Appendix M
Cost Estimates Update

Cost Estimates for Water Supply Alternatives

PREPARED FOR: Waukesha Water Utility

PREPARED BY: CH2M HILL

DATE: April 2, 2010

Background

To plan for the City of Waukesha's long-term water supply needs, the Waukesha Water Utility conducted water supply studies and contributed to regional water supply planning efforts. During the past several years, alternative water supply strategies were investigated at the conceptual level, including cost estimates. The cost estimates were developed to meet the intent of Act 227, Wisconsin's Compact implementation statute, and water supply planning law (2007) as part of an application for Great Lakes water.

Cost Estimate Basis

The cost estimates are based on conceptual information (proposed asset type, location, and capacity) and no design has been completed. They support strategic planning efforts that assess the feasibility of different alternatives and screen project options. The estimates are prepared for the purpose of long-range capital planning. They were prepared for guidance in comparing alternatives based on information available at the time of the estimate. Detailed engineering design has not been done. The final cost estimate of any project will depend on market conditions, site conditions, final project scope, schedule, and other variable factors. As a result, final project costs may vary from the estimates presented here.

Examples of estimating methods include cost/capacity curves, scale-up factors, historical cost information and parametric modeling techniques. The cost estimates include:

- Preliminary pipeline alignments and facility siting plans to meet Wisconsin Department
 of Natural Resources environmental reporting and cost-effectiveness reporting
 requirements. This also provided more information on high cost items such as pipeline
 highway and water crossings.
- Treatment strategies for the groundwater supply alternatives considered water quality
 data on both the deep and shallow aquifers. For example, arsenic removal treatment was
 used for shallow groundwater because of the recent discovery of arsenic in the future
 shallow wellfield. Disinfection was used because shallow groundwater modeling
 indicated a significant surface water influence could be present. The trend of increasing
 TDS in the deep aquifers resulted in desalination treatment being added in 2020.

CH2M HILL's proprietary Parametric Cost Estimating System (CPES) was used to generate water treatment plant construction, operation, and maintenance cost estimates by inputting fundamental water treatment process design criteria. The tool generates facility footprints to support site layout development and facility planning for quick assessment of cost and

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space impacts of alternatives. CPES uses updated industry databases and actual costs from other projects.

- Development costs for new shallow wells reflect recent shallow well costs and Lathers property wellfield planning.
- Electrical power costs reflect 2009 Water Utility rates.
- Backup power generation systems were included in the estimates for pump stations, wells, and treatment plants.
- Wastewater disposal costs were included for the water treatment plant residuals.
- Greenhouse gas estimates were prepared for all the alternatives to quantify this environmental impact.

Construction cost estimates include the following:

- Contractor bonds and insurance: 3 percent
- Contractor mobilization and demobilization: 5 percent
- Contractor overhead: 8 percent
- Contractor profit: 4 percent
- Project contingency: 25 percent

Further, the estimated total construction costs include:

- Engineering, planning, and design: 8 percent
- Permitting, legal, and administration: 12 percent
- Engineering services during construction: 8 percent

Capital and Life-Cycle Costs

Table 1 summarizes the capital, operation/maintenance and present worth costs of the water supply alternatives. Appendix M contains the detailed backup for the estimates.

TABLE 1
Water Supply Alternative Cost Estimates

Water Supply Alternative	Capital Cost ^a (\$ million)	Annual Operation/Maintenance Cost (\$ million)	20 yr Present Worth Cost (\$ million, 6%)	50 yr Present Worth Cost (\$ million, 6%)
Deep and shallow aquifers	189	7.2	272	302
Shallow aquifer and Fox River alluvium	184	7.4	269	301
Lake Michigan with return flow to Underwood creek	164	6.2	235	262
Lake Michigan and Shallow Aquifer	238	7.5	324	356

^aIncludes direct construction cost, contractor administrative costs (insurance, bonds, supervision etc), 25% contingency, and costs for permitting, legal, engineering, administrative.

Major changes from the last cost estimate include:

- Wellfield costs for Alternatives 1 and 2 increased because of a larger distance between shallow wells and additional wells. Changes were made based on recent shallow aquifer groundwater modeling results and attempting to reduce impacts on water resources.
- A new alternative was added. Alternative 4 includes the Lake Michigan supply and return system and the shallow aquifer. The Lake Michigan supply and return system has a smaller capacity (24-inch-diameter pipelines vs. 36-inch-diameter pipelines in Alternative 3). The shallow aquifer supply and treatment system is the same as in Alternative 1.

Waukesha Water Utility

Construction Cost Summary of Water Supply Alternatives

Construction Cost Summary of Water Su	ippiy A	iternatives						
			Α.	ternative 2 -		•		fornativo 4 Lako
	Altern	ative 1 - Deep		liow Wells and	 ∧ı₊	ernative 3 - Lake		ternative 4 - Lake
		hallow Wells		River Alluvium	<u>All</u>	Michigan	Michigan and Shallow Wells	
	anu S	HAHOW WEIIS	FUX	Rivel Alluviulii	\vdash	wiichigan		yvens
Deep Well Treatment Plant	-				\vdash			
3 RO plants for Wells 6,8,10	\$	17,467,000						
Shallow Aquifer Water Treatment Plant					l			
One @ 10.9 mgd	\$	29,864,000					\$	29,864,000
One @18.5 mgd			\$	37,355,000			\$	
Shallow Aquifer Wellfield								
14 new wells @ 0.75 mgd ea.		12,800,000		· · · · · · · · · · · · · · · · · · ·	<u> </u>		\$	12,800,000
18 new wells@ 0.75 to 1.5 mgd ea.	ļ		\$	17,815,000				
Shallow Aquifer Supply Pipeline to Waukesha		40 570 000			<u> </u>			10 870 000
10 miles of 24" for 10.9 mgd		18,573,000	\$	27.055.000	<u> </u>		\$	18,573,000
10 miles of 36" for 18.5 mgd Lake Michigan Pipeline to Waukesha	1		Ψ	27,855,000	-			
14 miles of 36" for 18.5 mgd					\$	38,522,000		
14 miles of 24" for 7.6 mgd				· · · · · · · · · · · · · · · · · · ·	Ψ	00,022,000	\$	25,682,000
Lake Michigan Pump Station to Waukesha	 						Ψ	20,002,000
one @18.5 mgd					\$	8,573,000		
one @ 7.6 mgd						ŕ	\$	5,282,822
Waukesha Pipeline to Lake Michigan								
11 miles of 36" for 18.5 mgd					\$	25,515,000		
11 miles of 24" for 7.6 mgd							\$	17,011,000
Waukesha Pump Station to Lake Michigan								
one @18.5 mgd					\$	3,508,000		
one @ 7.6 mgd	ļ						\$	2,161,686
Distribution System Improvements 3 miles of 20", 2 miles of 16"	-		\$	8,465,000	\$	8,465,000	\$	0.465.000
2.5 miles of 20", 7 miles of 16"		15,855,993	Ψ	6,465,666	Ψ	6,405,000	Φ	8,465,000
Wastewater Force Main	<u>Ψ</u> .	10,000,000						
5 miles of 6"	\$	3,332,000	-	\$3,332,000			\$	3,332,000
		-,,		7-7			7	
<u>Subtotal</u>	\$	97,891,993	\$	94,822,000	\$	84,583,000	\$	123,171,508
				ŧ		·		
3% markup for Bonds & Insurance	\$	2,937,000	\$	2,845,000	\$	2,538,000	\$	3,696,000
5% markup for Mob/Demob	\$	4,895,000	\$	4,742,000	\$	4,230,000	\$	6,159,000
00%		0.450.000		0.400.000		7.000.000		40.040.000
8% markup for Contractors Overhead	\$	8,458,000	\$	8,193,000	\$	7,309,000	\$	10,643,000
4% markup for Contractors profit	\$	4,229,000	6	4,097,000	d'	3,655,000	Φ.	5,322,000
476 Markap for Contractors profit	ΙΨ	4,229,000	Ψ	4,097,000	Ψ	3,033,000	φ	5,322,000
25% Contingency	\$	29,603,000	\$	28,675,000	\$	25,579,000	\$	37,248,000
2077 COMMISSION	*	20,000,000	 	20,010,000	Ψ	20,010,000	<u> </u>	01,240,000
Subtotal Markups and Contingency	\$	50,122,000	\$	48,552,000	\$	43,311,000	\$	63,068,000
			· · ·				T	
Total Project Construction Costs	\$	148,013,993	\$	143,374,000	\$	127,894,000	\$	186,239,508
8% allowance for engineering and design	\$	11,842,000	\$	11,470,000	\$	10,232,000	\$	14,900,000
400/ -11	-	47 700 000		47.005.000	_	45 0 10 000		000100
12% allowance for permitting, legal and admin.	\$	17,762,000	\$	17,205,000	\$	15,348,000	\$	22,349,000
8% allowance for engr services during construction	\$	11,842,000	\$	11,470,000	\$	10,232,000	\$	14,900,000
on anowance for engriservices during constitution	Ψ	11,042,000	Ψ	11,470,000	Ψ	10,232,000	Ψ	14,800,000
Subtotal Other Project Costs	\$	41,446,000	\$	40,145,000	\$	35,812,000	\$	52,149,000
	-	,,	├ ॅ ──	,,		20,012,000	· ·	J2, 170,000
TOTAL PROJECT CAPITAL COST	\$	189,000,000	\$	184,000,000	\$	164,000,000	\$	238,000,000

Alternative 1: Deep and Shallow Aquifers

Alternative 1 - [Deep and Sha	allow Aquifers			
Deep Well Treatme	ent Plant (proc	ont worth of futur	0.0001)		\$17,467,000
Deep wen Treatme	ent Plant (pres	ent worth or latur	e cost)		\$17,407,000
Shallow Aquifer W	ater Treatment	t Plant			\$29,864,000
Shallow Aquifer W	/ellfield				\$12,800,000
Supply Pipeline to	Waukesha			\$	18,573,000
Distribution Syste	m Improvemen	ts		\$	15,855,993
Wastewater Force	Main				\$3,332,000
Subtotal Construc	tion Cost				\$97,891,993
3% markup for Bon	ds & Insurance		\$2,937,000		
5% markup for Mot	/Demob		\$4,895,000		
8% markup for Con	tractors Overhe	ad .	\$8,458,000		
4% markup for Con	tractors profit		\$4,229,000		· · · · · · · · · · · · · · · · · · ·
25% Contingency		:	\$29,603,000		
Subtotal Markups	and Contingen	псу			\$50,122,000
Total Project Cons	struction Costs			ļ	\$148,013,993
8% allowance for e	ngineering and	design	11,842,000		
12% allowance for	l permitting, legal	and admin.	17,762,000		
8% allowance for e	ngr services dur	ing construction	11,842,000		
Subtotal Other Pro	pject Costs				\$41,446,000
TOTAL PROJECT	CAPITAL COS	<u> </u>		,	\$189,000,000

Alternativ	e 1 - Deep and Shall	ow Aquifer		
		Planning Period	Deep Well	 Capital Costs
	2009	Declining		R/O Treatment
Deep Well	Capacity, mgd	Capacity, mgd	Land Cost	
2	1.15	0.81		
3	1.4	0.98		
5	1.44	1.01		
6	2.59	1.63	\$500,000	\$6,579,000
7	1.08	0.76		
8	2.16	1.36	\$500,000	\$5.329,000
9	1.94	1.36		
10	3.74	2.36	\$500,000	\$9,868,000
	total	10.26		
	Firm	7.90	\$1,500,000	\$21,776,000
		2010 total	\$23,276,000	-117
		2020 @3%/yr		
		inflation	\$ 31,280,998	
		2010, P/F=0.5584	17,467,309	

	C H2M HII I P arame	etric Cost <u>E</u> stimating <u>S</u> ystem (CP	ES)
1 2	<u> </u>	out o oost <u>a</u> stimuting <u>o</u> yotom (or	
3	FACILITIES DESI	GN & CONSTRUCTION COST MODULI	=
4			
5	File Version: 1/7/2010 Click for CPES QA/QC	To Concrete Wall Thickness Help. To Cost Summary Matrix. To Unit Cost Database	
6			
7			
8	Project Name:	Waukesha Nanofiltration Groundwater WTP	→
10	Project Number: Project Manager:	Linda Mohr	
11	Estimator:	Jason Curl	
12	Project Description:	3.0 mgd Nanofiltration WTP	Roundup to the nearest:
13	Project Location (City):	Milwaukee	\$1
14 15	Project Location (State):	WISCONSIN	_
16	Project Location (Country): Construction Start (Month):	<u>USA</u> Jan	This Report is for INTERNAL Distribution
17	Construction Start (Year):	2011	INTERNAL Distributio
18	Construction Duration (months):	24	_
19	Mid-Point of Construction:	Jan/2012	This Report is for EXTERNAL Distribution
20			
	Item Is This Facility Included in	SCOPE OF PROJECT	Cost
21	Project? (Yes or No) Yes	BWRO: NanoFilt	
22 23	Yes	Air Stripper: Degas	\$5,219,952 \$837.013
24	Yes	In-Plant PS: FWPS	\$1.095.437
25	Yes	Liquid Chemical: NaOH	\$306.023
26	Experience agreement and the control of the control	- Enquire Onto Micul. 14001	4000,020
27	SUBTOTAL - PROJECT COST		\$7,458,425
28			
29	ADDITIONAL PROJECT COSTS:		
30	Demolition	0%	\$0
31	Overall Sitework	10%	\$745,843
32	Plant Computer System	5%	\$372,922
33	Yard Electrical	7%	\$544,466
34	Yard Piping	10%	\$745,843
35	UD #1 Default Description	0%	\$0
36	UD #2 Default Description	0%	\$0
37	UD #3 Default Description	0%	\$0
38	SUBTOTAL with Additional Project Costs		\$9,867,499

	В	Lc	D	E	F
1347			Consequent territori		
1348	<u>Description</u>	Quantity	<u>Unit</u>	\$/Unit	Total Cost
1349		2002 (Sept. 1992)	8009820220202010C+C26	Machine Commission States (States (Sta	TO SECURE OF SECURE STATES OF SECURE
1350	SITEWORK				
1351	Membrane Area: Excavation	222.24	CV	er ar	P4 04/
1352 1353	Imported Structural Backfilt	233.34 185.08	CY	\$5.35 \$40.56	\$1,249 \$7,506
1354	Native Backfill	23.26	CY	\$6.58	\$153
1355	Haul Excess	210.08	CY	\$6.58	\$1,382
1356	Pipe Trench Area:	050.00	074	05.05	70.40
1357 1358	Excavation Imported Structural Backfill	650.82 93.86	CY	\$5.35 \$40.56	\$3,483 \$3,807
1359	Native Backfill	276.03	CY	\$6.58	\$1,816
1360	Haul Excess	374.79	CY	\$6.58	\$2,466
1361	CIP / Cartridge Filter Area:	100.00			4.00
1362 1363	Excavation Imported Structural Backfilt	199.09 156.90	CY	\$5.35 \$40.56	\$1,066 \$6,363
1364	Native Backfill	20.86	CY	\$6.58	\$137
1365	Haul Excess	178.23	CY	\$6.58	\$1,173
1366	Electrical Room:				
1367	Excavation	91.60	CY	\$5.35	\$490
1368 1369	Imported Structural Backfill Native Backfill	66.30 15.48	CY	\$40.56 \$6.58	\$2,689 \$102
1370	Haul Excess	76.12	CY	\$6.58	\$501
1371	Pretreatment Liquid Chemicals Area:				
1372	Excavation	102.79	CY	\$5.35	\$550
1373 1374	Imported Structural Backfili Native Backfili	77.33 14.44	CY	\$40.56 \$6.58	\$3,136 \$95
1375	Hauf Excess	88.35	CY	\$6.58	\$581
1376	CIP Liquid Chemicals Area:			7,	V
1377	Excavation	89.85	CY	\$5.35	\$481
1378	Imported Structural Backfilt	66.67	CY	\$40.56	\$2,704
1379 1380	Native Backfill Haul Excess	13.56 76.29	CY	\$6.58 \$6.58	\$89 \$502
1381	CIP Dry Chemicals Area:	70.25	- 	φο.σο	\$302
1382	Excavation	48.12	CY	\$5.35	\$258
1383	Imported Structural Backfill	33.19	CY	. \$40.56	\$1,346
1384	Native Backfill	9.78	CY	\$6.58	. \$64
1385 1386	Hauf Excess Chemical Neutralization System Area:	38.34	CY	\$6.58	\$252
1387	Excavation	131.60	CY	\$5.35	\$704
1388	Imported Structural Backfill	100.76	CY	\$40.56	\$4,086
1389	Native Backfill	16.74	CY	\$6.58	\$110
1390 1391	Hauf Excess Flushing System and Permeate Transfer Area:	114.86	CY	\$6.58	\$756
1392	Excavation	0.00	CY	\$5.35	\$0
1393	Imported Structural Backfill	0.00	CY	\$40.56	\$0
1394	Native Backfill	0.00	CY	\$6.58	\$0
1395	Hauf Excess	0.00	CY	\$6.58	\$0
1396 1397	Pilot Skid Area: Excavation	0.00	CY	\$5.35	\$0
1398	Imported Structural Backfill	0.00	CY	\$40.56	\$0
1399	Native Backfill	0.00	CY	\$6.58	\$0
1400	Haul Excess	0.00	CY	\$6.58	\$0
1401 1402	Other Areas: Excavation	0.00	CY	\$5.35	\$0
1402	Imported Structural Backfill	0.00	CY	\$3.35 \$40.56	\$0
1404	Native Backfill	0.00	CY	\$6.58	\$0
1405	Haul Excess	0.00	CY	\$6.58	\$0
1406 1407	Allowance for Misc Items Subtotal	5%		\$50,098.07	\$2,505 \$53,603
1407	CONCRETE				\$52,603
1409	Slab on Grade:				
1410	Process Building	382.22	CY	\$345.93	\$132,222
1411	Trench Walls:	05.00			***
1412 1413	Membrane Pipe Trench Equipment Pads:	35.20	. CY	\$683.50	\$24,059
1414	Pumps:				
1415	High Pressure Membrane Feed Pumps (Active)	0.20	CY	\$345.93	\$69
1416	High Pressure Membrane Feed Pumps (Standby)	0.40	CY	\$345.93	\$139
1417	Interstage Booster Pumps (Active)	0.00	CY	\$345.93	\$0
1418 1419	Interstage Booster Pumps (Standby) Flushing Pumps (Active)	0.00	CY	\$345.93 \$345.93	\$0 \$0
1420	Flushing Pumps (Standby)	0.00	CY	\$345.93	\$0
1421	Permeate Transfer Pumps (Active)	0.00	CY	\$345.93	\$0
1422	Permeate Transfer Pumps (Standby)	0.00	CY	\$345.93	\$0
1423	Cleaning Solution Recirculation Pump (Active)	0.67	CY	\$345.93	\$232
1424	Cleaning Solution Recirculation Pump (Standby)	0.00	CY	\$345.93 \$345.93	\$0 \$0
1425	Dry Chemicals Transfer Pumb (Acrive)				
1425 1426	Dry Chemicals Transfer Pump (Active) Spent Chemicals Neutralization Pumps (Active)	1.12	CY	\$345.93	

Company		D				1
Coling	1	B	С	D	E	F
Salar And Start And Start Market Manifer Press 0.00	1428	Pretreatment Chemical Metering Pumps:			l	
Salar And Start And Start Market Manifer Press 0.00	1429	Sulfuric Acid Active Metering Pump	1.00	CY	\$345.93	\$346
Section Sect						
1.00 CV 340.00 384					<u> </u>	
1.00 CV 340.00 384		Hydrochloric Acid Active Metering Pump] \$0
1.00 CV 340.00 384	1432	Hydrochloric Acid Standby Metering Pump	0.00	CY	\$345.93	\$0
Scale belister Starting Learning Pump			1.00	CY		
165 Order Orderinal 1 Authors Materiary Pump 0.00						
Color Chemical Standard Section Management 0.00	1434	Scale Inhibitor Standby Metering Pump	•		\$345.93	
Color Chemical Standard Section Management 0.00	1435	Other Chemical 1 Active Metering Pump	0.00	CY	\$345.93	\$0
Chart Chemical Zouthow Meletring Pump			0.00			\$0
Color Chemical 2 Statety National Purps 0.00 CY \$344.59 ST					1	40
10.53 Light GPC Permissi Trender Pump	1437	Other Chemical 2 Active Metering Pump	0.00	CY	\$345.93	\$0
10.53 Light GPC Permissi Trender Pump	1438	Other Chemical 2 Standby Metering Pump	0.00	CY	\$345.93	\$0
Sodium Psychological Active Transfer Pump						
Solution High-color Statistics Personal Pump 0.00						
	[1440]	Sodium Hydroxide Active Transfer Pump	0.50	CY	\$345.93	\$173
Mydeodistrix Acid Acte Transfer Pump	1441	Sodium Hydroxide Standby Transfer Pump	0.00	ÇY	\$345.93	\$0
1855						
1446 Sodium EDTA Authory Transfer Pump						
1865 Cheer Command & Archet Frompton 0.00 CY	1443	Hydrochloric Acid Standby Transfer Pump	0.00	CY	\$345.93	\$0
1865 Cheer Command & Archet Frompton 0.00 CY	1444	Sodium EDTA Active Transfer Pump	0.50	CY	\$345.93	\$173
1466 Other Chemical School Programmer Pump						
1447					L	
1447	1446	Other Chemical 3 Active Transfer Pump	0.00	CY	\$345.93	\$0
1449 Ober Chemical & Landy Transfer Purp 0.00	1447	Other Chemical 3 Standby Transfer Pump	0.00	CY	\$345.93	\$0
1449 Ober Chemical & Landy Transfer Purp 0.00						#0
1455		· · · · · · · · · · · · · · · · · · ·				\$0
1455	[1449]	Other Chemical 4 Standby Transfer Pump	0.00 j	CY	\$345.93	\$0
1455 Flushing Tarks					I	
1455 Deceming Solution Turkis			0.00	CV	#0.4F 00	· · · · · · · · · · · · · · · · · · ·
1455 Dyn Chemicals Dublicon Preparation Tanks 9.42 OY \$34,639 \$3,20						
1455 Dry Chemicals Solition Preparation Tanks 9.42 OY \$348.59 \$3.20	1452	Cleaning Solution Tanks	7.07	CY	\$345.93	\$2,445
1455 Petersariner Chamicals Bulk Strage Tarles.		Dry Chemicals Solution Preparation Tanks	0.00	CY	\$345.03	
1555 Suffare Acid 0.00 CY \$346.93 \$ \$ \$ \$ \$ \$ \$ \$ \$			9.42	UΥ	\$345.93	\$3,260
1555 Suffare Acid 0.00 CY \$346.93 \$ \$ \$ \$ \$ \$ \$ \$ \$	1455	Pretreatment Chemicals Bulk Storage Tanks:				
Hydrochloris Acid	1456	Sulfuric Acid	0.00	CY	\$345.93	\$0
1650 Other Chemical 1						
1650 Other Chemical 1						\$0
1650 Other Chemical 1	1458	Scale Inhibitor	0.00	CY	\$345.93	\$0
1860 Other Chemical 2 0.00 CY \$345.20 \$185 1945 Update (OF Chemicals Bulk Strange Tanks:	1450	Other Chemical 1	0.00	CY	\$345.03	\$0
Hast Liquid CIP Chemicals Bulk Storage Tanks:						
1486			0.00	GY	\$345.93	\$0
1489	1461	Liquid CIP Chemicals Bulk Storage Tanks:				
1489	1462	Sodium Hydroxide	0.00	CY	\$245.03	\$0
1656 Other Chemical 3						
1486	-					\$0
1486	1464	Sodium EDTA	0.00	CY	\$345.93	\$0
1466						\$0
1467 Pretreshment Chemicals Containment Area Walls:						
1488 Hydrochloric Acid			0.00	CY .	\$345.93	\$0
1488 Hydrochloric Acid	1467	Pretreatment Chemicals Containment Area Walls:			l	
Hydrochloric Acid			2.34	CY	\$557 50	\$1.304
1470 Scale Inhibitor 2.14 CY \$587.50 \$1,117 1471 Other Chemical 1 0.00 CY \$587.50 S 1472 Other Chemical 2 0.00 CY \$587.50 S 1473 Loyer Circ Chemical Containment Area Walls:		· · · · · · · · · · · · · · · · · · ·				
1471						\$0
1471	1470	Scale Inhibitor	2.14	CY	\$557.50	\$1,193
1472 Other Chemical 2			0.00	CY		\$0
Liquid CIP Chemicals Containment Area Walle: 1.59						
1.59			0.00	CY	\$557.50	\$0
1.59	1473	Liquid CIP Chemicals Containment Area Walls:				1
1475	1474	Sodium Hydroxide	1.59	CY	\$557.50	5887
1476 Soldium EDTA 2.24 CY \$567.50 \$1.24						
1477 Other Chemical 3		······			-	
1479	1476	Sodium EDTA	2.24	CY	\$557.50	\$1,248
1479	1477	Other Chemical 3	0.00	CY	\$557.50	\$0
Allowance for Misc Items						
1480 Subtotal				UT		
MASONRY	1479	Allowance for Misc Items	5%		\$169,558.46	\$8,478
MASONRY	1480	Subtotal				
TABLE CMUI Building Over Membrane and Other Covered Areas 7223.06 SF \$167.92 \$1,140,67					 	Ψ1.0,000
1483 Subtotal 7223.06 SF \$1,140,67 METALS						
METALS Grating Over Pipe Trenches: 1055.98 SF \$72.38 \$76.43:	1482	CMU Building Over Membrane and Other Covered Areas	7223.06	SF	\$157.92	\$1,140,678
METALS Grating Over Pipe Trenches: 1055.98 SF \$72.38 \$76.43:	1483	Subtotal	7223.06	SF		\$1,140,678
1485 Grating Over Pipe Trenches: 1055.98 SF \$72.38 \$76.43 1486 Membrane Pipe Trenche: 1055.98 SF \$72.38 \$76.43 1487 Metal Stairways						\$ 1,1 15,010
1486 Membrane Pipe Trench: 1055.98 SF \$72.38 \$76,43: 1487 Metal Stainweys			<u> </u>		· · · · · · · · · · · · · · · · · · ·	
1487 Metal Stainways		· · · · · · · · · · · · · · · · · · ·				
1487 Metal Stainways	1486	Membrane Pipe Trench:	1055.98	SF	\$72.38	\$76,432
1488						
1489 Allowance for Misc Items 10% \$89,066.04 \$8,906.04 \$97,97 1490	-		9.00	ГА		210.00
1490 Subtotal Sy7,97: 1491 DOORS & WINDOWS		·		<u>EA</u>		
1490 Subtotal Sy7,97: 1491 DOORS & WINDOWS	1489	Allowance for Misc Items	10%		\$89,066.04	\$8,907
1491 DOORS & WINDOWS	1490	Subtotal				
1492 Roll-Up Doors (14' wide)			· · · · · · · · · · · · · · · · · · ·			401,010
1493 Single Entry Doors (4' wide) 4.00 EA \$828.95 \$3,314 1494 Double Entry Doors (6' wide) 1.00 EA \$1,243.43 \$1,243 1495 Allowance for Misc Items 10% \$16,316.61 \$1,631 1496 Subtotal						
1493 Single Entry Doors (4' wide) 4.00 EA \$828.95 \$3,314 1494 Double Entry Doors (6' wide) 1.00 EA \$1,243.43 \$1,244 1495 Allowance for Misc Items 10% \$16,316.61 \$1,631 1496 Subtotal	1492	Roll-Up Doors (14' wide)	4.00	EA	\$2,939.34	\$11,757
1494 Double Entry Doors (6' wide) 1.00 EA \$1,243.43 \$1	1493	Single Entry Doors (4' wide)	4.00	ËΑ		
1495 Allowance for Misc Items 10% \$16,316.51 \$1,631 \$1,631 \$1,631 \$1,631 \$1,941 \$1	-					
1496 Subtotal Su	-			<u> </u>		
1496 Subtotal Su	[1495]	Allowance for Misc Items	10%		\$16,316.61	\$1,632
1497 EQUIPMENT	1496	Subtotal				
1498 Equipment Purchase Prices (Installation Cost is NOT Included): Reverse Osmosis Train:						¥,5+0
Reverse Osmosis Train:	\rightarrow					
1499 1500 Skids & Manifold Piping 2.00 LS \$458,744.93 \$917,49 1501 Pressure Vessels (for & Inch membranes) 108.00 EA \$1,316.88 \$142,22 1502 Membrane Elements (& Inches in diameter) 756.00 EA \$455.84 \$344,62.14 1503 Cartridge Filters (919 gpm) 2.00 EA \$43,662.10 \$87,32 1504 Bypass Blend Cartridge Filters (0 gpm) 0.00 EA \$35,517.01 \$1 1505 CIP Cartridge Filters (1200 gpm) 1.00 EA \$50,356.43 \$50,356 1507 High Pressure Membrane Feed Pumps (Active) (157 hp each) 1.00 EA \$38,828.05 \$38,828.05 1508 High Pressure Membrane Feed Pumps (Standby) (157 hp each) 2.00 EA \$38,828.05 \$77,656	1498	Equipment Purchase Prices (Installation Cost is NOT Included):			<u> </u>	T
1499 1500 Skids & Manifold Piping 2.00 LS \$458,744.93 \$917,49 1501 Pressure Vessels (for & Inch membranes) 108.00 EA \$1,316.88 \$142,22 1502 Membrane Elements (& Inches in diameter) 756.00 EA \$455.84 \$344,62.14 1503 Cartridge Filters (919 gpm) 2.00 EA \$43,662.10 \$87,32 1504 Bypass Blend Cartridge Filters (0 gpm) 0.00 EA \$35,517.01 \$1 1505 CIP Cartridge Filters (1200 gpm) 1.00 EA \$50,356.43 \$50,356 1507 High Pressure Membrane Feed Pumps (Active) (157 hp each) 1.00 EA \$38,828.05 \$38,828.05 1508 High Pressure Membrane Feed Pumps (Standby) (157 hp each) 2.00 EA \$38,828.05 \$77,656		Reverse Osmosis Train:				
1500 Skids & Manifold Piping 2.00 LS \$458,744.93 \$917,491 1501 Pressure Vessels (for 8 inch membranes) 108.00 EA \$1,316.88 \$142,223 1502 Membrane Elements (8 inches in diameter) 756.00 EA \$455.84 \$344,611 1503 Cartridge Filters (919 gpm) 2.00 EA \$43,662.10 \$87,322 1504 Bypass Blend Cartridge Filters (0 gpm) 0.00 EA \$35,517.01 \$1 1505 CIP Cartridge Filters (1200 gpm) 1.00 EA \$50,356.43 \$50,356 1506 Pumps: 1507 High Pressure Membrane Feed Pumps (Active) (157 hp each) 1.00 EA \$38,828.05 \$38,821 1508 High Pressure Membrane Feed Pumps (Standby) (157 hp each) 2.00 EA \$38,828.05 \$77,656	1400	· · · · · · · ·				l
1501 Pressure Vessels (for 8 inch membranes) 108.00 EA \$1,316.88 \$142,22 1502 Membrane Elements (8 inches in diameter) 756.00 EA \$455.84 \$344,613 1503 Cartridge Filters (919 gpm) 2.00 EA \$43,662.10 \$87,324 1504 Bypass Blend Cartridge Filters (0 gpm) 0.00 EA \$35,517.01 \$100 1505 CIP Cartridge Filters (1200 gpm) 1.00 EA \$50,356.43 \$50,356 1506 Pumps: 1507 High Pressure Membrane Feed Pumps (Active) (157 hp each) 1.00 EA \$38,828.05 \$38,821 1508 High Pressure Membrane Feed Pumps (Standby) (157 hp each) 2.00 EA \$38,828.05 \$77,656		Children Manifeld Distan	000			
1502 Membrane Elements (8 inches in diameter) 758.00 EA \$455.84 \$344,612 1503 Cartridge Filters (919 gpm) 2.00 EA \$43,662.10 \$87,322 1504 Bypass Blend Cartridge Filters (0 gpm) 0.00 EA \$35,517.01 \$ 1505 CIP Cartridge Filters (1200 gpm) 1.00 EA \$50,356.43 \$50,356 Pumps: 1507 High Pressure Membrane Feed Pumps (Active) (157 hp each) 1.00 EA \$38,828.05 \$38,821 1508 High Pressure Membrane Feed Pumps (Standby) (157 hp each) 2.00 EA \$38,828.05 \$77,656	-				\$458,744.93	
1502 Membrane Elements (8 inches in diameter) 758.00 EA \$455.84 \$344,612 1503 Cartridge Filters (919 gpm) 2.00 EA \$43,662.10 \$87,322 1504 Bypass Blend Cartridge Filters (0 gpm) 0.00 EA \$35,517.01 \$ 1505 CIP Cartridge Filters (1200 gpm) 1.00 EA \$50,356.43 \$50,356 Pumps: 1507 High Pressure Membrane Feed Pumps (Active) (157 hp each) 1.00 EA \$38,828.05 \$38,821 1508 High Pressure Membrane Feed Pumps (Standby) (157 hp each) 2.00 EA \$38,828.05 \$77,656	1501	Pressure Vessels (for 8 inch membranes)	108.00	EA	\$1,316.88	\$142,223
1503 Cartridge Filters (919 gpm) 2.00 EA \$43,662.10 \$87,32 1504 Bypass Blend Cartridge Filters (0 gpm) 0.00 EA \$35,517.01 \$(1505 CIP Cartridge Filters (1200 gpm) 1.00 EA \$50,356.43 \$50,35 1506 Pumps: ** ** ** ** 1507 High Pressure Membrane Feed Pumps (Active) (157 hp each) 1.00 EA \$38,828.05 \$38,82 1508 High Pressure Membrane Feed Pumps (Standby) (157 hp each) 2.00 EA \$38,828.05 \$77,650						
1504 Bypass Blend Cartridge Filters (0 gpm) 0.00 EA \$35,517.01 \$1 1505 CIP Cartridge Filters (1200 gpm) 1.00 EA \$50,356.43 \$50,356 1506 Pumps: 1507 High Pressure Membrane Feed Pumps (Active) (157 hp each) 1.00 EA \$38,828.05 \$38,828.05 1508 High Pressure Membrane Feed Pumps (Standby) (157 hp each) 2.00 EA \$38,828.05 \$77,656						
1505 CIP Cartridge Filters (1200 gpm) 1.00 EA \$50,356.43 \$50,356 1506 Pumps:			<u> </u>			\$87,324
1505 CIP Cartridge Filters (1200 gpm) 1.00 EA \$50,356.43 \$50,356 1506 Pumps:	1504	Bypass Blend Cartridge Filters (0 gpm)	0.00	EA	\$35,517.01	\$0
1506 Pumps: EA \$38,828.05 \$38,828.05 1507 High Pressure Membrane Feed Pumps (Active) (157 hp each) 1.00 EA \$38,828.05 \$38,828.05 1508 High Pressure Membrane Feed Pumps (Standby) (157 hp each) 2.00 EA \$38,828.05 \$77,650						
1507 High Pressure Membrane Feed Pumps (Active) (157 hp each) 1.00 EA \$38,828.05 \$38,821 1508 High Pressure Membrane Feed Pumps (Standby) (157 hp each) 2.00 EA \$38,828.05 \$77,650		0 (0, 1	1.00	LA	\$30,330,43	\$20,J20
1508 High Pressure Membrane Feed Pumps (Standby) (157 hp each) 2.00 EA \$38,828.05 \$77,650					L	L
1508 High Pressure Membrane Feed Pumps (Standby) (157 hp each) 2.00 EA \$38,828.05 \$77,650	1507	High Pressure Membrane Feed Pumps (Active) (157 hp each)	1.00	EA	\$38.828.05	\$38,828
1509 Histerstage Booster Pumps (Active) (Unit each) U.00 EA \$22,610.32 \$1						
	1308	nisterstage booster numps (Aceve) (U np each)	J U.UU	EA.	\$22,610.32	; \$C

SEC Interestage Booster Purpos (Stardoy) (10 to earth)		n		·····		
Section Company Comp	لبيا	В	C	D	E	F
1955 Charmo Solution Floration for March (Arthon) (The quarth) 100 EA 337,77.77 503,000						\$0
1955 Charmo Solution Floration for March (Arthon) (The quarth) 100 EA 337,77.77 503,000	1511	Flushing Pumps (Active) (90 hp each)	0.00	EA	\$0.00	\$60
1955 Charmo Solution Floration for March (Arthon) (The quarth) 100 EA 337,77.77 503,000	1512	Flushing Pumps (Standby) (90 hp each)	0.00	FA	\$0.00	\$0
1955 Charmo Solution Floration for March (Arthon) (The quarth) 100 EA 337,77.77 503,000						transfer de
1955 Charmo Solution Floration for March (Arthon) (The quarth) 100 EA 337,77.77 503,000						ФL
600 Calestry Statement Name (Statement) (Chapters) 0.00 EA 55,000 S.			0.00	į EA	\$0.00	\$0
600 Calestry Statement Name (Statement) (Chapters) 0.00 EA 55,000 S.	1515	Cleaning Solution Recirculation Pump (Active) (70 hp each)	1.00	EA	\$29,379.74	\$29,380
Separate Processor Proce						¢/i
1508 Speed Chemerals Neutrisianine Funny (Metholy (7th peach) 1.00 EA						φυ
Series Chemical Resident Resident Princip (17th peach)						
Size Perfectionest Chemical Medicing Pumps 1.00 E.A. 55614.9 5501	1518	Spent Chemicals Neutralization Pumps (Active) (70 hp each)	1.00	EA EA	\$10,419.76	\$10,420
Size Perfectionest Chemical Medicing Pumps 1.00 E.A. 55614.9 5501	1519	Spent Chemicals Neutralization Pumps (Standby) (70 hp each)	1.00	FA	\$10,419.76	\$10.420
Section Sect					<i> </i>	\$10,720
Studies And Studies (And Studies) (And Advisor Native (And Advis						
1500 Physochetics And Active Netering Purse (0) to each)		Sulfuric Acid Active Metering Pump (1 hp each)	1.00			\$5,615
1802 Specializin And Active Notificial Prince (1) to each)	1522	Sulfuric Acid Standby Metering Pump (1 hp each)	1.00	EA	\$5,614.98	\$5.615
1505 September And Standy Meering Pump (I) by each)	1523		0.00	FΔ		
1505 Solate Inhibition Active Marketing Puring I (the patch)						
1502 Sabel Inhibited Stational Magning Pump (1 to seath)						
1507 Other Chemical Facility Memory Purps (in peach)	1525	Scale Inhibitor Active Metering Pump (1 hp each)	1.00	EA EA	\$5,614.98	\$5,615
1507 Other Chemical Facility Memory Purps (in peach)	1526	Scale Inhibitor Standby Metering Pump (1 hp each)	1.00	FΑ	\$5,614.98	\$5,615
1502 Other Chemical 1 Standay Medicing Funny (D to seath) D.605 EA 45,64.89 Standard 2 Active Medicing Puring (D to seath) D.605 EA 45,64.89 Standard 2 Active Medicing Puring (D to seath) D.605 EA 45,64.89 Standard 2 Active Medicing Puring (D to seath) D.605 EA 45,64.89 Standard Puring (D to seath) D.605 EA Standard Puring (D to s						
1500 Other Chemical 2 Schrieb Medicing Pump (D in pasch)						
1500 Ober Chemical 2 Standby Transfer Pure (0 to each)						\$0
1500 Ober Chemical 2 Standby Transfer Pure (0 to each)	1529	Other Chemical 2 Active Metering Pump (0 hp each)	0.00	EA	\$5,614.98	\$0
1931 Lipid CIP Chemotor Transfer Pumps 100 EA \$22,689.66 \$22,575 \$20 \$30 \$30 \$40 \$40 \$30	1530		0.00	FΔ		\$0
1502 Sodum Hydrotine Active Transfer Pump (i) to seath)					\$3,014.30	
Sodium Hightonics Standby Transfer Pump (0) to each)						
1553 Sodum Hydroxide Stardby Transfer Pump (0 to peach)		Sodium Hydroxide Active Transfer Pump (0 hp each)	1.00	EA EA	\$22,569.63	\$22,570
1595	1533	Sodium Hydroxide Standby Transfer Pump (0 hp each)	0.00			
1505 Hydrochric Acid Standby Transfer Pump (0 pe each) 1.00 EA \$22,566.63 \$25.555 \$3.555						
1566 Sodium EUTA Active Transfer Purps (D. p. pace) 1,00						\$0
1566 Sodium EUTA Active Transfer Purps (D. p. pace)						
1597 Sodium EDTA Standby Transfer Pump (D the pacety)	1536	Sodium EDTA Active Transfer Pump (0 hp each)	1.00	EA	\$22,569.63	\$22,570
1585 Other Chemical Scholer Transfer Purps (in the seath)						
1555 Other Chemical & Standby Transfer Pump (b) peach)						
1946 Other Chemical 4 Active Transfer Pump (by peach)						\$0
1946 Other Chemical 4 Active Transfer Pump (in peach)			0.00		\$22,569.63	\$0
1941 Other Chemical 4 Standby Transfer Purply (1) ps each)	1540	Other Chemical 4 Active Transfer Pump (0 hp each)	0.00	EA		\$0
Barry Recovery Devices (Turbocharager's						
1945 Turbocharger for Interstage Pressure Board (Astive) (Dit peach) 0.00 EA			0.00		\$22,003.03	φυ
1544 Turbochrager for Interstage Pressure Boost (Standby) (0 hp each) 0.00 EA \$35,587.55 \$1 1545 Tanks 1550 gations each) 0.00 EA \$20,300.26 \$1 1546 Flurining Tanks (6550 gations each) 0.00 EA \$15,75.67 \$18,577.57 1547 Cleaning Solution Tanks (6141 gations each) 0.00 EA \$17,472.12 \$1 1548 Restrictation Tranks (1552 gations each) 0.00 EA \$17,472.12 \$1 1549 Neutralization Tranks (1552 gations each) 0.00 EA \$17,472.12 \$1 1540 Neutralization Tranks (1552 gations each) 0.00 EA \$10,472.27 \$20,701 1550 Solution Act (01 gations each) 0.00 EA \$10,472.27 \$10,572.27 1551 Solution Act (01 gations each) 0.00 EA \$10,572.27 1552 Solution Changer (1525 gations each) 0.00 EA \$10,572.27 1553 Other Chemical \$1,600 gations each) 0.00 EA \$25,883.46 \$2,500 1555 Other Chemical \$1,600 gations each) 0.00 EA \$25,883.46 \$3,500 1555 Other Chemical \$1,600 gations each) 0.00 EA \$25,883.46 \$3,500 1555 Solution Hydroxido (0 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (0 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (0 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (0 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (0 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 1556 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 1556 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 1556 Telephor	\rightarrow					
1544 Turbochrager for Interstage Pressure Boost (Standby) (0 hp each) 0.00 EA \$35,587.55 \$1 1545 Tanks 1550 gations each) 0.00 EA \$20,300.26 \$1 1546 Flurining Tanks (6550 gations each) 0.00 EA \$15,75.67 \$18,577.57 1547 Cleaning Solution Tanks (6141 gations each) 0.00 EA \$17,472.12 \$1 1548 Restrictation Tranks (1552 gations each) 0.00 EA \$17,472.12 \$1 1549 Neutralization Tranks (1552 gations each) 0.00 EA \$17,472.12 \$1 1540 Neutralization Tranks (1552 gations each) 0.00 EA \$10,472.27 \$20,701 1550 Solution Act (01 gations each) 0.00 EA \$10,472.27 \$10,572.27 1551 Solution Act (01 gations each) 0.00 EA \$10,572.27 1552 Solution Changer (1525 gations each) 0.00 EA \$10,572.27 1553 Other Chemical \$1,600 gations each) 0.00 EA \$25,883.46 \$2,500 1555 Other Chemical \$1,600 gations each) 0.00 EA \$25,883.46 \$3,500 1555 Other Chemical \$1,600 gations each) 0.00 EA \$25,883.46 \$3,500 1555 Solution Hydroxido (0 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (0 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (0 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (0 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (0 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 \$3,500 1555 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 1556 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 1556 Solution Hydroxido (150,000 gations each) 0.00 EA \$30,00 1556 Telephor	1543	Turbocharger for Interstage Pressure Boost (Active) (0 hp each)	0.00	EA	\$35,587,35	\$0
1945 Tanks:	1544	Turbocharger for Interstage Pressure Boost (Standby) (0 hp each)	0.00	FΔ	\$25.587.35	
Flushing Tanks (8580 gallons each)	$\overline{}$		0.00		455,007.50	
1545 Disparing Solution Tarks (CH41 gallores each) 0.00 EA \$18,575.87 \$18,575 1546 Dry Chemicals Solution Properties in Tarks (Q gallore each) 0.00 EA \$12,412.12 \$3,755 1549 Neutralization Tarks (H982 gallores each) 0.00 EA \$22,702.27 \$52,701 1550 Perthermater Chemicals Busk Storage Tarks 0.00 EA \$80,00 \$3,755 1551 Sulfuric Acid (Q gallores each) 0.00 EA \$80,00 \$3,755 1552 Hydrochioch Acid (E225 gallores each) 0.00 EA \$80,00 \$3,755 1553 Scale Inhibitor (Q gallores each) 0.00 EA \$80,00 \$3,755 1555 Other Chemical (1940 gallores each) 0.00 EA \$25,853.48 \$3,755 1555 Other Chemical (1940 gallores each) 0.00 EA \$25,853.48 \$3,755 1556 Ulgue Chemical (1940 gallores each) 0.00 EA \$25,853.48 \$3,755 1557 Sodium Hydroxide (Q gallores each) 0.00 EA \$41,660.38 \$3,000 \$3,755 1557 Sodium Hydroxide (Q gallores each) 0.00 EA \$41,660.38 \$3,000 \$3,755 1559 Sodium Hydroxide (Q gallores each) 0.00 EA \$41,660.38 \$3,000 \$3,755 1559 Other Chemical (1950 gallores each) 0.00 EA \$41,660.38 \$3,000 \$3,755 1550 Other Chemical (1950 gallores each) 0.00 EA \$41,660.38 \$3,000 \$3,00		Tanks:				
1545 Disparing Solution Tarks (CH41 gallores each) 0.00 EA \$18,575.87 \$18,575 1546 Dry Chemicals Solution Properties in Tarks (Q gallore each) 0.00 EA \$12,412.12 \$3,755 1549 Neutralization Tarks (H982 gallores each) 0.00 EA \$22,702.27 \$52,701 1550 Perthermater Chemicals Busk Storage Tarks 0.00 EA \$80,00 \$3,755 1551 Sulfuric Acid (Q gallores each) 0.00 EA \$80,00 \$3,755 1552 Hydrochioch Acid (E225 gallores each) 0.00 EA \$80,00 \$3,755 1553 Scale Inhibitor (Q gallores each) 0.00 EA \$80,00 \$3,755 1555 Other Chemical (1940 gallores each) 0.00 EA \$25,853.48 \$3,755 1555 Other Chemical (1940 gallores each) 0.00 EA \$25,853.48 \$3,755 1556 Ulgue Chemical (1940 gallores each) 0.00 EA \$25,853.48 \$3,755 1557 Sodium Hydroxide (Q gallores each) 0.00 EA \$41,660.38 \$3,000 \$3,755 1557 Sodium Hydroxide (Q gallores each) 0.00 EA \$41,660.38 \$3,000 \$3,755 1559 Sodium Hydroxide (Q gallores each) 0.00 EA \$41,660.38 \$3,000 \$3,755 1559 Other Chemical (1950 gallores each) 0.00 EA \$41,660.38 \$3,000 \$3,755 1550 Other Chemical (1950 gallores each) 0.00 EA \$41,660.38 \$3,000 \$3,00	1546	Flushing Tanks (6580 gallons each)	0.00	EA	\$20,300.26	\$0
1546			100			
1549 Neutralization Tanks (41982 gathers each) 1.00 EA \$82,702.7 \$82,701						
Perlevatiment Chemicals Bulk Storage Tanks	1548	Dry Chemicals Solution Preparation Tanks (0 gallons each)	0.00	EA	\$12,412.12	
Perlevatiment Chemicals Bulk Storage Tanks	1549	Neutralization Tanks (41952 gallons each)	1.00	EA	\$62,702.27	\$62,702
1851 Sulfuric Acid (g gallons each)						702,02
Hydrochlofic Acis (8225 gallons each)						
Scale Inhibitor (Q gallone seart)	1551	Sulfuric Acid (0 gallons each)	0.00	.EA	\$0.00	\$0
Scale Inhibitor (Q gallone seart)	1552	Hydrochloric Acid (8225 gallons each)	0.00	EA	\$41,660.38	\$0
1555 Olher Chemical (1940) gallons each)						
1555 Other Chemical 2 (9400 galtons each)						
	1554	Other Chemical 1 (9400 gallons each)	0.00	EA !	\$25,853.48	
	1555	Other Chemical 2 (9400 gallons each)	0.00	EA	\$25,853,48	\$0
1557 Sodium Hydroxide (0 gallons each)	-				7-27,000.10	
Hydrochloric Acid (2225 gallons each)						
Sodium EDTA (Q gallons each)	1557	Sodium Hydroxide (0 gallons each)	0.00	EA	\$0.00	\$0
Sodium EDTA (Q gallons each)	1558	Hydrochloric Acid (8225 gallons each)	0.00	FA	\$41,660.38	.\$0
1560 Other Chemical 3 (9306 gailons each)						
1561 Other Chemical 4 (9305 gallons each)				1		
Dyy CIP Chemicals Bulk Storage Silos			0.00	EA	\$25,594.94	
Dyy CIP Chemicals Bulk Storage Silos	1561	Other Chemical 4 (9306 gallons each)	0.00	EA	\$25,594,94	\$0
1658					,,	
1564						
1564						\$0
1555 Sodium Tripolyphosphate (1125 of each) 0.00 EA \$0.00 \$\frac{1}{5}\text{S}\$	1564	Trisodium Phosphate (1350 of each)	0.00	ÉA	\$0.00	\$0
1566 Other Chemical 5 (1227 of each)						
1567 Mixers:						\$0
1567 Mixers:		Other Chemical 5 (1227 of each)	0.00	EA EA	\$0.00	\$0
1588 Static Mixer 1.00 EA \$3,167.26 \$3,167 \$1658 CIP Tank Mixers (6 hp each) 1.00 EA \$16,458.80 \$16,458.80 \$16,458.80 \$16,458.80 \$16,458.80 \$16,458.80 \$16,458.80 \$16,458.80 \$16,458.80 \$16,700 EA \$0.00 \$1,570 EA \$0.00 EA \$0.00 \$1,570 EA	1567	Mixers:				
1509 CIP Tank Mixers (6 hp each) 1.00 EA \$16,495.80 \$16,486 \$1670 Dry Chemicals Mixers (0 hp each) 0.00 EA \$0.00 \$1 \$1571 Heaters & Chillers			1.00	ΕΛ	#2 407 PE	£0 407
1570 Dry Chemicals Mixers (0 hp each) 0.00 EA \$0.00						
1571 Heaters & Chillers:	-			EA	\$16,485.80	
1571 Heaters & Chillers:	1570	Dry Chemicals Mixers (0 hp each)	0.00	EΑ	\$0.00	\$0
1572 CIP Heaters (212 kw per each) 2.00 EA \$43,962.14 \$87,924 1573 Dry Chemicals Heater (0 kw per each) 0.00 EA \$0.00 \$\$1 1574 CIP Chillers (87122 BTU/hr each) 0.00 BTU/hr \$0.00 \$\$2 1575 Equipment Installation Factor:						
1573 Dry Chemicals Heater (0 kw per each)				<u>-</u>		
1574 CIP Chillers (87122 BTU/hr each) 0.00 BTU/hr \$0.00 \$						
1574 CIP Chillers (87122 BTU/hr each) 0.00 BTU/hr \$0.00 \$			0.00	EA	\$0.00	\$0
Equipment Installation Factor: Equipment Installation Factor (Default = 20% * Equipment Purchase Price) 20% \$905,476.06 \$181,095 1577	1574	CIP Chillers (87122 BTU/hr each)				
Equipment Installation Factor					φο.υυ	Ψυ
1576	19/3				[
1577 Equipment Installation Factor (Default = 20% * Equipment Purchase Price) 20% \$905,476.06 \$181,095 \$1578 Allowance for Misc Items 5% \$905,476.06 \$45,274 \$1579 Subtotal \$2,191,555 \$18C \$2,191,555 \$18C \$18C \$1850 \$		Equipment Installation Factor:				. —
1577 Equipment Installation Factor (Default = 20% * Equipment Purchase Price) 20% \$905,476.06 \$181,095 \$1578 Allowance for Misc Items 5% \$905,476.06 \$45,274 \$1579 Subtotal \$2,191,555 \$18C \$2,191,555 \$18C \$18C \$1850 \$	1576					
1578 Allowance for Misc Items 5% \$905,476.06 \$45,274 1579 Subtotal \$2,191,558 1580 I&C 1581 Instruments 1582 Flow Elements 8.00 EA \$7,238.07 \$57,905 1583 Isolation Valve Actuators (Electric) 42.00 EA \$5,064.93 \$212,727 1584 Isolation Valve Actuators (Pneumatic) 0.00 EA \$5,064.93 \$30 1585 Conductivity Meters 6.00 EA \$5,064.93 1586 Turbiditymeters 2.00 EA \$30 1587 Temperature Elements 2.00 EA \$30 1588 pH Meters 4.00 EA \$30 1589 ORP Meters 4.00 EA \$30 1589 ORP Meters 4.00 EA \$30 1590 Pressure Indicators Transmitters 6.00 EA \$7,120.57 1591 Pressure Elements 16.00 EA \$593,38 \$9,495 1592 Level Indicator Transmitters 2.00 EA \$153,525 1592 Level Indicator Transmitters 2.00 EA \$6,764.54 \$13,525 1593 ORP Meters 16.00 EA \$6,764.54 \$13,525 1594 Pressure Elements 2.00 EA \$6,764.54 \$13,525 1595 Level Indicator Transmitters 2.00 EA \$6,764.54 \$13,525 1596 EA \$6,764.54 \$13,525 1597 EA \$6,764.54 \$13,525 1598 EA \$6,764.54 \$13,525 1598 EA \$6,764.54 \$13,525 1598 EA \$6,764.54 \$13,525 1598 EA \$6,764.54 \$13,525 1599 EA \$6,764.54 \$13,525 1590 EA \$		Equipment Installation Factor (Default = 20% * Fourthment Purchase Price)	20%		\$005 476 0C	\$404.000
1579 Subtotal \$2,191,556 \$2.191,556						
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1581 Instruments 1582 Flow Elements 8.00 EA \$7,238.07 \$57,905 1583 Isolation Valve Actuators (Electric) 42.00 EA \$5,064.93 \$212,727 1584 Isolation Valve Actuators (Pneumatic) 0.00 EA \$5,064.93 \$0 1585 Conductivity Meters 6.00 EA \$5 1586 Turbiditymeters 2.00 EA \$5 1587 Temperature Elements 2.00 EA \$0 1588 pH Meters 4.00 EA \$0 1589 ORP Meters 4.00 EA \$0 1590 Pressure Indicators Transmitters 6.00 EA \$7,120.57 \$42,725 1591 Pressure Elements 16.00 EA \$6,764.54 \$13,525 Level Indicator Transmitters 2.00 EA \$6,764.54 \$13,525	1580	I&C				
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1583 Isolation Valve Actuators (Electric) 42.00 EA \$5,064.93 \$212,727 1584 Isolation Valve Actuators (Pneumatic) 0.00 EA \$5,064.93 \$0 1585 Conductivity Meters 6.00 EA \$0 \$0 1586 Turbiditymeters 2.00 EA \$0						
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1589 ORP Meters 4.00 EA \$0 1590 Pressure Indicators Transmitters 6.00 EA \$7,120.57 \$42,723 1591 Pressure Elements 16.00 EA \$593.38 \$9,494 1592 Level Indicator Transmitters 2.00 EA \$6,764.54 \$13,525						
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1591 Pressure Elements 16.00 EA \$593.38 \$9,494 1592 Level Indicator Transmitters 2.00 EA \$6,764.54 \$13,529			6.00	EA 🖺	\$7,120.57	\$42,723
1592 Level Indicator Transmitters 2.00 EA \$6,764.54 \$13,525	1591	Pressure Elements				
Lideol Chemical Lank Radar Level Transmitters 0.00 EA \$824.29 \$0						
	1093	Unemical Tank Radar Level Transmitters	0.00	LA LA	\$824.29	\$0

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\vdash	В	C	D	E	F
1594	Chemical Tank Beacon	0.00	EA	\$824.29	\$0
1595	Drum or Tote Weigh Scale	4.00	EA	\$1,099.05	
1596	Metering Pump Discharge Pressure Switch	2.00	EA	\$549.53	
1597	Chemical Magmeters	2.00	EA	\$549.53	
1598	Sump Pump Float Switch	5.00	EA	\$274.76	
1599	Eyewash Station	7.00	EA	\$824.29	\$5,770
1600	Number of Analog I/O Counts	75.00	EA	\$208.82	
1601	Number of Digital I/O Counts	252.00	EA	\$49.46	
				\$49.46	\$12,463
1602	Number of Local Panels	2.00	EA		\$0
1603	Number of PLC's	1.00	EA	\$10,990.54	\$10,991
1604	I&C Conduit Wire	11946.67	LF	\$9.53	\$113,837
1605	Allowance for Misc Items	5%		\$503,069.07	
_		3%		\$303,069.07	
1606	Subtotal		<u> </u>		\$528,223
1607	CONVEYING SYSTEMS				
1608	Bridge Crane	1.00	EA	\$55,749.49	\$55,749
1609	Bridge Crane Rail	63.83	LF	\$28.96	
1610	Allowance for Misc Items	5%		\$57,597.87	\$2,880
1611	Subtotal				\$60,478
	MECHANICAL				
1612					
1613	Pipe:		1	-	
1614	Cartridge Filtration Influent Header (CFIH, 14 inch, FRP)	11.50	LF	\$145.90	\$1,678
1615	Cartridge Filtration Influent Lateral (CFIL, 8 inch, FRP)	41.34	LF	\$81.04	
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1616	Cartridge Filtraition Effluent Lateral (CFEL, 8 inch, FRP)	22.01	LF	\$81.04	\$1,784
1617	Cartridge Filtration Effluent Header (CFEH, 14 inch, FRP)	15.50	LF	\$145.90	\$2,261
1618	Reverse Osmosis Influent Dump Header (ROIDH, 14 inch, FRP)	10.00	LF	\$145.90	\$1,459
1619	Reverse Osmosis Influent Header (ROIH, 14 inch, FRP)	63.83	LF	\$145.90	
1620	High Pressure Pump Suction (HPPS, 12 inch, FRP)	23.33	LF	\$124.28	\$2,900
1621	High Pressure Pump Discharge (HPPD, 12 inch, Duplex SST)	0.00	LF	\$730.79	
1021			LF		
1. 1	Low Pressure Brine Outlet (ERD Discharge) (LPBRO, 6 inch, Duplex SST)	18.33	1	\$340.35	\$6,240
1622			LF	1	
П	Reverse Osmosis Influent Lateral (1st Stage) (ROIL1, 14 inch, Duplex SST)	24.89		\$860.93	\$21,428
1200		27.00	1 15	2000.33	φ21,420
1623			LF		
1 1	Reverse Osmosis Influent Lateral (2nd Stage) (ROIL2, 8 inch, Duplex SST)	8.33		\$470.50	\$3,921
1624			LF		
\vdash	Reverse Osmosis Influent Lateral (3rd Stage) (ROIL3, 0 inch, Duplex SST)	0.00	1	(\$50.08)	\$0
1000	Neverse Ostriosis (titloent Lateral (5/0 otage) (Notco, o mon, outplex 001)	0.00		(\$00.00)	40
1625			LF		
1 1	Reverse Osmosis Influent Skid Sub Lateral (1st Stage) (ROISL1, 10 inch,	42.50		\$0.00	\$0
1626	Duplex SST)		LF		
1	Reverse Osmosis Influent Skid Sub Lateral (2nd Stage) (ROISL2, 8 inch,	21.25	1 -	\$0.00	\$0
1.00-	, -, -, -, -, -, -, -, -, -, -, -, -, -,	21.20	1	\$0.00	. 30
1627	Duplex SST)		LF		
1	Reverse Osmosis Influent Skid Sub Lateral (3rd Stage) (ROISL3, 0 inch,	0.00	1	\$0.00	\$0
1628	Duplex SST)		LF		1
1629	Brine Skid Sub Lateral (1st Stage) (BSL1, 6 inch, Duplex SST)	42.50	LF	\$0.00	\$0
	Biffle Skid Sdb Lateral (1st Stage) (BSL1, 6 inch, Copiex SS1)				} • • • • • • • • • • • • • • • • • • •
1630	Brine Skid Sub Lateral (2nd Stage) (BSL2, 8 inch, Duplex SST)	21.25	LF	\$0.00	\$0
1630					
1631	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST)	21.25 0.00	LF LF	\$0.00 \$0.00	\$0
1631 1632	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST)	21.25 0.00 33.33	LF LF	\$0.00 \$0.00 \$600.64	\$0 \$20,021
1631 1632 1633	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST)	21.25 0.00 33.33 86.25	LF LF LF	\$0.00 \$0.00 \$600.64 \$470.50	\$0 \$20,021 \$40,580
1631 1632	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST)	21.25 0.00 33.33	LF LF	\$0.00 \$0.00 \$600.64	\$0 \$20,021
1631 1632 1633 1634	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST)	21.25 0.00 33.33 86.25 0.00	LF LF LF LF	\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08)	\$0,021 \$20,021 \$40,580 \$0
1631 1632 1633 1634 1635	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST)	21.25 0.00 33.33 86.25 0.00 59.83	LF LF LF LF LF	\$0.00 \$0,00 \$600.64 \$470.50 (\$50.08) \$340.35	\$0 \$20,021 \$40,580 \$0 \$20,364
1631 1632 1633 1634 1635 1636	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08	LF LF LF LF LF	\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66	\$0,021 \$20,021 \$40,580 \$0 \$20,364 \$8,632
1631 1632 1633 1634 1635	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST)	21.25 0.00 33.33 86.25 0.00 59.83	LF LF LF LF LF	\$0.00 \$0,00 \$600.64 \$470.50 (\$50.08) \$340.35	\$0,021 \$40,580 \$0,364 \$20,364 \$8,632 \$1,213
1631 1632 1633 1634 1635 1636	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08	LF LF LF LF LF	\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04	\$0,021 \$40,580 \$0,364 \$20,364 \$8,632 \$1,213
1631 1632 1633 1634 1635 1636 1637	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00	### ##################################	\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$5.42)	\$0 \$20,021 \$40,580 \$0 \$20,364 \$8,632 \$1,213
1631 1632 1633 1634 1635 1636 1637 1638 1639	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2rd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2rd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79		\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$5.42)	\$0 \$20,021 \$40,580 \$0 \$20,364 \$8,632 \$1,213 \$0 \$5,567
1631 1632 1633 1634 1635 1636 1637 1638 1639 1640	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00	### ##################################	\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$54.2) \$124.28	\$0 \$20,021 \$40,580 \$0 \$20,364 \$8,632 \$1,213 \$0 \$5,567
1631 1632 1633 1634 1635 1636 1637 1638 1639	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2rd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2rd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79		\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$5.42)	\$0 \$20,021 \$40,580 \$0 \$20,364 \$8,632 \$1,213 \$0 \$5,567
1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL2, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Suction Lateral (CSPSL, 10 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00	### ##################################	\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$5.42) \$124.28 \$102.66	\$0 \$20,021 \$40,580 \$0 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411
1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641 1642	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Suction Lateral (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72		\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$5.42) \$124.26 \$102.66 \$102.66	\$0 \$20,021 \$40,580 \$0,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411
1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641 1642 1643	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2rd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2rd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01	に に に に に に に に に に に に に に	\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$5.42) \$124.28 \$102.66 \$102.66	\$0 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$411 \$587 \$1,336
1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641 1642	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72		\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$5.42) \$124.26 \$102.66 \$102.66	\$0 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$411 \$587 \$1,336
1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641 1642 1643	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2rd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2rd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01	に に に に に に に に に に に に に に	\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$5.42) \$124.28 \$102.66 \$102.66	\$0 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$411 \$13,336
1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641 1642 1643	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (3rd Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch,	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80	### ##################################	\$0.00 \$0.00 \$600.6 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$5.42) \$124.28 \$102.66 \$102.66 \$102.66	\$0 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$411 \$13,336
1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641 1642 1643	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00	に に に に に に に に に に に に に に	\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$5.42) \$124.28 \$102.66 \$102.66 \$102.66 \$102.66	\$0 \$20,021 \$40,580 \$0 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$587 \$1,336 \$1,725
1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641 1642 1643 1644	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch,	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80	### ##################################	\$0.00 \$0.00 \$600.6 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$5.42) \$124.28 \$102.66 \$102.66 \$102.66	\$0 \$20,021 \$40,580 \$0 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$587 \$1,336 \$1,725
1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641 1642 1643 1644	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Suction Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00	### ##################################	\$0.00 \$0.00 \$600.6 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$5.42) \$124.28 \$102.66 \$102.66 \$102.66 \$102.66	\$0 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$557 \$411 \$411 \$587 \$1,336 \$1,725 \$411
1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641 1642 1643 1644	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch,	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00	### ##################################	\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$54.2) \$124.28 \$102.66 \$102.66 \$102.66 \$102.66 \$102.66	\$0 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$587 \$1,336 \$1,725 \$411
1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641 1642 1643 1644 1645	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (3rd Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 6 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00		\$0.00 \$0.00 \$600.6 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$5.42) \$124.28 \$102.66 \$102.66 \$102.66 \$102.66	\$0 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$587 \$1,336 \$1,725 \$411
1631 1632 1633 1634 1635 1636 1637 1639 1640 1641 1642 1643 1644 1645 1646 1647 1646	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00		\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$54.2) \$124.28 \$102.66 \$102.66 \$102.66 \$102.66	\$0 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$587 \$1,336 \$1,725 \$411 \$411 \$411 \$411 \$411 \$411 \$411 \$41
1631 1632 1633 1634 1635 1636 1637 1638 1640 1641 1645 1645 1645 1646 1647 1648	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Lateral (CSSH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 10 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00	### ##################################	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$5.42) \$124.28 \$102.66 \$102.66 \$102.66 \$102.66 \$102.66 \$102.66 \$102.66	\$0 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$587 \$1,336 \$1,725 \$411 \$411 \$411 \$411 \$411
1631 1632 1633 1634 1635 1636 1637 1639 1640 1641 1642 1643 1644 1645 1646 1647 1646	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2rd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2rd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRH, 10 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00		\$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$54.2) \$124.28 \$102.66 \$102.66 \$102.66 \$102.66	\$0 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$587 \$1,336 \$1,725 \$411 \$411 \$411 \$411 \$411
1631 1632 1633 1634 1635 1636 1637 1638 1640 1641 1645 1645 1645 1646 1647 1648	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Lateral (CSSH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 10 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00	### ##################################	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$600.64 \$470.50 (\$50.08) \$340.35 \$102.66 \$81.04 (\$5.42) \$124.28 \$102.66 \$102.66 \$102.66 \$102.66 \$102.66 \$102.66 \$102.66	\$0 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$587 \$1,336 \$1,725 \$411 \$411 \$411 \$411 \$411
1631 1632 1633 1634 1635 1636 1637 1640 1641 1642 1643 1644 1644 1644 1646 1647 1648 1649 1649 1650	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Suction Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Lateral (CSSH, 10 inch, FRP) Cleaning Solution Supply Lateral (CSSL, 10 inch, FRP) Cleaning Solution Supply Lateral (CSSL, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10		\$0.00 \$0.00	\$0 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$1,725 \$411 \$411 \$411 \$411 \$411 \$411 \$411 \$41
1631 1632 1633 1634 1635 1636 1637 1636 1640 1645 1645 1646 1645 1646 1645 1646 1646	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (3rd Stage) (PL1, 10 inch, PRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL3, 0 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Permeate Cleaning Solution Return Header (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Header (PCSRL, 3 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64	### ##################################	\$0.00 \$0.00	\$0,021 \$40,580 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$00 \$5,567 \$411 \$411 \$5587 \$1,336 \$1,725 \$411 \$411 \$6,117 \$462 \$8,120 \$2,290 \$2,236
1631 1632 1633 1634 1636 1637 1636 1640 1641 1645 1646 1646 1647 1648 1649 1650 1650 1650 1650 1650	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Suction Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 55.64 59.83	### ##################################	\$0.00 \$0.00	\$0, \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$587 \$1,725 \$411 \$411 \$411 \$411 \$411 \$411 \$411 \$41
1631 1632 1633 1634 1635 1636 1636 1637 1643 1644 1644 1645 1646 1647 1648 1649 1650 1651 1651	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (3rd Stage) (PL1, 10 inch, PRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL3, 0 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Permeate Cleaning Solution Return Header (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Header (PCSRL, 3 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64	### ##################################	\$0.00 \$0.00	\$0, \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$587 \$1,725 \$411 \$411 \$411 \$411 \$411 \$411 \$411 \$41
1631 1632 1633 1634 1635 1636 1637 1636 1641 1643 1644 1645 1646 1647 1648 1649 1650 1651 1653 1653	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRH, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Flushing Line (PFL, 10 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64 59.83 0.00	### ##################################	\$0.00 \$0.00	\$0 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$587 \$1,725 \$411 \$411 \$411 \$411 \$411 \$411 \$1,725 \$411 \$411 \$411 \$1,725 \$411 \$1,725 \$411 \$1,725 \$411 \$1,725 \$411 \$1,725 \$411 \$411 \$1,725 \$411 \$411 \$411 \$411 \$411 \$411 \$411 \$41
1631 1632 1633 1634 1635 1636 1637 1638 1639 1641 1642 1643 1644 1645 1646 1649 1650 1651 1652 1653 1654 1655	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Suction Lateral (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Eleaning Solution Return Lateral (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFIL, 6 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64 59.83 0.00	### ##################################	\$0.00 \$0.00	\$0,021 \$40,580 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$5,567 \$411 \$411 \$411 \$5,567 \$411 \$411 \$5,725 \$411 \$411 \$5,1725 \$411 \$5,1725 \$411 \$5,1725 \$411 \$5,1725 \$411 \$5,1725 \$411 \$5,1725
1631 1632 1633 1634 1635 1636 1637 1639 1640 1841 1642 1643 1644 1646 1646 1650 1651 1653 1653 1654	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Lateral (CSSL, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Header (PCSRH, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 6 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFEL, 6 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFEL, 6 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFEL, 6 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFEL, 6 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFEL, 6 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFEL, 6 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFEL, 6 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64 59.83 0.00 0.00 0.00	### ##################################	\$0.00 \$0.00	\$0, \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$411 \$557 \$1,336 \$1,725 \$411 \$411 \$411 \$5,1725 \$411 \$411 \$5,1725 \$411 \$411 \$5,1725 \$411 \$5,1725 \$411 \$5,1725 \$411 \$5,1725 \$1,414 \$5,1725 \$1,414 \$5,1725 \$1,414 \$1,725 \$1,414 \$1,725 \$1,414 \$1,725 \$1,414 \$1,725 \$1,414 \$1,725 \$1,414
1631 1632 1633 1634 1635 1636 1637 1638 1639 1641 1642 1643 1644 1645 1646 1649 1650 1651 1652 1653 1654 1655	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Suction Lateral (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Eleaning Solution Return Lateral (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFIL, 6 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64 59.83 0.00	### ##################################	\$0.00 \$0.00	\$0,021 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$1,725 \$411 \$411 \$411 \$411 \$411 \$411 \$1,725 \$411 \$411 \$411 \$1,725 \$411 \$411 \$411 \$411 \$411 \$411 \$411 \$41
1631 1632 1633 1634 1635 1636 1637 1639 1640 1841 1642 1643 1644 1646 1646 1650 1651 1653 1653 1654	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (3rd Stage) (PL1, 10 inch, PRP) Permeate Lateral (2nd Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Elasning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Flushing Line (PFL, 10 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64 59.83 0.00 0.00 32.00	### ##################################	\$0.00 \$0.00	\$0,021 \$40,580 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$5587 \$1,725 \$411 \$411 \$5,1725 \$411 \$411 \$5,1725 \$1,4462 \$1,448 \$1,44
1631 1633 1634 1635 1636 1637 1636 1630 1640 1641 1643 1644 1645 1646 1650 1651 1652 1653 1654 1655 1655	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Flushing Line (PFL, 10 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFIL, 6 inch, FRP) Common Spare High Pressure Pump Discharge (CSHPPD, 12 inch, Duplex	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64 59.83 0.00 0.00 0.00	### ##################################	\$0.00 \$0.00	\$0,021 \$40,580 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$00 \$5,567 \$411 \$411 \$5587 \$1,725 \$411 \$411 \$6,117 \$462 \$8,120 \$2,290 \$2,136 \$1,448 \$6,143 \$0 \$0 \$1,902 \$1,902
1631 1633 1634 1635 1636 1637 1636 1630 1641 1643 1644 1645 1646 1650 1651 1653 1654 1655 1656 1657	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRH, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRH, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Flushing Line (PFL, 10 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch, FRP) Common Spare High Pressure Pump Suction (CSHPPS, 12 inch, Duplex SST)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64 59.83 0.00 0.00 32.00 14.67 85.50	### ##################################	\$0.00 \$0.00	\$0,021 \$40,580 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$5587 \$1,725 \$411 \$411 \$5,1725 \$411 \$411 \$5,1725 \$1,4462 \$1,448 \$1,44
1631 1633 1634 1635 1636 1637 1636 1639 1640 1641 1643 1644 1645 1646 1650 1651 1652 1653 1654 1655 1655	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Flushing Line (PFL, 10 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFIL, 6 inch, FRP) Common Spare High Pressure Pump Discharge (CSHPPD, 12 inch, Duplex	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64 59.83 0.00 0.00 32.00	### ##################################	\$0.00 \$0.00	\$0,021 \$40,580 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$5587 \$1,725 \$411 \$411 \$5,1725 \$411 \$411 \$5,1725 \$1,4462 \$1,448 \$1,44
1631 1633 1634 1635 1636 1637 1636 1630 1641 1643 1644 1645 1646 1650 1651 1653 1654 1655 1656 1657	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRH, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRH, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Flushing Line (PFL, 10 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch, FRP) Common Spare High Pressure Pump Suction (CSHPPS, 12 inch, Duplex SST)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64 59.83 0.00 0.00 32.00 14.67 85.50	### ##################################	\$0.00 \$0.00	\$0,021 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,567 \$411 \$411 \$411 \$411 \$411 \$411 \$411 \$41
1631 1632 1633 1634 1635 1636 1637 1638 1640 1641 1642 1643 1644 1645 1659 1650 1651 1655 1656 1656 1656 1656	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (3rd Stage) (PL1, 10 inch, PRP) Permeate Lateral (2nd Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Suction Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 6 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch, FRP) Common Spare High Pressure Pump Discharge (CSHPPD, 12 inch, Duplex SST) Fittings: Cartridge Filtration Influent Header (CFIH, 14 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64 59.83 0.00 0.00 32.00 14.67 85.50	LF L	\$0.00 \$0.00	\$0,021 \$40,580 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$5,566 \$411 \$411 \$537 \$1,725 \$411 \$6,117 \$462 \$3,120 \$2,290 \$2,136 \$1,446 \$6,143 \$6,143 \$1,902 \$
1631 1632 1633 1634 1635 1636 1637 1638 1640 1641 1642 1643 1646 1647 1654 1650 1654 1655 1656 1657	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFIL, 6 inch, FRP) Common Spare High Pressure Pump Discharge (CSHPPD, 12 inch, Duplex SST) Fittings: Cartridge Filtration Influent Lateral (CFIL, 8 inch, FRP) Cartridge Filtration Influent Lateral (CFIL, 8 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64 59.83 0.00 0.00 32.00 14.67 85.50	### ##################################	\$0.00 \$0.00	\$0,021 \$40,580 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$0 \$5,565 \$411 \$411 \$411 \$411 \$6,117 \$462 \$8,120 \$2,290 \$2,136 \$1,446 \$6,143 \$5,1446 \$6,143 \$1,446 \$1,4
1631 1632 1633 1634 1635 1636 1637 1638 1640 1641 1647 1648 1649 1650 1651 1652 1653 1654 1655 1656 1656 1656 1656 1661 1662	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Suction Lateral (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Flushing Line (PFL, 10 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFIL, 6 inch, FRP) Common Spare High Pressure Pump Discharge (CSHPPD, 12 inch, Duplex SST) Fittings: Cartridge Filtration Influent Lateral (CFIL, 8 inch, FRP) Cartridge Filtration Influent Lateral (CFIL, 8 inch, FRP) Cartridge Filtration Influent Lateral (CFIL, 8 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64 59.83 0.00 0.00 32.00 14.67 85.50	LF L	\$0.00 \$0.00	\$0,021 \$40,580 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$5,567 \$411 \$411 \$411 \$411 \$411 \$411 \$411 \$41
1631 1632 1633 1634 1635 1636 1637 1638 1640 1641 1642 1643 1646 1647 1654 1650 1654 1655 1656 1657	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFIL, 6 inch, FRP) Common Spare High Pressure Pump Discharge (CSHPPD, 12 inch, Duplex SST) Fittings: Cartridge Filtration Influent Lateral (CFIL, 8 inch, FRP) Cartridge Filtration Influent Lateral (CFIL, 8 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64 59.83 0.00 0.00 32.00 14.67 85.50	### ##################################	\$0.00 \$0.00	\$0,021 \$40,580 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$5,567 \$411 \$411 \$411 \$411 \$411 \$411 \$411 \$41
1631 1632 1633 1634 1635 1636 1637 1638 1640 1641 1642 1643 1644 1645 1650 1650 1651 1650 1657 1656 1657 1668 1669 1660 1661 1662 1663	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Suction Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Becycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Supply Header (CSSL, 10 inch, FRP) Cleaning Solution Supply Lateral (CSSL, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Flushing Line (PFL, 10 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFIL, 6 inch, FRP) Common Spare High Pressure Pump Suction (CSHPPS, 12 inch, FRP) Common Spare High Pressure Pump Discharge (CSHPPD, 12 inch, Duplex SST) Fittings: Cartridge Filtration Influent Header (CFIL, 8 inch, FRP) Cartridge Filtration Effluent Lateral (CFIL, 8 inch, FRP) Cartridge Filtration Effluent Header (CFIL, 8 inch, FRP) Cartridge Filtration Effluent Lateral (CFIL, 8 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 5.72 13.01 16.80 4.00 4.00 4.00 59.59 4.50 79.10 52.30 79.10 53.64 59.83 0.00 0.00 0.00 32.00 14.67 85.50 1.00 4.00 2.00 1.00	LF L	\$0.00 \$0.00	\$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$5,567 \$411 \$411 \$411 \$411 \$411 \$411 \$411 \$41
1631 1633 1633 1634 1635 1636 1637 1638 1640 1641 1642 1643 1644 1646 1650 1651 1655 1656 1657 1656 1657 1658 1659 1650 1651 1656 1651 1656 1651 1656 1651 1656 1	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Lateral (CSSH, 10 inch, FRP) Cleaning Solution Supply Lateral (CSSL, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (CSCFIL, 6 inch, FRP) Permeate Flushing Line (PFL, 10 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch, FRP) Common Spare High Pressure Pump Suction (CSHPPS, 12 inch, Duplex SST) Fittings: Cartridge Filtration Influent Lateral (CFLL, 8 inch, FRP) Cartridge Filtration Influent Lateral (CFL, 8 inch, FRP) Cartridge Filtration Effluent Lateral (CFL, 8 inch, FRP) Cartridge Filtration Effluent Dump Header (ROIDH, 14 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 22.30 79.10 53.64 59.83 0.00 0.00 0.00 32.00 14.67 85.50	### ##################################	\$0.00 \$0.00	\$0,021 \$40,580 \$20,021 \$40,580 \$20,364 \$8,632 \$1,213 \$5,567 \$411 \$411 \$411 \$411 \$411 \$411 \$411 \$41
1631 1632 1633 1634 1635 1636 1637 1638 1640 1641 1644 1643 1644 1645 1650 1651 1651 1651 1651 1656 1656 165	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, PRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 6 inch, FRP) Permeate Lateral (2nd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Flushing Line (PFL, 10 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP) Common Spare High Pressure Pump Suction (CSHPPS, 12 inch, Duplex SST) Fittings: Cartridge Filtration Influent Lateral (CFEL, 8 inch, FRP) Cartridge Filtration Effluent Lateral (CFEL, 8 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 4.00 5.72 13.01 16.80 4.00 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64 59.83 0.00 0.00 0.00 32.00 14.67 85.50	LF L	\$0.00 \$0.00	\$20,02' \$40,586 \$20,36' \$8,632 \$1,213 \$5,566 \$411 \$411 \$558 \$1,336 \$1,725 \$411 \$411 \$56,117 \$466 \$3,122 \$2,296 \$2,136 \$1,446 \$6,143 \$6,143 \$6,143 \$6,143 \$6,144 \$6,145 \$6,145 \$1,902 \$1,
1631 1632 1633 1634 1635 1636 1637 1639 1640 1641 1645 1646 1647 1648 1650 1651 1655 1656 1657 1656 1657 1658 1659 1650 1651 1650 1651 1651 1656 1651 1656 1651 1656 1651 1656 1	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Lateral (CSSH, 10 inch, FRP) Cleaning Solution Supply Lateral (CSSL, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP) Permeate Cleaning Solution Return Lateral (CSCFIL, 6 inch, FRP) Permeate Flushing Line (PFL, 10 inch, FRP) Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch, FRP) Common Spare High Pressure Pump Suction (CSHPPS, 12 inch, Duplex SST) Fittings: Cartridge Filtration Influent Lateral (CFLL, 8 inch, FRP) Cartridge Filtration Influent Lateral (CFL, 8 inch, FRP) Cartridge Filtration Effluent Lateral (CFL, 8 inch, FRP) Cartridge Filtration Effluent Dump Header (ROIDH, 14 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 4.00 5.72 13.01 16.80 4.00 4.00 59.59 4.50 79.10 22.30 79.10 22.30 79.10 53.64 59.83 0.00 0.00 0.00 32.00 14.67 85.50	### ##################################	\$0.00 \$0.00	\$20,02' \$40,580 \$20,36' \$8,632 \$1,213' \$5,566' \$411 \$411 \$5587 \$1,725' \$411 \$411 \$411 \$56,117 \$460 \$5,120 \$2,290 \$2,136 \$1,444 \$6,145 \$5,120 \$1,902 \$
1631 1632 1633 1634 1635 1637 1638 1640 1641 1645 1645 1646 1651 1651 1653 1656 1656 1657 1656 1656 1656 1656 1666 166	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST) Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST) Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST) Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST) Brine Header (BH, 6 inch, Duplex SST) Permeate Lateral (1st Stage) (PL1, 10 inch, PRP) Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP) Permeate Lateral (2nd Stage) (PL2, 6 inch, FRP) Permeate Lateral (2nd Stage) (PL3, 0 inch, FRP) Permeate Header to Flush Tank (PHFT, 12 inch, FRP) Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Pump Discharge Header (CSPDH, 10 inch, FRP) Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFIL, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Supply Header (CSSH, 10 inch, FRP) Cleaning Solution Return Header (BCSRH, 10 inch, FRP) Brine Cleaning Solution Return Header (BCSRH, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (BCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP) Permeate Flushing Line (PFL, 10 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP) Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP) Common Spare High Pressure Pump Suction (CSHPPS, 12 inch, Duplex SST) Fittings: Cartridge Filtration Influent Lateral (CFEL, 8 inch, FRP) Cartridge Filtration Effluent Lateral (CFEL, 8 inch, FRP)	21.25 0.00 33.33 86.25 0.00 59.83 84.08 14.97 0.00 44.79 4.00 4.00 4.00 5.72 13.01 16.80 4.00 4.00 4.00 59.59 4.50 79.10 22.30 79.10 53.64 59.83 0.00 0.00 0.00 32.00 14.67 85.50	LF L	\$0.00 \$0.00	\$ \$20,02 \$40,58 \$20,036 \$8,63 \$1,21: \$ \$5,56 \$41 \$41 \$58 \$1,33 \$1,72 \$41 \$41 \$6,11 \$46 \$8,12; \$2,29 \$2,13 \$1,44 \$6,14 \$6,14 \$6,14 \$1,90 \$2,13 \$1,90 \$1,90 \$1,90 \$1,90 \$1,90 \$1,90 \$1,90 \$1,90 \$1,190 \$

