. Tunnel 70,150 LF \$20.00 \$1,403,000 Furnishing and Handling Cement TONS \$100.00 \$2,262,000 22,620 Furnishing and Handling Reinforcement 12,030,000 LBS \$0.60 \$7,218,000 **Diversion and Care of River Subtotal** \$120,906,200 Spillway 3,289,333 CY \$8.03 \$26,424,311 **Excavation for Spillway** CY \$180.00 \$1,380,600 Concrete in spillway crest 7,670 \$210.00 \$1,575,000 Concrete in spillway training walls and Apron 7.500 CY Furnishing and Handling Cement 4,280 TONS \$110.00 \$470,800 2,275,500 LBS \$0.65 Furnishing and Handling Reinforcement \$1,479,075 Spillway subtotal \$31,329,786 QUANTITIES **PRICES** CHECKED S. Osgood 11/20/03 S. Osgood 11/20/03 B. Foster B. Foster DATE PREPARED APPROVED DATE PRICE LEVEL Appraisal 03 11/10/200 11/10/03

11/10/200

**ESTIMATE WORKSHEET** CODE: D-8170 SHEET\_2\_ OF \_3\_ FEATURE: PROJECT: RM274 Dam Site Elev. 960 (Interpolated) DIVISION: Concrete Faced Rockfill Dam (CFR) FILE: P:\US\_Bureau\_Reclamation\IDIQ\_01CS20210B\Upper\_San\_Joa n\_Phase\_1\Documents\Surface Storage Option TMs\TM Temperance\Interpolated Costs\[MP274 CFRF.xls]MP274\_800 PLANT PAY UNIT ACCT. ITEM DESCRIPTION QUANTITY CODE UNIT PRICE AMOUNT OutletWorks Concrete in Outlet Works Intake Structure 3,110 CY \$265.00 \$824,150 Excavatioon of Outlet Shaft and Gate Structure 14,730 CY \$280.00 \$4,124,400 Rock Bolt Supports 600 Bolts \$360.00 \$216,000 Total Drilling for Rock Bolts 7,200 LF \$20.00 \$144,000 Concrete in Outlet Shaft and Gate Structure 6,530 CY \$450.00 \$2,938,500 2,720 \$120.00 Furnishing and Handling Cement TONS \$326,400 Furnishing and Handling Reinforcement 1,446,000 LBS \$0.65 \$939,900 Outlet Works Trashracks 495,000 LBS \$2.50 \$1,237,500 Outlet Works subtotal \$10,750,850 Powerplant Steel Pipe 13,323,922 \$19,985,883 LBS \$1.50 \$4.22 Valves, all Sizes and Types 4.506.270 LBS \$19,001,439 Hydraulic Control System 126,500 LBS \$10.00 \$1,265,000 Concrete in Powerplant 42,350 \$350.00 \$14,822,500 CY 426,800 CY \$12.00 \$5,121,600 Excavation for Powerplant Furnishing and Handling Cement 11,945 TONS \$100.00 \$1,194,500 Furnishing and Handling Reinforcement 3,464,742 LBS \$0.60 \$2,078,845 Turbines 1,941,700 LBS \$6.50 \$12,621,050 1,682,000 \$8.00 \$13,456,000 Generators LBS Governors, Motors, etc. 3-Units \$3,600,000 Powerplant subtotal \$93,146,816 QUANTITIES PRICES ВΥ CHECKED ВΥ CHECKED S. Osgood 11/20/03 B. Foster B. Foster S. Osgood 11/20/03 DATE PREPARED DATE PRICE LEVEL APPROVED

