

<b>FEATURE:</b>  <p style="text-align: center;"><b>Klamath River Dams Removal</b>  <b>Yreka water supply</b>  <b>Dam A modifications</b></p> <p style="text-align: center;"><b>Most Probable High</b></p>	<b>PROJECT:</b>  <p style="text-align: center;"><b>Klamath River</b>  <b>Northern California/Southern Oregon</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"><b>WOID:</b> AF652</td> <td style="width:50%;"><b>ESTIMATE LEVEL:</b> Appraisal</td> </tr> <tr> <td><b>REGION:</b> MP</td> <td><b>UNIT PRICE LEVEL:</b> July-2010</td> </tr> </table> <p><b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Yreka Supply Line\MPL, MP, MPH\Klamath Dams Removal - Yreka Water Supply Line - MPH - Appraisal Est - 2-2011.xlsx\Summary</p>	<b>WOID:</b> AF652	<b>ESTIMATE LEVEL:</b> Appraisal	<b>REGION:</b> MP	<b>UNIT PRICE LEVEL:</b> July-2010
<b>WOID:</b> AF652	<b>ESTIMATE LEVEL:</b> Appraisal				
<b>REGION:</b> MP	<b>UNIT PRICE LEVEL:</b> July-2010				

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CIVIL</b>					
	1	Remove & dispose steel frame with slide gates/weirs 14 ft wide x 9 ft tall, weight unknown assume contains heavy metals	86-68140	1	ea	\$7,000.00	\$7,000.00
	2	Remove & dispose by steel bulkhead panel 3'-2" ft wide x 5'-6" tall assume contains heavy metals	86-68140	1	ea	\$1,050.00	\$1,050.00
	3	Remove & dispose fish screen panels 3 ft wide x 5'-6" tall each assume contains heavy metals	86-68140	6	ea	\$1,050.00	\$6,300.00
	4	Cut, remove concrete deck 3 ft x 1'-7" x 6 in	86-68140	2.4	cf	\$160.00	\$384.00
	5	Remove & dipose wood frame building 16 ft x 12 ft with roll up door	86-68140	1	ea	\$26,000.00	\$26,000.00
	6	Furnish, install wood frame building 16 ft x 12 ft with two roll up doors 9 ft x 7 ft door, 12 ft x 7 ft door	86-68140	1	ea	\$52,500.00	\$52,500.00
	7	Furnish & install steel slide gate with pedestal lift 30" wide x 42", 500 lb ea.	86-68140	2	ea	\$4,200.00	\$8,400.00
	7a	Furnish and place concrete walls 3 @ 5-6 h x 5 w x 1 ft thick reinf. - 115 lb ea 27 #5 dowels, drill and grout		3.1	cy	\$1,350.00	\$4,185.00
	7b	Extend 220v power to the site distance is about 350 ft, lots of clearing		350	lf	\$160.00	\$56,000.00
	7c	Diversion & care assume 10 cfs for 40 days		1	ls		\$105,000.00
		<b>SUBTOTAL THIS SHEET</b>					<b>\$266,819.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY Sayer	CHECKED	BY <i>[Signature]</i> Craig A. Grush, P.E.	CHECKED <i>[Signature]</i> 03-08-11
DATE PREPARED 01/15/11	PEER REVIEW / DATE Dave Edwards 1/24/11	DATE PREPARED 03/08/11	PEER REVIEW / DATE <i>[Signature]</i> 3/9/11

<b>FEATURE:</b>  Klamath River Dams Removal Yreka water supply Dam A modifications  Most Probable High	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon
	WOID: AF652      ESTIMATE LEVEL: Appraisal REGION: MP      UNIT PRICE LEVEL: July-2010
	FILE: C:\Estimating\Klamath\Klamath River Dams\Yreka Supply Line\MPL, MP, MPH\Klamath Dams Removal - Yreka Water Supply Line - MPH - Appraisal Est - 4-2011.xlsx\Dam B