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	B Low Pressure Brine Outlet (ERD Discharge) (LPBRO, 6 inch, Duplex SST)	6.00	D	E \$1,374.61	F \$8,248
1668	Reverse Osmosis Influent Lateral (1st Stage) (ROIL1, 14 inch, Duplex SST)	0.00	EA	\$3,576.04	\$0
1669	Reverse Osmosis Influent Lateral (2nd Stage) (ROIL2, 8 inch, Duplex SST)	8.00	EA	\$1,924.96	\$15,400
1670	Reverse Osmosis Influent Lateral (3rd Stage) (ROIL3, 0 inch, Duplex SST)	0.00	EA	(\$276.47)	\$0
1671	Reverse Osmosis Influent Skid Sub Lateral (1st Stage) (ROISL1, 10 inch,	0.00	EA	\$0.00	\$0
1672	Duplex SST) Reverse Osmosis Influent Skid Sub Lateral (2nd Stage) (ROISL2, 8 inch,	0.00	EA	\$0.00	\$0
1673	Duplex SST) Reverse Osmosis Influent Skid Sub Lateral (3rd Stage) (ROISL3, 0 inch,	0.00	EA.	\$0.00	\$0
1674 1675	Duplex SST) Brine Skid Sub Lateral (1st Stage) (BSL1, 6 inch, Duplex SST)	0.00	EA EA	\$0.00	\$0
1676	, Brine Skid Sub Lateral (2nd Stage) (BSL2, 8 inch, Duplex SST)	0.00	EA	\$0.00	\$0
1677	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, Duplex SST)	0.00	EA	\$0.00	\$0
1678	Brine Lateral (1st Stage) (BL1, 10 inch, Duplex SST)	2.00	EA	\$2,475.32	\$4,951
1679	Brine Lateral (2nd Stage) (BL2, 8 inch, Duplex SST)	4.00	EA	\$1,924.96	\$7,700
1680	Brine Lateral (3rd Stage) (BL3, 0 inch, Duplex SST)	0.00	EA	(\$276.47)	\$0
1681	Brine Header (BH, 6 inch, Duplex SST)	0.00	ĒA	\$1,374.61	\$0
1682	Permeate Lateral (1st Stage) (Pl.1, 10 inch, FRP)	6.00	EA	\$410.65	\$2,464
1683	Permeate Lateral (2nd Stage) (PL2, 8 inch, FRP)	2.00	EA	\$324.18	\$648
1684	Permeate Lateral (3rd Stage) (PL3, 0 inch, FRP)	0.00	EA	(\$21.69)	\$0
1685	Permeate Header to Flush Tank (PHFT, 12 inch, FRP)	5.00	EA	\$497.11	\$2,486
1686	Cleaning Solution Pump Suction Header (CSPSH, 10 inch, FRP)	1.00	EA	\$410.65	\$411
1687 1688	Cleaning Solution Pump Suction Lateral (CSPSL, 10 inch, FRP) Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch, FRP)	0.00 2.00	EA EA	\$410.65 \$410.65	\$0 \$821
1689	Cleaning Solution Pump Discharge Leader (CSPDH, 10 inch, FRP)	. 0.00	EA	\$410.65	\$0
1690	Cleaning Solution Pump Recycle (CSPR, 10 inch, FRP)	4.00	EA	\$410.65	\$1,643
1000	Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch,	1.00		\$410.65	\$411
1691	FRP) Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch,	1.00	EA	\$410.65	\$411
1692	FRP)	1.50	EA	4710.00	V -1
1693	Cleaning Solution Supply Header (CSSH, 10 inch, FRP)	5.00	EA	\$410.65	\$2,053
1694	Cleaning Solution Supply Lateral (CSSL, 10 inch, FRP)	0.00	EA	\$410.65	\$0
1695	Brine Cleaning Solution Return Header (BCSRH, 10 inch, FRP)	5.00	EA	\$410.65	\$2,053
1696	Brine Cleaning Solution Return Lateral (BCSRL, 10 inch, FRP)	4.00	EA	\$410.65	\$1,643
1697	Permeate Cleaning Solution Return Header (PCSRH, 3 inch, FRP)	5.00	EA	\$108.01	\$540
1698	Permeate Cleaning Solution Return Lateral (PCSRL, 3 inch, FRP)	4.00	EA	\$108.01	\$432
1699	Permeate Flushing Line (PFL, 10 inch, FRP)	1.00	EA	\$410.65	\$411
1700	Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch, FRP)	0.00	EA	\$237.71	\$0
1701	Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch, FRP)	0.00	EA .	\$237.71	\$0
1702	Bypass Blend Line (BBL, 6 inch, FRP)	1.00 0.00	EA	\$237.71 \$497.11	\$238
1703	Common Spare High Pressure Pump Suction (CSHPPS, 12 inch, FRP) Common Spare High Pressure Pump Discharge (CSHPPD, 12 inch, Duplex	2.00	EA	\$3,025.68	\$0 \$6,051
1704	SST)	2.00	EA	\$0,020.00	Ψυ,υσι
1705	Valves:				
1706	Cartridge Filtration Influent Header (CFIH, 14 inch,)	0.00	EA ·	\$8,676.59	\$0
1707	Cartridge Filtration Influent Lateral (CFIL, 8 inch,)	2.00	EA	\$4,798.76	\$9,598
1708	Cartridge Filtraition Effluent Lateral (CFEL, 8 inch,)	2.00	EA	\$4,798.76	\$9,598
1709	Cartridge Filtration Effluent Header (CFEH, 14 inch,)	0.00	EA	\$8,676.59	. \$0
1710	Reverse Osmosis Influent Dump Header (ROIDH, 14 inch,)	1.00	EA	\$8,676.59	\$8,677
1711	Reverse Osmosis Influent Header (ROIH, 14 inch,)	0.00	EA	\$8,676.59	\$0
1712	High Pressure Pump Suction (HPPS, 12 inch,) High Pressure Pump Discharge (HPPD, 12 inch, SST Teflon Lined)	2.00	EA EA	\$7,383.98 \$7,383.98	\$14,768
1713	Low Pressure Pump Discharge (HPPD, 12 Inch, SS1 Tetion Linea) Low Pressure Brine Outlet (ERD Discharge) (LPBRO, 6 Inch, SST Teffon	0.00 2.00	EA	\$3,506.15	\$7,012
1714	Lined)		EA	-	
1715	Reverse Osmosis Influent Lateral (1st Stage) (ROIL1, 14 inch, SST Teflon Lined)	2.00	EA	\$8,676.59	\$17,353
1716	Reverse Osmosis Influent Lateral (2nd Stage) (ROIL2, 8 inch, SST Teflon Lined)	2.00	EA	\$4,798.76	\$9,598
	Reverse Osmosis Influent Lateral (3rd Stage) (ROIL3, 0 inch, SST Teflon	0.00		(\$371.68)	\$0
1717	Lined) Reverse Osmosis Influent Skid Sub Lateral (1st Stage) (ROISL1, 10 inch,	0.00	EA	. \$0.00	\$0
1718	SST Teflon Lined) Reverse Osmosis Influent Skid Sub Lateral (2nd Stage) (ROISL2, 8 inch,	0.00	EA	\$0.00	\$0
1719	SST Teflon Lined) Reverse Osmosis Influent Skid Sub Lateral (3rd Stage) (ROISL3, 0 inch,	0.00	EA	\$0.00	\$0
1720 1721	SST Teflon Lined)	0.00	EA EA	\$0.00	\$0
1721		2.00	EA	\$0.00	\$0
1723	Brine Skid Sub Lateral (3rd Stage) (BSL3, 0 inch, SST Teffon Lined)	0.00	EA	\$0.00	\$0
1724	Brine Lateral (1st Stage) (BL1, 10 inch, SST Teflon Lined)	2.00	EA	\$6,091.37	\$12,183
1725	Brine Lateral (2nd Stage) (BL2, 8 inch, SST Teflon Lined)	2.00	EA	\$4,798.76	\$9,598
1726		0.00	EA	(\$371.68)	\$0
1727	Brine Header (BH, 6 inch, SST Teflon Lined)	0.00	EA	\$3,506.15	\$0
1728		4.00	EA	\$6,091.37	\$24,365
1729	Permeate Lateral (2nd Stage) (PL2, 8 inch,)	2.00	EA	\$4,798.76	\$9,598
1730		0.00	EA	(\$371.68)	\$0
1731		1.00	EA	\$7,383.98	\$7,384
1732		, 1.00	EA	\$6,091.37	\$6,091
1733 1734		1.00	EA	\$6,091.37	\$6,091
	Cleaning Solution Pump Discharge Lateral (CSPDL, 10 inch,)	2.00	EΑ	\$6,091.37	\$12, 18

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1735	Cleaning Solution Pump Discharge Header (CSPDH, 10 inch,)	0.00	EΑ	\$6.091.37	\$0
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1736		2.00	EA	\$6,091.37	\$12,183
1737	Cleaning Solution Cartridge Filtration Influent Lateral (CSCFIL, 10 inch,)	1.00	EA	\$6,091.37	\$6,091
1738	Cleaning Solution Cartridge Filtration Effluent Lateral (CSCFEL, 10 inch,)	1.00	EA	\$6,091.37	\$6,091
1739		0.00	EA	\$6,091.37	\$0
1740	Cleaning Solution Supply Lateral (CSSL, 10 inch,)	2.00	ĖΑ	\$6,091.37	\$12,183
1741	Brine Cleaning Solution Return Header (BCSRH, 10 inch,)	1.00	EA	\$6,091.37	\$6,091
		<u> </u>			
1742		2.00	EA	\$6,091.37	\$12,183
1743	Permeate Cleaning Solution Return Header (PCSRH, 3 inch,)	0.00	EA	\$1,567.23	. \$0
1744		2.00	EA	\$1,567.23	\$3,134
			-		
1745		1.00	EA	\$6,091.37	\$6,091
1746	Bypass Blend Cartridge Filter Influent (BBCFIL, 6 inch,)	0.00	EA	\$3,506.15	\$0
1747	Bypass Blend Cartridge Filter Effluent (BBCFEL, 6 inch,)	0.00	EA	\$3,506.15	\$0
1748	Bypass Blend Line (BBL, 6 inch,)	1.00	EA	\$3,506.15	\$3,506
1749	Common Spare High Pressure Pump Suction (CSHPPS, 12 inch,)	1.00	EA	\$7,383.98	\$7,384
	Common Spare High Pressure Pump Discharge (CSHPPD, 12 inch, SST	2.00			
1,		2.00	l	\$7,383.98	\$14,768
1750	Teflon Lined)		EA		
1751	Allowance for Misc Items	5%		\$548,162.49	\$27,408
1752					\$601,229
				<u> </u>	\$001,229
1753					
1754	MCC's				
1755		8.00	EA	\$6,783.10	\$54,265
_		3,00	EA	\$0,103.70	\$04,265
1756				ļ	
1757	High Pressure Membrane Feed Pumps (Active) (157 hp each)	1.00	EA	\$149.20	\$23,465
1758	· · · · · · · · · · · · · · · · · · ·	2.00	EA	\$149.20	\$46,930
1759		0.00	EA	\$0.00	\$0
1760	Interstage Booster Pumps (Standby) (0 hp each)	0.00	EA	\$0.00	\$0
1761		0.00			
	Flushing Pumps (Active) (90 hp each)		EA	\$0.00	\$0
1762	Flushing Pumps (Standby) (90 hp each)	0.00	EA	\$0.00	\$0
1763		0.00	EA	\$0.00	\$0
		I			
1764		0.00	EA	\$0.00	\$0
1765	Cleaning Solution Recirculation Pump (Active) (70 hp each)	1.00	EA	\$181.91	\$12,734
1766		0.00	EA	\$0.00	\$0
1767	Dry Chemicals Transfer Pump (Active) (0 hp each)	0.00	EA	\$0.00	\$0
1768	Spent Chemicals Neutralization Pumps (Active) (70 hp each)	0.00	EA	\$0.00	. \$0
1769		0.00			
			EA	\$0.00	\$0
1770	Sulfuric Acid Active Metering Pump (1 hp each)	0.00	EA	\$0.00	\$0
1771	Sulfuric Acid Standby Metering Pump (1 hp each)	0.00	ĒΑ	\$0.00	\$0
					Ψ0
1772	Hydrochloric Acid Active Metering Pump (0 hp each)	0.00	EA	\$0.00	\$0
1773	Hydrochloric Acid Standby Metering Pump (0 hp each)	0.00	EA	\$0.00	\$0
1774		0.00			
-			EA	\$0.00	\$0
1775	Scale Inhibitor Standby Metering Pump (1 hp each)	0.00	EΑ	\$0.00	\$0
1776	Other Chemical 1 Active Metering Pump (0 hp each)	0.00	EA	\$0.00	\$0
1777	Other Chemical 1 Standby Metering Pump (0 hp each)	0.00	EA	\$0.00	\$0
1778	Other Chemical 2 Active Metering Pump (0 hp each)	0.00	EA	\$0.00	\$0
1779	Other Chemical 2 Standby Metering Pump (0 hp each)	0.00	+	\$0.00	\$0
	the second secon				
1780	Sodium Hydroxide Active Transfer Pump (0 hp each)	0.00	ËΑ		
1781	Bodishi Tijarokide Nesve Transfel Lamp (o tip cacity	0.00	EA EA	\$0.00	\$0
1782		0.00	EA	\$0.00	\$0
	Sodium Hydroxide Standby Transfer Pump (0 hp each)	0.00 0.00	EA EA	\$0.00 \$0.00	\$0 \$0
	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each)	0.00 0.00 0.00	EA EA EA	\$0.00 \$0.00 \$0.00	\$0 \$0 \$0
1783	Sodium Hydroxide Standby Transfer Pump (0 hp each)	0.00 0.00	EA EA	\$0.00 \$0.00	\$0 \$0 \$0 \$0
1783	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each)	0.00 0.00 0.00 0.00	EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0
1783 1784	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each)	0.00 0.00 0.00 0.00 0.00	EA EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0
1783 1784 1785	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each)	0.00 0.00 0.00 0.00 0.00 0.00	EA EA EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0
1783 1784	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each)	0.00 0.00 0.00 0.00 0.00	EA EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0
1783 1784 1785 1786	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each)	0.00 0.00 0.00 0.00 0.00 0.00 0.00	EA EA EA EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
1783 1784 1785 1786 1787	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each)	0.00 0.00 0.00 0.00 0.00 0.00 0.00	EA EA EA EA EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
1783 1784 1785 1786 1787	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA EA EA EA EA EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
1783 1784 1785 1786 1787	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each)	0.00 0.00 0.00 0.00 0.00 0.00 0.00	EA EA EA EA EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
1783 1784 1785 1786 1787 1788 1789	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA EA EA EA EA EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
1783 1784 1785 1786 1787 1788 1789	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Switchgear	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	EA EA EA EA EA EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1787 1788 1789 1790	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	EA EA EA EA EA EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1787 1788 1789 1790 1791	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	EA EA EA EA EA EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
1783 1784 1785 1786 1787 1788 1789 1790 1791	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	EA EA EA EA EA EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	EA EA EA EA EA EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$17,39\$
1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793 1794	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	EA EA EA EA EA EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	EA EA EA EA EA EA EA EA	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$1 \$0 \$17,396
1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793 1794 1795	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	EA E	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$17,396 \$13,739
1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793 1794 1795	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA E	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793 1794 1795 1796	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA E	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793 1794 1795	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA E	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1787 1788 1790 1791 1792 1793 1794 1795 1796 1797	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA UNIT	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1787 1788 1799 1791 1792 1793 1794 1795 1796 1797 1798	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA E	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793 1794 1795 1796 1797 1798	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 3 Description Item 4 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA UNIT	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1787 1788 1799 1791 1792 1793 1794 1795 1796 1797 1798	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 3 Description Item 4 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA UNIT	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793 1794 1795 1796 1797 1798 1799 1800 1801	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit 8 Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 4 Description Item 4 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA UT UNIT	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1787 1788 1788 1799 1791 1792 1793 1794 1795 1796 1797 1798 1799 1800 1801	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 4 Description Item 4 Description Item 5 Description Item 5 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA UT UNIT	\$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793 1794 1795 1796 1797 1798 1799 1800 1801	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit 8 Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 4 Description Item 4 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA UT UNIT	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
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1783 1784 1785 1786 1786 1787 1788 1799 1791 1792 1793 1794 1795 1796 1797 1798 1799 1800 1801 1802 1803 1804 1805	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 9 Description Item 9 Description Item 9 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA UF UNIT	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1786 1787 1788 1799 1799 1791 1792 1793 1794 1795 1798 1798 1801 1801 1802 1803 1804 1805	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 7 Description Item 9 Description Item 9 Description Item 9 Description Item 9 Description Item 10 Description Item 11 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA UF UNIT	\$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793 1794 1795 1796 1797 1798 1800 1801 1802 1803 1804 1805 1806	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 7 Description Item 9 Description Item 9 Description Item 9 Description Item 9 Description Item 10 Description Item 11 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA UF UNIT	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1786 1787 1788 1799 1791 1792 1793 1794 1795 1796 1797 1800 1800 1801 1805 1804 1805	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA UF UNIT	\$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
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1783 1784 1785 1786 1786 1787 1788 1799 1791 1792 1793 1794 1795 1796 1797 1800 1800 1801 1805 1804 1805	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 4 Description Item 6 Description Item 7 Description Item 7 Description Item 9 Description Item 10 Description Item 10 Description Item 11 Description Item 11 Description Item 12 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA UF UNIT	\$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793 1794 1795 1796 1800 1801 1801 1802 1803 1804 1805 1806 1807 1808 1809 1809 1809 1809 1809 1809 1809	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Standby Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 9 Description Item 10 Description Item 10 Description Item 11 Description Item 11 Description Item 12 Description Item 11 Description Item 12 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA UF UNIT	\$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1792 1793 1794 1795 1796 1800 1801 1802 1803 1804 1805 1806 1807 1808 1808 1808 1808 1808 1808 1808	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 10 Description Item 10 Description Item 10 Description Item 11 Description Item 11 Description Item 11 Description Item 12 Description Item 13 Description Item 14 Description Item 15 Description Item 15 Description Item 15 Description Item 15 Description Item 16 Description Item 17 Description Item 18 Description Item 19 Description Item 19 Description Item 19 Description Item 19 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA UF UNIT	\$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1783 1784 1785 1786 1786 1787 1788 1799 1790 1791 1795 1796 1797 1798 1798 1800 1801 1802 1803 1804 1805 1806 1807 1808 1808 1808 1808 1808 1808 1808	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Standby Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 6 Description Item 6 Description Item 7 Description Item 9 Description Item 10 Description Item 10 Description Item 11 Description Item 12 Description Item 12 Description Item 13 Description Item 14 Description Item 15 Description Item 15 Description Item 16 Description Item 17 Description Item 18 Description Item 19 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA UF UNIT	\$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
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1783 1784 1785 1786 1786 1787 1788 1799 1790 1791 1792 1793 1794 1795 1796 1797 1798 1800 1801 1805 1806 1806 1807 1808 1808 1808 1808 1808 1808 1808	Sodium Hydroxide Standby Transfer Pump (0 hp each) Hydrochloric Acid Active Transfer Pump (0 hp each) Hydrochloric Acid Standby Transfer Pump (0 hp each) Sodium EDTA Active Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Active Transfer Pump (0 hp each) Other Chemical 3 Standby Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Other Chemical 4 Active Transfer Pump (0 hp each) Switchgear Units Electrical Conduit & Wire Allowance for Misc Items Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 9 Description Item 9 Description Item 10 Description Item 10 Description Item 11 Description Item 12 Description Item 12 Description Item 13 Description Item 14 Description Item 15 Description Item 15 Description Item 16 Description Item 17 Description Item 18 Description Item 19 Description Item 10 Description Item 10 Description Item 11 Description Item 12 Description Item 14 Description Item 15 Description Item 15 Description Item 16 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	EA UF UNIT	\$0.00 \$0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$

	В	C	D	E	F
\Box	ALLOWANCES	·	User Over-	,	
1816			write		
1817	Finishes Allowance	1.0%	50000000000000000000000000000000000000	\$5,219,952	\$52,200
1818	I & C Allowance	0.5%	295000V2540	\$5,219,962	\$26,100
1819	Mechanical Allowance	1.0%	Techsens Howard	\$5,219,952	\$52,200
1820	Electricat Allowance	1.0%	61254445555	\$5,219,952	\$52,200
1821		-			
1822	Facility Cost	2,250,000	GPD	\$2.32	\$5,219,952

11.20 AM				
<u>DESCRIPTION</u>	QUANT	UNIT	<u>\$/UNIT</u>	TOTAL COST
SITEWORK: Sitework Prep for Air Stripper / Air Scrubber Pad	203.63	CY	\$13.16	\$2,689
Site Work Frep for Air Stripper Frai Scrubber Fad	203.03	01	\$13.10	\$2,000
Wetwell:				
Excavation	59.21	CY	\$5.35	\$(
Structural Backfill	22.75	CY	\$40.56	\$(
Backfill Haul Excess	7.36 51.85	CY	\$6.58	\$1
Allowance for Misc Items	5%	01	\$6.58 \$3,020.90	\$34 \$15
Subtotal	2,0		40,020,00	\$3,172
CONCRETE:				
Air Stripper / Air Scrubber Slab on Grade	12.72	CY	\$345.93	\$4,40
Air Stripper Pads Air Supply Fan Pads	7.44 8.86	CY	\$345.93 \$345.93	\$2,57 \$3,06
Recirculation Pump Pads	0.00	CY	\$345.93	\$3,00
The state of the s	0.00	<u> </u>	\$5,0,00	
Wetwell:				
Slab on Grade	15.98	CY	\$382.16	\$(
Walls	25.27	CY	\$683.50	\$0
Elevated Slab	4.87	CY	\$1,088.69	\$(
Effluent Transfer Pump Pads Allowance for Misc Items	0.53 5%	CY	\$345.93 \$10,038.59	\$(
Subtotal	3%		\$10,038.59	\$502 \$10,54
Subjoids				\$10,54
MASONRY:	High			
Electrical Room	189	SF	\$157.92	\$29,865
CMU Building Over Degasifiers	515	SF	\$157.92	\$81,354
CMU Building Over Pump Station	0	SF	\$157.92	\$(
Subtotal				\$111,219
EQUIPMENT: Air Stripping Tower (including Inlet Distributor, Tower, Packing, Sump & Fan) Air Fans	2.00	EA EA	\$186,286.49	\$372,573
Air Scrubbers (Biological)	0.00	EA	(\$930,830.02)	\$0
Recirculation Pumps Effluent Transfer Pumps:	0.00	EA	\$6,189.03	\$0
Active Pump # 1	29.87	HP	\$2,623,49	\$(
Active Pump # 1 Active Pump # 2	0.00	HP	\$2,623.49	\$(
Active Pump # 3	0.00	HP .	\$0.00	\$(
Active Pump # 4	0.00	HP	\$0.00	\$(
Active Pump # 5	0.00	HP	\$0.00	\$0
Active Pump #6	0.00	HP	\$0.00	
Active Pump # 7 Active Pump # 8	0.00	HP HP	\$0.00	\$(
Active Pump # 9	0.00	HP	\$0.00 \$0.00	\$(\$(
Active Pump # 10	0.00	HP	\$0.00	\$(
Standby Pump	29.87	HP	\$2,623.49	\$(
Permeate Makeup Supply Pumps (Active)	1.00	EA	\$5,696.45	\$5,696
Permeate Makeup Supply Pumps (Standby)	0.00	EA	\$0.00	\$(
Effluent Static Mixer	1.00	EA	\$4,980.12	\$4,980
Allowance for Misc Items Subtotal	10%		\$372,572.98	
Guividi				\$420,507
MECHANICAL:				
Pipe Feed Water Inlet Header-FWIH (12-inch , Exposed , Ductile Iron , Cement Mortar , Paint)	19	LF	\$82.21	\$1,582
Feed Water Inlet Lateral-FWIL (8-inch , Exposed , Welded Steel , Cement Mortar , Paint)	40	LF	\$146.11	\$5,84
Degasifier Air Influent Header-DAIH (24-inch , Exposed , FRP , None , None)	18	LF	\$126.39	\$2,300
Degasifier Air Influent Lateral-DAIL (16-inch , Exposed , FRP , None , None)	6	LF	\$86.59	\$520
Water Effluent Lateral-WEL (8-inch , Exposed , FRP , None , None)	16	LF	\$46.80	\$749
Scrubber Air Influent Header-SAIH (24-inch , Exposed , FRP , None , None)	0	LF	\$126.39	

Scrubber Air Influent Lateral-SAIL (24-inch , Exposed , FRP , None , None)	0	LF	\$126.39	\$0
Scrubber Air Discharge-SAD (24-inch , Exposed , FRP , None , None)	0	LF	\$126.39	\$0
Scrubber Recirculation Plpe-SRP (2-inch , Exposed , Ductile Iron , None , Paint)	. 0	LF	\$11.98	\$0
Pump Discharge Lateral-PDL (12-inch , Exposed , Welded Steel , Cement Mortar , Paint)	10	LF	\$219.17	\$2,192
Pump Discharge Header-PDH (10-inch , Exposed , Welded Steel , Cement Mortar , Paint)	37	LF	\$182.64	\$6,819
Permeate Makeup Supply Lateral-PML (4-inch , Exposed , Welded Steel , Cement Mortar , Paint)	10	LF	\$73.06	\$755
Permeate Makeup Supply Header-PMH (4-inch , Exposed , Welded Steel , Cement Mortar , Paint)	19	LF	\$73.06	\$1,364
Elbows				
Feed Water Inlet Header-FWIH (12-inch , Exposed , Ductile Iron , Cement Mortar , Paint)	1	EA	\$1,725.47	\$1,725
Feed Water Inlet Lateral-FWIL (8-inch , Exposed , Welded Steel , Cement Mortar , Paint)	4	EA	\$879.95	\$3,520
Degasifier Air Influent Header-DAIH (24-inch , Exposed , FRP , None , None)	2	EA	\$1,664.01	\$3,328
Degasifier Air Influent Lateral-DAIL (16-inch , Exposed , FRP , None , None)	0	EA	\$1,107.19	\$0
Water Effluent Lateral-WEL (8-inch, Exposed, FRP, None, None)	2	EA	\$550.38	\$1,101
Scrubber Air Influent Header-SAIH (24-inch , Exposed , FRP , None , None)	0	EA	\$1,664.01	\$0
Scrubber Air Influent Lateral-SAIL (24-inch , Exposed , FRP , None , None)	0	EA	\$1,664.01	\$(
Scrubber Air Discharge-SAD (24-inch , Exposed , FRP , None , None)	0	EA	\$1,664.01	\$0
Scrubber Recirculation Plpe-SRP (2-inch , Exposed , Ductile Iron , None , Paint)	0	EA	\$287.58	\$0
Pump Discharge Lateral-PDL (12-inch , Exposed , Welded Steel , Cement Mortar , Paint)	0	EA	\$1,319.92	\$0
Pump Discharge Header-PDH (10-inch , Exposed , Welded Steel , Cement Mortar , Paint)	3	EA	\$1,099.93	\$3,300
Permeate Makeup Supply Lateral-PML (4-inch , Exposed , Welded Steel , Cement Mortar , Paint)	0	EA	\$439.97	\$0
Permeate Makeup Supply Header-PMH (4-inch , Exposed , Welded Steel , Cement Mortar , Paint)	1	EA	\$439.97	\$440
Tees				
Feed Water Inlet Header-FWIH (12-inch , Exposed , Ductile Iron , Cement Mortar , Paint)	1	EA	\$2,865.10	\$2,865
Feed Water Inlet Lateral-FWIL (8-inch , Exposed , Welded Steel , Cement Mortar , Paint)	0 ,	EA	\$2,004.85	\$0
Degasifier Air Influent Header-DAIH (24-inch , Exposed , FRP , None , None)	2	EA	\$2,177.82	\$4,356
Degasifier Air Influent Lateral-DAIL (16-inch , Exposed , FRP , None , None)	0	EA	\$1,458.34	\$0
Water Effluent Lateral-WEL (8-inch , Exposed , FRP , None , None)	0	EA	\$738.87	\$0
Scrubber Air Influent Header-SAIH (24-inch , Exposed , FRP , None , None)	0	EA	\$2,177.82	\$(
Scrubber Air Influent Lateral-SAIL (24-inch , Exposed , FRP , None , None)	0	EA	\$2,177.82	\$0
Scrubber Air Discharge-SAD (24-inch , Exposed , FRP , None , None)	0	EA	\$2,177.82	\$0
Scrubber Recirculation Plpe-SRP (2-inch , Exposed , Ductile Iron , None , Paint)	0	EA	\$477.52	\$0
Pump Discharge Lateral-PDL (12-inch , Exposed , Welded Steel , Cement Mortar , Paint)	0 .	EA	\$3,007.27	\$0
Pump Discharge Header-PDH (10-inch , Exposed , Welded Steel , Cement Mortar , Paint)	1	EA	\$2,506.06	\$2,506
Permeate Makeup Supply Lateral-PML (4-inch , Exposed , Welded Steel , Cement Mortar , Paint)	0	EA	\$1,002.42	\$0
Permeate Makeup Supply Header-PMH (4-inch , Exposed , Welded Steel , Cement Mortar , Paint)	0	EA	\$1,002.42	\$0
Valves				
Feed Water Inlet Header-FWIH (12-inch , Exposed , Ductile Iron , Cement Mortar , Paint)	0	EA	\$8,401.82	\$0
Feed Water Inlet Lateral-FWIL (8-inch , Exposed , Welded Steel , Cement Mortar , Paint)	2	EA	\$6,435.71	\$12,87
Degasifier Air Influent Header-DAIH (24-inch , Exposed , FRP , None , None)	0	EA	\$16,803.65	\$0
Degasifier Air Influent Lateral-DAIL (16-inch , Exposed , FRP , None , None)	2	EA	\$11,202.43	\$22,409
Water Effluent Lateral-WEL (8-inch , Exposed , FRP , None , None)	2	EA	\$5,601.22	\$11,202
Scrubber Air Influent Header-SAIH (24-inch , Exposed , FRP , None , None)	0	EA	\$16,803.65	\$(
Scrubber Air Influent Lateral-SAIL (24-inch , Exposed , FRP , None , None)	0	EA	\$16,803.65	\$(
Scrubber Air Influent Lateral-SAL (24-inch , Exposed , FRP , None , None) Scrubber Air Discharge-SAD (24-inch , Exposed , FRP , None , None)	0	EA	\$16,803.65	\$(
Scrubber Air Discharge-SAD (24-inch , Exposed , PRP , None , None , Scrubber Recirculation Plpe-SRP (2-inch , Exposed , Ductile Iron , None , Paint)	0	EA	\$10,803.05	\$(
Pump Discharge Lateral-PDL (12-inch , Exposed , Welded Steel , Cement	2	EA	\$9,653.56	\$19,30

11.20 AW				
Pump Discharge Header-PDH (10-inch , Exposed , Welded Steel , Cement Mortar , Paint)	0	EA	\$8,044.63	\$0
Permeate Makeup Supply Lateral-PML (4-inch , Exposed , Welded Steel ,	1	EA	\$3,217.85	\$3,218
Cement Mortar , Paint) Permeate Makeup Supply Header-PMH (4-inch , Exposed , Welded Steel	0	EA	\$3,217.85	\$0
Cement Mortar , Paint)	5%		£04 740 42	£4 507
Allowance for Misc Items Subtotal	5%	+	\$91,749.43	\$4,587 \$118,862
Subtotal		 		Φ110,002
ELECTRICAL:				
MCC's	7		#C 700 40	¢ 47, 400
Sections AFD's	7	EA	\$6,783.10	\$47,482
Air Stripper Fan (Active) (4 hp each)	2	EA	\$4,617.76	\$9,236
Air Stripper Fan (Standby) (4 hp each)	0	EA	\$4,617.76	φ9,23t
Recirculation Pump (Active) (0 hp each)	0	EA	\$4,125.89	\$(
Recirculation Pump (Standby) (0 hp each)	0	EA	\$4,125.89	\$0
Effluent Transfer Pump (Active) (30 hp each)	1	EA	\$7,798.45	\$0
Effluent Transfer Pump (Standby) (30 hp each)	1	EA	\$7,798.45	\$0
Permeate Makeup Supply Pumps (Active)	Ö	EA	\$4,371.83	\$0
Permeate Makeup Supply Pumps (Standby)	Ö	EA	\$4,371.83	\$0
Switchgear			\$1,07.1.00	<u>_</u>
Units	0	EA	\$31,202.24	\$0
Electrical Conduit & Wire	98	If	\$9.53	\$935
Allowance for Misc Items	5%		\$57,652.30	\$2,883
Subtotal				\$60,535
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Item 1 Description	0.00		0.00	\$0
Item 2 Description	0.00	-0.294 (2018) (1918) - 1	0.00	\$C
Item 3 Description	0.00		0.00	\$0
Item 4 Description	0.00		0.00	\$0
Item 5 Description	0.00	3199 380 580 30 59 47	0.00	\$0
Item 6 Description	0.00		0.00	\$0
Item 7 Description	0.00	2.48(5)(15)(22.48(5)))	0.00	\$0
Item 8 Description	0.00		0.00	\$C
Item 9 Description	0.00	H. A.B. S. H. (181), 84	0.00	\$0
Ifem 10 Description	0.00		0.00	\$0
Item 11 Description	0.00		0.00	\$0
Item 12 Description	0.00	U Greec soppher to the common	0.00	\$0
Item 13 Description	0.00		0.00	\$0
Item 14 Description	0.00		0.00	\$0
Item 15 Description	0.00	nuce (1909)	0.00	\$0
Subtotal				\$0
Subtotal				\$724,835
		1	<u> </u>	
ALLOWANCES:		User Over-write		
ALLOWANCES: Finishes Allowance	2.0%	User Over-write	\$862.899	\$17.258
Finishes Allowance	2.0%	User Over-write	\$862,899 \$862,899	
Finishes Allowance I & C Allowance	4%		\$862,899	\$34,516
Finishes Allowance I & C Allowance Mechanical Allowance	4% 5%		\$862,899 \$862,899	\$17,258 \$34,516 \$43,145 \$17,258
Finishes Allowance I & C Allowance	4%		\$862,899	\$34,516

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<u>Description</u>	Quantity	<u>Unit</u>	<u>\$/Unit</u>	Total Cost		
SITEWORK: Excavation	1088.34	CY	\$5.35	\$5,825		
Imported Structural Backfill	57.32	CY	\$3.35 \$40.56	\$2,325		
Native Backfill	608.68	CY	\$6.58	\$4,005		
Haul Excess	479.66	CY	\$6.58	\$3,156		
Allowance for Misc Items	5%		\$15,311.28	\$766		
Subtotal			¥10,0 1 1120	\$16,077		
CONCRETE:						
Wet Well:						
Foundation	19.11	CY	\$382.16	\$7,302		
Perimeter Walls	60.44	CY	\$683.50	\$41,31		
Operating Floor:						
Elevated Slab (Including floor over Discharge Header Vault)	24.26	CY	\$1,088.69	\$26,414		
Pump Pads	0.48	CY	\$345.93	\$167		
Other Equipment Pads	1.00	CY	\$345.93	\$346		
Discharge Pipe Vault:						
Slab on Grade	10.03	CY	\$345.93	\$3,469		
Walls	12.36	CY	\$683.50	\$8,45		
Allowance for Misc Items	5%		\$87,462.34	\$4,373		
Subtotal				\$91,835		
MASONRY:	High	56486		•		
CMU Building	655.07	SF	\$157.92	\$103,450		
Subtotal				\$103,450		
METALS:						
Checker Plate Over Intake Pipe Gate = (Diameter of Influent Pipe +2') * (2 Feet Wide) (sf)	6.33	SF	\$72.38	\$458		
Checker Plate Over Discharge Pipe Header = ((Discharge Pipe Diameter * 2) * ("S" * Total Number of Pumps)	19.83	SF	\$72.38	\$1,436		
Ladder	17.92	VLF	\$99.36	\$1,781		
Allowance for Misc Items	10%		\$3,674.86	\$367		
Subtotal			4 -,	\$4,042		
THERMAL & MOISTURE PROTECTION:						
Wet Well Liner	0.00	SF	\$16.00	\$0		
Allowance for Misc Items	10%		\$0.00	\$0		
Subtotal				\$0		
·						
EQUIPMENT:				•		
Size of Sluice Gate (per side in inches)	14.00	in				
Sluice Gate	1.00	EA	\$3,467.45	\$3,467		
Pumps:						
Active Pump # 1	70.24	HP	\$1,236.99	\$86,887		
Active Pump # 2	70.24	HP	\$1,236.99	\$86,887		
Active Pump # 3	0.00	HP	\$0.00	\$0		
Active Pump # 4	0.00	HP	\$0.00	\$0		
Active Pump # 5	0.00	HP	\$0.00	\$0		
Active Pump # 6	0.00	HP	\$0.00	\$6		
		HP	\$0.00	\$(\$(
	0.00		, ,,,,,,	Ψ.		
Active Pump # 7	0.00		\$0.00	.R.		
Active Pump # 7 Active Pump # 8	0.00	HP	\$0.00 \$0.00	\$6		
Active Pump # 7 Active Pump # 8 Active Pump # 9	0.00	HP HP	\$0.00	\$0		
Active Pump # 7 Active Pump # 8	0.00	HP		\$0 \$0 \$0 \$86,887		

0.00 0.00 0.00 0.00 2.0% 8.0% 25.0% 15.0%	User Overwrite Total Pump	\$1,095,437 \$1,095,437 \$1,095,437 \$1,095,437 \$1,095,437 \$1,095,437	\$547, \$21, \$87, \$273, \$164,
0.00 0.00 0.00 2.0% 8.0% 25.0%	write	\$1,095,437 \$1,095,437 \$1,095,437 \$1,095,437	\$547, \$21, \$87, \$273,
0.00 0.00 0.00 2.0% 8.0%	write	\$1,095,437 \$1,095,437	\$547, \$21, \$87,
0.00 0.00 0.00	write	0.00 0.00 0.00 \$1,095,437	\$547, \$21,
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			\$332,
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70.24	HP	\$181.71	\$12
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	70.24 0.00 0.00 0.00 0.00 0.00 0.00 0.00	70.24 HP 0.00 HP	70.24 HP \$181.71 0.00 HP \$0.00 70.24 HP \$181.71 10% \$298,950.93 QUANT UNIT \$/UNIT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

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Description	Quantity	Unit	\$/Unit	Total Cost
SITEWORK:	Guanuty	OIIIE	a/OIII	i Otal GOSt
Excavation	71.29	CY	\$5.35	\$382
Imported Structural Backfill	36.37	CY	\$40.56	\$1,475
Native Backfill	0.00	CY	\$6.58	\$0
Haul Excess	71.29	CY	\$6.58	\$469
Allowance for Misc Items	5%		\$2,325.61	\$116
Subtotal				\$2,442
CONCRETE:				
Slab on Grade	26.14	CY	\$345.93	\$9,043
Containment Walls Bulk Tank Pads	7.75	CY	\$683.50	\$5,299
	17.10 0.00	CY	\$345.93	\$5,917
Day Tank Pads Transfer Pump Pads	0.00	CY	\$345.93	\$0 \$0
Metering Pump Pads	1.33	CY	\$345.93 \$345.93	\$461
Corridor	1.33	01	\$343.93	40 1
Slab on Grade	5.56	CY	\$345.93	\$1,922
Electrical Room	0.00		ψοτο,30	ψ1,022
Slab on Grade	3.04	CY	\$345.93	\$1,051
Allowance for Misc Items	5%		\$23,692.53	\$1,185
Subtotal			120,232.53	\$24,877
MASONRY:	High			
CMU Building	822.00	SF	\$157.92	\$129,812
Subtotal				\$129,812
METALS:				
Metal Stairway	1.00	EA	\$6,580.07	\$6,580
Grating	1.00	EA	\$1,579.22	\$1,579
Allowance for Misc Items	10%		\$8,159.28	\$816
Subtotal			(\$8,975
EQUIPMENT:				
EQUIPMENT.				
Bulk Tank	1.00	EA	\$20,154.94	\$20,155
Day Tank	0.00	EA	\$0.00	\$0
Transfer Pump	0.00	EA	\$0.00	\$0
Metering Pump	2.00	EA	\$6,737.98	\$13,476
Allowance for Misc Items	10%		\$33,630.90	\$3,363
Subtotal				\$36,994
INSTRUMENTS & CONTROLS:				
Instruments				
Chemical Tank Radar Level Transmitters	1.00	each	\$824.29	\$824
Chemical Tank Beacons	1.00	each	\$824.29	\$824
Day Tank Differential Pressure Transmitter	0.00	each	\$824.29	\$0
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch	0.00 2.00	each	\$1,099.05	\$0
Magmeter Magmeter		each	\$549.53	\$1,099
Sump Pump Float Switch	1.00	each each	\$549.53 \$274.76	\$550 \$275
Eyewash	1.00	each		
Number of Analog I/O Counts	5.00	each	\$824.29 \$208.82	\$824 \$1,044
Number of Digital I/O Counts	17.00	each	\$49.46	\$1,044
Number of Local Panels	1.00	each	\$10,331.10	\$10,331
Number of PLC's	1.00	each	\$10,990.54	\$10,991
I&C Conduit & Wire	140.00	If	\$9.53	\$1,334
Allowance for Misc Items	10%		\$28,936.76	\$2,894
Subtotal			720,000.10	\$31,830
				77.,000
MECHANICAL:				
Dina	1			
Pipe			-	
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0.00	lf ·	\$10.36	\$0

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Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC)	57.00	lf	\$10.36	\$59
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	57.00	If	\$11.98	\$683
Elbows Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$7.95	\$(
(1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$63.16	<u> </u>
CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH	8.00	each	\$7.95	\$64
(1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping-	8.00	each	\$63.16	\$50
LCDH (1-inch, Exposed, FRP) Tees			700.10	
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0.00	each	\$8.27	\$0
Chemical Transfer Pump Discharge Header Piping- CTDH (1-inch, Exposed, FRP)	0.00	each	\$109.33	\$0
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC)	2.00	each	\$8.27	\$17
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	2.00	each	\$109.33	\$219
End Caps				
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0.00	each	\$4.46	\$(
Chemical Transfer Pump Discharge Header Piping- CTDH (1-inch, Exposed, FRP)	0.00	each	\$32.34	\$0
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC)	2.00	each	\$4,46	\$9
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	2.00	each	\$32.34	\$65
Valves Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$0
(1-inch, Exposed, PVC, V-902, Diaphragm) Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$0
(1-inch, Exposed, PVC, V-902, Diaphragm) Chemical Metering Pump Suction Header Piping-LCSH	4.00	each	\$45.15	\$18 ⁷
(1-inch, Exposed, PVC, V-902, Diaphragm) Chemical Metering Pump Discharge Header Piping-	4.00	each	\$45.15	\$18
LCDH (1-inch, Exposed, FRP, V-902, Diaphragm) Allowance for Misc Items	10%		\$2,512.50	€ 25/
Subtotal	1078		\$2,012.00	\$25 ² \$2,76 ²
ELECTRICAL:			· · · · · · · · · · · · · · · · · · ·	
# MCC Sections	5.00	#	\$6,783.10	\$33,915
Switchgear	0.00	each	\$31,202.24	\$(
Adjustable Frequency Drives			7 7 7 7	······································
Metering Pumps	0.00	each	\$4,187.38	- \$0
User Defined Item #1	0.00	each	\$4,125.89	\$0
User Defined Item #2	0.00	each	\$4,125.89	\$0
User Defined Item #3	0.00	each	\$4,125.89	\$(
Electrical Conduit & Wire	40.00	lf	\$9.53	\$381
Allowance for Misc Items Subtotal	10%		\$34,296.63	\$3,430 \$37,726
HOPD DEFINITE FORMANT PERSON	CHART	1 14 4179	A 11 11 T	TOTAL 0000
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Item 1 Description	0.00		0.00	\$0
Item 2 Description	0.00		0.00	\$(
Item 3 Description Item 4 Description	0.00	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.00	\$(
Item 4 Description	0.00	AS DEFINE	0.00	\$(
Item 6 Description	0.00		0.00	\$C
Item 7 Description	0.00	d - Thatagageard Allerganteries	0.00	\$0
Item 8 Description	0.00		0.00	- Φt
Item 9 Description	0.00		0.00	\$0 \$0
Item 10 Description	0.00	1 12 12 12 12 12 12 12 12 12 12 12 12 12	0.00	\$0
Item 11 Description	0.00	E company of the comp	0.00	er er
Item 12 Description	0.00	San reasonate US	0.00	\$0 \$0
Item 13 Description	0.00		0.00	\$0
Item 14 Description	0.00		0.00	\$0
Item 15 Description	0.00		0.00	\$0
	1	JONA LILL (,	Ψ

Liquid Chemical NaOH

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Subtotal			*	\$0
Subtotal				\$275,42
Subiolai	 			Φ213,4 <u>2</u>
ALLOWANCES:		User Over-write		
Finishes Allowance	2.0%		\$306,023	\$6,120
I & C Allowance	2%		\$306,023	\$6,120
Mechanical Allowance	4%		\$306,023	\$12,24°
Electrical Allowance	2%		\$306,023	\$6,120
Facility Cost	 	982 Building SF	\$311.63	\$306,02

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1	<u>C</u>	H2M HILL P arame	etric Cost $ {m {m E}} $ stimating $ {m {m S}} $ ystem $ {m (CF)} $	PES)
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3		FACILITIES DESIG	GN & CONSTRUCTION COST MODUL	.E
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5	<u>File Version:</u>	1/5/2010 Click for CPES QA/QC	To Concrete Wall Thickness Help To Cost Summary Matrix To Unit Cost Databas	e English Commission
6				
7 8	Duair	4 N	Martin de MED	
9	-	ect Name: ect Number:	Waukesha WTP	
10	_	ect Manager:	Linda Mohr	
11		nator:	Jason Curl	
12	Proje	ect Description:	Fox River Alluvium and Shallow Groundwater	Roundup to the
13	Proie	ect Location (City):	Milwaukee	nearest; \$1.000
14	Proje	ect Location (State):	WISCONSIN	L. VVV
15		ect Location (Country):	USA	
16		struction Start (Month):	Jan	This Report is for INTERNAL Distribution
17		struction Start (Year):	2011	
18 19		struction Duration (months): Point of Construction:	24 Jan/2012	This Report is for
20	IVIU-I	om or oursu ucuon.	Jaiuzuiz	This Report is for EXTERNAL Distribution
	Item	Is This Facility Included in	SCOPE OF PROJECT	Cost
21		Project? (Yes or No)		
22		Yes	Inline Rapid Mix: RMX	\$623,000
23		Yes	Flocculation: FLOC	\$1,527,000
24		Yes	Lamella Clarifier: LAM	\$2,367,000
25		Yes	Filters: FILT	\$5,024,000
26		Yes	Surge Basin-Decanter: BWW	\$1,535,000
27		No	UV Disinfection: UVD	\$0
28		Yes	Concrete Clearwell: FWT	\$1,313,000
29		No	Steel Clearwell: FWT	\$0
30		No	In-Plant PS: FWPS	\$0
31		Yes	Vertical Turbine PS: FWPS	\$3,042,000
32	·	Yes	Filter BW PS: BWSPS	\$1,101,000
33		Yes	U.D. Facility: GEN	\$0
34		Yes	Liquid Chemical: FeCl3	\$393,000
35	. [Yes	Liquid Chemical: NaOCI	\$296,000
36	. [Yes Take	Liquid Chemical: FLUOR	\$186,000
37	·	Yes	Liquid Chemical: POLYPHOS	\$185,000
38	<u>[</u>	Yes	O&M Building: OMB	\$2,849,000
39	01155555			
40	SUBTOTAL -	PROJECT COST		\$20,441,000
41	ADDITIONAL T	DO ICOT COSTO		
		ROJECT COSTS:		
43	Demolition		0%	\$0
44	Overall Si		10%	\$2,045,000
45 40	Yard Elect	puter System	5%	\$1,023,000
46 47	Yard Pipin		7%	\$1,493,000
47 48		g ault Description	14% 0%	\$2,862,000
+0	OD WI DEL	uur Descripavii	U7e	\$0
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49		ault Description	0%	\$0
50		ault Description	0%	\$0
51		ith Additional Project Costs		\$27,864,000

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132						
133	<u>Description</u>	Quantity	<u>Unit</u>		<u>\$/Unit</u>	<u>Total Cost</u>
134				ļ		
135	SITEWORK:	440.04		•		675
136 137	Excavation Imported Structural Backfill	140.81 83.82	CY	\$	5.35 40.56	\$754 \$3,399
138	Native Backfill	0.00	CY	\$	6.58	\$3,395
139	Haul Excess	140.81	CY	\$	6.58	\$927
140	Allowance for Misc Items	5%	:	\$	5,079.48	\$254
141	Subtotal					\$5,333
142						
143	CONCRETE:					
144	Wall Footing	9.31	CY	\$	345.93	\$3,220
145	Stem Walls	0.00	CY	\$	683.50	\$0
146	Slab on Grade	27.50	CY	\$	345.93	\$9,513
147	Pipe Supports	14.00	EA	\$	438.67	\$6,141
148	Electrical Room Slab on Grade	2.13 5%	CY	\$	345.93	\$737
149 150	Allowance for Misc Items Subtotal	3%			\$19,613	\$981 \$20,593
151	GUDIUIAI					\$∠∪, 593
152	MASONRY:	Moderate				
153	CMU Building	864.20	SF	\$	131.60	\$113,730
154	Electrical Room	57.56	SF	\$	131.60	\$7,574
155	Subtotal	921.76		1		\$121,304
156	·					
157						
158		2.00	EA	\$	27,983.82	\$55,968
159	Allowance for Misc Items	10%	· .	\$	55,967.63	\$5,597
160	Subtotal		1			\$61,564.39
161						
162	INSTRUMENTS & CONTROLS:			ļ		
163 164	Instruments Mag Mater (42 inch)	2.00	EA	•	40 574 04	#04.440
165	Mag Meter (12-inch) pH / Temperature	1.00	EA EA	\$	10,574.21 2,093.45	\$21,148 \$2,093
166	Turbidity	1.00	EA :	\$	3,133.05	\$3,133
167		0.00	EA	\$	10,680.85	ψ5,133 \$0
168		1.00	EA	\$	21,794.63	\$21,795
169	Conductivity	0.00	EA	\$	2,057.84	\$0
170		2.00	EA	\$	3,948.04	\$7,896
171	Isolation Valve Actuators	4.00	each		\$5,064.93	\$20,260
172	Flow Control Valve Actuators	2.00	each		<i>\$5,064.93</i>	\$10,130
173		12.00	each		\$208.82	\$2,506
174		33.60	each		\$49.46	\$1,662
175		1.00	each		\$10,331.10	
176	I&C Conduit & Wire	552.52	lf		\$9.53	\$5,265
177	Allowance for Misc Items	10%		\$	106,218.79	\$10,622
178 179						\$116,841
180						
181	Monorall Hoist (3 Ton)	1.00	EA	\$	55,749.49	\$55,749
182	Hoist Rail	105.17	LF	\$	28.96	\$3,045
183	Allowance for Misc Items	10%		\$	58,794.83	\$5,879
184						\$64,674
185 186						
187	MECHANICAL: Pipe:	-				
		1	<u> </u>			
	Rapid Mix Pipe (20-inch, RW, Exposed ,Steel ,Cement	33.33	llf		\$365.28	\$12,176

- i	4:55 PM B	С	l D	E	F
\vdash	Flow Control Pipe (12-inch, FCP, Exposed ,Steel ,Cement	16.00	lf D	\$219.17	<u> </u>
189	Mortar .Paint)	10.00	11	\$219.17	φ 3,50 <i>1</i>
190	Elbows:				
191		4.00	an ab	69 400 07	#n 700
	Rapid Mix Pipe (20-inch)	4.00	each	\$2,199.87	\$8,799
192 193	Valves: Rapid Mix Isolation Valves (20-inch)	4.00	eách	\$16,089.26	#C4.0E3
194	Flow Control Valve (12-inch)	2.00	each	\$10,089.26	\$64,357
195	Allowance for Misc Items	10%	eacn	\$108,146.20	\$19,307
	Subtotal	1076		\$100,140.20	\$10,815
196 197	Subtotal		-		\$118,961
198	ELECTRICAL:				
199	MCC's				
-		5.00		ec 702 40	#22 D4E
200	Sections AFD's	5.00	each	\$6,783.10	\$33,915
201		0.00	t-	24 42 4 72	
202	Mechanical Mixers (3 hp each)	0.00	each	\$4,494.79	\$0
203	Switchgear	0.00	1	404 000 04	
204	Units	0.00	each	\$31,202.24	\$0
205	Electrical Conduit & Wire	85.00	lf	\$9.53	\$810
206	Allowance for Misc Items	10%		\$34,725	\$3,473
207	Subtotal				\$38,198
208				4	····
209	USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
210	Item 1 Description	0.00	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	0.00	\$0
211	Item 2 Description	0.00		0.00	\$0
212	Item 3 Description	0.00		0.00	\$0
213	Item 4 Description	0.00	And the second s	0.00	\$0
214	Item 5 Description	0.00		0.00	\$0
215	Item 6 Description	0.00		0.00	\$0
216	Item 7 Description	0.00	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	0.00	\$0
217	Item 8 Description	0.00		0.00	\$0
218	Item 9 Description	0.00	Sasse chearanteannst	0.00	\$0
219	Item 10 Description	0.00		0.00	\$0
220	Item 11 Description	0.00	94 (422) 25 20 20 21	0.00	\$0
221	Item 12 Description	0.00		0.00	\$0
222	Item 13 Description	0.00		0.00	\$0
223	Item 14 Description	0.00		0.00	\$0
224	Item 15 Description	0.00		0.00	\$0
225	Subtotal				\$0
226					
227	Subtotal				\$547,469
228					
229	ALLOWANCES:		User Over-write		•
230	Finishes Allowance	2.0%		\$622,124	\$12,442
231	I & C Allowance	5%		\$622,124	\$31,106
232	Mechanical Allowance	0%		\$622,124	\$0
233	Electrical Allowance	5%		\$622,124	\$31,106
234					
235	Facility Cost	12,000,000	GPD	\$0.05	\$622,124

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100	B	С	D	E	F
188				A comparison and participation of the	disk objects with his tree A. Co. 1995.
	Description	Quantity	Unit	\$/Unit	Total Cost
189		A STANDARD CO.	Surpeyed Association	3 43 13 13 13 13 1	S. B. Same and the second
190	SITEMODIA				
191 192	SITEWORK: Excavation	3,805	CY	#F 2F	#00.000
193	Imported Structural Backfill	617	CY	\$5.35	\$20,366 \$25,021
194	Native Backfill	1,032	CY	\$40.56 \$6.58	
195	Haul Excess	2,773	CY	\$6.58	\$6,793 \$18,244
196	Allowance for Misc Items	5%	0,	\$70,423.45	\$3,521
197	Subtotal	070		Ψ10,420.40	\$73,945
198	Cubota	<u></u>			Ψ, 0,040
199	CONCRETE:				
200	Influent Channel:				
201	Foundation	42	CY	\$382.16	\$16,188
	Channel Walls (Only 3 walls are covered here. The 4th wall	70	CY	\$683.50	\$47,563
202	is covered in the Flocc Basin.)	, -		7000.00	ψ 11,000
203	Elevated Slab	25	CY	\$1,088.69	\$27,007
204	Flocc Basin			\$1,000.00	421,001
205	Foundation	218	CY	\$382.16	. \$83,323
	Basin Walls (Only 3 walls are covered here. The Effluent	119	CY	\$683.50	\$81,280
	wall is covered in the Influent Channel of the Lamella			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	40.,
206	Clarifier)				
207	Under Baffle Wall	40	CY	\$683.50	\$27,065
208	Over Baffle Wall	40	CY	\$683.50	\$27,065
209	Elevated Slab	81	CY	\$1,088.69	\$88,341
210	Flocc Bearing Supports	42	EA	\$0.00	\$0
211	Electrical Room				
212	Slab on Grade	4 .	CY	\$345.93	\$1,435
213	Allowance for Misc Items	5%		\$399,265.97	\$19,963
214	Subtotal				\$419,229
215					
216	MASONRY:	Moderate			
217	CMU Building	4,312	SF	\$131.60	\$567,498
218	Electrical Room	112	SF	\$131.60	\$14,739
219	Subtotal	4,424			\$582,238
220					
221	METALS:				
222	Aluminum Handrail	233	LF	\$72.38	\$16,854
223	Additional Handrail with NO Building	0	LF	\$72.38	\$0
224	Stairs (1 per basin)	16	RISERS	\$394.80	\$6,270
225	Allowance for Misc Items	10%	·	\$23,124.34	\$2,312
226	Subtotal				\$25,437
227					
228	WOODS & PLASTICS:				
229	FRP Weir	6	LF	\$32.90	
230	FRP Ladder	4	ĒΑ	\$1,137.15	
231	Allowance for Misc Items	5%		\$4,732.07	\$237
232	Subtotal				\$4,969
233	THERMAL & MOINTINE PROTECTION				
234	THERMAL & MOISTURE PROTECTION:		0.5		
235	Concrete Liner	. 0	SF	\$16.00	\$0
236	Allowance for Misc Items	10%		\$0.00	\$0
237 238	Subtotal	······································			\$0
238	DOODS & WINDOWS				<u> </u>
	DOORS & WINDOWS:				
240	O/U Baffling ON/OFF Factor	0		-	
241 242	Serpentine Baffling ON/OFF Factor Stainless Steel Door (2' x 2') for O/U Baffling	1	E A	Ø4 050 01	\$0
		0	EA	\$1,052.81	\$0 \$4.044
243 244	Stainless Steel Door (2' x 2') for Serpentine Baffling Stainless Steel Door (7' x 2.5')	<u>4</u> 0	EA	\$1,052.81	\$4,211
244	Allowance for Misc Items	5%	EA	\$4,606.05	\$0 \$244
245 246	Subtotal	J%		\$4,211.24	\$211 \$4.422
246	OubiOtal				\$4,422
Z41					

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	В	С	D	E	F
	EQUIPMENT:				
- 1					
H					
- 1			}		
1					
248					
1	Horizontal Paddle Wheel Flocculation Mechanism (Paddles &	0	LF	\$0.00	\$
249	Drives)				
	Vertical Paddle Wheel Flocculation Mechanism (Paddles &	18	EA ·	\$0.00	\$6
250	Drives)		•		
1	Vertical Turbine Flocculation Mechanism (Turbines & Drives)	18	HP	\$1,477.12	\$26,58
251					
252	Vertical Turbine Flocculator VFD's	18	HP	\$596.65	\$10,74
253	Fabricated Slide Gate	2	EA	\$6,077.92	\$12,15
254	Allowance for Misc Items	10%		\$49,483.61	\$4,94
255	Subtotal			,	\$54,43
256					
257	ELECTRICAL:				
258	MCC's				
259	Sections	12	each	\$6,783.10	\$81,39
260	AFD's				
261	Flocculation Mixers Stage 1 (total facility) (1 hp each)	6	each	\$4,248.86	\$25,49
262	Flocculation Mixers Stage 2 (total facility) (1 hp each)	6	each	\$4,248.86	\$25,49
263	Flocculation Mixers Stage 3 (total facility) (1 hp each)	6	each	\$4,248.86	\$25,49
264	Flocculation Mixers Stage 4 (total facility) (0 hp each)	0	each	\$4,125.89	. \$0
265	Flocculation Mixers Stage 5 (total facility) (0 hp each)	0 -	each	\$4,125.89	\$0
266	Flocculation Mixers Stage 6 (total facility) (0 hp each)	0	each	\$4,125.89	\$(
267	Switchgear				
268	Units	0	each	\$31,202.24	\$0
269	Electrical Conduit & Wire	1,752	lf	\$9.53	\$16,694
270	Allowance for Misc Items	10%		\$174,571.06	\$17,457
271	Subtotal				\$192,028
272	· · · · · · · · · · · · · · · · · · ·				
273	INSTRUMENTS & CONTROLS:				
274	Instruments				
275	Level Switch	2	each	\$549.53	\$1,099
276	Number of Analog I/O Counts	43	each	\$208.82	\$9,02
277	Number of Digital I/O Counts	108	each	\$49.46	\$5,34
278	Number of PLC's	1	each	\$10,331.10	\$10,33
279	I&C Conduit & Wire	1,827	If	\$9.53	\$17,400
280	Allowance for Misc Items	10%	:	\$43,198.52	\$4,320
281	Subtotal	, , , , ,			\$47,518
282				·	
283	USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
284	Item 1 Description	0.00	3 566 CC	0.00	\$(
285	Item 2 Description	0.00	# JB4038440 - 7 99 / 5	0.00	\$(
286	Item 3 Description	0.00	9 雄化(公布)	0.00	\$0
287	Item 4 Description	0.00		0.00	\$(
288	Item 5 Description	0.00		0.00	\$0
289	Item 6 Description	0.00	d Automost agent are	0.00	\$(
290	Item 7 Description	0.00	면 100 mm - 100 mm (100 mm) 전 100 mm - 100 mm (100 mm)	0.00	\$(
291	Item 8 Description	0.00	90 #50: 1 - 00:250000 - 70:00 86 380: 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	0.00	\$(
292	Item 9 Description	0.00		0.00	\$(
293	Item 10 Description	0.00		0.00	\$(
294	Item 11 Description	0.00	7 () () () () () () () () () (0.00	\$0
295	Item 12 Description	0.00		0.00	\$(
296	Item 13 Description	0.00	10000000000000000000000000000000000000	0.00	\$(
297	Item 14 Description	0.00		0.00	\$(
298	Item 15 Description	0.00	CT 13.5 Page 56-1-7-5-5-5	0.00	\$
299	Subtotal				\$0
300					· · · · · · · · · · · · · · · · · · ·
301	Subtotal				\$1,404,21
302					
		 			
303	ALLOWANCES:		User Over-	i - i	•

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	-7.00 T W				
	В	C ·	D	E	F
304	Finishes Allowance	2.0%		\$1,526,323	\$30,526
305	I & C Allowance	2%		\$1,526,323	\$30,526
306	Mechanical Allowance	2%		\$1,526,323	\$30,526
307	Electrical Allowance	2%		\$1,526,323	\$30,526
308					
309	Facility Cost	12,000,000	GPD	\$0.13	\$1,526,323

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180					
 					
181	<u>Description</u>	Quantity	<u>Unit</u>	<u>\$/Unit</u>	Total Cost
182					
183	SITEWORK:				
184	Excavation	4,244	CY	\$ 5.35	\$22,713
185	Imported Structural Backfill	653	CY	\$ 40.56	\$26,492
186 187	Native Backfill Haul Excess	1,176 3,068	CY	\$ 6.58 \$ 6.58	\$7,738 \$20,185
188	Allowance for Misc Items	5%	CI	\$77,128	\$3,856
189	Subtotal			477,120	\$80,985
190	0001010		.5		
191	CONCRETE:				
192	Influent Channel:				
193	Foundation	37	CY	\$ 382.16	\$14,026
194	Channel Walls	77	CY	\$ 683.50	\$52,960
195	Elevated Slab	22	CY	\$ 1,088.69	\$24,216
196 197	Basin Foundation	138	CY	\$ 382.16	\$52,925
198	Channel Walls	264	CY	\$ 683.50	\$180,519
199	Elevated Slab	38	CY	\$ 1,088.69	\$41,369
200	Concrete Curb (8" X 8")	73	LF	\$ 32.90	\$2,402
201	Effluent Channel:				
202	Foundation	37	CY	\$ 382.16	\$14,026
203	Walls	77	CY	\$ 683.50	\$52,960
204	Elevated Slab	22	CY	\$ 1,088.69	\$24,216
205	Electrical Room				
206	Slab on Grade	2	CY	\$ 345.93	\$737
207	Allowance for Misc Items	5%		\$460,355	\$23,018
208 209	Subtotal				\$483,373
210	MASONRY:	Moderate			· · · · · · · · · · · · · · · · · · ·
211	CMU Building	4,746	SF	\$ 131.60	\$624,619
212	Electrical Room	58	SF	\$ 131.60	\$7,574
213	Subtotal	4,804		, , , ,	\$632,193
214					
215	METALS:				
216	Aluminum Handraíl	269	LF	\$ 72.38	\$19,470
217	Allowance for Misc Items	10%		\$ 19,470.17	\$1,947
218 219	Subtotal				\$21,417
220	WOODS & PLASTICS:				
221	FRP Ladder	4	EA	\$ 1,443.20	\$5,773
222	Allowance for Misc Items	5%	<u> </u>	\$ 5,772.82	\$289
223	Subtotal			V 0,112.02	\$6,061
224					
225	THERMAL & MOISTURE PROTECTION:				
226	Concrete Liner	0	SF	\$16.00	\$0
227	Allowance for Misc Items	10%		\$0.00	\$0
228	Subtotal				\$0
229	EQUIPMENT:				
	LACHTIMEN F.			'	
230		•			
1	Lamella Clarifier [WPL * PW * #P/T *# * COS(PAR)]	25,063	PLATE AREA	\$ 19.45	\$487,452
231		,	(SF)	10.70	Ψ-01,-02
232	Fabricated Slide Gate	2	EA	\$ 6,077.92	\$12,156
233	Hoseless Sludge Collector	. 4	EA	\$ 66,857.09	\$267,428
234	Allowance for Misc Items	10%		\$ 767,035.90	\$76,704
235 236	Subtotal				\$843,739
236	NOTE IN TENTO A CONTENT OF				
237	INSTRUMENTS & CONTROLS:				
238 239	Instruments		EA	¢ 9400.00	#40 E00
239	Turbidimeters Number of Analog I/O Counts	<u>4</u> 5	each	\$ 3,133.05 \$208.82	\$12,532 \$1,002,34
240	Number of Arialog I/O Counts	υ	Caul	\$208.82	\$1,002.34
H	Number of Digital I/O Counts	24	each	\$49.46	\$1,186.98
241	rambor or bigitar to oporto	47	Judi	943.40	ψ1,100. 3 0
242	Number of PLC's	1	each	\$10,331.10	\$10,331.10
243	I&C Conduit & Wire	321	LF	\$9.53	\$3,061.92
244	Allowance for Misc Items	10%	T	\$28,115	\$2,811.45
	7 11 11 11 11 11 11 11 11 11 11 11 11 11				
245 246	Subtotal				\$30,926

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	В	С	D	E	F
181	<u>Description</u>	Quantity	<u>Unit</u>	<u>\$/Unit</u>	<u>Total Cost</u>
247	MECHANICAL:				
248	Solids Collection Pipe (4-inch, USL, Immersed, Steel)	317	LF	\$66.15	\$20,969
249	Solids Collection Pipe Elbows	16	each	\$439.97	\$7,040
250	Mud Valves	4	EA	\$1,974.02	\$7,896
251	Allowance for Misc Items	10%		\$35,905	\$3,590
252	Subtotal				\$39,495
253					
254	ELECTRICAL:				
255	MCC's				•
256	Sections	5	each	\$6,783.10	\$33,915
257	AFD's				
258	Sludge Collectors (total facility) (1 hp each)	<u>-</u>	each	<i>\$4,248.86</i>	\$0
259	Switchgear		1		
260	Units		each	\$31,202.24	\$0
261	Electrical Conduit & Wire	161	LF	\$9.53	\$1,530.96
262	Allowance for Misc Items	10%		\$35,446	\$3,544.64
263	Subtotal				\$38,991
264					
265	USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
266	Item 1 Description	0.00	V 15- 4, 1-24-1-15-12-12-12-1	0.00	\$0
267	Item 2 Description	0.00		0.00	\$0
268	Item 3 Description	0.00		0.00	\$0
269	Item 4 Description	0.00		0.00	\$0
270	Item 5 Description	0.00		0.00	\$0
271	Item 6 Description	0.00		0.00	\$0 \$0
272	Item 7 Description	0.00		0.00	\$0
273	Item 8 Description	0.00		0.00	\$0
274	Item 9 Description	0.00		0.00	\$0
275	Item 10 Description	0.00	Control of the Contro	0.00	\$0 \$0
276	Item 11 Description	0.00		0.00	\$0
277	Item 12 Description	0.00		0.00	\$0
278 279	Item 13 Description Item 14 Description	0.00		0.00	\$0
280		0.00		0.00	\$0
281	Item 15 Description Subtotal	0.00		0.00	\$0 \$0
282	Subjoilar				<u> </u>
283	Cultistal				DO 477 404
263 284	Subtotal			,	\$2,177,181
£04	ALLOWANCES:			` <u> </u>	
285	ALLOWANCES.		User Over-write		
286	Finishes Allowance	2.0%		\$2,366,502	\$47,330
287	I & C Allowance	2%		\$2,366,502	\$47,330
288	Mechanical Allowance	2%		\$2,366,502	\$47,330
289	Electrical Allowance	2%		\$2,366,502	\$47,330
290					
291	Facility Cost	12,000,000	GPD	\$0.20	\$2,366,502

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317		Street programmer of the forest the contract of the contract o	Torro et conservationes mensiones franciscos con co	Leader be a section from the section of the section	rosinosos — Nakaika, 14.—A Maring a respecto
318	<u>Description</u>	Quantity	<u>Unit</u>	\$/Unit	Total Cost
319 320	SITEWORK: Soil Excavation	5429.67	CY	\$5.35	\$29,061
321	Imported Structural Backfill	640.14	CY	\$40.56	
322	Backfill	110.89	CY	\$6.58	
323	Haul Excess	5318.78	CY	\$6.58	\$34,998
324	Stair Case:				
325	Soil Excavation	638.48	CY	\$5.35	\$3,417
326	Imported Structural Backfill	87.11	CY	\$40.56	
327 328	Backfill Haul Excess	32.89 605.59	CY	\$6.58 \$6.58	
329	Blower Room:	605.59	C1	\$0.58	\$3,985
330	Soil Excavation	81.35	CY	\$5.35	\$435
331	Imported Structural Backfill	102.89	CY	\$40.56	
332	Backfill	4.04	CY	\$6.58	\$27
333	Haul Excess	77.31	CY	\$6.58	\$509
334	Electrical Room:				
335	Soil Excavation	16.29	CY	\$5.35	\$87
336	Imported Structural Backfill	19.63	CY	\$40.56	
337	Backfill	1.46	CY	\$6.58	
338 339	Haul Excess Allowance for Misc Items	14.83 5%	CY	\$6.58 \$108,034.91	\$98 \$5,402
340	Subtotal	376		\$100,034.91	\$113,437
341	Gubtotal				ψ, 10, 407
342	CONCRETE:				
343	Filters				
	Foundation (Includes Filter, Gulllet Channel, Filter	314.52	CY	\$382.16	\$120,198
	Influent/Backwash Wastewater Channel) (FSOGW *				
344	FSOGL * FOSGT) / 27 *#TF			,	
345	Pipe Gallery Wall	214.75	CY	\$683.50	\$146,779
346	Gullet Wall	42.53	CY	\$683.50	\$29,069
347	Filter Influent / Backwash Waste Channel Walls	362.33	CY	\$683.50	
348	Filter Influent / Backwash Waste Channel Lower Elevated Slab	20.99	CY	\$1,088.69	\$22,849
	Filter Influent / Backwash Waste Channel Upper	28.33	CY .	\$1,088.69	\$30,846
349	Elevated Slab				
350	End Walls	221.13	CY	\$683.50	\$151,141
351	Common Filter Influent		 	4	A 45.075
352	Slab on Grade	55.14	CY	\$345.93	\$19,076
353 354	Common Influent Channel Wall Common Influent Channel Elevated Slab	179.54 24.54	CY	\$683.50 \$1,088.69	\$122,718 \$26,719
355	Filter Gallery	24.04	01	Ψ1,000.09	Ψ20,719
356	Slab on Grade	389.93	CY	\$345.93	\$134,890
357	Filter Gallery Elevated Slab	57.77	CY	\$1,088.69	
358	Pipe Supports	1.84	CY	\$32.90	
359	Blower Room			1	
360	Slab on Grade	55.50	CY	\$345.93	
361	Blower Room Walls	29.08	CY	\$683.50	\$19,879
362	Stair Case	40.00	CV	AA 4	0.000
363	Slab on Grade	46.22	CY	\$345.93 \$683.50	
364 365	Stair Case Walls Electrical Room	25.58	01	\$08J.5U	\$17,481
366	Slab on Grade	3.04	CY	\$345.93	\$1,051
367	Electrical Room Walls	9.71	CY	\$683.50	
368	Allowance for Misc Items	5%		\$1,195,069.53	
369	Subtotal				\$1,254,823
370					
371		Moderate			
	CMU Filter Building	7599.82	SF	\$131.60	
	Blower Room	691.67	SF	\$131.60	
	Electrical Room	82.00	SF	\$131.60	\$10,791
	Subtotal				\$1,101,963
376 377					
311	IVIL FALO.	l .	<u> </u>		<u> </u>

	4:56 PM				
	В	С	D	. E	F
378	Metal Guardrail with Pickets	415.33	LF	\$72,38	\$30,062
379	Filter Access Hatch	13.44	SF	\$109.91	
380	Stairs (FBD * 12/8)	32.00	Risers	\$394.80	\$12,63
381	Allowance for Misc Items	10%		\$42,695.87	\$4,270
382	Subtotal				\$46,965
383					
384	THERMAL & MOISTURE PROTECTION:				
385	Concrete Liner	0	SF	\$16.00	\$0
386	Allowance for Misc Items	10%		\$0.00	\$(
387	Subtotal				\$0
388					
	EQUIPMENT:				
					•
389					
390	Fabricated Slide Gates, 42-inch	2	EA :	\$7,111.04	\$14,222
391	Underdrain - Leopold Type S	1,852	SF	\$69.90	\$129,45
392	Wash Troughs				
393	Conventional	0	LF	\$234.61	\$(
394	Media Retaining	223	LF	\$531.99	\$118,633
395	Media				· · · · · · · · · · · · · · · · · · ·
396	Bottom Media - Sand (ES=0.5 UC=1.4)	1,852	CF	\$17.47	\$32,364
397	Middle Media - Coal (ES=0 UC=0)	0	CF	\$23.30	\$(
398	Top Media - Coal (ES=1 UC=1.4)	7,408	CF	\$23.30	\$172,607
	Air Scour Blowers (88 hp each)	2	EA	\$71,524.98	\$143,050
	,				4
399					
400	Allowance for Misc Items	10%		\$610,331.42	\$61,033
401	Subtotal			\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	\$671,365
402					Ψ071,000
403	INSTRUMENTS & CONTROLS:				
404	Instruments				
405	Filter Effluent Magmeter (16-inch)	4.00	EA	\$14,438.40	\$57,754
406	Combined Filter Effluent Magmeter (30-inch)	0.00	EA	\$23,932.23	\$07,75
407	Isolation Valve Actuators	24.00	EA	\$5,064.93	\$121,558
408	Control Valve Actuators	4.00	EA	\$5,064.93	
409	Turbidimeters	4.00	EA		\$20,260
410	Particle Counters	4	EA	\$3,133.05	\$12,532
411	Level Transmitters			\$6,764.54	\$27,058
		4	EA	\$7,120.57	\$28,482
412	Differential Pressure Transmitters	4	EA	\$7,120.57	\$28,482
413	Filter Influent Level Transmitter	2	EA	\$7,120.57	\$14,241
414	Air Scour Differential Pressure Transmitter	2	EA	\$7,120.57	\$14,241
ا ا	Air Scour Discharge Pressure Indicator Transmitter	2 .	EA	\$7,120.57	\$14,24 1
415					
أيرا	Number of Analog I/O Counts	53	EA	\$208.82	\$11,026
416					
<u>, , </u>	Number of Digital I/O Counts	149	EA	\$49.46	\$7,359
417		 			
418	Number of PLC's	1	EA	\$10,331.10	\$10,331
419	I&C Conduit & Wire	3,438	LF	\$9.53	\$32,760
420	Allowance for Misc Items	10%		\$400,325.99	\$40,033
421	Subtotal				\$440,359
422					· · · · · · · · · · · · · · · · · · ·
423	CONVEYING SYSTEMS:			· ·	
424	Monorail Hoist (3 Ton)	1	EA	\$3,257.13	\$3,257
425	Hoist Rail	162	LF	\$32.90	\$5,324
426	Allowance for Misc Items	5%	P	\$8,581.61	\$429
427	Subtotal				\$9,011
428					
429	MECHANICAL:				
430	Pipe				
	Air Scour Pipe-BAW (12-inch , Exposed , Steel , None	216	LF	\$198.45	\$42,899
			1	1	7,500

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	В	С	D	E	F
	Filter Influent Header Pipe-FIH (30-inch , Buried ,	0	LF	\$547.92	\$0
432	Steel , Cement Mortar , Fusion Bonded Epoxy)				
\neg	Filter Influent Pipe-FIH (20-inch , Encased , Steel ,	0	LF	\$365.28	\$0
433	Cement Mortar , Fusion Bonded Epoxy)				,
\neg	Filter Effluent Pipe-FE (16-inch , Exposed , Steel ,	50	LF	\$292.22	\$14,613
434	Cement Mortar , Paint)	• -		¥	4,0.0
	Filter Effluent Pipe-FE (16-inch , Encased , Steel ,	50	LF	\$292.22	\$14,613
435	Cement Mortar , Fusion Bonded Epoxy)	V	[-	9202.22	Ψ1-1,010
''''	Filter Control Valve Pipe-FCV (12-inch , Exposed ,	32	LF	\$198.45	\$6,350
436	Steel, None, None)	32		\$190.43	φυ,330
730	Filter Effluent Header Pipe-FEH (30-inch, Encased,	64	LF	\$5.47.00	#04 BD4
12-1	· · ·	04	LF	\$547.92	\$34,884
437	Steel , Cement Mortar , Fusion Bonded Epoxy)	40	· 1 pa	22222	A40.040
400	Filter to Waste-FTW (16-inch , Exposed , Steel ,	43	LF	\$292.22	\$12,612
438	Cement Mortar , Paint)			4.5.5.5.5	
	Filter to Waste-FTW (16-inch , Encased , Steel ,	153	LF	\$292.22	\$44,807
439	Cement Mortar , Fusion Bonded Epoxy)				
- 1	Backwash Supply Pipe-BWS (30-inch , Exposed ,	170	LF	\$547.92	\$93,186
440	Steel , Cement Mortar , Paint)				
ŀ	Backwash Supply Pipe-BWS (30-inch , Encased ,	48	LF	\$547.92	\$26,300
441	Steel , Cement Mortar , Fusion Bonded Epoxy)				
\neg	Backwash Waste Pipe-BWW (30-inch , Encased ,	10	LF	\$547.92	\$5,479
442	Steel , Cement Mortar , Fusion Bonded Epoxy)				,:-
443	Elbows				
444	Air Scour Pipe-BAW (12-inch , Steel)	16	EA	\$1,319.92	\$21,119
445	Filter Influent Header Pipe-FIH (30-inch , Steel)	0	EA	\$3,299.80	\$0
446	Filter Influent Pipe-FIH (20-inch , Steel)	0	EA	\$2,199.87	\$0 \$0
447	Filter Effluent Pipe-FE (16-inch , Steel)	4	EA	\$1,759.89	\$7,040
448	Filter Effluent Pipe-FE (16-inch , Steel)	4	EA	\$1,759.89	\$7,040
449	Filter Control Valve Pipe-FCV (12-inch , Steel)	0	EA	\$1,319.92	\$0
450	Filter Effluent Header Pipe-FEH (30-inch , Steel)	0	EA	\$3,299.80	\$0
451	Filter to Waste-FTW (16-inch , Steel)	6	EA	\$1,759.89	\$10,559
452	Filter to Waste-FTW (16-inch , Steel)	0	EA	\$1,759.89	\$0
453	Backwash Supply Pipe-BWS (30-inch , Steel)	2	EA	\$3,299.80	\$6,600
454	Backwash Supply Pipe-BWS (30-inch , Steel)	2	EA	\$3,299.80	\$6,600
455	Backwash Waste Pipe-BWW (30-inch , Steel)	0	EA	\$3,299.80	\$0
456	Tees				
457	Air Scour Pipe-BAW (12-inch, Steel)	4	EA	\$3,007.27	\$12,029
458	Filter Influent Header Pipe-FIH (30-inch, Steel)	0	EA	\$7,518.19	\$0
459	Filter Influent Pipe-FIH (20-inch , Steet)	0	EA .	\$5,012.12	\$0
460	Filter Effluent Pipe-FE (16-inch , Steel)	4	EA	\$4,009.70	\$16,039
461	Filter Effluent Pipe-FE (16-inch , Steel)	0	EA	\$4,009.70	\$0
462	Filter Control Valve Pipe-FCV (12-inch , Steel)	0	EA	\$3,007.27	\$0
463	Filter Effluent Header Pipe-FEH (30-inch , Steel)	0	EA	\$7,518.19	
464					\$0
_	Filter to Waste-FTW (16-inch , Steel)	0	EA	\$4,009.70	\$0
465	Filter to Waste-FTW (16-inch , Steel)	2	EA	\$4,009.70	\$8,019
466	Backwash Supply Pipe-BWS (30-inch , Steel)	a. 6 · .	EA	\$7,518.19	\$45,109
467	Backwash Supply Pipe-BWS (30-inch , Steel)	0	EA	\$7,518.19	\$0
468	Backwash Waste Pipe-BWW (30-inch , Steel)	0	EA	\$7,518.19	\$0
469	Crosses				
470	Air Scour Pipe-BAW (12-inch , Steel)	2	EA	\$4,009.70	\$8,019
471	Filter Influent Header Pipe-FIH (30-inch , Steel)	0	EA	\$10,024.25	\$0
472	Filter Influent Pipe-FIH (20-inch , Steel)	0	EA	\$6,682.83	\$0
473	Filter Effluent Pipe-FE (16-inch , Steel)	. 0	EA	\$5,346.27	\$0
474	Filter Effluent Pipe-FE (16-inch , Steel)	0	EA	\$5,346.27	\$0
475	Filter Control Valve Pipe-FCV (12-inch , Steel)	0	EA	\$4,009.70	\$0 \$0
476	Filter Effluent Header Pipe-FEH (30-inch, Steel)	2	EA	\$10,024.25	\$20,048
477	Filter to Waste-FTW (16-inch , Steel)	0	EA		
478				\$5,346.27	\$0
	Filter to Waste-FTW (16-inch , Steel)	0	EA	\$5,346.27	\$0
479	Backwash Supply Pipe-BWS (30-inch , Steel)	0	EA	\$10,024.25	\$0
480	Backwash Supply Pipe-BWS (30-inch , Steel)	0	EA .	\$10,024.25	\$0
481	Backwash Waste Pipe-BWW (30-inch , Steel)	0	EA	\$10,024.25	\$0
482	Valves				
483	Air Scour Pipe-BAW (12-inch ,V500 - BFV)	4	EA	\$9,653.56	\$38,614
	Filter Influent Header Pipe-FIH (30-inch ,V500 - BFV)	0	EA	\$24,133.90	\$0
484				+,· ₁	