11/10/03

Appraisal 03

### **ESTIMATE WORKSHEET**

SHEET\_3\_ OF \_3\_\_\_

0002.00	DE:D-8170 LOTHWATE WORKOTTEET			SHEET_3_ OF _3						
FEAT	JRE:		PROJE							
	D8407	4 Dawn Cita		USJRBSI						
		4 Dam Site	DIVISIO	ANI.						
		960 (Interpolated) nkment	DIVISIO	JN:						
	EIIIDai	KITER								
			FILE: P:\US_Bureau_Reclamation\IDIQ_01CS20210B\Upper_San_Joa							
				ase_1\Documen						
				Temperance\Int	erpolated Co	sts\[MP274 CFF	RF.xls]MP274_800			
PLANT	PAY					UNIT				
ACCT.	ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	PRICE	AMOUNT			
		CFRF Dam								
		Excavation - common (removal of alluvium, rock slope			0.7		<b>***</b>			
	20	cleaning by dozer to sound rock, minimal ripping.)	8313	460,200	CY	\$5.70	\$2,623,140			
		Zone 1A - Exc, haul, & place (CL, SM, GM in 6" lifts to 98%		40.007	0)/	00.40	<b>#070 50</b>			
	30	Proctor, 2 mile haul) Toe slab imperv. Cap	8313	40,267	CY	\$9.40	\$378,507			
	40	Zone 1B - Exc, haul, & place (random in 18" lifts to 95%		220 722	CV	¢6.00	¢4 404 220			
	40	Proctor, 0.5 mile haul) Shell for Zone 1A	8313	239,733	CY	\$6.23	\$1,494,338			
		Zone 2 - Exc, haul, & place processed SM, GM in 18" lifts to		004 000	0.7	047.07	¢4.007.07			
	50	98% Proctor, 0.5 mile haul) Deck foundation	8313	224,293	CY	\$17.87	\$4,007,374			
	00	Zone 3A - Exc, haul, & place (processed GP in 18" lifts to	8313	224,293	CV	\$17.37	¢2 00E 220			
-	60	95% Proctor, 0.5 mile haul) Transition to Shell Zone 3B - Exc, haul, & place (rockfill, 18" max in 3' lifts,	8313	224,293	Ci	\$17.37	\$3,895,228			
	70	blasting operation 0.5 mile away) Upstream Shell	8313	8,350,933	CV	\$8.20	\$68,477,653			
-	70	Zone 3C - Exc, haul, & place (rockfill, 4' max in 4' lifts,	6313	0,330,933	Ci	φ0.20	φυσ,477,000			
	90	blasting operation 0.5 mile away) Downstream Shell	8313	8,522,667	CV	\$7.95	\$67,755,200			
		Concrete deck (3,000 psi strength, 0.4% reinforcing)	8313	103,367		\$213.33	\$22,051,556			
		Concrete toe slab (3,000 psi strength, 0.3% reinforcing)	8313	3,679	<del>                                     </del>	\$213.33	\$784,924			
		Anchor bars for toe slab (4' deep grouted into granite)	8313		anchors	\$40.00	\$715,120			
		Parapet Wall (3,000 psi, 0.4% reinforcing)	8313	3,397		\$420.00	\$1,426,880			
		Drilling for grout program (setup, drill, test), setups=1165	8313	51,200		\$31.93	\$1,634,987			
		Grouting (grout injection into competent granite.	8313	38,413		\$24.33	\$934,724			
		Unwatering	8313		LS	<b>\$200</b>	\$1,980,000			
	100	Subtotal, CFRF Dam	00.0	-			\$178,159,631			
		SUMMATION OF COSTS								
		Diversion and Care of River	1			+ +	\$120,900,000			
		Spillway	1			+ +	\$31,300,000			
		Outlet Works				<del>1 1</del>	\$10,800,000			
		Powerplant	1			+	\$101,900,000			
		CFRF Dam	1			+ +	\$178,200,000			
		Mobilization - 5%	1			+	\$22,000,000			
		Subtotal	1			<del>                                     </del>	\$465,100,000			
		Unlisted Items - 15%	1			1	\$64,900,000			
		Contract Cost	1			1	\$530,000,000			
		Contingencies - 30%	1		1	1	\$160,000,000			
		Field Cost					\$690,000,000			
			1							
		QUANTITIES	1		PRICES	<u> </u>				
BY		CHECKED	ВҮ		CHECKED					
	B. Fost		1	B. Foster		S. Osgood 11	/20/03			
DATE P			DATE		PRICE LEV					
		11/10/2003	1	11/10/03		Appraisal 03				
		· · · · · · · · · · · · · · · · · · ·		11,10,00		pp				