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>MECHANICAL</b>					
	8	Furnish and install cylindrical tee fish screen (Q= 15 cfs) Assumes approach velocity = 0.33 ft/s Screen diameter = 30 inches Overall unit length = 128" Inclined track length = 10 ft All stainless steel 304 or 316 Assume: ISI screen model T30-42 with electrical drives and 120 volt AC winch	86-68410	1	ea	\$150,000.00	\$150,000.00
		Furnish and install three bulkheads, welded structural steel construction, protective coating.	86-68410				
	9a	- 3 Bulkheads, 500 lbs. ea.		0	lbs	\$8.00	
	9b	-30 - 1/2" dia. x 9" epoxy anchors		0	ea	\$26.00	
		<b>DAM A MODIFICATIONS SUBTOTAL</b>					<b>\$416,819.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY R. Stephen	CHECKED R. Christensen	BY <i>[Signature]</i> Craig A. Grush, P.E.	CHECKED <i>[Signature]</i> 05-23-11
DATE PREPARED 01/20/11	PEER REVIEW / DATE T. Hummel P.E. 1/21/11	DATE PREPARED 05/23/11	PEER REVIEW / DATE <i>[Signature]</i> 5/24/11

<b>FEATURE:</b>  Klamath River Dams Removal Yreka water supply Dam B modifications  Most Probable High	<b>PROJECT:</b>  Klamath River Northern California/Southern Oregon <hr/> <b>WOID:</b> AF652 <b>ESTIMATE LEVEL:</b> Appraisal <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <hr/> <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Yreka Supply Line\MPL, MP, MPH\Klamath Dams Removal - Yreka Water Supply Line - MPH - Appraisal Est - 2-2011.xlsx\Summary
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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CIVIL</b>					
	10	Excavation for structure	86-68140	40	cy	\$120.00	\$4,800.00
	11	Compacted backfill for structure	86-68140	30	cy	\$65.00	\$1,950.00
	12	Concrete removal, 2'x2' cut opening	86-68140	4	cf	\$160.00	\$640.00
	13	Furnish & place concrete in structure	86-68140	8	cy	\$1,350.00	\$10,800.00
	14	Remove & dipose existing trashrack 5 ft x 9 ft assume contains heavy metals	86-68140	1	ea	\$2,600.00	\$2,600.00
	15	Furnish & install grating	86-68140	25	sf	\$210.00	\$5,250.00
	15a	Furnish and place concrete wall size, 9.5 ft tall, 5 ft w, 1 ft thick 11 #5 dowels, drill and grout reinf - 200 lb		1.8	cy	\$2,325.00	\$4,185.00
	15b	Extend 220v power to the site distance is about 280 ft, lots of clearing		280	lf	\$160.00	\$44,800.00
	16	Diversion & care assume 10 cfs for 10 days	86-68140	1	ls		\$75,000.00
	17	Create access to dam	86-68140	1	ls		\$50,000.00
		<b>SUBTOTAL THIS SHEET</b>					<b>\$200,025.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
<b>BY</b> Sayer	<b>CHECKED</b> [Signature]	<b>BY</b> Craig A. Grush, P.E.	<b>CHECKED</b> [Signature] 03-08-11
<b>DATE PREPARED</b> 01/15/11	<b>PEER REVIEW / DATE</b> Dave Edwards 1/24/11	<b>DATE PREPARED</b> 03/08/11	<b>PEER REVIEW / DATE</b> [Signature] 3/9/11

<b>FEATURE:</b>  Klamath River Dams Removal Yreka water supply Dam B modifications  Most Probable High	<b>PROJECT:</b> Klamath River Northern California/Southern Oregon
	WOID: AF652      ESTIMATE LEVEL: Appraisal REGION: MP      UNIT PRICE LEVEL: July-2010
	FILE: C:\Estimating\Klamath\Klamath River Dams\Yreka Supply Line\MPL, MP, MPH\Klamath Dams Removal - Yreka Water Supply Line - MPH - Appraisal Est - 4-2011.xlsx\Dam B