485 486 487 488	B Filter Influent Pipe-FIH (20-inch ,V500 - BFV)	<u> </u>	D	E	F
486 487	Filter Influent Pipe-FIH (20-inch ,V500 - BFV)				
487		4	EA	\$16,089.26	\$64,357
	Filter Effluent Pipe-FE (16-inch ,V500 - BFV)	4	EA	\$12,871.41	\$51,486
488	Filter Effluent Pipe-FE (16-inch ,V500 - BFV)	0	EA	\$12,871.41	\$0
400	Filter Control Valve Pipe-FCV (12-inch ,V500 - BFV)	4	EA	\$9,653.56	\$38,614
	Filter Effluent Header Pipe-FEH (30-inch ,V500 - BFV)	0	EA	\$24,133.90	\$0
489	E''			4.5	
490	Filter to Waste-FTW (16-inch ,V500 - BFV)	4	EA	\$12,871.41	\$51,486
491	Filter to Waste-FTW (16-inch ,V500 - BFV)	0	EA	\$12,871.41	\$C
492	Backwash Supply Pipe-BWS (30-inch ,V500 - BFV)	4	EA	\$24,133.90	\$96,536
493	Backwash Supply Pipe-BWS (30-inch ,V500 - BFV)	. 0	EA	\$24,133.90	· \$0
494	Backwash Waste Pipe-BWW (30-inch ,V500 - BFV)	4	EA	\$24,133.90	\$96,536
495	Allowance for Misc Items	5%		\$901,593.08	\$45,080
496	Subtotal	J 70		φου 1,0οο.00	
497	Subtotal				\$946,673
498	ELECTRICAL:				
499	MCC's				
500	Sections	Е		#C 700 40	
501	AFD's	<u></u>	EA	\$6,783.10	\$33,915
502	Air Scour Blowers (88 hp each)			044.040.04	Φ.
_		-	EA .	\$14,946.94	\$0
503	Switchgear		F	404 000 04	·
504	Units	407	EA	\$31,202.24	\$0
505	Electrical Conduit & Wire	127	LF	\$9.53	\$1,213
506	Allowance for Misc Items	5%		\$35,128.81	\$1,756
507	Subtotal				\$36,885
508	LOCK REPUER FORWARD LITERS			4	
509	USER DEFINED ESTIMATE ITEMS	QUANT	UNIT	\$/UNIT	TOTAL COST
510	Item 1 Description	- E-10 (0.00 - s)		#4.00 0:00	\$0
511	Item 2 Description	0.00		0.00	\$0
512	Item 3 Description	0.00		0.00	\$0
513	Item 4 Description	0.00		0.00	\$0
514	Item 5 Description	0.00	AMORPHON CO.	0.00	\$0
515	Item 6 Description	0.00	DESCRIPTION AND THE RESERVE OF THE PERSON OF	0.00	\$0
516	Item 7 Description	0.00	Designation (1997)		\$0
517	Item 8 Description	0.00		0.00	\$0
518	Item 9 Description	0:00	######################################	0.00	\$0
519	Item 10 Description	0.00		0.00	\$0
520	Item 11 Description	0.00		0.00	\$0
521	Item 12 Description	0.00		0.00	\$0
522	Item 13 Description	0.00		0.00	\$0
523	Item 14 Description	0.00	STANCE CONTRACTOR	0.00	\$0
524	Item 15 Description	0.00	Big 56 in particular later succession	0.00	\$0
525	Subtotal				\$0
526					
527	Subtotal				\$4,621,479.61
528	ALLOWANDEO.				
529	ALLOWANCES:	05'	User Over-write		
530	Finishes Allowance	2%		\$5,023,347	\$100,466.95
531	Mechanical Allowance	2%		\$5,023,347.40	\$100,466.95
532	I&C Allowance	2%	MANAGEMENT SHOULD THE STATE OF	\$5,023,347.40	\$100,466.95
533 534	Electrical Allowance	2%		\$5,023,347.40	\$100,466.95
535	Facility Cost	12,000,000	GPD	\$0.42	\$5,023,347

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Description	Quantity	Unit	\$/Unit	Total Cost
SITEWORK:				
Excavation				
Influent Channel, Surge Basin & Decant Pump	5311.63	CY	\$5.35	\$28,429
Dry Pit, Backwash Waste Sludge Wet Well, & Backwash Waste	1502.22	CY	75.00	\$8,040
Recycle Wet Well			\$5.35	
Pipe Vault	351.82	CY .	\$5.35	\$1,883
Imported Structural Backfill				
Influent Channel, Surge Basin & Decant Pump	426.72	CY .	\$40.56	\$17,306
Dry Pit, Backwash Waste Sludge Wet Well, & Backwash Waste	80.20	CY		\$3,252
Recycle Wet Well	ļ <u></u>	1007	\$40.56	***
Pipe Vault	70.17	CY	\$40.56	\$2,846
Native Backfill	1115.38	CY	\$6.58	\$7,339
Influent Channel, Surge Basin & Decant Pump Dry Pit, Backwash Waste Sludge Wet Well, & Backwash Waste	32.00	CY	\$0.30	\$211
Recycle Wet Well	32.00	61	\$6.58	ΨΖΙΙ
Pipe Vault	103.39	CY	\$6.58	\$680
Haul Excess	100.00	01	ψ0.50	Ψ000
Influent Channel, Surge Basin & Decant Pump	4196.25	CY	\$6.58	\$27,612
Dry Pit, Backwash Waste Sludge Wet Well, & Backwash Waste	1470.22	CY	V	\$9,674
Recycle Wet Well			\$6.58	, , , , , ,
Pipe Vault	248.42	CY	\$6.58	\$1,635
Allowance for Misc Items	5%		\$108,907.43	\$5,445
Subtotal				\$114,353
CONCRETE:				
Surge Basin:				
Foundation	308.85	CY	\$382.16	\$118,028
Perimeter Walls	382.34	CY	\$683.50	\$261,329
Influent Channel Wall	62.23	CY	\$683.50	\$42,536
Concrete Curb (8" X 8")	76.89	LF	\$32.90	\$2,530
Backwash Recycle Sump:	40.00	CY	CO 45 00	PC E24
Siab on Grade	18.89 90.62	CY	\$345.93	\$6,534 \$61,940
Walls	9.23	CY	\$683.50 \$1,088.69	\$10,045
Elevated Slab Backwash Sludge Sump:	9.23	01	\$1,000.03	\$10,040
Slab on Grade	13.33	CY	\$345.93	\$4,612
Walls	66.77	CY	\$683.50	\$45,640
Elevated Slab	6.88	CY	\$1,088.69	\$7,491
Dry Pit:			1,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Slab on Grade	5.31	CY	\$345.93	\$1,836
Walls	32.33	CY	\$683.50	\$22,096
Elevated Slab	3.49	CY	\$1,088.69	\$3,802
Pipe Vault:		i		
Lower Elevated Slab	29.64	CY	\$1,088.69	\$32,271
Upper Elevated Slab	29.64	CY	\$1,088.69	\$32,271
Walls	32.67	CY	\$683.50	\$22,333
Electrical Room Slab on Grade	5.27	CY	\$345.93	\$1,822
Allowance for Misc Items	5%		\$677,117.15	\$33,856
Subtotal				\$710,973
MACONDY		3 3		
MASONRY:	Moderate	I C E	\$131.60	\$C
Pump Sumps and Pipe Vault	0.00 80.89	SF SF	\$131.60	\$10,645
Electrical Room	80.89	J.	\$131.00	\$10,645
Subtotal	60.00	-		φ10,040
METALS:				
Influent Channel:				
Grating	185.56	SF	\$72.38	\$13,431
Surge Basin:	1			4 1 - 0
Grating	4.00	SF	\$72.38	\$290
Backwash Recycle Sump:				
Grating	4.00	SF	\$72.38	\$290
Backwash Sludge Sump:				
Grating	4.00	SF	\$72.38	\$290
Dry Pit:			-	

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Ladder	27.60	VLF	\$99.36	\$2,742
Pipe Vault:		0,5		A00
Grating	4.00	SF	\$72.38	\$290
Stairs	16.00	RISERS	\$394.80	\$6,31
Allowance for Misc Items	10%		\$23,647.47	\$2,365
Subtotal				\$26,012
DOORS & WINDOWS:				
Backwash Recycle Sump:	4.00		64 400 75	64.40
Aluminum Access Hatch (10' x 5')	1.00	EA	\$4,400.75	\$4,40
Backwash Sludge Sump:	4.00	EA	84 000 04	64.00
Aluminum Access Hatch (3' x 3')	1.00	EA	\$1,098.21	\$1,098
Dry Pit:	4.00		64 009 24	\$1,09
Aluminum Access Hatch (3' x 3')	1.00	EA	\$1,098.21	\$1,09
Pipe Vault:	0.00		64 000 04	PO 40
Aluminum Access Hatch (3' x 3')	2.00	EA	\$1,098.21	\$2,19
Allowance for Misc Items	5%		\$8,793.60	\$44
Subtotal				\$9,23
EQUIPMENT:		9		
			·	
Floating Decanter Plate System	0.00	SF	\$72.94	\$(
Traveling Solids Removal Mechanism	2.00	EA	\$66,857.09	\$133,71
Washwater Decant Pump (Submersible Pump)	3.00	EA	\$18,993.38	\$56,98
Sludge Pump (Submersible Pump)	2.00	EA.	\$12,409.63	\$24,81
Mixers	0.00	HP	\$1,580.26	\$1
Allowance for Misc Items	10%		\$215,513.57	\$21, 55 ⁻
Subtotal				\$237,06
I&C:	•			
Instruments	•			
Backwash Waste Recycle Header Magmeter (BWRH, 12 inch)	1.00	EA		\$10,57
			\$10,573.93	
Isolation Valve Actuators (Electric)	5.00	EA	\$5,064.93	\$25,32
Level Transmitters	1.00	EA	\$7,120.57	\$7,12
Number of Analog I/O Counts	6.00	EA	\$208.82	\$1,25
Number of Digital I/O Counts	30.00	EA	\$49.46	\$1,48
Number of Local Panels	1.00	EA	\$10,331.10	\$10,33
Number of PLC's	1.00	EA	\$10,990.54	\$10,99
I&C Conduit Wire	259.78	if	\$9.53	\$2,47
Allowance for Misc Items	5%		\$69,552.80	\$3,47
Subtotal	070		\$00,00Z.00	\$73,03
Subiolai	4			. 470,00
MECHANICAL:				
Pipe:	0.00	LF	\$657.50	\$
Backwash Waste (BWW, 36 inch, Steel)	0.00	LF	\$123.32	\$
Filter to Waste (FTW, 18 inch, DI)	16.22	LF	\$219.17	\$3,55
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	0.00	LF	\$219.17	\$3,33 \$
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	81.00	LF	\$54.81	\$4,43
Backwash Waste Recycle Lateral (BWRL, 8 inch, DI)				
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	16.22	LF	\$109.58	\$1,77
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	0.00	LF	\$109.58	\$
Backwash Waste Sludge Lateral (BWSL, 6 inch, Steel)	54.00	LF	\$109.58	\$5,91
Elbows:			20050 70	
Backwash Waste (BWW, 36 inch, Steel)	0.00	EA	\$3,959.76	\$
Filter to Waste (FTW, 18 inch, DI)	0.00	EA.	\$2,588.21	\$
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	1.00	EA	\$1,319.92	\$1,32
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	0.00	EA	\$1,319.92	\$
Backwash Waste Recycle Lateral (BWRL, 8 inch, DI)	6.00	EA	\$1,150.31	\$6,90
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	1:00	EA:	\$659.96	\$66
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	0.00	EA	\$659.96	
Backwash Waste Sludge Lateral (BWSL, 6 inch, Steel)	4.00	EA	\$659.96	\$2,64
Tee:				
Backwash Waste (BWW, 36 inch, Steel)	0.00	EA	\$9,021.82	
Filter to Waste (FTW, 18 inch, DI)	0.00	EA	\$4,297.65	
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	2.00	EA	\$3,007.27	\$6,01

Item 1 Description	. \$ \$
Backwash Waste Sludge Header (EWSH, 6 inch, Steet) 0.00 EA	\$
Backwash Waste Sludge Header (BWSH, 6 inch, Steet) 0.00 EA \$1,503.64	
Backwash Waste Sludge Header (BWSH, 6 Inch, Steel) 0.00 EA \$1,503.64	\$1,50
Backwash Waste (BWW, 36 inch, Steel)	\$
Valves: Backwash Waste (BWW, 36 inch, Steel) 0.00 EA \$28,960.68 Filter to Waste (FTW, 18 inch, DI) 0.00 EA \$12,602.74 Backwash Waste Recycle Header (BWRH, 12 inch, Steel) 0.00 EA \$9,633.66 Backwash Waste Recycle Header (BWRH, 12 inch, Steel) 0.00 EA \$9,633.66 Backwash Waste Recycle Leteral (BWRH, 12 inch, DI) 3.00 EA \$5,601.22 Backwash Waste Studge Header (BWSH, 6 inch, DI) 3.00 EA \$5,601.22 Backwash Waste Studge Header (BWSH, 6 inch, Steel) 0.00 EA \$4,226.78 Backwash Waste Studge Lateral (BWSL, 6 inch, Steel) 0.00 EA \$4,226.78 Backwash Waste Studge Lateral (BWSL, 6 inch, Steel) 0.00 EA \$4,226.78 Backwash Waste Studge Lateral (BWSL, 6 inch, Steel) 2.00 EA \$4,226.78 Balckwash Waste Studge Lateral (BWSL, 6 inch, Steel) 5% \$61,186.86 Subtotal ELECTRICAL: # MCC Sections 8.00 EA \$37,202.24 Adjustable Frequency Drives 8.00 EA \$4,725.89 Basin Mixer 0.00 EA \$4,725.89 Basin Mixer 0.00 EA \$4,725.89 Budge Pumps (Standby) 1.00 EA \$4,725.89 Begin Glader 1.00 EA \$4,725.89	\$
Backwash Waste (BWW, 36 inch, Steel)	
Filter to Waste (FTW, 18 inch, Di)	\$
Backwash Waste Recycle Header (BWRH, 12 Inch, Steet) 0.00 EA \$9,653.56 Backwash Waste Recycle Lateral (BWRL, 8 Inch, Steet) 0.00 EA \$9,653.56 Backwash Waste Recycle Lateral (BWRL, 8 Inch, DI) 3.00 EA \$5,601.22 Backwash Waste Sludge Header (BWSH, 6 Inch, Steet) 0.00 EA \$4,226.78 Backwash Waste Sludge Leader (BWSH, 6 Inch, Steet) 0.00 EA \$4,226.78 Backwash Waste Sludge Leader (BWSL, 6 Inch, Steet) 2.00 EA \$4,226.78 Backwash Waste Sludge Leader (BWSL, 6 Inch, Steet) 2.00 EA \$4,226.78 Balcwash Waste Sludge Leader (BWSL, 6 Inch, Steet) 2.00 EA \$4,226.78 Balcwash Waste Sludge Leader (BWSL, 6 Inch, Steet) 2.00 EA \$4,226.78 Balcwash Waste Sludge Leader (BWSL, 6 Inch, Steet) 2.00 EA \$4,226.78 Balcwash Waste Sludge Leader (BWSL, 6 Inch, Steet) 2.00 EA \$4,226.78 WICC Sections 8.00 EA \$51,102.24 Adjustable Frequency Drives 0.00 EA \$51,202.24 Adjustable Frequency Drives 0.00 EA \$4,472.58 Sludge Pumps (Active) 1.00 EA \$4,472.58 Sludge Pumps (Standby) 1.00 EA \$4,871.14 Recycle Pumps (Standby) 1.00 EA \$6,299.20 Recycle Pumps (Standby) 1.00	\$
Backwash Waste Recycle Header (BWRH, 12 inch, Steet) 0.00 EA \$9,653.56 Backwash Waste Recycle Lateral (BWRL, 8 inch, DI) 3.00 EA \$5,601.22 Backwash Waste Studge Header (BWSH, 6 inch, Steet) 0.00 EA \$4,826.78 Backwash Waste Studge Header (BWSH, 6 inch, Steet) 0.00 EA \$4,826.78 Backwash Waste Studge Lateral (BWSL, 6 inch, Steet) 2.00 EA \$4,826.78 Allowance for Misc Items 5% \$61,186.88 Subtotal	\$
Backwash Waste Recycle Lateral (BWRL, 8 inch, DJ) 3.00 EA \$5,601.22 Backwash Waste Sludge Header (BWSH, 6 inch, Steel) 0.00 EA \$4,826.78 Backwash Waste Sludge Leateral (BWSL, 6 inch, Steel) 0.00 EA \$4,826.78 Backwash Waste Sludge Lateral (BWSL, 6 inch, Steel) 2.00 EA \$4,826.78 Backwash Waste Sludge Lateral (BWSL, 6 inch, Steel) 2.00 EA \$4,826.78 Backwash Waste Sludge Lateral (BWSL, 6 inch, Steel) 2.00 EA \$4,826.78 Allowance for Misc Items 5% \$61,186.86 Subtotal	\$
Backwash Waste Sludge Header (BWSH, 6 inch, Steel) 0.00 EA \$4,826.78	\$16,80
Backwash Waste Sludge Lateral (BWSL, 6 inch, Steel) 2.00 EA \$4,826.78	\$
Backwash Waste Sludge Lateral (BWSL, 6 inch, Steel) 2.00 EA \$4,826.78 Allowance for Misc Items 5% \$61,186.86 Subtotal	\$
Allowance for Misc Items 5% \$61,186.86	\$9,65
Subtotal	\$3,05
#MCC Sections	\$64,24
#MCC Sections	
#MCC Sections	
Switchgear 0.00 EA \$31,202.24 Adjustable Frequency Drives 0.00 EA \$4,125.89 Basin Mixer 0.00 EA \$4,125.89 Sludge Pumps (Active) 1.00 EA \$4,871.14 Sludge Pumps (Standby) 1.00 EA \$4,871.14 Sludge Pumps (Standby) 1.00 EA \$4,871.14 Recycle Pumps (Standby) 1.00 EA \$6,299.20 Recycle Pumps (Standby) 1.00 EA \$6,299.20 Electrical Conduit & Wire 259.78 f \$9.53 Allowance for Misc Items 5% \$85,380.01 Subtotal	\$54,26
Adjustable Frequency Drives Basin Mixer 0.00 EA \$4,125.89	\$34,26 \$
Basin Mixer 0.00	4
Sludge Pumps (Active)	\$
Sludge Pumps (Standby)	\$4,87
Recycle Pumps (Active)	\$4,87 \$4,87
Recycle Pumps (Standby)	\$4,6 <i>1</i> \$12,59
Electrical Conduit & Wire 259.78 If \$9.53 Allowance for Misc Items 5% \$85,380.01 Subtotal	\$12,59 \$6,29
Allowance for Misc Items 5% \$85,380.01	\$6,29 \$2,47
Subtotal USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT TOT/ Item 1 Description	\$2,47 \$4,26
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT TOT/ Item 1 Description	\$4,26 \$89,64
Item 1 Description	φου,04
Item 1 Description	L COST
Item 2 Description	
Item 3 Description	, \$ \$
Item 4 Description 0.00 0.00 0.00 Item 5 Description 0.00 0.00 0.00 Item 6 Description 0.00 0.00 0.00 Item 7 Description 0.00 0.00 0.00 Item 8 Description 0.00 0.00 0.00 Item 9 Description 0.00 0.00 0.00 Item 10 Description 0.00 0.00 0.00 Item 11 Description 0.00 0.00 0.00 Item 12 Description 0.00 0.00 0.00 Item 13 Description 0.00 0.00 0.00 Item 14 Description 0.00 0.00 0.00 Subtotal	\$
Item 5 Description	<u> </u>
Item 6 Description	\$ \$
Item 7 Description	<u> </u>
Item 8 Description	\$
Item 9 Description	- \$
Item 10 Description 0.00 0.00 Item 11 Description 0.00 0.00 Item 12 Description 0.00 0.00 Item 13 Description 0.00 0.00 Item 14 Description 0.00 0.00 Item 15 Description 0.00 0.00 Subtotal 0.00 0.00	\$
Item 11 Description	<u> </u>
Item 12 Description 0.00 0.00 Item 13 Description 0.00 0.00 Item 14 Description 0.00 0.00 Item 15 Description 0.00 0.00 Subtotal 0.00 0.00	\$ \$ \$ \$
Item 13 Description 0.00 0.00	\$
Item 14 Description	\$
Item 15 Description 0.00 0.00 Subtotal	\$
Subtotal	\$
	\$
Subtotal	. \$0
Subtotal	
	1,335,206.9
ALLOWANCES: User Over-write	
Finishes Allowance 2% \$1,534,721	\$30,694.4
! & C Alfowance 3% \$1,534,720.67	\$46,041.6
Mechanical Allowance 5% \$1,534,720.67	\$76,736.0
Electrical Allowance 3% \$1,534,720.67	\$46,041.6
Facility Cost 2,519,600 Gallons \$0.61	\$1,534,72

				ay farang ara ara da ara d Ara da ara d
<u>Description</u>	Quantity	<u>Unit</u>	<u>\$/Unit</u>	Total Cost
SITEWORK:				
Circular Clearwell Excavation	14,515	CY	\$5.35	\$77 CO1
Imported Structural Backfill	1,523	CY	\$5.35 \$40.56	\$77,691 \$61,784
Native Backfill	2,973	CY	\$6.58	\$19,563
Haul Excess	11,542	CY	\$6.58	\$75,949
Rectangular Clearwell	,	1	φυ.σσ	φ/0,0π
Excavation	0	CY	\$5.35	\$0
Imported Structural Backfill	0	CY	\$40.56	\$0
Native Backfill	0	CY	\$6.58	\$(
Haul Excess	0	CY	\$6.58	\$(
Allowance for Misc Items	5%		\$234,986.14	\$11,749
Subtotal				\$246,735
CONCRETE:				
Circular Clearwell		· .		
Prestressed Concrete Tank (2000000 gallons)	1	EA	\$872,030.58	\$872,031
Rectangular Clearwell	ļ	0)4	A	
Foundation	0	CY	\$382.16	\$0
Columns Walls	0	CY	\$683.50	\$0 \$0
Elevated Slab	0	CY	\$683.50	\$0
Concrete Baffling	0	CY	\$1,088.69 \$683.50	\$0 \$0
Allowance for Misc Items	5%	C1	\$872,030.58	\$43,602
Subtotal	376		Ψ072,030.38	\$915,632
METALS & PLASTICS:				
Polypropylene Baffling	0	SF	\$10.99	\$0
Stainless Steel Baffling	0	SF	\$45.79	\$0
Allowance for Misc Items	5%	0.	\$0.00	\$0
Subtotal			40.00	\$0
THERMAL & MOISTURE PROTECTION:				
Concrete Liner	0	SF	\$16.00	\$0
Allowance for Misc Items	10%		\$0.00	\$0
Subtotal				\$0
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Item 1 Description	0.00		0.00	\$0
Item 2 Description	0.00	1.70 - 1.70 - 1.70 - 1.00 - 1.	0.00	\$0
Item 3 Description	0.00		0.00	\$0
Item 4 Description	0.00		0.00	\$0
Item 5 Description	0.00		0.00	\$0 \$0
Item 6 Description	0.00		0.00	\$0
Item 7 Description	0.00		0.00	\$0
Item 8 Description	0.00		0.00	\$0 \$0
Item 9 Description	0.00		0.00	\$0
Item 10 Description	0.00	Through the property states of	0.00	\$0 \$0 \$0 \$0 \$0
Item 11 Description	0.00	an an amage and the Section Co. (Co.)	0.00	\$0
Item 12 Description	0.00		0.00	\$0
Item 13 Description	0.00		0.00	\$0
Item 14 Description	0.00		0.00	
Item 15 Description Subtotal	0:00	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.00	\$0 \$0
Subtotal				\$1,162,368
ALLOWANCES:		User Over-write		
ALLOWANCES: Metals Allowance Finishes Allowance	1.0%	User Over-write	\$1,249,858 \$1,249,858	

Concrete Clearwell FWT

Printed by:

Facility Cost	2,000,000	Gallons	\$0.66	\$1,312,350
Electrical Allowance	1%		\$1,249,858	\$12,499
Mechanical Allowance	5%		\$1,249,858	\$62,493
I & C Allowance	2%		\$1,249,858	\$24,997
Equipment Allowance	1.0%		\$1,249,858	\$12,499

<u>Description</u>	Quantity	<u>-Unit</u>	\$/Unit	Total Cost
SITEWORK:			·	
Pump Station:				
Excavation	701.75	CY	\$5.35	\$0
Imported Structural Backfill	358.27	CY	\$40.56	
Native Backfill	89.16	CY .	\$6.58	\$0
Haul Excess	612.60	CY	\$6.58	\$0
Forebay:				
Excavation	7114.29	CY	\$5.35	\$0
Imported Structural Backfill	437.87	CY	\$40.56	\$0
Native Backfill	1838.49	CY	\$6.58	\$0
Haul Excess	5275.80	CY	\$6.58	\$0
Office:	0.00	CY	05.05	
Excavation	0.00	CY	\$5.35 \$40.56	\$0 \$0
Imported Structural Backfill	0.00	CY	\$6.58	\$0
Native Backfill	0.00	CY	\$6.58	\$0
Haul Excess	0.00	<u> </u>	\$6.50	Ψ0
Surge Protection:	117.15	CY	\$5.35	\$627
Excavation Imported Structural Backfill	86.04	CY	\$40.56	\$3,489
Native Backfill	18.55	CY	\$6.58	\$3,469
Haul Excess	98.59	CY	\$6.58	\$649
Allowance for Misc Items	5%		\$4,887.33	\$244
Subtotal	1 0,0		\$4,667.35	\$5,132
Gastolio	1			φυ, 132
CONCRETE:				-
Pump Station				
Foundation	256.01	CY	\$382.16	\$0
Pump Pad Epoxy	0.74	CY	\$3,412.56	
Pump Pad Support	7.78	CY	\$345.93	\$2,692
Pipe Supports	4.19	CY	\$345.93	\$1,448
Electrical Room				
Foundation	14.61	CY	\$345.93	\$5,055
Surge Protection				
Foundation	20.70	CY	\$345.93	\$7,161
Office				
Foundation	0.00	CY	\$345.93	\$0
Pump Station Forebay				
Slab on Grade for Rectangular Tank	231.48	CY	\$345.93	\$0
Support Walls for Rectangular	342.22	CY	\$683.50	\$0
Support Columns for Rectangular	16.50	CY	\$683.50	\$0
Elevated Slab for Rectangular	91.36	CY	\$1,088.69	\$0
Pump Baffling (for all cases)	16.43	CY	\$683.50	\$0
Sump Walls	86.37	CY	\$683.50	\$0
Sump Concrete Fill	184.06	CY	\$382.16	\$0
Prestressed Concrete Tank (422429 gallions)	0.00	EA	\$0.00	
Allowance for Misc Items	5%		\$18,883.83	\$944
Subtotal	. L			\$19,828
MASONRY:	Moderate	l er		
Pump Station Building	2235.55	SF	\$197.40	\$441,303
Office Building	0.00	SF	\$131.60	\$0
Surge Building	558.89 394.53	SF	\$131.60	\$73,551
Electrical Room	394.03	or	\$131.60	\$51,921
Subtotal	3188.98			\$566,775
	1			φουυ,//3
METALS:			1	<u> </u>
Pump Removal Hatches	73.33	SF	\$109.91	\$8,060
Allowance for Misc Items	10%		\$8,059.73	\$806
Subtotal	1070	1	\$0,009.10	\$8,866
		-		*****
THERMAL & MOISTURE PROTECTION:				
Wet Well Liner	0.00	SF	\$16.00	\$0
Allowance for Misc Items	10%		\$0.00	\$0
Subtotal				\$0
				**
EQUIPMENT:				
Pumps				
Active Pump # 1	1.00	EA	\$167,150.63	\$167,151
Active Pump # 2	1.00	EA	\$167,150.63	
Active Pump # 3	1.00	EA	\$167,150.63	\$167,151

4:58 PM	·			
Active Pump # 4	1.00	EA	\$167,150.63	\$167,1
Active Pump # 5	0.00	EA	\$0.00	
Active Pump # 6	0.00	EA	\$0.00	
Active Pump # 7	0.00	EA	\$0.00	
Active Pump # 8	0.00	EA	\$0.00	
Active Pump # 9	0.00	EA	\$0.00	
Active Pump # 10	0.00	EA	\$0.00	
Standby Pump	1.00	EA	\$167,150.63	\$167,1
······································	10%		\$835,753.14	\$83,57
Allowance for Misc Items	10%		\$655,755.14	
Subtotal				\$919,32
	ļ <u></u>			
INSTRUMENTATION & CONTROLS:			•	
Instruments				
Isolation Valve Actuators	10.00	each	\$5,064.93	\$50,6
Control Valve Actuators	5.00	each	\$5,064.93	\$25,3
Level Indicator Transmitters	2.00	each	\$6,764.54	\$13,5
Level Swithces	2.00	each	\$7,120.57	\$14,2
Pressure Indicator Transmitters	6.00	each	\$7,120.57	\$42,7
Pressure Switches	10.00	each	\$7,120.57	\$71,2
	37.20	each	\$208.82	\$7,7
Number of Analog I/O Counts				
Number of Digital I/O Counts	104.40	each	\$49.46	\$5,1
Number of PLC's	5.00	each	\$10,331.10	\$51,6
1&C Conduit & Wire	2380.06	lf	\$9.53	\$22,6
Allowance for Misc Items	10%		\$ 304,939.30	\$30,49
Subtotal	,			\$335,43
				φουσ,τι
PITOLIANIOAL .		_	1	
MECHANICAL:	 			
Pipe:	ļ			
Discharge Lateral Pipe (14-inch, DIS, Exposed, HDPE, Cement Mortar,	35.00	LF .	\$53.41	\$1,8
Cement Mortar)				
Discharge Header Pipe (30-inch, DIS, Exposed/Buried, Steel, Cement	42.50	LF	\$744.31	\$31,6
Mortar, Cement Mortar)				
Pump Discharge Pipe (10-inch,DIS, Exposed, HDPE, Cement Mortar,	4.17	LF	\$55.90	\$2
Cement Mortar)				
Elbows:			<u> </u>	
Discharge Header Pipe (30-inch)	2.00	EA	\$2,831.95	- \$5,6
Tees:				'
Discharge Header Pipe (30-inch)	5.00	EA	\$5,509.28	\$27,5
Valves:				
	5.00	EA	\$1,529.44	\$7,6
Discharge Lateral Isolation Valve (14-inch, BFV)	J			
Pump Control Valve (14-inch, Check Valve)	5.00	EA	\$1,529.44	\$7,6
Discharge Header Isolation Valve (30-inch, BFV)	1.00	EA	\$5,934.12	- \$5,9
Air Release Vacuum Valves	15.00	EA	\$3,297.16	\$49,4
Allowance for Misc Items	10%		\$137,631.79	\$13;76
Subtotal				\$151,39
Oublotai				****
ELECTRICAL:				
ELECTRICAL:	ļ			
MCC's				
Sections	7.00	each	\$6,783.10	\$47,4
AFD's	<u> </u>			
Active Pump # 1	450.00	HP	\$132.14	\$59,4
Active Pump # 2	.450.00	HP	\$132.14	\$59,4
Active Pump # 3	450.00	HP	\$132.14	\$59,4
Active Pump # 4	450.00	HP	\$132.14	\$59,4
·		HP		φοσ,-
Active Pump # 5	0.00		\$0.00	
Active Pump # 6	0.00	HP	\$0.00	
Active Pump # 7	0.00	HP	\$0.00	
Active Pump # 8	0.00	HP	\$0.00	
Active Pump # 9	0.00	HP	\$0.00	
Active Pump # 10	0.00	HP	\$0.00	
Standby Pump	450.00	HP	\$132.14	\$59,4
			7.02.14	400,
Switchgear	0.00	aach	\$31,202.24	
Units		each		***
Electrical Conduit & Wire	340.01	lf	\$9.53	\$3,2
Allowance for Misc Items	5%		\$348,025	\$17,4
Subtotal				\$365,4
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
		Des Desertions	0.00	. 3 1742 3001
#####################################		ogad, ∎overski odaci Yukidi Alii k	U.UU	
Item 1 Description	0.00	30000 LUC-521397 LAV 75 155 11	The Company of the Co	
Item 2 Description	0.00	2000 11.25 12.50 24.50 12.50 1	0.00	
EMPERATE DOTAL AND THE STATE OF	0.00		0.00	
Item 2 Description	0.00		175700000000000000000000000000000000000	
Item 2 Description Item 3 Description	0.00		0.00	

•			•	*
Item 7 Description	0.00	2000年1月1日 1月1日	0.00	\$
Item 8 Description	0.00		0.00	\$(
Item 9 Description	0.00		0.00	\$0
Item 10 Description	0.00	0184 (falger 1884 o.)	0.00	\$0
Item 11 Description	0.00		0.00	\$0
Item 12 Description	0.00		0.00	\$0
Item 13 Description	0.00		0.00	\$0
Item 14 Description	0.00		0.00	\$0
Item 15 Description	0.00		0.00	\$0
Subtotal				\$0
Subtotal				\$2,372,183
ALLOWANCES:	-	User Over-write		
Finishes Allowance	5%	Marie de la company	. \$3,041,261	\$152,063
I & C Allowance	2%		\$3,041,261	\$60,825
Surge Allowance	5%		\$3,041,261	\$152,063
Mechanical Allowance	5%		\$3,041,261	\$152,063
Electrical Allowance	5%		\$3,041,261	\$152,063
Facility Cost	2 250	Total Pump HP	\$1,351.67	\$3,041,261

A COLUMN	ere en			
<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	Total Cost
SITEWORK:				
Excavation	1575.42	CY	er or	•
	86.68	CY	\$5.35	
Imported Structural Backfill	828.79		\$40.56	
Native Backfill		CY .	\$6.58	
Haul Excess	746.63	CY	\$6.58	
Allowance for Misc Items	5%		\$0.00	\$0
Subtotal				\$0
CONCRETE:				
Wet Well:				
Foundation	28.89	CY	\$382.16	\$
Perimeter Walls	64.42	CY	\$683.50	\$
Operating Floor:		<u> </u>	,	7
Elevated Slab (Including floor over Discharge Header Vault)	36.61	CY	\$1,088.69	\$(
Pump Pads	1.63	CY	\$345.93	
Other Equipment Pads	1.00	CY	\$345.93	\$34
Discharge Pipe Vault:	1.00		\$340.93	φ34·
	42.66	OV	#045.00	A4.70
Slab on Grade	13.66	CY	\$345.93	
Walls	17.16	CY	\$683.50	
Allowance for Misc Items	5%		\$17,362.33	\$868
Subtotal		ļ		\$18,230
MACONDY	NUNCOSAURORI NA PROPINTA POR	8		
MASONRY:	Moderate		<u> </u>	
CMU Building	988.44	SF	\$131.60	\$130,086
Subtotal				\$130,080
METALS:		`		
Checker Plate Over Intake Pipe Gate = (Diameter of Influent Pipe +2	10.00	SF	\$72.38	\$72
)* (2 Feet Wide) (sf)	10.50	0,	Ψ/2,30	Ψ, Σ.
Checker Plate Over Discharge Pipe Header = ((Discharge Pipe	57.98	SF	\$72.38	\$4,19
Diameter * 2) * ("S" * Total Number of Pumps)	37.50	0,	\$72.50	Ψ4,13
Ladder	15.55	VLF	\$99.36	\$1,54
Allowance for Misc Items	10%	V E1	\$6,464.96	\$646
Subtotal	1070		ψ0,+04.50	\$7,111
EQUIPMENT:				
Size of Sluice Gate (per side in inches)		Inches		
Sluice Gate	1.00	EA	\$6,330.27	.\$6,330
Pumps:	404.00	LID	A-A	***
Active Pump # 1		HP	\$790.52	\$98,332
Active Pump # 2		HP	\$790.52	\$98,332
Active Pump # 3	- i	HP	\$0.00	\$(
Active Pump # 4	0.00	HP	\$0.00	\$(
Active Pump # 5	0.00	HP	\$0.00	\$0
Active Pump # 6	0.00	HP	\$0.00	\$0
Active Pump # 7	0.00	HP	\$0.00	\$0
Active Pump # 8	0.00	HP	\$0.00	\$0
Active Pump # 9	0.00	HP	\$0.00	\$(\$
Active Pump # 10	0.00	HP	\$0.00	\$
	124.39	HP	\$790.52	\$98,33
		1. "	φ1 3U.JZ	ψου,οο.
Standby Pump	124.39			
Standby Pump AFD's		ШD	¢aec 44	Ø40.40
Standby Pump AFD's Active Pump # 1	124.39	HP	\$156.14	
Standby Pump AFD's Active Pump # 1 Active Pump # 2	124.39 124.39	HP	\$156.14	\$19,42
Standby Pump AFD's Active Pump # 1 Active Pump # 2 Active Pump # 3	124.39 124.39 0.00	HP HP	\$156.14 \$0.00	\$19,42 \$4
Standby Pump AFD's Active Pump # 1 Active Pump # 2	124.39 124.39	HP	\$156.14	\$19,42 \$19,42 \$1 \$1 \$1 \$1 \$1 \$1

4:58 PM Active Pump # 6	0.00	HP	\$0.00	\$0
Active Pump # 7	0.00	HP	\$0.00	\$(\$(\$(\$(
Active Pump # 8	0.00	HP ,	\$0.00	\$(
Active Pump # 9	0.00	HP	\$0.00	\$(
Active Pump # 10	0.00	HP	\$0.00	\$0
Standby Pump	124.39	HP	\$156.14	\$19,422
Allowance for Misc Items	10%		\$353,259.39	\$35,326
Subtotal				\$394,916
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Item 1 Description	0.00		0.00	\$0
Item 2 Description	0.00		0.00	\$0
Item 3 Description	0.00	70 5 65 7 661 10976440250	0.00	\$0 \$0 \$0
Item 4 Description	0.00	Transporter and the second and the s	0.00	\$0
Item 5 Description	0.00		0.00	\$0
Item 6 Description	0.00	A seminar and in	0.00	\$0 \$0 \$0 \$0 \$0
Item 7 Description	# 0.00		0.00	\$C
Item 8 Description	0.00		0.00	\$C
Item 9 Description	0.00		0.00	\$0
Item 10 Description	0.00	A Brown No. 199	0.00	
Item 11 Description	0.00		0.00	\$0
Item 12 Description	0.00	Walden Sta	0.00	\$0 \$0 \$0 \$0 \$0
Item 13 Description	0.00	Missississis in the contract	0.00	\$0
Item:14 Description	0.00	to the second second	0.00	\$0
Item 15 Description	0.00		0.00	\$0
Subtotal				\$0
Subtotal				\$550,338
ALLOWANCES:		User Over- write		
Finishes Allowance	2.0%	200500000000000000000000000000000000000	\$1,100,676	\$22,014
I & C Allowance	8.0%		\$1,100,676	\$88,054
Mechanical Allowance	25.0%		\$1,100,676	\$275,169
Electrical Allowance	15.0%		\$1,100,676	\$165,101
Facility Cost	37	3 Total Pump HP	\$2,949.56	\$1,100,676

4:59 PM				reger, ex less est a recent de la
Description	Quantity	Unit	\$/Unit	Total Cost
SITEWORK:		100 / 100 /	<u> </u>	
Excavation	89.00	CY	\$5.35	\$476
Imported Structural Backfill	45.41	CY	\$40.56	\$1,842
Native Backfill	0.00	CY	\$6.58	\$0
Haul Excess	89.00	CY	\$6.58	\$586
Allowance for Misc Items	5%		\$2,903.46	\$145
Subtotal				\$3,049
CONCRETE:				
Slab on Grade	31.46	CY	\$345.93	\$10,882
Containment Walls	6.37	CY	\$683.50	\$4,356
Bulk Tank Pads	29.50	CY	\$345.93	\$10,204
Day Tank Pads	0.00	CY	\$345.93	\$0
Transfer Pump Pads	0.00	CY	\$345.93	\$0
Metering Pump Pads	2,00	CY	\$345.93	\$692
Corridor				,
Slab on Grade	7.50	CY	\$345.93	\$2,594
Electrical Room				
Slab on Grade	3.41	CY	\$345.93	\$1,179
Allowance for Misc Items	5%		\$29,906.78	\$1,495
Subtotal				\$31,402
MASONRY:	Moderate			
CMU Building	1226.00	ISF	\$131.60	\$161,343
Subtotal				\$161,343
METALS:				
Metal Stairway	1.00	EA	\$6,580.07	\$6,580
Grating	1.00	EA	\$1,579.22	\$1,579
Allowance for Misc Items	10%		\$8,159.28	Ψ1,379 \$816
Subtotal	1070		ψ0,103.20	\$8,975
00000				\$0,0,0
Bulk Tank	2.00	EA	\$16,973.34	\$33,947
Day Tank	0.00	EA	\$0.00	\$0
Transfer Pump	0.00	EA	\$0.00	\$0
Metering Pump	3.00	EA	\$6,737.98	\$20,214
Allowance for Misc Items	10%		\$54,160.63	\$5,416
Subtotal				\$59,577
INSTRUMENTS & CONTROLS:				
Instruments	· · · · · · · · · · · · · · · · · · ·			
Chemical Tank Radar Level Transmitters	2.00	each	\$824.29	\$1,649
Chemical Tank Reacons	2.00	each	\$824.29	\$1,649
Day Tank Differential Pressure Transmitter	0.00	each	\$824.29	\$0
Drum or Tote Weigh Scale	0.00	each	\$1,099.05	\$0
Metering Pump Discharge Pressure Switch	3.00	each	\$549.53	\$1,649
Magmeter	2.00	each	\$549.53	\$1,099
Sump Pump Float Switch	1.00	each	\$274.76	\$275
Eyewash	1.00	each	\$824.29	\$824
Number of Analog I/O Counts	9.00	each	\$208.82	\$1,879
Number of Digital I/O Counts	26,00	each	\$49.46	\$1,286
Number of Local Panels	1.00	each	\$10,331.10	\$10,331
Number of PLC's	1.00	each	\$10,990.54	\$10,991
I&C Conduit & Wire	297.00	if	\$9.53	\$2,830
Allowance for Misc Items	10%		\$34,460.81	\$3,446
Subtotal				\$37,907
MECHANICAL: Pipe				
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0.00	lf .	\$10.36	\$0
Chemical Transfer Pump Discharge Header Piping- CTDH (1-inch, Exposed, FRP)	.0.00	lf	\$11.98	\$0

4:59 PM				
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC)	61.00	lf .	\$10.36	\$63
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	61.00	lf	\$11.98	\$73
Elbows	-			
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0.00	each	\$7.95	\$1
Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$63.16	\$1
CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH	12.00	each	\$7.95	\$9:
(1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping-	12.00	each	\$63.16	\$75
LCDH (1-inch, Exposed, FRP) Tees				
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0.00	each	\$8.27	\$6
Chemical Transfer Pump Discharge Header Piping- CTDH (1-inch, Exposed, FRP)	0.00	each	\$109.33	\$(
Chemical Metering Pump Suction Header Piping-LCSH	3.00	each	\$8.27	\$2
(1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	3.00	each	\$109.33	\$326
End Caps				
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0.00	each	\$4.46	. \$6
Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$32.34	\$6
CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH	2.00	each	\$4.46	\$
(1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping-	2.00	each	\$32.34	\$6
LCDH (1-inch, Exposed, FRP)		<u> </u>		
Valves Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$0
(1-inch, Exposed, PVC, V-902, Diaphragm) Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$1
(1-inch, Exposed, PVC, V-902, Diaphragm) Chemical Metering Pump Suction Header Piping-LCSH	6.00	each	\$45.15	\$27
(1-inch, Exposed, PVC, V-902, Diaphragm) Chemical Metering Pump Discharge Header Piping-	6.00	each	\$45.15	\$27
LCDH (1-inch, Exposed, FRP, V-902, Diaphragm)				
Allowance for Misc Items Subtotal	10%		\$3,184.53	\$318 \$3,500
ELECTRICAL:				
# MCC Sections	6.00	#	\$6,783.10	\$40,699
Switchgear	0.00	each	\$31,202.24	\$(
Adjustable Frequency Drives				, ·
Metering Pumps	0.00	each	\$4,187.38	\$(
User Defined Item #1	0.00	each	\$4,125.89	\$(
User Defined Item #2	0.00	each	\$4,125.89	\$(
User Defined Item #3	0.00	each	\$4,125.89	\$(
Electrical Conduit & Wire	243.00	H .	\$9.53	\$2,31
Allowance for Misc Items	10%		\$43,014.07	\$4,30
Subtotal			:	\$47,315
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Item 1 Description	0.00	: Separate and	0.00	\$(
Item 2 Description	0.00		0.00	\$(
Item 3 Description	0.00	2.00 - E1 -	0.00	\$(
Item 4 Description	0.00		0.00	\$(
Item 5 Description	0.00		0.00	\$(
Item 6 Description	0.00	E L'A CONTRACTOR DE LA	0.00	\$(
Item 7 Description	0.00	TO BECOME TO SELECT AND SELECTION OF A STATE OF THE SELECTION OF THE SELEC	0.00	\$(
Item 8 Description	0.00		0.00	\$(\$(\$(
Item 9 Description	0.00	a water op generalen in 1992. I State of	0.00	Φt
Item 10 Description	0.00		0.00	\$(
Item 11 Description	0.00	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	0.00	<u>\$</u> (
Item 12 Description	the second secon	The Control of the Co	0.00	\$(\$r
		300000000000000000000000000000000000000		\$(
Item 13 Description	0.00	300000000000000000000000000000000000000	0.00	\$(
Item 14 Description	0.00	9109665091550	0.00	\$(
Item 15 Description	0.00		0:00	\$(

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Subtotal				\$0
Subtotal				\$353,07
ALLOWANCES:		User Over-write		
Finishes Allowance	2.0%		\$392,301	\$7,840
I & C Allowance	2%		\$392,301	\$7,84
Mechanical Allowance	4%		\$392,301	
Electrical Allowance	2%		\$392,301	\$7,840
Facility Cost	1,	226 Building SF	\$319.98	\$392,30 ⁻

000000000000000000000000000000000000000				
Description	Quantity	Unit	\$/Unit	Total Cost
SITEWORK:				
Excavation	76.22	CY	\$5.35	\$40
Imported Structural Backfill Native Backfill	38.89 0.00	CY	\$40.56 \$6.58	\$1,57 \$1
Haul Excess	76.22	CY	\$6.58	\$50
Allowance for Misc Items	5%		\$2,486.65	\$12
Subtotal	070		Ψ2,400.00	\$2,61
COMODETE				
CONCRETE: Slab on Grade	28.07	CY	\$345.93	\$9,71
Containment Walls	4.73	CY .	\$683.50	\$3,23
Bulk Tank Pads	25.13	CY	\$345.93	\$8,69
Day Tank Pads	0.00	CY	\$345.93	\$
Transfer Pump Pads	0.00	CY	\$345.93	\$
Metering Pump Pads	1.33	CY	\$345.93	\$46
Corridor				
Slab on Grade	6.94	CY	\$345.93	\$2,40
Electrical Room				
Slab on Grade	0.00	CY	\$345.93	\$(
Allowance for Misc Items Subtotal	5%		\$24,500.49	\$1,225 \$25,720
- ·				Ψ20,121
MASONRY:	Moderate	(R		
CMU Building	1050.00	SF	\$131.60	\$138,18°
Subtotal				\$138,18 ⁻
NET II O				
METALS:	1.00	EA	#C EBO 07	#0 F0
Metal Stairway Grating	1.00	EA	\$6,580.07 \$1,579.22	\$6,580
Allowance for Misc Items	10%	EA	\$8,159.28	\$1,579 \$816
Subtotal	1076		\$6,139.28	\$8,97
Bulk Tank	2.00	EA	\$17,367.52	\$34,73
Day Tank	0.00	EA	\$0.00	\$(
Transfer Pump	0.00	EA	\$0.00	\$(
Metering Pump	2.00	EA	\$6,737.98	\$13,470
Allowance for Misc Items	10%		\$48,211.01	\$4,82
Subtotal				\$53,032
INSTRUMENTS & CONTROLS:				
Instruments		<u> </u>		
Chemical Tank Radar Level Transmitters	2.00	each	\$824.29	\$1,649
Chemical Tank Beacons Day Tank Differential Pressure Transmitter	2.00	each	\$824.29 \$824.29	\$1,649
Drum or Tote Weigh Scale	0.00	each	\$1,099.05	\$0 . \$0
Metering Pump Discharge Pressure Switch	2.00	each	\$549.53	\$1,099
Magmeter	1.00	each	\$549.53	\$550
Sump Pump Float Switch	1.00	each	\$274.76	,\$275
Eyewash	1.00	each	\$824.29	\$824
Number of Analog I/O Counts	6.00	each	\$208.82	\$1,253
Number of Digital I/O Counts	20.00	each	\$49.46	\$989
Number of Local Panels	1.00	each	\$10,331.10	\$10,331
Number of PLC's	1.00	each	\$10,990.54	\$10,99
I&C Conduit & Wire	225.00	lf	\$9.53	\$2,144
Allowance for Misc Items Subtotal	10%		\$31,752.48	\$3,175 \$34,000
				\$34,928
MECHANICAL:				
Pipe		le l		
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0.00	lf	\$10.36	\$0
Chemical Transfer Pump Discharge Header Piping-	0.00	If	\$11.98	\$(

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Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC)	59.00	lf	\$10.36	\$61
Chemical Metering Pump Discharge Header Piping-	59.00	If	\$11.98	\$707
LCDH (1-inch, Exposed, FRP)				
Elbows Chemical Transfer Pump Suction Header Piping-CTSH	0.00	leach	\$7.95	\$(
(1-inch, Exposed, PVC)	0.00	Caul	\$7.93	Φί
Chemical Transfer Pump Discharge Header Piping-	0.00	each:	\$63.16	\$(
CTDH (1-inch, Exposed, FRP)			1	·
Chemical Metering Pump Suction Header Piping-LCSH	8.00	each	\$7.95	\$64
(1-inch, Exposed, PVC)				
Chemical Metering Pump Discharge Header Piping-	8.00	each	\$63.16	\$50
LCDH (1-inch, Exposed, FRP)			<u> </u>	
Tees Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$8.27	\$(
(1-inch, Exposed, PVC)	0.00	Cacii	\$6.27	Ψ
Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$109.33	\$(
CTDH (1-inch, Exposed, FRP)				
Chemical Metering Pump Suction Header Piping-LCSH	2.00	each	\$8.27	\$17
(1-inch, Exposed, PVC)				
Chemical Metering Pump Discharge Header Piping-	2.00	each	\$109.33	\$219
LCDH (1-inch, Exposed, FRP)	·		ļ	
End Caps Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$4.46	\$0
(1-inch, Exposed, PVC)	0.00	Caon	94.40	φι
Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$32.34	\$(
CTDH (1-inch, Exposed, FRP)				·
Chemical Metering Pump Suction Header Piping-LCSH	2.00	each	\$4.46	\$9
(1-inch, Exposed, PVC)	***************************************			
Chemical Metering Pump Discharge Header Piping-	2.00	each	\$32.34	\$65
LCDH (1-inch, Exposed, FRP)				
Valves Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$(
(1-inch, Exposed, PVC, V-902, Diaphragm)	0.00	Caon	J 43.13	
Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$(
(1-inch, Exposed, PVC, V-902, Diaphragm)				·
Chemical Metering Pump Suction Header Piping-LCSH	- 4.00	each	\$45.15	\$18
(1-inch, Exposed, PVC, V-902, Diaphragm)				
Chemical Metering Pump Discharge Header Piping-	4.00	each	\$45.15	\$18
LCDH (1-inch, Exposed, FRP, V-902, Diaphragm)	10%		\$2,557.19	\$256
Allowance for Misc Items Subtotal	1070		\$2,557.19	\$2,813
Cubiotal				ΨΕ,Ο Α
ELECTRICAL:				
# MCC Sections	0.00	#	\$6,783.10	\$(
Switchgear	0.00	each	\$31,202.24	\$(
Adjustable Frequency Drives			0.407.00	
Metering Pumps	0.00	each	\$4,187.38	\$0 \$0
User Defined Item #1 User Defined Item #2	0.00	each each	\$4,125.89 \$4,125.89	\$(
User Defined Item #3	0.00	each	\$4,125.89	\$(
Electrical Conduit & Wire	0.00	If	\$9.53	\$(
Allowance for Misc Items	10%		\$0.00	\$0
Subtotal				\$0
			A 11 44 11	
USER DEFINED ESTIMATE ITEMS:	QUANT 0.00	UNIT	\$/UNIT 0.00	TOTAL COST
Item 1 Description	0.00	e <mark>gram en le le le le trestreze de le .</mark> E <mark>l sido en le . Le le</mark>	0.00	\$0 \$0
Item 3 Description	0.00	d para di Alika Kantanan dan	0.00	\$(
Item 4 Description	0.00	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.00	\$(
Item 5 Description	0.00	0.000	0.00	\$(
Item 6 Description	0.00	ni osaisa ya miki maaraala ekistora. M	0.00	\$0
Item 7 Description	0.00		0.00	\$0
Item 8 Description	0.00		0.00	\$(
Item 9 Description	0.00		0.00	\$1 \$1
Item 10 Description	0.00		0.00	\$(
Item 11 Description Item 12 Description	0.00	sapro nota - de Cestifias de Poi. El especial de Postes establista a la	0.00	\$(\$(
Item 12 Description	0.00		0.00	\$(
Item 14 Description	0.00		0.00	\$(
Item 15 Description	0.00		0.00	\$(
And the second s		A commence of the commence of		Ψ,

Liquid Chemical NaOCI

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4:59 PM Subtotal				\$0
Subtotal				\$266,26
ALLOWANCES:		User Over-write	-	
Finishes Allowance	2.0%		\$295,851	\$5,91
I & C Allowance	2%		\$295,851	\$5,91
Mechanical Allowance	4%		\$295,851	\$11,83
Electrical Allowance	2%		\$295,851	\$5,91
Facility Cost	. 1.	.050 Building SF	\$281.76	\$295.85

4,59 PM				
Description	Quantity	Unit	\$/Unit	Total Cost
SITEWORK:				
Excavation	51.83	CY	\$5.35	\$277
Imported Structural Backfill	26.44	CY	\$40.56	\$1,072
Native Backfill	0.00	CY	\$6.58	\$0
Haul Excess	51.83	CY	\$6.58	\$341
Allowance for Misc Items	5%		\$1,690.92	\$85
Subtotal				\$1,775
		·		
CONCRETE:		4		
Slab on Grade	20.15	CY	\$345.93	\$6,969
Containment Walls	3.83	CY	\$683.50	\$2,617
Bulk Tank Pads	0.00	CY	\$345.93	\$0 \$0
Day Tank Pads Transfer Pump Pads	0.00	CY	\$345.93 \$345.93	\$0
Metering Pump Pads Metering Pump Pads	1.33	CY	\$345.93 \$345.93	\$461
Corridor	1.33	01	\$345.93	Φ401
Slab on Grade	4.72	CY	\$345.93	\$1,634
Electrical Room	4.12		\$343.93	\$1,004
Slab on Grade	0.00	CY	\$345.93	\$0
Allowance for Misc Items	5%	01	\$11,680.12	\$584
Subtotal	- 0,0		ψ11,030.12	\$12,264
Subtotal				Ψ12,204
MASONRY:	Moderate			
CMU Building	714.00	SF	\$131.60	\$93,963
Subtotal		1 - · · · · · · · · · · · · · · · · · ·		\$93,963
METALS:				
Metal Stairway	1.00	EA	\$6,580.07	\$6,580
Grating	1.00	EA	\$1,579.22	\$1,579
Allowance for Misc Items	10%		\$8,159.28	\$816
Subtotal			·	\$8,975
EQUIPMENT:				
Bulk Tank	0.00	EA	\$0.00	\$0
Day Tank	0.00	EA	\$0.00	\$0
Transfer Pump	0.00	EA	\$0.00	\$0
Metering Pump	2.00	EA	\$6,737.98	\$13,476
Allowance for Misc Items	10%		\$13,475.96	\$1,348
Subtotal				\$14,824
INSTRUMENTS & CONTROLS:		:		
Instruments				•
Chemical Tank Radar Level Transmitters	0.00	each	\$824.29	\$0
Chemical Tank Beacons	0.00	each	\$824.29	\$0
Day Tank Differential Pressure Transmitter	0.00	each	\$824.29	\$0
Drum or Tote Weigh Scale	2.20	each	\$1,099.05	
Metering Pump Discharge Pressure Switch	2.00	each	\$549.53	\$1,099
Magmeter	1.00	each	\$549.53	\$550
Sump Pump Float Switch	1.00	each	\$274.76	\$275
Eyewash	1.00	each	\$824.29	\$824
Number of Analog I/O Counts	7.00	each	\$208.82	\$1,462
Number of Digital I/O Counts	15.00	each	\$49.46	\$742
Number of Local Panels	1,00	each	\$10,331.10	\$10,331 \$40,001
Number of PLC's	1.00 122.47	each If	\$10,990.54	\$10,991 \$1,467
1&C Conduit & Wire	122.47	111	\$9.53 \$29,861.98	\$1,167 \$2,086
Allowance for Misc Items	1076	 	\$∠9,801.98	\$2,986
Subtotal		1		\$32,848
MECHANICAL:		· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
Pipe		ļ. <u>.</u>		
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0.00	lf	\$10.36	\$0
Chemical Transfer Pump Discharge Header Piping- CTDH (1-inch, Exposed, FRP)	0.00	lf	\$11.98	\$0

(1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP) Elbows Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping- CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC)	0.36 \$528 1.98 \$611 7.95 \$0
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP) Elbows Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping- CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping- 8.00 each \$63	7.95 \$0
Elbows Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping-Route Route Rou	
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping-ESH (1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping-ESH (1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping-ESH (1-inch, Exposed, PVC)	
(1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping- CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping- 8.00 each \$6000	
Chemical Transfer Pump Discharge Header Piping- CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping- 8.00 each \$63 Chemical Metering Pump Discharge Header Piping- 8.00 each \$63	3.16 \$0
CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH 8.00 each \$: (1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping- 8.00 each \$6:	3.16 \$C
Chemical Metering Pump Suction Header Piping-LCSH 8.00 each \$7 (1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping- 8.00 each \$63	
(1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping- 8.00 each \$65	
Chemical Metering Pump Discharge Header Piping- 8.00 each \$6.	7.95 \$64
	3.16 \$505
	•
Tees	· · · · · · · · · · · · · · · · · · ·
	8.27 \$0
(1-inch, Exposed, PVC)	
Chemical Transfer Pump Discharge Header Piping- 0.00 each \$100	9.33 \$0
CTDH (1-inch, Exposed, FRP)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	8.27 \$17
(1-inch, Exposed, PVC)	3.27
	9.33 \$219
	9.33 \$219
LCDH (1-inch, Exposed, FRP)	
End Caps	
	4.46 \$0
(1-inch, Exposed, PVC)	
	2.34 \$0
CTDH (1-inch, Exposed, FRP)	
Chemical Metering Pump Suction Header Piping-LCSH 2.00 each \$4	4.46 \$9
(1-inch, Exposed, PVC)	
Chemical Metering Pump Discharge Header Piping- 2.00 each \$33	2.34 \$65
LCDH (1-inch, Exposed, FRP)	
Valves	
	5.15 \$0
(1-inch, Exposed, PVC, V-902, Diaphragm)	
	5.15 \$0
(1-inch, Exposed, PVC, V-902, Diaphragm)	2.10
	5. <i>15</i> \$181
	3.73
(1-inch, Exposed, PVC, V-902, Diaphragm) Chemical Metering Pump Discharge Header Piping- 4.00 each \$48	5.45
	5. <i>15</i> \$181
LCDH (1-inch, Exposed, FRP, V-902, Diaphragm)	0.44
Allowance for Misc Items 10% \$2,376	
Subtotal	\$2,616
ELECTRICAL:	
# MCC Sections 0.00 # \$6,783	· · · · · · · · · · · · · · · · · · ·
Switchgear 0.00 each \$31,202	2.24 \$0
Adjustable Frequency Drives	
Metering Pumps 0.00 each \$4,187	
User Defined Item #1 0.00 each \$4,128	5.89 \$0
User Defined Item #2 0.00 each \$4,128	
User Defined Item #3 0.00 each \$4,128	
	9.53 \$0
	0.00 \$0
	\$0
i Suprorai	
Subtotal	TOTAL COST
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT	TOTAL COST
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT Item 1 Description 0:00 0.00	\$0
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT	\$0 \$0 \$0
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT Item 1 Description 0.00 0.00 Item 2 Description 0.00 0.00 Item 3 Description 0.00 0.00	\$0 \$0 \$0 \$0
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT	\$0 \$0 \$0 \$0 \$0 \$0
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT	\$0 \$0 \$0 \$0 \$0 \$0
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT Item 1 Description 0.00 0.00 Item 2 Description 0.00 0.00 Item 3 Description 0.00 0.00 Item 4 Description 0.00 0.00 Item 5 Description 0.00 0.00 Item 6 Description 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT Item 1 Description 0.00 0.00 Item 2 Description 0.00 0.00 Item 3 Description 0.00 0.00 Item 4 Description 0.00 0.00 Item 5 Description 0.00 0.00 Item 6 Description 0.00 0.00 Item 7 Description 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT Item 1 Description 0.00 0.00 Item 2 Description 0.00 0.00 Item 3 Description 0.00 0.00 Item 4 Description 0.00 0.00 Item 5 Description 0.00 0.00 Item 6 Description 0.00 0.00 Item 7 Description 0.00 0.00 Item 8 Description 0.00 0.00	\$C \$C \$C \$C \$C \$C \$C \$C \$C \$C \$C \$C \$C \$
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT Item 1 Description 0.00 0.00 Item 2 Description 0.00 0.00 Item 3 Description 0.00 0.00 Item 4 Description 0.00 0.00 Item 5 Description 0.00 0.00 Item 6 Description 0.00 0.00 Item 7 Description 0.00 0.00 Item 8 Description 0.00 0.00 Item 9 Description 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT Item 1 Description 0.00 0.00 Item 2 Description 0.00 0.00 Item 3 Description 0.00 0.00 Item 4 Description 0.00 0.00 Item 5 Description 0.00 0.00 Item 6 Description 0.00 0.00 Item 7 Description 0.00 0.00 Item 8 Description 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT Item 1 Description 0.00 0.00 Item 2 Description 0.00 0.00 Item 3 Description 0.00 0.00 Item 4 Description 0.00 0.00 Item 5 Description 0.00 0.00 Item 6 Description 0.00 0.00 Item 7 Description 0.00 0.00 Item 8 Description 0.00 0.00 Item 9 Description 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT Item 1 Description 0.00 0.00 Item 2 Description 0.00 0.00 Item 3 Description 0.00 0.00 Item 4 Description 0.00 0.00 Item 5 Description 0.00 0.00 Item 6 Description 0.00 0.00 Item 7 Description 0.00 0.00 Item 8 Description 0.00 0.00 Item 9 Description 0.00 0.00 Item 10 Description 0.00 0.00 Item 11 Description 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT Item 1 Description 0.00 0.00 Item 2 Description 0.00 0.00 Item 3 Description 0.00 0.00 Item 4 Description 0.00 0.00 Item 5 Description 0.00 0.00 Item 6 Description 0.00 0.00 Item 7 Description 0.00 0.00 Item 8 Description 0.00 0.00 Item 9 Description 0.00 0.00 Item 10 Description 0.00 0.00 Item 11 Description 0.00 0.00 Item 12 Description 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT Item 1 Description 0.00 0.00 0.00 Item 2 Description 0.00 0.00 0.00 Item 3 Description 0.00 0.00 0.00 Item 4 Description 0.00 0.00 0.00 Item 5 Description 0.00 0.00 0.00 Item 7 Description 0.00 0.00 0.00 Item 8 Description 0.00 0.00 0.00 Item 10 Description 0.00 0.00 0.00 Item 11 Description 0.00 0.00 0.00 Item 12 Description 0.00 0.00 0.00 Item 13 Description 0.00 0.00 0.00	\$C \$C \$C \$C \$C \$C \$C
USER DEFINED ESTIMATE ITEMS: QUANT UNIT \$/UNIT Item 1 Description 0.00 0.00 Item 2 Description 0.00 0.00 Item 3 Description 0.00 0.00 Item 4 Description 0.00 0.00 Item 5 Description 0.00 0.00 Item 6 Description 0.00 0.00 Item 7 Description 0.00 0.00 Item 8 Description 0.00 0.00 Item 9 Description 0.00 0.00 Item 10 Description 0.00 0.00 Item 11 Description 0.00 0.00 Item 12 Description 0.00 0.00	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$

4:59 PM Subtotal				\$0
	Y			
Subtotal				\$167,26
				N
ALLOWANCES:		User Over-write		
Finishes Allowance	2.0%		\$185,851	\$3,71
I & C Allowance	2%		\$185,851	\$3,71
Mechanical Allowance	4%		\$185,851	\$7,43
Electrical Allowance	2%		\$185,851	\$3,71
Facility Cost	7	14 Building SF	\$260.30	\$185,85

4:59 PM				
Description	Quantity	Unit	\$/Unit	Total Cost
SITEWORK:				
Excavation	51.83	CY	\$5.35	\$277
Imported Structural Backfill	26.44	CY	\$40.56	\$1,072
Native Backfill	0.00	CY	\$6.58	\$0
Haul Excess	51.83 .5%	CY	\$ 6.58 \$1,690.92	\$341
Allowance for Misc Items Subtotal	.5%		\$1,090.92	\$85 \$1,775
Sub(otal				\$1,773
CONCRETE:				
Slab on Grade	20.15	CY	\$345.93	\$6,969
Containment Walls	3.83	CY	\$683.50	\$2,617
Bulk Tank Pads	0.00	CY	\$345.93	\$0
Day Tank Pads	0.00	CY	\$345.93	\$0
Transfer Pump Pads	0.00	CY	\$345.93	\$0
Metering Pump Pads	1.33	CY	\$345.93	\$461
Corridor	4.70	0)/	2045.00	
Slab on Grade	4.72	CY	\$345.93	\$1,634
Electrical Room Slab on Grade	0.00	CY	\$345.93	\$0
Allowance for Misc Items	5%	<u> </u>	\$11,680.12	\$584
Subtotal	378		\$11,000.12	\$12,264
	<u> </u>			ψ12,204
MASONRY:	Moderate			
CMU Building	714.00	SF	\$131.60	\$93,963
Subtotal				\$93,963
METALS:		,		
Metal Stairway	1.00	EA	\$6,580.07	\$6,580
Grating	1.00	EA	\$1,579.22	\$1,579
Allowance for Misc Items	10%		\$8,159.28	\$816
Subtotal				\$8,975
EQUIPMENT:				
Bulk Tank	0.00	EA	\$0.00	\$0
Day Tank	0.00	EA	\$0.00	\$0 \$0
Transfer Pump	0.00 2.00	EA EA	\$0.00 \$6,737.98	\$13,476
Metering Pump Allowance for Misc Items	10%	EA	\$13,475.96	\$13,476 \$1,348
Subtotal	1070		ψ10,410.90	\$14,824
Odbiotal			·	ψ. 1,02 ·
INSTRUMENTS & CONTROLS:				
Instruments				
Chemical Tank Radar Level Transmitters	0.00	each	\$824.29	\$0
Chemical Tank Beacons	0.00	each	\$824.29	\$0
Day Tank Differential Pressure Transmitter	0.00	each	\$824.29	\$0
Drum or Tote Weigh Scale	1.37	each	\$1,099.05	\$1,501 \$4,000
Metering Pump Discharge Pressure Switch Magmeter	2.00	each '	\$549.53 \$549.53	\$1,099 \$550
Sump Pump Float Switch	1.00	each	\$274.76	\$330 \$275
Evewash	1.00	each	\$824.29	\$824
Number of Analog I/O Counts	6.00	each	\$208.82	\$1,253
Number of Digital I/O Counts	15.00	each	\$49.46	\$742
Number of Local Panels	1.00	each	\$10,331.10	\$10,331
Number of PLC's	1.00	each	\$10,990.54	\$10,991
1&C Conduit & Wire	108.22	lf	\$9.53	\$1,031
Allowance for Misc Items	10%		\$28,596.74	\$2,860
Subtotal				\$31,456
MECHANICAL:				
Pipe				
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0.00	if	\$10.36	\$0
Chemical Transfer Pump Discharge Header Piping- CTDH (1-inch, Exposed, FRP)	0.00	if	\$11.98	\$0

4:59 PM	F4.00	Tie .		
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC)	51.00	lf	\$10.36	\$528
Chemical Metering Pump Discharge Header Piping-	51.00	lf	\$11.98	\$611
LCDH (1-inch, Exposed, FRP)				· · · · · · · · · · · · · · · · · · ·
Elbows Chemical Transfer Pump Suction Header Piping-CTSH	0,00	each	\$7.95	\$0
(1-inch, Exposed, PVC)	0,00	eacii	91.33	φυ
Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$63.16	\$0
CTDH (1-inch, Exposed, FRP)				
Chemical Metering Pump Suction Header Piping-LCSH	8.00	each	\$7.95	\$64
(1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping-	8.00	each	\$63.16	\$505
LCDH (1-inch, Exposed, FRP)	0.00	·	. \$00.70	ψου.
Tees				
Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$8.27	\$0
(1-inch, Exposed, PVC)	0.00		0400.22	
Chemical Transfer Pump Discharge Header Piping- CTDH (1-inch, Exposed, FRP)	0.00	each	\$109.33	\$0
Chemical Metering Pump Suction Header Piping-LCSH	2.00	each	\$8.27	\$17
(1-inch, Exposed, PVC)			, , , , , , , , , , , , , , , , , , , ,	•••
Chemical Metering Pump Discharge Header Piping-	2.00	each	\$109.33	\$219
LCDH (1-inch, Exposed, FRP)				
End Caps Chamical Transfer Dump Systian Llander Dining CTSH	0,00		¢4.4¢	\$0
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0,00	leach	\$4.46	φt
Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$32.34	\$0
CTDH (1-inch, Exposed, FRP)				
Chemical Metering Pump Suction Header Piping-LCSH	2.00	each	\$4.46	\$9
(1-inch, Exposed, PVC)			***	
Chemical Metering Pump Discharge Header Piping-	2.00	each	\$32.34	\$65
LCDH (1-inch, Exposed, FRP) Valves				
Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$C
(1-inch, Exposed, PVC, V-902, Diaphragm)				•
Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$0
(1-inch, Exposed, PVC, V-902, Diaphragm)	400		447.45	0404
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC, V-902, Diaphragm)	4.00	each	\$45.15	\$181
Chemical Metering Pump Discharge Header Piping-	4.00	each	\$45.15	\$181
LCDH (1-inch, Exposed, FRP, V-902, Diaphragm)				
Allowance for Misc Items	10%	1 a	\$2,378.44	\$238
Subtotal				\$2,616
ELECTRICAL:				
# MCC Sections	0.00	#	\$6,783.10	\$0
Switchgear	0.00	each	\$31,202.24	. \$0
Adjustable Frequency Drives				
Metering Pumps	0.00	each	\$4,187.38	\$0
User Defined Item #1	0.00	each	\$ 4,12 5.89	\$0
User Defined Item #2 User Defined Item #3	0.00	each each	\$4,125.89	\$0 \$0
Electrical Conduit & Wire	0.00	lf	\$4,125.89 \$9.53	\$0
Allowance for Misc Items	10%		\$0.00	\$0
Subtotal				\$0
LIGED DEENIED FOTHARD PERIOD	OUALIT.	1 15 17-	64 II 117	TOTAL COOT
USER DEFINED ESTIMATE ITEMS: Item 1 Description	QUANT 0:00	UNIT	\$/UNIT 0.00	TOTAL COST \$0
Item 2 Description	0.00		0.00	\$0
Item 3 Description	0.00	A STATE OF THE STA	0.00	\$0
Item 4 Description	0.00	42 30000000	0.00	\$0 \$0 \$0
Item 5 Description	0.00		0.00	\$C
Item 6 Description Item 7 Description	0.00		0.00 0.00	\$C
Item 7 Description	0.00		0.00	\$0 \$0
Item 9 Description	0.00	100	0.00	\$0 \$0 \$0
Item 10 Description	0.00	Sept.	0.00	\$(
Item 11 Description	0.00	· · · · · · · · · · · · · · · · · · ·	22.160.250.2500	\$(
Item 12 Description	0.00		0.00	\$0 \$0
Item 13 Description	0.00	301.555 De 12-11 BUDSS 2000.5	0.00	\$0
Item 14 Description Item 15 Description	0.00		0.00	\$0 \$0
mem (5) Description	All Pights Owned by C	■ spa. presp. Arter U.P.SETER SEE		Vamion: 1/5/2010

Liquid Chemical POLYPHOS

Printed by:

4:59 PM				
Subtotal				\$0
		· [·		
Subtotal				\$165,874
ALLOWANCES:		User Over-write		
Finishes Allowance	2.0%		\$184,305	\$3,686
I & C Allowance	2%		\$184,305	\$3,686
Mechanical Allowance	4%		\$184,305	\$7,372
Electrical Allowance	2%		\$184,305	\$3,686
Facility Cost		714 Building SF	\$258.13	\$184,305

C.00 (M				
<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	Total Cost
O&M BUILDING	6000.00	SF	\$474.70	\$2,848,22
Subtotal			VII 1.7 0	\$2,848,22
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Item 1 Description	0.00		0.00	\$
Item 2 Description	0.00		0.00	
Item 3 Description	0.00	2 2 3 5 5 5 5 6 W	0.00	\$
Item 4 Description	0.00	el geven en englige de	0.00	\$
Item 5 Description	0.00	EM GERMAN AND AND AND AND AND AND AND AND AND A	0.00	\$
Item 6 Description	0.00		0.00	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
Item 7 Description	0.00		0.00	\$
Item 8 Description	0.00	Convention Control	0.00	\$
Item 9 Description	0.00	- 1 (0)(0)(8)(0)(0)(0)(1)(1)	0.00	\$
Item 10 Description	0.00	. Käsigettiäs och o	0.00	\$
Item 11 Description	0.00	100000000000000000000000000000000000000	0.00	\$
ttem 12 Description	0.00	Supplement Comment	0.00	\$
Item 13 Description	0.00	9 753 26 100 17 27 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.00	\$
Item 14 Description	0.00	in 2000 History anasa	0.00	\$
Item 15 Description	0.00	**************************************	0.00	\$
Subtotal				\$0
Subtotal		•		\$2,848,22
ALLOWANCES:		-		···
Finishes Allowance	0.0%		\$2,848,226	\$
I & C Allowance	0%		\$2,848,226	\$1
Mechanical Allowance	0%		\$2,848,226	\$1 \$1 \$1
Electrical Allowance	0%		\$2,848,226	\$(
acility Cost	6,000) SF	\$474.70	\$2,848,226

Alternative 1 - Deep and Shallow Aquifer

	erina di periodi di periodi Periodi di Periodi	Shallow We	II Capital Costs			
Shallow Well	Shallow Well Capacity, mgd	Land	Wells and Pumphouses	Sitework Electric Utility	Shallow well Treatment Facility	Interconnecting Piping
Vernon 1	0.75	\$160,000	\$300,000	\$750,000		\$ 907,200
Vernon 2	0.75	\$160,000	\$300,000	\$644,000		\$ 132,000
Vernon 3	0.75	\$160,000	\$300,000			\$ 662,400
Vernon 4	0.75	\$160,000	\$300,000			\$ 1,152,000
Vernon 5	0.75	\$160,000	\$300,000			\$ 2,112,000
Vernon 6	0.75	\$160,000	\$300,000			NAMES OF BUILDING
Vernon 7	0.75	\$160,000	\$300,000			
Lather 1	0.75	\$160,000	\$300,000			
Lather 2	0.75	\$160,000	\$300,000			
Lather 3	0.75	\$160,000	\$300,000			
Lather 4	0.75	\$160,000	\$300,000			
Lather 5	0	\$160,000	\$300,000			
Vernon 8	0.75	\$160,000	\$300,000			-
Vernon 9	0.75	\$160,000	\$300,000		•	
/ells 11-13 firm	1.2	\$2,240,000	\$4,200,000	\$1,394,000	\$29,864,000	\$4,965,600

Includes \$2 million for Land

10.95 Total Wellfield

\$12,799,600

Alternative 1	Finished	Water	pipeline

Alternative 1 Finished Water pipelir Pipelines	<u>1e</u>	\$16,884,000	
% allowance for pipeline valves & appurtenances		\$1,689,000	
Pipeline Construction Cost		\$18,573,000	
Pipeline Construction Cost		\$18,573,000	
3% markup for Bonds & Insurance	\$558,000		
5% markup for Mob/Demob	\$929,000		
8% markup for Contractors Overhead	\$1,561,000		
4% markup for Contractors profit	\$843,000		
25% Contingency	\$5,616,000		
Subtotal Markups and Contingency		\$9,507,000	
Total Project Construction Costs		\$28,080,000	
8% allowance for pipeline engineering and design	2,24 7 ,000	•	
2% allowance for permitting, legal and administration	3,370,000		
owance for pipeline engr services during construction	2,247,000		
Subtotal Other Project Costs	· .	\$7,864,000	
GRAND TOTAL PROJECT COST		\$35,944,000	

Alternative 1 - Deep and Shallow Aquifer Finished Water Pipeline

Water Ford		
Segment	Miles	Diameter
Αs	6	24
* B	5	24

Unit cost	\$/dia-in	12

Mile	Cost	Comments
1	\$1,462,856	Co. Rd I, wetland
2	\$1,976,832	In Co HWY H
3	\$1,520,640	In Oakdale
	•	In Oakdale, cross Les
4	\$1,556,755	Paul
		In Sunset Drive, cross
5	\$1,535,086	SW Ave
		In NW Ave, cross
6	\$1,823,247	College
		NW Ave to Main, at Fox
7	\$2,682,613	River
_	4	
8	\$7,234	Main Street, businesses
.	# 0.00= 400	In Co. Road Y, wetland,
9	\$2 ,995,12 9	cross 164
. 40	64 000 057	City streets, Open
10	\$1,322,957	country to Hillcrest
subtotal	\$16,883,349	

Pipeline Construction Difficulty

AlignmentCategory	Factors (source: CPES)	Seg A cost \$/If	Seg B cost \$/lf
Open country	0.74	213	213
Low urban	1.00	288	288
Medium urban	1.19	343	343
High urban	1.37	395	395
Groundwater	1.30	374	374
Forest	1.15	331	331
Gravel roads	0.85	245	245
Creek crossing	2.00	576	576
HWY crossing	4.00	1152	1152

miles	0.13	0.25	0.5
feet	660	1/320	2640

4620 3960 2640

Alternative 1 Distribution System Costs

Distribution Improvements		\$	14,414,539	
10% allowance for pipeline valves & appurtenances		\$	1,441,454	
Pipeline Construction Cost			\$15,855,993	
3% markup for Bonds & Insurance	\$476,000			
5% markup for Mob/Demob	\$793,000			
8% markup for Contractors Overhead	\$1,332,000			
4% markup for Contractors profit	\$720,000	•		
25% Contingency	\$4,795,000			
Subtotal Markups and Contingency			\$8,116,000	
Total Project Construction Costs	•		\$23,971,993	
5% allowance for pipeline engineering and design	1,439,000			
12% allowance for permitting, legal and administration	1,199,000			
% allowance for pipeline engr services during construction	1,918,000			
Subtotal Other Project Costs			\$4,556,000	
GRAND TOTAL PROJECT COST			\$28,528,000	

Alternative 1 - Deep and Shallow Distribution System Improvements

Water For	cemain	
Segment	Miles	Diameter
A	2.5	20
В.	2.1	16.
* C **	5.1	16/65
Unit cost	S/dia-in	12

Blending Pipes

Mile	Cost	Comments
1 mi of 20"	\$1,736,064	Assume High Urban
1 mi of 16"	\$1,388,851	Assume High Urban
~	\$4,414,811	20" Distribution
	\$2,916,588	16" Distribution
	\$7,083,141	16" Blending

subtotal \$14,414,539

	Pipeline Construction		
Alignment	Difficulty Factors	Seg A cost	Sea B cost
Category	(source: CPES)	\$/lf	\$/If
Open country	0.74	178	142
Low urban	1.00	240	192
Medium urban	1.19	286	228
High urban	1.37	329	263
Groundwater	1.30	312	250
Forest	1.15	276	221
Gravel roads	0.85	204	163
Creek crossing	2.00	480	384
HWY crossing	4.00	960	768
miles	0.13	0,25	0.5
feet	660	1320	2640

Alternative 1&2 Wastewater Forcemain

Pipelin	es	\$3,029,000
10% allowance for pipeline valves & appurtenance	es	\$303,000
Pipeline Construction Co	ost	\$3,332,000
	٥	e e
Pipeline Construction Co	ost	\$3,332,000
3% markup for Bonds & Insuran	ice \$100,000	
5% markup for Mob/Dem	ob \$167,000	
8% markup for Contractors Overhe	ad \$280,000	
4% markup for Contractors pro	ofit \$152,000	
25% Continger	ncy \$1,008,000	
Subtotal Markups and Contingen	су	\$1,707,000
Total Project Construction Cos	sts	\$5,039,000
5% allowance for pipeline engineering and desi	gn 303,000	
12% allowance for permitting, legal and administrati	on 252,000	
08% allowance for pipeline engr services during constructi	on 404,000	
Subtotal Other Project Cos	sts	\$959,000
GRAND TOTAL PROJECT CO	ST	\$5,998,000
	•	

Alternative 1 & 2 - Wastewater Force Main

Wastewate	er Forcemain	`.
Segment	Miles	Diameter
Α	2	6
,% * B	3 */	- 6

Unit cost \$/dia-in 12

Mile 1	Cost \$416,275	Comments In Sentry Dr., Cross 2 access roads, Chapman Dr, Spring city Dr, W. Sunset Dr
2	\$452,390	In Sunset Dr, cross access road, dozens of residential drive ways, Oakdale Dr, Wisteria, School Dr. Burr Oak, HWY 59 Cross Foxwood Trail, River Plain, Dale,
3	\$452,390	Mary Arin, Red Oak In HWY H, cross HWY, Red clover, 0.5
4	\$833,026	mi wetland
5	\$874,368	In Co Rd I, wetland
subtotal	\$3,028,450	