### **ESTIMATE WORKSHEET**

SHEET 1 OF 3

CODE:D-8	170	ESTIMATE WORKSHEET	SHEET_1_ OF _3					
FEAT	JRE:		PROJE	CT:				
			1	USJRBSI				
	RM27	4 Dam Site						
		985 (Interpolated)	DIVISIO	ON:				
	Conc	rete Faced Rockfill Dam (CFR)						
			FILE:	P:\US_Bureau_R n Phase 1\Docu			3\Upper_San_Joaqui	
				Temperance\Inte				
PLANT	PAY					UNIT		
ACCT.	ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	PRICE	AMOUNT	
		Discourse de la constant de la const						
	1	Diversion and care of river Upstream Cofferdam (Crest @ El. 635)	+	1,892,500	CY	\$13.00	\$24,602,500	
		Excavation for Left Abutment Diversion Tunnel	_	141.300	CY	\$13.00	\$24,602,500	
		Concrete Liner for Left Abutment Diversion Tunnel	+	31,300	CY	\$260.00	\$20,488,500	
		Rock Bolts - Left Abt. Div. Tunnel	_	3,270	Bolts	\$500.00	\$1,635,000	
		Total Drilling - Left Abt. Div. Tunnel	-	58,860	LF	\$20.00	\$1,177,200	
		Excavation for Right Abutment Diversion Tunnel	+	281,700	CY	\$140.00	\$39,438,000	
		Concrete Liner for Right Abutment Diversion Tunnel		48,900	CY	\$260.00	\$12,714,000	
		Rock Bolts - Right Abt. Div. Tunnel		3,050	Bolts	\$600.00	\$1,830,000	
		Total Drilling - Right Abt. Div. Tunnel		70,150	LF	\$20.00	\$1,403,000	
		Furnishing and Handling Cement		22,620	TONS	\$100.00	\$2,262,000	
		Furnishing and Handling Reinforcement		12,030,000	LBS	\$0.60	\$7,218,000	
		Diversion and Care of River Subtotal					\$120,906,200	
		Spillway						
		Excavation for Spillway		2,975,667	CY	\$8.12	\$24,152,494	
		Concrete in spillway crest		7,670	CY	\$180.00	\$1,380,600	
		Concrete in spillway training walls and Apron		7,500	CY	\$210.00	\$1,575,000	
		Furnishing and Handling Cement		4,280	TONS	\$110.00	\$470,800	
		Furnishing and Handling Reinforcement		2,275,500	LBS	\$0.65	\$1,479,075	
		Spillway subtotal					\$29,057,969	
		QUANTITIES		PR	ICES			
вү		CHECKED	BY		CHECKED			
	B. Fost	1 1 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		B. Foster		S. Osgood 11/2	0/03	
DATE P	REPAR		DATE		PRICE LEVI			
		11/10/2003		11/10/03		Appraisal 03		