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>MECHANICAL</b>					
	18	Furnish and install cylindrical tee fish screen (Q= 15 cfs) Assumes approach velocity = 0.33 ft/s Screen diameter = 30 inches Overall unit length = 128" Vertical track length = 12 ft All stainless steel 304 or 316 Assume: ISI screen model T30-42 with electrical drives and 120 volt AC winch	86-68410	1	ea	\$150,000.00	\$150,000.00
		Furnish and install bulkhead to replace trashrack, welded structural steel construction, protective coating.	86-68410				
	19a	- 1 Bulkhead, 1,200 lbs.		0	lbs	\$8.00	
	19b	-18 - 1/2" dia. x 9" epoxy anchors		0	ea	\$26.00	
		<b>DAM B MODIFICATIONS SUBTOTAL</b>					<b>\$350,025.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY R. Stephen	CHECKED R. Christensen	BY <i>[Signature]</i> Craig A. Grush, P.E.	CHECKED <i>[Signature]</i> 05-23-11
DATE PREPARED 01/20/11	PEER REVIEW / DATE T. Hummel P.E. 1/21/11	DATE PREPARED 05/23/11	PEER REVIEW / DATE <i>[Signature]</i> 8/9/11

<b>FEATURE:</b>  Klamath River Dams Removal Yreka water supply Yreka pipe crossing Iron Gate Reservoir Most Probable High	<b>PROJECT:</b>  Klamath River Northern California/Southern Oregon
	<b>WOID:</b> AF652 <b>ESTIMATE LEVEL:</b> Appraisal
	<b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010
	<b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Yreka Supply Line\MPL, MP, MPH\Klamath Dams Removal - Yreka Water Supply Line - MPH - Appraisal Est - 2-2011.xlsx\Ssummary

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CIVIL</b>					
	20	Furnish & install three span, pre-engineered pipe support/pedestrian access bridge, with 8' clear width. Span lengths are 100', 200', 100'. Support one 24" Dia. Welded steel pipe. Steel pipe and supports, Wt.=150 lbs/linear ft Water, Wt.=200 lbs/linear ft 4'-0" pedestrian walkway, with 85 psf live load (Includes epoxy anchor bolts, and 8'-0" high chain link fence (7'-0" fabric and 1'-0" high 3-strand barbed wire) on bridge (vinyl coated)	86-68140	1	ea	\$1,365,000.00	\$1,365,000.00
		Funish & place reinforced concrete caps for abutment 1 and pier 1 (4' diameter column)					
	21	Concrete	86-68140	25	cy	\$2,600.00	\$65,000.00
	22	Reinforcement, epoxy coated	86-68140	10,000	lb	\$2.10	\$21,000.00
		Drilled shafts					
	23	5'-0" Diameter @ pier 1 (Pier drilled shaft requires 12 CY of concrete and 5,000 lbs of reinforcement)	86-68140	16	lf	\$10,000.00	\$160,000.00
	24	3'-0" Diameter @ abutment 1 (Abutment drilled shafts require 14 CY of concrete and 8,000 lbs of reinforcement)	86-68140	52	lf	\$2,500.00	\$130,000.00
<b>SUBTOTAL THIS SHEET</b>							<b>\$1,741,000.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY Sayer	CHECKED Clough 11/05/10	BY <i>[Signature]</i> Craig A. Grush, P.E.	CHECKED <i>[Signature]</i> 03-08-11
DATE PREPARED 11/05/10	PEER REVIEW / DATE Jesus Romero, PE 11/05/10	DATE PREPARED 03/08/11	PEER REVIEW / DATE <i>[Signature]</i> 3/9/11

<b>FEATURE:</b>  Klamath River Dams Removal Yreka water supply Yreka pipe crossing Iron Gate Reservoir Most Probable High	<b>PROJECT:</b>  Klamath River Northern California/Southern Oregon <hr/> <b>WOID:</b> AF652 <b>ESTIMATE LEVEL:</b> Appraisal <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Yreka Supply Line\MPL, MP, MPH\Klamath Dams Removal - Yreka Water Supply Line - MPH - Appraisal Est - 2-2011.xlsx\Pipe Crossing
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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		<b>CIVIL</b>					
		Furnish & place reinforced concrete caps for abutment 2 and pier 2 (4' diameter column)					
	25	Concrete	86-68140	25	cy	\$2,600.00	\$65,000.00
	26	Reinforcement, epoxy coated	86-68140	10,000	lb	\$2.10	\$21,000.00
		Drilled shafts					
	27	5'-0" Diameter @ pier 2 (Pier drilled shaft requires 12 CY of concrete and 5,000 lbs of reinforcement)	86-68140	16	lf	\$10,000.00	\$160,000.00
	28	3'-0" Diameter @ abutment 2 (Abutment drilled shafts require 14 CY of concrete and 8,000 lbs of reinforcement)	86-68140	52	lf	\$2,500.00	\$130,000.00
	29	Remove & dispose existing steel pipe, 1/4 inch wall, 24" dia. assume contains heavy metals	86-68140	20	lf	\$52.00	\$1,040.00
	30	Welded steel pipe, 1/4 inch wall, 24 inch dia. epoxy primer, polyurethane top coat, exterior coal-tar epoxy lined	86-68140	490	lf	\$210.00	\$102,900.00
	31	Install/Remove 2 access ramps for piers, dumped compacted gravel in river	86-68140	270	cy	\$150.00	\$40,500.00
	32	Excavation for pipe trench	86-68140	70	cy	\$25.00	\$1,750.00
	33	CLSM pipe bedding	86-68140	8	cy	\$315.00	\$2,520.00
	34	Backfill in pipe trench	86-68140	55	cy	\$32.00	\$1,760.00
		<b>PIPE CROSSING SUBTOTAL</b>					<b>\$2,267,470.00</b>