Pipeline Construction Difficulty

	Ulfficulty		
Alignment	Factors	Seg A cost	Seg B cost
Category	(source: C	\$/If	\$/If
Open country	0.74	53	53
Low urban	1.00	72	72
Medium urban	1.19	86	86
		10.10 (2) 12.10 (2)	
High urban	1.37	99	99
		USP NESS (CO.)	
Groundwater	1.30	94	94
Forest	1.15	83	83
		S. STALLA	
Gravel roads	0.85	61	61
Creek crossing	2.00	144	144
HWY crossing	4.00	288	288
	Category Open country Low urban Medium urban High urban Groundwater Forest Gravel roads Creek crossing	Alignment Category (source: Copen country 0.74 Low urban 1.00 Medium urban 1.19 High urban 1.37 Groundwater 1.30 Forest 1.15 Gravel roads 0.85 Creek crossing 2.00	Alignment Category Factors Seg A cost (source: C source:

miles.	0.13	0.25	0.5	0.05
feet	660	1320	2640	264

	O&M Cost Alternative 1 - D	eep and Shallow	wells								
Source of	·) Supply	Units	Quantity	Unit Co	ost	Ext.	Cost		\$/yr		Total
	Deep Well							_			
	pumping/maintenance Shallow Well	\$/1000 gal	1,387,000	\$	0.350	\$	485,450	\$	485,450	-	
	Pumping/Maintenance	\$/1000 gal	2,007,500	\$	0.140	\$	281,050	\$	281,050		
	Total Supply					<u> </u>				\$	766,500
Treatment/	_ Pumping	Units	Quantity	Un	it Cost	Ext.	Cost		\$/vr		
	Deep Wells 6,7,8							\$	646,449		
	Shallow Wells							\$	2,226,000		
	Residuals		144175	\$	4	\$	576,700	\$	576,700		
	Total Treatment/Pumping									\$	3,449,149
Home Soft	ening	<u>Units</u>	Quantity	Un	it Cost	Ext.	Cost		\$/yr	-	•
,	Salt/Equipment/Replacment	11						\$	2,863,894	<u> </u>	
										\$	2,863,894
ransmissi	<u> </u>	Units	Quantity	Un	it Cost	Ext.	Cost	<u> </u>	\$/yr		
	O&M	\$/lf/yr	137,280	\$	0.52	\$	71,386	\$	71,386		
	Total Transmission						· · ·			\$	71,386
Alternative	Total O&M (\$/yr.)									\$	7,200,000
PRESENT	WORTH (6%, 20 yrs)									\$	83,000,000
PRESENT	 WORTH (6%, 50 yrs)	'			<u> </u>					\$	113,000,000

	Α	В		С		D	E	F
1		<u>С</u> H2М	HILL P ar	rametric Cost	E stimating	<u>S</u> ystem	(CPES)
2								
3			FACILI	ITIES LIFE C	YCLE COST A	NALYSIS		
4	<u>File</u>	<u>1/5/2010</u>						
┢	Version:	orene establishment in action in establishment.	Import File:	C:\ Documents and Settings	\jcurl\Desktop\WaukeshaWl	\Waukesha 3.0 mgd N	F GW WTP.xls	Brows
5	Click t	or CPES QA/QC	1	l			··	<u> </u>
6								
-	Project Nam	e:	Waukesha Nanofil	ltration Groundwater W	TP			
7		i					Life Cycle Analy	
8	Project Num Project Man		Linda Mohr				. i= . n=	6.00% 25
۴	Estimator:	ager.	Jason Curl				-	4.50%
10			0.0007				Inflation %:	-110070
11	Project Desc	ription:	3.0 mgd Nanofiltra	ation WTP			control of the second of	verteett selvertin en erlenden (
	Project Loca		Milwaukee				To Global Life C	ycle Deta Sheet
	Project Loca		WISCONSIN				- :::::::::::::::::::::::::::::::::::::	
		tion (Country):	USA				To Annual O & I	// Cost Summary Sheet
16		n Start.(Month): n Start (Year):	Jan 2011				•	
17		n Duration (months)					This Report is Distribution	s for INTERNAL
18		Construction:	Jan/2012				="	
19	1						Distribution	is for EXTERNAL
	Item	Is This Facility		SCOPE OF PROJE	CT	Construction	Annual	Life Cycle Cost
		Included in				Cost	O&M Cost	(NPV)
ŀ		Project? (Yes					(Escalated)	()
l		or No)					(
20		57 7157						•
21		Yes	BWRO: NanoFilt			\$9,139,656	\$433,740	\$14,684,307
22		Yes	Air Stripper: Dega	a <u>s</u>	100000000000000000000000000000000000000	\$1,465,532	\$42,217	\$2,005,200
23		Yes	In-Plant PS: FWP	<u>s</u>		\$1,918,009	\$76,024	\$2,889,840
24	1	Yes	Liquid Chemical:	<u>NaOH</u>		\$535,818	\$154,723	\$2,513,689
25								
26			Additional Proj					
27			Biosolids Dispo	isal		\$0	\$0.	\$0
28			Standard Items			\$4,218,067	\$115,121	\$5,689,695
29			User Defined He	ems		\$0	\$0	\$0
30]				•			-
31			Plant O & M La	bor			\$173,963	\$2,223,822
32			·		· · · · · · · · · · · · · · · · · · ·			
33	I TOTAL -	I ife Cycle Analy	/sis			\$17 277 082	\$995,788	\$30,006,553

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Annual O & M Cost:	Total HP	Average-to-	Annual Usage	\$/kwh	Power Cost
A Committee of the Comm	M Av. 8 714.08	Maximum Flow	(Hours / Year)		
		Factor			
					The state of the state of
	u valabar				or comparisons save save
	n problems				Construction of the construction of the
Equipment Power	271	50%	8,760	\$ 0.06	\$ 49,567
Other Electrical:	Building	Watts / SF	Annual Usage	\$/kwh	Other Electrical Cost
	Area (SF)		(Hours / Year)		
A DESCRIPTION OF THE PROPERTY				A COMM	
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		THE RESERVE OF			
				(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	MUNISSOCIAL STATE OF THE STATE OF
Building Electrical	7,223	2.00	8,760	\$ 0.06	\$ 7,087
NAMES OF THE PROPERTY OF THE P	of Milenies of the same				
Specialty Chemicals:	Annual	Average-to-	Annual Usage	Cost (\$/dry ton)	Chemical Cost
	Usage (% of year)	Factor	(dry tons / year)		
	(*****	A THE STATE OF THE			
A STATE OF THE STA					
		TO COMMON TO STATE OF THE PARTY			
Citric Acid	100%	50%	enggenerre Sittlefaller (f	C 0.500.00	e
Hydrochloric Acid	100%	50%	4	\$ 2,500.00 \$ 360.00	\$ 4,983 \$ -
Scale Inhibitor	100%	50%	10		
Sodium Hydroxide	100%	50%	2		
Sodium Tripolyphosphate	100%	50%		\$ 3,100.00	\$ -
Sodium EDTA	100%	50%	2		\$ 1,256
Sulfuric Acid	100%	50%	81		\$ 5,564
Trisodium Phosphate Other Elquid CIP Chemical 1	100%	50% 50%		\$ 2,700.00 \$ -	\$ -
Other Liquid CIP Chemical 2	100%	50%	-	\$ - \$ -	\$ -
Other Dry CIP Chemical 1	100%	50%	-	\$ -	\$ -
Other Pretreatment Chemical 1	100%	50%	-	\$ -	\$ -
Other Pretreatment Chemical 2	100%	50%	-	\$ -	\$ -
Total Specialty Chemicals					\$ 34,988
	1		į.	1	
		L			
Specialty Items:		<u> </u>	Number per	Cartridge Filter Cost /	Cost
			Relacement	Each	
Process Cartridge Filter Replacements			Relacement 1,236	Each \$ 11.00	\$ 13,596
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements			Relacement 1,236 1,408	Each \$ 11.00	\$ 13,596 \$ 15,488
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements	Typica	illy 3 to 5 years	Relacement 1,236	Each \$ 11.00	\$ 13,596
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements		illy 3 to 5 years	Relacement 1,236 1,408	Each \$ 11.00	\$ 13,596 \$ 15,488
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Membrane Size	= Membrane	illy 3 to 5 years	Relacement 1,236 1,408	Each \$ 11.00	\$ 13,596 \$ 15,488
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Membrane Size 8 inches			Relacement 1,236 1,408	Each \$ 11.00	\$ 13,596 \$ 15,488 \$ 30,886
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Membrane Size	= Membrane		Relacement 1,236 1,408	Each \$ 11.00	\$ 13,596 \$ 15,488
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Total Specialty Items	= Membrane		Relacement 1,236 1,408	\$ 11.00 \$ 11.00	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Membrane Size 8 inches	= Membrane		Relacement 1,236 1,408	\$ 11.00 \$ 11.00 Replacement Included?	\$ 13,596 \$ 15,488 \$ 30,886
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Total Specialty Items	= Membrane		Relacement 1,236 1,408	\$ 11.00 \$ 11.00	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Membrane Size 8 inches Total Specialty Items Repair and Maintenance, and Replacement:	= Membrane		Relacement 1,236 1,408	\$ 11.00 \$ 11.00 Replacement Included?	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Input Membrane Module Cost B Inches Total Specialty Items Repair and Maintenance, and Replacement:	= Membrane		Relacement 1,236 1,408	\$ 11.00 \$ 11.00 Replacement Included?	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970 Annual Cost
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Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Membrane Size 8 inches Total Specialty Items Repair and Maintenance, and Replacement: Maintenance & Repair Cost	= Membrane			\$ 11.00 \$ 11.00 Replacement Included?	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970 Annual Cost
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Membrane Size 8 inches Total Specialty Items Repair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost	= Membrane		Relacement 1,236 1,408 378	Each	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970 Annual Cost
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Membrane Size 8 inches Total Specialty Items Repair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost	= Membrane			Each	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970 Annual Cost
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Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Input Membrane Membrane Membrane Size Input Membrane Module Cost Input Membrane Membrane Membrane Size Input Membrane Module Cost Input Membrane Membrane Membrane Size Input Membrane Module Cost Input Membrane Membrane Membrane Size Input Membrane Module Cost	= Membrane		Relacement 1,236 1,408 378 Total Annual O&M Cost	Each	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970 Annual Cost
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Membrane Size 8 inches Total Specialty Items Repair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost Other:	= Membrane Cost:	\$ 513.35	Relacement 1,236 1,408 378 Total Annual O&M Cost	Replacement Included? (1= "Yes", 0 = "No") "Other" Percent	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970 Annual Cost \$ 67,831 \$ Other Cost
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Membrane Size 8 inches Total Specialty Items Repair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost Other: Other:	= Membrane Cost:	\$ 513.35	Relacement 1,236	Replacement Included? (1'= "Yes", 0 = "No") "Other" Percent	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970 Annual Cost \$ 67,831 \$ Other Cost
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Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Binches Total Specialty Items Repair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost Other: Other: User Defined Annual O&M Items: Item 1 Item 2	= Membrane Cost:	\$ 513.35	Relacement 1,236	Replacement Included? (1= "Yes", 0 = "No") "Other" Percent	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970 Annual Cost \$ 67,831 \$ Cother Cost. \$ 21,944 Annual Cost \$ -
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Input Membrane Module C	= Membrane Cost:	\$ 513.35	Relacement 1,236	Replacement Included? (1= "Yes", 0 = "No") "Other" Percent	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970 Annual Cost \$ 67,831 \$
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Input Membrane Module C	= Membrane Cost:	\$ 513.35	Relacement 1,236	Replacement Included? (1= "Yes", 0 = "No") "Other" Percent	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970 Annual Cost \$ 67,831 \$ \$ 21,944 Annual Cost \$ - \$ -
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Input Membrane Module C	= Membrane Cost:	\$ 513.35	Relacement	Replacement Included? (1 = "Yes", 0 = "No")	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970 Annual Cost \$ 67,831 \$ Other Cost. Annual Cost \$ - \$ \$ - \$
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Input	= Membrane Cost:	\$ 513.35	Relacement	Replacement Included? (1 = "Yes", 0 = "No")	\$ 13,596 \$ 15,488 \$ 30,886 \$ 30,886 \$ 59,970 Annual Cost \$ 67,831 \$
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Input	= Membrane Cost:	\$ 513.35	Relacement	Replacement Included? (1 = "Yes", 0 = "No")	\$ 13,596 \$ 15,488 \$ 30,886 \$ 30,886 \$ 59,970 Annual Cost \$ 67,831 \$ \$ 21,944 Annual Cost \$ \$ \$ \$ \$ \$ \$ \$
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Membrane Size 8 inches Total Specialty Items Repair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost Other: Other: User Defined Annual O&M Items: Item 1 Item 2 Item 3 Item 4 Item 5 Item 6 Item 7 Item 8	= Membrane Cost:	\$ 513.35	Relacement	Replacement Included? (1 = "Yes", 0 = "No")	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970 Annual Cost \$ 67,831 \$ Other Cost Annual Cost \$ - 5
Process Cartridge Filter Replacements CIP Cartridge Filter Replacements Membrane Elements Input Membrane Replacement Frequency (yrs) Input Membrane Module Cost Input Membrane Module Cost Input Membrane Module Cost Repair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost Other: Other: User Defined Annual O&M Items: Item 1 Item 2 Item 3 Item 4 Item 5 Item 6 Item 7 Item 8 Item 9	= Membrane Cost:	\$ 513.35	Relacement	Replacement Included? (1 = "Yes", 0 = "No")	\$ 13,596 \$ 15,488 \$ 30,886 \$ 59,970 Annual Cost: \$ 67,831 \$ Other Cost: \$ 21,944 Annual Cost: \$ - \$ \$ -
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4/9/2010 BWRO NanoFilt Printed by: 1:57 PM

Subtotal Annual O&M Cost		\$ 241,388
Contingency	10%	\$ 24,139
Total Annual O&M Cost		\$ 265,526

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nnual O & M Cost:		TO SEE STATE				
Power:	Security Process Security (Control of Security Control of Security	Total HP		Annual Usage (Hours	\$/kwh	Power Cos
			Flow Factor	/ Year)		
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	BODIES SAUDE LA PROPERTIE DE PROPERTIE	1.00				· 李雪·李东
From 274505						
Equipment Power		140	50%	8,760	\$ 0.06	\$ 25,6
Equipment Fower						
Other Electrical:		Building	Watts / SF	Annual Usage (Hours	\$/kwh	Other Electri
	AND SEC. LAND SEC. 1	Area (SF)		/Year)		Cost
	NETHERIES OF THE SECOND				NE CONTRACTOR	
Region Construction of the		and Government				
Building Electrical	nn a aithe aith afhail fhair eacht na mheill na an Leabhad ar mheil (a air 60 bhlian, 1970 mail i 1997).	655	2.00	8,760	\$ 0.06	\$
Chemicals:	2000 yelde och 50 Trokking som de o	or Expension for				\$
Repair and Maintenance, and	<u> </u>			1	Replacement	Annual Co
Replacement:	aranina da la la companione de la compan		0.00		Included? (1 =	
		100			"Yes", 0 =	
Maintenance & Repair Cost					"No")	\$ 12,2
Replacement Cost					-	\$
Other:		100		Total Annual O&M	"Other"	Other Cos
	Graphic trainer dan magiliar memberi			Cost	Percent	1000000
Other Cost		ero Shell o e Eugene S. Steffort meneral Control State of	The second secon	\$ 38,462.57	10.0%	\$ 3,
						Annual Co
User Defined Annual O&M Item Item 1	IS :					\$
Item 2						\$
Item 3			Selfore in the Habita		81.63	\$
Item 4		A Parada A				\$
Item 5				entrage of the		\$
Item 6		is Philippines	<u>Nymenniki</u>			\$
Item 7						\$
Item 8					1.2.28.000	\$
Item 9						\$
Item 10						\$
Item 11			andra — Transport de la Sala de l Sala de la Sala de la S	가 하는 것도 되었다. 현실 보호자 원교회 전 기업을 경기되었다.	1 - 3(621) \$586834 y - mod Kolor Albard	\$
Item 12 Item 13						\$
item 14				•		\$
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age - ROIII IV	The state of the s	1	•			18 75 m 98887 (1935 m)
btotal Annual O&M Cost		ı		I		\$ 42,
ontingency					10%	\$ 4,2
otal Annual O&M Cost				· · · · · · · · · · · · · · · · · · ·		\$ 46,5

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Power:		Total HP	Average-to- Maximum Flow	Annual Usage (Hours / Year)	\$/kwh	Powe	er Cost
			Factor	(nours / rear)			
				1000000			
And the Secretary of the Control of	66 S S S S S			1-21-15-10-6	6 34 32 4		an gr
Equipment Power	State of the state	2	50%	8,760	\$ 0.06	\$	
Other Electrical:		Building Area (SF)	Watts / SF	Annual Usage (Hours / Year)	\$/kwh	Other E	Electri ost
Company of the Compan		Alea (OF)	a sale se	(nours riear)			ost
		14159			waste do	10.50	
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				接續維持是			
Building Electrical		822	2.00	8,760	\$ 0.06	\$	
Liquid Chemicals:		Annual	Average-to-	Annual Usage	Cost (\$/dry.ton)	Chemi	cal C
Elquiu Criefficais.		Usage (% of	Maximum Flow	(dry tons / year)	COST (Wary tol)	Miller State	
March 1995 (1995)		year)	Factor				
		evalváción. Vojete	知识的经验和			40000	
					15.45		
Aluminum Sulfate (Alum)		100%	50%		\$ 644.17	\$	
Aqueous Ammonia Ferric Chloride	:	100% 100%	50%	-	\$ 404.57 \$ 782.93	\$ \$	
Hydrofluorosilicic Acid		100%	50%		\$ 360.00	\$	
Hyrogen Peroxide (35%)		100%	50%	-	\$ 1,734.23	\$	
Liquid Polymer		100%	50%	-	\$ 3,140.89	\$	
Sodium Bisulfite Sodium Hydroxide (50%)		100% 100%	50% 50%	183	\$ 920.91 \$ 825.32	\$	7.
Sodium Hypochlorite (12.5%)		100%	50%	103	\$ 1,672.13	\$	
Sulfuric Acid		100%	50%		\$ 138.09	\$	
Other Chemical	Trans.	100%	50%	-	\$ -	\$	
Total Chemical Cost Repair and Maintenance, and Replacement:					Replacement	\$ Annu	
Repair and Maintenance, and Replacement:	2005 (1415 b))				Replacement Included? (1 = "Yes", 0 = "No")	Annu	al Co
Repair and Maintenance, and Replacement: Maintenance & Repair Cost	70.05%		100 (200) 100 (200) 100 (200)		Included? (1 = "Yes", 0 = "	Annus \$	al Co
Repair and Maintenance, and Replacement:		2015			Included? (1 = "Yes", 0 = "	Annu	al Co
Repair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost				S-Total Annual	Included? (1 = "Yes", 0 = "	Annu	al Co
Repair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost				Total Annual O&M Cost	Included? (1 = "Yes", 0 = "No")	Annus \$	al Co
Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost Dither:				O&M Cost	Included? (1 = "Yes", 0 = "No")	Annu	al Co
Repair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost		75 (F)		A CONTRACTOR OF THE PROPERTY O	Included? (1 = "Yes", 0 = "No")	Annu	al Co
Repair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost Other:				O&M Cost	Included? (1 = "Yes", 0 = "No")	Annu	al Co
Repair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost Other: Other Cost User Defined Annual O&M Items: Item 1				O&M Cost	Included? (1 = "Yes", 0 = "No")	Annus \$ \$ Othe	al Co
Maintenance & Repair Cost Replacement Cost Replacement Cost Other: Other Cost User Defined Annual O&M Items: Item 1 Item 2				O&M Cost	Included? (1 = "Yes", 0 = "No")	Annua \$ Othe	al Co
Maintenance & Repair Cost Replacement Cost Other Cost Ser Defined Annual O&M Items: Item 1 Item 2 Item 3				O&M Cost	Included? (1 = "Yes", 0 = "No"). "No"). "Other". Percent.	Annua \$ Othe \$ Annua \$ \$	al Co
epair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost ther: Other Cost ser Defined Annual O&M Items: Item 1 Item 2 Item 3 Item 4				O&M Cost	Included? (1 = "Yes", 0 = "No")	Annua \$ Othe \$ Annua \$ \$	al Co
Pair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost Other: Other Cost ser Defined Annual O&M Items: Item 1 Item 2 Item 3 Item 4 Item 5				O&M Cost	Included? (1 = "Yes", 0 = "No")	Annua \$ Othe \$ Annua \$ \$ \$	al Co
Maintenance & Repair Cost Replacement Cost Wher: Other Cost Ser Defined Annual O&M Items: Item 1 Item 2 Item 3 Item 4 Item 5 Item 6		ji.		O&M Cost	Included? (1 = "Yes", 0 = "No") "Other" Percent	Annua	al Co
Maintenance & Repair Cost Replacement Cost Other Cost Jeer Defined Annual O&M Items: Item 1 Item 2 Item 3 Item 4 Item 5 Item 6 Item 7		ji.		O&M Cost	Included? (1 = "Yes", 0 = "No") "Other" Percent 10.0%	Annua	al Co
Maintenance & Repair Cost Replacement Cost Other Cost User Defined Annual O&M Items: Item 1 Item 2 Item 3 Item 4 Item 5 Item 6 Item 6 Item 7 Item 8		ji.		O&M Cost	Included? (1 = "Yes", 0 = "No") "Other" Percent	Annua	al Co
Maintenance & Repair Cost Replacement Cost Other Cost User Defined Annual O&M Items: Item 1 Item 2 Item 3 Item 4 Item 5 Item 6 Item 7 Item 8 Item 8 Item 9		ji.		O&M Cost \$ 78,279	Included? (1 = "Yes", 0 = "No")	Annua	al Co
Maintenance & Repair Cost Replacement Cost Other Cost User Defined Annual O&M Items: Item 1 Item 2 Item 3 Item 4 Item 5 Item 6 Item 7 Item 8 Item 9 Item 9 Item 10		ji.		O&M Cost \$ 78,279	Included? (1 = "Yes", 0 = "No")	Annua	al Co
Repair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost Other: Other: Other Cost Jeen 1 Item 1 Item 2 Item 3 Item 4 Item 5 Item 6 Item 7 Item 8 Item 8 Item 9 Item 10 Item 11 Item 11 Item 12		ji.		O&M Cost \$ 78,279	Included? (1 = "Yes", 0 = "No")	Annua	al Co
Maintenance & Repair Cost Replacement Cost Other: Other Cost Jeen 1 Item 1 Item 2 Item 3 Item 4 Item 5 Item 6 Item 7 Item 8 Item 9 Item 10 Item 11 Item 10 Item 11 Item 12 Item 11 Item 13		ji.		O&M Cost \$ 78,279	Included? (1 = "Yes", 0 = "No")	Annua	al Co
Maintenance & Repair Cost Replacement Cost Other: Other Cost Jeen 1 Item 2 Item 3 Item 4 Item 5 Item 6 Item 7 Item 8 Item 9 Item 10 Item 11 Item 12 Item 11 Item 12 Item 13 Item 14 Item 14 Item 15 Item 16 Item 17 Item 18 Item 17 Item 18 Item 19 Item 10 Item 11 Item 12 Item 13 Item 14		ji.		O&M Cost \$ 78,279	Included? (1 = "Yes", 0 = "No")	Annua	al Co
Repair and Maintenance, and Replacement: Maintenance & Repair Cost Replacement Cost Other: Other: Other Cost Jeen 1 Item 2 Item 3 Item 4 Item 5 Item 6 Item 7 Item 8 Item 9 Item 10 Item 11 Item 12 Item 11 Item 12 Item 13 Item 14 Item 15 Item 10 Item 11 Item 12 Item 13 Item 14 Item 12 Item 13 Item 14 Item 15 Item 10 Item 11 Item 12 Item 13 Item 14		ji.		O&M Cost \$ 78,279	Included? (1 = "Yes", 0 = "No")	Annua	al Co
Maintenance & Repair Cost Replacement Cost Other: Other Cost User Defined Annual O&M Items: Item 1 Item 2 Item 3 Item 4 Item 5 Item 6 Item 7 Item 8 Item 8 Item 9 Item 10 Item 11 Item 12 Item 11 Item 12 Item 13 Item 14 Item 15		ji.		O&M Cost \$ 78,279	Included? (1 = "Yes", 0 = "No")	Annua	al Co
Maintenance & Repair Cost Replacement Cost Other: Other Cost User Defined Annual O&M Items: Item 1 Item 2 Item 3 Item 4 Item 5 Item 6 Item 7 Item 8 Item 8 Item 9 Item 10 Item 11 Item 12 Item 11 Item 12 Item 13 Item 11		ji.		O&M Cost \$ 78,279	Included? (1 = "Yes", 0 = "No")	Annua	or Cos

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ا ا		С н2м	HILL Parametric Cost Estimating	S vstem	<i>(CPES</i>	5)
1			··· <u>-</u>		,	,
2						
3			FACILITIES LIFE CYCLE COST A	NALYSIS		
	File	1/5/2010				
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<u> </u>	2/20/00/20	AND CONTRACTOR OF THE PROPERTY OF THE PARTY				
6						
	Project Name	9;	Waukesha WTP			
7					Life Cycle Anal	·
	Project Numi				. <i>j</i> =	6.00%
9	Project Mana	iger:	Linda Mohr Jason Curl		. n =	25 4 50%
10	Estimator:		Jason Curi		Annual Inflation %:	4.50%
	Project Desc	rintion:	Fox River Alluvium and Shallow Groundwater		. mmatron /a.	
	Project Loca		Milwaukee	•	To Global Life C	Sycle Data Sheet
	Project Loca		WISCONSIN			
		tioп (Country):	USA		To Annual O & I	M Cost Summary Sheet
		Start (Month):	Jan		-	
		Start (Year):	2011		This Report in Distribution	s for INTERNAL
_		Duration (months) Construction:) 24 Jan/2012			
19	MIQ-FOIIL OI	Construction.	Jail/2012		This Report	is for EXTERNAL
19	Item	Is This Facility	SCOPE OF PROJECT	Construction	Annual	Life Cycle Cost
	nem	Included in		Cost	O&M Cost	(NPV)
				COSI		(IALA)
		Project? (Yes	·		(Escalated)	
		or No)				
20		115-11-12-12-13-13-13-13-13-13-13-13-13-13-13-13-13-				region, n _{e e} inceparate anno me americane
21		Yes	Inline Rapid Mix: RMX	\$1,124,218	payment to a community were also	CONSTRUCTION IN A SAME TO BE REPORTED AND ADDRESS OF THE PARTY.
22		Yes	Flocculation: FLOC	\$2,758,162	Tan Co. of Co. St	\$3,019,917
23		Yes	Lamella Clarifier: LAM	\$4,276,418	action of a contract of a contract of	\$5,554,216
24		Yes	Filters: FILT	\$9,077,505	white flat control of Astronomerable	\$10,031,332
25		Yes	Surge Basin-Decanter: BWW	\$2,773,337	\$38,555	\$3,266,193
26		No No	UV Disinfection: UVD	\$0		\$0
27		Yes	Concrete Clearwell: FWT	\$2,371,500	\$1,111	\$2,385,692
28		No	Steel Clearwell: FWT	\$0	\$0	\$0
29		<u>No</u>	In-Plant PS: FWPS	\$0	\$0	\$0
30		Yes	Vertical Turbine PS: FWPS	\$5,495,750	\$738,581	\$14,937,283
31		Yes	Filter BW PS: BWSPS	\$1,988,991	\$44,586	\$2,558,947
32		Yes	U.D. Facility: GEN	\$0	\$0	\$0
33		Yes	Liquid Chemical: FeCI3	\$708,914	CONTRACTOR SERVICES PROPERTY AND ADMINISTRACTOR	and when the control of the control
34		Yes	Liquid Chemical: NaOCI	\$534,622	\$98,204	\$1,789,986
35		Yes	Liquid Chemical: FLUOR	\$335,846	\$8,675	\$446,737
36		Yes	Liquid Chemical: POLYPHOS	\$333,051	\$39,577	\$838,978
37		Yes	O&M Building: OMB	\$5,146,925	A CHARLEST AND A CONTRACT OF THE CONTRACT OF T	ACRES TO A CONTRACTOR STATE AND A CONTRACTOR OF THE ACRES
38				The second of th		A CONTRACTOR OF THE PROPERTY O
			Additional Property Const.			
39			Additional Project Costs: Biosolids Disposal		l constant	
40				\$0	\$0	\$0
41			Standard Items	\$13,413,828	\$384,177	\$18,324,898
42			User Defined Items	\$0	\$0	\$0
. —	!		Fig. 10 The control of the control o	properties and the larger of the St.	part i service a vo s	e e e e e e e e e e e e e e e e e e e
43	ı			gi galiga ga kalan ili ku malaka	الانتان المنافقة الم	age a sejje nek a p a jula se umi
44			Plant O & M Labor		\$434,906	\$5,559,555
45	TOTAL	1 *C - O - 1 - 1 - 1		4-4-	A	<u> </u>
46		Life Cycle Analy		\$50,339,067	\$2,226,059	\$78,795,464
47			D (based on Maximum Daily Flow Rate)	\$4.19	I GPU	
48		Cost per CRD (ha	cod on Maximum Daily Flow Patal	64.40	LCDD	(Note: "Capital Cost" equals
	Capital	Cost per GPD (Da	sed оп Maximum Daily Flow Rate)	\$4. 19	/ GPD	Construction Cost plus Non-
						Construction Cost)
49		0.011.0	00 0 11 1 1 1			175
50	Annual	U & M Cost per 1,0	100 Gallons (based on Average Annual Daily Flow Rate)		\$ 1.016	/ Thousand Gallons

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Rapid Mixing (Inline)	To S	ummary Sheet				
			<u> </u>			
nstruction Cost:						\$1,124,217
mual O & M Cost:						
Power:		Total HP	Average-to-	Annual Usage (Hours	\$/kwh	Power Cos
			Maximum Flow Factor	/Year)		44.
Equipment Power		6	50%	8,760	\$ 0.06	\$ 1,0
E-MODELLA COLOR						
Other Electrical:		Building Area (SF)	- Watts / SF	Annual Usage (Hours / Year)	\$/kwh	Other Electri
		Alou (Cit)				
Building Electrical		922	2.00	8,760	\$ 0.06	\$!
Chemicals:						\$
Whem learns	A STATE OF THE STA	Production management of section	CONTRACTOR OF THE STATE OF THE	300003 XXXXX 1110 32-2 1, 2 × 2 × 2		
Repair and Maintenance, and Replacemen	t				Replacement Included? (1 = "Yes"; 0 = "No")	Annual Co
Maintenance & Repair Cost	Marin 1997					\$ 3,
Replacement Cost				Trefore and the B		\$
Other:				Total Annual O&M	"Other" Percent	Other Cos
Ville).				Cost		
04-0-4			28	\$ 5,086	10.0%	\$
Other Cost						
User Defined Annual O&M Items:	4 A A				第一个人,是是	Annual Co
llem 1	The second second					\$
The second secon		1200 244		THE SIME SAFE		\$
Item 3				op of the part spectation where		\$
Item 4			(10 K) (40 K)	200 (4) (1) (5) (6) (6) (6) (6) (6) (6) (6) (6) (6) (6		\$ \$
Item 5						. .
Item 6		e forelegist	20.195.00000			S
Item 7 Item 8					gricory	\$
The second secon						\$
	Tage Control	基施基本		42 (4 (1 (2))))))))))		\$ 3
Item 11	ingerjones - 1		The Sale of the Co.			\$
Item 12				In 1934 of the section	152 (SIGNAL DAY)	\$
Item 13					75 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	\$
Item 14	75 (55 (58 20 (55 (55 (55 (55 (55 (55 (55 (55 (55 (5		A 1072 CO		POST COME	\$
item 15		SHEENE STOT			(2011年) [196] [196] [196] [196] [196] [196] [196] [196] [196] [196] [196] [196] [196] [196] [196] [196] [196]	<u> </u>
ubtotal Annual O&M Cost		T. Park	· 50			\$ 5,
ontingency	1985) 1985)	194			10%	\$
otal Annual O&M Cost	-11-81X					\$ 6,

Placedelies (Wariteath) Parish I	Akhanat (Ekoksiaalas)	tion for Community and : I To Hamming thems	<u>Soutineerstellard</u>		
Cerubrus lium Cistali:		To Bapterior, Shipped]			***************************************
Partial D. A. H. Cont					
Estatoriant Paneur.					
		1			
Voirterena A Chemic Grad Nuclean et al Chemic Grad Nuclean et al Chemic Grad					
Alamin Million Davin Alamining					
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Bubbatul Aseruul 1446 Capt Estilisgiisky Kalif Aseruil 1468 Capt				 *****	

То	1		1	1	1	
1 222	Summary She	et				
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						\$4,276,417
						4.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	Total HP	Average-to- Maximum-Flow		s S /kwh		Power Cost
	4	Factor	4	0.6	0.00	
						732
	Building Area (SF)	Watts / SF	Annual Usage (Hour /Year)	s \$/kwh	C	ther Electrica Cost
	4.804	2.00	8.76	0 8	0.06.5	4,713
C. C. C. C.						Annual Cost
	(1) (1)		AND			45,12
			Total Association			
			Cost	Other Percent		Other Cost
			\$ 50,57	2 10.0%	\$	5,057
					la de la composición	Annual Cost
					Act of April 198 (Act 198	· Connect Addisorbing to a
	garana iyo		al College		\$	翻续10.
		- 101-5211				
				AND THE PROPERTY OF THE PROPER		
50 794 15 15 15 15 15 15 15 15 15 15 15 15 15		AND COMMENTS				
		The Succession of the Contract	And Market State Co.		\$	
		CASO	33913211221142	Control of the contro		
3 45 45 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		2.7.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2			\$	
		ALL CARE			indicate and in Minary and a second	
					CASSIBILITIES PARTITION TO THE	
	. !		l		: <u> </u>	55,629
		1.74		10%		
		Building Area: (SF)	Building Area (SF) 4 50% Building Area (SF) 4,804 2.00	Maximum Flow Factor, 8,76 4 50% 8,76 Building Area (SF) 2.00 8,76 4,804 2.00 8,76 Total Annual O&M Cost 3 \$ 50,57	Maximum Flow /Year)	Total HP Average to Annual Usage (Hours November 1) Average to November 2) Annual Usage (Hours November 2) Average to Annual Usage (Hours November 2) Average to Annual Usage (Hours November 2) Average to Ave

<u>Filters</u>	To Sumo	nary Sheet				
	-					
Construction Cost:						\$9,077,505
Annual O & M Cost: Power::		Total HP	Average-to-	Annual Usage (Hours	\$/kwh	Power Cost
			Maximum Flow Factor	/Year)		
					44.3850	
Equipment Power		5	50%	8,760	\$ 0.06	\$ 915
Other Electrical:		Building	Watts / SF	Annual Usage (Hours	\$/kwh	Other Electrica
		Area (SF)		/Year)		Cost
Building Electrical		7,600	2.00	8,760	\$ 0.06	\$ 7,457
Chemicals:				Annual Facility Usage	\$/ton	Chemical Cost
			(tons)	(% of year)	Party of the section of	1000
GAC			-	100%	\$ 2,400.00	
Total Chemical Cost Repair and Maintenance, and Replacement.					Replacement included? (f)	
					"Yes", 0 = "No")	
					a supply	
Maintenance & Repair Cost Replacement Cost				en e	ACCOMMENSATION OF STREET O	\$ 29,379 \$ -
Other:				Total Annual O&M	"Other" Percent	Other Cost
				Cost		
Other Cost				\$ 37,750	10.0%	\$ 3,775
User Defined Annual O&M Items: Item 1						Annual Cost
Item 2 Item 3						\$ -
Item 5						\$ -
Item 6 Item 7				<u> </u>		\$ - \$ -
Item 8 Item 9			<u>n naki bira.</u> Gedel Bağısan			\$ - \$
Item 10 Item 11						\$ - \$ -
						\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
Item 14 Item 15						\$ - \$ -
Subtotal Annual O&M Cost			1 1			\$ 41,525
Contingency Total Annual O&M Cost					10%	\$ 4,153 \$ 45,678

Large System Combination Wastewater Surge Basin						
and Floating Tube Decanter Clarification (>= 5 MGD)	T- 0)]	
and Frodomy race became training and the	10 Sun	mary Sheet				
			,			
		!				\$2,773,337
Construction Cost:	T	·	<u> </u>	· -	1	\$2,113,331
Annual 0 & M Cost:	AT THE RESERVE					
Power:	ALCOHOL MANAGEMENT	Total HP	Average-to-Maximum	Annual Usage	5/kwh	Power Cost
			Flow Factor	(Hours / Year)		
			100			
Company of the Compan						
		42.65				
	100000000000000000000000000000000000000	508 SE	COM.	0.700		
Equipment Power	: '	43	50%	8,760	\$ 0.06	\$ 7,865
		Building	Watts / SF	Annual Usage	\$/kwh	Other Electrical
Other Electrical:		Area: (SF)		(Hours / Year)		Cost
					9	
						100
		04	0.00	8.700	6 0.00	
Building Electrical		81	2.00	8,760	\$ 0.06	\$ 79
Chemicals:		ASSESSED ASSESSED				\$
	Angular for the Committee of the Committ	III AND	The Part of the Company of the Part of the Company	The state of the s		The second secon
Repair and Maintenance, and Replacement:		a Carpet Ser		海绵 多病	Replacement	Annual Cost
					included? (1 = "Yes", 0 =	
					"No")	
Maintenance & Repair Cost	te Pigusek	Stephen	ees organisme	i jang	学校 在连续机	\$ 11,562
Replacement Cost	1 1 1 1 1 1 1 1 1		<u> </u>	1 2/1/27		\$ -
				Total Annual	"Other"	Other Cost
Other:				O&M Cost	Percent	Cities Oost
				100		
Other Cost	1		<u> </u>	\$ 19,506	10.0%	\$ 1,951
User Defined Annual O&M Items:						Annual Cost
Item 1	Part Harris New York Constitution (Co.	4 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6				\$ -
Item 2	Ge/18 (2.55), No. 12			. 20 fee (12 v 13 v 2		\$
AND ASSAULT OF THE PROPERTY OF	经营销额人款 医	Option soler		owa con		\$. <i>\$</i>
PROGRAMMA AND THE STREET STREE						\$ 1500
Item 5					1.43.17.00.76.18.1	\$ -
Item 6				(소설 15년 4년 1년 1년 97일 1787 년 - 17년	The All Shipperson	\$: : :
Item 7	te de la composition de la composition La composition de la		e ja arendaja kapaten ette Neli Vala ere ereket taas et	entengan beria. Salah salah salah 1949.	era e de astrologio d du cultificació d'Atri	\$
Item 9		A STANDARD STANDARD		estaturen eren bildatua. Here del Digita Digita (digita)	n a un regres esent e a r Nulta Deculo de Regel y re	\$ -
Item 10						\$ -
Jtem 11		1.00 (0.00		AUG Shark Asia	griffig wat sit	\$ 1,245 (d) - ,-
The state of the s		3 . Park		역시가 호텔링	jak (uk (just	\$ - \$ (# ¹ 2) ¹ (# = ² 1)
Item 13					girkini v	\$
Item 14						\$ -
Item 15	<u>1 (5) 8, 20 (1) 8 (</u>				1 - 1 . T	\$ -
Cohestal Americal Control Control	l .	I	1.	I	I	\$ 21,457
Subtotal Annual O&M Cost					10%	\$ 2,146
Contingency Total Annual O&M Cost					7.70	\$ 23,602
I DIAI AIIIIIAI OON COSI	Contract Contract		* * * * * * * * * * * * * * * * * * * *			- LUJUVE

To Sumply Stort	4/5/2010 5:09 PM	Concrete	e Clearwell	FWT	· · · · · · · · · · · · · · · · · · ·	I	Printed by:
Construction Cost: \$2,271,500 \$2,271,5	Concrete Tank						
District		To Sumn	nary Sheet				
District							
District	Construction Cost:						\$2,371,500
Equipment Power							
Equipment Power	remain that the second			V->			
Equipment Power 50% 6,700 \$ 0.00 \$			BAGPER PROTESTS				
Differ Electrical: Building Watts/SF Annual Usage (Flours Silven Other Electric Cost	FOWEI		, Otal 11			PAWII	Fower Gost
Differ Electrical: Building Watts/SF Annual Usage (Flours Silven Other Electric Cost							
Differ Electrical: Building Watts/SF Annual Usage (Flours Silven Other Electric Cost							
Differ Electrical: Building Watts/SF Annual Usage (Flours Silven Other Electric Cost							
Differ Electrical: Building Watts/SF Annual Usage (Flours Silven Other Electric Cost	Fauinment Power		-	50%	8 760	\$ 0.06	\$.
Building Electrical -	Equipment 1 Ower					0.00	\
Building Electrical 2.00 8.760 \$ 0.06 \$	Other Electrical:	s confine of the		Watts / SF		. \$/kwh	Other Electrical
Repair and Maintenance, and Replacement: Repair and Maintenance, and Replacement: Replacement			Area (SF)		/Year)		Cost
Repair and Maintenance, and Replacement: Repair and Maintenance, and Replacement: Replacement							
Repair and Maintenance, and Replacement: Repair and Maintenance, and Replacement: Replacement					CONTRACTOR OF THE PROPERTY OF		
Repair and Maintenance, and Replacement: Repair and Maintenance, and Replacement: Replacement							
Repair and Maintenance; and Replacement: Replacement Include9 (1 = 1	Building Electrical		-	2.00	8,760	\$ 0.06	\$ -
Repair and Maintenance; and Replacement: Replacement Include9 (1 = 1	Chemicals:						S
Maintenance & Repair Cost S S6 Replacement Cost Total Annual Q&M **Other Cost Other Cost Percent Other Cost Percent Item 1 S S6 Item 2 S S Item 3 S S Item 4 S S Item 6 S S Item 6 S S Item 8 S S Item 9 S S Item 10 S S Item 11 S S Item 11 S S Item 12 S S Item 14 S S Item 15 S S Item 16 S S Item 17 S S Item 18 S S Item 19 S S Item 10 S S Item 11 S S Item 11 S S Item 12 S S Item 14 S S Item 15 S S Item 16 S S Item 17 S S Item 18 S S Item 19 S S Item 10 S S Item 11 S S Item 12 S S Item 14 S S Item 15 S S Item 15 S S Item 16 S S Item 17 S S Item 18 S S Item 19 S S Item 10 S S Item 11 S S Item 12 S S Item 13 S S Item 14 S S Item 15 S S Item 16 S S Item 17 S S Item 18 S S Item 19 S S Item 19 S S Item 10 S S Item 11 S S Item 12 S S Item 14 S S Item 15 S S Item 16 S S Item 17 S S Item 18 S S Item 19 S S Item 19 S S Item 10 S S Item 10 S S Item 11 S S Item 12 S S Item 14 S S Item 15 S S Item 16 S S Item 17 S S Item 18 S S Item 19 S S Item 19 S S Item 10 S S Item 10 S S Item 11 S S Item 12 S S Item 14 S S Item 15 S S Item 16 S Item 17 S S Item 18 S S Item 19 S S Item 19 S Item 10 S S Item 10 S Item 10 S Item 10 S Item 11 S S Item 12 S Item 14 S Item 15 S S Item 16 S Item 17 S S Item 18 S Item 19 S Item 19 S Item 10			MIX. COMP. F 2 20. F 1 1 1 2		300(CERTACOPEDA HAS (AAR) AS A 2-2-7-1-1-2-1-1-1-3-2-7.		
Maintenance & Repair Cost \$ 565 Replacement Cost \$ 565 Replacement Cost \$ 5 56 Replacement Cost \$ 5 56 \$ 5 60 \$ 5 5 60 \$ 5 60 \$ 5 60 \$ 5 60 \$ 6 60	Repair and Maintenance, and Replacement:						
Maintenance & Repair Cost \$ 566 Replacement Cost \$ 560 \$ 5 60							
Cost Cost Percent						"No")	
Other Cost Percent Cost Cost Percent Cost					NAC SAL	3 3334m - 3 3137 <u>-</u>	
Other Cost Percent. User Defined Annual O&M Items: Annual Cost I tem 1 \$ - I tem 2 \$ - I tem 3 \$ - I tem 4 \$ - I tem 5 \$ - I tem 6 \$ - I tem 7 \$ - I tem 8 \$ - I tem 9 \$ - I tem 10 \$ - I tem 11 \$ - I tem 12 \$ - I tem 13 \$ - I tem 14 \$ - I tem 15 \$ - subtotal Annual O&M Cost \$ 611 contingency 10% \$ 621	TOO GOOTHORE OVOL						
Other Cost \$ 562 10.0% \$ 56 User Defined Annual O&M Items: Annual Cost Item 1 \$ Item 2 \$ Item 3 \$ Item 4 \$ Item 5 \$ Item 6 \$ Item 7 \$ Item 8 \$ Item 10 \$ Item 11 \$ Item 12 \$ Item 13 \$ Item 14 \$ Item 15 \$ subtotal Annual O&M Cost \$ 61 contingency 10% \$ 62	© Other .				Officer to the second of the s	CONTRACTOR STATE OF THE PROPERTY.	Other Cost
User Defined Annual O&M Items: Annual Cost					COSC	reitent	1.30
Item 1	Other Cost		Mer i	34000000	\$ 562	10.0%	\$ 56
Item 1	Isor Defined Appual OSM Items						Annual Cost
Item 3							NAME OF TAXABLE PARTY O
Item 4		72 72 12 74 No. 44 C.					9 91N-MARKOWS 1 1 1 1
Item 5						(22)	A SAME SAME A SAME AS A SAME A SAME AS A SAME
Item 6						F 150	§ CARGORAL - NECREPORT SAND
Item 7		ere en	andro Arte. Notae Markette				STATE OF THE PROPERTY OF THE
Item 9			f (Stylenope)			100000	THE STATE OF THE PROPERTY OF THE
Item 10							A CONTRACTOR OF STREET AND ACCOUNT.
Item 11		A A FE		4500 000 200	er Saladi. 1801 (1904) Avadad Saladi.	<u> </u>	
Item 12				21. 18.528 M		in the end that well	W. M. S. 2000 2000 2000 2000 2000 2000 2000
Item 13				127 (12.25)			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Item 15	Item 13		Post and the contract	2016 JUNE 1016 J	Provide Av.		
ubtotal Annual O&M Cost \$ 618 ontingency 10% \$ 62		200 (190 (190 (190 (190 (190 (190 (190 (1		to the statement of the statement		4.4	
ontingency 10% \$ 52	Item 15		5881 8 1 		, was a san filipaga mata		
ontingency 10% \$ 52	Subtotal Annual O&M Cost	.	l		. 1		\$ 618
otal Annual O&M Cost \$ 680	Contingency			<u></u>		10%	i
	Total Annual O&M Cost				e la Seguita		\$ 680

In-Plant PS FWPS

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4/5/2010

5:09 PM	vertical full	1	··· •	1	T	rifiled by.
ertical Turbine Pump Station		i To Summan	/ Sheet			
						•
nstruction Cost:	1					\$5,495,75
nual O & M Cost: Power:		Total HP	Average-to-Maximum	Annual Usage (Hours	\$/kwh	Power Co
			Flow Factor	/Year)		
Approximation of the second se				9.00		
 This is a man and a state of the state of th						
Equipment Power		1,800	50%	8,760	\$ 0.06	\$ 329,
Other Electrical:		Building	Watts / SF	Annual Usage (Hours	\$/kwh	Other Elect
		Area (SF)		/Year)		Cost
Building Electrical	<u>.</u>	3,189	2.00	8,760	\$ 0.06	\$ 3,
Chemicals:				275 C		\$
Repair and Maintenance, and Replacement:		l .	l	l	Replacement	
					Included? (1 = "Yes", 0 =	
Maintenance & Repair Cost		1900 (4			"No")	\$ 41,
Replacement Cost					-	\$
Other:		12		Total Annual O&M . Cost	"Other" Percent	Other Co
Other Cost				\$ 373,672	10.0%	\$ 37,
		14.				Annual Co
User Defined Annual O&M Items: Item 1				CHINE SIL		\$
Item 2 Item 3	The State of the S				265	\$ \$
Item 4	A CONTRACTOR OF THE STATE OF TH					\$ ************************************
Item 5 Item 6					7.7	\$
Item 7						\$
Item 9		ide sitematic				\$
Item 10 Item 11						\$ \$
Item 12 Item 13	TO THE STATE OF TH					\$
Item 14			13 19 19 1 18 18 18 18 18 18 18 18 18 18 18 18 1			\$
ftem 15			ora de Carles (195) — relini			\$
btotal Annual O&M Cost	ı	'	1	•	10%	\$ 411, \$ 41,
ntingency tal Annual O&M Cost					1076	\$ 452,

0.00 ()						
	-	To Summar	v Sheet			
Granular Media Filter Backwash Supply Pu	mp Station	TO SOMETEN	y Gricer			
						1
Construction Cost:				1		\$1,988,991
ponsituation cost.		T		T	1	1,,000,001
Annual O & M Cost:	04-38454-1516-2					
Power:		Total HP	Average-to-Maximum Flow Factor	Annual Usage (Hou / Year)	irs \$/kwh	Power Cost
	medical control of					
Employees F D		21	500/		co # 000	2 2 2 4 4
Equipment Power	<u> </u>	21	50%	8,7	60 \$ 0.06	\$ 3,841
Other Electrical:		Building	Watts / SF	Annual Usage (Hou	rs \$/kwb	Other Electrical
		Area (SF)		/Year)		Cost
				le de la company		
				The second		
Building Electrical		988	2.00	8,7	60 \$ 0.06	\$ 969
	(1)	Egitymusta-typeytede	1997			man and a paint of the contract of
Chemicals:			, (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)			-
Repair and Maintenance, and Replacement:	7.66		4 4 4 4		Replacement	Annual Cost
		1957			included? (1 = "Yes", 0 =	
					"No")	
Maintenance & Repair Cost		4.12		44 July 1		\$ 17,747
Replacement Cost			·.		<u> </u>	\$ -
Other:		July 19		Total Annual O&N	Other"	Other Cost
20 PM		the second		Cost	Percent	
Other Cost				\$ 22,5	57 10.0%	\$ 2,256
,						
User Defined Annual O&M Items:				1		Annual Cost
Item 1			200	SSEEDER PROPERTY OF THE STATE OF THE SEEDER PROPERTY OF THE SEEDER P		s -
Item 3		sa na	0.000		(1) (20) N Holder (20)	\$ -
Item 4			78 452 C 715 (\$199)		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	\$ -
Item 5		以下的时候	errord of borogality			\$
Item 6					2 (A)	\$ -
Item 8			CONTRACTOR OF THE PARTY OF THE		STANSON SHIP	\$ 35.5
Item 9		Zarija e i	THE CONTROL OF THE CO		Sec. (10 (485) 151 (4)	\$ -
Item 10	化4000000000000000000000000000000000000	No.	Sales in the		一, 2000 基 2.4.30	\$ -
Item 11	· · · · · · · · · · · · · · · · · · ·	Albertania <u>.</u>				\$ -
Item 12 Item 13		144 - 17 - 17 - 17 - 17 - 17 - 17 - 17 -				\$ -
Item 14	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			Section 1		\$
Item 15		Service of the servic				\$ -
22+STP >			1			
Subtotal Annual O&M Cost	e de la companya de La companya de la co				400	\$ 24,813
Contingency Total Annual O&M Cost					. 10%	\$ 2,481 \$ 27,294
. Turi unida Cam Cot						+ E1124

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Liquid Chemical Storage & Feed				To Summary She	et	
Construction Cost:						\$708,913
construction cost.						\$100,513
Annual O & M Cost:						
Power:		Total HP	Average-to- Maximum Flow Factor	Annual Usage (Hours / Year)	-\$/kwh	Power Cost
Equipment Power		3	50%	8,760	\$ 0.06	\$ 549
Other:Electrical:		Building Area (SF)	Watts / SF	Arinual Usage (Hours / Year)	\$/kwh	Other Electrical Cost
Building Electrical		1,226	2.00	8,760	\$ 0.06	\$ 1,203
striquid Chemicals		Annual Usage (% of year)	Average-to- Maximum Flow Factor	Annual Usage (dry tons / year)	Cost (\$/dry ton)	Chemical Cost
Aluminum Sulfate (Alum)		100%	50%	-	\$ 644.17	\$ -
Aqueous Ammonia		100% 100%	50% 50%	274	\$ 404.57	\$ \$ 107,249
Hydrofluorosilicic Acid Hyrogen Peroxide (35%)		100%	50% 50%		\$ 360.00 \$ 1,734.23	\$ - -\$ -
Liquid Polymer Sodium Bisulfite	1.44 (1.75 kg) 20 (1.75 kg) 2.44 (1.44 kg)	100%	50% 50%		\$ 3,140.89	2 (\$ 7/2) -
Sodium Hydroxide (50%)		100%	50%	., 70. mai (2005)	\$ 825.32	\$ - \$ -
Sodium Hypochlorite (12.5%) Sulfuric Acid		100% 100%	50% 50%		\$ 1,672.13 \$ 138.09	\$ -
Other Chemical Total Chemical Cost		100%	50%		.\$	\$ - \$ 107,249
Repair and Maintenance, and Replacement:					Replacement	Annual Cost
					Included? (1 = "Yes", 0 =	
Maintenance & Repair Cost					"No")	\$ 2,783
Replacement Cost				244.2 244.2 244.2	: : : : : : : : : : : : : : : : : : :	\$.
Other:				Total Annual	"Other"	Other Cost
				O&M Cost	Percent	
Other Cost		· · · · · · · · · · · · · · · · · · ·		\$ 111,783	10.0%	\$ 11,178
User Defined Annual O&M Items:					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Annual Cost
Item 2		AMERIKA Marijan				\$
Item 3				n Janear, Seji Sering. Mesophysika		\$ -
ltem 5	CWC VII.			Tarana Barana at a sa s		\$ 2000 -
Item 6 Item 7	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				1884	\$ -
Item 8 Item 9			(1 to 6 (2 to 6 (2 to 6)			\$ 500 -
Item 10				4900 P. 100 L. 1		\$ 40
Item 11 Item 12			1.47924483 1.661483			\$ -
Item 13		1 1 3 3 3	71 ja 5. 174 ja 5. 1			\$
Item 14 Item 15	(2) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	<u>- 1 - 1 - 6 株</u> 3				\$ -
The second section of the second section of the second section of the second section s	····	· ·	5 S. C. (1975)			· .51/h.,

		.	
Subtotal Annual O&M Cost			\$ 122.962
Subjoital Annual Com Cost			• • • • • • • • • • • • • • • • • • •
Contingency			10% \$ 12,296
Condingency	te distribution state in a visit of the distribution in the	and the retraction of the property of the property of the state of the section of	STAPS SECTION SECTIONS
Total Annual O&M Cost	er augusta a transporte de la proposition de la proposition de	 Display the stress steel time of references the County Table Party Version Version Version 	\$ 135,258

Liquid Chemical Storage & Feed				To Summary She	et	
Construction Cost:			ı			\$534,621
Annual O & M Cost:						
Power:		Total HP	Average to- Maximum Flow	Annual Usage (Hours / Year)	\$/kwh	Power Cost
			Factor	0.0		1,000
Endowed Down		2	50%	8,760	\$ 0.06	\$ 36
Equipment Power Other Electrical:		Building	Watts / SF	Annual Usage	\$/kwh	Other Electrica
Office Lieuthan		Area (SF)		(Hours / Year)		Cost
Building Electrical		1,050	2.00	8,760	\$ 0.06	\$ 1,03
Liquid Chemicals:	l l	Annual Usage (% of	Average-to- Maximum Flow	Annual Usage (dry tons / year)	Cost (\$/dry ton)	Chemical Cost
		year)	Factor			
Aluminum Sulfate (Alum) Aqueous Ammonia Ferric Chloride		100% 100% 100%	50% 50% 50%		\$ 644.17 \$ 404.57 \$ 782.93	\$ \$ \$
Hydrofluorosilicic Acid Hyrogen Peroxide (35%)	कार के किस्सार कर दिस्ता है। स्ते । इस के अस्ति के किस के किस के किस के किस	100%	50% 50%	Way George (1944) (George (1944) August (1944)	\$ 360.00 \$ 1,734.23	\$
Liquid Polymer Sodium Bisulfite Sodium Hydroxide (50%)		100% 100% 100%	50% 50% 50%		\$ 3,140.89 \$ 920.91 \$ 825.32	\$ \$ \$
Sodium Hypochlorite (12.5%) Sulfuric Acid		100% 100%	50% 50%		\$ 1,672.13 \$ 138.09	\$ 45,81 \$
Other Chemical Total Chemical Cost		100%	50%	I	S	\$ \$ 45,81
Repair and Maintenance, and Replacement					Replacement Included? (1 =	Annual Cost
Maintenance & Repair Cost					"Yes", 0 = "No")	\$ 2,47
Replacement Cost	· · · · · · · · · · · · · · · · · · ·				-	\$
Other:	Apple of the			Total Annual O&M Cost	"Other" Percent	Other Cost
Other Cost			T	\$ 49,684	10.0%	\$ 4,96
User Defined Annual O&M Items:			L		100	Annual Cost
Item 2						\$
Item 4 Item 5					A varyin on a	\$
Item 6 Item 7						\$
Item 8 Item 9 Item 10	e de Spielle et et en					\$ \$ \$
Item 10 Item 11 Item 12	(2013년)					\$
Item 13						\$ -
tem 15				S.C. Sterling	1.0	\$ -

		-
Subtotal Annual O&M Cost	· Santa and American Company of the	54,653
Contingency	10% \$	5,465
Total Annual O&M Cost	\$	60,118

Liquid Chemical Storage & Feed				To Summary She	et	
Construction Cost:	<u> </u>					\$335,845
Name and the man						
Annual O & M Cost:		Total HP	Average-to-	Annual Usage	\$/kwh	Power Cost
			Maximum Flow Factor	(Hours / Year)		
Equipment Power	and the supplemental state of the level of t	2	50%	8,760	\$ 0.06	\$ 366
Other Electrical:	10	Building Area (SF)	Watts / SF	Annual Usage (Hours //Year)	\$/kwh	Other Electrical Cost
Building Electrical		714	2.00	8,760	\$ 0.06	\$ 701
Elquid Chemicals:		year)	Average-to- Maximum Flow Factor	Annual Usage (dry tons / year)	Cost (\$/dry ton)	Gljemical Cost
Aluminum Sulfate (Alum) Aqueous Ammonia	14.52 17.58	100% 100%	50% 50%		\$ 644.17 \$ 404.57	\$ -
Ferric Chloride Hydrofluorosilicic Acid		100% 100%	50% 50%	- - 15	\$ 782.93 \$ 360.00	\$ - \$ 2,630
Hyrogen Peroxide (35%) Liquid Polymer	va. Valoty va	100% 100%	50% 50%	(30)	\$ 1,734.23 \$ 3,140.89	\$ 1 1.61 % % \$ \tau \Q2/8804
Sodium Bisulfite Sodium Hydroxide (50%)		100% 100%	50% 50%		\$ 920.91 \$ 825.32	\$ \$
Sodium Hypochlorite (12.5%) Sulfuric Acid		100% 100%	50% 50%		\$ 1,672.13 \$ 138.09	• - • • • • • • • • • • • • • • • • • •
Other Chemical Total Chemical Cost		100%	50%		\$	\$ - \$ 2,630
		be the State of State				
Repair and Maintenance, and Replacement: Maintenance & Repair Cost					Replacement Included? (1 = "Yes", 0 = "No")	Annual Cost \$ 692
Replacement Cost			· . ·		-	\$
Other: Other Cost			es en l'éph	Total Annual O&M Cost \$ 4,389	"Other" Percent	Other Cost
						Annual Cost
Item 1					A Company	\$ -
Carry Constitution of the		A			130 - 130 A 1 (10 A 1	\$ - \$ -
Item 4					1.456.40	\$
Item 6		46.		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		\$
Item 7.			5.5.6.6.5. 3.6.6.6	ATTEMPT OF		\$ 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Item 9			SEC	Grand State	140	\$
Ifem 11					56 900 14 15 1	\$ -
Item 12 Item 13				A CONTRACTOR OF THE CONTRACTOR		\$ 333335-
Item 14		BORT Y 1				5 S

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Liquid Chemical FLUOR

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	Subtotal Annual O&M Cost Contingency			10%	\$ 4,828 \$ 483
	Total Annual O&M Cost				\$ 5,310

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					To Summary She	ot I	
Liquid Chemical Storage & Feed	<u> </u>				10 Sulfinary Sile	E1	
Construction Cost:	· · · ·			<u></u>			\$333.051
Our delight Oddi.							4003,021
				Book and the second			
Power:			Total HP	Average-to- Maximum Flow	Annual Usage (Hours: / Year)	\$/kwh	Power Cost
				Factor			
A PART OF STREET, STRE							
2.46 的复数国际							
F	44,816		2	50%	8,760	\$ 0.06	¢ 200
Equipment Power			- 2	30%	6,760	a 0.06	\$ 366
Other Electrical:			Building	Watts / SF	Annual Usage	\$/kwh	Other Electrical
			Area (SF)		(Hours / Year)		Cost
					100		
		34 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
Building Electrical			714	2.00	8,760	\$ 0.06	\$ 701
			- Annual	Average-to-	Annual Usage	Cost (\$/dry ton)	Chemical Cost
Elquid Chemicals:			Usage (% of	Maximum Flow	(dry tons / year)	Cost (stary torr)	Grieffical Cost
			year)	Factor			

Aluminum Sulfate (Alum)			100%	50%	-	\$ 644.17	\$ -
Aqueous Ammonia			100%	50%	ega (A	\$ 404.57	\$ -
Ferric Chloride Hydrofluorosilicic Acid	galik bisker og som filter Ringsom og holdster		100% 100%	50% 50%	Species in a second	\$ 782.93 \$ 360.00	\$ -
Hyrogen Peroxide (35%)			100%	50%		\$ 1,734.23	\$
Color Liquid Polymer			100%	50%	<u> </u>	\$ 3,140.89	\$
Sodium Bisulfite Sodium Hydroxide (50%)	- 1		100% 100%	50% 50%	-	\$ 920.91 \$ 825.32	\$ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Sodium Hypochlorite (12.5%)			100%	50%		\$ 1,672.13	\$
Sulfuric Acid Other Chemical	iga (j. 1944) 1880: Producino de Programa (j. 1884)		100% 100%	50% 50%	- 19	\$ 138.09 \$ 2,000.00	\$ - \$ 18,265
		A COLOR AND A STREET OF THE STREET		:			\$ 18,265
Repair and Maintenance, and Repl	acement:			Web to		Replacement Included? (1 =	Annual Cost
						"Yes", 0 =	
						"No")	
Maintenance & Repair Cost Replacement Cost	· · · · · · · · · · · · · · · · · · ·	<u>in A. Garadalli A.C. ()</u> Bang Nara in	<u> </u>		, es a haige .		\$ 692 \$ -
teplacement cost							
Other	1000				Total Annual	"Other"	Other Cost
					O&M Cost	Percent	
Other Cost					\$ 20,023	10.0%	\$ 2,002
User Defined Annual O&M Items:							Annual Cost
ltem 1 ltem 2							\$ -
Item 3			CARSE OF Section 2 (4)			- 2. 2022.352.552.552. - 2. 20. 50. 50. 50. 50. 50. 50. 50. 50. 50. 5	\$ -
Altem 4	n azedinta viva		455 × .	4.3		And the second s	\$ -
Item 5	Station of South Control of the Control	MESSE AT INC. N. 1479.C.		1303	156 6 - 14 - 1	2000 (0000000)	\$ 550 cm
Item 6			ing the state of t			1 1000	\$ -
Item 7	100 00 100 00 100 00 00 00 00 00 00 00 0			1 (1003-433-58) 1 (1003-433-58)		A GARAGEAN	\$ <u>\$</u> -
Item 9	Anna Maria M		Vale o	0.600 St. St. 4	A STATE OF THE STA	114 (2000)	\$
Item 10			1956 to 17	V- 12	10 KG 15	THE STATE OF THE BUILDING BUILDING	s -
Item 11		Taking Sample and Sample	66 (46) L. T	.63		Transcript: 1- 0	\$ -
Item 12					3220 d		\$ -
Item 13 Item 14			eriji Historia		Or not to a state of the state of	THE SECOND OF THE	\$ - \$ -
Item 15				11 12 10 10 10 10 10 10 10 10 10 10 10 10 10			\$ -

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Liquid Chemical POLYPHOS

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Subtotal Annual O&M Cost			\$ 22,026
Contingency	A Land Armore		10% \$ 2,203
Total Annual O&M Cost		ACTOR ACCOUNTS OF SECTION	\$ 24,228

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O & M Building						
	To Sum	nary Sheet				
,	<u> </u>					
	;	•				
Construction Cost:						\$5,146,924
Construction Cost.	;					1
Annual O & M Cost:						
Power:		Total HP	Average-to-	Annual Usage	\$/kwh	Power Cost
rower.			Maximum Flow	(Hours / Year)	7,77	ENDER STORY
			Factor			
				1000		
			Later to the second			
<u> </u>			500/	0.700		
Equipment Power	······································	-	50%	8,760	\$ 0.06	3
	ganguagung stockersteller	Maria Maria		J. T. Volumental School and Market School and School an		
Other Electrical:		Building	Watts / SF	Annual Usage	\$/kwh	Other Electric
		Area (SF)		(Hours / Year)		Cost
		000 45				
				100		100000
		0.00				
Building Electrical	•	6,000	2.00	8,760	\$ 0.06	\$ 5,88
	of the China E.C. Turner Share MCT Condition	- Kelendal Scare Annances and	The same Art Section 1950 and	Company of the debatts of the section of the	DOWNERS OF LOCATED W. WINDOW CHECK AND LINE WHITE HER WINDOW	6 Diotar Connec Paradhirological Labourous
Chemicals:				100		\$
		NATURAL ARTICISMOS SALA		V-1-1-19-2-11-11-11-11-11-11-11-11-11-11-11-11-1		
Repair and Maintenance, and Replacement.	Section 1				Replacement Included? (1 = "Yes", 0 = "No")	Annual Cos
					11-10-10-10-1	1 3 3
Maintenance & Repair Cost	and the state of t	visite rozvisud Arst 61409	A CONTRACTOR OF THE PROPERTY OF		PARKET MATERIAL PROPERTY AND ADDRESS OF THE PARKET	\$
Replacement Cost			The Article of Market	4.317.8	9 (14)	1 m - 1 m - 1 m - 1 m - 2 m
Other:				Total Annual	"Other" Percent	Other Cost
				O&M Cost		
	4.00					
		Bright Bright		len i jaran		
						Tarabia de la companya de la company
Other Cost	3 - 44 det		. ' ''	\$ 5,887	10.0%	\$ 58
User Defined Annual O&M Items:	an Control	oden kadamatan	ju _{rg}		7.77	Annual Cos
						e e e e e e e e e e e e e e e e e e e
Item 1	A SANGER SANGER SANGER	MARKET AND A				S
Ifem 2		rdiğey riğa viç ili. Gəbər satəsən		100000000000000000000000000000000000000		3 % A
Item 3			<u>andige (generalitating Arie)</u> La alam			gravatadeniacentration :
Item 4			Net vettel til til at skille. I		59567403 - 31575661	
Item 5		Sharan C				\$ 6 6
Item 6	4 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2					\$.
Item 7						\$
Item 8			and the second	· 中国 医皮肤管膜炎		\$
Item 9						\$
Item 10						\$
Item 11	66.62.0第4款(55.56	Market III				\$
Item 12		Rosen I				\$
Item 13		y (y 4)	e jewili e e ilayila,			\$.
Item 14	TANDAMAN P					\$
Item 15	SWEETS TO THE			90.5		\$
Subtotal Annual O&M Cost						\$ 6,47
Contingency					10%	\$ 64
Total Annual O&M Cost	e Gunthe				e Balance	\$ 7,12
· · · · · · · · · · · · · · · · · · ·						

City of Waukesha Home Water Softening Costs	
Total number of residential meters (2010)	17,104
Percent of meters that have water softening units	80%
Salt Cost (\$/year) **	\$ 1,551,675
Lbs salt per year	7,388,928
Annual Maintenance & electricity b	\$ 273,664
Cost for repair/replacement of equipment [©]	\$ 1,038,555
Total Softening Cost (\$/yr)	\$ 2,863,894

a Assumes 45 lb of salt per month per customer, \$0.21/lb b Assumes \$20 per customer per year c Asumes 10 year replacement, starting in 2020, \$1,000/unit, A/F 0.0759

Alternative 2: Shallow and Fox River Alluvium

Alternative 2	2 - Shallow and	Fox River Allu	<u>ıvium</u>	
Shallow Aquif	er Wells			\$17,815,000
Shallow Aquif	er Water Treatmen	t Plant	· · · · · · · · · · · · · · · · · · ·	\$37,355,000
Transmission	 Main to Waukesha			\$27,855,000
Distribution Im	provements			\$ 8,465,000
Wastewater Fo	orce Main			\$3,332,000
		:		
Subtotal Cons	truction Cost			\$94,822,000
3% markup for	Bonds & Insurance		\$2,845,000	
5% markup for	Mob/Demob		\$4,742,000	
8% markup for	Contractors Overhe	ad	\$8,193,000	
4% markup for	Contractors profit		\$4,097,000	
25% Contingen	cy	, .	\$28,675,000	
Subtotal Mark	ups and Continger	ıcy		\$48,552,000
Total Project C	Construction Costs			\$143,374,000
	or engineering and		11,470,000	
	for permiting, legal		17,205,000	
	or engr services dur		11,470,000	
	r Project Costs			\$40,145,000
Jubiolai Offiei	1 roject oosts	·		ψτο, ι το, σου
TOTAL PROJE	CT CAPTIAL COS	T		\$184,000,000

Alternative 2 - Shallow Aquifer and Fox River Alluvium

	ium Pelitrielo Capital Coro. Silonos Iliter-conscilis
	Landisces Welliams Electrolities Pileng
M. H	discussion of the state of the
# 4 Print 1 Pr	

\$1;000,000 \$2;800,000 \$495,000 \$715,200

TOTAL

\$5,010,200

Alternative 2 - Shallow Aquifer and Fox River Alluvium

						Wellstein Stewark Right Recomposition	Standard Standard Standard Standard Standard Standard Standard
					mphasus (Chales Liber) — Philip	delin mind Shework Habitoling	THE PARTY OF THE P
						nd Streetsk Indicating	With the same of t
						Shework Hiterconnecting	THE CORP.
						TRANSON PERSON	
	-		-	e e e e e e e e e e e e e e e e e e e	- Piging - Facilit	ntaiconnecens	
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							10.11

TOTAL

\$12,804,400

\$2,240,000 | \$4,200;000 | \$1,394,000 | \$4,970,400

	4:02 PM	В	C D	l E
		<u> </u>		***************************************
1		H2M HILL P arame	etric Cost $oldsymbol{E}$ stimating $oldsymbol{S}$ ystem $$ (CF	'ES)
2		<u> </u>		,
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3		FACILITIES DESIG	GN & CONSTRUCTION COST MODUL	E
	•			
4				,
_	File Version:	1/5/2010 Click for CPES QA/QC	To Concrete Wall Thickness Help To Cost Summary Matrix To Unit Cost Databas	
5	,			
1		•		
6				
7				
8	Proj	ect Name:	Waukesha WTP	
9	Proj	ect Number:		
10	Proj	ect Manager:	<u>Linda Mohr</u>	
11		mator:	Jason Curl	
	Proj	ect Description:	Fox River Alluvium and Shallow Groundwater	Roundup to the
12				nearest:
13		ect Location (City):	Milwaukee	\$1,000
14		ect Location (State):	WISCONSIN	· ·
15		ect Location (Country):	USA	This Report is for
16		struction Start (Month):	Jan 2014	This Report is for INTERNAL Distribution
17		struction Start (Year):	2011	
18	· ·	struction Duration (months):	24	— Thin Bonort in for
19	Mid-	Point of Construction:	Jan/2012	This Report is for EXTERNAL Distribution
20	*			
	. Item	Is This Facility Included in	SCOPE OF PROJECT	Cost
21		Project? (Yes or No)		
22		Yes	Inline Rapid Mix: RMX	\$700,000
23		Yes	Flocculation: FLOC	\$1,814,000
24		Yes	Lamella Clarifier: LAM	\$2,940,000
-				5 1 m 1 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
25		Yes	Filters: FILT	\$6,591,000
26		Yes	Surge Basin-Decanter: BWW	\$1,535,000
27		Yes	UV Disinfection: UVD	\$1,342,000
28		Yes	Concrete Clearwell: FWT	\$1,313,000
29	-	No	Steel Clearwell: FWT	\$0
30		No	In-Plant PS: FWPS	\$0
31		Yes	Vertical Turbine PS: FWPS	\$4,233,000
32		Yes	Filter BW PS: BWSPS	\$1,101,000
-				war a few against the contract of the contract
33		Yes	U.D. Facility: GEN	\$0
34		Yes	Liquid Chemical: FeCI3	\$396,000
35		Yes	Liquid Chemical: NaOCI	\$296,000
36		Yes	Liquid Chemical: FLUOR	\$189,000
37		Yes	Liquid Chemical: POLYPHOS	\$207,000
38		Yes	O&M Building: OMB	\$4,748,000
39			The state of the s	
40	SURTOTAL -	PROJECT COST		\$27,405,000
	JUDIOIAL -	7.1.00.07.0007		Ψ21,400,000
41	ADDITIONAL	DDO IEOT COSTO:		
42		PROJECT COSTS:		
43	Demolitio		0%	\$0
44	Overall S		10%	\$2,741,000
45	Plant Con	nputer System	5%	\$1,371,000
46	Yard Elec		7%	\$2,001,000
47	Yard Pipi		14%	\$3,837,000
48		fault Description	0%	
48	ט אוויינט וויינט	aan Description	V 76	\$0
	٠			,
49	IID #2 De	fault Description	0%	\$0
50		fault Description	0%	\$0
51		vith Additional Project Costs	U /0	
	. SUBSICIIAL V	uuu Aoomonai Project Costs -	1	\$37,355,000

403 PM			e e e e e e e e e e e e e e e e e e e	alialismosti isan
<u>Description</u>	Quantity	<u>Unit</u>	<u>\$/Unit</u>	Total Cost
O&M BUILDING	10000.00	SF	\$474.70	\$4,747,04
Subtotal				\$4,747,04
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Item 1 Description	0.00	50-74 (8.8% (\$1.6%) \$88	0.00	\$0
Item 2 Description	0.00	a 4 3 2 3 2 3 2 3 4 1 4 4 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	0.00	
Item 3 Description	0.00	1.000.000000000000000000000000000000000	0.00	\$6 \$6 \$6 \$6 \$6 \$6 \$6 \$6 \$6 \$6 \$6 \$6 \$6 \$
Item 4 Description	0.00		0.00	\$(
Item 5 Description	0.00		0.00	\$0
Item 6 Description	0.00		0.00	\$0
Item 7 Description	0.00		0.00	\$0
Item 8 Description	0.00	to continue to the second	0.00	\$0
Item 9 Description	0.00		0.00	\$0
Item 10 Description	0.00		0.00	\$0
Item 11 Description	0.00	美国国际公司	0.00	\$0
Item 12 Description	0.00		0.00	\$(
Item 13 Description	0.00	(100年8月19日本)	0.00	\$(
Item 14 Description	0.00		0.00	\$0
Item 15 Description	0.00		0.00	\$0
Subtotal				\$0
Subtotal				\$4,747,044
ALLOWANCES:				
Finishes Allowance	0.0%		\$4,747,044	\$0
I & C Allowance	0%		\$4,747,044	\$0 \$0 \$0 \$0
Mechanical Allowance	0%		\$4,747,044	\$(
Electrical Allowance	0%		\$4,747,044	\$(
Facility Cost	10,000	SF	\$474.70	\$4,747,044

TARREST TO THE TARRES				4.74.]
Description	Quantity	Unit	\$/Unit	Total Cost
SITEWORK:			2 Note 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Excavation	60,98	CY	\$5.35	\$326
Imported Structural Backfill	31.11	CY	\$40.56	
Native Backfill	0.00	CY	\$6.58	
Haul Excess	60.98	CY	\$6.58	·
Allowance for Misc Items	5%		\$1,989.32	
Subtotal	0,0		\$1,000.0Z	\$2,089
Oubtotal				Ψ2,003
CONCRETE:				
Slab on Grade	23.12	CY	\$345.93	\$7,997
Containment Walls	4.17	CY	\$683.50	\$2,847
Bulk Tank Pads	0.00	CY	\$345.93	
Day Tank Pads	0.00	CY		\$0 \$0
Transfer Pump Pads	0.00	CY	\$345.93	\$(
			\$345.93	
Metering Pump Pads	1.33	CY	\$345.93	\$46
Corridor		014		0.00
Slab on Grade	5.56	CY	\$345.93	\$1,922
Electrical Room				
Slab on Grade	0.00	CY	\$345.93	\$(
Allowance for Misc Items	5%	<u> </u>	\$13,227.45	
Subtotal				\$13,889
MASONRY:	Moderate.			
CMU Building	840.00	SF	\$131.60	\$110,545
Subtotal				\$110,545
METALS:				
Metal Stairway	1.00	EA	\$6,580.07	\$6,580
Grating	1.00	EA	\$1,579.22	
Allowance for Misc Items	10%		\$8,159.28	\$816
Subtotal				\$8,975
EQUIPMENT:				
Bulk Tank	0.00	EA	**************************************	
			\$0.00	\$(
Day Tank	0.00	EA	\$0.00	\$0
Transfer Pump	0.00	EA	\$0.00	\$0
Metering Pump	2.00	EA	\$6,737.98	\$13,476
Allowance for Misc Items	10%		\$13,475.96	\$1,348
Subtotal				\$14,824
INSTRUMENTS & CONTROLS:				
Instruments				-
Chemical Tank Radar Level Transmitters	0.00	each	\$824.29	\$0
Chemical Tank Beacons	0.00	each	\$824.29	
Day Tank Differential Pressure Transmitter	0.00	each	\$824.29	\$0
Drum or Tote Weigh Scale	2.28	each	\$1,099.05	
Metering Pump Discharge Pressure Switch	2.00	each	\$549.53	\$1,099
Magmeter	1.00	each	\$549.53	\$550
Sump Pump Float Switch	1.00	each	\$274.76	\$275
Eyewash	1.00	each	\$824.29	\$824
Number of Analog I/O Counts	7.00	each	\$208.82	\$1,462
Number of Digital I/O Counts	15.00	each	\$49.46	\$742
Number of Local Panels	1.00	each	\$10,331.10	\$10,331
Number of PLC's	1.00	each	\$10,990.54	\$10,991
I&C Conduit & Wire	145.54	If .	\$10,990.54	\$1,387
Allowance for Misc Items	10%	 	\$30,162.07	\$3,016
Subtotal	1070		φου, 102.07	
Guototai				\$33,178
MECHANICAL		- 	<u> </u>	
MECHANICAL:			<u> </u>	
Pipe		115	 	
Chemical Transfer Pump Suction Header Piping-CTSH	0.00	lf	\$10.36	\$0
(1-inch, Exposed, PVC)				
Chemical Transfer Pump Discharge Header Piping-	0.00	If	\$11.98	\$0
CTDH (1-inch, Exposed, FRP)		1	1	

4:04 PM				
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC)	54.00	If	\$10.36	\$55
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	54.00	lf .	\$11.98	\$64
Elbows Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$7.95	\$
(1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-	0,00	each	\$63.16	\$
CTDH (1-inch, Exposed, FRP)				
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC)	8.00	each	\$7.95	\$6
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	8.00	each	\$63.16	\$50
Tees Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$8.27	\$
(1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-	0.00			\$
CTDH (1-inch, Exposed, FRP)		each	\$109.33	
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC)	2.00	each	\$8.27	\$1
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	2.00	each	\$109.33	\$21
End Caps Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$4.46	\$
(1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$32.34	\$
CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH	2.00		\$4.46	\$
(1-inch, Exposed, PVC)		each		
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	2.00	each	\$32.34	\$6
Valves Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$
(1-inch, Exposed, PVC, V-902, Diaphragm)				
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC, V-902, Diaphragm)	0.00	each	\$45.15	\$
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC, V-902, Diaphragm)	4.00	each	\$45.15	\$18
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP, V-902, Diaphragm)	4.00	each	\$45.15	\$18
Allowance for Misc Items	10%		\$2,445.47	\$24
Subtotal				\$2,69
ELECTRICAL:				
# MCC Sections	0.00	#	\$6,783.10	\$
Switchgear	0.00	each	\$31,202.24	\$
Adjustable Frequency Drives Metering Pumps	0.00	each	\$4,187.38	\$
User Defined Item #1	0.00	each each	\$4,125.89	\$
User Defined Item #2	0.00	each	\$4,125.89	\$
User Defined Item #3	0.00	each	\$4,125.89	\$
Electrical Conduit & Wire	. 0.00	lf	\$9.53	\$
Allowance for Misc Items	10%	`	\$0.00	\$
Subtotal				\$
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Item 1 Description	0.00	ONII	0.00	**************************************
Item 2 Description	0.00		0.00	\$
Item 3 Description	0.00	2011/00 et especialistation	0.00	\$
Item 4 Description	0.00	20 T - 00 050 050 050 050 050	0.00	\$
Item 5 Description	0.00		0.00	\$
Item 6 Description	0.00	SERVE CONTROL OF THE	0.00	<u> </u>
Item 7 Description	0.00	TOTAL SECTION	0.00	\$
Item 8 Description	0.00		0.00	\$
Item 9 Description	0.00		0.00	\$
Item 10 Description	0.00		0.00	\$
New 11 Description	0.00		0.00	\$
Item 12 Description	0.00		0.00	\$
Item 13 Description	0.00		0.00	\$
Item 14 Description	0.00		0.00	\$ \$
Item 15 Description	0.00		0.00	\$

Liquid Chemical POLYPHOS

Printed by: tmyers

Subtotal				\$0
Subtotal				\$186,19
Subtotal				\$ 100,18
ALLOWANCES:	· ·	User Over-write		
Finishes Allowance	+ 2.0%		\$206,878	\$4,13
I & C Allowance	2%		\$206,878	\$4,13
Mechanical Allowance	4%		\$206,878	\$8,27
Electrical Allowance	2%		\$206,878	\$4,13
Facility Cost		840 Building SF	\$246.28	\$206,87

4:04 PM			i is is is is in a silving a	eperatura e
Description	Quantity	lloit	\$/Unit	Total Cost
SITEWORK:	Guantity	Oint	y/Onic	I Otal Cost
Excavation	51.83	CY	\$5.35	\$277
Imported Structural Backfill	26.44	CY	\$40.56	\$1,072
Native Backfill	0.00	CY	\$6.58	\$0
Haul Excess	51.83	CY	\$6.58	\$341
Allowance for Misc Items	5%		\$1,690.92	\$85
Subtotal	1		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	\$1,775
				+ - /
CONCRETE:				
Slab on Grade	20.15	CY	\$345.93	\$6,969
Containment Walls	3.83	CY	\$683.50	\$2,617
Bulk Tank Pads	0.00	CY .	\$345.93	\$0
Day Tank Pads	0.00	CY	\$345.93	\$0
Transfer Pump Pads	0.00	CY	\$345.93	\$0
Metering Pump Pads	1.33	CY	\$345.93	\$461
Corridor				
Slab on Grade	4.72	CY	\$345.93	\$1,634
Electrical Room				
Slab on Grade	0.00	CY	\$345.93	\$0
Allowance for Misc Items	5%		\$11,680.12	\$584
Subtotal				\$12,264
				•
MASONRY:	Moderate			
CMU Building	714.00	SF	\$131.60	\$93,963
Subtotal				\$93,963
METALS:				
Metal Stairway	1.00	EA	\$6,580.07	\$6,580
Grating	1.00	EA	\$1,579.22	\$1,579
Allowance for Misc Items	10%		\$8,159.28	\$816
Subtotal				\$8,975
Bulk Tank	0.00	EA	\$0.00	\$0
Day Tank	0.00	EA	\$0.00	\$0
Transfer Pump	0.00	EA	\$0.00	\$0
Metering Pump	2.00	EA	\$6,737.98	\$13,476
Allowance for Misc Items	10%		\$13,475.96	\$1,348
Subtotal				\$14,824
INSTRUMENTS & CONTROLS:				
Instruments Observed Tours Bodge Lovel Transmitters	0.00		ton.4.00	
Chemical Tank Radar Level Transmitters	0.00	each	\$824.29	\$0 \$0
Chemical Tank Beacons Day Tank Differential Pressure Transmitter	0.00	each each	\$824.29 \$824.29	\$0
		 		\$4,037
Drum or Tote Weigh Scale	3.67	each	\$1,099.05	
Metering Pump Discharge Pressure Switch	2.00 1.00	each each	\$549.53 \$549.53	\$1,099 \$550
Magmeter Sump Pump Float Switch	1.00	each	\$549.53 \$274.76	\$550 \$275
Eyewash	1.00	each	\$824.29	\$275 \$824
Number of Analog I/O Counts	9.00	each	\$208.82	
Number of Digital I/O Counts	15.00	each	\$49.46	\$742
Number of Local Panels	1.00	each	\$10,331.10	\$10,331
Number of PLC's	1.00	each	\$10,990.54	\$10,331 \$10,991
1&C Conduit & Wire	147.44	If	\$9.53	\$1,405
Allowance for Misc Items	10%		\$32,132.39	\$3,213
Subtotal			402,102.00	\$35,346
			'	400,010
		<u> </u>	1	
MECHANICAL:			<u> </u>	
				<u> </u>
Pipe	. 0.00	If	\$10.36	\$0
	. 0.00	If	\$10.36	\$0
Pipe Chemical Transfer Pump Suction Header Piping-CTSH	0.00	if If	\$10.36 \$11.98	\$0 \$0