### **ESTIMATE WORKSHEET**

SHEET\_2\_ OF \_3\_\_

FEATURE: RM274 Dam Site		PROJE	CT:					
				DIVIEW	OM.			
		985 (Interpote rete Faced	olated) Rockfill Dam (CFR)	DIVISIO	JN:			
				FILE:	n_Phase_1\Docu	ments\Surfa	ce Storage Opti	DB\Upper_San_Joaqui on TMs\TM F.xls]MP274_800
PLANT ACCT.			DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		OutletWor	ks					
			Outlet Works Intake Structure		3,110	CY	\$265.00	\$824,150
			on of Outlet Shaft and Gate Structure		14.730	CY	\$280.00	\$4.124.400
		Rock Bolt			600	Bolts	\$360.00	\$216,000
			ng for Rock Bolts		7.200	LF	\$20.00	\$144,000
			Outlet Shaft and Gate Structure		6,530	CY	\$450.00	\$2,938,500
			and Handling Cement		2.720	TONS	\$120.00	\$326,400
			and Handling Reinforcement		1,446,000	LBS	\$0.65	\$939,900
			ks Trashracks		495,000	LBS	\$2.50	\$1,237,500
			Outlet Works subtotal				Ų	\$10,750,850
		Powerplar	nt .					
		Steel Pipe	п	-	16,256,762	LBS	\$1.50	\$24,385,143
			Sizes and Types	-	4,813,230	LBS	\$4.62	\$22,221,079
			Control System		138,500	LBS	\$10.00	\$1,385,000
			n Powerplant		42,350	CY	\$350.00	\$14,822,500
	_		for Powerplant		426,800	CY	\$12.00	\$5,121,600
	1		and Handling Cement		11,945	TONS	\$100.00	\$1,194,500
			and Handling Reinforcement		4,939,342	LBS	\$0.60	\$2,963,605
		Turbines	and Handling Reinforcement		1,915,300	LBS	\$6.50	\$12,449,450
		Generators		+	2,018,000	LBS	\$8.00	\$16,144,000
			, Motors, etc.	-	3-Units	LS	ψ0.00	\$3,600,000
		Governois	Powerplant subtotal		3-011113	LO		\$104,286,876
			·					
			UANTITIES		DD	ICES		
ву		Q	CHECKED	BY	rn	CHECKED		
	B. Fost		S. Osgood 11/20/03		B. Foster		S. Osgood 11/2	20/03
DATE	PREPAR	ED 11/10/2003	APPROVED	DATE	11/10/03	PRICE LEVI	EL Appraisal 03	
		,	ı		,,50		~ F 00 00	

11/10/2003

### **ESTIMATE WORKSHEET**

SHEET\_3\_ OF \_3\_ CODE:D-8170 FEATURE: PROJECT: USJRBSI RM274 Dam Site Elev. 985 (Interpolated) DIVISION: Embankment FILE: P:\US\_Bureau\_Reclamation\IDIQ\_01CS20210B\Upper\_San\_Joaqui n\_Phase\_1\Documents\Surface Storage Option TMs\TM
Temperance\Interpolated Costs\[MP274 CFRF.xls]MP274\_800 PLANT PAY UNIT ACCT. ITEM DESCRIPTION CODE QUANTITY UNIT PRICE AMOUNT **CFRF Dam** Excavation - common (removal of alluvium, rock slope 504,450 CY 20 cleaning by dozer to sound rock, minimal ripping.) 8313 \$5.58 \$2,812,309 Zone 1A - Exc, haul, & place (CL, SM, GM in 6" lifts to 98% 30 Proctor, 2 mile haul) Toe slab imperv. Cap 8313 44,683 CY \$9.15 \$408,853 Zone 1B - Exc, haul, & place (random in 18" lifts to 95% 266,567 CY \$6.19 \$1,650,492 40 Proctor, 0.5 mile haul) Shell for Zone 1A 8313 Zone 2 - Exc, haul, & place processed SM, GM in 18" lifts to 244,777 CY \$17.53 50 98% Proctor, 0.5 mile haul) Deck foundation \$4,291,751 8313 Zone 3A - Exc, haul, & place (processed GP in 18" lifts to 244,777 CY \$17.03 60 95% Proctor, 0.5 mile haul) Transition to Shell 8313 \$4,169,363 Zone 3B - Exc, haul, & place (rockfill, 18" max in 3' lifts, 70 blasting operation 0.5 mile away) Upstream Shell 9,288,267 CY \$8.08 \$75,002,753 8313 Zone 3C - Exc, haul, & place (rockfill, 4' max in 4' lifts, 80 blasting operation 0.5 mile away) Downstream Shell 8313 9,479,333 CY \$7.83 \$74,175,783 114,596 CY \$209.17 \$23,969,628 90 Concrete deck (3,000 psi strength, 0.4% reinforcing) 8313 3,915 CY \$818.922 100 Concrete toe slab (3,000 psi strength, 0.3% reinforcing \$209 17 8313 110 Anchor bars for toe slab (4' deep grouted into granite) 8313 19,148 anchors \$40.00 \$765,920 120 Parapet Wall (3,000 psi, 0.4% reinforcing) 3,616 CY \$413.75 \$1,495,982 8313 130 Drilling for grout program (setup, drill, test), setups=1165 54,825 LF \$31.77 \$1,741,608 8313 41,134 bags \$23.92 140 Grouting (grout injection into competent granite. 8313 \$983,792 150 Unwatering 8313 1 LS \$2,055,000 Subtotal, CFRF Dam \$194,342,156 SUMMATION OF COSTS \$120,900,000 Diversion and Care of River Spillway \$29,100,000 **Outlet Works** \$10,800,000 Powerplant \$104,300,000 CFRF Dam \$194,300,000 Mobilization - 5% \$23,000,000 Subtotal \$482,400,000 Unlisted Items - 15% \$67,600,000 Contract Cost \$550,000,000 Contingencies - 30% \$170,000,000 Field Cost \$720,000,000 QUANTITIES **PRICES** CHECKED CHECKED ΒY BY S. Osgood 11/20/03 B. Foster B. Foster S. Osgood 11/20/03 DATE PREPARED APPROVED DATE PRICE LEVEL