<b>QUANTITIES</b>		<b>PRICES</b>	
BY Sayer	CHECKED Clough 11/05/10	BY <i>[Signature]</i> Craig A. Grish, P.E.	CHECKED <i>[Signature]</i> 03-10-11
DATE PREPARED 11/05/10	PEER REVIEW / DATE	DATE PREPARED 03/08/11	PEER REVIEW / DATE <i>[Signature]</i> 3/10/11

<b>FEATURE:</b>  Klamath River Dams Removal Yreka water supply  Most Probable High SUMMARY	<b>PROJECT:</b>  Klamath River Northern California/Southern Oregon <hr/> <b>WOID:</b> AF121 <b>ESTIMATE LEVEL:</b> Appraisal <hr/> <b>REGION:</b> MP <b>UNIT PRICE LEVEL:</b> July-2010 <hr/> <b>FILE:</b> C:\Estimating\Klamath\Klamath River Dams\Yreka Supply Line\MPL, MP, MPH\Klamath Dams Removal - Yreka Water Supply Line - MPH - Appraisal Est - 4-2011.xlsx\Summary
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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Dam A Modifications					\$416,819.00
		Dam B Modifications					\$350,025.00
		Pipe Crossing					\$2,267,470.00
		<b>Subtotal</b>					<b>\$3,034,314.00</b>
		Mobilization	5%	+/-			\$150,000.00
		<b>Subtotal 1 with Mobilization</b>					<b>\$3,184,314.00</b>
		Escalation to Notice to Proceed (NTP), from July 2010 to July 2020					\$1,701,993.00
		(assumes 4.375%/yr compounding over 10 years) - Covered as a separate feature within the Project Summary of Costs					
		<b>Subtotal 2 = Subtotal 1 with Mobilization + Escalation to NTP</b>					<b>\$4,886,307.00</b>
		Design Contingencies	20%	+/-			\$996,422.00
		Allowance for Procurement Strategies (APS)	2%	+/-			\$117,271.00
		Type of solicitation assumed is: Competitive RFP					
		<b>CONTRACT COST</b>					<b>\$6,000,000.00</b>
		Construction Contingencies	30%	+/-			\$1,800,000.00
		<b>FIELD COST</b>					<b>\$7,800,000.00</b>
		Non-Contract Costs:	61%	+/-			\$4,700,000.00
		(Environmental & Cultural Resources Mitigation ~ 35%, Design Data Collection ~ 2%, Engineering Design ~ 6%, Permitting ~ 4%, Procurement ~ 2%, Construction Management ~ 11%, and Closeout ~ 1%)					
		<b>CONSTRUCTION COST</b>					<b>\$12,500,000.00</b>

Ref.: For appropriate use and terminology, see Reclamation Manual, Directives and Standards FAC; 09-01, 09-02 and 09-03.

QUANTITIES		PRICES	
BY	CHECKED	BY	CHECKED
Refer to Previous Sheets	Refer to Previous Sheets	<i>CG</i> Craig A. Grush, P.E.	<i>SW</i> 05-10-11
DATE PREPARED	PEER REVIEW / DATE	DATE PREPARED	PEER REVIEW / DATE
	Refer to Previous Sheets	03/08/11	<i>ACD</i> 05-10-11