Chemical Metering Pump Suction Header Piping-LCSH	51.00	lf '	\$10.36	\$528
(1-inch, Exposed, PVC)	<u> </u>			
Chemical Metering Pump Discharge Header Piping-	. 51.00	lf	\$11.98	\$611
LCDH (1-inch, Exposed, FRP)				
Elbows	,			
Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$7.95	\$0
(1-inch, Exposed, PVC)				
Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$63.16	\$0
CTDH (1-inch, Exposed, FRP)	-			
Chemical Metering Pump Suction Header Piping-LCSH	8.00	each	\$7.95	\$64
(1-inch, Exposed, PVC)				•
Chemical Metering Pump Discharge Header Piping-	8.00	each	\$63.16	\$505
LCDH (1-inch, Exposed, FRP)				
Tees				
Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$8.27	\$0
(1-inch, Exposed, PVC)				
Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$109.33	\$0
CTDH (1-inch, Exposed, FRP)				
Chemical Metering Pump Suction Header Piping-LCSH	2.00	each	\$8.27	\$17
(1-inch, Exposed, PVC)				
Chemical Metering Pump Discharge Header Piping-	2.00	each	\$109.33	\$219
LCDH (1-inch, Exposed, FRP)				
End Caps				
Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$4.46	\$C
(1-inch, Exposed, PVC)				
Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$32.34	\$0
CTDH (1-inch, Exposed, FRP)		- /		·
Chemical Metering Pump Suction Header Piping-LCSH	2.00	each	\$4.46	\$9
(1-inch, Exposed, PVC)			, i	•
Chemical Metering Pump Discharge Header Piping-	2.00	each	\$32.34	\$65
LCDH (1-inch, Exposed, FRP)				·
Valves				
Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$0
(1-inch, Exposed, PVC, V-902, Diaphragm)				
Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$0
(1-inch, Exposed, PVC, V-902, Diaphragm)				
Chemical Metering Pump Suction Header Piping-LCSH	4.00	each	\$45.15	\$181
(1-inch, Exposed, PVC, V-902, Diaphragm)				•
Chemical Metering Pump Discharge Header Piping-	4.00	each	\$45.15	\$181
LCDH (1-inch, Exposed, FRP, V-902, Diaphragm)				•
Allowance for Misc Items	10%		\$2,378.44	\$238
Subtotal				\$2,616
			·	
ELECTRICAL:				
# MCC Sections	0.00	#	\$6,783.10	\$0
Switchgear	0.00	each	\$31,202.24	\$0
Adjustable Frequency Drives				
Metering Pumps	0.00	each	\$4,187.38	\$0
User Defined Item #1	0.00	each	\$4,125.89	. \$0
User Defined Item #2	0.00	each	\$4,125.89	\$0
User Defined Item #3	0.00	each	\$4,125.89	\$0
Electrical Conduit & Wire	0.00	lf	\$9.53	\$0
Allowance for Misc Items	10%		\$0.00	\$0
Subtotal	1		, , , , , ,	\$0
,			1	
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Item 1 Description	0.00	The rest of the House of the Contractions	0.00	\$0
Item 2 Description	0.00		0.00	\$0
Item 3 Description	0.00		0.00	\$0
Item 4 Description	0.00		0.00	\$0 \$0
Item 5 Description	0.00		0.00	\$n
Item 6 Description	0.00		0.00	\$0 \$0 \$0
Item 7 Description	0.00		0.00	φ0 • • • • • • • • • • • • • • • • • • •
Item 8 Description	0.00		0.00	\$0
Item 9 Description	0.00	romanome e como e en como e en como a raciona de la completada en 1954 de 20 Santanto	0.00	\$0
Item 10 Description	0.00		0.00	\$0
Item 11 Description	0.00	<u>andrew (m. 1865), a serienda da la la</u>	0.00	ው ው
The second of th	0.00		0.00	φ. • • • • • • • • • • • • • • • • • • •
Item 12 Description	0.00		0.00	\$0 \$0
Item 14 Description	0.00	general village i statistica e e e e e e e e e e e e e e e e e e e	0.00	\$C
Item 15 Description	0.00		0.00	\$0
Transport to negotibioting assessed as a residence of	All Rights Owned by			φυ /ersion:1/5/2010

Liquid Chemical FLUOR

Printed by: tmyers

Subtotal				\$0
Subtotal				£460.76
Subiolai				\$169,76
ALLOWANCES:		User Over-write		
Finishes Allowance	2.0%		\$188,626	\$3,77
I & C Allowance	2%		\$188,626	\$3,77
Mechanical Allowance	4%		\$188,626	\$7,54
Electrical Allowance	2%		\$188,626	\$3,77
Facility Cost		714 Building SF	\$264.18	\$188,62

POTENTIAL TO STATE OF THE STATE		a markonina and production and a		
Description SITEWORK:	Quantity	Unit	\$/Unit	lotal Cost
Excavation	76.22	CY	\$5.35	\$408
Imported Structural Backfill	38.89	CY	\$40.56	
Native Backfill	0.00	CY	\$6.58	\$0
Haul Excess	76.22	CY	\$6.58	\$502
Allowance for Misc Items	5%		\$2,486.65	\$124
Subtotal			7-1,100	\$2,61
CONCRETE:				
Slab on Grade	28.07	CY	\$345.93	\$9,71
Containment Walls	4.73	CY	\$683.50	\$3,232
Bulk Tank Pads	25.13	CY	\$345.93	\$8,694
Day Tank Pads	0.00	CY	\$345.93 \$345.93	\$6,69
Transfer Pump Pads	0.00	CY	\$345.93	\$(
Metering Pump Pads	1.33	CY	\$345.93	\$46
Corridor	1.33	01	\$345.93	ወ 40
Slab on Grade	6.94	CY	\$345.93	\$2,402
Electrical Room	0.94	01	\$345.93	\$2,402
Slab on Grade	0.00	CY	\$345.93	\$0
Allowance for Misc Items	5%	<u> </u>	\$24,500.49	\$1,225
Subtotal	376		\$24,500.49	\$1,225
MASONRY:	Moderate 1050.00	er	#404.00	#400 404
CMU Building	1050.00	SF	\$131.60	\$138,181
Subtotal				\$138,181
METALS:				
Metal Stairway	1.00	EA	\$6,580.07	\$6,580
Grating	1.00	EA	\$1,579.22	\$1,579
Allowance for Misc Items	10%		\$8,159.28	\$816
Subtotal				\$8,975
EQUIPMENT:				
Bulk Tank	2.00	EA	\$17,367.52	\$34,735
Day Tank	0.00	EA	\$0.00	\$0
Transfer Pump	0.00	EA	\$0.00	\$0
Metering Pump	2.00	EA	\$6,737.98	\$13,476
Allowance for Misc Items	10%		\$48,211.01	\$4,821
Subtotal				\$53,032
INSTRUMENTS & CONTROLS:				
Instruments				
Chemical Tank Radar Level Transmitters	2.00	each	\$824.29	\$1,649
Chemical Tank Beacons	2.00	each	\$824.29	
Day Tank Differential Pressure Transmitter	0.00	each	\$824.29	
Drum or Tote Weigh Scale	0.00	each	\$1,099.05	
Metering Pump Discharge Pressure Switch	2.00	each	\$549.53	\$1,099
Magmeter	1.00	each	\$549.53	\$550
Sump Pump Float Switch	1.00	each	\$274.76	
Eyewash	1.00	each	\$824.29	\$824
Number of Analog I/O Counts	6.00	each	\$208.82	\$1,253
Number of Digital I/O Counts	20.00	each	\$49.46	\$989
Number of Local Panels	1.00	each	\$10,331.10	\$10,331
Number of PLC's	1.00	each	\$10,990.54	\$10,991
I&C Conduit & Wire	225.00	<u>lf</u> ·	\$9.53	\$2,144
Allowance for Misc Items	10%		\$31,752.48	\$3,175
Subtotal				\$34,928
MECHANICAL:				
Pipe				
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0.00	lf .	\$10.36	\$0
Chemical Transfer Pump Discharge Header Piping- CTDH (1-inch, Exposed, FRP)	0.00	if .	\$11.98	\$0

Item 15 Description	0.00 All Rights Owned by C		0.00	\$0 Version:1/5/2010
Item 14 Description	0.00		0.00	\$(
Item 13 Description	0.00		0.00	\$0 \$0
Item 12 Description	0.00	AN A NEW BOOKS OF A	0.00	\$(
Item 11 Description	0.00	- 1 A sa és de Casalaga de 12	0.00	\$(\$(
Item 10 Description	0.00	EASTICE, NORTHERN	0.00 mg/m/m/m	\$0
Item 9 Description	0.00		0.00	\$(
Item 8 Description	0.00		0:00	\$(
Item 7 Description	0.00		0.00	\$(\$(
Item 6 Description	0.00	A STATE OF THE STA	0.00	
Item 5 Description	0.00	// www.ner.healthealthealthealthealth	0.00	\$(.\$(
Item 3 Description	0.00		0.00	\$(
Item 2 Description Item 3 Description	0.00	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.00	\$0 \$0
Item 1 Description	0.00		0.00	\$(
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Subtotal	·	· ·		\$(
Allowance for Misc Items	10%	-	\$0.00	\$(\$(
Electrical Conduit & Wire	0.00	If	\$9.53	12
User Defined Item #2 User Defined Item #3	0.00	each	\$4,125.89 \$4,125.89	\$(\$(
User Defined Item #1 User Defined Item #2	0.00	each	\$4,125.89 \$4,125.89	\$(\$(
Metering Pumps User Defined Item #1	0.00	each	\$4,187.38 \$4,125.89	· \$(
Adjustable Frequency Drives	0.00	anah	\$1.407.CO	
Switchgear	0.00	each	\$31,202.24	\$(
# MCC Sections	0.00	#	\$6,783.10	\$0
ELECTRICAL:				
Subtotal				\$2,81
Allowance for Misc Items	10%		\$2,557.19	\$256
LCDH (1-inch, Exposed, FRP, V-902, Diaphragm)	4.00		\$\psi_040.10	. 410
Chemical Metering Pump Discharge Header Piping-	4.00	each	\$45.15	\$18 ⁻
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC, V-902, Diaphragm)	4.00	each	\$45.15	\$18°
(1-inch, Exposed, PVC, V-902, Diaphragm)	4.00	each	\$45.15	\$18 ⁻
Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$0
(1-inch, Exposed, PVC, V-902, Diaphragm)	2.22		1 7 -	*
Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$0
Valves				
LCDH (1-inch, Exposed, FRP)				
Chemical Metering Pump Discharge Header Piping-	2.00	each	\$32.34	\$6
(1-inch, Exposed, PVC)		·		
Chemical Metering Pump Suction Header Piping-LCSH	2.00	each	\$4.46	\$9
CTDH (1-inch, Exposed, FRP)			,,	
Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$32,34	\$(
(1-inch, Exposed, PVC)	0,00	1	y-1.40	Ψ
Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$4.46	\$(
End Caps			+	
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	2.00	each	\$109.33	\$219
(1-inch, Exposed, PVC)	0.00		*****	
Chemical Metering Pump Suction Header Piping-LCSH	2.00	each	\$8.27	\$17
CTDH (1-inch, Exposed, FRP)				
Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$109.33	\$0
(1-inch, Exposed, PVC)	2.00		J	Ψ.
Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$8.27	\$(
LCDH (1-inch, Exposed, FRP) Tees				
Chemical Metering Pump Discharge Header Piping-	8.00	each	\$63.16	\$50
(1-inch, Exposed, PVC)	0.00	anah	400.40	8-0-
Chemical Metering Pump Suction Header Piping-LCSH	8.00	each .	\$7.95	\$64
CTDH (1-inch, Exposed, FRP)	***	ļ		
Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$63.16	\$(
(1-inch, Exposed, PVC)		<u></u>		
Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$7.95	\$0
Elbows				·
LCDH (1-inch, Exposed, FRP)	00.00	["	\$11.90	φιυ
(1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping-	59.00	lf	\$11.98	\$70
Chemical Metering Pump Suction Header Piping-LCSH	59.00	If	\$10.36	\$61
4:05 PM		1.0	1	

4:05 PM			·	
Subtotal				\$0
			•	·
Subtotal				\$266,26
ALLOWANCES:	'	User Over-write	·	
Finishes Allowance	2.0%		\$295,851	\$5,91
I & C Allowance	2%		\$295,851	
Mechanical Allowance	4%		\$295,851	\$5,91 \$11,83
Electrical Allowance	2%		\$295,851	\$5,917
	-			
Facility Cost	1,0	50 Building SF	\$281.76	\$295,85°

7.00 PM		entingly.		
Description	Quantity	Unit	\$/Unit	Total Cost
SITEWORK:				
Excavation	89.00	CY	\$5.35	\$476
Imported Structural Backfill	45.41	CY	\$40.56	\$1,842
Native Backfill	0.00	CY	\$6.58	\$0
Haul Excess	89.00	CY	\$6.58	
Allowance for Misc Items	5%		\$2,903.46	
Subtotal				\$3,049
CONCRETE: .		<u> </u>		
Slab on Grade	31.46	CY	\$345.93	\$10,882
Containment Walls	6.87	CY	\$683.50	\$4,699
Bulk Tank Pads	29.50	CY	\$345.93	\$10,204
Day Tank Pads	0.00	CY .	\$345.93	\$0
Transfer Pump Pads	0.00	CY	\$345.93	\$0
Metering Pump Pads	2.00	CY	\$345.93	\$692
Corridor				
Slab on Grade	7.50	CY	\$345.93	\$2,594
Electrical Room				
Slab on Grade	3.41	CY	\$345.93	\$1,179
Allowance for Misc Items	5%		\$30,249.22	\$1,512
Subtotal				\$31,762
MASONRY:	Moderate			<u> </u>
CMU Building	1226.00	SF	\$131.60	\$161,343
Subtotal		<u> </u>		\$161,343
		<u> </u>		
METALS:		<u></u>		•
Metal Stairway	1.00	EA	\$6,580.07	\$6,580
Grating	1.00	EA	\$1,579.22	
Allowance for Misc Items	10%	}	\$8,159.28	\$816
Subtotal		1		\$8,975
EQUIPMENT:				
Bulk Tank	2.00	EA	\$18,113.65	\$36,227
Day Tank	0.00	EA	\$0.00	\$0
Transfer Pump	0.00	EA	\$0.00	\$0
Metering Pump	3.00	EA	\$6,737.98	\$20,214
Allowance for Misc Items	10%		\$56,441.24	\$5,644
Subtotal				\$62,085
INSTRUMENTS & CONTROLS:			1	
Instruments				
Chemical Tank Radar Level Transmitters	2.00	each	\$824.29	\$1,649
Chemical Tank Beacons	2.00	each	\$824.29	\$1,649
Day Tank Differential Pressure Transmitter	0.00	a a a b	\$824.29	\$0
		each		
Drum or Tote Weigh Scale	0.00	each	\$1,099.05	\$0
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch	0.00 3.00	each each	\$1,099.05 \$549.53	\$0 \$1,649
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter	0.00 3.00 2.00	each each each	\$1,099.05 \$549.53 \$549.53	\$0 \$1,649 \$1,099
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch	0.00 3.00 2.00 1.00	each each each each	\$1,099.05 \$549.53 \$549.53 \$274.76	\$0 \$1,649 \$1,099 \$275
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash	0.00 3.00 2.00 1.00 1.00	each each each each each	\$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29	\$0 \$1,649 \$1,099 \$275 \$824
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts	0.00 3.00 2.00 1.00 1.00 9.00	each each each each each each	\$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82	\$0 \$1,649 \$1,099 \$275 \$824 \$1,879
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts	0.00 3.00 2.00 1.00 1.00 9.00 26.00	each each each each each each each	\$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46	\$0 \$1,649 \$1,099 \$275 \$824 \$1,879 \$1,286
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels	0.00 3.00 2.00 1.00 1.00 9.00 26.00 1.00	each each each each each each each each	\$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10	\$0 \$1,649 \$1,099 \$275 \$824 \$1,879 \$1,286 \$10,331
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's	0.00 3.00 2.00 1.00 1.00 9.00 26.00 1.00	each each each each each each each each	\$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54	\$0 \$1,649 \$1,099 \$275 \$824 \$1,879 \$1,286 \$10,331 \$10,991
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's I&C Conduit & Wire	0.00 3.00 2.00 1.00 1.00 9.00 26.00 1.00 1.00 297.00	each each each each each each each each	\$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54 \$9.53	\$0 \$1,649 \$1,099 \$275 \$824 \$1,879 \$1,286 \$10,331 \$10,991 \$2,830
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's I&C Conduit & Wire Allowance for Misc Items	0.00 3.00 2.00 1.00 1.00 9.00 26.00 1.00	each each each each each each each each	\$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54	\$0 \$1,649 \$1,099 \$275 \$824 \$1,879 \$1,286 \$10,331 \$10,991 \$2,830 \$3,446
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's I&C Conduit & Wire	0.00 3.00 2.00 1.00 1.00 9.00 26.00 1.00 1.00 297.00	each each each each each each each each	\$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54 \$9.53	\$0 \$1,649 \$1,099 \$275 \$824 \$1,879 \$1,286 \$10,331 \$10,991 \$2,830 \$3,446
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's I&C Conduit & Wire Allowance for Misc Items Subtotal	0.00 3.00 2.00 1.00 1.00 9.00 26.00 1.00 1.00 297.00	each each each each each each each each	\$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54 \$9.53	\$0 \$1,649 \$1,099 \$275 \$824 \$1,879 \$1,286 \$10,331 \$10,991 \$2,830 \$3,446
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's I&C Conduit & Wire Allowance for Misc Items Subtotal	0.00 3.00 2.00 1.00 1.00 9.00 26.00 1.00 1.00 297.00	each each each each each each each each	\$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54 \$9.53	\$0 \$1,649 \$1,099 \$275 \$824 \$1,879 \$1,286 \$10,331 \$10,991 \$2,830 \$3,446
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's I&C Conduit & Wire Allowance for Misc Items Subtotal MECHANICAL: Pipe	0.00 3.00 2.00 1.00 1.00 9.00 26.00 1.00 1.00 297.00	each each each each each each each each	\$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54 \$9.53 \$34,460.81	\$0 \$1,649 \$1,099 \$275 \$824 \$1,879 \$1,286 \$10,331 \$10,991 \$2,830 \$3,446 \$37,907
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's I&C Conduit & Wire Allowance for Misc Items Subtotal MECHANICAL: Pipe Chemical Transfer Pump Suction Header Piping-CTSH	0.00 3.00 2.00 1.00 1.00 9.00 26.00 1.00 1.00 297.00	each each each each each each each each	\$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54 \$9.53	\$0 \$1,649 \$1,099 \$275 \$824 \$1,879 \$1,286 \$10,331 \$10,991 \$2,830 \$3,446 \$37,907
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's I&C Conduit & Wire Allowance for Misc Items Subtotal MECHANICAL: Pipe Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0.00 3.00 2.00 1.00 1.00 9.00 26.00 1.00 1.00 297.00 10%	each each each each each each each each	\$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54 \$9.53 \$34,460.81	\$0 \$1,649 \$1,099 \$275 \$824 \$1,879 \$1,286 \$10,331 \$10,991 \$2,830 \$3,446 \$37,907
Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's I&C Conduit & Wire Allowance for Misc Items Subtotal MECHANICAL: Pipe Chemical Transfer Pump Suction Header Piping-CTSH	0.00 3.00 2.00 1.00 1.00 9.00 26.00 1.00 1.00 297.00	each each each each each each each each	\$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54 \$9.53 \$34,460.81	\$0 \$1,64\$ \$1,09\$ \$275 \$824 \$1,879 \$1,286 \$10,331 \$10,991 \$2,830 \$3,446 \$37,907

4:06 PM				
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC)	61.00	lf	\$10.36	\$63
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	61.00	lf	\$11.98	\$73
Elbows				
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0.00	each	\$7.95	\$
Chemical Transfer Pump Discharge Header Piping- CTDH (1-inch, Exposed, FRP)	0.00	each	\$63.16	\$
Chemical Metering Pump Suction Header Piping-LCSH	12.00	each	\$7.95	\$9
(1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping-	12.00	each	\$63.16	\$75
LCDH (1-inch, Exposed, FRP)				
Tees Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$8.27	\$
(1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$109.33	\$
CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH	3.00	each	\$8.27	\$2
(1-inch, Exposed, PVC)				
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	3.00	each	\$109.33	· \$32
End Caps				
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0.00	each	\$4.46	\$
Chemical Transfer Pump Discharge Header Piping- CTDH (1-inch, Exposed, FRP)	0.00	each	\$32.34	• \$
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC)	2.00	each	\$4.46	. \$
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	2.00	each	\$32.34	\$6
Valves				
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC, V-902, Diaphragm)	0.00	each	\$45.15	\$
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC, V-902, Diaphragm)	0.00	each	\$45.15	\$
Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC, V-902, Diaphragm)	6.00	each	\$45.15	\$27
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP, V-902, Diaphragm)	6.00	each	\$45.15	\$27
Allowance for Misc Items	10%		\$3,184.53	\$31
Subtotal				\$3,50
	<u> </u>			·
ELECTRICAL:		1		
# MCC Sections	6.00	#	\$6,783.10	\$40,69
Switchgear Adjustable Frequency Drives	0.00	each	\$31,202.24	\$
Metering Pumps	0.00	each	\$4,187.38	\$
User Defined Item #1	0.00	each	\$4,125.89	\$
User Defined Item #2	0.00	each	\$4,125.89	\$
User Defined Item #3	0.00	each	\$4,125.89	\$
Electrical Conduit & Wire	243.00	If	\$9.53	\$2,31
Allowance for Misc Items	10%		\$43,014.07	\$4,30
Subtotal				\$47,31
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT .	\$/UNIT	TOTAL COST
Item 1 Description	0.00		0.00	\$1
Item 2 Description	0.00		0.00	\$1 \$1
Item 3 Description	0.00		0.00	\$
Item 4 Description	0.00		0.00	\$ \$
Item 5 Description	0.00		0.00	\$1
Item 6 Description	0.00		0.00	\$1
Item 7 Description	0.00		0.00	\$
Item 8 Description	0.00		0.00	\$(
Item 9 Description	0.00		0.00	\$ \$
Item 10 Description	0.00		0.00	\$1
Item 11 Description	0.00		0.00	. \$(
Item 12 Description	0.00	Toward No State de La Communicación de la Comm	0.00	\$1
Item 13 Description	0.00	property to Majora et al. 1919 billion To supplie to the supplier to the supplier to	0.00	\$
Item 14 Description	0.00	m HE DA SATA POR NAVE	0.00	\$1
Item 15 Description	0.00 All Rights Owned by C	1 - 10 (100 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	0.00	\$1
				Version:1/5/2010

Subtotal				\$0
Subtotal				\$355,94
				, , , , , , , , , , , , , , , , , , , ,
ALLOWANCES:		User Over-write	·	
Finishes Allowance	2.0%		\$395,488	\$7,910
I & C Allowance	. 2%		\$395,488	\$7,910
Mechanical Allowance	4%		\$395,488	\$15,820
Electrical Allowance	2%		\$395,488	\$7,910
Facility Cost	1	,226 Building SF	\$322.58	\$395,48

4.07 PW				erenji se ese
<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	Total Cost
CITEMORY				
SITEWORK: Excavation	1575.42	CY	¢5.35	\$0
Imported Structural Backfill	86.68	CY	\$5.35 \$40.56	\$C
Native Backfill	828.79	CY	\$6.58	\$0
Haul Excess	746.63	CY	\$6.58	\$0
Allowance for Misc Items	5%		\$0.00	\$0
Subtotal			Ψ0.00	\$0
CONCRETE:				
Wet Well:	00.00	CY	0000 40	Φ.σ.
Foundation Perimeter Walls	28.89 64.42	CY	\$382.16	\$0 \$0
Operating Floor:	04.42	CT ·	\$683.50	Ф С
Elevated Slab (Including floor over Discharge Header Vault)	36.61	CY	\$1,088.69	\$C
Pump Pads	1.63	CY	\$345.93	\$565
Other Equipment Pads	1.00	CY	\$345.93	\$346
Discharge Pipe Vault:	11.00		ψ0-10.50	φοτο
Slab on Grade	13.66	CY	\$345.93	\$4,725
Walls	17.16	CY	\$683.50	\$11,727
Allowance for Misc Items	5%		\$17,362.33	\$868
Subtotal				\$18,230
MASONRY:	Moderate			
CMU Building	988.44	SF	\$131.60	\$130,080
Subtotal				\$130,080
NET II O				· · · · · · · · · · · · · · · · · · ·
METALS: Checker Plate Over Intake Pipe Gate = (Diameter of Influent Pipe +2'	10.00	05	070.00	A70.4
)* (2 Feet Wide) (sf)	10.00	SF	\$72.38	\$724
Checker Plate Over Discharge Pipe Header = ((Discharge Pipe	57.98	SF	\$72.38	\$4,197
Diameter * 2) * ("S" * Total Number of Pumps)	07.50	0	9,2.50	ψ+, ιστ
Ladder	15.55	VLF	\$99.36	\$1,545
Allowance for Misc Items	10%		\$6,464.96	\$646
Subtotal				\$7,111
EQUIPMENT:			·	
Size of Sluice Gate (per side in inches)	36.00	Inches		
Sluice Gate	1.00	EA	\$6,330.27	\$6,330
Pumps:				
Active Pump # 1	124.39	HP	\$790.52	\$98,332
Active Pump # 2	124.39	HP	\$790.52	\$98,332
Active Pump # 3	0.00	HP	\$0.00	\$0
Active Pump # 4	0.00	HP	\$0.00	\$0
Active Pump # 5	0.00	HP	\$0.00	\$0
Active Pump # 6 Active Pump # 7	0.00	HP	\$0.00	\$0
Active Pump # 7 Active Pump # 8		HP HP	\$0.00	\$0
Active Pump # 9	0.00	HP	\$0.00	\$0
Active Pump # 9 Active Pump # 10	0.00	HP	\$0.00 \$0.00	\$0 \$0
Standby Pump	124.39	HP	\$790.52	\$98,332
AFD's	127.00	1	φ13U.3Z	ψ90,332
Active Pump # 1	124.39	HP	\$156.14	\$19,422
Active Pump # 2		HP	\$156.14	\$19,422
			, Ψ1.00.17	Ψ10,π ∠ ∠
		1		.\$ 0
Active Pump # 3 Active Pump # 4	0.00	HP HP	\$0.00 \$0.00	\$0 \$0

4:07 PM				<u>* . *</u>
Active Pump # 6	0.00	HP	\$0.00	\$0
Active Pump # 7	0.00	HP	\$0.00	\$0
Active Pump # 8	0.00	HP .	\$0.00	\$0
Active Pump # 9	0.00	HP	\$0.00	\$0 \$0
Active Pump # 10	0.00	HP ·	\$0.00	\$0
Standby Pump	124.39	HP	\$156.14	\$19,422
Allowance for Misc Items	10%		\$353,259.39	\$35,326
Subtotal				\$394,916
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Item 1 Description	0.00		0.00	\$0
Item 2 Description	0.00		0.00	\$0
Item 3 Description	0.00	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	0.00	\$0
Item 4 Description	0.00		0.00	\$0 \$0 \$0 \$0 \$0
Item 5 Description	0.00	s sa w sa sasata	0.00	\$0
Item 6 Description	0.00	0.3-90-51-25/00	4612414 0.00	\$0
Item 7 Description	0.00	S. Showson	0.00	\$0
Item 8 Description	0.00	100000000000000000000000000000000000000	0.00	\$0
Item 9 Description	0.00	100 CO 148 ESC 100 CO	0.00	\$0
Item: 10 Description	0.00	22 (128 (135 (135 (135 (135 (135 (135 (135 (135	0.00	\$0
Item 11 Description	0.00	7.7508106.945.55	0.00	\$0
Item 12 Description	0.00	160900384	0.00	\$0
Item 13 Description	0.00	- 127, 163, 142, 142, 145, 145, 1	0.00	\$0
Item 14 Description	0.00		0.00	\$0 \$0 \$0
Item 15 Description	0.00	1 200 50	0.00	\$0
Subtotal				\$0
Subtotal				\$550,338
ALLOWANCES:		User Over- write		
Finishes Allowance	2.0%		\$1,100,676	\$22,014
I & C Allowance	8.0%		\$1,100,676	\$88,054
Mechanical Allowance	25.0%		\$1,100,676	\$275,169
Electrical Allowance	15.0%		\$1,100,676	\$165,101
Facility Cost	373	Total Pump HP	\$2,949.56	\$1,100,676

4.07 FM		191.15.1		
Description	Quantity	linis	\$// Init	Total Cost
Description	Quantity	<u>Ome</u>	a ding	i otal cost
RITEWORK:				
SITEWORK:				
Pump Station:	766.13	CY	\$5.35	\$6
Exogration	394.33	CY	\$40.56	
Imported Structural Backfill			1	
Native Backfill	92.56	CY	\$6.58	\$1
Haul Excess	673.58	CY	\$6.58	\$0
Forebay:				
Excavation	9387.95	CY	\$5.35	
Imported Structural Backfill	667.68	CY	\$40.56	
Native Backfill	1838.49	CY	\$6.58	
Haul Excess	7549.46	CY	\$6.58	\$
Office:				
Excavation	0.00	CY	\$5.35	\$
Imported Structural Backfill	0.00	CY	\$40.56	\$0
Native Backfill	0.00	CY	\$6.58	
Haul Excess	0.00	CY	\$6.58	
Surge Protection:				
	129.07	CY	\$5.35	\$69
Excavation	95.68	CY	\$40.56	· ·
Imported Structural Backfill	19.56	CY		1
Native Backfill		E	\$6.58	
Haul Excess	109.51	CY	\$6.58	
Altowance for Misc Items	5%		\$5,420.31	\$271
Subtotal			·	\$5,691
CONCRETE:				
Pump Station				
Foundation	284.38	CY	\$382.16	\$0
Pump Pad Epoxy	0.74	CY	\$3,412.56	\$2,528
Pump Pad Support	10.50	CY	\$345.93	
Pipe Supports	5.32	CY	\$345.93	\$1,842
Electrical Room	0.04	-	70.000	\$1,012
Foundation	50.50	CY	\$345.93	\$17,471
The state of the s	30.50		\$340.53	क्रा'सा
Surge Protection	00.00	0)/	\$5.00 C	AD 020
Foundation	23.33	CY	\$345.93	\$8,069
Office				
Foundation	0.00	CY	\$345.93	\$0
Pump Station Forebay			· ·	
Slab on Grade for Rectangular Tank	231.48	CY	\$345.93	\$0
Support Walls for Rectangular	342.22	CY	\$6,83.50	
Support Columns for Rectangular	16.50	CY	\$683.50	\$0
Elevated Slab for Rectangular	91.36	CY	\$1,088.69	\$0
Pump Baffling (for all cases)	16.43	CY	\$683.50	
Sump Walls	86.37	CY	\$683.50	\$(
Sump Concrete Fill	184.06	CY	\$382.16	\$(
Prestressed Concrete Tank (704049 gallons)	0.00	EA	\$0.00	
			·	
Allowance for Misc Items	5%		\$33,541.85	\$1,677
Subtotal				\$35,219
MASONRY:	Moderate	<u> </u>		
Pump Station Building	2519.25	SF	\$197.40	
Office Building	0.00	SF	\$131.60	
Surge Building	629.81	SF	\$131.60	\$82,884
Electrical Room	1363.60	SF	\$131.60	\$179,452
	·			
Subtotal	4512.66			\$759,641
METALS:				
Pump Removal Hatches	73.33	SF	\$109.91	\$8,060
Allowance for Misc Items	10%		\$8,059.73	\$806
Subtotal			+-1	\$8,866
				75,500
THERMAL & MOISTURE PROTECTION:				
Wet Well Liner	0.00	SF	\$16.00	\$0
		<u> </u>	2000 - 10	\$0
Allowance for Misc Items	10%		\$0.00	
Subtotal		ļ		\$0
EQUIPMENT:				
Pumps		1		
Active Pump # 1	1.00	EA	\$219,989.00	\$219,989
Active Pump # 2	1.00	EA	\$219,989.00	\$219,989
Active Pump # 3	1.00	EA	\$219,989.00	\$219,989
	•			

4.07 FW	4.00	IEA.	#242 ABO OO	#040.000
Active Pump # 4 Active Pump # 5	1.00 0.00	EA EA	\$219,989.00	\$219,989
Active Pump # 6	0.00	EA	\$0.00	\$0 \$0
Active Pump # 7	0.00	EA	\$0.00	
Active Pump # 8	0.00	EA		\$0
			\$0.00	\$0
Active Pump # 9	0.00	EA	\$0.00	\$0
Active Pump # 10	0.00	EA	\$0.00	\$0
Standby Pump	1.00	EA	\$219,989.00	\$219,989
Altowance for Misc Items	10%		\$1,099,945.01	\$109,995
Subtotal				\$1,209,940
INSTRUMENTATION & CONTROLS:				
Instruments				
Isolation Valve Actuators	10.00	each	\$5,064.93	\$50,649
Control Valve Actuators	5.00	each	\$5,064.93	\$25,325
Level Indicator Transmitters	2.00	each	\$6,764.54	\$13,529
Level Swithces	2.00	each	\$7,120.57	\$14,241
Pressure Indicator Transmitters	6.00	each	\$7,120.57	\$42,723
Pressure Switches	10.00	each	\$7,120.57	\$71,206
Number of Analog I/O Counts	37.20	each	\$208.82	\$7,768
Number of Digital I/O Counts	104.40	each	\$49.46	\$5,163
Number of PLC's	5.00	each	\$10,331.10	\$51,656
I&C Conduit & Wire	2407.48	lf	\$9.53	\$22,940
Allowance for Misc Items		"		
Subtotal	10%	-	\$ 305,200.54	\$30,520
_ อนมเดิเสเ				\$335,721
MECHANICAL:				
Pipe:				•
Discharge Lateral Pipe (18-inch,DIS, Exposed, HDPE, Cement Mortar,	45.00	LF	\$68.67	\$3,090
Cement Mortar)				
Discharge Header Pipe (36-inch,DIS, Exposed/Buried, Steel, Cement	45.00	LF	\$896.07	\$40,323
Mortar, Cement Mortar) Pump Discharge Pipe (12-inch,DIS, Exposed, HDPE, Cement Mortar,	500	 -	000.00	0007
Cement Mortar)	5.00	LF	\$59.36	\$297
Elbows:				
Discharge Header Pipe (36-inch)	2.00	EA	\$3,449.05	re ene
Tees:	2.00	<u> </u>	\$3,449.03	\$6,898
			40 700 00	400.040
Discharge Header Pipe (36-inch)	5.00	EA	\$6,723.69	\$33,618
Valves:				
Discharge Lateral Isolation Valve (18-inch, BFV)	5.00	EA	\$2,759.13	\$13,796
Pump Control Valve (18-inch, Check Valve)	5.00	EA	\$2,759.13	\$13,796
Discharge Header Isolation Valve (36-inch, BFV)	1.00	EA	\$7,386.98	\$7,387
Air Release Vacuum Valves	15.00	EA	\$3,297.16	\$49,457
Allowance for Misc Items	10%		\$168,662.47	\$16,866
Subtotal		,		\$185,529
ELECTRICAL:				
MCC's				
Sections	3.00	each	\$6,783.10	\$20,349
AFD's				4-10/0 10
Active Pump # 1	700.00	HP	\$128.86	\$90,202
Active Pump # 2	700.00	HP	\$128.86	\$90,202
Active Pump #3	700.00	HP	\$128.86	\$90,202
Active Pump # 4				
	700.00	HP	\$128.86	\$90,202
Active Pump # 5	0.00	HP .	\$0.00	\$0
Active Pump # 6	0.00	HP	\$0.00	\$0
Active Pump # 7	0.00	HP	\$0.00	\$0
Active Pump # 8	0.00	HP	\$0.00	\$0
Active Pump # 9	0.00	HP	\$0.00	\$0
Active Pump # 10	0.00	HP	\$0.00	\$0
Standby Pump	700.00	HP	\$128.86	\$90,202
Switchgear				
· Units	8.00	each	\$31,202.24	\$249,618
Electrical Conduit & Wire	343.93	lf	\$9.53	\$3,277
Allowance for Misc Items	5%		\$724,256	\$36,213
Subtotal			47211200	\$760,469
				ψ, ου, του
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Item 1 Description	0.00		0.00	\$0
Item 2 Description	0.00	rega (Cristian Ay), ky Stellaggarek (Cristian Ay)	0.00	ֆս \$0
	0.00	CONTRACTOR FOR A	the province of the province of the second o	
			0.00	\$0
Item 4 Description	0.00	da etteropé (GANA). Rozador maiores	0.00	\$0
Item 5 Description	0.00	1865 Ten 128 (1865)	0.00	\$0
Item 6 Description	0.00	Newstern Control (Control	0.00	\$0

Facility Cost	3,500	Total Pump HP	\$1,209.18	\$4,232,147
Electrical Allowance	5%		\$4,232,147	\$211,607
Mechanical Allowance	5%		\$4,232,147	\$211,607
Surge Allowance	5%		\$4,232,147	\$211,607
I & C Allowance	2%	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	\$4,232,147	\$84,643
Finishes Allowance	5%		\$4,232,147	\$211,607
ALLOWANCES:	-	User Over-write		
Subtotal				\$3,301,075
Subtotal		Paragoni na pravi na independen	The second control of the second seco	\$0
Item 15 Description	0.00	West Edition	0.00	\$0
Item 14 Description	0.00	Virginia Valla va Provi	0.00	. \$0
Item 13 Description	0.00	V80:::::\$0:::220:::971:::100.	0.00	\$0
Item 12 Description	0.00	antinational distribution of the Control of the Con	0.00	\$0
Item 11 Description	0.00		0.00	\$0
Item 10 Description	0.00	High grades HA Construction	0.00	\$0 \$0
Item 9 Description	0.00	Estadores arrestadas	0.00	\$0
Item 8 Description	0.00	Service a description of the	0.00	\$0

			er vir.
Quantity	<u>Unit</u>	<u>\$/Unit</u>	Total Cost
		`	
			\$77,691
			\$61,784
	<u> </u>		\$19,563 \$75,949
11,542	CY	\$0.08	Φ70,94 8
	CV	¢5 25	\$(
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			\$11,749
376		Q201,000.11	\$246,735
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. 1	EA	\$872,030.58	\$872,03

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			· \$1
	CY		\$43,602
5%		\$872,030.58	
			\$915,632
	<u> </u>		
	eE .	\$10.00	\$0
			\$(
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370		Ψ0.50	\$(
	 		
0	SF	\$16,00	\$(
			\$0
			\$0
QUANT	UNIT	\$/UNIT	TOTAL COST
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	14,515 1,523 2,973 11,542 0 0 0 0 0 0 5% 11 0 0 0 0 0 0 0 0 5% 0 0 0 0 0 0 0 0 0 0	14,515 CY 1,523 CY 2,973 CY 11,542 CY 0 CY 0 CY 0 CY 0 CY 5% 1 EA 1 EA 0 CY 0 CY 0 CY 0 CY 0 CY 0 SF 0 SF 0 SF 10%	14,515 CY \$5.35 1,523 CY \$40.56 2,973 CY \$6.58 11,542 CY \$6.58 0 CY \$5.35 0 CY \$40.56 0 CY \$40.56 0 CY \$40.56 0 CY \$6.58 0 CY \$6.58 5% \$234,986.14 1 EA \$872,030.58 0 CY \$683.50 0 CY \$68

Concrete Clearwell FWT

Printed by: tmyers

10000		Gallons	\$0.66	\$1,312,350
Electrical Allowance	1%		\$1,249,858	\$12,499
Mechanical Allowance	5%		\$1,249,858	\$62,493
I & C Allowance	2%		\$1,249,858	\$24,997
Equipment Allowance	1.0%		\$1,249,858	\$12,499

4/13 PM	11 57565.753	W 7 7	er vegen in the second	
<u>Description</u>	Quantity	<u>Unit</u>	\$/Unit	Total Cost
SITEWORK:		,		
Excavation	1383.87	CY	\$5.35	\$7,40
Imported Structural Backfill	76.18	CY	\$40.56	\$3,090
Native Backfill	308.73	CY	\$6.58	\$2,03
Haul Excess	1075.14	CY	\$6.58	\$7,075
Allowance for Misc Items	5%		\$19,602.35	\$980
Subtotal				\$20,582
CONCRETÉ:				
Process Building Slab on Grade	73.32	CY	\$345.93	\$25,364
Concrete Walls	57.78	CY	\$683.50	\$39,49
Electrical Room Slab on Grade	0.15	CY	\$345.93	\$51
Allowance for Misc Items Subtotal	5%		\$64,906.76	\$3,245 \$68,152
Subidial				
MASONRY:	Moderate 4546.67	SF	\$131.60	\$203,543
CMU Building	1546.67	SF	\$131.00	\$203,543
Subtotal		,		-
METALS:			4004.00	D44.04
Stairway from Building Doors to Floor	30.00	Risers	\$394.80	\$11,844
Stairway from Grating to Floor	18.00	Risers	\$394.80	\$7,106
Grating	469.33	SF	\$72.38	\$33,971
Handrail	56.00	LF	\$72.38	\$4,053
Allowance for Misc Items Subtotal	10%		\$56,974.61	\$5,697 \$62,672
EQUIPMENT:	2.00	EA	\$185,134.72	\$370,269
UV Reactors	1.00	EA	\$185,134.72	\$6,078
Sump Pump Allowance for Misc Items	10%	<u> </u>	\$376,347.36	\$37,635
Subtotal	1078		φονο,ο-ν.100	\$413,982
INSTRUMENTS & CONTROLS:				
	2.00	EA	\$17,912.55	\$35,825
Mag Meters UV Absorbance Analyzer	1.00	EA	\$21,794.63	\$21,795
Allowance for Misc Items	5%	LA	\$57,619.74	\$2,881
Subtotal	3,0			\$60,501
CONVEYING SYSTEMS:				
Bridge Crane	1.00	EA	\$25,289.83	\$25,29
Crane Rail	53.33	LF	\$56.12	\$2,99
Allowance for Misc Items	10%		\$28,282.91	\$2,828
Subtotal				\$31,111
MECHANICAL:				
Inlet and Outlet Pipe Headers (36 inch diameter)	1.00	LS	\$82,262.74	\$82,26
UV Train Pipe Systems (24 inch diameter)	2.00	EA	\$24,962.51	\$49,92
Allowance for Misc Items	10%		\$132,187.76	\$13,219
Subtotal				\$145,407
ELECTRICAL:				
UPS	0.00	KW	\$1,316.01	\$
Allowance for Misc Items	10%		\$0.00	\$0
Subtotal				\$0
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Item 1 Description	0.00		0.00	\$6 \$6
Item 2 Description	0.00		0.00	\$(
Item 3 Description	0.00		0.00	\$

Facility Cost	20,000,000	GPD	\$0.07	\$1,341,26
		AND THE PROPERTY OF THE PROPER		
Electrical Allowance	10%		\$1,341,268	\$134,12
Mechanical Allowance	8%		\$1,341,268	\$107,30
1 & C Allowance	5%		\$1,341,268	\$67,06
Finishes Allowance	2.0%		\$1,341,268	\$26,82
ALLOWANCES:		User Over- write		
Subtotal				\$1,005,95
Subtotal				\$0
Item 15 Description	0.00		0.00	
Item 14 Description	0.00	171116 COLGUNSTACIO I	0.00	\$
Item 13 Description	0.00	Maria Carrella de Carrella	0.00	\$
ttem 12 Description	0.00	an artist of solution	0.00	\$
Item 11 Description	0.00	50 00 20 TO FOR	0.00	\$
Item 10 Description	0.00	(Éstacamenta Biológia	0.00	\$ \$ \$ \$ \$ \$
Item 9 Description	0.00		0.00	\$
Item 8 Description	0.00	The control of the control of the control of	0.00	\$
Item 7 Description	0.00	1955 - 0.11 - 0.21 - 145 1 (0.41 1 (2.41)	0.00	\$ \$
Item 6 Description	0.00		0.00	\$
Item 5 Description	0.00	多度 经由分析	0.00	\$
Item 4 Description	6.000 and 1.000 and 1	ESCHOLOGICAL	0.00	\$

Description	Quantity	Unit	\$/Unit	Total Cost
SITEWORK:			Table 1 Table 2 to	21133
Excavation		,		· · · · · · · · · · · · · · · · · · ·
Influent Channel, Surge Basin & Decant Pump	5311.63	CY	\$5.35	\$28,429
Dry Pit, Backwash Waste Sludge Wet Well, & Backwash Waste	1502.22	CY	ψ0.00	\$8,040
Recycle Wet Well			<i>\$5.</i> 35	, -,
Pipe Vault	351.82	CY	\$5.35	\$1,883
Imported Structural Backfill				
Influent Channel, Surge Basin & Decant Pump	426.72	CY	\$40.56	\$17,306
Dry Pit, Backwash Waste Sludge Wet Well, & Backwash Waste Recycle Wet Well	80.20	CY	440.00	\$3,252
Pipe Vault	70.17	CY	\$40.56 \$40.56	ድጋ 046
Native Backfill	70.17	CI	φ40.3b	\$2,846
Influent Channel, Surge Basin & Decant Pump	1115.38	CY	\$6.58	\$7,339
Dry Pit, Backwash Waste Sludge Wet Well, & Backwash Waste	32.00	CY		\$211
Recycle Wet Well			\$6.58	
Pipe Vault	103.39	CY	\$6.58	\$680
Haul Excess				
Influent Channel, Surge Basin & Decant Pump	4196.25	CY	\$6.58	\$27,612
Dry Pit, Backwash Waste Sludge Wet Well, & Backwash Waste Recycle Wet Well	1470.22	CY		\$9,674
Pipe Vault	248.42	CY	\$6.58 \$6.58	\$1,635
Allowance for Misc Items	5%	0,1	\$108,907.43	\$1,635 \$5,445
Subtotal	070		Ψ100,307.40	\$114,353
				Ψ111,000
CONCRETE:				
Surge Basin:				
Foundation	308.85	CY	\$382.16	\$118,028
Perimeter Walls	382.34	CY	\$683.50	\$261,329
Influent Channel Wall Concrete Curb (8" X 8")	62.23 76.89	CY LF	\$683.50 \$32.90	\$42,536
Backwash Recycle Sump:	70.09	LF	\$32.50	\$2,530
Slab on Grade	18.89	CY	\$345.93	\$6,534
Walls	90.62	CY	\$683.50	\$61,940
Elevated Slab	9.23	CY	\$1,088.69	\$10,045
Backwash Sludge Sump:				
Slab on Grade	13.33	CY	\$345.93	\$4,612
Walls	66.77	CY	\$683.50	\$45,640
Elevated Slab	6.88	CY	\$1,088.69	\$7,491
Dry Pit: Slab on Grade	5.31	CY	#34F.03	₽4 D2C
Walls	32.33	CY	\$345.93 \$683.50	\$1,836 \$22,096
Elevated Slab	3.49	CY	\$1,088.69	\$3,802
Pipe Vault:			ψ1,000.00	Ψ0 ₁ 002
Lower Elevated Slab	29.64	CY	\$1,088.69	\$32,271
Upper Elevated Slab	29.64	CY	\$1,088.69	\$32,271
Walls	32.67	CY	\$683.50	\$22,333
Electrical Room Slab on Grade	5.27	CY	\$345.93	\$1,822
Allowance for Misc Items	5%		\$677,117.15	\$33,856
Subtotal				\$710,973
MASONRY:	Moderate			
Pump Sumps and Pipe Vault	0.00	SF	\$131.60	\$0
Electrical Room	80.89	SF	\$131.60	\$10,645
Subtotal	80.89		,,,,,,,	\$10,645
				770.00
METALS:				

Influent Channel:				
Grating	185.56	SF	\$72.38	\$13,431
Grating Surge Basin:				
Grating Surge Basin: Grating	185.56 4.00	SF SF	\$72.38 \$72.38	\$13,431 \$290
Grating Surge Basin: Grating Backwash Recycle Sump:	4.00	SF	\$72.38	\$290
Grating Surge Basin: Grating Backwash Recycle Sump: Grating				
Grating Surge Basin: Grating Backwash Recycle Sump:	4.00	SF	\$72.38	\$290

4:13 PM Ladder	27.60	VLF	\$99.36	\$2,742
Pipe Vault:			755.55	ΨΔ-11-12
Grating	4.00	SF	\$72.38	\$290
Stairs	16.00	RISERS	\$394.80	\$6,317
Allowance for Misc Items	10%		\$23,647.47	\$2,365
Subtotal				\$26,012
		· ·		
DOORS & WINDOWS:				
Backwash Recycle Sump:				
Aluminum Access Hatch (10' x 5')	1.00	EA	\$4,400.75	\$4,401
Backwash Sludge Sump:				
Aluminum Access Hatch (3' x 3')	1.00	EA	\$1,098.21	\$1,098
Dry Pit: Aluminum Access Hatch (3' x 3')	1.00	IEA		\$4.00C
Pipe Vault:	1.00	EA	\$1,098.21	\$1,098
Aluminum Access Hatch (3' x 3')	2.00	EA	\$4,000,24	¢2 100
Allowance for Misc Items	5%	EA	\$1,098.21 \$8,793.60	\$2,196 \$440
Subtotal	J /6		\$6,793.60	\$9,233
Gubiotas				φ9,233
EQUIPMENT:				
EQUI MENT.	V			
		*		
Floating Decanter Plate System	0.00	SF	\$72.94	\$0
Traveling Solids Removal Mechanism	2.00	EA	\$66,857.09	\$133,714
Washwater Decant Pump (Submersible Pump)	3.00	EA	\$18,993.38	\$56,980
Sludge Pump (Submersible Pump)	2.00	EA	\$12,409.63	\$24,819
Mixers	0.00	HP	\$1,580.26	\$0
Allowance for Misc Items	10%		\$215,513.57	\$21,551
Subtotal	1070		\$2.10,0.10.07	\$237,065
	······································			4201,000
I&C:				
Instruments				
Backwash Waste Recycle Header Magmeter (BWRH, 12 inch)	1,00	EA		\$10,574
			\$10,573.93	*
Isolation Valve Actuators (Electric)	5.00	EA	\$5,064.93	\$25,325
Level Transmitters	1.00	EA	\$7,120.57	\$7,121
Number of Analog I/O Counts	6.00	EA	\$208.82	\$1,253
Number of Digital I/O Counts	30.00	EA	\$49.46	\$1,484
Number of Local Panels	1.00	EA	\$10,331.10	\$10,331
Number of PLC's	1.00	EA	\$10,990.54	\$10,991
I&C Conduit Wire	259.78	· If	\$9.53	\$2,475
Allowance for Misc Items	5%	·	\$69,552.80	\$3,478
Subtotal			·	\$73,030
MECHANICAL:				
Pipe:				
Backwash Waste (BWW, 36 inch, Steel)	0.00	LF	\$657.50	\$0
Filter to Waste (FTW, 18 inch, DI)	0.00	LF	\$123.32	\$0
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	16.22	LF	\$219.17	\$3,555
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	0.00	LF	\$219.17	\$0
Backwash Waste Recycle Lateral (BWRL, 8 inch, DI)	81.00	LF	\$54.81	\$4,439
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	16.22	LF.	\$109.58	\$1,778
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	0.00	LF	\$109.58	\$0
Backwash Waste Sludge Lateral (BWSL, 6 inch, Steel)	54.00	LF	\$109.58	\$5,917
Elbows:	0.00			
Backwash Waste (BWW, 36 inch, Steel)	0.00	EA	\$3,959.76	\$0
Filter to Waste (FTW, 18 inch, DI)	0.00	EA EA	\$2,588.21	\$0
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	1.00	EA	\$1,319.92	\$1,320
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	0.00	EA	\$1,319.92	\$0
Backwash Waste Recycle Lateral (BWRL, 8 inch, DI)	6.00	EA	\$1,150.31	\$6,902
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	1.00	EA	\$659.96	\$660
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	0.00	EA	\$659.96	\$0
Backwash Waste Sludge Lateral (BWSL, 6 inch, Steel)	4.00	EA	\$659.96	\$2,640
Tee:	0.00	EA	\$0.004.00	
Backwash Waste (BWW, 36 inch, Steel) Filter to Waste (FTW, 18 inch, DI)	0.00	EA EA	\$9,021.82	\$0 \$0
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	2.00	EA EA	\$4,297.65	\$0 \$6.015
Backwasii waste necycle neader (bwrth, 12 ifich, Steet)	Z.VU	IEA .	\$3,007.27	\$6,015

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Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	0.00	EA	\$3,007.27	\$0
Backwash Waste Recycle Lateral (BWRL, 8 inch, DI)	0.00	EA	\$1,910.07	\$
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	1.00	EA	\$1,503.64	\$1,50
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	0.00	EA .	\$1,503.64	\$
Backwash Waste Sludge Lateral (BWSL, 6 inch, Steel)	0.00	EA	\$1,503.64	\$(
Valves:				
Backwash Waste (BWW, 36 inch, Steel)	0.00	EA	\$28,960.68	\$
Filter to Waste (FTW, 18 inch, DI)	0.00	EA	\$12,602.74	\$
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	0.00	EA	\$9,653.56	\$(
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	0.00	EA	\$9,653.56	\$(\$(
Backwash Waste Recycle Lateral (BWRL, 8 inch, DI)	3.00	EA	\$5,601.22	\$16,804
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	0.00	EA	\$4,826.78	\$(
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	0.00	EA	\$4,826.78	\$1
Backwash Waste Sludge Lateral (BWSL, 6 inch, Steel)	2.00	EA	\$4,826.78	\$9,65
Allowance for Misc Items	5%		\$61,186.86	\$3,05
Subtotal				\$64,24
				+01,21
ELECTRICAL:				
#MCC Sections	8.00	EA	\$6,783.10	\$54,26
Switchgear	0.00	EA	\$31,202,24	\$1
Adjustable Frequency Drives		 - - - - - - - -	ΨO 1,LVL,LT	Ψ
Basin Mixer	0.00	EA	\$4,125.89	\$0
Sludge Pumps (Active)	1.00	EA	\$4,871.14	\$4,87
Sludge Pumps (Standby)	1.00	EA	\$4,871.14	\$4,87
Recycle Pumps (Active)	2.00	EA	\$6,299.20	\$12,598
Recycle Pumps (Standby)	1.00	EA	\$6,299.20	\$6,299
Electrical Conduit & Wire	259.78	lf	\$9.53	\$2,475
Allowance for Misc Items	5%	"	\$85,380.01	\$4,269
Subtotal	070		Ψου,ουσ.στ	\$89,649
- Control	-			ψ05,040
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Item 1 Description	0.00	7.1 - A 20.00 A 20.00 A 20.00	0.00	\$0
Item 2 Description	0.00		0.00	. \$0
Item 3 Description	0.00	1 17 756 275 286 286	0.00	\$0 \$0
Item 4 Description	0.00	011111GP0001GE002000000	0.00	\$0
Item 5 Description	0.00	Salar Salar Salar (1996) Salar Sa	0.00	\$(
Item 6 Description	0.00	PECASTOSEGUES CARECTOS PROPERTIES DE CARECTOS DE CAREC	0.00	\$(\$(
Item 7 Description	0.00	COLOR COLOR CONTRACTOR	0.00	\$0
Item 8 Description	0.00	i lavos controlos macinos de la comunicación	0.00	\$0
Item 9 Description	0.00		0.00	\$(\$(
Item 10 Description	0.00	A CONTRACTOR AND A CONT	0.00	\$(
Item 11 Description	0.00		0.00	Φ(
Item 12 Description	0.00		0.00	\$(\$(
Item 13 Description	0.00		0.00	\$(
The state of the s		<u> </u>		
Item 14 Description Item 15 Description	0.00		0.00	\$(\$(
Subtotal	0.00		0.00	\$0
Gubiolai				\$0
Subtotal				\$1,335,206.98
ALLOWANCES:		User Over-write		
Finishes Allowance	2%	Oser Over-write	\$1,534,721	\$30,694.4
I & C Allowance	3%		\$1,534,721	\$30,694.4 \$46,041.62
Mechanical Allowance	5%		\$1,534,720.67	\$76,736.03
Electrical Allowance	3%		\$1,534,720.67	\$76,736.03 \$46,041.62
Foolitie Cost				
Facility Cost	2,519,600	Gallons	\$0.61	\$1,534,721

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-	В	С) D	Ε	F
317	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Server objects — we see a fact that is a proper shock that		Property and the second	200x 090000 - 0900 toxe 200 - 0000 000 000 000 000 000 000 000
318	A CONTRACTOR OF THE PROPERTY O	Quantity	Unit	\$/Unit	Total Cost
319	SITEWORK:				
320	Soil Excavation	7890.61	CY	\$5.35	\$42,233
321	Imported Structural Backfill	885.62	CY	\$40.56	\$35,916
322	Backfill	137.39	CY	\$6.58	\$904
323	Haul Excess	7753.22	CY	\$6.58	\$51,017
324	Stair Case:			•	
325	Soil Excavation	673.00	CY	\$5.35	\$3,602
326	Imported Structural Backfill	87.11	CY	\$40.56	\$3,533
327	Backfill	34.67	CY	\$6.58	\$228
328	Haul Excess	638.33	CY	\$6.58	\$4,200
329	Blower Room:				
330	Soil Excavation	91.90	CY	\$5.35	\$492
331	Imported Structural Backfill	116.44	CY	\$40.56	\$4,722
332	Backfill	4.42	CY	\$6.58	\$29
333	Haul Excess	87.48	CY	\$6.58	\$576
334	Electrical Room:				
335	Soil Excavation	16.29	CY	\$5.35	\$87
336	Imported Structural Backfill	19.63	CY	\$40.56	\$796
337	Backfill	1.46	CY	\$6.58	\$10
338	Haul Excess	14.83	CY	\$6.58	\$98
339	Allowance for Misc Items	5%		\$148,442.48	\$7,422
340	Subtotal				\$155,865
341					
342	CONCRETE:	•			
343	Filters				
	Foundation (Includes Filter, Gulllet Channel, Filter	458.37	CY	\$382.16	\$175,171
	Influent/Backwash Wastewater Channel) (FSOGW *				
344	FSOGL * FOSGT) / 27 *#TF				
345	Pipe Gallery Wall	278.19	CY	\$683.50	\$190,141
346	Gullet Wall	55.97	CY	\$683.50	\$38,257
347	Filter Influent / Backwash Waste Channel Walls	460.37	CY	\$683.50	\$314,665
	Filter Influent / Backwash Waste Channel Lower	26.67	CY	\$1,088.69	\$29,032
348					
	Filter Influent / Backwash Waste Channel Upper	36.00	CY	\$1,088.69	\$39,193
349	Elevated Slab				
350	End Walls	253.63	CY	\$683.50	\$173,357
351	Common Filter Influent				
352	Slab on Grade	62.48	CY	\$345.93	\$21,615
353	Common Influent Channel Wall	213.70	CY	\$683.50	\$146,067
354		27.81	CY	\$1,088.69	\$30,276
355	Filter Gallery				
356	Slab on Grade	567.17	CY	\$345.93	\$196,201
357	Filter Gallery Elevated Slab	75.62	CY	\$1,088.69	\$82,330
358	Pipe Supports	2.24	CY	\$32.90	
359	Blower Room				
360	Slab on Grade	63.66	CY	\$345.93	\$22,023
361	Blower Room Walls	31.79	CY	\$683.50	\$21,730
362	Stair Case				· · · · · · · · · · · · · · · · · · ·
363	Slab on Grade	46.22	CY	\$345.93	\$15,990
364	Stair Case Walls	25.58	CY	\$683.50	\$17,481
365	Electrical Room				
366	Slab on Grade	3.04	CY	\$345.93	\$1,051
367	Electrical Room Walls	9.71	CY	\$683.50	\$6,638
368	Allowance for Misc Items	5%		\$1,521,216.81	\$76,061
369	Subtotal				\$1,597,278
370					, , , , ,
371	MASONRY:	Moderate			
	CMU Filter Building	10239.03	SF	\$131.60	\$1,347,470
	Blower Room	793.33	SF	\$131.60	\$104,404
	Electrical Room	82.00	SF	\$131.60	\$10,791
	Subtotal	52.00		7.07.00	\$1,462,665
376					Ψ (,102,000
377					
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	В	С	D	E	F
378	Metal Guardrail with Pickets	517.33	LF	\$72.38	\$37,445
379	Filter Access Hatch	20.25	SF	\$109.91	
380	Stairs (FBD * 12/8)	32.00	Risers	\$394.80	\$12,634
381	Allowance for Misc Items	10%		\$50,078.70	\$5,008
382	Subtotal				\$55,087
383					· · ·
384	THERMAL & MOISTURE PROTECTION:				
385	Concrete Liner	0	SF	\$16.00	\$0
386	Allowance for Misc Items	10%	0.	\$0.00	\$0
387	Subtotal	1070		48.00	\$0
388	Odblotai				ΨΟ
300	EQUIPMENT:				
	EQUITMENT.				
200					
389	5.1.2.1.1001.0.4.100.1.1	2		A- 44. 24	****
390	Fabricated Slide Gates, 42-inch		EA	\$7,111.04	\$14,222
391	Underdrain - Leopold Type S	3,083	SF	\$69.90	\$215,466
392	Wash Troughs			-	
393	Conventional	0	<u>L</u> F	\$234.61	\$0
394	Media Retaining	379	LF	\$531.99	\$201,446
395	Media				
396	Bottom Media - Sand (ES=0.5 UC=1.4)	3,083	CF	\$17.47	\$53,867
397	Middle Media - Coal (ES=0 UC=0)	0	CF	\$23.30	\$0
398	Top Media - Coal (ES=1 UC=1.4)	12,331	CF	\$23.30 4	\$287,288
	Air Scour Blowers (147 hp each)	2	EA	\$80,692.87	\$161,386
	(700,00=.01	4.0.,000
	1				
399				1	
400	Allowance for Misc Items	10%		\$933,675.01	\$93,368
401	Subtotal	1076		φ933,073.01	\$1,027,043
402	Sublotai				\$1,027,043
	INOTELINENTO A CONTROLO				· · · · · · · · · · · · · · · · · · ·
403	INSTRUMENTS & CONTROLS:				
404					
405	Filter Effluent Magmeter (20-inch)	4.00	EA	\$17,150.92	\$68,604
406	Combined Filter Effluent Magmeter (36-inch)	0.00	EA	\$28,001.02	\$0
407	Isolation Valve Actuators	24.00	EA	\$5,064.93	\$121,558
408	Control Valve Actuators	4.00	EA	\$5,064.93	\$20,260
409	Turbidimeters	4	EA	\$3,133.05	\$12,532
410	Particle Counters	4	EA	\$6,764.54	\$27,058
411	Level Transmitters	4	EA	\$7,120.57	\$28,482
412	Differential Pressure Transmitters	4	EA	\$7,120.57	\$28,482
413	Filter Influent Level Transmitter	2	EA	\$7,120.57	\$14,241
414		2	EA	\$7,120.57	\$14,241
Н	Air Scour Discharge Pressure Indicator Transmitter	2	EA	\$7,120.57	\$14,241
415	-	~	, \	\$1,120.01	ΨΙΤ,ΣΤΙ
H	Number of Analog I/O Counts	53	EA	\$208.82	\$11,026
416		00	Im/\(\frac{1}{2}\)	\$200.02	Ψ11,020
710		140		040.40	Ф7 ОБО
147	Number of Digital I/O Counts	149	EA	\$49.46	\$7,359
417	Number of DLCle		Ε.Δ	20.000	# * * * * * * * * * * * * * * * * * * *
418		1 000	EA	\$10,331.10	\$10,331
419	I&C Conduit & Wire	4,266	LF	\$9.53	\$40,650
420	Allowance for Misc Items	10%		\$419,065.93	\$41,907
421	Subtotal				\$460,973
422					
423	CONVEYING SYSTEMS:				
424	Monorail Hoist (3 Ton)	1	EA	\$3,257.13	\$3,257
425	Hoist Rail	190	LF	\$32.90	\$6,259
426	Allowance for Misc Items	5%		\$9,515.98	\$476
427	Subtotal				\$9,992
428	,				45,502
429	MECHANICAL:				
430	Pipe			F	
700	Air Scour Pipe-BAW (16-inch , Exposed , Steel , None	268	LF	\$264.60	¢70.004
424	• •	200	LF	\$264.60	\$70,861
431	, None)				

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	В	С	D	[E	F
432	Filter Influent Header Pipe-FIH (36-inch , Buried , Steel , Cement Mortar , Fusion Bonded Epoxy)	0	LF	\$657.50	\$0
433	Filter Influent Pipe-FIH (30-inch , Encased , Steel , Cement Mortar , Fusion Bonded Epoxy)	0	LF	\$547.92	\$0
434	Filter Effluent Pipe-FE (20-inch , Exposed , Steel , Cement Mortar , Paint)	56	LF	\$365.28	\$20,385
435	Filter Effluent Pipe-FE (20-inch , Encased , Steel , Cement Mortar , Fusion Bonded Epoxy)	56	LF	\$365.28	\$20,385
436	Filter Control Valve Pipe-FCV (16-inch , Exposed , Steel , None , None)	43	LF	\$264.60	\$11,290
437	Filter Effluent Header Pipe-FEH (36-inch , Encased , Steel , Cement Mortar , Fusion Bonded Epoxy)	79	LF	\$657.50	\$51,942
438	Filter to Waste-FTW (20-inch , Exposed , Steel , Cement Mortar , Paint)	43	LF	\$365.28	\$15,765
439	Filter to Waste-FTW (20-inch , Encased , Steel , Cement Mortar , Fusion Bonded Epoxy)	184	LF	\$365.28	\$67,211
440	Backwash Supply Pipe-BWS (36-inch , Exposed , Steel , Cement Mortar , Paint)	201	LF	\$657.50	\$131,986
441	Backwash Supply Pipe-BWS (36-inch , Encased , Steel , Cement Mortar , Fusion Bonded Epoxy)	48	LF	\$657.50	\$31,560
442	Backwash Waste Pipe-BWW (36-inch , Encased , Steel , Cement Mortar , Fusion Bonded Epoxy)	10	LF	\$657.50	\$6,575
443	Elbows	·			
444	Air Scour Pipe-BAW (16-inch , Steel)	16	EA	\$1,759.89	\$28,158
445	Filter Influent Header Pipe-FIH (36-inch , Steel)	0	EA	\$3,959.76	\$0
446	Filter Influent Pipe-FIH (30-inch , Steel)	0	EA	\$3,299.80	\$0
447	Filter Effluent Pipe-FE (20-inch , Steel)	4	EA	\$2,199.87	\$8,799
448	Filter Effluent Pipe-FE (20-inch , Steel)	4	EA	\$2,199.87	\$8,799
449 450	Filter Control Valve Pipe-FCV (16-inch , Steel)	0	EA	\$1,759.89	\$0
450 451	Filter Effluent Header Pipe-FEH (36-inch , Steel) Filter to Waste-FTW (20-inch , Steel)	6	EA EA	\$3,959.76	\$0
452	Filter to Waste-FTW (20-inch , Steel)	0	EA	\$2,199.87	\$13,199 \$0
453	Backwash Supply Pipe-BWS (36-inch , Steel)	2	EA	\$2,199.87 \$3,959.76	\$7,920
454	Backwash Supply Pipe-BWS (36-inch , Steel)	2	EA	\$3,959.76	\$7,920
455	Backwash Waste Pipe-BWW (36-inch , Steel)	0	EA	\$3,959.76	ψ7,520 \$0
456	Tees			73,333.3	Ψ0
457	Air Scour Pipe-BAW (16-inch , Steel)	4	EA	\$4,009.70	\$16,039
458	Filter Influent Header Pipe-FIH (36-inch , Steel)	0	EA	\$9,021.82	\$0
459	Filter Influent Pipe-FIH (30-inch , Steel)	0	EA	\$7,518.19	\$0
460	Filter Effluent Pipe-FE (20-inch , Steel)	4	EA	\$5,012.12	\$20,048
461	Filter Effluent Pipe-FE (20-inch , Steel)	0	EA	\$5,012.12	\$0
462	Filter Control Valve Pipe-FCV (16-inch , Steel)	0 -	EA	\$4,009.70	
463	Filter Effluent Header Pipe-FEH (36-inch , Steel)	0	EA .	\$9,021.82	\$0 \$0
464	Filter to Waste-FTW (20-inch , Steel)	0	EA	\$5,012.12	
465	Filter to Waste-FTW (20-inch , Steel)	2	EA	\$5,012.12	\$10,024
466 467	Backwash Supply Pipe-BWS (36-inch , Steel)	6	EA	\$9,021.82	\$54,131
468	Backwash Supply Pipe-BWS (36-inch , Steel) Backwash Waste Pipe-BWW (36-inch , Steel)	0	EA EA	\$9,021.82	\$0
469	Crosses		EA	\$9,021.82	\$0
470	Air Scour Pipe-BAW (16-inch , Steel)	2	EA	\$5,346.27	\$10,693
471	Filter Influent Header Pipe-FIH (36-inch , Steel)	0	EA	\$12,029.10	\$10,093
472	Filter Influent Pipe-FIH (30-inch , Steel)	0	EA	\$10,024.25	\$0
473	Filter Effluent Pipe-FE (20-inch , Steel)	0	EA	\$6,682.83	\$0
474	Filter Effluent Pipe-FE (20-inch , Steel)	0	EA	\$6,682.83	\$0
475	Filter Control Valve Pipe-FCV (16-inch , Steel)	0	EA	\$5,346.27	\$0
476	Filter Effluent Header Pipe-FEH (36-inch , Steel)	2	EA	\$12,029.10	\$24,058
477	Filter to Waste-FTW (20-inch , Steel)	0	EA	\$6,682.83	\$0
478	Filter to Waste-FTW (20-inch , Steel)	0	EA	\$6,682.83	\$0
479	Backwash Supply Pipe-BWS (36-inch , Steel)	0	EA	\$12,029.10	\$0
480	Backwash Supply Pipe-BWS (36-inch , Steel)	0	EA	\$12,029.10	\$0
	Backwash Waste Pipe-BWW (36-inch , Steel)	0	EA	\$12,029.10	\$0
481	14.1		1	!	
482	Valves		<u>-</u> .		·
	Air Scour Pipe-BAW (16-inch ,V500 - BFV) Filter Influent Header Pipe-FIH (36-inch ,V500 - BFV)	4 0	EA EA	\$12,871.41 \$28,960.68	\$51,486 \$0

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	В .	С	D	E	F
485	Filter Influent Pipe-FIH (30-inch ,V500 - BFV)	4	EA	\$24,133.90	\$96,536
486	Filter Effluent Pipe-FE (20-inch, V500 - BFV)	4	EA	\$16,089.26	\$64,357
487	Filter Effluent Pipe-FE (20-inch ,V500 - BFV)	0	EA	\$16,089.26	\$0
	Filter Control Valve Pipe-FCV (16-inch ,V500 - BFV)	4	EA	\$12,871.41	\$51,486
488	, , , , , , , , , , , , , , , , , , , ,	•		, , , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , , ,
	Filter Effluent Header Pipe-FEH (36-inch, V500 - BFV)	0	EA	\$28,960.68	\$0
489	The Emdert leader i pe i En (ee mon 17000 Di v)	v	-	φ20,000.00	Ψο
490	Filter to Waste-FTW (20-inch ,V500 - BFV)	4	EA	\$16,089.26	\$64,357
491	Filter to Waste-FTW (20-inch ,V500 - BFV)	0	EA	\$16,089.26	\$0
1 491	Backwash Supply Pipe-BWS (36-inch ,V500 - BFV)	4	EA	\$28,960.68	\$115,8 4 3
492	Dackwasii Supply Fipe-BVVS (So-Ilicii , VSOO - BFV)	4		\$20,900.00	क् । १२,०५३
492	Backwash Supply Pipe-BWS (36-inch ,V500 - BFV)	0	EA ·	620.060.00	\$0
1,00	backwash Supply Fipe-ByyS (So-Inch ,VS00 - BFV)	U	EA .	\$28,960.68	ΦU
493	Destaurabilities Dies Diamonico in the MCOO DELO	4	le a	200 000 00	0445.040
ا ہے ا	Backwash Waste Pipe-BWW (36-inch ,V500 - BFV)	. 4	EA	\$28,960.68	\$115,843
494				A4 407 007 70	
495	Allowance for Misc Items	5%		\$1,197,655.76	\$59,883
496	Subtotal				\$1,257,539
497					
498	ELECTRICAL:				
499	MCC's				
500	Sections	5	EA	\$6,783.10	\$33,915
501	AFD's				
502	Air Scour Blowers (147 hp each)	-	EA	\$22,201.95	\$0
503	Switchgear				
504	Units		EA	\$31,202.24	\$0
505	Electrical Conduit & Wire	158	LF	\$9.53	\$1,506
506	Allowance for Misc Items	5%		\$35,421.03	\$1,771
507	Subtotal				\$37,192
508					
509	USER DEFINED ESTIMATE ITEMS	QUANT	UNIT	\$/UNIT	TOTAL COST
510	Item 1 Description	0.00	. 1.46k (2016) el (3.66k) (2016)	0.00	\$0
511	Item 2 Description	0.00	a da se estado de Nobre de Sebre	0.00	\$0
512	Item 3 Description	0.00	NGS ZERPASSIVETPURSIER	0.00	\$0 \$0
513	Item 4 Description	0.00		0.00	\$0
514	Item 5 Description	0.00		0.00	\$0
515	Item 6 Description	0.00		0.00	\$0
516	Item 7 Description	0.00	STREET, COLORADO PROPERTIMINA DE LA SERVICIO COM	0.00	\$0
517	Item 8 Description	0.00	540 C. FORESCHINE (1971)	0.00	\$Q
518		0.00	2012/03/2015 April 68/2015/03/2015/2016/2016	0.00	φή
	Item 9 Description				\$0
519	Item 10 Description	0.00		0.00	\$0 \$0
520	Item 11 Description	0.00	The Control of Control of State (State (Stat	0.00	\$0
521	Item 12 Description	0.00		0.00	\$0
522	Item 13 Description	0.00		0.00	\$0 \$0
523	Item 14 Description	0.00		0.00	\$0
524	Item 15 Description		A - N. F. Corpor Eulope National Elizabeth	0.00	\$0
525	Subtotal				\$0
526		 			
527	Subtotal				\$6,063,631.57
528		····			
529	ALLOWANCES:		User Over-write		
530	Finishes Allowance	2%	And the state of t	\$6,590,904	\$131,818.08
531	Mechanical Allowance	2%		\$6,590,903.88	\$131,818.08
532	I&C Allowance	2%		\$6,590,903.88	\$131,818.08
533	Electrical Allowance	2%		\$6,590,903.88	\$131,818.08
534					·
535	Facility Cost	20,000,000	GPD	\$0.33	\$6,590,904
		,,		7	7-,,50-1

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180	В	С	D	E	F
100					
181	<u>Description</u>	Quantity	<u>Unit</u>	<u>\$/Unit</u>	Total Cost
182	AND THE PROPERTY OF THE PROPER				
183	SITEWORK:				
184	Excavation		CY	\$ 5.35	\$25,383 \$30,305
185 186	Imported Structural Backfill Native Backfill		CY	\$ 40.56 \$ 6.58	\$8,194
187	Haul Excess	3,497	CY	\$ 6.58	\$23,011
188	Allowance for Misc Items	5%		\$86,893	\$4,345
189	Subtotal				\$91,237
190					
191	CONCRETE:				
192 193	Influent Channel: Foundation	42	CY	\$ 382.16	\$16,188
194	Channel Walls	88	CY	\$ 683.50	
195	Elevated Slab	26	CY	\$ 1,088.69	\$28,234
196	Basin				
197	Foundation		CY	\$ 382.16	\$61,282
198	Channel Walls	286	CY	\$ 683.50	
199	Elevated Slab Concrete Curb (8" X 8")	38 86	CY LF	\$ 1,088.69 \$ 32.90	\$41,369 \$2,829
200 201	Concrete Curb (8" X 8") Effluent Channel:	- 00		Ψ .3U	Ψ2, Ψ2,
202	Foundation	42	CY	\$ 382.16	\$16,188
203	Walls	88	CY	\$ 683.50	\$60,363
204	Elevated Slab	26	CY	\$ 1,088.69	\$28,234
205	Electrical Room		0.4		A-^-
206	Slab on Grade	5%	CY	\$ 345.93 \$511,114	\$737 \$25,556
207 208	Allowance for Misc Items Subtotal	3%		Φ311,114	\$536,669
209	Subtotal				φοσο,σσο
210	MASONRY:	Moderate			
211	CMU Building	5,514	SF	\$ 131.60	\$725,698
212	Electrical Room	58	SF	\$ 131.60	\$7,574
213	Subtotal	5,572			\$733,272
214	METALO				
215 216	METALS: Aluminum Handrail	295	LF	\$ 72.38	\$21,352
217	Allowance for Misc Items	10%		\$ 21,352.07	\$2,135
218	Subtotal				\$23,487
219					
220	WOODS & PLASTICS:				Ac 770
221	FRP Ladder	5%	EA	\$ 1,443.20 \$ 5,772.82	\$5,773 \$289
222 223	Allowance for Misc Items Subtotal	3%		\$ 3,112.02	\$6,061
224	Sublocal				40,007
225	THERMAL & MOISTURE PROTECTION:				
226	Concrete Liner	0	SF	\$16.00	\$0
227	Allowance for Misc Items	10%		\$0.00	\$0
228	Subtotal		<u> </u>		\$0
229	FOURDAENT	1			
	EQUIPMENT:				
230	· 				
	Lamella Clarifier [WPL * PW * #P/T *# * COS(PAR)]	41,771	PLATE AREA	\$ 19.45	\$812,420
231			(SF)		
232	Fabricated Slide Gate	2	EA	\$ 6,077.92	
233	Hoseless Sludge Collector	10%	EA	\$ 66,857.09 \$ 1,092,003.71	\$267,428 \$109,200
234 235	Allowance for Misc Items Subtotal	1076		ψ 1,032,003.71	\$1,201,204
236	Guniotai				Ψ1,201,20-
237	INSTRUMENTS & CONTROLS:				
238	Instruments				
239		4	EA	\$ 3,133.05	
	Number of Analog I/O Counts	5	each	\$208.82	\$1,002.34
240	North and District VO Country	24	ooch	C40 40	\$1,186.98
244	Number of Digital I/O Counts	24	each	\$49.46	\$1,100.98
241 242	Number of PLC's	1	each	\$10,331.10	\$10,331.10
243	I&C Conduit & Wire	373	LF	\$9.53	
1044	Allowance for Misc Items	10%		\$28,610	
244		1070		\$20,0.0	
244 245 246	Subtotal	1070		420,010	\$31,471

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Ш	В	С	D	E	F
181	<u>Description</u>	Quantity	<u>Unit</u>	<u>\$/Unit</u>	Total Cost
247	MECHANICAL:				
248	Solids Collection Pipe (4-inch, USL, Immersed, Steel)	343	LF	\$66.15	\$22,689
249	Solids Collection Pipe Elbows	16	each	\$439.97	\$7,040
250	Mud Valves	4	EA	\$1,974.02	\$7,896
251	Allowance for Misc Items	10%		\$37,625	\$3,762
252	Subtotal				\$41,387
253					
254	ELECTRICAL:				
255	MCC's				
256	Sections	5	each	\$6,783.10	\$33,915
257	AFD's				
258	Sludge Collectors (total facility) (1 hp each)	-	each	\$4,248.86	\$0
259	Switchgear				
260	Units	-	each	\$31,202.24	\$0
261	Electrical Conduit & Wire	187	LF	\$9.53	\$1,778.71
262	Allowance for Misc Items	10%		\$35,694	\$3,569.42
263	Subtotal				\$39,264
264					
265	USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
266	Item 1 Description	0.00		0.00	\$0
267	Item 2 Description	0.00		0.00	\$0
268	Item 3 Description	0.00		0.00	\$0
269	Item 4 Description	0.00		0.00	\$0
270	Item 5 Description	0.00		0.00	\$0
271	Item 6 Description	0.00	63,609,604,854,639,6	0.00	\$0
272	Item 7 Description	0.00		0.00	\$0
273	Item 8 Description	0.00		0.00	.\$0
274	Item 9 Description	0.00		0.00	\$0
275	Item 10 Description	0.00		0.00	\$0
276	Item 11 Description	0.00		0.00	\$0
277	Item 12 Description	0.00		0:00	\$0
278	Item 13 Description	0.00	101 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-0.00	\$0
279	Item 14 Description	0.00	No. of the last of	0.00	\$0
280	Item 15 Description	0.00		0.00	\$0
281	Subtotal				\$0
282					
283	Subtotal				\$2,704,054
284					7-1. 3 1,00 1
285	ALLOWANCES:		User Over-write		
286	Finishes Allowance	2.0%		\$2,939,189	\$58,784
287	1 & C Allowance	2%		\$2,939,189	\$58,784
288	Mechanical Allowance	2%		\$2,939,189	\$58,784
289	Electrical Allowance	2%		\$2,939,189	\$58,784
290	MICOLITON / HICTIGATION	~70	NAMES OF THE PROPERTY OF THE P	Ψ2,303,103	Ψυυ,/ 04
291	Facility Cost	20,000,000	GPD	\$0.15	\$2,939,189
	r domy Coot	20,000,000	0,0	φ υ.1 5	⊅∠, 535,169,