11/10/03

Appraisal 03

# **ESTIMATE WORKSHEET**

CODE:D-81	70		ESTIMATE WORKSHEE	<u>T</u>	SHEET_1_ OF _3					
EATU		74 Dam Site	9	PROJECT	PROJECT: USJRBSI  DIVISION:  P:\US_Bureau_Reclamation\IDIQ_01CS20210B\Upp FILE: n_Joaquin_Phase_1\Documents\Surface Storage G TMs\TM Temperance\Interpolated Costs\[MP274 CFRF.xls]MP274_800					
	Elev.	1100	Rockfill Dam (CFR)	DIVISION						
				FILE:						
LANT CCT.	PAY ITEM			CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT		
	1	Diversion	and care of river							
$\dashv$	- '		Cofferdam (Crest @ El. 635)		1,892,500	CY	\$13.00	\$24.602.500		
$\dashv$			for Left Abutment Diversion Tunnel	+	1,892,500	CY	\$13.00	\$24,602,500		
$\dashv$			iner for Left Abutment Diversion Tunnel	-	31,300	CY	\$260.00	\$8,138,00		
$\dashv$			- Left Abt. Div. Tunnel	_	3,270	Bolts	\$500.00	\$1,635,00		
$\dashv$			ng - Left Abt. Div. Tunnel	-	58.860	LF	\$20.00	\$1,033,00		
-			for Right Abutment Diversion Tunnel	_	281,700	CY	\$140.00	\$39,438,000		
$\dashv$			iner for Right Abutment Diversion Tunnel	_	48,900	CY	\$260.00	\$12,714,000		
-			- Right Abt. Div. Tunnel	_	3,050	Bolts	\$600.00	\$1,830,000		
-			rg - Right Abt. Div. Tunnel	_	70,150	LF	\$20.00	\$1,403,00		
-			and Handling Cement		22.620	TONS	\$100.00	\$2,262,00		
-			and Handling Reinforcement	_	12.030.000	LBS	\$0.60	\$7,218,000		
		Fulfilstillig	Diversion and Care of River Subtotal		12,030,000	LDS	\$0.60	\$120,906,200		
		Spillway								
-			for Spillway		1,532,800	CY	\$8.50	\$13,028,800		
$\neg$			n spillway crest		7,670	CY	\$180.00	\$1,380,600		
$\neg$			n spillway training walls and Apron		7,500	CY	\$210.00	\$1,575,000		
$\neg$			and Handling Cement		4,280	TONS	\$110.00	\$470,80		
$\neg$		Furnishing	and Handling Reinforcement		2,275,500	LBS	\$0.65	\$1,479,07		
			Spillway subtotal		, ,,,,,,,,,			\$17,934,275		
$\dashv$										
			UANTITIES		PRI	CES				
Y	S. Hig	inbotham	CHECKED	ВҮ	R. Baumgarten	CHECKED				
ATE P	REPA	RED	APPROVED	DATE	09/09/200	PRICE LEVI	EL Appraisal 03			