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188		Ů		_		
100				016.000.000.000.000.000.000.000	and the second of the second o	
189	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	Total Cost	
190		From the continuous services in a court of continuous c	Para Trans an Destration State and Appropriate Sci	2 3590 CO-90 X 20-0 CO-70 CC 2 C COCK 2 C-1	ONTO 100 CARACTER STEEN NAME AND ASSESSED ASSESSED.	
191	SITEWORK:					
192	Excavation	4,462	CY	\$5.35	\$23,882	
193	Imported Structural Backfill	743	CY	\$40.56	\$30,115	
194	Native Backfill	1,137	CY	\$6.58	\$7,485	
195	Haul Excess	3,325	CY	\$6.58	\$21,876	
196	Allowance for Misc Items	5%		\$83,357.26	\$4,168	
197	Subtotal				\$87,525	
198						
199	CONCRETE:					
200	Influent Channel:					
201	Foundation	42	CY	\$382.16	\$16,188	
	Channel Walls (Only 3 walls are covered here. The 4th wall	88	CY	\$683.50	\$60,362	
202	is covered in the Flocc Basin.)					
203	Elevated Slab	25	CY	\$1,088.69	\$27,007	
204	Flocc Basin			4	A	
205	Foundation	275	CY	\$382.16	\$105,198	
	Basin Walls (Only 3 walls are covered here. The Effluent	178	CY	\$683.50	\$121,487	
	wall is covered in the Influent Channel of the Lamella					
206	Clarifier)	40	0)/	2000 70	600.704	
207	Under Baffle Wall	48 48	CY	\$683.50	\$32,761	
208	Over Baffle Wall	48 91	CY	\$683.50	\$32,761	
209	Elevated Slab	42	EA	\$1,088.69 \$0.00	\$99,593 \$0	
210 211	Flocc Bearing Supports Electrical Room	42	EM	\$0.00	ΦU	
212	Slab on Grade	4	CY	\$345.93	\$1,435	
213	Allowance for Misc Items	5%	O I	\$496,789.26	\$24,839	
214	Subtotal	370 .	 	ψ430,103.20	\$521,629	
215	Odbiotal				Ψ02 1,020	
216	MASONRY:	Moderate				
217	CMU Building	5,292	SF	\$131.60	\$696,495	
218	Electrical Room	112	SF	\$131.60	\$14,739	
219	Subtotal	5,404			\$711,234	
220						
221	METALS:					
222	Aluminum Handrail	276	LF	\$72.38	\$19,962	
223	Additional Handrail with NO Building	0	LF	\$72.38	\$0	
224	Stairs (1 per basin)	27	RISERS	\$394.80	\$10,507	
225	Allowance for Misc Items	10%		\$30,468.67	\$3,047	
226	Subtotal				\$33,516	
227						
228	WOODS & PLASTICS:			000.00		
229	FRP Weir	9	LF	\$32.90	\$306	
230	FRP Ladder	4 5%	EA	\$1,443.17	\$5,773	
231	Allowance for Misc Items	3%	1	\$6,078.43	\$304 \$6,382	
232 233	Subtotal				\$0,382	
234	THERMAL & MOISTURE PROTECTION:					
235	Concrete Liner	0	SF	\$16.00	\$0	
236	Allowance for Misc Items	10%	-	\$0.00	\$0	
237	Subtotal	10,70	1	\$0.00	\$0	
238						
239	DOORS & WINDOWS:		1			
240	O/U Baffling ON/OFF Factor	0				
241	Serpentine Baffling ON/OFF Factor	1			\$0	
	Stainless Steel Door (2' x 2') for O/U Baffling	0	EA	\$1,052.81	\$0	
242	Stainless Steel Door (2 X 2) for O/O Danning				7.	
		4	EA	\$1,052.81	\$4,211	
242	Stainless Steel Door (2' x 2') for Serpentine Baffling Stainless Steel Door (7' x 2.5')	4 0	EA EA	\$1,052.81 \$4,606.05	\$0	
242 243	Stainless Steel Door (2' x 2') for Serpentine Baffling					
242 243 244	Stainless Steel Door (2' x 2') for Serpentine Baffling Stainless Steel Door (7' x 2.5')	0		\$4,606.05	\$0	

EQUIPMENT: 248 Horizontal Paddle Whee	В	С	D	E	F
248					
				i	
				1	
I Horizontal Paddle Whee					
	el Flocculation Mechanism (Paddles &	0	LF	\$0.00	\$0
249 Drives)				ł	
Vertical Paddle Wheel F	locculation Mechanism (Paddles &	18	EA	\$0.00	\$0
250 Drives)	,	X		· 1	,
Vortical Turbine Floraul	ation Mechanism (Turbines & Drives)	. 24	HP	\$1,345.03	\$32,281
	attorr mechanism (ruibines a brives)	24	1 41	\$1,040.00	φυΖ,ΖΟ Ι
251				4	
252 Vertical Turbine Floccul	ator VFD's	24	HP	\$533.15	\$12,796
253 Fabricated Slide Gate		2	EA	\$6,077.92	\$12,156
254 Allowance for Misc Item	S	10%		\$57,232.18	\$5,723
255 Subtotal					\$62,955
256			1		
257 ELECTRICAL:					
258 MCC's					
259 Sections		12	each	\$6,783.10	\$81,397
260 AFD's					
	age 1 (total facility) (2 hp each)	6	each	\$4,371.83	\$26,231
	age 2 (total facility) (1 hp each)	6	each	\$4,248.86	\$25,493
	age 3 (total facility) (1 hp each)	6	each	\$4,248.86	\$25,493
					
	age 4 (total facility) (0 hp each)	0	each	\$4,125.89	\$0
	age 5 (total facility) (0 hp each)	0	each	\$4,125.89	\$0
	age 6 (total facility) (0 hp each)	0	each	\$4,125.89	\$0
267 Switchgear					
268 Units		0	each	\$31,202.24	\$0
269 Electrical Conduit & Wir	Δ	1,752	If	\$9.53	\$16,694
		10%	II	\$175,308.86	\$17,531
	8	1076		\$175,500.00	
271 Subtotal					\$192,840
272					
273 INSTRUMENTS & CONT	ROLS:				
274 Instruments					
275 Level Switch		2	each	\$549.53	\$1,099
276 Number of Analog I/O C	· · · · · · · · · · · · · · · · · · ·	43	each	\$208.82	
				· · · · · · · · · · · · · · · · · · ·	\$9,021
277 Number of Digital I/O C	ounts	108	each	\$49.46	\$5,341
278 Number of PLC's		1	each	\$10,331.10	\$10,331
279 I&C Conduit & Wire		1,827	If	\$9.53	\$17,406
280 Allowance for Misc Item	S	10%		\$43,198.52	\$4,320
281 Subtotal					\$47,518
282					
	UED COTINATE ITEMS:	QUANT	LINIT	## INIT	TOTAL COCT
	NED ESTIMATE ITEMS:		UNIT	\$/UNIT	TOTAL COST
	m 1 Description	0.00	The Shake AND A Share	0.00	. \$0
	m 2 Description	0.00		0.00	. \$0
286 [te	n 3 Description	0.00		0.00	. \$0
	m 4 Description	0.00	Palas in the same	0.00	\$0
	m 5 Description	0.00	y production stage, such	0.00	\$0
	n 6 Description				\$0
	The state of the s	0.00	Service Control (Care)	0.00	\$0
	n 7 Description	0.00		0.00	\$0
	n 8 Description	0.00	AND ADDRESS ON THE REST.	0.00	\$0
292 Ite	n 9 Description	0.00	ugyeta sala segara kalanda ke	0.00	\$0
	1 10 Description	- 0.00	Process Comment	0.00	\$0
	1 11 Description	0.00	84 CE 150 150 150 150 150 150 150	0.00	\$0
		0.00	100 705 (00 50 50 50 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1	0.00	ቀሳ
	1 12 Description				\$U
	n 13 Description	0.00	agos asibel sistemi sis	0.00	\$0 \$0 \$0
	1 14 Description	0.00	A Burthard	0.00	\$0
298 Iten	n 15 Description	0.00		0.00	\$0
299 Subtotal					\$0
300	· · · · · · · · · · · · · · · · · · ·	1			
301 Subtotal					\$1,668,021
		 	ļ	1	φ1,000,021
302			 		
ALLOWANCES:			User Over-	1	
303		<u> </u>	write	<u> </u>	

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	: В	С	Ď	E	F
304	Finishes Allowance	2.0%		\$1,813,066	\$36,261
305	I & C Allowance	2%		\$1,813,066	\$36,261
306	Mechanical Allowance	2%		\$1,813,066	\$36,261
307	Electrical Allowance	2%		\$1,813,066	\$36,261
308					
309	Facility Cost	20.000.000	GPD	\$0.09	\$1 813 066

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132				****	
133	<u>Description</u>	Quantity	<u>Unit</u>	<u>\$/Unit</u>	<u>Total Cost</u>
134 135	SITEWORK:				
136	Excavation	164.17	CY	\$ 5.35	\$879
137	Imported Structural Backfill	97.72	CY	\$ 40.56	\$3,963
138	Native Backfill	0.00	CY	\$ 6.58	\$0
139	Haul Excess	164.17	CY	\$ 6.58	\$1,080
140 141	Allowance for Misc Items Subtotal	5%		\$ 5,921.92	\$296 \$6,218
142	Sublotal				\$0,210
143	CONCRETE:				
144	Wall Footing	10.34	CY	\$ 345.93	\$3,576
145	Stem Walls	0.00	CY	\$ 683.50	\$0
146	Slab on Grade	32.91	CY	\$ 345.93	\$11,385
147	Pipe Supports	14.00	EA	\$ 438.67	\$6,141
148 149	Electrical Room Slab on Grade	2.13 5%	CY	\$ 345.93 \$21,839	\$737 \$1,092
150	Allowance for Misc Items Subtotal	378		Ψ21,039	\$22,931
151			 		422,001
152	MASONRY:	Moderate			
153	CMU Building	1024.14	SF	\$ 131.60	\$134,778
154	Electrical Room	57.56	SF	\$ 131.60	\$7,574
155	Subtotal	1081.69			\$142,352
156	EQUIPMENT:				
157					·
158	Inline Mixer (24-inch)	2.00	EA	\$ 33,734.86	\$67,470
159	Allowance for Misc Items	10%		\$ 67,469.72	\$6,747
160	Subtotal				\$74,216.70
161 162	INSTRUMENTS & CONTROLS:				
163	Instruments				<u> </u>
164	Mag Meter (14-inch)	2.00	EA	\$ 11,797.27	\$23,595
165	pH / Temperature	1.00	EA ·	\$ 2,093.45	\$2,093
166	Turbidity	1.00	EA	\$ 3,133.05	\$3,133
167	Streaming Current Detector	0.00	EA	\$ 10,680.85	\$0
168	UV Absorbance	1.00	EA EA	\$ 21,794.63 \$ 2,057.84	\$21,795 \$0
169 170	Conductivity Sample Panels	0.00 2.00	EA	\$ 2,057.84	\$7,896
171	Isolation Valve Actuators	4.00	each	\$5,064.93	\$20,260
172	Flow Control Valve Actuators	2.00	each	\$5,064.93	\$10,130
173	Number of Analog I/O Counts	12.00	each	\$208.82	\$2,506
174	Number of Digital I/O Counts	33.60	each	\$49.46	
175	Number of PLC's	1.00	each	\$10,331.10	
176	1&C Conduit & Wire	633.99	lf .	\$9.53	
177 178	Allowance for Misc Items Subtotal	10%		\$ 109,441.19	\$10,944 \$120,385
179	Outroidi				Ψ120,000
180	CONVEYING SYSTEMS:		· -		
181	Monorail Hoist (3 Ton)	1.00	EA	\$ 55,749.49	\$55,749
182	Hoist Rail	118.04	LF	\$ 28.96	
183	Allowance for Misc Items	10%		\$ 59,167.41	\$5,917
184 185	Subtotal				\$65,084
185 186	MECHANICAL:				
187	Pipe:				
	Rapid Mix Pipe (24-inch, RW, Exposed ,Steel ,Cement	40.00	If	\$438.33	\$17,533
188	Mortar ,Paint)				

	4:15 PM				
	В	С	D	E	F
	Flow Control Pipe (14-inch, FCP, Exposed ,Steel ,Cement	18.67	lf	\$255.69	\$4,773
189	Mortar ,Paint)				
190	Elbows:				
191	Rapid Mix Pipe (24-inch)	4.00	each	\$2,639.84	\$10,559
192	Valves:				
193	Rapid Mix Isolation Valves (24-inch)	4.00	each	\$19,307.12	\$77,228
194	Flow Control Valve (14-inch)	2.00	each	\$11,262.48	\$22,525
195	Allowance for Misc Items	10%		\$132,619.04	\$13,262
196	Subtotal				\$145,881
197		·			
198	ELECTRICAL:				
199	MCC's				
200	Sections	5.00	each	\$6,783.10	\$33,915
201	AFD's				
202	Mechanical Mixers (4 hp each)	0.00	each	\$4,617.76	\$0
203	Switchgear				
204	Units	0.00	each	\$31,202.24	\$0
205	Electrical Conduit & Wire	97.54	lf	\$9.53	\$929
206	Allowance for Misc Items	10%		\$34,845	\$3,484
207	Subtotal				\$38,329
208					
209	USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
210	Item 1 Description	0.00		0.00	\$0
211	Item 2 Description	0.00		0.00	\$0
212	Item 3 Description	0.00		0.00	\$0
213	Item 4 Description	0.00		0.00	\$0
214	Item 5 Description	0.00	ar - en salo este est realizado da	0.00	\$0
215	Item 6 Description	0.00		0.00	\$0
216	Item 7 Description	0.00	3.5 B.Z.F.F.	> ∴ ∴0.00	\$0
217	Item 8 Description	0.00	5 700077356	0.00	\$0
218	Item 9 Description	0.00	** ** ** ** ** *** *** *** *** *** ***	0.00	\$0
219	Item 10 Description	0.00	- consistent of the control of the c	0.00	\$0
220	Item 11 Description	0.00		0.00	\$0
221	Item 12 Description	0.00		0.00	\$0
222	Item 13 Description	0.00		0.00	\$0
223	Item 14 Description	0.00	vice and test of Section	0.00	\$0
224	Item 15 Description	0.00	A CONTRACTOR OF THE SECOND	0.00	\$0
225	Subtotal				\$0
226					
227	Subtotal				\$615,398
228					* • • • • • • • • • • • • • • • • • • •
229	ALLOWANCES:		User Over-write		
230	Finishes Allowance	2.0%	OSCI OVCI WILL	\$699,316	\$13,986
231	I & C Allowance	5%		\$699,316	\$34,966
232	Mechanical Allowance	0%		\$699,316	\$0
233	Electrical Allowance	5%		\$699,316	\$34,966
234	Electrical villes			ψυσσ,υ το	Ψυ-τ,συυ
	Spelling Cost	20,000,000	GPD	മ വാ	\$699,316
235	Facility Cost	20,000,000	Gru	\$0.03	\$699 ,

Alternative 2 Finished Water pipeline

Pipelines \$25,322,000 10% allowance for pipeline valves & appurtenances \$2,533,000 **Pipeline Construction Cost** \$27,855,000 **Pipeline Construction Cost** \$27,855,000 3% markup for Bonds & Insurance \$836,000 5% markup for Mob/Demob \$1,393,000 8% markup for Contractors Overhead \$2,340,000 4% markup for Contractors profit \$1,264,000 25% Contingency \$8,422,000 **Subtotal Markups and Contingency** \$14,255,000 \$42,110,000 **Total Project Construction Costs** 8% allowance for pipeline engineering and design 3,369,000 12% allowance for permitting, legal and administration 5,054,000 8% allowance for pipeline engr services during construction 3,369,000 **Subtotal Other Project Costs** \$11,792,000

GRAND TOTAL PROJECT COST

\$53,902,000

Alternative 2 - Shallow Aquifer Finished Water Transmission Main

Water For		
Segment	Miles	Diameter
Α	6	36
В	5	. 36

Unit cost	Unit cost \$/dia-in 12								
Mile	Cost	Comments							
1	\$2,194,284	Co. Rd I, wetland							
2	\$2,965,248	In Co HWY H							
3	\$2,280,960	in Oakdale							
4	\$2,335,133	In Oakdale, cross Les Paul							
5	\$2,302,629	In Sunset Drive, cross SW Ave							
~6	\$2,734,871	in NW Ave, cross College							
7	\$4,023,920	NW Ave to Main, at Fox River							
8	\$7,234	Main Street, businesses							
9	\$4,492,693	In Co. Road Y, wetland, cross 164							
10	\$1,984,435	City streets, Open country to Hillcrest							
subtotal	\$25.321.406								

	Pipeline Construction Difficulty		
Alignment	Factors	Seg A cost	Seg B cost
Category	(source: CPES)	\$/If	\$/if
. Open country	0.74	320	320
Low urban	1.00	432	432
Medium urban	1.19	514	514
High urban	1.37	592	592
Groundwater	1.30	562	562
Forest	1.15	497	497
Gravel roads	0.85	367	367
Creek crossing	2.00	864	864
HWY crossing	4.00	1728	1728
miles	0.13	0.25	0.5
feet	660	1320	2640

Alternative 2 - Distribution

Pipeline	S ·	\$7,695,000
10% allowance for pipeline valves & appurtenance	S	\$770,000
Pipeline Construction Cos	t	\$8,465,000
Pipeline Construction Cos	t	\$8,465,000
3% markup for Bonds & Insurance	e \$254,000	
5% markup for Mob/Demol	\$424,000	
8% markup for Contractors Overhead	d \$ 7 12,000	
4% markup for Contractors profi	it \$385,000	
25% Contingenc	y \$2,560,000	
Subtotal Markups and Contingenc	y .	\$4,335,000
Total Project Construction Cost	S .	\$12,800,000
5% allowance for pipeline engineering and design	768,000	· .
12% allowance for permitting, legal and administration	n 640,000	
08% allowance for pipeline engr services during construction	1,024,000	
Subtotal Other Project Cost	s į	\$2,432,000
GRAND TOTAL PROJECT COS	Г	\$15,232,000

O&M Costs Alternative 2 - Shallow and Fox River Alluvium

Source of Supply Well pumping/maintenance	<u>Units</u> \$/1000 gal	Quantity 3,978,500	<u>Unit Cost</u> \$ 0.140	Ext. Cost \$ 556,990	<u>\$/yr</u> \$ 556,990	<u>Totals</u>
Total Supply		•				\$ 556,990
Treatment/Pumping Treatment Plant/Pump station Residuals	<u>Units</u> on \$/1000 gal	Quantity 79570	Unit Cost \$ 4	Ext. Cost \$ 318,280	\$/yr \$3,558,904 \$ 318,280	
Total Treatment/Pumping						\$ 3,877,184
<u>Transmission</u> O&M	<u>Units</u> \$/lf/yr	Quantity 108,281	<u>Unit Cost</u> \$ 0.52	Ext. Cost \$ 56,306	\$/ <u>yr</u> \$ 56,306	
Total Transmission						\$ 56,306
Home Softening Salt/Equipment/Replacment	<u>Units</u> 1	Quantity	Unit Cost	Ext. Cost	<u>\$/vr</u> \$ 2,863,894	\$ 2,863,894
Alternative Total O&M (\$/yr.)			·			\$ 7,400,000
PRESENT WORTH (6%, 20 yrs)	•			C.		\$ 85,000,000
PRESENT WORTH (6%, 50 yrs)		•			·	\$ 117,000,000

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	Α	В	C	D	<u> </u>	F F
	,	С нэм	HILL P arametric Cost E stimating	System	<i>(CPFS</i>)
1		<u> </u>	THEE I arametric bost Estimating	<u>—</u>	, ,	/
2						
3			FACILITIES LIFE CYCLE COST A	NALYSIS		
4	File Version:	<u>1/5/2010</u>				
5	AND CONTROL OF THE PARTY OF THE	or CPES QAJ QC	Import File: C:\ Documents and Settings\ tnading\ Desktop\ waukesha	Waukesha WTP.xls		Brows
6	<u> Marinerin in Nation</u>	A TOTAL CONTROL LANGUAGE COME AND				
	Project Name	ə:	Waukesha WTP			
7					Life Cycle Analy	rsis:
	Project Num				. i=	6.00%
9	Project Mana	ger:	Linda Mohr		n =	25
	Estimator:		Jason Curl			4.50%
10		* - 4*	5 O' All Jan and Oballan Oranghustan		_ Inflation %:	
	Project Desc		Fox River Alluvium and Shallow Groundwater Milwaukee		To Clobal Life (ycle Data Sheet
	Project Loca Project Loca		WISCONSIN		·	yce bata onect
		tion (State): tion (Country):	USA		To Annual O & N	/ Cost Summary Sheet
		Start (Month):	Jan		- Newscarding	
		Start (Year):	2011		· Thic Report is	s for INTERNAL
		Duration (months) 24		This Report is Distribution	SIDE HAI CLANT
		Construction:	Jan/2012		_ p⊸ This Report	is for EXTERNAL
19]				Distribution	
	Item	Is This Facility	SCOPE OF PROJECT	Construction	Annual	Life Cycle Cost
		Included in		Cost	O&M Cost	(NPV)
		Project? (Yes			(Escalated)	` ′
		-			(2000,0100)	<u>'</u>
		or No)		·		
20			Inline Rapid Mix: RMX	\$1,224,509	\$11,448	\$1,370,850
21		Yes	AND A THE COLOR OF THE PROPERTY OF THE PROPERT	\$3,174,699	Control of the Contro	A CONTRACTOR CONTRACTOR OF THE SECOND STANDARD OF THE CO.
22		Yes	Flocculation: FLOC	of heavy property of the first state for a first state of the	Control of the Control of the Assessment	A CONTRACTOR OF THE PROPERTY O
23	1	Yes	Lamella Clarifier: LAM	\$5,146,551	\$85,072	\$6,234,044
24		Yes	Filters: FILT	\$11,540,743	\$87,491	\$12,659,160
25		Yes	Surge Basin-Decanter: BWW	\$2,687,313	\$33,462	\$3,115,069
26]	Yes	UV Disinfection: UVD	\$2,348,574	\$82,195	\$3,399,292
27	1	Yes	Concrete Clearwell: FWT	\$2,297,940	\$1,092	\$2,311,899
28	1	No	Steel Clearwell: FWT	\$0	\$0	\$0
29	1	No	In-Plant PS: FWPS	\$0	\$0	\$0
30	1	Yes	Vertical Turbine PS: FWPS	\$7,410,535	MARKON LOG TO SECTION (GORDEN DE	\$21,725,243
	-	- 11 (12) (14-4) (#2,4820) (#200)	Filter BW PS: BWSPS	\$1,927,296	assertion (Investity, a succession of service)	\$2,404,344
31		Yes		\$1,321,230	makes and the second of the second	\$2,404,641
32	4	Yes	U.D. Facility: GEN	The state of the s	200000000000000000000000000000000000000	
33		Yes	Liquid Chemical: FeCI3	\$692,505		\$5,319,976
34		Yes	Liquid Chemical: NaOCI	\$518,039	the second secon	\$2,524,178
35		Yes	Liquid Chemical: FLUOR	\$330,287	19-19-19-19-19-19-19-19-19-19-19-19-19-1	\$480,429
36]	Yes	Liquid Chemical: POLYPHOS	\$362,245		\$1,174,039
37		Yes	O&M Building: OMB	\$8,312,125	\$157,639	\$10,327,270
38						
39			Additional Project Costs: Biosolids Disposal			eventura de la companya de la compa
40				\$0	\$0	\$0
41			Standard Items	\$17,422,556	\$499,001	\$23,801,456
42		7	User Defined Items	\$0	\$0	\$0
43	1	A STATE OF THE STA				
44			Plant O & M Labor		\$782,831	\$10,007,198
45]					
46		Life Cycle Anal	ysis	\$65,395,917	\$3,521,013	\$110,406,190

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Rapid Mixing (Inline)				.4				
14,014,311,311,31		ToS	ummary Sheet	6				
			34 5-1 00 00 00 00 00 00 00 00 00 00 00 00 00	1				
onstruction Cost:	il de la companya de				The second second		\$1,224	,509
onstruction dest.						<u> </u>		
							1	
Annual O & M Cost:								
Power:			Total HP	Average-to-	Annual Usage (Hou	s \$/kwh	Power	Cost
				Maximum Flow	/Year)			
	3.00			Factor				
Equipment Power	gidhan. Hillig	20) 650 50 600 1 5	8	50%	8,7	50 \$	0.06 \$	1,46
			Statement of Charles		**************************************	enza e	Other Ele	
Other Electrical:			Building Area (SF)	Watts / SF	Annual Usage (Hou / Year)	s \$/kwh	Cos	10 may 1 may 2
) i can			j.
Building Electrical			1,082	2.00	8,7	60 \$	0.06 \$	1,06
	<u></u>							
Chemicals:		TAX BELLEVIOLE			Section 1.	A CONTRACTOR	\$	
Repair and Maintenance, and	Replacement:		7			Replacement included		Cost
						= "Yes", 0 = "No"		
Maintanna P Daneir Co.			CHARLES AND A STATE OF				5	3.26
Maintenance & Repair Cos Replacement Cost	SU			1 4	A CONTRACTOR		- \$	·//·/·
Neplacement Cost	177 035	1						
Other:	4 - 2 - 40 - 60 - 60 - 60 - 60 - 60 - 60 - 60				Total Annual O&M	"Other" Percent	Other	Cost
Fig. 1 Sec. 1.	100	化多量 医多色			Cost			
						92 10.0%	•	F7
Other Cost	(1.4.2) (4.	T	5,855,000,000	- 1, 1	\$ 5,7	92 10.0%	\$	57
User Defined Annual O&M Ite							Annual	Cost
User Defined Affidat Odiwite	1115.							
			0.00					
		5.0	a company					
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Item 5				AF VAD DEVISION OF	10 10 10 10 10 10 10 10 10 10 10 10 10 1	TO COURSE PROPERTY OF THE PARTY OF	\$	
Item 6	CHARLEST STATE						\$	C 185
Item 7	Control September 19		-43-30026-050	esimpA Hada-Milabile-			S - C	(6)15.
Item 8	0.486.084452.42 - A. C.	A 161 (644 A. Fall Self 1645	1860-150-15-15-15-15-15-15-15-15-15-15-15-15-15-	North Harping			\$	COLOR.
Item 9				Time sudence (1889)	11:00-38:38:39:00:00:00		\$	- C-686
Item 10	3 (4 1474, 3/492, 577) (3					1.0000000000000000000000000000000000000	\$	ialera:
		10.01:000000000000000000000000000000000	Harris San		his Stock	22.1-14.1920/2000/00/2015/2015	\$	1:20(5)
Item 12	To a programme of the control of the	THE SOLD STREET STREET	Mark Control	- 8 15 10 194 5	CHECKER OF THE SECOND	11 - Turker 1944 (2011 (2011))	\$. 130 1
Item 13				arease	A - SA -		\$	
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Item 15	TENERAL PROPERTY OF THE PROPER	TO THE SERVICE OF THE					5	
SANCE OF THE TOTAL OF THE PROPERTY OF THE PARTY OF THE PA	Filtra 100 (100 (100 (100 (100 (100 (100 (100		Commence of the Commence of th	, , , , , , , , , , , , , , , , , , , ,	m. consistent of the control of the			
		1	l .				1	
Subtotal Annual O&M Cost		1	Long of	I			\$	6,37
Subtotal Annual O&M Cost Contingency		1.	la segreta.	1		10%	\$ \$	6,37 63

Fiscaulation (Harizontal Paddle Wheel F	Hocculetion for Downstraum Sea	dinnan dankir di		
	Section range (British			
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nstruction Cost:	The state of the s		tan Agasta	្នាស់ ក្រាស់ 	: -			\$5,	146,55
		<u> </u>		ļ					
nual O & M Cost:									
Power:		Total HP	Average-to-	Annual Us	age (Hours	\$/kwh		Pov	ver Co
			Maximum Flow	JYe	ar)				
Equipment Pours		4	Factor 50%		8 760	\$	0.06	e e	
Equipment Power			JU /B		0,100	• ♣ g. 1 s. 2 s. 2 c. 2 g. 12 s. 6 c. 2 g. 12 s. 2 s. 2 s. 2 s.	0.00	1.0	
Other Electrical:		Building	Watts / SF	Annual Us		\$/kwh		Other	Elect
		Area (SF)		140	ar)				Cost
Building Electrical		5,572	2.00		8,760	\$	0.06	\$	5,
•	1		2.00		0,100	-	. 0.00	-	رق. :
Chemicals:			New Age and a				2000	\$	44.5
			The second secon	000000000000000000000000000000000000000	05*64480412±660461	Replacement Inclu	tera time page that a local materials	20072000	ual C
Repair and Maintenance, and Replacement						Yes:,0=		AUIN	шансн
Mointonones & Bassis Cost								第 編集 c	36,
Maintenance & Repair Cost Replacement Cost				1		•		\$	
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Other:			100	-Total Ann	AND VALUE OF A STATE OF THE STA	"Other" Per	cent	Oth	ier Co
					st				:: vi v ie
Other Cost		44347 A 1		\$	43,040	10.0%	AZONTO PERSONNELLAS	\$	4,
		AL PERFENDING THE RESIDENCE AND THE PARTY OF THE	COMMERCIAL STATES OF THE STATE	and a date has don't not after the	125 202 1201 125 2 2 2 2			Thurs You Or Vo.	
User Defined Annual O&M Items								Ann	ual Co
Item 1		30,701 7,702 7,702 7,702 7,702						\$	-
Item 2	The Assessment How		VISIN 1200 PROPERTY.					\$	(\$115)
Item 3					āğ .	Negativa series		\$	
Item 4	. (1911) P. (22) \$0.20			MANAGE MEN	6 8383.5			\$	ājā,
Item 5	5 B 05 50				電影器とできる			\$	
Item 6		MACCACO (BENEZOS) A Maccaco (Alexano)						\$ \$	Marian.
Item 7 Item 8				er er eglete. Se er er er ette	Santana a santa Santana a santa			\$	
Item 9				Les 11: 10: 25: 25:	900 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	ing a series of the series of	100000000000000000000000000000000000000	\$	940000
Item 10	The Telephone		g>3) it :					\$	
Item 11	March St. St. Chickers		2000 Sec. 56.00	69.1657-01.252-0				\$	
ltem 12	0.07012554 pro 1556 A. 155		EXACTNOTION OF THE		SHEVEL S			\$	
Item 13				2 TO 1				\$	EWA.
Item 14	e generalise i sala de la compania del compania de la compania del compania de la compania del compania del la compania del compania de							\$	
Item 15		1	E ANDRES					300	
total Annual ORM Coat	January I.			ŀ			n si si penggala	\$	47,
btotal Annual O&M Cost ntingency						10%		\$	47, 4,1
al Annual O&M Cost	A TOTAL OF THE STATE OF THE STA					/4		\$	52,

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<u>Filters</u>	To Sun	nmary Sheet				
-						
Construction Cost:			1.3			\$11,540,742
						1
Annual O & M Cost:						
Fower:		Total HP	Average-to- Maximum Flow	Annual Usage (Hours /Year)	\$/kwh	Power Cost
New York Control of the Control of t			Factor			
		8	50%	9.700	0.00	
Equipment Power		0	50%	001,8	\$ 0.06	\$ 1,46
Other Electrical:		Building Area (SF)	Watts / SF	Annual Usage (Hours / Year)	\$/kwh	Other Electric
				[시] (1년 10일 12년 1일 12년 1 [기술 12년 10일 10일 12년 1		
Building Electrical		10,239	2.00	8,760	\$ 0.06	\$ 10,04
	100% of 100000000000000000000000000000000000	, ,,,,,,		421 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		
Chemicals:		39	Annual Usage (tons)	Annual Facility Usage (% of year)	\$/ton	Chemical Cos
					The second second	
						+ +
GAC			-	100%	\$ 2,400.00	\$
Total Chemical Cost			: •			\$
Repair and Maintenance, and Replacement:		14			Replacement included? (1 = "Yes", 0 = "No")	Annual Cost
					Martin Co.	
Maintenance & Repair Cost	ACCEPTATION WAS UNABAN PERSON NAMED	er teritek herriak eri orian retisor				\$ 32,75
Replacement Cost					•	\$ -
Other				Total Annual O&M Cost	"Other" Percent	Other Cost
						18.00
Other Cost				\$ 44,264	10.0%	\$ 4,42
User Defined Annual O&M Items:	CANADA	Service level				Annual Cost
Item 1 Item 2	E CUIDHIGUNDO					\$ -
Item 3	25 (2011) NO. (2011) AND AND 126 AND AND 126		1 250 S	. 54E		\$ - \$ -
Item 5	44. 23.0421-45. (br		YDSS X			\$ -
Item 6 Item 7			- vi distantini e	<u> </u>		\$ is
Item 8		11 1,317			and the same and t	\$ -
Item 9 Item 10						\$ -
Item 11				1.0000000000000000000000000000000000000		\$ ·
Item 13				245 P. 480 P		\$
Item 14 Item 15	보았다. 1일 : 10 : 1					\$ - \$ -
		(18 - A.1)S				
Subtotal Annual O&M Cost Contingency					10%	\$ 48,691 \$ 4,869
Total Annual O&M Cost						\$ 53,560

Large System Combination Wastewater Surge Basin						
and Floating Tube Decanter Clarification (>= 5 MGD)	To Sum	mary Sheet				
	<u> </u>					
	ļ'	-				
		-				
Construction Cost:	<u></u>					\$2,687,312
					1	
Annual O & M Cost:						
Power		Total HP	Average-to-Maximum Flow Factor	Annual Usage (Hours / Year)	\$/kwh	Power Cost
			FINE LOUIS	(hours / rea/		
Equipment Power	Dard Manner of the Land	43	50%	8,760	\$ 0.06	\$ 7,865
Other Electrical:		Building	Watts / SF	Annual Usage		Other Electrical
		Area (SF)		(Hours / Year)		Cost
			1,200			
Building Electrical		. 81	2.00	8,760	\$ 0.06	\$ 79
Chemicals:	5.00 名為多場	ar district		4. Y. A. Y. A. Y. A. Y. A.	1000	.\$
Repair and Maintenance, and Replacement:				A Section Control	Replacement	Annual Cost
33 Repail and maintenance, and reprocesses.					included? (1 =	
					"Yes", 0 =	
Province Martinday of Donate Cond		71			"No")	2000
Maintenance & Repair Cost Replacement Cost		A September 1				\$ 8,985 \$ -
Repagnion 9000						▼ Weight Continues of the con-
Other:	J.			Total Annual	"Other"	Other Cost
				O&M Cost	Percent	1
Other Cost		Alter Control of the Control	A 15 Teacher and the second	\$ 16,930	10.0%	\$ 1,693
CONTRACT OF CHILD, SAND						.,
User Defined Annual O&M Items:						Annual Cost
Item 1		これ 水道道		3 (2) Super 15.	William Const.	\$
attended to Marke 1.5 -		A SOURCE OF THE SECOND		192105 KIDIKELSE		\$
Item 3	es e un séglégérok Deser Contra contra contra const	Colorania Colorania	Text Text Survey Co.	SERVICE SERVICES	refere En al dis	.
Item 4 Item 5		**************************************	ANAMAS TO THE STREET		等性に関する。 ペン・3 3000時による。 2000年	\$
		Australia Luisti enus			34 54 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	\$
Item 7				villa (del prima) (del		\$
Item 8	A CONTRACTOR	125 United Section 1		COLUMN DE L	And Control of the	\$ -
Item 9					sets under 1995. Designe Recognition	\$
Item 10		有紧紧	7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		ischen des la Nacht de voer	\$
Item 11						\$
Item 12		A STATE OF THE STA				\$
Item 13 Item 14	<u>an Cheel Wilde 1448 M</u> General Cheel (1488)		100.000.0000000000000000000000000000000			\$ -
item 14		i de la	A CONTROL SOFT AND			\$ -
ENTERNATION CONTROL CO	1 / As all transactions	Musaganuser -	The control of the special property of the con-	(Paper per per per per per per per per per	34 Ja 1 - 1 - 1 - 1	♥ , self-hart it @essen
Subtotal Annual O&M Cost			to a second	1 1	1	\$ 18,622
Contingency		•			10%	\$ 1,862
Total Annual O&M Cost			· · · · · · · · · · · · · · · · · · ·	·····	7.5	\$ 20,485

UV Disinfection	To Summ	ary Sheet				
Construction Cost:					***	\$2,348,574
General George						
Annual O & M Cost:						
Power:		Total kw	Average-to-Maximum Flow Factor	Annual Usage (Hours / Year)	\$/kwh	Power Cost
					-	
		100	Food	A 700		
Equipment Power		42	50%	8,760	\$ 0.06	\$ 10,400
Other Electrical:		Building Area (SF)	Watts / SF	Annual Usage (Hours / Year)	\$/kwh	Other Electrical Cost
Control of the Contro						
Building Electrical		1,547	2.00	8,760	\$ 0.06	\$ 1,517
		1,0	2.00	5,755		100000000000000000000000000000000000000
Specialty Items:					Number per Replacement /	Cost
					Recalibration	
Lamp Replacement		- 3.00 A			8	\$ 6,017
Lamp Replacement Frequency (hrs)	4,000 \$ 350.00		Fixed Default = \$350			
Ballast Replacement Input Ballast Replacement Frequency (yrs)	10		pically 10 years		8	2,178
		1.00	efault = \$4,000			
Input Ballast Cost Sieeve Replacement	\$ 4,000.00		eradit = \$4,000		8 . 8	\$ 432
and the second s						
Input Sleeve Replacement Frequency (yrs)	an 3 iji	Тур	ically 3 to 5 years	· .		
				-		
				5. T 5.13		
Input Sleeve Cost Intensity Sensor Replacement	The second secon				8	\$ 3,502
Input Intensity Sensor Replacement Frequency (yrs)	5 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Тур	lcally 3 to 5 years	e e i j		
Input Intensity Sensor Cost Intensity Sensor Recalibration	\$ 2,750.00		efault = \$2,750			\$ 3,363
		Re	olacement Years			
Input Cost of Single Sensor Recalibration (each)	\$ 500.00		Default = \$500			使 医 图 图 图 图 图 图 图 图 图 图 图 图 图 图 图 图 图 图
Total Specialty Items					ि १ कि	\$ 15,492
Repair and Maintenance, and Replacement:					Replacement included? (1 = "Yes", 0 = "No")	Annual Cost
Mointanana & Bassis Cont	112					\$ 14,175
Maintenance & Repair Cost Replacement Cost						3
S. Other:	eigy törs ámað krait			Total Annual	"Other" Percent	Other Cost
	rain of the contract			O&M Cost		
		, i				
Other Cost			TO SEE THE TOTAL PROPERTY OF THE PROPERTY OF T	41,585	10.0%	\$ 4,158
SUser Defined Annual O&M Items:		atte Salata				Annual Cost
ltem 1		41.5		A CONTRACT OF THE PARTY OF THE	And the second s	\$
Item 2			en de división de la composition de la La composition de la			\$ \$
Item 4		1 00 6 1 6 20 5 5 5				\$ 1000

2/1/2010 4:28 PM	Concret	e Clearwell	FWT			Printed by:
oncrete Tank						
	To Sum	mary Sheet				
nstruction Cost:				Turkly of the Control	L A A A	\$2,297,94
nual 0 & M Cost:						New Constitution
Power:		Total HP	Average-to-Maximum Flow Factor	/ Year)	\$/kwh	Power Co
Equipment Power		-	50%	8,760	\$ 0.06	\$
		220 × 100 ×				
Other Electrical:		Building Area (SF)	Watts / SF	Annual Usage (Hours / Year)	\$/kwh	Other Elect Cost
Building Electrical		-	2.00	8,760	\$ 0.06	\$
		Andrew American Delivers		The state of the s	TOUR ONE SHARE ASSESSED.	
						.\$
Repair and Maintenance, and Replacement:					Replacement included? (1 =	Annual Co
					"Yes"; 0 = "No")	
Maintenance & Repair Cost Replacement Cost				A 44-13-11 AAVCASTERIOR CONTROL STREET, STREET	-	\$
	MANAGEM AND MANAGEM AND	Parts of Productive Constantial Con-	allegen i stanga i si kala masalaki engelin a siki mikasa seseri			
Other:				Total Annual O&M Cost	"Other" Percent	Other Co
Other Cost				\$ 552	10.0%	\$
User Defined Annual O&M Items:				Ø 40	***************************************	- Annual C
ltem 1						\$
Item 2		Constitution				\$
Item 4			AND SECURITY OF THE SECURITY O			\$
Item 5			145			\$ \$
Item 7		4.400000000000000000000000000000000000				\$
Item 8	<u> </u>					\$
Item 10	orginal og skrig Diskolog hvetskist	100 42 19 04 14 10 10 10 10			0.669	\$ \$
Item 12	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Pro A Edistry (E)	NY 28 12 12 12 12 12 12 12 12 12 12 12 12 12		(Y 20) (B) (B) (B) (B) (B) (B) (B) (B) (B) (B	\$
Item 13 Item 14			77 D7 13 47 4 5 4 10 10 10 10 10 10 10 10 10 10 10 10 10			\$
Item 15						\$
ototal Annual O&M Cost						\$
ntingency				<u>.</u>	10%	\$
tal Annual O&M Cost						\$

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					ļ	
Vertical Turbine Pump Station		To Summan	y Sheet			
vertical rummine Fump Station						1.
						-
				<u> </u>		\$7,410,535
Construction Cost:				ellare et d'est		\$7,410,535
WHILE WAS A STATE OF THE STATE	a Separation of the second					
Annual O & M Cost:						
Power:		Total HP	Average-to-Maximum		\$/kwh	Power Cost
			Flow Factor	/Year)		
					1000 2000	
Equipment Power	CONTRACTOR OF CONTRACTOR CONTRACTOR	2,800	50%	8,760	\$ 0.06	\$ 512,13
(See - Equipment Fower	T	2,000	2070 ::	7 27 US /800/04/04	0.00	Ψ 31 <u>2,1</u> 3
	l	Building	Watts / SF	Annual Usage (Hours	\$/kwh	Other Electric
Other Electrical:		Area (SF)	Walls or	/Year)	anwii.	Cost
				501)		
				Total Control		
Building Electrical		4,513	2.00	8,760	\$ 0.06	\$ 4,42
Chemicals:	POTABLE STATE OF STATE OF					\$
Repair and Maintenance, and Replacement:					Replacement	Annual Cost
					included? (1 =	
					"Yes", 0 =	
					"No")	
Maintenance & Repair Cost Replacement Cost	*.	344 <u>2</u> [344]	<u> </u>			\$ 49,97
Replacement Cost						\$
		Carlos Ca		SSS TO THE PROPERTY OF THE PARTY OF THE PART	104	83000000000000000000000000000000000000
Other:				Total Annual O&M Cost	"Other"	Other:Cost
				CUSI	Percent	
Partition Other Cook		Zagazagon-ordenes		\$ 566,540	10.0%	\$ 56,65
Other Cost	<u> </u>			Ψ	10.076	\$ 50,05
User Defined Annual O&M Items:	i Kanasan da kalanda	and the section of	I			Annual Cost
MANAGEMENT AND						\$ -
Committee Control of the Control of	in de like brokk i kir tigkti oʻlgatir. Tan ilga oʻlga ilga bayayta sa tari			er (experience experience experience)	pagarant, 1700. Kabupatèn ba	
Item 2			AND		sandari (m. 1965) Norma	\$
Item 3						\$ -
Item 4			100 A 170 Oct. April 1900			\$ -
						\$ -
item 6						\$ -
Item 7				COST OF COMPTRICACE.	Harabert - Sta	\$ -
Item 8				jedici Chanci II.		\$ 30,000 -
Item 9			reconstruction of the operation	Principle of the second	gival in America.	\$
Item 10		HARLEY MYSK		Markera Vergeta	Sulf spirality i est	\$ 8000 000
Second 11	ngalagan san saniji 🖅 🤫		4.4020	NE PERENCHE	eng Affrica yan er b	\$ 20 20 30 45
Item 12				CARLE BURGER	No.	\$
		a ive Marin			TANK Y	\$
Item 14	Tarka Appared :	14 - J. M. 1882 - 1		0162006:036347.57.57		\$
		Consultations		anna destructiones		\$
Item 15	<u> </u>				1	·▼1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
Britania de la companya de la compa	I		l jaran	I	F	
Subtotal Annual O&M Cost						\$ 623,19
Contingency			·		10%	\$ 62,31
Total Annual O&M Cost						\$ 685,51

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			l •			
Granular Media Filter Backwash Supply Pum	n Station	To Summer	y Sheet			
Characa model med Suchmon Cuppy i an	D Ctation					
David Allia Abara Ola A						\$4 007 00E
Construction Cost:	· · · · · · · · · · · · · · · · · · ·		T	·		\$1,927,295
Annual O & M Cost:						
Power:		Total HP	Average-to-Maximum	Annual Usage (Hours	\$/kwh	Power Cost
1000			Flow Factor	/ Year)	, Y	
				100	100	
Equipment Power		21	50%	8,760	\$ 0.06	\$ 3,841
		under mod this the manager				
Other Electrical:		Building	- Watts / SF	Annual Usage (Hours	\$/kwh	Other Electrical
		Area (SF)		/Year)		Cost
				200		
Building Electrical		988	2.00	8,760	\$ 0.06	\$ 969
Chemicals:		76	医肠的 电多点运送			\$ -
Repair and Maintenance, and Replacement:					Replacement	Annual Cost
					"Yes", 0=	
					"No")	
Maintenance & Repair Cost			4.5 To \$ 150	grana e		\$ 14,070
Replacement Cost	er Kritigeressi ed	-	· · · · · · · · · · · · · · · · · · ·		-	\$ 1.00
Øs≪Other:				Total Annual O&M	"Other"	Other Cost
				Cost	Percent	
Other Cost		filagar e vajir a	1	\$ 18,880	10.0%	\$ 1,888
User Defined Annual O&M Items:		(3.1)				Annual Cost
Item 1			. 1 Nov. 4 1 10 11 15 15 15 15 15 15 15 15 15 15 15 15		Constitution of the Constitution	\$ -
		*** ***********************************		AND SHOP	non dieta et et e	\$
Chanda Maria 18 foot at London Burg at						\$ -
Item 4						\$ - ·
Item 5						\$ 1, 1
Item 6				W. Dental V	4177-145165.5	\$
Item 7				. 134.1307 (BROWN STATE		.\$ -
Item 8		1987 - 2000 (SC			SIGNATURE AT	\$
Item 9			Markovicki – Papakoviki 199 Markovicki suomaanin 1990		5 48 2 0	\$.75 0 0 0
Item 10 Item 11			1998: 大道			\$ -
Item 12					PARTY IN	s -
Item 13		approxydental sign				\$ -
Item 14		3 2 48164 (4)				\$ -
Item 15		Stopens:			20 May 199	\$ -
	120-17-17-18-18-18-18-18-18-18-18-18-18-18-18-18-		-			
Subtotal Annual O&M Cost		•	· · · · · ·	1. A. A. M. A.	. '	\$ 20,768
Contingency				·	10%	\$ 2,077
Total Annual O&M Cost						\$ 22,845

Equipment Power 3 50% 6,760 \$ 0.06 \$	
Construction Cost:	
Pover Job More Mountain From Mountai	
Power Jose Hospital Power Jose Hospital Power Power Jose Hospital Power Power Jose Hospital Power Power Jose Hospital Power Power Jose Jose	
Pover	
Pover	
Power	\$692,504
Power	
Power	
Building Electrical Solidary Wests 15 Solidary Solidary	
Equipment Power 3 50% 8,760 \$ 0.00 \$	Power Cost
Building Electrical 1,225	
Building Electrical 1,225	
Building Electrical 1,226	
Building Electrical: Building Waits \$5 Armuni Usage Blowh One \$1 \$2 \$2 \$3 \$3 \$3 \$3 \$3 \$3	
Building Electrical Area (EF)	5
Building Electrical 1,225	
Building Electrical 1,226 2,00 8,760 \$ 0,06 \$	ther Electric
Liquid Chemicals: Annual Usage (% or Maximum Flow year)	Cost
Liquid Chemicals: Annual Usage (% or Maximum Flow year)	
Liquid Chemicals: Annual Usage (% or Maximum Flow year)	
Liquid Chemicals: Annual Usage (% or Watering of Cost (\$\frac{1}{2}	
Liquid Chemicals: Annual Usage (% or Watering of Cost (\$\frac{1}{2}	1,2
Aluminum Sulfate (Alum)	1,4
Separation Sep	hemical Cos
Aluminum Sulfate (Alum) Aluminum Sulfate (Alum) 100% 50%	
Aqueous Ammonia 100% 50% - \$ 404.57 \$ \$ Ferric Chloride 100% 50% 457 \$ 782.93 \$	
Aqueous Ammonia 100% 50% - \$ 404.57 \$ \$ Ferric Chloride 100% 50% 457 \$ 782.93 \$	
Aqueous Ammonia 100% 50% - 8 404.57 \$	
Aqueous Ammonia 100% 50% - 8 404.57 \$	
Ferric Chloride	
Hydrofluorosilicic Acid 100% 50% - \$ 360.00 \$	178,7
Liquid Polymer	110,1
Sodium Bisulfite	
Sodium Hydroxide (50%)	
Sodium Hypochlorite (12.5%)	
Sulfuric Acid	
Total Chemical Cost Repair and Maintenance, and Replacement: Replacement	
Repair and Maintenance, and Replacement: Replacement Included? (1 = "Yes", 0 = "No.")	
Included? (1 = "Yes"; 0 = "Yes"; 0 = "No")	178,7
Included? (1 = "Yes"; 0 = "Yes"; 0 = "No")	Annual Cost
Tyes": 0 = "No")	Armuai Cost
Maintenance & Repair Cost \$ Replacement Cost \$ Other: Total Annual O&M Cost "Other" Percent Other Cost \$ 183,144 10.0% \$ User Defined Annual O&M Items: X X Item 1 \$ \$ Item 2 \$ Item 3 \$ \$ Item 4 \$ Item 5 \$ \$ \$	140
Commonweight	
Other: Other Cost Other Cost Other Cost Other Cost S 183,144 10.0% \$ User Defined Annual O&M Items: Item 1 Item 2 Item 3 Item 4 S Item 5	2,6
Other Cost	n - des asse
Other Cost	045-2
Other Cost \$ 183,144 10.0% \$ User Defined Annual O&M Items:	Other Cost
User Defined Annual O&M Items:	
User Defined Annual O&M Items: Item 1	18,3
Item 1 \$ Item 2 \$ Item 3 \$ Item 4 \$ Item 5 \$	
Item 2 \$ Item 3 \$ Item 4 \$ Item 5 \$	Annual Cost
tem 3	divisions of
Item 4 \$ ltem 5 \$	
ltem 5 \$	SWELDING : CHI
	The second second
Item 8 Item 9	
item 10	eren eren eren eren eren eren eren eren
Item 11 \$	4
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tem 13 \$	1. 1.
Item 14	14 (14 H H)
Item 15	

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 Liquid Chemical FeCl3
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 Subfotal Annual O&M Cost Contingency
 \$ 201,458 20,1458 \$ 20,1458 \$ 221,604

 Total Annual O&M Cost
 \$ 221,604

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				To Summary She		
Liquid Chemical Storage & Feed				TO Suffriely She		
	:					
onstruction Cost:						\$518,038
origination occi.						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
innual O & M Cost:						
Power:		Total HP	Average-to- Maximum Flow	Annual Usage (Hours / Year)	\$/kwh	Power Cost
			Factor			
			-	Line of the		
Equipment Power	Nila province	2	50%	8,760	\$ 0.06	\$ 34
Equipment Fower	* 1.58 × 8 × 1.55 × 1.5	-	0070	0,700	0.00	<u> </u>
Other Electrical:		Building	Watts / SF	Annual Usage	\$/kwh	Other Electrica
		Area (SF)		(Hours / Year)		Cost
		2				
Building Electrical	1	1,050	2.00	8,760	\$ 0.06	\$ 1,03
%Liquid Chemicals:		Annual	Average-to-	Annual Usage	Cost (\$/dry ton)	Chemical Cos
Eldad Chellicais.		Usage (% of	Maximum Flow	(dry tons / year)		
		year)	Factor			
Aluminum Sulfate (Alum)	of the Friday Anter great Anne State Bloom to the Anne State Bloom and the State Sta	100%	50%	New Process Control of the Control o	\$ 644.17	**************************************
Aqueous Ammonia		100%	50%	1 44 y 11 -	\$ 404.57	\$
Ferric Chloride Hydrofluorosilicic Acid		100%	50% 50%	e sanê sêre⊨ Serî de ên•	\$ 782.93 \$ 360.00	\$ \$
Hyrogen Peroxide (35%)	tin jir e e	100%	50%	I e ta terra	\$ 1,734.23	\$
Liquid Polymer Sodium Bisulfite		100% 100%	50% 50%		\$ 3,140.89 \$ 920.91	\$ \$
Sodium Hydroxide (50%)		100%	50%	-	\$ 825.32	\$
Sodium Hypochlorite (12.5%)		100%	50%	91		\$ 76,3
Sulfuric Acid Other Chemical		100%	50% 50%	iggida - Namaa •	\$ 138.09 \$	\$
Total Chemical Cost			1. 1.54	edropas e	ale in the	\$ 76,3
		ridait viale mais present		_	le promotorio de la composición de la c	Annual Cost
Repair and Maintenance, and Replacement:					Replacement Included? (1 =	Annua Cost
					"Yes", 0 =	
Maintenance & Repair Cost					*No")	\$ 1,65
Replacement Cost				5 + 1	-	\$
Other:				Total Annual O&M Cost	"Other" Percent	Other Cost
				OXIII CUSI	recent	
Other Cost	Annual London Contraction		- second a signature and a line	\$ 79,398	10.0%	\$ 7,94
		Scientifica Science		200000000000000000000000000000000000000		
■User Defined Annual O&M Items: Item 1					o di alianti di 1000	: Annual Cost
Item 2						\$
Item 3	vale is in Extra Attraction	y - a - Se		Marga .		\$ 2 3 3 3 5
Item 4				CREAR	ir agoverno e roješ	\$.612.62.65
Item 5		· SOULES SAGER	Samuel Color (Color Color Colo	2 4069 0 - 200 - 350		\$
Item 6 Item 7			i de la composition de la composition La composition de la	The second section of the second seco	and the second of the second o	\$
	A. B. A.				¥ 11 . v. 34 .	• \$
Item 8	fla-fina vi			0.000.000.000.000.000.000.000	200 a 20 a 30 a 30 50 50 50 50 50 50 50 50 50 50 50 50 50	S
Item 9		16. (a) 기구 : 1년 8년			是我是在一个工工工工工程的	\$1,809.00 CERTAL CO. 100 CERTAIN CO. 10 CERTAIN CO.
Item 9 Item 10		10.00		TOPPORT		\$ (12.0)
item 9 item 10 item 11						\$ 44.50 A.S.
Item 9 Item 10 Item 11 Item 12						\$ 4020
Item 9 Item 10 Item 11 Item 12 Item 13						\$ 442 fs

Subtotal Annual O&M Cost Contingency		10%	\$ 87,338 \$ 8,734
Total Annual O&M Cost	As in the second higher than the		\$ 96,071

Liquid Chemical Storage & Feed				To Summary She	et	
Construction Cost:		1		2.35		\$330,287
Annual O & M Cost:						
Power:		Total HP	Average to- Maximum Flow-	Annual Usage (Hours / Year)	\$/kwh	Power Cost
			Factor			
Equipment Power		2	50%	8,760	\$ 0.06	\$ 366
Other Electrical:		Building	Watts / SF	«Annual Usage»	\$/kwh	Other Electrical
		Area (SF)		(Hours / Year)		Cost
		N.				
Building Electrical		714	2.00	8,760	\$ 0.06	\$ 701
and Dunumy Liectical		1.	Liou		Ψ 0.00	101
Liquid Chemicals:		Алпual Usage (% of	Average-to- Maximum Flow	Annual Usage (dry tons / year)	Cost (\$/dry ton)	- Chemical Cost
		year):	Factor			
Aluminum Sulfate (Alum) Aqueous Ammonia		100% 100%	50% 50%	-	\$ 644.17 \$ 404.57	\$ - \$
多数 Ferric Chloride		100%	50%	-	\$ 782.93	\$ -
Hydrofluorosilicic Acid Hyrogen Peroxide (35%)		100% 100%	50% 50%	24	\$ 360.00 \$ 1,734.23	\$ 4,384 \$ -
Liquid Polymer		100%	50%	\	\$ 3,140.89	\$ -
Södium Bisulfite Södium Hydroxide (50%)		100% 100%	50% 50%		\$ 920.91 \$ 825.32	\$ -
Sodium Hypochlorite (12.5%) Sulfuric Acid		100% 100%	50% 50%		\$ 1,672.13 \$ 138.09	\$ - \$ -
Other Chemical	Ten est des les seus es	100%	50%		\$ -	\$ -
Total Chemical Cost				W.Y.		\$ 4,384
Repair and Maintenance, and Replacement:					Replacement	Annual Cost
		a at a second			Included? (1 = "Yes", 0 =	
Maintenance & Repair Cost	#15 45 10 10 10 10 10 10 10 10 10 10 10 10 10			100	"No")	\$ 492
Replacement Cost			18.5s	e e e e e e e e e e e e e e e e e e e		\$ -
Other:				. Total Annual ≥	"Other"	
Colors				O&M Cost	Percent	Other Cost
Other Cost				\$ 5,942	10.0%	\$ 594
User Defined Annual O&M Items:			and the second			Annual Cost \$ -
Item 2	A CONTROL OF THE CONT			TOTAL CONTRACTOR	100	\$
Item 3			ASP APRICADES		· 2.65.64	\$
Item 5						\$ - \$ -
Las Item 6					11/3/8/40	\$
Item 7 Item 8						\$
Item 9			Same of the Association Company	VSD:selection		\$
Item 10 Item 11						\$ - \$ -
Item 12			No.			\$ \$
Item 13			Santasia Haria	Training S	skrigerija u ilang a filologija Szeries a karani (j. 1855) Szeries a karani (j. 1855)	\$
Item 14 Item 15						\$ - 1

2/1/2010		Liquid Chemical FLUOR				
4:32 PM	•					
Subtotal Annua	al O&M Cost			ASSTRUCTURA LEASILEACH	regresor as associated	\$ 6.5
Contingency						10% \$ 6
Transplantation 155	0.000	to an array massive. No conductive Society assured		A SECTION CONTROL FOR CONTROL OF	en en de statue en en de transporter de la company de La company de la company d	tara nacas esta a la calega esta esta esta esta en esta en esta esta en esta en esta en esta en esta esta esta

Liquid Chemical Storage & Feed				To Summary She	et	
Construction Cost:						\$362,245
Innual O & M Cost;		TotalHP	Average-to-	Annual Usage	\$/lowh	Power Cost
	100000000000000000000000000000000000000		Maximum Flow Factor	(Hours / Year)		
Equipment Power		2	50%	8,760	\$ 0.06	\$ 36
Other Electrical:		Building Area (SF)	- Watts / SF	Annual Usage (Hours / Year)	\$/kwh	Other Electrica
Building Electrical		840				
Liquid Chemicals:		Annual Usage (% of year)	Average-to- Maximum Flow Factor	Annual Usage (dry tons / year)	Cost (\$/dry ton)	Chemical Cost
Aluminum Sulfate (Alum)		100%	50%		\$ 644.17	\$
Aqueous Ammonia Ferric Chloride Hydrofluorosilicic Acid		100% 100% 100%	50% 50% 50%	-	\$ 404.57 \$ 782.93 \$ 360.00	\$ \$
Hyrogen Peroxide (35%) Liquid Polymer Sodium Bisülfite		100% 100% 100%	50% 50% 50%	10 10 10 10 10 10 10 10	\$ 1,734.23 \$ 3,140.89 \$ 920.91	\$ \$
Sodium Hydroxide (50%) Sodium Hypochlorite (12.5%) Sulfuric Acid Other Chemical		100% 100% 100% 100%	50% 50% 50% 50%	30	\$ 825.32 \$ 1,672.13 \$ 138.09 \$ 2,000.00	\$ \$ \$ \$ 30,44
Total Chemical Cost Repair and Maintenance, and Replacement:				s comes all section	Replacement	\$ 30,44 Annual Cost
Maintenance & Repair Cost					Included? (1 = "Yes", 0 = "No")	\$ 49
Replacement Cost Other:				Total Annual	"Other"	\$ -
Other Cost	Programme Company			O&M Cost \$ 32,129	Percent 10.0%	\$ 3,21
User Defined Annual O&M Items:						Annual Cost
Item 2 Item 3 Item 4						\$4965 (5)464 (- \$4066) (6)46 (- \$606) (6)46 (-
Item 5 Item 6 Item 7				1919 11 E 13 E 1	# 1	\$ - \$ - \$
Item 8 Item 9 Item 10				attended to the second		\$ \$
Item 11						\$ 2 2 2 2 2 4 4 5 4 5 4 5 5 5 5 5 5 5 5 5
Item 14						\$ 45 kg kg kg -

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Liquid Chemical POLYPHOS

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Subtotal Annual O&M Cost			\$ 35,342
Contingency		10%	\$ 3,534
Total Annual O&M Cost			\$ 38,876

\$

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\$

10%

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87,730

8,773

96,503

Item 10 Item 11 Item 12

Item 13

Item 14

Item 15

Total Annual O&M Cost

Contingency

Subtotal Annual O&M Cost

To Summary Sheet

Standard Additional Project Costs

Complete Companies (Companies Companies Compan		
		d semeres
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Repair and Marnerares Cod	
Finjagrammeret Coopi	

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Item 5				
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ikem 12				**************************************
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Subtotal Annual O&M Cost Contingency	10% \$	277,707 27,771
Total Annual O&M Cost		305,477

Alternative 3: Lake Michigan Water

Alternative 3 - Lake Michigan Water		
Supply Pipeline		\$35,020,000
10% allowance for pipeline valves & appurtenances		\$3,502,000
Subtotal Pipeline Construction Cost		\$38,522,000
Parkway Booster Station	'	\$8,573,000
Subtotal Supply System Construction Cost		 \$47,095,000
Return Pipeline/Pump station to Underwood Creek	1,47,474,47	\$ 29,023,000
Distribution System Improvements		\$ 8,465,000
Subtotal Construction Cost		\$ 84,583,000
3% markup for Bonds & Insurance	\$2,538,000	
5% markup for Mob/Demob	\$4,230,000	
8% markup for Contractors Overhead	\$7,309,000	
4% markup for Contractors profit	\$3,655,000	
25% Contingency	\$25,579,000	
Subtotal Markups and Contingency		\$43,311,000
Total Project Construction Costs		\$ 127,894,000
8% allowance for pipeline engineering and design	10,232,000	
12% allowance for permitting, legal and administration	15,348,000	
8% allowance for pipeline engr services during construction	10,232,000	 MANNO A.
Subtotal Other Project Costs	*****	\$35,812,000
TOTAL PROJECT CAPITAL COST		\$ 164,000,000

Alternative 3 - Milwaukee Water Supply

Pipeline		
Segment	Mile s	Diameter
Α	9	36
В	3	*,**36

ı	Unit cost	\$ /dia-in	12

Mile	Cost	Comments
1	\$3,991,680	In Howard Ave, cross HWY 894, 60th
2	\$2,335,133	In Howard Ave, cross 76th, cross 84th, cross 92nd
3	\$3,190,493	In Howard Ave, cross HWY 45, cross 104th In Howard Ave, cross HWY 100, cross Beliot Rd, in
4	\$2,720,045	pkwy, cross Morgan Ave In pkwy, cross Oklahoma, cross National, cross
5	\$3,736,212	Cleveland
6	\$3,024,553	0.5 mi pkwy, 0.5 mi in 124th Street
7	\$1,984,435	In 124th, cross 124th street, Utility corridor (Oak Leaf)
8	\$2,047,162	Utility corridor, cross Sunnyslope, cross Moorland
9	\$1,816,214	Utility corridor, cross Calhoun
10	\$2,194,284	Utility corridor
11	\$2,194,284	Utility corridor
. 12	\$1,816,214	Utility corridor, cross Springdale
13	\$2,280,960	Cotton Crt
14	\$1,687,910	Open country
subtotal	\$35,019,579	

	Pipeline Construction Difficulty		
Alignment	Factors	Seg A cost	Seg B cost
Category	(source: CPES)	\$/If	\$/If
Open country	0.74	320	320
Low urban	1.00	432	432
Medium urban	1.19	514	514
High urban	1.37	592	592
Groundwater	1.30	562	562
Forest	1.15	497	497
Gravel roads	0.85	367	367
Creek crossing	2.00	864	864
HWY crossing	4.00	1728	1728
miles	0.13	0.25	0.5
feet	660	1320	2640
	4620	3960	2640

3:41 PM				Marrie .
Description	Quantity	<u>Unit</u>	\$/Unit	Total Cost
SITEWORK:				
Pump Station:				
Excavation	455.19	CY	\$5.35	\$2,43
Imported Structural Backfill	576.89	CY	\$40.56	\$23,3
Native Backfill	21.83	CY	\$6.58	\$1,
Haul Excess	433.36	CY	\$6.58	\$2,8
Forebay:			70.00	4-,1-
Excavation	943.32	CY	\$5.35	
Imported Structural Backfill	575.02	CY	\$40.56	
Native Backfill	75.56	CY	\$6.58	
Haul Excess	867.76	CY	\$6.58	
Office:				
Excavation	0.00	CY	\$5.35	ļ
Imported Structural Backfill	0.00	CY	\$40.56	
Native Backfill	0.00	CY	\$6.58	
Haul Excess	0.00	CY	\$6.58	
Surge Protection:		 	75.00	
Excavation	266.84	CY.	\$5.35	\$1,4
Imported Structural Backfill	146.42	CY	\$40.56	\$5,9
Native Backfill	43.02	CY	\$6.58	\$2
Haul Excess	223.81	CY	\$6.58	\$1,4
Allowance for Misc Items	5%	0.	\$37,949.28	\$1,89
Subtotal			Ψ57,945.20	\$39,84
Odblotal	· · · · · · · · · · · · · · · · · · ·			φ39,64
CONCRETE:				
Pump Station		<u> </u>		
Foundation	342.13	CY	\$382.16	\$130,74
Support Walls	0.00	CY	\$683.50	\$130,72
Support Walls	0.00	0'	φυσο.ου ·	`
Support Columns	0.00	CY	\$683.50	(
	·			
Pump Pad Epoxy	2.48	CY	\$3,412.56	\$8,4
Pump Pad Support	50.52	CY	\$345.93	\$17,4
Pipe Supports	2.74	CY	\$345.93	\$9
Mezzanine				
Elevated Slab	0.00	CY	\$1,088.69	
Electrical Room		· · · · · · · · · · · · · · · · · · ·		
Foundation	58.69	CY	\$345.93	\$20,30
Surge Protection				
Foundation	75.51	CY	\$345.93	\$26,12
Office				
Foundation	0.00	CY	\$345.93	(
Pump Station Forebay			,	
Slab on Grade for Steel Tank	346.49	CY	\$345.93	
Prestressed Concrete Tank (654765 gallons)	0.00	EA	\$0.00	
Outlet Box	5.91	CY	\$382.16	\$2,2
Allowance for Misc Items	5%		\$206,302.68	\$10,31
Subtotal			\$250,002.00	\$216,61
				ΨΕ 10,01
MASONRY:	Moderate			
Pump Station Building	4077.42	SF	\$197.40	\$804,8
Office Building	0.00	SF	\$131.60	φου4,ο
Surge Building	1019.35	SF	\$131.60 \$131.60	\$134,14
Electrical Room	1584.66	SF	\$131.60 \$131.60	\$208,5
Subtotal	6681.43			\$1,147,58

3:41 PM	,			
METALS:				
Metal Guardrail with Pickets	0.00	LF	\$72.38	\$(
Stairs = IF Mezzanine = 10 * 12/8	0.00	Risers	\$394.80	\$(
Pump Removal Hatches	191.04	SF	\$109.91	\$20,99
Ladder	0.00	VLF	\$99.36	\$1
Allowance for Misc Items	10%		\$20,996.63	\$2,100
Subtotal	1070		Ψ20,000.00	\$23,096
Obbotal				VL0,000
THERMAL & MOISTURE PROTECTION:				
Wet Well Liner	0.00	SF	\$16.00	\$0
Allowance for Misc Items	10%		\$0.00	\$0
Subtotal				\$0
EQUIPMENT:				
Pumps				
Active Pump # 1	1000.00	HP	\$249.00	\$249,000
Active Pump # 2	1000.00	HP	\$249.00	\$249,000
Active Pump # 3	1000.00	HP	\$249.00	\$249,000
Active Pump # 4	<i>~</i> 0.00	HP	\$0.00	\$0
Active Pump # 5	0.00	HP	\$0.00	\$0
Active Pump # 6	0.00	HP	\$0.00	\$0
Active Pump # 7	0.00	HP	\$0.00	\$0
Active Pump # 8	0.00	HP	\$0.00	\$0
Active Pump # 9	0.00	HP	\$0.00	\$0
Active Pump # 10	0.00	HP	\$0.00	\$0
Standby Pump	1000.00	HP	\$249.00	\$249,000
Steel Forebay Tank (654765 gallons)	1.00	EA	\$278,348.80	\$0
Allowance for Misc Items	10%		\$996,000.47	\$99,600
Subtotal				\$1,095,601
·				
INSTRUMENTATION & CONTROLS:	<u>.</u>			
Instruments				
Isolation Valve Actuators	8.00	each	\$5,064.93	\$40,519
Control Valve Actuators	4.00	each	\$5,064.93	\$20,260
Level Indicator Transmitters	2.00	each	\$6,764.54	
Level Swithces	2.00	each	\$7,120.57	\$14,24 1
Pressure Indicator Transmitters	5.00	each	\$7,120.57	\$35,603
Pressure Switches	8.00	each	\$7,120.57	
Number of Analog I/O Counts	31.20	each	\$208.82	\$6,515
Number of Digital I/O Counts	84:00	each	\$49.46	
Number of PLC's	4.00	each	\$10,331.10	
1&C Conduit & Wire Allowance for Misc Items	2347.84 10%	lf	\$9.53 \$ 255,482.85	\$22,372 \$25,548
Subtotal	1070		Ψ 200,402.00	\$281,031
CONVEYING SYSTEMS				
Bridge Crane	0.00	EA	\$55,749.49	\$0
Bridge Crane Rail	0.00	LF	\$28.96	\$(
Allowance for Misc Items Subtotal	10%		\$ -	\$0 \$
GUNUTUI	·			Ψ -
MECHANICAL:		-		
Pipe:				-
Suction Header Pipe (30-inch,SUC, Buried, Steel, Cement Mortar, Tape Coating)	66.96	LF	\$744.31	\$49,839
Suction Lateral Pipe (20-inch,SUC, Exposed, Steel, Cement Mortar, Paint)	46.67	LF	\$491.38	\$22,931

\$15,868 Discharge Lateral Pipe (18-inch, DIS, Exposed, Steel, Cement 36.00 LF \$440.79 Mortar, Paint) Discharge Header Pipe (30-inch, DIS, Buried, Steel, Cement Mortar, 66.96 LF \$744.31 \$49,839 Tape Coating) Pump Suction Pipe (12-inch, SUC, Exposed, Steel, Cement Mortar, 4.00 LF \$289.03 \$1,156 Pump Discharge Pipe (8-inch, DIS, Exposed, Steel, Cement Mortar, 2.67 \$187.86 \$501 LF Paint) Elbows: Discharge Lateral Pipe (18-inch) 4.00 EΑ \$1,597.76 \$6,391 Discharge Header Pipe (30-inch) 2.00 EΑ \$5,664 \$2,831.95 Suction Header Pipe (30-inch) 4.00 \$5.509.28 \$22,037 EΑ Discharge Header Pipe (30-inch) 4.00 EΑ \$22,037 \$5,509.28 Suction Header Isolation Valve (30-inch, BFV) 1.00 ÌΕΑ \$5,934.12 \$5,934 \$14,181 Suction Lateral Isolation Valve (20-inch, BFV) 4.00 EΑ \$3,545.34 EΑ Discharge Lateral Isolation Valve (18-inch, BFV) 4.00 \$2,759.13 \$11,037 Pump Control Valve (18-inch, Butterfly Valve) \$2,759.13 \$11,037 4.00 EΑ Discharge Header Isolation Valve (30-inch, BFV) 1.00 EΑ \$5,934.12 \$5,934 \$39,566 Air Release Vacuum Valves 12.00 EΑ \$3,297,16 Allowance for Misc Items 10% \$283,952.56 \$28,395 Subtotal \$312,348 ELECTRICAL: MCC's Sections 3.00 each \$6,783.10 \$20,349 AFD's Active Pump # 1 1000.00 HP \$127.09 \$127,092 Active Pump # 2 1000.00 HP \$127.09 \$127,092 \$127,092 Active Pump # 3 1000.00 HP \$127.09 HP Active Pump # 4 0.00 \$0.00 \$0 HP \$0 Active Pump # 5 0.00 \$0.00 Active Pump # 6 0.00 HP \$0.00 \$0 HP \$0 Active Pump #7 0.00 \$0.00 Active Pump # 8 0.00 HP \$0.00 \$0 ΗP \$0 Active Pump # 9 0.00 \$0.00 Active Pump # 10 0.00 HP \$0.00 \$0 Standby Pump 1000.00 HP \$127.09 \$127,092 Switchgear Units 7.00 \$31,202.24 \$218,416 each 323,84 Electrical Conduit & Wire \$9.53 \$3,086 Allowance for Misc Items 5% \$750.220 \$37,511 Subtotal \$787,731 **USER DEFINED ESTIMATE ITEMS:** QUANT UNIT \$/UNIT TOTAL COST 75,000 gallon welded steel tank, foundation 1.00 150000.00 \$150,000 1000000.00 \$1,000,000 Standby Generator 1.00 250000.00 \$250,000 Land 1.00 Item 4 Description 0.00 0.00 \$0 Item 5 Description 0.00 0.00 \$0 Item 6 Description 0.00 0.00 \$0 Item 7 Description 0.00 \$0 0.00 Item 8 Description 0.00 0.00 \$0 Item 9 Description 0.00 0.00 \$0 Item 10 Description 0.00 0.00 \$0 \$0 Item 11 Description 0.00 0.00 \$0 Item 12 Description 0.00 0.00 \$0 Item 13 Description 0.00 0.00 Item 14 Description 0.00 0.00 \$0 Item 15 Description 0.00 0.00 \$0 \$1,400,000 Subtotal Subtotal \$5,303,853

acility Cost	4,	000 Total Pump HP	\$2,144.53	\$8,578,12
Electrical Allowance	5%	7//6	\$8,578,122	\$609,04
Mechanical Allowance	2%	15%	\$8,578,122	\$1,286,71
Surge Allowance	. 5%	10%	\$8,578,122	\$857,81
I & C Allowance	2%	4%	\$8,578,122	\$349,13
Finishes Allowance	2%		\$8,578,122	\$171,56
ALLOWANCES:		User Over- write		,

n Flow Underwood Creek (18.5 mgd, 36" dia)	
Pipelines \$2	3,195,000
Ilowance for pipeline valves & appurtenances \$	52,320,000
mowance for pipeline valves & appurtenances	2,320,000
Pipeline Construction Cost \$2	5,515,000
WWTP Effluent Pump Station \$	3,508,000
Conveyance System Construction Cost \$2	9,023,000
3% markup for Bonds & Insurance \$871,000	
5% markup for Mob/Demob \$1,452,000	
8% markup for Contractors Overhead \$2,508,000	
4% markup for Contractors profit \$1,254,000	
25% Contingency \$8,777,000	
Subtotal Markups and Contingency \$1	4,862,000
Total Project Construction Costs \$4	3,885,000
% allowance for pipeline engineering and design 3,511,000	
allowance for permitting, legal and administration 5,267,000	
nce for pipeline engr services during construction 3,511,000	
Subtotal Other Project Costs \$1	2,289,000
GRAND TOTAL PROJECT COST \$5	6,174,000

Alternative 3 - Underwood Creek Return Flow

Pipeline		
Segment		Diameter
Α	Programme Company	36
* B		36

Unit cost	\$/dia-in	12

Mile	Cost	Comments
1	\$2,389,306	0.75 mi follows river, crosses Prairie ave, Marshall and Dunbar, 0.25 under alley to NW ave
		Cross Maple, Grand, Barstow, East, Barney, Hartwell,
2	\$2,389,306	crossing of E Broadway (major street); end at Oakland follows path (cross Greendale and Frederick), cross
3	\$3,290,285	East Side bypass HYW 59 (MAJOR) Follows New Berlin trail/utility corridor, cross
4	\$1,836,971 70 %	Springdale; also a stream crossing, some forest; ends near stream crossing
		Follows trail, open country mostly, some forest, wetlands for 0.5 mi; assume groundwater; ends near
5	\$1 ,555,159 70%	wetlands/open water pond
0	P4 047 004 700	Follows trail, open country mostly, some forest
6	\$1,247,001 70 %	(assume 10%) Begins near Calhoun, one stream crossing; becoming urban again but still follows trail and is mostly open, crosses Calhoun and ends near Moorland, assume
* 7	\$1,700,456 70 %	10% forest
8	\$1,181,537 70 %	Still in trail, no crossings; very open; Ends near Sunnyslope Rd
9	\$1,181,537 70%	Still in trail, no crossings; very open; Ends at 124th st Going north under 124th st, crosses Greenfield (hwy
10	\$2,623,104	59), ends near 124th and Zinke Dr
11 subtotal	\$3,800,079 \$23,194,740	Last section follows Underwood Creek, Crosses I-94

	Pipeline	
	Construction Difficulty	
Alignment	Factors	Seg A cost
Category	(source: CPES)	\$/If
Open country	0.74	320
Low urban	1.00	432
Medium urban	1.19	514
High urban	1.37	592
Groundwater	1.30	562
Forest	1.15	497
Gravel roads	0.85	367
Creek crossing	2.00	864
HWY crossing	4.00	1728

miles	0.13	0.25
feet	660	1320

			Karani da da karanda kara. Maran	
<u>Description</u>	Quantity	<u>Unit</u>	\$/Unit	Total Cost
SITEWORK:				
Pump Station:			<u> </u>	
Excavation	639.92	CY	\$5.28	\$3,3
Imported Structural Backfill	532.57	CY	\$40.04	\$21,3
Native Backfill	38.78	CY	\$6.50	\$2
Haul Excess	601.13	CY	\$6.50	\$3,9
	001.13		90.50	Ψο,σ
Forebay:	0.00	CY	\$5.28	:
Excavation	0.00	CY	\$40.04	
Imported Structural Backfill	0.00	CY	\$6.50	
Native Backfill		CY		
Haul Excess	0.00	Ci	\$6.50	
Office:				
Excavation	0.00	CY	\$5.28	
Imported Structural Backfill	0.00	CY	\$40.04	
Native Backfill	0.00	CY	\$6.50	
Haul Excess	0.00	CY	\$6.50	
Surge Protection:				
Excavation	385.95	CY	\$5.28	\$2,0
Imported Structural Backfill	201.65	CY	\$40.04	\$8,0
Native Backfill	75.73	CY	\$6.50	\$4
Haul Excess	310.22	CY	\$6.50	\$2,0
Allowance for Misc Items	5%		\$41,478.65	\$2,07
Subtotal			\$11,77,0100	\$43,55
Cubicital				ψ+0,00
CONCRETE:				
Pump Station				
Foundation	482.04	CY	\$382.16	\$184,2°
Support Walls	0.00	CY	\$683.50	
0 (0)	10.07	0)/	0000 50	
Support Columns	10.37	CY	\$683.50	\$7,0
Pump Pad Epoxy	2.20	CY	\$3,368.81	
Pump Pad Support	24.15	CY	\$345.93	\$8,3
Pipe Supports	29.63	CY	\$345.93	\$10,2
Mezzanine			VO.10.00	Ψ10,2
Elevated Slab	0.00	CY	\$4,000,60	
	0.00	01	\$1,088.69	
Electrical Room	13.23	07	\$345.93	.
Foundation	13.23	CY	\$340.93	\$4,5
Surge Protection	100.47	0)/	40444	4077
Foundation	108.47	CY	\$345.93	\$37,5
Office				
Foundation	0.00	CY	\$345.93	
Pump Station Forebay				
Slab on Grade for Steel Tank	0.00	CY	\$345.93	
Prestressed Concrete Tank (0 gallons)	0.00	EA	\$0.00	
Outlet Box	9.91	CY	\$382.16	\$3,7
Allowance for Misc Items	5%		\$263,196.94	\$13,16
Subtotal			, , , , , , , , , , , , , , , , , , ,	\$276,35
	STATES CONTROL OF THE STATE OF			
MASONRY:	Moderate			
Pump Station Building	5857.49	SF	\$194.87	
Office Building	0.00	SF	\$129.91	
Surge Building	1464.37	SF	\$129.91	\$190,2
Electrical Room	357.23	SF	\$129.91	\$46,4
Cultotal	7679.09	1		Ø4 970 46
Subtotal	Owned by CH2M HILL /		 File Versi	\$1,378,10

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			٠	
METALS:	0.00			
Metal Guardrail with Pickets	0.00	LF	\$71.45	
Stairs = IF Mezzanine = 10 * 12/8	0.00	Risers	\$389.74	3
Pump Removal Hatches	0.00	SF	\$108.50	
Ladder	0.00	√ VLF	\$98.09	\$
Allowance for Misc Items	10%		\$0.00	\$0
Subtotal				\$(
	·		. ,	
EQUIPMENT:		į		
Pumps	· · ·			
Active Pump # 1	200.00	HP	\$323.10	\$64,61
Active Pump # 2	200.00	HP	\$323.10	\$64,61
Active Pump # 3	200.00	HP	\$323.10	\$64,61
Active Pump # 4	0.00	HP	\$0.00	\$
Active Pump # 5	0.00	HP	\$0.00	\$
	0.00	HP	\$0.00	
Active Pump # 6		1		
Active Pump # 7	0.00	HP	\$0.00	9
Active Pump # 8	0.00	HP	\$0.00	8
Active Pump # 9	0.00	HP	\$0.00	\$
Active Pump # 10	0.00	HP	\$0.00	\$
Standby Pump	200.00	HP	\$323.10	\$64,61
Steel Forebay Tank (0 gallons)	0.00	EA	\$0.00	\$
Allowance for Misc Items	10%		\$258,477.39	\$25,848
Subtotal			, , , , , , , , , , , , , , , , , , , ,	\$284,325
INSTRUMENTATION & CONTROLS:				
Instruments				
Isolation Valve Actuators	8.00	each	\$2,169.93	\$17,35
Control Valve Actuators	4.00	each	\$2,169.93	\$8,68
Level Indicator Transmitters	2.00	each	\$6,677.82	
	2.00			
Level Swithces		each	\$7,029.28	
Pressure Indicator Transmitters	5.00	each	\$7,029.28	
Pressure Switches	8.00	each	\$7,029.28	\$56,23
Number of Analog I/O Counts	31.20	each	\$206.14	
Number of Digital I/O Counts	84.00	each	\$48.82	
Number of PLC's	4.00	each	\$10,198.66	\$40,79
I&C Conduit & Wire	2896.62	If	\$9.41	\$27,24
Allowance for Misc Items	10%		\$ 223,408.90	\$22,341
Subtotal				\$245,750
CONVEYING SYSTEMS	······································			
Bridge Crane	1.00	EA	\$55,034.79	\$55,03
Bridge Crane Rail	207.77	LF	\$28.59	
Allowance for Misc Items	10%		\$ 60,974	\$6,097
Subtotal				\$ 67,071
MECHANICAL:	i			
Pipe:				
Suction Header Pipe (42-inch, SUC, Buried, Steel, Cement Mortar,	65.88	. LF	\$1,034.40	\$68,15
Tape Coating)				
Suction Lateral Pipe (24-inch,SUC, Exposed, Steel, Cement Mortar,	56.00	LF	\$584.96	\$32,75
Paint)				
Discharge Lateral Pipe (24-inch,DIS, Exposed, Steel, Cement Mortar, Paint)	48.00	LF	\$58 <i>4.</i> 96	
Discharge Header Pipe (42-inch,DIS, Buried, Steel, Cement Mortar, Tape Coating)	65.88	LF	\$1,034.40	\$68,15