# **ESTIMATE WORKSHEET**

SHEET\_2\_ OF \_3\_\_\_

FEATURE:		PROJECT	PROJECT:					
	PM27	74 Dam Site	<u> </u>					
		1100	<del>-</del>	DIVISION				
			Rockfill Dam (CFR)	DIVISION	•			
			,					
				FILE:	P:\US Bureau Rec	:lamation\IDI	Q 01CS20210	B\Upper San Joaq
					hase_1\Documents	Surface Sto	orage Option T	Ms\TM
					Temperance\Interp	olated Costs		F.xls]MP274_800
PLANT	l						UNIT	
ACCT.	ITEM		DESCRIPTION	CODE	QUANTITY	UNIT	PRICE	AMOUNT
		OutletWor	ks					
			Outlet Works Intake Structure		3.110	CY	\$265.00	\$824,150
			on of Outlet Shaft and Gate Structure		14,730	CY	\$280.00	\$4,124,400
		Rock Bolt S			600	Bolts	\$360.00	\$216,000
			ng for Rock Bolts		7.200	LF	\$20.00	\$144,000
			Outlet Shaft and Gate Structure		6,530	CY	\$450.00	\$2,938,500
			and Handling Cement		2,720	TONS	\$120.00	\$326,400
			and Handling Reinforcement		1,446,000	LBS	\$0.65	\$939,900
			ks Trashracks		495.000	LBS	\$2.50	\$1,237,500
		Odilot Wol	Outlet Works subtotal		.00,000		<b>\$2.00</b>	\$10,750,850
								<b>V.0,.00,000</b>
		Powerplar	nt					
		Steel Pipe			19,067,400	LBS	\$1.50	\$28,601,100
			Sizes and Types		5,107,400	LBS	\$5.00	\$25,537,000
			Control System		150,000	LBS	\$10.00	\$1,500,000
			n Powerplant		42,350	CY	\$350.00	\$14,822,500
			for Powerplant		426,800	CY	\$12.00	\$5,121,600
			and Handling Cement		11,945	TONS	\$100.00	\$1,194,500
			and Handling Reinforcement		6,352,500	LBS	\$0.60	\$3,811,500
		Turbines	<u> </u>		1,890,000	LBS	\$6.50	\$12,285,000
		Generators	6		2,340,000	LBS	\$8.00	\$18,720,000
		Governors	, Motors, etc.		3-Units	LS		\$3,600,000
			Powerplant subtotal					\$115,193,200
			•					
QUANTITIES				PRIC	CES			
ву			CHECKED	ву		CHECKED		
	S. Hia	inbotham			R. Baumgarten			
DATE			APPROVED	DATE	ŭ	PRICE LEV	EL	
					09/09/200		Appraisal 03	
			•				•	

# **ESTIMATE WORKSHEET**

SHEET\_3\_ OF \_3\_\_

FEATURE:		PROJECT:						
	RM274 Dam Site							
	Elev.	1100		DIVISION:				
	Emba	ankment						
				FILE:	P:\US_Bureau_Rec hase_1\Documents Temperance\Interp	s\Surface St	orage Option T	
PLANT ACCT.			DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		CFRF Dam						
	20		- common (removal of alluvium, rock slope	8313	708,000	CY	\$5.00	\$3,540,000
			Exc, haul, & place (CL, SM, GM in 6" lifts to 98%		100,000		70.00	40,010,000
	30		nile haul) Toe slab imperv. Cap	8313	65,000	CY	\$8.00	\$520,000
			Exc, haul, & place (random in 18" lifts to 95%					. ,
	40		mile haul) Shell for Zone 1A	8313	390,000	CY	\$6.00	\$2,340,000
		Zone 2 - Ex	c, haul, & place processed SM, GM in 18" lifts					
	50	to 98% Pro	ctor, 0.5 mile haul) Deck foundation	8313	339,000	CY	\$16.00	\$5,424,000
			Exc, haul, & place (processed GP in 18" lifts to					
	60		or, 0.5 mile haul) Transition to Shell	8313	339,000	CY	\$15.50	\$5,254,500
			Exc, haul, & place (rockfill, 18" max in 3' lifts,					
	70		eration 0.5 mile away) Upstream Shell	8313	13,600,000	CY	\$7.50	\$102,000,000
			Exc, haul, & place (rockfill, 4' max in 4' lifts,		42 000 000	CV	¢т ог	¢400 c20 000
			eration 0.5 mile away) Downstream Shell	8313			\$7.25 \$190.00	\$100,630,000
_			eck (3,000 psi strength, 0.4% reinforcing)	8313			\$190.00	\$31,587,500 \$950,000
_			be slab (3,000 psi strength, 0.3% reinforcing	8313			\$190.00	\$950,000
			s for toe slab (4' deep grouted into granite)	8313		anchors	\$385.00	\$1,778,700
			all (3,000 psi, 0.4% reinforcing) grout program (setup, drill, test), setups=1165	8313 8313			\$31.00	\$2,216,500
			rout injection into competent granite.	8313			\$22.00	\$1,180,300
	_	0 10	(assumes 30 month construction)	8313	33,030	_ <u> </u>	Ψ22.00	\$2,400,000
	130	Unwatering	Subtotal, CFRF Dam	0313	'	120	+	\$260,821,100
			Subtotal, Cl IXI Daili					\$200,021,100
							+	
		SUMMATIC	ON OF COSTS					
			nd Care of River				1	\$121,000,000
		Spillway	na care or rare.				1	\$18,000,000
		Outlet Work	(S					\$11,000,000
		Powerplant						\$115,000,000
		CFRF Dam						\$261,000,000
		Mobilization	n - 5%					\$26,300,000
		Subtotal						\$552,300,000
		Unlisted Ite	ms - 15%				1	\$87,700,000
		Contract Cost Contingencies - 30% Field Cost						\$640,000,000
								\$190,000,000
								\$830,000,000
QUANTITIES			PRICES					
вү				ву		CHECKED		
	Mark I	Pabst	Mark Pabst		R. Baumgarten			
DATE PREPARED APPROVED			APPROVED	DATE	-	PRICE LEV	EL.	
7/1/03				09/09/03		Appraisal 03		
	_		·	•			•	· · · · · · · · · · · · · · · · · · ·