2/1/2010

4:19 PM				
Pump Suction Pipe (12-inch,SUC, Exposed, Steel, Cement Mortar, Paint)	4.00	LF	\$285.33	\$1,14
Pump Discharge Pipe (8-inch,DIS, Exposed, Steel, Cement Mortar, Paint)	2.67	LF	\$278.51	\$74
Elbows:				
Discharge Lateral Pipe (24-inch)	4.00	EA	\$2,186.46	\$8,746
Discharge Header Pipe (42-inch)	2.00	EA	\$4,014.02	\$8,02
Tees:			,,,,,,,,,,	
Suction Header Pipe (42-inch)	4.00	EA	\$7,836.34	\$31,345
Discharge Header Pipe (42-inch)	4.00	EA	\$7,836.34	\$31,345
Valves:			7.,,,,,,,,,	
Suction Header Isolation Valve (42-inch, BFV)	1.00	EA	\$8,726.52	\$8,727
Suction Lateral Isolation Valve (24-inch, BFV)	4.00	EA	\$5,390.47	\$21,562
Discharge Lateral Isolation Valve (24-inch, BFV)	4.00	EA	\$5,390.47	\$21,562
Pump Control Valve (24-inch, Full Port Valve)	4.00	EA	\$5,390.47	\$21,562
Discharge Header Isolation Valve (42-inch, BFV)	1.00	EA	\$8,726.52	\$8,727
Air Release Vacuum Valves	12.00	EA	\$3,254.89	\$39,059
Allowance for Misc Items	10%		\$399,680.68	\$39,968
Subtotal				\$439,649
ELECTRICAL:				
MCC's				
Sections	8.00	each	\$6,696.14	\$53,569
AFD's				
Active Pump # 1	200.00	HP	\$180.66	\$36,132
Active Pump # 2	200.00	HP	\$180.66	\$36,132
Active Pump # 3	200.00	HP	\$180.66	\$36,132
Active Pump # 4	0.00	HP	\$0.00	\$0
Active Pump # 5	0.00	HP	\$0.00	. \$0
Active Pump # 6	0.00	HP	\$0.00	\$0
Active Pump # 7	0.00	HP	\$0.00	\$0
Active Pump # 8	0.00	HP .	\$0.00	\$0
Active Pump # 9	0.00	HP	\$0.00	\$0
Active Pump # 10	0.00	HP	\$0.00	\$0
Standby Pump	200.00	HP	\$180.66	\$36,132
Switchgear				
Units	0.00	each	\$30,802.24	\$0
Electrical Conduit & Wire	399.53	lf	\$9.41	\$3,758
Allowance for Misc Items	5%		\$201,856	\$10,093
Subtotal				\$211,949
USER DEFINED ESTIMATE ITEMS:				
Item 1 Description	QUANT	UNIT	\$/UNIT	TOTAL COST
	0.00		0:00	\$0
Item 2 Description	0.00		0.00	\$0
Item 2 Description Item 3 Description	0.00 0.00 0.00		0.00 0.00 0.00	\$0
Item 2 Description Item 3 Description Item 4 Description	0.00 0.00 0.00 0.00		0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0
Item 2 Description Item 3 Description Item 4 Description Item 5 Description	0.00 0.00 0.00 0.00 0.00		0.00 0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0 \$0
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description	0.00 0.00 0.00 0.00 0.00		0:00 0.00 0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description	0.00 0.00 0.00 0.00 0.00 0.00		0:00 0:00 0:00 0:00 0:00 0:00	\$0 \$0 \$0 \$0 \$0 \$0 \$0
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00		0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 8 Description Item 9 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 8 Description Item 9 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 11 Description Item 12 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description Item 14 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description Item 14 Description Item 14 Description Item 15 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description Item 14 Description Item 15 Description	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description Item 14 Description Item 15 Description Subtotal	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description Item 14 Description Item 15 Description Subtotal	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	User Over- write	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description Item 14 Description Subtotal ALLOWANCES:	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	User Over- write	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$

2/1/2010

Horizontal PS New

Printed by: tmyers

Facility Cost		Total Pump HP	\$4,385.06	\$3,508,051
			. , .	
Electrical Allowance	5%		\$3,508,051	\$175,403
Mechanical Allowance	2%		\$3,508,051	\$70,161

Alternative 3 - Distribution

\$7,695,000		Pipelines
\$770,000		10% allowance for pipeline valves & appurtenances
\$8,465,000		Pipeline Construction Cost
\$8,465,000		Pipeline Construction Cost
	\$254,000	3% markup for Bonds & Insurance
	\$4 24,000	5% markup for Mob/Demob
	\$712,000	8% markup for Contractors Overhead
	\$385,000	4% markup for Contractors profit
	\$2,560,000	25% Contingency
\$4,335,000		Subtotal Markups and Contingency
\$12,800,000		Total Project Construction Costs
	768,000	5% allowance for pipeline engineering and design
	640,000	12% allowance for permitting, legal and administration
	1,024,000	08% allowance for pipeline engr services during construction
\$2,432,000		Subtotal Other Project Costs
\$15,232,000		GRAND TOTAL PROJECT COST

Alternative 3 - Lake Michigan Distribution System Improvements

1	Water For		
	Segment	Miles	Diameter
	Α	2.8	20
	В	2	16

Unit cost	\$/dia-in	12

Mile Cost

1 mi of 20" \$1,736,064
1 mi of 16" \$1,388,851

Comments

Assume High Urban Assume High Urban

subtotal \$7,694,380

Pipeline Construction Difficulty

Alignment Category	Factors (source: CPES)		Seg A cost \$/if	Seg B cost \$/If
Open country		0.74	178	142
Low urban		1.00	240	192
Medium urban		1.19	286	228
High urban		1.37	329	263
Groundwater		1.30	312	250
Forest		1.15	276	221
Gravel roads		0.85	204	163
Creek crossing		2.00	480	384
HWY crossing		4.00	960	768
miles		0.13	0.25	0.5
foot		3660	1220	2640

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Michigan O&	M Coete			Т.		· · · · · ·		Ι			
s Michigan Oo	IVI COSIS			+							
				+		 					
				1			*		·		
rce of Supply		<u>Units</u>	Quantity		nit Cost	Ext. Cos			<u>\$/yr</u>		<u>Totals</u>
Purc	hased water	1000 gals	3,978,500	\$	1.40	\$	5,569,900	\$	5,569,900		
				_						_	
Tota	Supply			_	•					\$	5,569,90
				╄	11.11.0.11	F- (O	4		<u> </u>		
ping Supply			Quantity 10.9	-	<u>Unit Cost</u>	Ext. Cos	<u>[</u>	\$	\$/vr 179,759		
Ener O&M	'gy	mgd	2% of Capital cost of pump station	+	0.0200	¢	8,573,000	\$	179,759		
UQIV	".		278 of Capital cost of pullip station	$+^{\varphi}$	0.0200	Ψ	0,010,000	Ψ	171,400		,
Tota	l Pumping Sup	nlv		+		<u> </u>	···			\$	351,21
1000	ir diliping cap			+-		· · · ·		<u> </u>		· ·	
ırn Flow		Units	Quantity		Unit Cost	Ext. Cos	t	1	\$/yr		
Ener	gу	mgd	10.9					\$	118,712		
O&N	1		2% of Capital cost of pump station	\$	0.0200	\$	3,508,000	\$	70,160		
								ļ			
Tota	I Return Flow			<u> </u>						\$	188,8
		11-14-	0	+	Unit Cost	Ext. Cos	4	-	\$/yr		
ismission O&M	A .	Units \$/lf/yr	Quantity 132,000	+			68,640	\$	68,640		
UQIV	1	финун	132,000	- Ψ	0.52	Ψ	00,040	Ψ_	00,040		
Tota	l Transmission			+				 		\$	68,64
1000	· · · · · · · ·			-	······					<u></u>	
										٠,	
rnative Total O	&M (\$/yr.)									\$	6,200,00
				$oxed{\Box}$							
SENT WORTH	(6%, 20 yrs)			_		ļ		ļ		\$	71,000,00
<u> </u>	(00/ EC			╀				ļ		<u> </u>	00 000 00
SENT WORTH	(6%, 50 yrs)							J		\$	98,000,00
							٠				

)

Milwaukee Water Supply - 36" the entire alignment

Pipeline			60th & Howard Ground Elevation	780
Segment	Miles	Diameter	Hillcrest WSE	1000
Α	7	36	Segment A Piping K	8.85 (one K=1.0 entr, ten K=0.30 90-elb, 3 open billy valve K=0.25,one bend thru rdcr tee K=1.80+0.3)
В	-3491 7 6000	36	Segment B Piping K	5.65 (one flow thru tee K=0.6, five K=0.3 90-elb, one bend thru tee K=1.80, three open ofly valve K=0.25, one exit K=0.5)
	,		Piping Friction Factor	0.015
			Power cost, \$/kw	\$600 PM 1000
			Power efficiency	
•			GHG, lbs CO2/Mwhr	1859

	Supply Flow Rate	Supply Flow Rate	A Pipeline Velocity	A Pipeline Frict Loss	A Piping Misc K Loss	B RW Velocity	B Pipeline Frict Loss	FW Piping	Total Static Loss	Total Friction Head	Available Suction Head	TDH	TDH	Power	Power	Annual Power Usage	Annual Power Cost
	mgd	gpm	ft/s	ft	ft	ft/s	ft	ft	ft	ft	ft	ft	psi	hp	kw	kw	\$
	8	5552	1.75	8.77	0.33	1.75	8.80	18.16	220	238	81	157	68	276	228	2001032	\$120,062
ADD	3. 10.9	7565	2.39	16.28	0.61	2.39	16.33	33.72	220	254	81	173	75	413	342	2995986	\$179,759
MDD	18.5	12839	4.05	46.90	1.74	4.05	47.05	97.13	220	317	81	236	102	958	793	6950168	\$417,010

Underwood Creek Return Flow - 36" the entire alignment

Pipeline			Wa
Segment	Miles	Diameter	ele
A	11,4	36	Dis

Waukesha WWTP elevation at watershed divide Discharge at Underwood Creek

Segment A Piping K Segment B Piping K Piping Friction Factor Power cost, \$/kw Power efficiency GHG, lbs CO2/Mwhr



earth elevation at WWTP

면 보고 한다는 K=1.0 entr, ten K=0.30 90-elb, 3 open bfly valve K=0.25,one bend thru rdcr tee K=1.80+0.3) 토토 (대표 lbw thru tee K=0.6, five K=0.3 90-elb, one bend thru tee K=1.80, three open bfly valve K=0.25, one



ADD MDD

]		Α	Α	Α	Total	Total	Total				,	Annual	
Supply	Supply	Pipeline	Pipeline	Piping	FW Piping	Static	Friction					Power	Annual
Flow Rate	Flow Rate	Velocity	Frict Loss	Misc K Loss	Fric Loss	Loss	Head	TDH	TDH	Power	Power	Usage	Power Cost
mgd	gpm	ft/s	£4.	Ŧ4	£4	E1	- 4	£4	nai	L	1000	1	•
mgu 1	gpiii	IVS	ΙĻ	I,	IL	It	IL	п	psi	hp	kw	kw	\$
10	6940	2.19	22.25	0.51	22.76	102	124	124	54	173	226	1978537	\$ \$118,712

Underwood Creek Return Flow

	Pipeline			Waukesha WWTP
	Segment	Miles	Diameter	elevation at watershed divide
	Α	11.4	36	Discharge at Underwood Creel
•				Commant A Dining I/

Segment A Piping K
Segment B Piping K
Piping Friction Factor
Power cost, \$/kw
Power efficiency
GHG, lbs CO2/Mwhr

794 Google earth elevation at WWTP 895

6.85 (one K=1.0 entr, ten K=0.30 90-elb, 3 open bfly valve K=0.25, one bend thru rdcr tee K=1.80+0.3)

5.65 (one flow thru tee K=0.6, five K=0.3 90-elb, one bend thru tee K=1.80, three open bfly valve K=0.25, one exit K=0.5)

		Α	Α	Α	Total	Total	Total					Annual		Annual
Supply	Supply	Pipeline	Pipeline	Piping	FW Piping	Static	Friction					Power	Annual	GHG
Flow Rate	Flow Rate	Velocity	Frict Loss	Misc K Loss	Fric Loss	Loss	Head	TDH	TDH	Power	Power	Usage	Power Cost	Produced
mgd	gpm	ft/s	ft	ft	ft	ft	ft	ft	psi	hp	kw	kw	\$	tons CO2
10	6940	2.19	22.25	0.51	22.76	102	124	124	54	273	226	1978537	\$118,712	1839
10	5	2.13	22.20	0.01	22.70	102	121	127	0	270	220	107007	Ψ110,112	1000

ADD MDD

WWTP Effluent Pump Station

Approx. Topo EL 794

Design TDH 146 ft must be designed to pump up to the watershed divide;

718

0.015

0.06

0.9 1859

63 psi

No. of pumps 3 3 active, 1 standby

Capacity, mgd (each) 3.33

HP (each) 122 nominal 150 hp

Drive variable frequency

Underwood Creek Return Flow

Pipeline	
Segment	Diameter
Α	36
В	36

Unit cost	\$/dia-in	12
Mile	Cost	Comments 0.75 mi follows river, crosses Prairie ave, Marshall and
1	\$2,389,306	Dunbar, 0.25 under alley to NW ave
2	\$2,389,306	Cross Maple, Grand, Barstow, East, Barney, Hartwell, crossing of E Broadway (major street); end at Oakland follows path (cross Greendale and Frederick), cross
3	\$3,290,285	East Side bypass HYW 59 (MAJOR) Follows New Berlin trail/utility corridor, cross Springdale;also a stream crossing, some forest
4	\$1,836,971	70% (assume 20%); ends near stream crossing Follows trail, open country mostly, some forest (assume 30%), wetlands for 0.5 mi; assume groundwater; ends
5	\$1,555,159	70% near wetlands/open water pond Follows trail, open country mostly, some forest (assume
6	\$1,247,001	70% 10%) Begins near Calhoun, one stream crossing; becoming urban again but still follows trail and is mostly open, crosses Calhoun and ends near Moorland, assume
7	\$1,700,456	70% 10% forest
8	\$1,181,537	Still in trail, no crossings; very open; Ends near 70% Sunnyslope Rd
9	\$1,181,537	70% Still in trail, no crossings; very open; Ends at 124th st Going north under 124th st, crosses Greenfield (hwy
10	\$2,623,104	59), ends near 124th and Zinke Dr
11	\$3,800,079	Last section follows Underwood Creek, Crosses I-94
subtotal	\$23,194,740	

	Pipeline	
	Construction	
	Difficulty	
Alignment	Factors	Seg A cost
Category	(source: CPES)	\$/If
Open country	0.74	320
Low urban	1.00	432
Medium urban	1.19	514
l limbub a.a	4.07	500
High urban	1.37	592
Groundwater	1.30	562
Forest	1.15	497
Gravel roads	0.85	367
Creek crossing	2.00	864
HWY crossing	4.00	1728

Underwood Creek Return Flow

Pipelines		\$23,195,000
10% allowance for pipeline valves & appurtenances		\$2,320,000
Pipeline Construction Cost		\$25,515,000
WWTP Effluent Pump Station		\$3,508,000
Conveyance System Construction Cost		\$29,023,000
3% markup for Bonds & Insurance	\$871,000	
5% markup for Mob/Demob	\$1,452,000	
8% markup for Contractors Overhead	\$2,508,000	
4% markup for Contractors profit	\$1,254,000	
25% Contingency	\$8,777,000	
Subtotal Markups and Contingency		\$14,862,000
Total Project Construction Costs		\$43,885,000
8% allowance for pipeline engineering and design	3,511,000	
12% allowance for permitting, legal and administration	5,267,000	
8% allowance for pipeline engr services during construction	3,511,000	
Subtotal Other Project Costs		\$12,289,000
GRAND TOTAL PROJECT COST		\$56,174,000

<u>Description</u>	Quantity	Unit	\$/Unit	Total Cost
CITCWODY				
SITEWORK:		-		
Pump Station:	639.92	ICY	¢£ 20	\$3,3
Excavation Part 61	532.57	CY	\$5.28	
Imported Structural Backfill		I	\$40.04	\$21,3
Native Backfill	38.78	CY	\$6.50	\$2
Haul Excess	601.13	CY	\$6.50	\$3,9
Forebay:				
Excavation	0.00	CY	\$5.28	
Imported Structural Backfill	0.00	CY	\$40.04	
Native Backfill	0.00	CY	\$6.50	
Haul Excess	0.00	CY	\$6.50	
Office:				
Excavation	0.00	CY	\$5.28	
Imported Structural Backfill	0.00	CY	\$40.04	
Native Backfill	0.00	CY	\$6.50	
Haul Excess	0.00	CY	\$6.50	
Surge Protection:				
Excavation	385.95	CY	\$5.28	\$2,0
Imported Structural Backfill	201.65	CY	\$40.04	\$8,0
Native Backfill	75.73	CY	\$6.50	\$4
Haul Excess	310.22	CY	\$6.50	\$2,0
Allowance for Misc Items	5%		\$41,478.65	\$2,07
Subtotal				\$43,55
CONCRETE:			·	
Pump Station				
Foundation	482.04	CY	\$382.16	\$184,2
Support Walls	0.00	CY	\$683.50	. ,
Support Columns	10.37	CY	\$683.50	\$7,0
Pump Pad Epoxy	2.20	CY	#2 200 D4	67.4
Pump Pad Support	24.15	CY	\$3,368.81	\$7,4
Fullip Fad Support	24.15	Ci	\$345.93	\$8,3
Pipe Supports	29.63	CY	\$345.93	\$10,2
Mezzanine				
Elevated Slab	0.00	CY	\$1,088.69	
Electrical Room				
Foundation	13.23	CY	\$345.93	\$4,5
Surge Protection				
Foundation	108.47	CY	\$345.93	\$37,5
Office	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		-	ψοτιο
Foundation	0.00	CY	\$345.93	
Pump Station Forebay	. 0.00		Ψ0-70.30	
Slab on Grade for Steel Tank	0.00	CY	\$345.93	
Prestressed Concrete Tank (0 gallons)	0.00	EA	\$0.00	
Outlet Box	9.91	CY		
		CT	\$382.16	\$3,7
Allowance for Misc Items	5%		\$263,196.94	\$13,16
Subtotal				\$276,35
MASONRY:	Moderate			
Pump Station Building	5857.49	SF	\$194.87	\$1,141,4
Office Building	0.00	SF	\$129.91	,
Surge Building	1464.37	SF	\$129.91	\$190,2
Electrical Room	357.23	SF	\$129.91	\$46,4
Subtotal	7679.09			\$1,378,10
All Rights	Owned by CH2M HILL /			n:8/4/2009

4:19 PM				
METALS:	0.00		AT-1 47	
Metal Guardrail with Pickets Stairs = IF Mezzanine = 10 * 12/8	0.00	LF Diagram	\$71.45	
Pump Removal Hatches		Risers	\$389.74	
•	0.00	SF	\$108.50	
Ladder	0.00	· VLF	\$98.09	
Allowance for Misc Items	10%		\$0.00	\$0
Subtotal				\$0
1				
· .		1		
EQUIPMENT:				
Pumps				
Active Pump # 1	200.00	HP	\$323.10	\$64,619
Active Pump # 2	200.00	HP	\$323.10	
Active Pump # 3	200.00	HP	\$323.10	<u> </u>
Active Pump # 4	0.00	HP	\$0.00	
Active Pump # 5	0.00	HP	\$0.00	1
Active Pump # 6	0.00	HP	\$0.00	1 · ·
Active Pump # 7	0.00	HP	\$0.00	\$0
Active Pump # 8	0.00	HP	\$0.00	\$0
Active Pump # 9	0.00	HP	\$0.00	\$0
Active Pump # 10	0.00	HP	\$0.00	
Standby Pump	200.00	HP	\$323.10	l .
Steel Forebay Tank (0 gallons)	0.00	EA	\$0.00	
Allowance for Misc Items	10%			
	10%		\$258,477.39	\$25,848
Subtotal				\$284,325
INOTELIATION & CONTROL O				
INSTRUMENTATION & CONTROLS: Instruments				
Isolation Valve Actuators	8.00	cook	40.400.00	£47.250
Control Valve Actuators		each	\$2,169.93	\$17,359
	4.00	each	\$2,169.93	\$8,680
Level Indicator Transmitters	2.00	each	\$6,677.82	
Level Swithces	2.00	each	\$7,029.28	
Pressure Indicator Transmitters	5.00	each	\$7,029.28	
Pressure Switches	8.00	each	\$7,029.28	·
Number of Analog I/O Counts	31.20	each	\$206.14	1
Number of Digital I/O Counts	84.00	each	\$48.82	
Number of PLC's	4.00	each	\$10,198.66	
I&C Conduit & Wire	2896.62	lf	\$9.41	
Allowance for Misc Items	10%	•	\$ 223,408.90	\$22,341
Subtotal				\$245,750
CONVEYING SYSTEMS				
Bridge Crane	1.00	EA	\$55,034.79	
Bridge Crane Rail Allowance for Misc Items	207.77	LF	\$28.59	
Subtotal	10%		\$ 60,974	\$6,097 \$ 67,071
Oublotal				Ψ 07,071
MECHANICAL:		•		
Pipe:				
Suction Header Pipe (42-inch,SUC, Buried, Steel, Cement Mortar, Tape Coating)	65.88	LF	\$1,034.40	\$68,150
Suction Lateral Pipe (24-inch,SUC, Exposed, Steel, Cement Mortar, Paint)	56.00	LF	\$584.96	\$32,757
Discharge Lateral Pipe (24-inch,DIS, Exposed, Steel, Cement Mortar, Paint)	48.00	LF	\$584.96	\$28,078
Discharge Header Pipe (42-inch, DIS, Buried, Steel, Cement Mortar, Tape Coating)	65.88	LF	\$1,034.40	\$68,150

4:19 PM	<u>.</u>			
Pump Suction Pipe (12-inch,SUC, Exposed, Steel, Cement Mortar, Paint)	4.00	LF	\$285.33	\$1,14
Pump Discharge Pipe (8-inch,DIS, Exposed, Steel, Cement Mortar,	2.67	LF	\$278.51	\$743
Paint)				·
Elbows:				
Discharge Lateral Pipe (24-inch)	4.00	EA	\$2,186.46	\$8,746
Discharge Header Pipe (42-inch)	2.00	EA	\$4,014.02	\$8,028
Tees:				
Suction Header Pipe (42-inch)	4.00	EA	\$7,836,34	\$31,34
Discharge Header Pipe (42-inch)	4.00	EA	\$7,836.34	\$31,34
Valves:				
Suction Header Isolation Valve (42-inch, BFV)	1.00	EA	\$8,726.52	\$8,727
Suction Lateral Isolation Valve (24-inch, BFV)	4.00	EA	\$5,390.47	\$21,562
Discharge Lateral (solation Valve (24-inch, BFV)	4.00	EA	\$5,390.47	\$21,562
Pump Control Valve (24-inch, Full Port Valve)	4.00	EA	\$5,390.47	\$21,562
Discharge Header Isolation Valve (42-inch, BFV)	1.00	EA	\$8,726.52	\$8,72
Air Release Vacuum Valves	12.00	EA	\$3,254.89	\$39,059
Allowance for Misc Items	10%		\$399,680.68	\$39,968
Subtotal				\$439,649
ELECTRICAL:	,	1		
MCC's				
Sections	8.00	each	\$6,696.14	\$53,569
AFD's				
Active Pump # 1	200.00	HP	\$180.66	\$36,132
Active Pump # 2	200.00	HP	\$180.66	\$36,132
Active Pump # 3	200.00	HP	\$180.66	\$36,132
Active Pump # 4	0.00	HP	\$0.00	\$0
Active Pump # 5	0.00	HP	\$0.00	\$0
Active Pump # 6	0.00	HP.	\$0.00	\$0
Active Pump # 7	0.00	HP	\$0.00	\$0
Active Pump # 8	0.00	HP	\$0.00	\$0
Active Pump # 9	0.00	HP	\$0.00	\$0
Active Pump # 10	0.00	HP	\$0.00	\$0
Standby Pump	200.00	HP	\$180.66	\$36,132
Switchgear	200.00		\$100.00	ψου, 102
Units	0.00	each	\$30,802.24	\$0
Electrical Conduit & Wire	399.53	If	\$9.41	\$3,758
Allowance for Misc Items	5%		\$201,856	\$10,093
			Ψ <u></u> -01,000	
	J/0			\$211 949
Subtotal	376			\$211,949
Subtotal		UNIT	\$/UNIT	
Subtotal USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Subtotal USER DEFINED ESTIMATE ITEMS: Item: 1 Description:	QUANT 0.00	UNIT	0.00	TOTAL COST \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description	QUANT 0.00 0.00		0.00	TOTAL COST \$0 \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description	QUANT 0.00 0.00 0.00		0.00 0.00 0.00	TOTAL COST \$(
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description	QUANT 0.00 0.00 0.00 0.00		0.00 0.00 0.00 0.00	TOTAL COST \$(
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description	QUANT 0.00 0.00 0.00 0.00 0.00		0.00 0.00 0.00 0.00 0.00	TOTAL COST \$(
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description	QUANT 0.00 0.00 0.00 0.00 0.00 0.00		0.00 0.00 0.00 0.00 0.00 0.00	**TOTAL COST
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description	QUANT 0.00 0.00 0.00 0.00 0.00 0.00		0.00 0.00 0.00 0.00 0.00 0.00	**TOTAL COST
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description	QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.		0.00 0.00 0.00 0.00 0.00 0.00 0.00	**TOTAL COST
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description	QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	**TOTAL COST
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 9 Description	QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	TOTAL COST \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 10 Description	QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	TOTAL COST \$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description	QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	TOTAL COST \$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 11 Description Item 12 Description	QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	TOTAL COST \$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description Item 13 Description Item 14 Description	QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	TOTAL COST \$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description Item 13 Description Item 14 Description Item 15 Description	QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	TOTAL COST \$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description Item 13 Description	QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	TOTAL COST \$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(\$(
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description Item 14 Description Item 15 Description Item 15 Description	QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	TOTAL COST \$(\$(\$() \$() \$() \$() \$() \$() \$() \$()
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description Item 13 Description Item 14 Description Item 15 Description	QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	TOTAL COST \$(\$(\$() \$() \$() \$() \$() \$() \$() \$()
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description Item 14 Description Item 15 Description Subtotal	QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	TOTAL COST \$(\$(\$() \$() \$() \$() \$() \$() \$() \$()
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description Item 14 Description Item 15 Description Item 15 Description	QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	User Over-	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	TOTAL COST \$(\$(\$() \$() \$() \$() \$() \$() \$() \$()
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description Item 14 Description Item 15 Description Subtotal ALLOWANCES:	QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	User Over-write	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description Item 14 Description Item 15 Description Subtotal	QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	User Over-	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	TOTAL COST

2/1/2010

Horizontal PS New

Printed by: tmyers

Facility Cost	800	Total Pump HP	\$4,385.06	\$3,508,051
Electrical Allowance	5%		\$3,508,051	\$175,403
Mechanical Allowance	2%		\$3,508,051	\$70,161
4:19 PM	 00/	Name and Sandards Sandards	A0 500 054	\$70.46

Root River Return Flow

Pipeline			Waukesha WWTP	
Segment	Miles	Diameter	elevation at watershed divide	
Α	15.5	36	Discharge at Root River	
			Segment A Piping K	
			Segment B Piping K	
			Piping Friction Factor	
			Power cost, \$/kw	

Power efficiency

GHG, lbs CO2/Mwhr

794	Google earth elevation at WWTP
895	
705	
10.35	(one K=1.0 entr, twenty K=0.30 90

0.06

0.9

1859

one K=1.0 entr, twenty K=0.30 90-elb, 5 open bfly valve K=0.25,one bend thru rdcr tee K=1.80+0.3) 8.15 (one flow thru tee K=0.6, ten K=0.3 90-elb, one bend thru tee K=1.80, five open bfly valve K=0.25, one exit K=0.5) 0.015

ADD	
MDD	

		Α	Α	Α	Total	Total					Annual		Annual
Supply	Supply	Pipeline	Pipeline	Piping	FW Piping	Static					Power	Annual	GHG
Flow Rate	Flow Rate	Velocity	Frict Loss	Misc K Loss	Fric Loss	Loss	TDH	TDH	Power	Power	Usage	Power Cost	Produced
mgd	gpm	ft/s	ft	ft	ft	ft	ft	psi	hp	kw	kw	\$	tons CO2
mgd 10	gpm 6940		ft 30.34	ft 0.77		ft 102	ft 133	psi 57	hp 332	kw 275	kw 2413060		tons CO2 2243

WWTP Effluent Pump Station

Approx. Topo EL

Design TDH 163 ft must be designed to pump up to the watershed divide;

70 psi

No. of pumps 3 3 active, 1 standby

Capacity, mgd (each) 3.33

HP (each) 136 nominal 150 hp

Drive variable frequency

Root River Return Flow

Pipeline	
Segment	Diameter
Α	36
В	36

Unit cost	\$/dia-in	12

Mile	Cost	Comments
		0.75 mi follows river, crosses Prairie ave, Marshall and Dunbar,
1	\$2,389,306	0% 0.25 under alley to NW ave
•	# 0.000.000	Cross Maple, Grand, Barstow, East, Barney, Hartwell, crossing of E
2	\$2,389,306	0% Broadway (major street); end at Oakland
0	# 0.000.005	follows path (cross Greendale and Frederick), cross East Side
3	\$3,290,285	0% bypass HYW 59 (MAJOR) Follows New Berlin trail/utility corridor, cross Springdale; also a
		stream crossing, some forest (assume 20%); ends near stream
4	\$1,836,971	70% crossing
4	φ1,030,971	Follows trail, open country mostly, some forest (assume 30%),
		wetlands for 0.5 mi; assume groundwater; ends near wetlands/open
5	\$1,555,159	70% water pond
6	\$1,247,001	70% Follows trail, open country mostly, some forest (assume 10%)
Ü	Ψ1,217,001	Begins near Calhoun, one stream crossing; becoming urban again
		but still follows trail and is mostly open, crosses Calhoun and ends
7	\$1,700,456	70% near Moorland, assume 10% forest
8	\$1,181,537	70% Still in trail, no crossings; very open; Ends near Sunnyslope Rd
9	\$1,181,537	70% Still in trail, no crossings; very open; Ends at 124th st
		Going south, 0.7 mi under 124th st. 0.3 mi along Root River pkwy;
10	\$2,584,328	ends near Cleveland Ave.
		Follows Root River Parkway, crosses Oklahoma (major crossing),
11	\$2,623,104	ends near S 116th St
		Follows Root River Parkway 0.2 mi, crosses Morgan, follows oak
		leaf bike trail, crosses Beloit Rd, ends between Beloit Rd and S
12	\$1,806,520	108th St
		Follows Oak Leaf Bike Trail, crosses Hwy 100, crosses Coldspring,
13	\$2,431,503	ends at Hwy 45
4.4	00 040 500	In Root River pkwy, cross HWY 45, Layton Ave, ends at Forest
14	\$3,649,536	Home Ave
4.5	#0.000.404	In Root River pkwy, crosses Forest Home Ave (Hwy 24) and 84th
15	\$2,623,104	st, discharges to Root River
subtotal	\$32,489,652	

	Pipeline Construction Difficulty	
Alignment	Factors	Seg A cost
Category	(source: CPES	\$/If
Open country	0.74	320
Low urban	1.00	432
Medium urban	1.19	514
High urban	1.37	592
Groundwater	1.30	562
Forest	1.15	497
Gravel roads	0.85	367
Creek crossing	2.00	864
HWY crossing	4.00	1728

Root River Return Flow

40 =, 100,000		· ·po·····oo
\$3,249,000		10% allowance for pipeline valves & appurtenances
\$35,739,000		Pipeline Construction Cost
\$3,508,000		WWTP Effluent Pump Station
\$39,247,000		Conveyance System Construction Cost
	\$1,178,000	3% markup for Bonds & Insurance
	\$1,963,000	5% markup for Mob/Demob
	\$3,392,000	8% markup for Contractors Overhead
	\$1,696,000	4% markup for Contractors profit
	\$11,869,000	25% Contingency
\$20,098,000		Subtotal Markups and Contingency
\$59,345,000		Total Project Construction Costs
	4,748,000	8% allowance for pipeline engineering and design
	7,122,000	12% allowance for permitting, legal and administration
	4,748,000	8% allowance for pipeline engr services during construction
\$16,618,000		Subtotal Other Project Costs
\$75,963,000		GRAND TOTAL PROJECT COST

Pipelines

\$32,490,000

Lake Michigan Direct Return Flow

Pipeline			Waukesha WWTP	794	
Segment	Miles	Diameter	elevation at watershed divide	895	
Α	22.0	36	Discharge at Lake Michigan	580	
			Segment A Piping K	10.35	(one K=1.0 entr, twenty K=0.30 90-elb, 5 open bfly valve K=0.25, one bend thru rdcr tee K=1.80+0.3)
			Segment B Piping K	8.15	(one flow thru tee K=0.6, ten K=0.3 90-elb, one bend thru tee K=1.80, five open bfly valve K=0.25, one exit K=0.5)
			Piping Friction Factor	0.015	
			Power cost, \$/kw	0.06	
			Power efficiency	0.9	
			GHG, lbs CO2/Mwhr	1859	

ADD MDD

		Α	Α	Α	Total	Total					Annual		Annual
Supply	Supply	Pipeline	Pipeline	Piping	FW Piping	Static					Power	Annual	GHG
Flow Rate	Flow Rate	Velocity	Frict Loss	Misc K Loss	Fric Loss	Loss	TDH	TDH	Power	Power	Usage	Power Cost	Produced
mgd	gpm	ft/s	ft	ft	ft	ft	ft	psi	hp	kw	kw	\$	tons CO2
10	6940	2.19	43.07	0.77	44	102	146	63	364	302	2644286	\$158,657	2458
14	9716	3.06	84.41	1.51	86	102	188	81	658	545	4772636	\$286,358	4436

WWTP Effluent Pump Station

Approx. Topo EL 794

Design TDH 188 ft must be designed to pump up to the watershed divide;

81 psi

No. of pumps 3 3 active, 1 standby

3.33

Capacity, mgd (each) HP (each) 157 nominal 200 hp

Drive variable frequency

Lake Michigan Direct Return Flow

Pipeline	
Segment	Diameter
Α	36
В	36

Unit cost	\$/dia-in	12

Mile	Cost	Comments
		0.75 mi follows river, crosses Prairie ave, Marshall and Dunbar, 0.25 under
1	\$2,389,306	0% alley to NW ave
		Cross Maple, Grand, Barstow, East, Barney, Hartwell, crossing of E
2	\$2,389,306	0% Broadway (major street); end at Oakland
		follows path (cross Greendale and Frederick), cross East Side bypass HYW
3	\$3,290,285	0% 59 (MAJOR)
		Follows New Berlin trail/utility corridor, cross Springdale;also a stream
4	\$1,836,971	70% crossing, some forest (assume 20%); ends near stream crossing
		Follows trail, open country mostly, some forest (assume 30%), wetlands for
5	\$1,555,159	70% 0.5 mi; assume groundwater; ends near wetlands/open water pond
6	\$1,247,001	70% Follows trail, open country mostly, some forest (assume 10%)
		Begins near Calhoun, one stream crossing; becoming urban again but still
		follows trail and is mostly open, crosses Calhoun and ends near Moorland,
7	\$1,700,456	70% assume 10% forest
8	\$1,181,537	70% Still in trail, no crossings; very open; Ends near Sunnyslope Rd
9	\$1,181,537	70% Still in trail, no crossings; very open; Ends at 124th st
10	\$2,059,707	Follows Trail, crosses S 16th St, ends at Hwy 100
11	\$2,431,503	Follows Trail, crosses Hwy 45, ends at S 92nd St
12	\$2,714,342	Follows train tracks, crosses National, 82nd, 80th, ends at 76th
13	\$2,714,342	Follows train tracks, crosses 73rd, 71st, 68th, Becher, ends at Beloit Rd
14	\$2,714,342	Follows train tracks, ends at 43rd st
15	\$2,714,342	Follows train tracks, ends at 27th st
16	\$2,714,342	Follows train tracks, ends at 16th st
17	\$2,714,342	Follows train tracks, ends at Hwy 794
		Follows train tracks, crosses Hwy 794, Oklahoma, Chase, Howell, Whitman,
18	\$2,714,342	ends near Clement
19	\$2,714,342	Follows train tracks, ends near Lake pkwy
20	\$2,714,342	Follows train tracks, crosses Lake pkwy, Howard, ends at KK
21	\$2,714,342	Follows KK then turns east on Lunham and discharges to Lake
subtotal	\$48,406,191	

	Pipeline Construction Difficulty	
Alignment	Factors	Seg A cost
Category	(source: CPES	\$/If
Open country	0.74	320
Low urban	1.00	432
Medium urban	1.19	514
High urban	1.37	592
Groundwater	1.30	562
Forest	1.15	497
Gravel roads	0.85	367
Creek crossing	2.00	864
HWY crossing	4.00	1728

Lake Michigan Direct Return Flow

Pipelines		\$48,407,000
10% allowance for pipeline valves & appurtenances		\$4,841,000
Pipeline Construction Cost		\$53,248,000
WWTP Effluent Pump Station		\$3,508,000
Conveyance System Construction Cost		\$56,756,000
3% markup for Bonds & Insurance	\$1,703,000	
5% markup for Mob/Demob	\$2,838,000	
8% markup for Contractors Overhead	\$4,904,000	
4% markup for Contractors profit	\$2,452,000	
25% Contingency	\$17,164,000	
Subtotal Markups and Contingency		\$29,061,000
Total Project Construction Costs		\$85,817,000
8% allowance for pipeline engineering and design	6,866,000	
12% allowance for permitting, legal and administration	10,299,000	
8% allowance for pipeline engr services during construction	6,866,000	
Subtotal Other Project Costs		\$24,031,000
GRAND TOTAL PROJECT COST		\$109,848,000

Alternative 4: Lake Michigan and Shallow Aquifer

Alternative 4 -Lake Michigan and Shallow Aquifers						
	:					
Shallow Aquifer Water Treat	lment Plant		\$29,864,000			
·						
Shallow Aquifer Wellfield			\$12,800,000			
 Shallow Aquifer Supply Pipe	eline to Waukes	ha	\$ 18,573,000			
Distribution System Improve	ements		\$ 8,465,000			
Wastewater Force Main			\$3,332,000			
Subtotal Shallow Aquifer Co	netruction Cost		\$73,034,000			
		<u>.</u>	Ψε 0,004,000			
Lake Michigan Supply Pipel	ine		\$25,682,000			
Parkway Booster Station			\$5,282,822			
	01.11					
Return Flow Pipeline/Pump	Station		\$19,172,686			
Subtotal Lake Michigan Sup	ply		\$50,137,508			
Subtotal Construction Cost		·	\$123,171,508			
3% markup for Bonds & Insur	ance	\$3,696,000				
5% markup for Mob/Demob		\$6,159,000				
8% markup for Contractors O	verhead	\$10,643,000				
4% markup for Contractors pr	ofit	\$5,322,000				
25% Contingency		\$37,248,000				
		ψυ1,240,000				
Subtotal Markups and Cont	ngency		\$63,068,000			
Total Project Construction (Costs		\$186,239,508			
		44.000.000				
8% allowance for engineering	and design	14,900,000				
12% allowance for permitting,	legal and admin	22,349,000				
8% allowance for engr service	es during constru	⁻ 14,900,000				
Subtotal Other Project Cost	s		\$52,149,000			
TOTAL PROJECT CAPITAL	COST		\$238,000,000			

-	4:41 PM A	UM UII Parama	tric Cost <u>E</u> stimating <u>S</u> ystem (CPI	
1 2	<u>U</u>	HZW HILL <u>F</u> aranie	tiric cost <u>L</u> stillating <u>S</u> ystem (Cl 1	_3)
3		FACILITIES DESIG	ON & CONSTRUCTION COST MODULE	
4				
5	<u>File Version:</u>	1/5/2010 Click for CPES QA/QC	To Concrete Wall Thickness Help To Cost Summary Matrix To Unit Cost Database	
6				
7				
8		ect Name:	Waukesha WTP	
10		ect Number: ect Manager:	Linda Mohr	- -
1		nator: ect Description:	Jason Curl Fox River Alluvium and Shallow Groundwater	Roundup to the
2	rioje	ect Description.	TOX MYOT AMUVANITURIS GRADIOTY GRADIANGE	nearest:
3		ect Location (City):	Milwaukee WISCONSIN	\$1,000
5		ect Location (State): ect Location (Country):	USA	_
6	Cons	struction Start (Month):	Jan	This Report is for INTERNAL Distribution
7		struction Start (Year):	2011	-
8 9	Cons Mid-l	struction Duration (months): Point of Construction:	Jan/2012	This Report is for EXTERNAL Distribution
20	Item	Is This Facility Included in	SCOPE OF PROJECT	Cost
21		Project? (Yes or No) Yes	Inline:Rapid Mix: RMX	1 \$623,000
3		Yes	Flocculation: FLOC	\$1,527,000
4	\	Yes	Lamella Clarifier: LAM	\$2,367,000
5		Yes	Filters: FILT	\$5,024,000
6		Yes	Surge Basin-Decanter: BWW	\$1,535,000
7	•	No.	UV Disinfection: UVD	\$0
8		Yes No	Concrete Clearwell: FWT Steel Clearwell: FWT	\$1,313,000 \$0
9		No	In-Plant PS: FWPS	\$0
1	•	Yes	Vertical Turbine PS: FWPS	\$3,042,000
2		Yes	Filter BW PS: BWSPS	\$1,101,000
3		Yes	U.D. Facility: GEN	\$0
34		Yes	Liquid:Chemical: FeCl3	\$393,000
5		Yes	Liquid Chemical: NaOCI Liquid Chemical: FLUOR	\$296,000 \$186,000
36		Yes Yes	Liquid Chemical: POLYPHOS	\$186,000 \$185,000
37 38		Yes	O&M Building: OMB	\$2,849,000
39	·			
40	SUBTOTAL -	PROJECT COST		\$20,441,000
41	ADDITIONAL	DDO IECT COSTS.		
42	ADDITIONAL I Demolitic	PROJECT COSTS:	0%	\$0
43 44	Overall S		10%	\$2,045,000
45		nputer System	5%	\$1,023,000
46	Yard Elec		.7%	\$1,493,000
47	Yard Pipi	ng	14%	\$2,862,000
48	<i>UD #1 D</i> e	fault Description	0%	\$0
	UD 40 D-	stault Description	0%	en.
49 50		fault Description fault Description	0%	\$0 \$0
υ		with Additional Project Costs		\$27,864,000

	55 PM B	С	D	E	F
132					
133	<u>Description</u>	Quantity	<u>Unit</u>	<u>\$/Unit</u>	Total Cost
134	Santaga Banga merekan terdigi da da majar menangganggan menanggan da menanggan da menanggan da menanggan da me				
	SITEWORK:				
136	Excavation	140.81 83.82	CY	\$ 5.35 \$ 40.56	\$754 \$3,399
137 138	Imported Structural Backfill Native Backfill	0.00	CY	\$ 6.58	\$3,399 \$0
139	Haul Excess	140.81	CY	\$ 6.58	\$927
140	Allowance for Misc Items	5%	. :	\$ 5,079.48	\$254
141	Subtotal				\$5,333
142		-		,	·
	CONCRETE:	9.31	CY	\$ 345.93	\$3,220
144 145	Wall Footing Stem Walls	0.00	CY	\$ 683.50	\$3,220
146	Slab on Grade	27.50	CY	\$ 345.93	\$9,513
147	Pipe Supports	14.00	EA	\$ 438.67	\$6,141
148	Electrical Room Slab on Grade	2.13	CY	\$ 345.93	\$737
149	Allowance for Misc Items	5%	1	\$19,613	\$981
150	Subtotal				\$20,593
151			1		
	MASONRY:	Moderate 864.20	SF	\$ 131.60	\$113,730
153 154	CMU Building Electrical Room	57.56	SF	\$ 131.60	\$7,574
155	Subtotal	921.76		1	\$121,304
156	Odd Codd.				
	EQUIPMENT:				
ŀ					
	•				
457					
157 158	Inline Mixer (20-inch)	2.00	EA	\$ 27,983.82	\$55,968
159	Allowance for Misc Items	10%		\$ 55,967.63	\$5,597
160	Subtotal				\$61,564.39
161					
162	INSTRUMENTS & CONTROLS:	-			
163	Instruments	0.00		A 40.574.04	001110
164	Mag Meter (12-inch)	2.00	EA EA	\$ 10,574.21 \$ 2,093.45	\$21,148 \$2,093
165 166	pH / Temperature Turbidity	1.00	EA	\$ 3,133.05	\$3,133
167	Streaming Current Detector	0.00	EA	\$ 10,680.85	\$0,100
168	UV Absorbance	1.00	EA	\$ 21,794.63	\$21,795
169	Conductivity	. 0.00	EA	\$ 2,057.84	\$0
170	Sample Panels	2.00	EA	\$ 3,948.04	\$7,896
171	Isolation Valve Actuators	4.00	each	\$5,064.93	\$20,260
172	Flow Control Valve Actuators	2.00	each	\$5,064.93	\$10,130
173	Number of Analog I/O Counts	12.00 33.60	each .	\$208.82 \$49.46	\$2,506
174 175	Number of Digital I/O Counts Number of PLC's	1.00	each	\$10,331.10	\$1,662 \$10,331
176	I&C Conduit & Wire	552.52	If	\$9.53	\$5,265
177	Allowance for Misc Items	10%	·····	\$ 106,218.79	\$10,622
178	Subtotal				\$116,841
179					
180	CONVEYING SYSTEMS:	ļ			
181	Monorail Hoist (3 Ton)	1.00	EA	\$ 55,749.49	\$55,749
182	Hoist Rail	105.17 10%	LF	\$ 28.96 \$ 58,794.83	\$3,045 \$5,879
183 184	Allowance for Misc Items Subtotal	10/6	 	ψ 50,784.03	\$5,879 \$64,674
185	Subjuidi				φυ-1,074
186	MECHANICAL:	-			
187	Pipe:				
\Box	Rapid Mix Pipe (20-inch, RW, Exposed ,Steel ,Cement	33.33	If	\$365.28	\$12,176
188	Mortar ,Paint)	1	I	1	!

- 1 4	55 PM B	С	D	E	F
	Flow Control Pipe (12-inch, FCP, Exposed ,Steel ,Cement	16.00	lf	\$219.17	\$3,507
189	Mortar ,Paint)				
190	Elbows:				
191	Rapid Mix Pipe (20-inch)	4.00	each	\$2,199.87	\$8,799
192	Valves:				
193	Rapid Mix Isolation Valves (20-inch)	4.00	each	\$16,089.26	\$64,357
194	Flow Control Valve (12-inch)	2.00	each	\$9,653.56	\$19,307
195	Allowance for Misc Items	10%		\$108,146.20	\$10,815
196	Subtotal				\$118,961
197	Gabota				
198	ELECTRICAL:		· · · · · · · · · · · · · · · · · · ·		
199	MCC's				
200	Sections	5.00	each	\$6,783.10	\$33,915
201	AFD's				
202	Mechanical Mixers (3 hp each)	0.00	each	\$4,494.79	\$0
203	Switchgear	·			
204	Units	0.00	each	\$31,202.24	\$C
205	Electrical Conduit & Wire	85.00	lf	\$9.53	\$810
206	Allowance for Misc Items	10%		\$34,725	\$3,473
207	Subtotal	1=10		, , , , , , , , , , , , , , , , , , ,	\$38,198
208	Subjected				
209	USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
210	Item 1 Description	0.00		0.00	\$0
211	Item 2 Description	0.00		0.00	\$C
212	Item 3 Description	0.00	Televation trades for	0.00	\$C
213	Item 4 Description	0.00	azanet Marinez (a. 1818)	0.00	\$C
214	Item 5 Description	0.00	Method Coet School greaters as Seese Association (CAAS) at the	0.00	\$0
215	Item 6 Description	0.00		0.00	\$C
216	Item / Description	0.00	Double Committee of the committee of the	0.00	\$C
217	Item 8 Description	0.00		0.00	\$0
-		0.00	000011000000000000000000000000000000000	0.00	\$0
218	The state of the s	0.00		0.00	\$0
219	Item 10 Description	0.00	22 C.	0.00	\$C
220	AND	0:00	9.00 St. 10.00	0.00	\$C
221	Item 12 Description Item 13 Description	0.00		0.00	\$0
222	10 10 10 10 10 10 10 10 10 10 10 10 10 1	0.00		0.00	\$0
223		0.00		0.00	φς (\$C
224	and the second s	19.00	APPER CONTROL AND APPEARED	(15) (8) (0.00 (8) (8)	\$0
225	Subtotal				Ψυ
226					\$E 47.460
227	Subtotal	N .			\$547,469
228			Haar Over write		
229	ALLOWANCES:	2.09/	User Over-write	6000 404	640.446
230	Finishes Allowance	2.0%		\$622,124	\$12,442
231	1 & C Allowance	5%	Series (Anna Province Ass.) Grand Call	\$622,124	\$31,106
232	Mechanical Allowance	0%		\$622,124	\$0
233	Electrical Allowance	5%		\$622,124	\$31,106
234		40.000.000	600		***
235	Facility Cost	12,000,000	GPD	\$0.05	\$622,124

188 Description 189	Quantity	D	E	F
189 <u>Description</u>	Quantity	SERVICE CONTRACTOR		The second secon
189	i unantity	348 349 498 600 000 000	A CONTRACTOR OF THE PARTY OF TH	
		<u>Unit</u>	\$/Unit	<u>Total Cost</u>
11801				
191 SITEWORK:				
192 Excavation	3,805	CY	\$5.35	\$20,366
193 Imported Structural Backfill	617	CY	\$40.56	\$25,021
194 Native Backfill	1,032 2,773	CY	\$6.58	\$6,793
195 Haul Excess	5%	CY	\$6.58 \$70,423.45	\$18,244 \$3,521
196 Allowance for Misc Items 197 Subtotal	370		φ10,423.43	\$73,945
198 Subtotal				ψ10,040
199 CONCRETE:				
200 Influent Channel:	-			,
201 Foundation	42	CY	\$382.16	\$16,188
Channel Walls (Only 3 walls are covered here. The 4th v	vall 70	CY	\$683.50	\$47,563
202 is covered in the Flocc Basin.)				
203 Elevated Slab	25	CY	\$1,088.69	\$27,007
204 Floce Basin	218	CY	\$382.16	#02.222
205 Foundation Basin Walls (Only 3 walls are covered here. The Effluen		CY	\$683.50	\$83,323 \$81,280
wall is covered in the Influent Channel of the Lamella	113	01	\$003.30	Ψ01,200
206 Clarifier)				
207 Under Baffle Wall	40	CY	\$683.50	\$27,065
208 Over Baffle Wall	40	CY	\$683.50	\$27,065
		CY	\$1,088.69	\$88,341
	81	,0,	φ1,000.00	γου,υ-ι
209 Elevated Slab	81 42	EA	\$0.00	\$0
209 Elevated Slab	42	EA	\$0.00	\$0
209 Elevated Slab 210 Flocc Bearing Supports	42		\$0.00 \$345.93	\$0 \$1,435
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items	42	EA	\$0.00	\$0 \$1, 435 \$19,963
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal	42	EA	\$0.00 \$345.93	\$0 \$1,435
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215	42 4 5%	EA CY	\$0.00 \$345.93	\$0 \$1, 435 \$19,963
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY:	42 4 5% Moderate	EA CY	\$0.00 \$345.93 \$399,265.97	\$1,435 \$19,963 \$419,229
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building	42 4 5% Moderate 4,312	EA CY SF	\$0.00 \$345.93 \$399,265.97 \$131.60	\$1,435 \$19,963 \$419,229 \$567,498
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room	42 4 5% 8 Moderate 4,312 112	EA CY	\$0.00 \$345.93 \$399,265.97	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal	42 4 5% Moderate 4,312	EA CY SF	\$0.00 \$345.93 \$399,265.97 \$131.60	\$1,435 \$19,963 \$419,229 \$567,498
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220	42 4 5% 8 Moderate 4,312 112	EA CY SF	\$0.00 \$345.93 \$399,265.97 \$131.60	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220 221 METALS:	42 4 5% 8 Moderate 4,312 112	EA CY SF SF	\$0.00 \$345.93 \$399,265.97 \$131.60	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220	42 4 5% Moderate 4,312 112 4,424 233 0	EA CY SF SF LF LF	\$0.00 \$345.93 \$399,265.97 \$131.60 \$131.60 \$72.38 \$72.38	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220 221 METALS: 222 Aluminum Handrail 223 Additional Handrail with NO Building 224 Stairs (1 per basin)	42 4 5% Moderate 4,312 112 4,424 233 0 16	EA CY SF SF	\$0.00 \$345.93 \$399,265.97 \$131.60 \$131.60 \$72.38 \$72.38 \$394.80	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220 221 METALS: 222 Aluminum Handrail 223 Additional Handrail with NO Building 224 Stairs (1 per basin) 225 Allowance for Misc Items	42 4 5% Moderate 4,312 112 4,424 233 0	EA CY SF SF LF LF	\$0.00 \$345.93 \$399,265.97 \$131.60 \$131.60 \$72.38 \$72.38	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220 221 METALS: 222 Aluminum Handrail 223 Additional Handrail with NO Building 224 Stairs (1 per basin) 225 Allowance for Misc Items	42 4 5% Moderate 4,312 112 4,424 233 0 16	EA CY SF SF LF LF	\$0.00 \$345.93 \$399,265.97 \$131.60 \$131.60 \$72.38 \$72.38 \$394.80	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220 221 METALS: 222 Aluminum Handrail 223 Additional Handrail with NO Building 224 Stairs (1 per basin) 225 Allowance for Misc Items 226 Subtotal	42 4 5% Moderate 4,312 112 4,424 233 0 16	EA CY SF SF LF LF	\$0.00 \$345.93 \$399,265.97 \$131.60 \$131.60 \$72.38 \$72.38 \$394.80	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220 221 METALS: 222 Aluminum Handrail 223 Additional Handrail with NO Building 224 Stairs (1 per basin) 225 Allowance for Misc Items 226 Subtotal 227 228 WOODS & PLASTICS:	42 4 5% Moderate 4,312 112 4,424 233 0 16 10%	EA CY SF SF LF LF RISERS	\$131.60 \$131.60 \$131.60 \$123.8 \$72.38 \$72.38 \$394.80 \$23,124.34	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220 221 METALS: 222 Aluminum Handrail 223 Additional Handrail with NO Building 224 Stairs (1 per basin) 225 Allowance for Misc Items 226 Subtotal 227 228 WOODS & PLASTICS: 229 FRP Weir	42 4 5% Moderate 4,312 112 4,424 233 0 16 10%	EA CY SF SF SF LF LF RISERS	\$131.60 \$131.60 \$131.60 \$123.48 \$72.38 \$72.38 \$394.80 \$23,124.34	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220 221 METALS: 222 Aluminum Handrail 223 Additional Handrail with NO Building 224 Stairs (1 per basin) 225 Allowance for Misc Items 226 Subtotal 227 228 WOODS & PLASTICS: 229 FRP Weir 230 FRP Ladder	42 4 5% Moderate 4,312 112 4,424 233 0 16 10%	EA CY SF SF LF LF RISERS	\$131.60 \$131.60 \$131.60 \$131.60 \$23,124.34 \$32.90 \$1,137.15	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220 221 METALS: 222 Aluminum Handrail 223 Additional Handrail with NO Building 224 Stairs (1 per basin) 225 Allowance for Misc Items 226 Subtotal 227 228 WOODS & PLASTICS: 229 FRP Weir 230 FRP Ladder 231 Allowance for Misc Items	42 4 5% Moderate 4,312 112 4,424 233 0 16 10%	EA CY SF SF SF LF LF RISERS	\$131.60 \$131.60 \$131.60 \$123.48 \$72.38 \$72.38 \$394.80 \$23,124.34	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437 \$183 \$4,549 \$237
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220 221 METALS: 222 Aluminum Handrail 223 Additional Handrail with NO Building 224 Stairs (1 per basin) 225 Allowance for Misc Items 226 Subtotal 227 228 WOODS & PLASTICS: 229 FRP Weir 230 FRP Ladder 231 Allowance for Misc Items 232 Subtotal	42 4 5% Moderate 4,312 112 4,424 233 0 16 10%	EA CY SF SF SF LF LF RISERS	\$131.60 \$131.60 \$131.60 \$131.60 \$23,124.34 \$32.90 \$1,137.15	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220 221 METALS: 222 Aluminum Handrail 223 Additional Handrail with NO Building 224 Stairs (1 per basin) 225 Allowance for Misc Items 226 Subtotal 227 228 WOODS & PLASTICS: 229 FRP Weir 230 FRP Ladder 231 Allowance for Misc Items 232 Subtotal	42 4 5% Moderate 4,312 112 4,424 233 0 16 10%	EA CY SF SF SF LF LF RISERS	\$131.60 \$131.60 \$131.60 \$131.60 \$23,124.34 \$32.90 \$1,137.15	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437 \$183 \$4,549 \$237
Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220 221 METALS: 222 Aluminum Handrail 223 Additional Handrail with NO Building 224 Stairs (1 per basin) 225 Allowance for Misc Items 226 Subtotal 227 228 WOODS & PLASTICS: 229 FRP Weir 230 FRP Ladder 231 Allowance for Misc Items 232 Subtotal 233 234 THERMAL & MOISTURE PROTECTION: 235 Concrete Liner	42 4 5% Moderate 4,312 112 4,424 233 0 16 10% 6 4 5%	EA CY SF SF SF LF LF RISERS	\$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437 \$183 \$4,549 \$237 \$4,969
209 Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220 221 METALS: 222 Aluminum Handrail 223 Additional Handrail with NO Building 224 Stairs (1 per basin) 225 Allowance for Misc Items 226 Subtotal 227 228 WOODS & PLASTICS: 229 FRP Weir 230 FRP Ladder 231 Allowance for Misc Items 232 Subtotal 233 234 THERMAL & MOISTURE PROTECTION: 235 Concrete Liner 236 Allowance for Misc Items	42 4 5% Moderate 4,312 112 4,424 233 0 16 10% 6 4 5%	EA CY SF SF SF LF LF RISERS	\$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437 \$183 \$4,549 \$237 \$4,969
Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220 221 METALS: 222 Aluminum Handrail 223 Additional Handrail with NO Building 224 Stairs (1 per basin) 225 Allowance for Misc Items 226 Subtotal 227 228 WOODS & PLASTICS: 229 FRP Weir 230 FRP Ladder 231 Allowance for Misc Items 232 Subtotal 233 234 THERMAL & MOISTURE PROTECTION: 235 Concrete Liner 236 Allowance for Misc Items	42 4 5% Moderate 4,312 112 4,424 233 0 16 10% 6 4 5%	EA CY SF SF SF LF LF RISERS	\$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437 \$183 \$4,549 \$237 \$4,969
Elevated Slab 210 Flocc Bearing Supports 211 Electrical Room 212 Slab on Grade 213 Allowance for Misc Items 214 Subtotal 215 216 MASONRY: 217 CMU Building 218 Electrical Room 219 Subtotal 220 221 METALS: 222 Aluminum Handrail 223 Additional Handrail with NO Building 224 Stairs (1 per basin) 225 Allowance for Misc Items 226 Subtotal 227 228 WOODS & PLASTICS: 229 FRP Weir 230 FRP Ladder 231 Allowance for Misc Items 232 Subtotal 233 234 THERMAL & MOISTURE PROTECTION: 235 Concrete Liner 236 Allowance for Misc Items 237 Subtotal	42 4 5% Moderate 4,312 112 4,424 233 0 16 10% 6 4 5%	EA CY SF SF SF LF LF RISERS	\$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437 \$183 \$4,549 \$237 \$4,969
Elevated Slab Ploce Bearing Supports Electrical Room Slab on Grade Allowance for Misc Items MASONRY: CMU Building Electrical Room Subtotal Electrical Room METALS: Aluminum Handrail Additional Handrail with NO Building Stairs (1 per basin) Allowance for Misc Items Allowance for Misc Items Electrical Room The Building Place of Misc Items Electrical Room Place of Misc Items Electrical Room Place of Misc Items Electrical Room Electrical Room	42 4 5% Moderate 4,312 112 4,424 233 0 16 10% 6 4 5%	EA CY SF SF SF LF LF RISERS	\$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437 \$183 \$4,549 \$237 \$4,969
Elevated Slab Ploce Bearing Supports Electrical Room Slab on Grade Allowance for Misc Items MASONRY: CMU Building Electrical Room Subtotal Electrical Room METALS: Aluminum Handrail Additional Handrail with NO Building Stairs (1 per basin) Allowance for Misc Items Allowance for Misc Items Electrical Room The Building Th	42 4 5% Moderate 4,312 112 4,424 233 0 16 10% 6 4 5%	EA CY SF SF SF LF LF RISERS	\$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60 \$131.60	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437 \$183 \$4,549 \$237 \$4,969 \$0 \$0
Elevated Slab Flocc Bearing Supports Electrical Room Slab on Grade Slab	42 4 5% Moderate 4,312 112 4,424 233 0 16 10% 6 4 5% 0 10%	EA CY SF SF SF LF LF RISERS LF EA	\$345.93 \$399,265.97 \$131.60 \$131.60 \$72.38 \$72.38 \$72.38 \$394.80 \$23,124.34 \$32.90 \$1,137.15 \$4,732.07	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437 \$183 \$4,549 \$237 \$4,969
Elevated Slab Electrical Room	42 4 5% Moderate 4,312 112 4,424 233 0 16 10% 6 4 5% 0 10% 0 10%	EA CY SF SF SF LF LF RISERS LF EA	\$345.93 \$399,265.97 \$131.60 \$131.60 \$131.60 \$72.38 \$72.38 \$394.80 \$23,124.34 \$32.90 \$1,137.15 \$4,732.07	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437 \$183 \$4,549 \$237 \$4,969 \$0 \$0 \$0
Elevated Slab Electrical Room	42 4 5% Moderate 4,312 112 4,424 233 0 16 10% 6 4 5% 0 10%	EA CY SF SF LF LF RISERS LF EA EA	\$345.93 \$399,265.97 \$131.60 \$131.60 \$131.60 \$72.38 \$72.38 \$394.80 \$23,124.34 \$32.90 \$1,137.15 \$4,732.07 \$16.00 \$0.00	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437 \$183 \$4,549 \$237 \$4,969 \$0 \$0 \$0 \$0
Elevated Slab Flocc Bearing Supports Electrical Room Slab on Grade Slab	42 4 5% Moderate 4,312 112 4,424 233 0 16 10% 6 4 5% 0 10% 0 10%	EA CY SF SF SF LF LF RISERS LF EA	\$345.93 \$399,265.97 \$131.60 \$131.60 \$131.60 \$72.38 \$72.38 \$394.80 \$23,124.34 \$32.90 \$1,137.15 \$4,732.07 \$1,052.81 \$1,052.81 \$1,052.81 \$4,606.05	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437 \$183 \$4,549 \$237 \$4,969 \$0 \$0 \$0 \$0
Elevated Slab Electrical Room	42 4 5% Moderate 4,312 112 4,424 233 0 16 10% 6 4 5% 0 10% 0 10%	EA CY SF SF LF LF RISERS LF EA EA	\$345.93 \$399,265.97 \$131.60 \$131.60 \$131.60 \$72.38 \$72.38 \$394.80 \$23,124.34 \$32.90 \$1,137.15 \$4,732.07 \$16:00 \$0.00	\$1,435 \$19,963 \$419,229 \$567,498 \$14,739 \$582,238 \$16,854 \$0 \$6,270 \$2,312 \$25,437 \$183 \$4,549 \$237 \$4,969 \$0 \$0 \$0 \$0

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$\sqcup \downarrow$	B	С	D	E	F
	EQUIPMENT:				
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	·	<i>(</i> *)			į
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248	A Design of the Control of the Contr		1.5	00.00	0.0
1 1	Horizontal Paddle Wheel Flocculation Mechanism (Paddles &	0	LF	\$0.00	\$0
249	Drives) (D. 1111 A				
	Vertical Paddle Wheel Flocculation Mechanism (Paddles &	18	EA	\$0.00	\$0
250	Drives)				
1	Vertical Turbine Flocculation Mechanism (Turbines & Drives)	18	HP ;	\$1,477.12	\$26,588
251					
252	Vertical Turbine Flocculator VFD's	18	HP	\$596.65	\$10,740
253	Fabricated Slide Gate	2	EA	\$6,077.92	\$12,156
254	Allowance for Misc Items	10%		\$49,483.61	\$4,948
255	Subtotal				\$54,432
256					
257	ELECTRICAL:				
258	MCC's		,		
259	Sections	12	each	\$6,783.10	\$81,397
260	AFD's				
261	Flocculation Mixers Stage 1 (total facility) (1 hp each)	6	each	\$4,248.86	\$25,493
262	Flocculation Mixers Stage 2 (total facility) (1 hp each)	6	each	\$4,248.86	\$25,493
263	Flocculation Mixers Stage 3 (total facility) (1 hp each)	6	each	\$4,248.86	\$25,493
264	Flocculation Mixers Stage 4 (total facility) (0 hp each)	0	each	\$4,125.89	\$0
265	Flocculation Mixers Stage 5 (total facility) (0 hp each)	0	each	\$4,125.89	\$0
266	Flocculation Mixers Stage 6 (total facility) (0 hp each)	0	each	\$4,125.89	\$0
267	Switchgear				
268	Units	0	each	\$31,202.24	\$0
269	Electrical Conduit & Wire	1,752	lf	\$9.53	\$16,694
270	Allowance for Misc Items	10%		\$174,571.06	\$17,457
271	Subtotal				\$192,028
272					
273	INSTRUMENTS & CONTROLS:				
274	Instruments				
275	Level Switch	2	each	\$549.53	\$1,099
276	Number of Analog I/O Counts	43	each	\$208.82	\$9,021
277	Number of Digital I/O Counts	108	each	\$49.46	\$5,341
278	Number of PLC's	1	each	\$10,331.10	\$10,331
279	I&C Conduit & Wire	1,827	If	\$9.53	\$17,406
280	Allowance for Misc Items	10%		\$43,198.52	\$4,320
281	Subtotal				\$47,518
282	Gablotai				7 11 10 10
283	USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
284	Item 1 Description	0.00		0.00	\$0
285	Item 2 Description	0.00		0.00	\$0
286	Item 3 Description	0.00		0.00	\$0
287	Item 4 Description	0.00	Feb. 2012 (1991) 1991 (1991)	0.00	\$0
288	Item 5 Description	0.00		0.00	\$0
289	Item 6 Description	0.00		0.00	\$0
290		0.00		0.00	\$0 \$0
291	Item 8 Description	0.00		0.00	\$0
292	Item 9 Description	0.00		0.00	\$0
293	Item 10 Description	0.00		0.00	\$0
294	Item 11 Description	0.00		0.00	\$0
295	Item 12 Description	0.00		0.00	\$0
295		0.00	7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.00	\$0
	Item 14 Description	0.00		0.00	\$0
297	Item 15 Description	0.00		0.00	\$0
298		0.00	And About the About Affice of the	0.00	\$0
299 300	Subtotal				φ ₀
			<u> </u>		@4_404_047
301	Subtotal		+		\$1,404,217
302			User Over-		
1000	ALLOWANCES:				
303		<u></u>	write	<u> </u>	

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	В	 C	D	E	·F
304	Finishes Allowance	2.0%		\$1,526,323	\$30,526
305	I & C Allowance	2%		\$1,526,323	\$30,526
306	Mechanical Allowance	2%	AUTO COLORADO CO	\$1,526,323	\$30,526
307	Electrical Allowance	2%		\$1,526,323	\$30,526
308					
309	Facility Cost	 12,000,000	GPD	\$0.13	\$1,526,323

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400	В		U		E	
180				4 75 9 9 4 P	SOMEON PLANS	
101	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	10.74	\$/Unit	Total Cost
181 182		A STATE OF THE STA	3 of 1 of 5 % Tech 30 Sc W53536 in 60 h	, 54	W1200 (80 km) (8 km)	BASES OF THE CONTROL
183	SITEWORK:					
184	Excavation	4,244	CY	\$	5.35	\$22,713
185	Imported Structural Backfill	653	CY	\$	40.56	\$26,492
186	Native Backfill	1,176	CY	\$	6.58	\$7,738
187	Haul Excess	3,068 5%	CY	\$	6.58	\$20,185
188	Allowance for Misc Items	5%	<u>. </u>	+ -	\$77,128	\$3,856 \$80,985
189	Subtotal			1		Ψ00,300
190 191	CONCRETE:			+	· · · · · · · · · · · · · · · · · · ·	
192	Influent Channel:			1		· · · · · · · · · · · · · · · · · · ·
193	Foundation	37	CY	\$	382.16	\$14,026
194	Channel Walls	77	CY	\$	683.50	\$52,960
195	Elevated Slab	22	CY	\$	1,088.69	\$24,216
196	Basin					
197	Foundation	138	CY	\$	382.16	\$52,925
198		264	CY	\$	683.50	\$180,519
199		38	CY	\$	1,088.69	\$41,369
200		73	LF	\$	32.90	\$2,402
201	Effluent Channel:	37	CY	\$	382.16	644 000
202	Foundation	77	CY	\$	382.76 683.50	\$14,026 \$52,960
203	Walls Elevated Siab	22	CY	\$	1,088.69	\$24,216
20 ²			-	+*-	1,500.05	Ψ2-7,2 10
200		2	CY	\$	345.93	\$737
207	Allowance for Misc Items	5%			\$460,365	\$23,018
208				1		\$483,373
209						
210		Moderate				
211	CMU Building	4,746	SF	\$	131.60	\$624,619
212		58	SF	\$	131.60	\$7,574
213		4,804				\$632,193
214						
21		269	LF.	\$	72.38	\$19,470
210		10%	LF	\$	19,470.17	\$19,470 \$1,947
21		1070		Ψ-	15,470.11	\$21,417
218				-		Ψ2.1, +11
220		-		+		
22		4	EA	\$	1,443.20	\$5,773
22	Allowance for Misc Items	5%		\$	5,772.82	\$289
22						\$6,061
22						
22						
22	Concrete Liner	0	SF	Alson Ast	\$16.00	
22		10%			\$0.00	\$0
22						\$0
22	FOURNICHT.	 	 	 		
	EQUIPMENT:					
20					l	•
23	Lamella Clarifier [WPL * PW * #P/T *# * COS(PAR)]	25,063	PLATE AREA	\$	19.45	\$487,452
23			(SF)	1		
23	2 Fabricated Slide Gate	2	EA	\$	6,077.92	\$12,156
23	3 Hoseless Sludge Collector	4	EA	\$	66,857.09	\$267,428
23	4 Allowance for Misc Items	10%		\$	767,035.90	\$76,704
23	5 Subtotal					\$843,739
23	3					
23	7 INSTRUMENTS & CONTROLS:	 				
23		 	 			A 1 A 2 2 - 1
		4	EA each	\$	3,133.05	\$12,532
23			THREE	1	\$208.82	\$1,002.34
	Number of Analog I/O Counts	5	ouo		,200.02	I
23	Number of Analog I/O Counts					£4.400.00
24	Number of Analog I/O Counts Number of Digital I/O Counts	5 24	each		\$49.46	\$1,186.98
24 24	Number of Analog I/O Counts Number of Digital I/O Counts	24	each		\$49.46	
24 24	Number of Analog I/O Counts Number of Digital I/O Counts Number of PLC's	24	each		\$49.46 \$10,331.10	\$10,331.10
24 24 24	Number of Analog I/O Counts Number of Digital I/O Counts Number of PLC's Number of PLC's	24	each		\$49.46 \$10,331.10 \$9.53	\$10,331.10 \$3,061.92
24 24	Number of Analog I/O Counts Number of Digital I/O Counts Number of PLC's Number of PLC's Allowance for Misc Items	24 1 321	each		\$49.46 \$10,331.10	\$10,331.10

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	В	С	D	Е	F
181	<u>Description</u>	Quantity	<u>Unit</u>	<u>\$/Unit</u>	<u>Total Cost</u>
247	MECHANICAL:				
248	Solids Collection Pipe (4-inch, USL , Immersed , Steel)	317	LF	\$66.15	\$20,969
249	Solids Collection Pipe Elbows	16	each	\$439.97	\$7,040
250	Mud Valves	4	EA	\$1,974.02	\$7,896
251	Allowance for Misc Items	10%		\$35,905	\$3,590
252	Subtotal				\$39,495
253					
254	ELECTRICAL:				
255	MCC's				
256	Sections	5	each	\$6,783.10	\$33,915
257	AFD's				<u> </u>
258	Sludge Collectors (total facility) (1 hp each)	-	each	\$4,248.86	\$0
259	Switchgear				
260	Units	_	each	\$31,202.24	\$0
261	Electrical Conduit & Wire	161	LF	\$9.53	\$1,530.96
262	Allowance for Misc Items	10%		\$35,446	\$3,544.64
263	Subtotal				\$38,991
264					
265	USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
266	Item 1 Description	0.00	57522854-9-0-5	0.00	\$0
267	Item 2 Description	0.00		0.00	\$0
268	Item 3 Description	0.00		0.00	\$0
269	Item 4 Description	0:00		0.00	\$0
270	Item 5 Description	0.00		0,00	\$0
271	Item 6 Description	0.00		0.00	\$0
272	Item 7 Description	0.00	表现的1995年 在1996 第	0.00	\$0
273	Item 8 Description	0.00	September 1985	0.00	\$0
274	Item 9 Description	0.00		0.00	\$0
275	Item 10 Description	0.00		0.00	\$0
276	Item 11 Description	0.00	\$ 54455AKA\$\$VAY\$	0.00	\$0
277	Item 12 Description	0.00		0.00	\$0
278	Item 13 Description	0.00		0.00	\$0
279	tem 14 Description	0.00		-0.00	\$0
280	Item:15 Description	0.00	到第四次的经验	0.00	\$0
281	Subtotal				\$0
282					
283	Subtotal				\$2,177,181
284					
	ALLOWANCES:		User Over-write		
285		<u> </u>			
286	Finishes Allowance	2.0%		\$2,366,502	\$47,330
287	1 & C Allowance	2%		\$2,366,502	\$47,330
288	Mechanical Allowance	2%		\$2,366,502	\$47,330
289	Electrical Allowance	2%		\$2,366,502	\$47,330
290					
	Facility Cost	12,000,000	GPD	\$0.20	\$2,366,502

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317	3050 (E371)6433		e deservation de la company de la company. Ann la company de la comp		
318	Description	Quantity	Unit	\$/Unit	Total Cost
319	SITEWORK:				
320	Soil Excavation	5429.67	CY	\$5.35	\$29,061
321	Imported Structural Backfill	640.14	CY	\$40.56	\$25,961
322	Backfill	110.89	CY	\$6.58	\$730
323	Haul Excess	5318.78	CY	\$6.58	\$34,998
324	Stair Case:	020.40		er or	CO 447
325	Soil Excavation	638.48	CY	\$5.35	\$3,417
326	Imported Structural Backfill	87.11 32.89	CY	\$40.56 \$6.58	\$3,533 \$216
327	Backfill	605.59	CY	\$6.58	\$3,985
328	Haul Excess	005.59	C1	\$0.50	\$3, 3 63
329	Blower Room: Soil Excavation	81.35	CY	\$5.35	\$435
330 331	Imported Structural Backfill	102.89	CY	\$40.56	
332	Backfill	4.04	CY	\$6.58	
333	Haul Excess	77.31	CY	\$6.58	
334	Electrical Room:				
335	Soil Excavation	16.29	CY	\$5.35	\$87
336	Imported Structural Backfill	19.63	CY	\$40.56	
337	Backfill	1.46	CY	\$6.58	
338	Haul Excess	14.83	CY	\$6.58	
339	Allowance for Misc Items	5%		\$108,034.91	\$5,402
340	Subtotal				\$113,437
341					
342	CONCRETE:				
343	Filters				
	Foundation (Includes Filter, Guillet Channel, Filter	314.52	CY	\$382.16	\$120,198
	Influent/Backwash Wastewater Channel) (FSOGW *				
344	FSOGL * FOSGT) / 27 *#TF				_
345	Pipe Gallery Wall	214.75	CY	\$683.50	
346	Gullet Wall	42.53	CY	\$683.50	
347	Filter Influent / Backwash Waste Channel Walls	362.33	CY	\$683.50	
	Filter Influent / Backwash Waste Channel Lower	20.99	CY	\$1,088.69	\$22,849
348	Elevated Slab	00.00	0.7	44 000 00	400.040
	Filter Influent / Backwash Waste Channel Upper	28.33	CY	\$1,088.69	\$30,846
349		221.13	CY	6000 FO	\$454.444
350	End Walls	221.13	01	\$683.50	\$151,141
351	Common Filter Influent	55.14	CY	\$345.93	\$19,076
352	Slab on Grade Common Influent Channel Wall	179.54	CY	\$683.50	\$122,718
353 354		24.54	CY	\$1,088.69	\$26,719
355				<i>p.</i> ,,	420,1.0
356		389.93	CY	\$345.93	\$134,890
357		57.77	CY	\$1,088.69	
358		1.84	CY	\$32.90	
359					
360		55.50	CY	\$345.93	
361		29.08	CY	\$683.50	\$19,879
362					
363		46.22	CY	\$345.93	
364	Stair Case Walls	25.58	CY	\$683.50	\$17,481
365	Electrical Room				
366		3.04	CY	\$345.93	
367		9.71	CY	\$683.50	
368		5%		\$1,195,069.53	
369					\$1,254,823
370			0		-
371		Moderate	: CC	P404.00	04 000 4 4
372		7599.82	SF SF	\$131.60	
	Blower Room	691.67 82.00	SF	\$131.60 \$131.60	
	Electrical Room	02.00	O1⁻	\$131.00	\$10,791
	Subtotal				Ψ1,101,303
376 377					
3//	METALS:	<u></u>	084 (411) /	<u> </u>	<u> </u>

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H	В	С	D	E	F
378	Metal Guardrail with Pickets	415.33	LF	\$72.38	\$30,062
379	Filter Access Hatch	13.44	SF	\$109.91	
380	Stairs (FBD * 12/8)	32.00	Risers	\$394.80	\$12,634
381	Allowance for Misc Items	10%		\$42,695.87	\$4,270
382	Subtotal	·			\$46,965
383	Gabiotai				¥ 10,500
	THERMAL & MOISTURE PROTECTION:				
384		0	SF		ΦΔ
385	Concrete Liner		SF	\$16.00	\$0
386	Allowance for Misc Items	10%		\$0.00	\$0
387	Subtotal				\$0
388			· ·		
\neg	EQUIPMENT:				
l	·			ł	
389			·		
	Fabricated Slide Gates, 42-inch	2	EA	\$7,111.04	\$14,222
390		1,852	SF		
391	Underdrain - Leopold Type S	1,852	SF	\$69.90	\$129,455
392	Wash Troughs				- · · · · · · · · · · · · · · · · · · ·
393	Conventional	0	LF	\$234.61	\$0
394	Media Retaining	223	LF	\$531.99	\$118,633
395	Media				
396	Bottom Media - Sand (ES=0.5 UC=1.4)	1,852	CF	\$17.47	\$32,364
397	Middle Media - Coal (ES=0 UC=0)	0	CF	\$23.30	\$0
		7,408	CF	\$23.30	\$172,607
398	Top Media - Coal (ES=1 UC=1.4)				
	Air Scour Blowers (88 hp each)	2	EA	\$71,524.98	\$143,050
			Į		
1				· ·	
399	• • • • • • • • • • • • • • • • • • •				
400	Allowance for Misc Items	10%		\$610,331.42	\$61,033
401	Subtotal				\$671,365
402	Odpiotai	· · · · · ·		Ε.	407.1,000
	MOTELLIA & CONTROL C.				
403	INSTRUMENTS & CONTROLS:			-	
404	Instruments	4.00			
405	Filter Effluent Magmeter (16-inch)	4.00	EA	\$14,438.40	\$57,754
406	Combined Filter Effluent Magmeter (30-inch)	0.00	EA	\$23,932.23	\$0
407	Isolation Valve Actuators	24.00	EA	\$5,064.93	\$121,558
408	Control Valve Actuators	4.00	EA	\$5,064.93	\$20,260
409	Turbidimeters	4	EA	\$3,133.05	\$12,532
410	Particle Counters	4	EA	\$6,764.54	\$27,058
	Level Transmitters	4	EA	\$7,120.57	\$28,482
411		· · · · · · · · · · · · · · · · · · ·			
412	Differential Pressure Transmitters	4	EA	\$7,120.57	\$28,482
413	Filter Influent Level Transmitter	2	EA	\$7,120.57	\$14,241
414	Air Scour Differential Pressure Transmitter	2	EA	\$7,120.57	\$14,241
	Air Scour Discharge Pressure Indicator Transmitter	2	EA	\$7,120.57	\$14,241
415		•			
\vdash	Number of Analog I/O Counts	53	EA	\$208.82	\$11,026
416				[* , *
1	Number of Digital I/O Counts	149	EA	\$49.46	\$7,359
ا_رر[Number of Digital I/O Counts	140		943.40	φ <i>τ</i> ,339
417	(P) (I)			040 004 47	M40.0
418		1	EA	\$10,331.10	\$10,331
419	I&C Conduit & Wire	3,438	LF	\$9.53	\$32,760
420	Allowance for Misc Items	10%		\$400,325.99	\$40,033
421	Subtotal		=======================================		\$440,359
422					
423	CONVEYING SYSTEMS:				
424	Monorail Hoist (3 Ton)	1	EA	\$3,257.13	\$3,257
		162	LF		
425	Hoist Rail		<u>L</u> F	\$32.90	\$5,324
426	Allowance for Misc Items	5%		\$8,581.61	\$429
427	Subtotal				\$9,011
428					
429	MECHANICAL:				
430	I Pipe '				
430	Pipe Air Scour Pipe-BAW (12-inch , Exposed , Steel , None	216	LF	\$198.45	\$42,899