Description		Amount		
100 Foot CFR, including Powerhouse (from TF274_800_CFR_3)		\$390,000,000		
OMW Powerhouse		E07 045 450		
RM274 PH (40MW), 2003 prices, from Phase 1 est. for 800 Foot CFR Dam Less portion of pipes and valves attributable to O.W., from below		\$87,215,150 -\$28,166,995		
Subtotal		\$59,048,155		
Mobilization (5%)		\$3,000,000		
Subtotal		\$62,048,155		
Unlisted items (~15%)		\$8,951,845		
Powerhouse Contract Cost Contract Costs for RM274 800 Foot CFR Dam, excluding 40MW P		\$71,000,000 \$320,000,000		
	owernouse (Jul-2003 Cost)	, ,		
365 Foot CFR, including Powerhouse (from TF274_865_CFR_3) IOMW Powerhouse		\$450,000,000		
RM274 PH (40MW), 2003 prices, from Phase 1 est. for 865 Foot CFR Dam		\$87,215,150		
ess portion of pipes and valves attributable to O.W., from below		-\$28,166,995		
Subtotal		\$59,048,155		
Mobilization (5%)		\$3,000,000		
Subtotal Unlisted items (~15%)		\$62,048,155 \$8,951,845		
Powerhouse Contract Cost		\$71,000,000		
Contract Cost for RM274 865 Foot CFR Dam, excluding 40MW Po	werhouse (Jul-2003 costs)	\$379,000,000		
160 Foot CFR, including Powerhouse (from TF274_960_CFR_3)		\$530,000,000		
50MW Powerhouse				
10MW Powerhouse Contract Cost (reference above)		\$71,000,000 \$89,000,000		
60MW Powerhouse Contract Cost (reference below) Powerhouse Average Contract Cost		000,000,08		
Contract Cost for RM274 960 Foot CFR Dam, excluding 50MW Po	werhouse (Jul-2003 costs)	\$450,000,000		
985 Foot CFR, including Powerhouse (from TF274 985 CFR 3)		\$550,000,000		
50MW Powerhouse		\$330,000,000		
40MW Powerhouse Contract Cost (reference above)		\$71,000,000		
50MW Powerhouse Contract Cost (reference below)		\$89,000,000		
Powerhouse Average Contract Cost Contract Cost for RM274 985 Foot CFR Dam, excluding 50MW Po	werhouse ( lul 2003 costs)	\$80,000,000 \$470,000,000		
, =	Welliouse (Sul-2003 Costs)	, ,		
1100 Foot CFR, including Powerhouse (from TF274_1100_CFR_3) 50MW Powerhouse		\$640,000,000		
RM274 PH (60MW), 2003 prices, from Phase 1 est. for 1100 Foot CFR Dam		\$115,193,200		
ess portion of pipes and valves attributable to O.W., from below		-\$41,249,925		
Subtotal		\$73,943,275		
Mobilization (5%) Subtotal		\$3,700,000		
Subtotal Unlisted items (~15%)		\$77,643,275 \$11,356,725		
Powerhouse Contract Cost		\$89,000,000		
Contract Cost for RM274 1100 Foot CFR Dam, excluding 60MW P	owerhouse (Jul-2003 costs	\$550,000,000		
		C	0/ A- DU (	V 4- 0V
	(reference TF286_ADJ COSTS_1)	Capacity (MW) 180	% to PH 9 41%	% 10 OV 599
	(reference TF286 ADJ COSTS 1)	40	19%	81
	(reference TF286_ADJ COSTS_1)	60	24%	769
	(reference TF286_ADJ COSTS_1)	80	27%	73'
For 800 Foot CFR Dam (w/ 40MW PH), Jul-2003 costs		£17 COO OCE		
Steel pipe, from Phase 1 est. for 800 Foot CFR Dam Valves, from Phase 1 est. for 800 Foot CFR Dam		\$17,602,965 \$17,360,000		
Subtotal, pipe and valves		\$34,962,965		
Portion of pipes and valves attributable to O.W.		\$28,166,995		
Portion of pipes and valves attributable to 40MW PH		\$6,795,970		
For 1100 Foot CFR Dam (w/ 60MW PH), Jul-2003 costs				
Steel pipe, from Phase 1 est. for 1100 Foot CFR Dam		\$28,601,115		
/alves, from Phase 1 est. for 1100 Foot CFR Dam		\$25,537,000		
Subtotal, pipe and valves		\$54,138,115		
Portion of pipes and valves attributable to O.W. Portion of pipes and valves attributable to 60MW PH		\$41,249,925 \$12,888,190		
		ţjooo,,oo		
CONTRACT COST FOR NEW P.	OMEDUOLICE AT DAGG	· 4		
CONTRACT COST FOR NEW P	OWERHOUSE AT RIVI2/	4		
	40MW Contrat Cost (from above)	\$71,000,000		
		\$89,000,000		

Description 80MW Powerhouse

Conversion Factor (square root of MW ratio)

Adjusted Contract Cost for 80MW Powerhouse at RM274 (Jul-2003 costs)

100MW Powerhouse
Conversion Factor (square root of MW ratio)
Adjusted Contract Cost for 100MW Powerhouse at RM274 (Jul-2003 costs)

60MW Contrat Cost (from above)

\$89,000,000

\$100,000,000

Amount

1.29 **\$115,000,000**