	4/5/2010	Filters FIL I			rintea by:
1	4:56 PM	С	D	Ë !	F
32	Filter Influent Header Pipe-FIH (30-inch , Buried , Steel , Cement Mortar , Fusion Bonded Epoxy)	0	LF .	\$547.92	\$
	Filter Influent Pipe-FIH (20-inch , Encased , Steel ,	0	LF	\$365.28	\$
33	Cement Mortar , Fusion Bonded Epoxy) Filter Effluent Pipe-FE (16-inch , Exposed , Steel ,	50	LF	\$292.22	\$14,61
34	Cement Mortar , Paint) Filter Effluent Pipe-FE (16-inch , Encased , Steel ,	50	LF	\$292.22	\$14,61
35	Cement Mortar , Fusion Bonded Epoxy) Filter Control Valve Pipe-FCV (12-inch , Exposed ,	32	LF	\$198.45	\$6,35
36	Steel , None , None) Filter Effluent Header Pipe-FEH (30-inch , Encased ,	64	LF	\$547.92	\$34,88
37	Steel , Cement Mortar , Fusion Bonded Epoxy) Filter to Waste-FTW (16-inch , Exposed , Steel ,	43	<u>L</u> F	\$292.22	\$12,61
38	Cement Mortar , Paint) Filter to Waste-FTW (16-inch , Encased , Steel ,	153	LF	\$292.22	\$44,80
39	Cement Mortar , Fusion Bonded Epoxy) Backwash Supply Pipe-BWS (30-inch , Exposed ,	170	LF	\$547.92	\$93,18
140	Steel , Cement Mortar , Paint) Backwash Supply Pipe-BWS (30-inch , Encased ,	. 48	LF	\$547.92	\$26,30
141	Steel , Cement Mortar , Fusion Bonded Epoxy) Backwash Waste Pipe-BWW (30-inch , Encased ,	10	LF	\$547.92	\$5,47
142 143	Steel , Cement Mortar , Fusion Bonded Epoxy) Elbows				
444	Air Scour Pipe-BAW (12-inch , Steel)	16	EA	\$1,319.92	\$21,11
445	Filter Influent Header Pipe-FIH (30-inch , Steel)	0	EA	\$3,299.80	\$
446	Filter Influent Pipe-FIH (20-inch , Steel)	0	EA	\$2,199.87	\$ \$7.04
147	Filter Effluent Pipe-FE (16-inch , Steel)	4	EA EA	\$1,759.89 \$1,759.89	\$7,04 \$7,04
148	Filter Effluent Pipe-FE (16-inch , Steel)	0	EA	\$1,319.92	\$7,04
449	Filter Control Valve Pipe-FCV (12-inch , Steel)	. 0	EA		<u>\$</u>
450	Filter Effluent Header Pipe-FEH (30-inch , Steel)	. 6	EA '	\$3,299.80 \$1,759.89	 \$10,55
451	Filter to Waste-FTW (16-inch , Steel)	0	EA .	\$1,759.89	\$10,55
452	Filter to Waste-FTW (16-inch , Steel)		EA	\$3,299.80	· · · · · · · · · · · · · · · · · · ·
153	Backwash Supply Pipe-BWS (30-inch , Steel)	2	EA .	\$3,299.80	\$6,60 \$6,60
154 155	Backwash Supply Pipe-BWS (30-inch , Steel) Backwash Waste Pipe-BWW (30-inch , Steel)	0	EA	\$3,299.80	\$0,50
456	Tees				
457	Air Scour Pipe-BAW (12-inch , Steel)	4	EA	\$3,007.27	\$12,02
458	Filter Influent Header Pipe-FIH (30-inch , Steel)	0.	EA	\$7,518.19	\$
459	Filter Influent Pipe-FIH (20-inch , Steel)	. 0	EA	\$5,012.12	\$
460	Filter Effluent Pipe-FE (16-inch , Steel)	4	EA	\$4,009.70	\$16,03
461	Filter Effluent Pipe-FE (16-inch , Steel)	. 0	EA	\$4,009.70	\$
462	Filter Control Valve Pipe-FCV (12-inch , Steel)	0	EA	\$3,007.27	\$
463	Filter Effluent Header Pipe-FEH (30-inch , Steel)	0	EA	\$7,518.19	\$
464	Filter to Waste-FTW (16-inch , Steel)	0	EA	\$4,009.70	\$
465	Filter to Waste-FTW (16-inch , Steel)	2	EA	\$4,009.70	\$8,01
466	Backwash Supply Pipe-BWS (30-inch , Steel)	6	EA	\$7,518.19	\$45,10
467	Backwash Supply Pipe-BWS (30-inch , Steel)	0	EA	\$7,518.19	\$
468	Backwash Waste Pipe-BWW (30-inch , Steel)	0	EA	\$7,518.19	\$
469	Crosses				
470	Air Scour Pipe-BAW (12-inch , Steel)	2	EA	\$4,009.70	\$8,01
471	Filter Influent Header Pipe-FIH (30-inch , Steel)	0	EA	\$10,024.25	\$
472	Filter Influent Pipe-FIH (20-inch , Steel)	0	EA	\$6,682.83	\$
473	Filter Effluent Pipe-FE (16-inch , Steel)	0	EA	\$5,346.27	\$
474	Filter Effluent Pipe-FE (16-inch , Steel)	0 ·	EA	\$5,346.27	\$
475	Filter Control Valve Pipe-FCV (12-inch , Steel)	0	EA .	\$4,009.70	\$
476	Filter Effluent Header Pipe-FEH (30-inch , Steel)	2	EA	\$10,024.25	\$20,04
477	Filter to Waste-FTW (16-inch , Steel)	0	EA EA	\$5,346.27	\$(
478	Filter to Waste-FTW (16-inch , Steel)	0	EA	\$5,346.27	\$(
479	Backwash Supply Pipe-BWS (30-inch , Steel)	0	EA	\$10,024.25	\$1
480	Backwash Supply Pipe-BWS (30-inch , Steel)	0	EA	\$10,024.25	\$1
481	Backwash Waste Pipe-BWW (30-inch , Steel)	0	EA	\$10,024.25	\$
482	Valves		EA	\$0.652.56	#20.04
483	Air Scour Pipe-BAW (12-inch ,V500 - BFV)	4		\$9,653.56	\$38,61
	Filter Influent Header Pipe-FIH (30-inch ,V500 - BFV)	0 .	EA	\$24,133.90	\$1

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	В	C	D		
485	Filter Influent Pipe-FIH (20-inch ,V500 - BFV)	4	EA	\$16,089.26	\$64,357
486	Filter Effluent Pipe-FE (16-inch ,V500 - BFV)	4	EA	\$12,871.41	\$51,486
487	Filter Effluent Pipe-FE (16-inch ,V500 - BFV)	0	EA	\$12,871.41	\$0
488	Filter Control Valve Pipe-FCV (12-inch ,V500 - BFV)	4	EA	\$9,653.56	\$38,614
	Filter Effluent Header Pipe-FEH (30-inch ,V500 - BFV)	0	EA	\$24,133.90	\$0
489	Filter to Waste-FTW (16-inch ,V500 - BFV)	4	EA	\$12,871.41	\$51,486
490	Filter to Waste-FTW (16-inch, V500 - BFV)		EA	\$12,871.41	\$0
491	Backwash Supply Pipe-BWS (30-inch, V500 - BFV)	4	EA	\$24,133.90	\$96,536
492					
	Backwash Supply Pipe-BWS (30-inch ,V500 - BFV)	0	EA	\$24,133.90	\$0
493	Backwash Waste Pipe-BWW (30-inch ,V500 - BFV)	4	EA	\$24,133.90	\$96,536
494	All for Mine Itoma	5%		\$901,593.08	\$45,080
495	Allowance for Misc Items				\$946,673
496 497	Subtotal				,
498	ELECTRICAL:				
499	MCC's				
500	Sections	5	EA	\$6,783.10	\$33,915
501	AFD's				
502	Air Scour Blowers (88 hp each)	-	EA	\$14,946.94	\$0
503	Switchgear				
504	Units		EA	\$31,202.24	\$0
505	Electrical Conduit & Wire	127	LF	\$9.53	\$1,213
506	Allowance for Misc Items	5%		\$35,128.81	\$1,756
507	Subtotal				\$36,885
508	Cubiotal				
509	USER DEFINED ESTIMATE ITEMS	QUANT	UNIT	\$/UNIT	TOTAL COST
510	Item 1 Description	0.00		0.00	\$0
511	Item 2 Description	0.00		0.00	\$0
512	Item 3 Description	0.00	Valentija valtedaja ja jas	0.00	\$0
513	Item 4 Description	0.00		0.00	\$0
514	Item 5 Description	0.00	4、1000年度2月19月1	0.00	\$(\$(
515	Item 6 Description	0.00	No. 10 10 10 10 AND MARKET SALE	0.00	\$0
516	Item 7 Description	0.00		0.00	\$(
517	Item 8 Description	0.00		0.00	.\$0
518	Item 9 Description	0.00		0.00	\$(
519	Item 10 Description	0.00		0.00	\$0
520	Item 11 Description	0.00	revolució volumento de la	0.00	\$(
521	Item 12 Description	0.00		0.00	\$0
522	Item 13 Description	0.00		0.00	\$0
523	Item 14 Description	0.00		0.00	\$(
524	Item 15 Description	0.00		0.00	\$(
525	Subtotal				\$0
526				·	
527	Subtotal				\$4,621,479.61
528					
529	ALLOWANCES:	·	User Over-write		
530	Finishes Allowance	2%		\$5,023,347	\$100,466.95
531	Mechanical Allowance	2%		\$5,023,347.40	\$100,466.95
532	I&C Allowance	2%		\$5,023,347.40	\$100,466.95
533	Electrical Allowance	2%		\$5,023,347.40	\$100,466.95
534					
535	Facility Cost	12,000,000	GPD	\$0.42	\$5,023,347

4:57 PM				
OSTRESTAMATE				
Description	<u>Quantity</u>	<u>Unit</u>	\$/Unit	Total Cost
SITEWORK:				
Excavation		·		
	5311.63	CY	\$5.35	\$28,429
Influent Channel, Surge Basin & Decant Pump	1502.22	CY	70.00	\$8,040
Dry Pit, Backwash Waste Sludge Wet Well, & Backwash Waste	1002.22		\$5.35	
Recycle Wet Well	351.82	CY	\$5.35	\$1,883
Pipe Vault				
Imported Structural Backfill Influent Channel, Surge Basin & Decant Pump	426.72	CY	\$40.56	\$17,306
Dry Pit, Backwash Waste Sludge Wet Well, & Backwash Waste	80.20	CY		\$3,252
			\$40.56	
Recycle Wet Well	70.17	CY	\$40.56	\$2,846
Pipe Vault Native Backfill				
Influent Channel, Surge Basin & Decant Pump	1115.38	CY .	\$6.58	\$7,339
Dry Pit, Backwash Waste Sludge Wet Well, & Backwash Waste	32.00	CY		\$211
Recycle Wet Well			\$6.58	
Pipe Vault	103.39	CY	\$6.58	\$680
Haul Excess				
Influent Channel, Surge Basin & Decant Pump	4196.25	CY	\$6.58	\$27,612
Dry Pit, Backwash Waste Sludge Wet Well, & Backwash Waste	1470.22	CY		\$9,674
Recycle Wet Well			\$6.58	
Pipe Vault	248.42	CY	\$6.58	\$1,635
Allowance for Misc Items	5%		\$108,907.43	
Subtotal				\$114,353
Sublotal				
CONCRETE:				
Surge Basin:				
Foundation	308.85	CY	\$382.16	\$118,028
Perimeter Walls	382.34	CY	\$683.50	\$261,329
Influent Channel Wall	62.23	CY	\$683.50	\$42,536
Concrete Curb (8" X 8")	76.89	LF	\$32.90	\$2,530
Backwash Recycle Sump:				
Slab on Grade	18.89	CY	\$345.93	\$6,534
Walls	90.62	CY	\$683.50	\$61,940
Elevated Slab	9.23	CY	\$1,088.69	\$10,04
Backwash Sludge Sump:				
Slab on Grade	13.33	CY	\$345.93	\$4,612
Walls	66.77	CY	\$683.50	\$45,640
Elevated Slab	6.88	CY	\$1,088.69	\$7,49
Dry Pit:				
Slab on Grade	5.31	CY	\$345.93	\$1,830
Walls	32.33	CY	\$683.50	\$22,090
Elevated Slab	3.49	CY	\$1,088.69	\$3,80
Pipe Vault:			#4 000 CO	000.07
Lower Elevated Slab	29.64	CY	\$1,088.69 \$1,088.69	\$32,27 \$32,27
Upper Elevated Slab	29.64	CY	\$683.50	
Walls	32.67	CY	\$345.93	
Electrical Room Slab on Grade	5.27	CY		
Allowance for Misc Items	5%		\$677,117.1	5 \$33,85 \$710,97
Subtotal				\$110,97
MASONRY:	Moderate	le r	\$131.60	\$
Pump Sumps and Pipe Vault	0.00	SF	\$131.60	
Electrical Room	80.89	SF.	\$131.00	\$10,64
Subtotal	80.89			\$10,04
				
METALS:				
Influent Channel:	105 56	SF	\$72.38	\$13,43
Grating	185.56	<u> 3</u> F	φ1 2.30	ψ13,43
Surge Basin:	400	OC.	\$72.38	\$29
Grating	4.00	SF	\$12.38	\$29
Backwash Recycle Sump:	4.00	eE .	¢70.00	\$29
Grating	4.00	SF	\$72.38	Φ29
Backwash Sludge Sump:	4.00	-le-	670.00	\$29
Grating	4.00	SF	\$72.38	- ⊅ ∠9
Dry Pit:	abte Owned by CH2M I		File \	<u> </u>

4:57 PM Ladder	27.60	VLF	\$99.36	\$2,74
Pipe Vault:			#70.00	<u> </u>
Grating	4.00 16.00	SF RISERS	\$72.38 \$394.80	\$29 \$6,31
Stairs	10%	RISERS	\$23,647.47	\$2,36
Allowance for Misc Items	1076		\$20,047.47	\$26,01
Subtotal				Ψ20,01
OORS & WINDOWS:				
Backwash Recycle Sump:				
Aluminum Access Hatch (10' x 5')	1.00	EA	\$4,400.75	\$4,40
Backwash Sludge Sump:				
Aluminum Access Hatch (3' x 3')	1.00	EA ,	\$1,098.21	\$1,09
Dry Pit:			64 000 04	£4.00
Aluminum Access Hatch (3' x 3')	1.00	EA	\$1,098.21	\$1,09
Pipe Vault:	2.00	EA	\$1,098.21	\$2,19
Aluminum Access Hatch (3' x 3')	5%	EA .	\$8,793.60	\$44
Allowance for Misc Items	376		φυ,755.00	\$9,23
Subtotal				Ψ5,20
EQUIPMENT:				
Floating Decanter Plate System	0.00	SF	\$72.94	\$
Traveling Solids Removal Mechanism	2.00	EA	\$66,857.09	\$133,71
Washwater Decant Pump (Submersible Pump)	3.00	EA	\$18,993.38	\$56,98
Sludge Pump (Submersible Pump)	2.00	EA	\$12,409.63	\$24,81
Mixers	0.00	HP	\$1,580.26	\$
Allowance for Misc Items	10%		\$215,513.57	\$21,55
Subtotal				\$237,06
l&C:				
Instruments				040 55
Backwash Waste Recycle Header Magmeter (BWRH, 12 inch)	1.00	EA	640 570 00	\$10,57
			\$10,573.93	005.00
Isolation Valve Actuators (Electric)	5.00	EA	\$5,064.93	\$25,32
Level Transmitters	1.00	EA	\$7,120.57 \$208.82	\$7,12 \$1,25
Number of Analog I/O Counts	6.00	EA EA	\$208.82 \$49.46	\$1,48
Number of Digital I/O Counts	30.00 1.00	EA	\$10,331.10	\$10,33
Number of Local Panels	1.00	EA	\$10,990.54	\$10,99
Number of PLC's	259.78	if LA	\$9.53	\$2,47
I&C Conduit Wire	5%		\$69,552.80	\$3,47
Allowance for Misc Items	370		\$00,00Z.00	\$73,03
Subtotal				
MECHANICAL:			1	
Pipe:	0.00		0007.50	
Backwash Waste (BWW, 36 inch, Steel)	0.00	LF	\$657.50	9
Filter to Waste (FTW, 18 inch, DI)	0.00	LF LF	\$123.32 \$219.17	\$3,55
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	16.22 0.00	LF	\$219.17	φο,ος
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	81.00	LF	\$54.81	\$4,4
Backwash Waste Recycle Lateral (BWRL, 8 inch, DI)	16.22	LF	\$109.58	\$1,7
Backwash Waste Sludge Header (BWSH, 6 inch, Steel) Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	0.00	LF	\$109.58	Ψ1,,,
Backwash Waste Sludge Reader (BWSI, 6 Inch, Steel) Backwash Waste Sludge Lateral (BWSL, 6 Inch, Steel)	54.00	LF	\$109.58	\$5,9
	. 0 1.00			7-1-
Elbows: Backwash Waste (BWW, 36 inch, Steel)	0.00	EA	\$3,959.76	
Filter to Waste (FTW, 18 inch, DI)	0.00	EA	\$2,588.21	:
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	1.00	EA	\$1,319.92	\$1,3
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	0.00	EA	\$1,319.92	
Backwash Waste Recycle Lateral (BWRL, 8 inch, DI)	6.00	EA	\$1,150.31	\$6,9
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	1.00	EA	\$659.96	\$6
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	0.00	EA	\$659.96	
Backwash Waste Sludge Lateral (BWSL, 6 inch, Steel)	4.00	EA	\$659.96	\$2,6
Tee:				
Backwash Waste (BWW, 36 inch, Steel)	0.00	EA	\$9,021.82	
Filter to Waste (FTW, 18 inch, DI)	0.00	EA	\$4,297.65	
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)	2.00	EA	\$3,007.27	\$6,0

Liectifical Allowanics		1	I	
Electrical Allowance	3/0	vije negovaja napovanje negovaja	φ1,004,120.01	Ψ40,041.
Mechanical Allowance	5%		\$1,534,720.67 \$1,534,720.67	\$76,736. \$46,041.
I & C Allowance	3%		\$1,534,720.67	\$46,041.
Finishes Allowance	2%		\$1,534,721	\$30,694.
ALLOWANCES:		User Over-write		
Subtotal				÷ /100012001
C. LLLL	<u></u>			\$1,335,206
Subtotal				
Item 15 Description	0.00		0.00	
Item 14 Description	0.00	Venezione de la companya della companya della companya de la companya de la companya della compa	0.00	
Item 13 Description	0.00		0.00	
Item 12 Description	0.00		0.00	
Item 11 Description	0.00	0.0101-2.556-6-4-18-19-0-2-1	0.00	
Item 10 Description	0.00	1.402.039.301.24.25	0.00	
Item 9 Description	0.00		0.00	
Item 8 Description	0.00	Para Carrier Carrier	0.00	
Itém 7 Description	0.00		0.00	
Item 6 Description	0.00		0.00	
Item 5 Description	0.00	2014 CO. 400 Miles 10	0.00	
Item 4 Description	0.00	S 20 (Agaz 28 48 4)	0.00	
Item 3 Description	0.00		0.00	· · · · · ·
Item 2 Description	0.00		0.00	
USER DEFINED ESTIMATE TEMS. Item 1 Description	0.00		0.00	
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Subtotal				\$09
Allowance for Misc Items	5%	-	φου, σου, υ Ι	\$4, \$89,
Electrical Conduit & Wire	259.78	lf	\$9.53 \$85,380.01	\$2,
Recycle Pumps (Standby)	1.00	EA	\$6,299.20	\$6,
Recycle Pumps (Active)	2.00	EA	\$6,299.20	\$12,
Sludge Pumps (Standby)	1.00	EA	\$4,871.14	\$4,
Sludge Pumps (Active)	1.00	EA	\$4,871.14	\$4,
Basin Mixer	0.00	EA	\$4,125.89	
Adjustable Frequency Drives				
Switchgear	0.00	EA	\$31,202.24	
# MCC Sections	8.00	EA	\$6,783.10	\$54,
ELECTRICAL:				
Oublotal				
Subtotal				\$64,
Allowance for Misc Items	5%		\$61,186.86	\$3,
Backwash Waste Sludge Header (BWSH, 6 inch, Steel) Backwash Waste Sludge Lateral (BWSL, 6 inch, Steel)	2.00	EA	\$4,826.78	\$9,
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)		EA	\$4,826.78	
Backwash Waste Recycle Lateral (BWRL, 8 inch, DI)		EA	\$4,826.78	\$10,
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)		EA EA	\$5,601.22	\$16,
Backwash Waste Recycle Header (BWRH, 12 inch, Steel)		EA	\$9,653.56 \$9,653.56	
Filter to Waste (FTW, 18 inch, DI)		EA	\$12,602.74	
Backwash Waste (BWW, 36 inch, Steel)		EA .	\$28,960.68	
Valves:				· · · · · · · · · · · · · · · · · · ·
Backwash Waste Siudge Lateral (BWSL, 6 inch, Steel)	0.00	EA	\$1,503.64	
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)	0.00	EA	\$1,503.64	
Backwash Waste Sludge Header (BWSH, 6 inch, Steel)		EA	\$1,503.64	\$1,
Backwash Waste Recycle Lateral (BWRL, 8 inch, DI)	0.00	EA	\$1,910.07	

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4:57 PM OS INESTRAVATIE				
<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	Total Cost
SITEWORK:				<u> </u>
Circular Clearwell	44545	CV	05.05	ф - 7-7
Excavation Imported Structural Backfill	14,515 1,523	CY	\$5.35 \$40.56	\$77, \$61,
Native Backfill	2,973	CY	\$6.58	\$19,
Haul Excess	11,542	CY	\$6.58	\$75,
Rectangular Clearwell				
Excavation	0	CY	\$5.35	
Imported Structural Backfill	0	CY	\$40.56	
Native Backfill	0	CY	\$6.58	•
Haul Excess	5%	CY	\$6.58 \$234,986.14	C44
Allowance for Misc Items	3%	-	\$234,986.14	\$11, \$246,
Subtotal			-	Ψ240,
CONCRETE:				
Circular Clearwell				
Prestressed Concrete Tank (2000000 gallons)	1	EA	\$872,030.58	\$872,
Rectangular Clearwell			¥0, 2,000.00	Ψ072,
Foundation	0	CY	\$382.16	
Columns	0	CY	\$683.50	
Walls	0	CY	\$683.50	
Elevated Slab	0	CY	\$1,088.69	
Concrete Baffling	0	CY	\$683.50	
Allowance for Misc Items	5%		\$872,030.58	\$43,
Subtotal				\$915,
METALS & PLASTICS: Polypropylene Baffling	0	SF	\$10.99	
Stainless Steel Baffling	0	SF	\$45.79	
Allowance for Misc Items	5%		\$0.00	
Subtotal				
THERMAL & MOISTURE PROTECTION:			· · · · · · · · · · · · · · · · · · ·	
Concrete Liner	0	SF	\$16.00	
Allowance for Misc Items	10%		\$0.00	
Subtotal				
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COS
Item / Description	0.00		0.00	
Item 2 Description	0,00		0.00	
Item 3 Description	0.00		0.00	
ftem 4 Description	0.00		0.00	
Item 5 Description	0.00		0.00	
Item 6 Description Item 7 Description	0.00		0.00	·
Item 8 Description	0.00		0.00	
tem 9 Description		54 (220 00 12 op 1002) 100 110 12	0.00	
	0.00	in a later a second in the many and the second of the seco		
Item 10 Description	0.00			
Item 10 Description Item 11 Description	0.00		0.00	
Item 11 Description Item 12 Description	0.00 0.00 0.00		0.00 0.00 0.00	
Item 11 Description Item 12 Description Item 13 Description	0.00 0.00 0.00 0.00		0.00 0.00 0.00 0.00	
Item 11 Description Item 12 Description Item 13 Description Item 14 Description	0.00 0.00 0.00 0.00 0.00		0.00 0.00 0.00 0.00 0.00	
Item 11 Description Item 12 Description Item 13 Description Item 14 Description Item 15 Description	0.00 0.00 0.00 0.00		0.00 0.00 0.00 0.00	
Item 11 Description Item 12 Description Item 13 Description Item 14 Description Item 15 Description Subtotal	0.00 0.00 0.00 0.00 0.00		0.00 0.00 0.00 0.00 0.00	\$1.162
Item 11 Description Item 12 Description Item 13 Description Item 14 Description Item 15 Description Subtotal	0.00 0.00 0.00 0.00 0.00		0.00 0.00 0.00 0.00 0.00	\$1,162
Item 11 Description Item 12 Description Item 13 Description Item 14 Description Item 15 Description	0.00 0.00 0.00 0.00 0.00	User Over-write	0.00 0.00 0.00 0.00 0.00	\$1,162, \$12,

Concrete Clearwell FWT

Printed by:

Facility Cost		2,000,000	Gallons	\$0.66	\$1,312,350
Electrical Allowance	· · · · · · · · · · · · · · · · · · ·	1%		\$1,249,858	\$12,499
Mechanical Allowance		5%		\$1,249,858	\$62,493
I & C Allowance		2%		\$1,249,858	\$24,997
Equipment Allowance				\$1,249,858	\$12,499
4:57 PM					

Description	Quantity	Unit	\$/Unit	Total Cost
Description.				
TEWORK:				
Pump Station:	704.75	CV	\$5.35	
Excavation	701.75	CY	\$40.56	
Imported Structural Backfill	358.27			•
Native Backfill	89.16	CY	\$6.58	
Haul Excess	612.60	CY	\$6.58	· · · · · · · · · · · · · · · · · · ·
Forebay:			40.05	
Excavation	7114.29	CY	\$5.35	
Imported Structural Backfill	437.87	CY	\$40.56	
Native Backfill	1838.49	CY	\$6.58	·
Haul Excess	5275.80	CY	\$6.58	·
Office:				
Excavation	0.00	CY	\$5.35	
Imported Structural Backfill	0.00	CY	\$40.56	
Native Backfill	0.00	CY	\$6.58	
Haul Excess	0.00	CY	\$6.58	
Surge Protection:	117.15	CY	\$5.35	
Excavation	86.04	CY	\$40.56	\$3
Imported Structural Backfill	18.55	CY	\$6.58	
Native Backfill	98.59	CY	\$6.58	
Haul Excess	5%	† · · · · · · · · · · · · · · · · · · ·	\$4,887.33	\$
Allowance for Misc Items	370		Ψ4,007.33	\$5,
Subtotal				ψ0,
ONCRETE				
ONCRETE:				
Pump Station	256.01	CY	\$382.16	
Foundation	0.74	CY	\$3,412,56	\$2
Pump Pad Epoxy	7.78	CY	\$345.93	\$2
Pump Pad Support	4.19	CY	\$345.93	\$1
Pipe Supports	7.10		Voles	Ψ.
Electrical Room	14.61	CY	\$345.93	\$5
Foundation	14.01		\$040.00	Ψ.
Surge Protection	- 00.70	0)/	\$345.93	\$7
Foundation	20.70	CY	\$345.93	φ/
Office		ļ <u>.</u>	40.47.00	
Foundation	0.00	CY	\$345.93	
Pump Station Forebay				
Slab on Grade for Rectangular Tank	231.48	CY	\$345.93	
Support Walls for Rectangular	342.22	CY	\$683.50	
Support Columns for Rectangular	16.50	CY	\$683.50	
Elevated Slab for Rectangular	91.36	CY	\$1,088.69	
Pump Baffling (for all cases)	16.43	CY	\$683.50	
Sump Walls	86.37	CY	\$683.50	
Sump Concrete Fill	184.06	CY	\$382.16	
Prestressed Concrete Tank (422429 gallons)	0.00	EA	\$0.00	
	5%		\$18,883.83	
Allowance for Misc Items				\$19
Subtotal				
	Moderate	8		
MASONRY:	2235.55	SF	\$197.40	\$441
Pump Station Building	0.00	SF	\$131.60	
Office Building	558.89	SF	\$131.60	
Surge Building	394.53	SF	\$131.60	
Electrical Room	354.55	5	413.13	
Subtotal	3188.98			\$566,
Subjoidi				Ľ
METALS:				
Pumo Removal Hatches	73.33	SF	\$109.91	. \$8
Allowance for Misc Items	10%		\$8,059.73	\$
Subtotal				\$8,
THERMAL & MOISTURE PROTECTION:				
Wet Well Liner	0.00	SF	\$16.00	
Allowance for Misc Items	10%	1	\$0.00	
Subtotal	1070		45.55	
		-		
Subotal				· · ·
			í	
EQUIPMENT:				
EQUIPMENT: Pumps	1.00	FΔ	\$467 4E0 60	Q465
EQUIPMENT:	1.00	EA EA	\$167,150.63 \$167,150.63	

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Active Pump # 5 Active Pump # 6	0.00	EA EA	\$0.00	\$
	0.00	EA	\$0.00	\$
Active Pump # 7 Active Pump # 8	0.00	EA	\$0.00	\$
Active Pump # 9	0.00	EA	\$0.00	\$
Active Pump # 10	0.00	EA	\$0.00	\$
Standby Pump	1.00	EA	\$167,150.63	\$167,15
Allowance for Misc Items	10%		\$835,753.14	\$83,575
Subtotal				\$919,328
Cubicial				
NSTRUMENTATION & CONTROLS:				
Instruments				
Isolation Valve Actuators	10.00	each	\$5,064.93	\$50,64
Control Valve Actuators	5.00	each	\$5,064.93	\$25,32
Level Indicator Transmitters	2.00	each	\$6,764.54	\$13,52 \$14,24
Level Swithces	2.00	each	\$7,120.57 \$7,120.57	\$42,72
Pressure Indicator Transmitters	6.00	each	\$7,120.57	\$42,72
Pressure Switches	10.00 37.20	each	\$208.82	\$7,76
Number of Analog I/O Counts	104.40	each each	\$49.46	\$5,16
Number of Digital I/O Counts	5.00	each	\$10,331.10	\$51,65
Number of PLC's	2380.06	lf each	\$9.53	\$22,67
1&C Conduit & Wire	2380.06	- "	\$ 304,939.30	\$30,494
Allowance for Misc Items	10%		ψ 304,838,30	\$335,433
Subtotal				φοσο,τοι
	<u></u>			
MECHANICAL:				
Pipe: Discharge Lateral Pipe (14-inch, DIS, Exposed, HDPE, Cement Mortar,	35,00	LF .	\$53.41	\$1,86
Coment Mortar)	*			
Discharge Header Pipe (30-inch,DIS, Exposed/Buried, Steel, Cement	42.50	ĹF	\$744.31	\$31,63
Marker Comort Morter)				001
Pump Discharge Pipe (10-inch,DIS, Exposed, HDPE, Cement Mortar,	4.17	LF	\$55.90	\$23
Cement Mortar)				
Elbows:	2.00	EA	\$2,831.95	\$5,66
Discharge Header Pipe (30-inch)	2.00			*-,
Tees:	5.00	EA	\$5,509.28	\$27,54
Discharge Header Pipe (30-inch)				, , , , , , , , , , , , , , , , , , , ,
Valves: Discharge Lateral Isolation Valve (14-inch, BFV)	5.00	EA	\$1,529.44	\$7,64
Pump Control Valve (14-inch, Check Valve)	5.00	EA	\$1,529.44	\$7,64
Discharge Header Isolation Valve (30-inch, BFV)	1.00	EA	\$5,934.12	\$5,90
Air Release Vacuum Valves	15.00	EA	\$3,297.16	\$49,4
Allowance for Misc Items	10%		\$137,631.79	\$13,76
Subtotal	1			\$151,39
Subtotal				
ELECTRICAL:				
MCC's				
Sections	7.00	each	\$6,783.10	\$47,48
AFD's				
Active Pump # 1	450.00	HP	\$132.14	\$59,40
Active Pump # 2	450.00	HP	\$132.14	\$59,40
Active Pump # 3	450.00	HP	\$132.14	\$59,4
Active Pump # 4	450.00	HP	\$132.14	\$59,40
Active Pump # 5	0.00	HP	\$0.00	
Active Pump # 6	0.00	HP	\$0.00	
Active Pump # 7	0.00	HP	\$0.00	
Active Pump # 8	0.00	HP	\$0.00 \$0.00	
Active Pump # 9	0.00	HP HP	\$0.00	
Active Pump # 10	0.00 450.00	HP	\$132.14	\$59,4
Standby Pump	450.00	nr nr	\$132.14	Ψ , σ,σ,
Switchgear	0.00	each	\$31,202.24	
Units	340.01	If	\$9.53	\$3,2
Electrical Conduit & Wire		H	\$348,025	\$17,40
Allowance for Misc Items	5%		\$346,025	\$365,42
Subtolal				φου υ,4 2
DEFINED FORMATE MEMO.	QUANT	UNIT	\$/UNIT	TOTAL COST
USER DEFINED ESTIMATE (TEMS:	0.00		0.00	101AL 0001
Item 1 Description			0.00	
Item 2 Description	the design of the second secon		0.00	
Item 3 Description	0.00		0.00	
Item 4 Description	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	er y neg grava i de		
Item 5 Description	0.00		0.00	

4.30 FW				
Item 7 Description	0.00		0.00	\$
Item 8 Description	0.00		0.00	\$
Item 9 Description	0.00		0.00	\$
Item 10 Description	0.00		0.00	\$
Item 11 Description	0.00		0.00	\$
Item 12 Description	0.00		0.00	\$
Item 13 Description	0.00		0.00	\$
Item 14 Description	0.00		0.00	\$
Item 15 Description	0.00		0.00	\$
Subtotal				\$0
Subtotal				\$2,372,18
ALLOWANCES:		User Over-write		
Finishes Allowance	5%		\$3,041,261	\$152,06
I & C Allowance	2%		\$3,041,261	\$60,82
Surge Allowance	5%	100	\$3,041,261	\$152,06
Mechanical Allowance	5%		\$3,041,261	\$152,06
Electrical Allowance	5%		\$3,041,261	\$152,06
acility Cost	2,250	Total Pump HP	\$1,351.67	\$3,041,26

4/5/2010 4:58 PM

4:58 PM COSTUB STUDY TE	e nyampagan menyamban kanyan salah salah salah salah			
<u>Description</u>	Quantity	Unit	\$/Unit	Total Cost
<u> Description</u>	Suditity	5 - S - S - S - S	<u> </u>	10,000,000,000
OLTENODY.				
SITEWORK: Excavation	1575.42	CY	\$5.35	\$(
Imported Structural Backfill	86.68	CY	\$40.56	
Native Backfill	828.79	CY	\$6.58	
Haul Excess	746.63	CY	\$6.58	
Allowance for Misc Items	5%		\$0.00	\$0
Subtotal				\$0
	-			
CONCRETE:				
Wet Well:			4000.40	
Foundation	28.89	CY	\$382.16	\$1
Perimeter Walls	64.42	CY	\$683.50	\$1
Operating Floor:	00.04	0.7		
Elevated Slab (Including floor over Discharge Header Vault)	36.61	CY	\$1,088.69	\$1
Pump Pads	1.63	CY	\$345.93	\$56
Other Equipment Pads	1.00	CY	\$345.93	\$34
Discharge Pipe Vault:	40.00	0)/	40.45.00	0.1.50
Slab on Grade	13.66	CY	\$345.93	\$4,72
Walls	17.16	CY	\$683.50	\$11,72
Allowance for Misc Items	5%		\$17,362.33	\$868
Subtotal				\$18,230
MASONRY:	Moderate	0.5		2400.00
CMU Building	988.44	SF	\$131.60	\$130,08
Subtotal				\$130,080
				···
METALS:	10.00	SF	670.00	\$72
Checker Plate Over Intake Pipe Gate = (Diameter of Influent Pipe +2'	10.00	SF	\$72.38	\$12
)* (2 Feet Wide) (sf) Checker Plate Over Discharge Pipe Header = ((Discharge Pipe	57.98	SF	\$72.38	\$4,19
Diameter * 2) * ("S" * Total Number of Pumps)	77.50		\$72.50	Ψ4,13
Ladder	15.55	VLF.	\$99.36	\$1,54
Allowance for Misc Items	10%		\$6,464.96	\$646
Subtotal	15,0		401.0.00	\$7,111
Subjorda			1	42,111
				·
EQUIPMENT:				
Size of Sluice Gate (per side in inches)	36.00	Inches		
Sluice Gate	1.00	EA	\$6,330.27	\$6,330
Pumps:				
Active Pump # 1	124.39	HP	\$790.52	\$98,332
Active Pump # 2	124.39	HP	\$790.52	
Active Pump # 3	0.00	HP	\$0.00	\$0
Active Pump # 4	0.00	HP	\$0.00	\$0
Active Pump # 5	0.00	HP	\$0.00	\$(
Active Pump # 6	0.00	HP	\$0.00	\$(
Active Pump # 7	0.00	HP	\$0.00	\$0
Active Pump # 8	0.00	HP	\$0.00	\$(
Active Pump # 9	0.00	HP	\$0.00	\$(
Active Pump # 10	0.00	HP	\$0.00	\$(
Standby Pump	124.39	HP	\$790.52	\$98,332
AFD's				
Active Pump # 1	124.39	HP	\$156.14	\$19,422
Active Pump # 2	124.39	HP	\$156.14	\$19,42
Active Pump # 3	0.00	HP	\$0.00	\$(
Active Pump # 4	0.00	HP	\$0.00	\$(\$(
Active Pump # 5	0.00	HP	\$0.00	\$0

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Active Pump # 6	0.00	HP	\$0.00	\$
Active Pump # 7	0.00	HP	\$0.00	\$
Active Pump # 8	0.00	HP .	\$0.00	\$
Active Pump # 9	0.00	HP	\$0.00	\$
Active Pump # 10	0.00	HP	\$0.00	\$
Standby Pump	124.39	HP	\$156.14	\$19,42
Allowance for Misc Items	10%		\$353,259.39	\$35,326
Subtotal				\$394,916
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Item 1 Description	0.00	What had broken son-t	0.00	\$1
Item 2 Description	0.00	r egentleget i selve i severe (1920) I talen i severe (1920)	0.00	\$
Item 3 Description	0.00		0.00	\$
Item 4 Description	0.00	J. 4. izmomed e	0.00	\$
Item 5 Description	0.00		0.00	\$
Item 6 Description	0.00		0.00	\$
Item 7 Description	0.00		0.00	\$
Item 8 Description	0.00	sit ske svene står til	0.00	\$
Item 9 Description	0.00	e in the contract of the	0.00	\$
Item 10 Description	0,00		0.00	\$
Item 11 Description	0.00		0.00	\$
Item 12 Description	0.00		0.00	\$
Item 13 Description	0.00		0.00	. \$
Item 14 Description	0.00	de o partir de	0.00	. \$
Item 15 Description	0.00	THE STATE OF STATE	0.00	\$
Subtotal				\$0
Subtotal				\$550,33
ALLOWANCES:		User Over- write	,	·
Finishes Allowance	2.0%		\$1,100,676	\$22,01
1 & C Allowance	8.0%		\$1,100,676	\$88,05
Mechanical Allowance	25.0%		\$1,100,676	\$275,16
Electrical Allowance	15.0%		\$1,100,676	\$165,10
Facility Cost	373	Total Pump HP	\$2,949.56	\$1,100,67

4:59 PM GOSTUESTIMATUS				
Description	Quantity	Unit	\$/Unit	Total Cost
SITEWORK:				
Excavation	89.00	CY	\$5.35	\$476
Imported Structural Backfill	45.41	CY	\$40.56	
Native Backfill	0.00	CY	\$6.58	\$6
Haul Excess	. 89.00	CY	\$6.58	
Allowance for Misc Items	5%		\$2,903.46	
Subtotal				\$3,049
CONCRETE:				
Slab on Grade	31.46	CY	\$345.93	\$10,882
Containment Walls	6.37	CY	\$683.50	\$4,356
Bulk Tank Pads	29.50	CY	\$345.93	
Day Yank Pads	0.00	CY	\$345.93	\$1
Transfer Pump Pads	0.00	CY	\$3 4 5.93	. \$6
Metering Pump Pads	2.00	CY	\$345.93	\$693
Corridor				
Slab on Grade	7.50	CY	\$345.93	\$2,59
Electrical Room				
Slab on Grade	3.41	CY	\$345.93	\$1,179
Allowance for Misc Items	5%		\$29,906.78	\$1,499
Subtotal				\$31,402
MASONRY:	Moderate			
CMU Building	1226.00	SF	\$131.60	\$161,34
Subtotal		1	\$101.00	\$161,34
Subtotal				Ψ101,01
METALS:			40.500.00	
Metal Stairway	1.00	EA	\$6,580.07	
Grating	1.00	EA	\$1,579.22	\$1,579
Allowance for Misc Items	10%		\$8,159.28	
Subtotal				\$8,97
	2.00	EA	\$16,973.34	**************************************
Bulk Tank	0.00	EA		\$33,94
Day Tank	0.00	EA	\$0.00	\$(
Transfer Pump	3.00	EA	\$0.00 \$6,737.98	\$(
Metering Pump	10%	EA	\$54,160.63	
Allowance for Misc Items	1078		\$34,100.03	\$5,410
Subtotal				Ф39,571
INSTRUMENTS & CONTROLS:				
Instruments			<u></u>	
Chemical Tank Radar Level Transmitters	2.00	each	\$824.29	
Chemical Tank Beacons	2.00	each /	\$824.29	
Day Tank Differential Pressure Transmitter	0.00	each	\$824.29	
Drum or Tote Weigh Scale	0.00	each	\$1,099.05	
Metering Pump Discharge Pressure Switch	3.00	each	\$549.53	
Magmeter	2.00	each	\$549.53	
Sump Pump Float Switch	1.00	each	\$274.76	
Eyewash	1.00	each	\$824.29	
Number of Analog I/O Counts	9.00	each	\$208.82	
Number of Digital I/O Counts	26.00	each	\$49.46	
Number of Local Panels	1.00	each	\$10,331.10	
Number of PLC's	1.00	each	\$10,990.54	\$10,991
1&C Conduit & Wire	297.00	lf	\$9.53	
Allowance for Misc Items	10%		\$34,460.81	
Subtotal				\$37,907
MECHANICAL:		-		
Pipe				
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch, Exposed, PVC)	0.00	lf	\$10.36	
Chemical Transfer Pump Discharge Header Piping- CTDH (1-inch, Exposed, FRP)	.0.00	lf	\$11.98	\$0

4/5/2010	Liquid Chemical FeCl3	Printed by:
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Chemical Metering Pump Suction Header Piping-LCSH	61.00	lf	\$10.36	\$632
(1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping-	61.00	If	\$11.98	\$731
Chemical Metering Pump Discharge Reader Piping	01.00	•	\$11.00	φισι
LCDH (1-inch, Exposed, FRP)				
Elbows Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$7.95	\$0
	0.00	Cacil	Ψ1.55	
(1-inch, Exposed, PVC)	0.00	each	\$63.16	\$0
Chemical Transfer Pump Discharge Header Piping-	0.00	Caur	\$00.10	Ψ0
CTDH (1-inch, Exposed, FRP)	12.00	each	\$7.95	\$95
Chemical Metering Pump Suction Header Piping-LCSH	12.00	each	\$7.95	\$93
(1-inch, Exposed, PVC)	42.00		663.46	\$758
Chemical Metering Pump Discharge Header Piping-	12.00	each	\$63.16	\$108
LCDH (1-inch, Exposed, FRP)				
Tees			20.00	
Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$8.27	\$0
(1-inch, Exposed, PVC)				
Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$109.33	\$0
CTDH (1-inch, Exposed, FRP)				
Chemical Metering Pump Suction Header Piping-LCSH	3.00	each	\$8.27	\$25
(1-inch, Exposed, PVC)				
Chemical Metering Pump Discharge Header Piping-	3.00	each	\$109.33	⁻ \$328
LCDH (1-inch, Exposed, FRP)				
End Caps			·	
Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$4.46	\$0
(1-inch, Exposed, PVC)			·	
Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$32.34	\$0
Chemical transfer Pump discharge Header Fibring	0.00	Cuon		40
CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH	2.00	each	\$4,46	\$9
Chemical Metering Pump Suction Header Fiping-20011	2.00	·	V-1,-10	Ψ.
(1-inch, Exposed, PVC)	2.00	each	\$32.34	\$65
Chemical Metering Pump Discharge Header Piping-	2.00	eacii	\$32.54) 303
LCDH (1-inch, Exposed, FRP)				
Valves		· ·	045.45	
Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$0
(1-inch, Exposed, PVC, V-902, Diaphragm)				
Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$0
(1-inch, Exposed, PVC, V-902, Diaphragm)				
Chemical Metering Pump Suction Header Piping-LCSH	6.00	each	\$45.15	\$271
(1-inch, Exposed, PVC, V-902, Diaphragm)				
Chemical Metering Pump Discharge Header Piping-	6.00	each	\$45.15	\$271
LCDH (1-inch, Exposed, FRP, V-902, Diaphragm)				
Allowance for Misc Items	10%		\$3,184.53	\$318
Subtotal				\$3,503
ELECTRICAL:				
# MCC Sections	6.00	#	\$6,783.10	\$40,699
Switchgear	0.00	each	\$31,202.24	\$0
Adjustable Frequency Drives				
Metering Pumps	0.00	each	\$4,187.38	\$0
User Defined Item #1	0.00	each	\$4,125.89	\$0
User Defined Item #2	0.00	each	\$4,125.89	. \$0
User Defined Item #3	0.00	each	\$4,125.89	\$0
Electrical Conduit & Wire	243.00	If	\$9.53	\$2,315
				% <u>Z</u> 201
Allowance for Misc Items	10%		\$43,014.07	\$4,301 \$47,315
Allowance for Misc Items Subtotal				\$4,301 \$47,315
Subtotal	10%		\$43,014.07	\$47,315
Subtotal USER DEFINED ESTIMATE ITEMS:	10% QUANT	UNIT	\$43,014.07 \$/UNIT	\$47,315 TOTAL COST
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description	10% QUANT 0.00		\$43,014.07 \$/UNIT 0.00	\$47,315 TOTAL COST \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description	10% QUANT 0.00 0.00	UNIT	\$43,014.07 \$/UNIT 9.00 0.00	\$47,315 TOTAL COST \$0 \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description	10% QUANT 0.00 0.00 0.00	UNIT	\$/UNIT 9.00 0.00 0.00	\$47,315 TOTAL COST \$0 \$0 \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description	10% QUANT 0.00 0.00 0.00 0.00 0.00	UNIT	\$/UNIT 9.00 0.00 0.00 0.00	\$47,315 TOTAL COST \$0 \$0 \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description	10% QUANT 0.00 0.00 0.00 0.00 0.00 0.00	UNIT	\$/UNIT 9.00 0.00 0.00 0.00 0.00	\$47,315 TOTAL COST \$0 \$0 \$0 \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description	10% QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00	UNIT	\$/UNIT 9.00 0.00 0.00 0.00 0.00 0.00	\$47,315 TOTAL COST \$0 \$0 \$0 \$0 \$0 \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description	10% QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	UNIT	\$/UNIT 9.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$47,315 TOTAL COST \$0 \$0 \$0 \$0 \$0 \$0 \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description	10% QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	UNIT	\$/UNIT 9.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$47,315 TOTAL COST \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description	10% QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	UNIT	\$/UNIT 9.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$47,315 TOTAL COST \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description	10% QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	UNIT	\$/UNIT 9.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$47,315 TOTAL COST \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description	10% QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	UNIT	\$/UNIT 9.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$47,315 TOTAL COST \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description	10% QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	UNIT	\$/UNIT 9.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$47,315 TOTAL COST \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 11 Description Item 12 Description	10% QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	UNIT	\$43,014.07 \$/UNIT 9.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$47,315 TOTAL COST \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description Item 13 Description	10% QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	UNIT	\$43,014.07 \$/UNIT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$47,315 TOTAL COST \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
Subtotal USER DEFINED ESTIMATE ITEMS: Item 1 Description Item 2 Description Item 3 Description Item 4 Description Item 5 Description Item 6 Description Item 7 Description Item 8 Description Item 8 Description Item 9 Description Item 10 Description Item 11 Description Item 12 Description	10% QUANT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	UNIT	\$43,014.07 \$/UNIT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	\$47,315 TOTAL COST \$(\$6 \$6 \$6 \$6 \$6 \$6 \$6 \$6 \$6 \$6 \$6 \$6 \$6

4:59 PM Subtotal				\$0
Subtotal				\$353,07
ALLOWANCES:		User Over-write		
Finishes Allowance	2.0%		\$392,301	\$7,84
I & C Allowance	2%		\$392,301	\$7,84
Mechanical Allowance	4%		\$392,301	\$15,693
Electrical Allowance	2%		\$392,301	\$7,84
Facility Cost	. 1	1,226 Building SF	\$319.98	\$392,30°

4/5/2010 4:59 PM

4:59 PM				
OSINESTRIATE Description	Quantity	Unit	\$/Unit	Total Cost
SITEWORK:	www.generalizer.	errore in Account		Kennya tananya ang ang ang ang ang ang ang ang ang an
Excavation	76.22	CY	\$5.35	\$4
Imported Structural Backfill	38.89	CY	\$40.56	\$1,5
	0.00	CY	\$6.58	V 1,0
Native Backfill	76.22	CY	\$6.58	\$5
Haul Excess	5%	<u> </u>	\$2,486.65	\$1
Allowance for Misc Items	070		\$2,100.00	\$2,6
Subtotal			1	Ψ2,,0
CONCRETE:				
Slab on Grade	28.07	CY	\$345.93	\$9,7
Containment Walls	4.73	CY .	\$683.50	\$3,2
Bulk Tank Pads	25.13	CY	\$345.93	\$8,6
Day Tank Pads	0.00	CY	\$345.93	
Transfer Pump Pads	0.00	CY	\$345.93	
Metering Pump Pads	1.33	CY	\$345.93	\$4
Corridor				
Slab on Grade	6.94	CY	\$345.93	\$2,4
Electrical Room				·
Slab on Grade	0.00	CY	\$345.93	
Allowance for Misc Items	5%		\$24,500.49	\$1,2
Subtotal				\$25,
MA CONDV	Moderate			· ····································
MASONRY:	1050.00	SF	\$131.60	\$138,
CMU Building	1000.00	101	\$757.00	\$138,
Subtotal				Ψ130,
METALS:				
Metal Stairway	1.00	EA	\$6,580.07	\$6,
Grating	1.00	EA	\$1,579.22	\$1,
Allowance for Misc Items	10%		\$8,159.28	\$
Subtotal				\$8,
			·	
Bulk Tank	2.00	EA	\$17,367.52	\$34,7
Day Tank	0.00	EA	\$0.00	
Transfer Pump	0.00	EA	\$0.00	
Metering Pump	2.00	EA	\$6,737.98	\$13,
Allowance for Misc Items	10%		\$48,211.01	\$4,
Subtotal				\$53,
			1	•
INDEED INTERIOR OF CONTROL C.				
Instruments	2.00	each	\$824.29	\$1,
	2.00	each each	\$824.29 \$824.29	\$1, \$1,
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons				
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter	2.00	each	\$824.29	
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter Drum or Tote Weigh Scale	2.00 0.00	each each	\$824.29 \$824.29	\$1,
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch	2.00 0.00 0.00	each each each	\$824.29 \$824.29 \$1,099.05	\$1, \$1,
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter	2.00 0.00 0.00 2.00	each each each each	\$824.29 \$824.29 \$1,099.05 \$549.53	\$1, \$1,
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch	2.00 0.00 0.00 2.00 1.00	each each each each	\$824.29 \$824.29 \$1,099.05 \$549.53 \$549.53	\$1, \$1, \$,
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash	2.00 0.00 0.00 2.00 1.00 1.00	each each each each each each	\$824.29 \$824.29 \$1,099.05 \$549.53 \$549.53 \$274.76	\$1, \$1, \$, \$,
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts	2.00 0.00 0.00 2.00 1.00 1.00 1.00 6.00	each each each each each each each each	\$824.29 \$824.29 \$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82	\$1, \$1, \$, \$, \$, \$,
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts	2.00 0.00 0.00 2.00 1.00 1.00 1.00 6.00 20.00	each each each each each each each each	\$824.29 \$824.29 \$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46	\$1, \$1, \$.\$.\$ \$
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels	2.00 0.00 0.00 2.00 1.00 1.00 1.00 6.00 20.00 1.00	each each each each each each each each	\$824.29 \$824.29 \$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10	\$1, \$1, \$.\$.\$ \$1,
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's	2.00 0.00 0.00 2.00 1.00 1.00 1.00 6.00 20.00 1.00	each each each each each each each each	\$824.29 \$824.29 \$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54	\$1, \$1, \$.\$.\$ \$10, \$10,
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's I&C Conduit & Wire	2.00 0.00 0.00 2.00 1.00 1.00 1.00 6.00 20.00 1.00 1.00 25.00	each each each each each each each each	\$824.29 \$824.29 \$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54 \$9.53	\$1, \$1, \$ \$, \$ \$10, \$10, \$2,
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's I&C Conduit & Wire Allowance for Misc Items	2.00 0.00 0.00 2.00 1.00 1.00 1.00 6.00 20.00 1.00	each each each each each each each each	\$824.29 \$824.29 \$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54	\$1 \$1 \$ \$ \$1 \$ \$10 \$10 \$2 \$3
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's I&C Conduit & Wire	2.00 0.00 0.00 2.00 1.00 1.00 1.00 6.00 20.00 1.00 1.00 25.00	each each each each each each each each	\$824.29 \$824.29 \$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54 \$9.53	\$1, \$1, \$ \$, \$ \$10, \$10, \$2, \$3,
Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's I&C Conduit & Wire Allowance for Misc Items Subtotal	2.00 0.00 0.00 2.00 1.00 1.00 1.00 6.00 20.00 1.00 1.00 25.00	each each each each each each each each	\$824.29 \$824.29 \$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54 \$9.53	\$1, \$1, \$.\$ \$1, \$ \$10, \$10, \$2, \$3,
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Digital I/O Counts Number of Local Panels Number of PLC's I&C Conduit & Wire Allowance for Misc Items Subtotal MECHANICAL: Pipe	2.00 0.00 0.00 2.00 1.00 1.00 1.00 6.00 20.00 1.00 1.00 225.00 10%	each each each each each each each each	\$824.29 \$824.29 \$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54 \$9.53 \$31,752.48	
Instruments Chemical Tank Radar Level Transmitters Chemical Tank Beacons Day Tank Differential Pressure Transmitter Drum or Tote Weigh Scale Metering Pump Discharge Pressure Switch Magmeter Sump Pump Float Switch Eyewash Number of Analog I/O Counts Number of Digital I/O Counts Number of Digital I/O Counts Number of PLC's I&C Conduit & Wire Allowance for Misc Items Subtotal	2.00 0.00 0.00 2.00 1.00 1.00 1.00 6.00 20.00 1.00 1.00 25.00	each each each each each each each each	\$824.29 \$824.29 \$1,099.05 \$549.53 \$549.53 \$274.76 \$824.29 \$208.82 \$49.46 \$10,331.10 \$10,990.54 \$9.53	\$1, \$1, \$ \$, \$ \$10, \$10, \$2, \$3,

4/5/2010	Liquid Chemical N	laOCI		Printed by:
4:59 PM Chemical Metering Pump Suction Header Piping-LCSH (1-inch, Exposed, PVC)	59.00	lf	\$10.36	\$611
Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	59.00	lf .	\$11.98	\$707
Elbows Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$7.95	\$0
(1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$63.16	\$0
CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH	8.00	each	- \$7.95	\$64
(1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	8.00	each	\$63.16	\$505
Chemical Transfer Pump Suction Header Piping-CTSH	0,00	each	\$8.27	\$0
(1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$109.33	\$0
CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH	2.00	each	\$8.27	\$17
(1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	2.00	each	\$109.33	\$219
End Caps Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$4.46	\$0
(1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$32.34	\$0
CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH	2.00	each	\$4.46	\$9
(1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping- LCDH (1-inch, Exposed, FRP)	2.00	each	\$32.34	\$65
Valves Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$0
(1-inch, Exposed, PVC, V-902, Diaphragm) Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$0
(1-inch, Exposed, PVC, V-902, Diaphragm) Chemical Metering Pump Suction Header Piping-LCSH	4.00	each	\$45.15	\$181
(1-inch, Exposed, PVC, V-902, Diaphragm) Chemical Metering Pump Discharge Header Piping-	4.00	each	\$45.15	\$181
LCDH (1-inch, Exposed, FRP, V-902, Diaphragm) Allowance for Misc Items	. 10%		\$2,557.19	\$256
Subtotal				\$2,813
ELECTRICAL:				
# MCC Sections	0.00	#	\$6,783.10	\$0
Switchgear	0.00	each	\$31,202.24	\$0
Adjustable Frequency Drives	0.00	each	\$4,187.38	\$0
Metering Pumps User Defined Item #1	0.00	each	\$4,125.89	\$0
User Defined Item #2	0.00	each	\$4,125.89	\$0
User Defined Item #3	0.00	each	\$4,125.89	\$0
Electrical Conduit & Wire	0.00	If	\$9.53	\$0
Allowance for Misc Items	10%		\$0.00	\$0
Subtotal				\$0
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
	0.00	1	0.00	\$0
Item 1 Description	0.00		0.00	\$0
Item 2 Description Item 3 Description	0.00		0.00	\$0
Item 3 Description	0.00		0.00	\$0
Item 5 Description	0.00		0.00	\$0
Item 6 Description	0.00		0.00	\$0
Item 7 Description	0.00		0.00	\$0
Item 8 Description	0.00		0.00	\$0
Item 9 Description	0.00		0.00	\$0
Item 10 Description	0.00		0.00	\$0
Item 11 Description	0.00		0.00	\$0
Item 12 Description	0.00		0.00	φ0 \$0
Hard And Document	0.00		0.00	\$0 \$0
Item 14 Description	0.00	PROGRAMMA SET SOMEONE	0.00	\$0
Item 15 Description	0.00		0.00	\$0

4:59 PM				
Subtotal				\$0
Subtotal				\$266,266
ALLOWANGES.		User Over-write		
ALLOWANCES:	2.0%	THE COLUMN TO TH	\$295,851	&E 047
Finishes Allowance		######################################		\$5,917
I & C Allowance	2%	Market Service County	\$295,851	\$5,917
Mechanical Allowance	4%		\$295,851	\$11,834
Electrical Allowance	2%		\$295,851	\$5,917
Facility Cost	1	,050 Building SF	\$281.76	\$295,851

4/5/2010 4:59 PM

4:59 PM		CONTRACTOR SPECIAL SPE		
ZOSTA ESTADA ALEM ANDA MARKANIA MARKAN	Quantity		\$/Unit	Total Cost
Description	Quantity	<u>Omit</u>	DAUAIL	<u>iotal cost</u>
SITEWORK:	51.83	CY	\$5.35	\$277
Excavation Imported Structural Backfill	26.44	CY	\$40.56	\$1,072
	- 0.00	CY	\$6.58	\$(
Native Backfill Haul Excess	51.83	CY	\$6.58	\$34
Allowance for Misc Items	5%		\$1,690.92	\$85
Subtotal				\$1,77
Subiolal				
CONCRETE:				
Slab on Grade	20.15	CY	\$345.93	\$6,969
Containment Walls	3.83	CY	\$683.50	\$2,617
Bulk Tank Pads	0.00	CY	\$345.93	\$(
Day Tank Pads	0.00	CY	\$345.93	\$1
Transfer Pump Pads	0.00	CY	\$345.93	\$(
Metering Pump Pads	1.33	CY	\$345.93	\$46
Corridor				·
Slab on Grade	4.72	CY	\$345.93	\$1,634
Electrical Room				
Slab on Grade	0.00	CY	\$345.93	\$(
Allowance for Misc Items	5%		\$11,680.12	\$58
Subtotal				\$12,26
MASONRY:	Moderate			
CMU Building	714.00	SF	\$131.60	\$93,96
Subtotal				\$93,963
METALS:			-	
Metal Stairway	1.00	EA ·	\$6,580.07	\$6,580
Grating	1.00	EA	\$1,579.22	\$1,579
Allowance for Misc Items	10%		\$8,159.28	\$816
Subtotal				\$8,97
			· .	
Bulk Tank	0.00	EA	\$0.00	-\$0
Day Tank	0.00	EA	\$0.00	\$(
Transfer Pump	0.00	EA	\$0.00	\$(
Metering Pump	2.00	EA	\$6,737.98	\$13,476
Allowance for Misc Items	10%		\$13,475.96	\$1,348
Subtotal				\$14,824
INSTRUMENTS & CONTROLS:				
Instruments Transmitters	0.00	each	\$824.29	\$0
Chemical Tank Radar Level Transmitters Chemical Tank Beacons	0.00	each	\$824.29	\$(
Day Tank Differential Pressure Transmitter	0.00	each	\$824.29	\$(
Drum or Tote Weigh Scale	2.20	each	\$1,099.05	\$2,422
Metering Pump Discharge Pressure Switch	2.00	each	\$549.53	\$1,099
Magmeter Magmeter	1.00	each	\$549.53	\$550
Sump Pump Float Switch	1.00	each	\$274.76	\$275
Eyewash	1.00	each	\$824.29	\$824
Number of Analog I/O Counts	7.00	each	\$208.82	\$1,462
Number of Digital I/O Counts	15.00	each	\$49.46	\$742
Number of Local Panels	1.00	each	\$10,331.10	\$10,33
Number of PLC's	1.00	each	\$10,990.54	\$10,99°
I&C Conduit & Wire	122.47	If	\$9.53	\$1,167
Allowance for Misc Items	10%		\$29,861.98	\$2,986
Subtotal				\$32,848
Oubiotal				+, 0-10
MECHANICAL:				
Pipe				
Chemical Transfer Pump Suction Header Piping-CTSH (1-inch Exposed PVC)	0.00	lf	\$10.36	\$0
1		1,2		
Chemical Transfer Pump Discharge Header Piping-	0.00	lf	\$11.98	\$(

4/5/2010 Liquid Chemical FLUOR Pri	Printed by:
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4/5/2010	Liquid Chemic	al FLUOR		Printed by:
4:59 PM Chemical Metering Pump Suction Header Piping-LCSH	51.00	lf	\$10.36	\$52
(1-inch, Exposed, PVC)				
Chemical Metering Pump Discharge Header Piping-	51.00	. If	\$11.98	\$61
LCDH (1-inch, Exposed, FRP)				
Elbows Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$7.95	\$
(1-inch, Exposed, PVC)	0.00	Cucit	00	•
Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$63.16	\$
CTDH (1-inch, Exposed, FRP)				
Chemical Metering Pump Suction Header Piping-LCSH	8.00	each	\$7.95	\$6
(1-inch, Exposed, PVC)	<u> </u>			
Chemical Metering Pump Discharge Header Piping-	8.00	each	\$63.16	\$50
LCDH (1-inch, Exposed, FRP)				
Tees CTSH	0.00	each	\$8.27	\$
Chemical Transfer Pump Suction Header Piping-CTSH	0.00	eaui	\$0.27	Ψ
(1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$109.33	\$
CTDH (1-inch, Exposed, FRP)	•/			·
Chemical Metering Pump Suction Header Piping-LCSH	2.00	each	\$8.27	\$1
(1-inch, Exposed, PVC)			<u> </u>	
Chemical Metering Pump Discharge Header Piping-	2.00	each	\$109.33	\$21
LCDH (1-inch, Exposed, FRP)				
End Caps				
Chemical Transfer Pump Suction Header Piping-CTSH	0.00	each	\$4.46	\$
(1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-	0.00	each	\$32.34	\$
CTDH (1-inch, Exposed, FRP)	0.00	Gaçii	902.04	Ψ
Chemical Metering Pump Suction Header Piping-LCSH	2.00	each	\$4.46	\$
(1-inch, Exposed, PVC)				•
Chemical Metering Pump Discharge Header Piping-	2.00	each	\$32.34	\$6
LCDH (1-inch, Exposed, FRP)			· ·	
Valves				
Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	\$
(1-inch, Exposed, PVC, V-902, Diaphragm)	0.00		our de	\$
Chemical Metering Pump Suction Header Piping-LCSH	0.00	each	\$45.15	Φ
(1-inch, Exposed, PVC, V-902, Diaphragm) Chemical Metering Pump Suction Header Piping-LCSH	4.00	each	\$45.15	\$18
(1-inch, Exposed, PVC, V-902, Diaphragm)	4.00	Cash	770.73	Ψ,0
Chemical Metering Pump Discharge Header Piping-	4.00	each	\$45.15	\$18
LCDH (1-inch, Exposed, FRP, V-902, Diaphragm)				
Allowance for Misc Items	10%		\$2,378.44	\$23
Subtotal	·			\$2,61
			<u> </u>	
ELECTRICAL:	0.00	ш	00 700 40	
# MCC Sections	0.00	# each	\$6,783.10 \$31,202.24	\$ \$
Switchgear	0.00	Cacii	\$31,202.24	Ψ
Adjustable Frequency Drives Metering Pumps	0.00	each	\$4,187.38	\$
User Defined Item #1	0.00	each	\$4,125.89	\$
User Defined Item #2	0.00	each	\$4,125.89	\$
User Defined Item #3	0.00	each	\$4,125.89	\$
Electrical Conduit & Wire	0.00	If	\$9.53	\$
Allowance for Misc Items	10%		\$0.00	\$
Subtotal				\$
WATER COTINE TO THE TOTAL OF TH	CHANT	UNIT	\$/UNIT	TOTAL COST
USER DEFINED ESTIMATE ITEMS:	QUANT 0.00	UNH	\$/UNIT	TOTAL COST \$
Item 1 Description Item 2 Description	0.00		0.00	\$
Itom 2 Description	0.00		0.00	\$
Item 4 Description	0.00		0.00	\$
Item 5 Description	0.00		-0.00	\$
Item 6 Description	0.00		0.00	\$
Item 7 Description	0.00		0.00	
Item 8 Description	0.00		0.00	9
Item 9 Description	0.00		0.00	
Item 10 Description	0.00		0.00	9
Item 11 Description		요. 이 이 이 이 아이를 받는 것이다. 이 아이 아이 아이 아이를 받는 것을 보았다.	0.00	\$ \$
Item 12 Description	0.00			
	0.00	이 없는 사람들 전문 이 어떻게 되었다는 일 시작되었다.	ብ ከተመደ ነው።	· · · · · · · · · · · · · · · · · · ·
Item 13 Description Item 14 Description	0.00 0.00		0.00	\$ \$

4:59 PM				\$0
Subtotal				
Subtotal				\$167,26
ALLOWANCES:		User Over-write		
Finishes Allowance	2.0%		\$185,851	\$3,71
I & C Allowance	2%		\$185,851	\$3,71
Mechanical Allowance	4%		\$185,851	\$7,43
Electrical Allowance	2%		\$185,851	\$3,71
Facility Cost	71	4 Building SF	\$260.30	\$185,85

4:59 PM CO 3 E STILLATE				
Description	Quantity	Unit	\$/Unit	Total Cost
SITEWORK:				
Excavation	51.83	CY	\$5.35	. \$277
Imported Structural Backfill	26.44	CY	\$40.56	
Native Backfill	0.00	CY	\$6.58	
Haul Excess	51.83	CY	\$6.58	
Allowance for Misc Items	5%		\$1,690.92	
Subtotal				\$1,775
CONCRETE:		-		
Slab on Grade	20.15	CY	\$345.93	\$6,969
Containment Walls	3.83	CY	\$683.50	\$2,617
Bulk Tank Pads	0.00	CY	\$345.93	
Day Tank Pads	0.00	CY	\$345.93	
Transfer Pump Pads	0.00	CY	\$345.93	
Metering Pump Pads	1.33	CY	\$345.93	\$461
Corridor				
Slab on Grade	4,72	CY	\$345.93	\$1,634
Electrical Room				
Slab on Grade	0.00	CY	\$345.93	\$(
Allowance for Misc Items	5%		\$11,680.12	
Subtotal				\$12,264
	Moderate	3	,	
MASONRY:	714.00	SF	\$131.60	\$93,963
CMU Building	714.00	101	\$131.00	\$93,963
Subtotal				\$93,903
METALS:				
Metal Stairway	1.00	EA	\$6,580.07	
Grating	1.00	EA :	\$1,579.22	
Allowance for Misc Items	10%		\$8,159.28	
Subtotal			•	\$8,975
		ΕΔ		,
Bulk Tank	0.00	L-1	\$0.00	
Day Tank	0.00	EA	\$0.00	
Transfer Pump	0.00	EA	\$0.00	
Metering Pump	2.00	EA	\$6,737.98	
Allowance for Misc Items	10%	<u> </u>	\$13,475.96	
Subtotal				\$14,824
INSTRUMENTS & CONTROLS:				
Instruments				
Chemical Tank Radar Level Transmitters	0.00	each	\$824.29	
Chemical Tank Beacons	0.00	each	\$824.29	\$0
Day Tank Differential Pressure Transmitter	0.00	each	\$824.29	
Drum or Tote Weigh Scale	1.37	each	\$1,099.05	
Metering Pump Discharge Pressure Switch	2.00	each	\$549.53	·
Magmeter	1.00	each	\$549.53	
Sump Pump Float Switch	1.00	each	\$274.76	
Eyewash	1.00	each	\$824.29	
Number of Analog I/O Counts	6.00	each	\$208.82	
Number of Digital I/O Counts	15.00	each	\$49.46	
Number of Local Panels	1.00	each	\$10,331.10	
Number of PLC's	1.00	each	\$10,990.54	
I&C Conduit & Wire	108.22	<u>lf</u>	\$9.53	
Allowance for Misc Items	10%		\$28,596.74	
Subtotal	-			\$31,456
MECHANICAL:	1			
Pine				
Chemical Transfer Pump Suction Header Piping-CTSH	0.00	lf	\$10.36	\$0
(1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-	0.00	If	\$11.98	\$0
CTDH (1-inch, Exposed, FRP)				

Liquid Chemical POLYPHOS Printed by: 4/5/2010 4:59 PM Chemical Metering Pump Suction Header Piping-LCSH 51.00 \$10.36 (1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping-51.00 \$11.98 LCDH (1-inch, Exposed, FRP) Elbows Chemical Transfer Pump Suction Header Piping-CTSH 0.00 each \$7.95 (1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-0.00 each \$63.16 CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH 8.00 each \$7.95 (1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping-8.00 each \$63.16 LCDH (1-inch, Exposed, FRP) Tees Chemical Transfer Pump Suction Header Piping-CTSH 0.00 \$8.27 each (1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-0.00 each \$109.33 CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH 2.00 each \$8.27 (1-inch, Exposed, PVC) Chemical Metering Pump Discharge Header Piping-2.00 \$109.33 each LCDH (1-inch, Exposed, FRP) End Caps Chemical Transfer Pump Suction Header Piping-CTSH 0.00 \$4.46 each (1-inch, Exposed, PVC) Chemical Transfer Pump Discharge Header Piping-0.00 each \$32.34 CTDH (1-inch, Exposed, FRP) Chemical Metering Pump Suction Header Piping-LCSH 2.00 each \$4.46 (1-inch, Exposed, PVC) 2.00 Chemical Metering Pump Discharge Header Piping-\$32.34 each LCDH (1-inch, Exposed, FRP) Valves 0.00 Chemical Metering Pump Suction Header Piping-LCSH each \$45.15 (1-inch, Exposed, PVC, V-902, Diaphragm) Chemical Metering Pump Suction Header Piping-LCSH \$45.15 0.00 each (1-inch, Exposed, PVC, V-902, Diaphragm) Chemical Metering Pump Suction Header Piping-LCSH 4.00 \$45.15 each (1-inch, Exposed, PVC, V-902, Diaphragm) 4.00 Chemical Metering Pump Discharge Header Pipingeach \$45.15 LCDH (1-inch, Exposed, FRP, V-902, Diaphragm) 10% \$2,378.44 Allowance for Misc Items Subtotal ELECTRICAL: 0.00 \$6,783.10 # MCC Sections 0.00 \$31,202.24 each Switchgear Adjustable Frequency Drives 0.00 each \$4,187.38 Metering Pumps 0.00 each \$4,125.89 User Defined Item #1 0.00 \$4,125.89 each User Defined Item #2 0.00 each \$4,125.89 User Defined Item #3 Electrical Conduit & Wire 0.00 \$9.53 10% \$0.00 Allowance for Misc Items Subtotal

741077	and the miles reme				
Subto	otal				\$0
	USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	· \$/UNIT	TOTAL COST
Ārija	Item 1 Description	0.00		0.00	\$0
	Item 2 Description	0.00		0.00	- \$0
	Item 3 Description	0.00		0.00	\$0
Market L	Item 4 Description	0.00		0.00	\$0
W. S. C.	Item 5 Description	0.00		0.00	\$0
	Item 6 Description	0.00		0.00	\$0
	Item 7 Description	0.00		0.00	\$0
epotensor) j	Item 8 Description	0.00		0.00	\$0
	Item 9 Description	0.00		0.00	.\$0
	Item 10 Description	0.00		0.00	\$0
	Item 11 Description	0.00		0.00	\$0
	Item 12 Description	0.00		0.00	\$0
ar e ar	Item 13 Description	0.00		0.00	\$0
Alteria	Item 14 Description	0.00	n i tra i mende karantar, innggan beranggaba Tanggan	0.00	\$0
iv viv	Item 15 Description	0.00		0.00	\$0
		All Rights Owned by CH	I2M HILL /	File	Version:1/5/2010

\$528

\$611

\$0

\$0

\$64

\$505

\$0

\$0

\$17

\$219

\$0

\$0

\$9

\$65

\$0

\$0

\$181

\$181

\$238

\$0

\$0

\$0

\$0

\$0

\$0

\$0

\$0

\$2,616

			\$0
			\$165,874
2.0%		\$184,305	\$3,686
2%		\$184,305	\$3,686
4%		\$184,305	\$7,372
2%		\$184,305	\$3,686
	744 Duilding CF	6050.40	\$184,305
	4%	2% 4%	2.0% \$184,305 2% \$184,305 4% \$184,305 2% \$184,305 2% \$184,305

5:00 PM 5:0 STHES THE ATTE				
<u>Description</u>	Quantity	<u>Unit</u>	<u>\$/Unit</u>	Total Cost
O&M BUILDING	6000.00	SF	\$474.70	\$2,848,22
Subtotal				\$2,848,22
USER DEFINED ESTIMATE ITEMS:	QUANT	UNIT	\$/UNIT	TOTAL COST
Item 1 Description	0.00		0.00	\$
Item 2 Description	0.00		0.00	\$
Item 3 Description	0.00		0.00	\$
Item 4 Description	0.00	The sale in the street of the sale in the	0.00	\$
Item 5 Description	0.00		0.00	\$
Item 6 Description	0.00		0.00	\$
Item 7 Description	0.00		0.00	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
Item 8 Déscription	0.00		0.00	\$
ltem 9 Description	0.00		0.00	\$
Item 10 Description	0.00		0.00	\$
Item 11 Description	0.00		0.00	\$
Item 12 Description	0.00		0.00	\$
Item 13 Description	0,00		0.00	\$
Item 14 Description	0.00	as above construction	0.00	\$
Item 15 Description	0.00		0:00	. \$
Subtotal				\$0
Subtotal				\$2,848,22
ALLOWANCES:			-	
Finishes Allowance	0.0%		\$2,848,226	\$
1 & C Allowance	0%		\$2,848,226	
Mechanical Allowance	0%		\$2,848,226	\$
Electrical Allowance	0%		\$2,848,226	\$
Facility Cost	6,00	00 SF	\$474.70	\$2,848,22

Alternative 1 - Deep and Shallow Aquifer

		Shallow We	II Capital Costs		Ancientistic visuality	Interconnecting
Shallow Well	Shallow Well Capacity, mgd	Land	Wells and Pumphouses	Sitework Electric Utility	Shallow well Treatment Facility	Piping \$ 907,200
Vernon 1	0.75	\$160,000	\$300,000	\$750,000		\$ 132,000
Vernon 2	0.75	\$160,000	\$300,000	\$644,000		\$ 662,400
Vernon 3	0.75	\$160,000	\$300,000			\$ 1,152,000
Vernon 4	0.75	\$160,000	\$300,000			\$ 2,112,000
Vernon 5	0.75	\$160,000	\$300,000			φ <u></u> 2,112,000
Vernon 6	0.75	\$160,000	\$300,000			
Vernon 7	0.75	\$160,000	\$300,000			
Lather 1	0.75	\$160,000	\$300,000			
Lather 2	0.75	\$160,000	\$300,000			
Lather 3	0.75	\$160,000	\$300,000			
Lather 4	0.75	\$160,000	\$300,000			
Lather 5	0	\$160,000	\$300,000			
			4000 000	3		
Vernon 8	0.75	\$160,000	\$300,000	4		
Vernon 9	0.75	\$160,000	\$300,000	04 004 0000	\$29,864,000	\$4,965,600
Wells 11-13 fin	r 1.2	\$2,240,000	\$4,200,000	\$1,394,000	Includes \$2 million	41,000,000

Includes \$2 million

for Land

10.95 Total Wellfield

\$12,799,600

Alternative 1 Finished Water pipelines	<u>1e</u>	\$16,884,000
10% allowance for pipeline valves & appurtenances		\$1,689,000
Pipeline Construction Cost		\$18,573,000
Pipeline Construction Cost		\$18,573,000
3% markup for Bonds & Insurance	\$558,000	
5% markup for Mob/Demob	\$929,000	
8% markup for Contractors Overhead	\$1,561,000	
4% markup for Contractors profit	\$843,000	·
25% Contingency	\$5,616,000	•
Subtotal Markups and Contingency		\$9,507,000
Total Project Construction Costs		\$28,080,000
8% allowance for pipeline engineering and design	2,247,000	
12% allowance for permitting, legal and administration	3,370,000	
8% allowance for pipeline engr services during construction	2,247,000	
Subtotal Other Project Costs		\$7,864,000
GRAND TOTAL PROJECT COST		\$35,944,000

Alternative 3 - Distribution

Pipelines		\$7,695,000
10% allowance for pipeline valves & appurtenances		\$770,000
Pipeline Construction Cost		\$8,465,000
Pipeline Construction Cost		\$8,465,000
3% markup for Bonds & Insurance	\$254,000	
5% markup for Mob/Demob	\$424,000	•
8% markup for Contractors Overhead	\$712,000	
4% markup for Contractors profit	\$385,000	
25% Contingency	\$2,560,000	
Subtotal Markups and Contingency		\$4,335,000
Total Project Construction Costs	÷	\$12,800,000
5% allowance for pipeline engineering and design	768,000	
12% allowance for permitting, legal and administration	640,000	
08% allowance for pipeline engr services during construction	1,024,000	
Subtotal Other Project Costs		\$2,432,000
GRAND TOTAL PROJECT COST		\$15,232,000

Alternative 3 - Lake Michigan Distribution System Improvements

	Diameter	0	6
	Dian	7	
main	Miles	2.8	2
Water Forcemain	Segment	Y	m

Unit cost | %/dia-in | 12

 Mile
 Cost
 Comments

 1 mi of 20"
 \$1,736,064
 Assume High Urban

 1 mi of 16"
 \$1,388,851
 Assume High Urban

subtotal \$7,694,380

Pipeline Construction Difficulty

Seg B cost \$/lf	142	192	228	263	250	221	163	384	298
Seg A costSeg B cost \$/If \$/If	178	240	286	329	312	276	204	480	096
••	0.74	1.00	1.19	1.37	1.30	1.15	0.85	2.00	4.00
Factors (source: CPES)									
Alignment Category	Open country	Low urban	Medium urban	High urban	Groundwater	Forest	Gravel roads	Creek crossing	HWY crossing

miles	0.13	0.25	0.5
1661	noo	lozell	7.04N

Alternative 1&2 Wastewater Forcemain

Pipelines		\$3,029,000
10% allowance for pipeline valves & appurtenances		\$303,000
Pipeline Construction Cost		\$3,332,000
	*	
Pipeline Construction Cost		\$3,332,000
3% markup for Bonds & Insurance	\$100,000	
5% markup for Mob/Demob	\$167,000	
8% markup for Contractors Overhead	\$280,000	
4% markup for Contractors profit	\$152,000	
25% Contingency	\$1,008,000	·
Subtotal Markups and Contingency		\$1,707,000
Total Project Construction Costs		\$5,039,000
5% allowance for pipeline engineering and design	303,000	
12% allowance for permitting, legal and administration	252,000	
08% allowance for pipeline engr services during construction	404,000	
Subtotal Other Project Costs		\$959,000
GRAND TOTAL PROJECT COST		\$5,998,000

Alternative 1 & 2 - Wastewater Force Main

Wastewater Forcemain								
Segment	Miles	Diameter						
Α	2	6						
В	- 3	. 6						

Unit cost	\$/dia-in	12

Mile 1	Cost \$416,275	Comments In Sentry Dr., Cross 2 access roads, Chapman Dr, Spring city Dr, W. Sunset Dr
2	\$452,390	In Sunset Dr, cross access road, dozens of residential drive ways, Oakdale Dr, Wisteria, School Dr. Burr Oak, HWY 59 Cross Foxwood Trail, River Plain, Dale,
3	\$452,390	Mary Ann, Red Oak In HWY H, cross HWY, Red clover, 0.5
4	\$833,026	mi wetland
5	\$874,368	In Co Rd I, wetland
subtotal	\$3,028,450	

Pipeline
Construction
Difficulty
Factors Seg A costSeg B cost
(source: C \$/lf \$/lf Alignment

Category	(source: C	\$/If	\$/\1
Open country	0.74	53	_ 53
Low urban	1.00	72	72
Medium urban	1.19	86	86
High urban	1.37	99	99
Groundwater	1.30	94	94
Forest	1.15	83	83
Gravel roads	0.85	61	61
Creek crossing	2.00	144	144
HWY crossing	4.00	288	288

miles	0.13	0.25	0.5	0.05
feet	660	1320	2640	264

Alternative 4 - Lake Michigan and Shallow Aquifer

	Pipeline		
	Segment	Miles	Diameter
•	Α	9	24
	B .	. 3	24

Unit cost	\$/dia-in	12

Mile	Cost	Comments
1	\$2,661,120	In Howard Ave, cross HWY 894, 60th
2	\$1,556,755	In Howard Ave, cross 76th, cross 84th, cross 92nd
3	\$2,126,995	In Howard Ave, cross HWY 45, cross 104th
		In Howard Ave, cross HWY 100,
		cross Beliot Rd, in pkwy, cross
4	\$1,613,363	Morgan Ave
		In pkwy, cross Oklahoma, cross
5	\$2,490,808	National, cross Cleveland
6	\$2,016,369	0.5 mì pkwy, 0.5 mi în 124th Street
7	\$1,322,957	In 124th, cross 124th street, Utility corridor (Oak Leaf)
8	\$1,364,774	Utility corridor, cross Sunnyslope, cross Moorland
- 9	\$1,210,810	Utility corridor, cross Calhoun
10	\$1,462,856	Utility corridor
11	\$1,462,856	Utility corndor
12	\$1,210,810	Utility corridor, cross Springdale
13	\$1,520,640	Cotton Crt
14	\$1,125,274	Open country
subtotal	\$23,346,386	•
10% Valves	\$2,334,639	
Total	\$25,681,025	

Pipeline Construction Difficulty

Alignment Category	Factors (source: CPES	Seg A cost \$/if	Seg B cost \$/lf
Open country	0.74	213	213
Low urban	1.00	288	288
Medium urban	1.19	343	343
High urban	1.37	395	395
Groundwater	1.30	374	374
Forest	1.15	331	331
Gravel roads	0.85	245	245
Creek crossing	2.00	576	576
HWY crossing	4.00	1152	1152

miles	0.13	0.25	0.5
feet	660	1320	2640

4620 3960 2640

Alternative 4 - Lake Michigan and Shallow Aquifer
Return Flow Underwood Creek (7.6 mgd, 24" dia)
Pipelines \$15,463,160

10% allowance for pipeline valves & \$1,547,000

Pipeline Construction Cost \$17,011,000

WWTP Effluent Pump Station \$2,161,686

Conveyance System Construction C \$19,172,686

Alternative 4 - Underwood Creek Return Flow

Pipeline	
Segment	Diameter
Α	24
B	***24 /-4

Unit cost \$/dia-in 12

Mile	Cost	Comments
		0.75 mi follows river, crosses Prairie ave, Marshall and
1	\$1,592,870	Dunbar, 0.25 under alley to NW ave
	•	Cross Maple, Grand, Barstow, East, Barney, Hartwell,
2	\$1,592,870	crossing of E Broadway (major street); end at Oakland follows path (cross Greendale and Frederick), cross
3	\$2,193,523	East Side bypass HYW 59 (MAJOR)
		Follows New Berlin trail/utility corridor, cross
		Springdale;also a stream crossing, some forest; ends
4	\$1,224,647	70% near stream crossing
		Follows trail, open country mostly, some forest,
_		wetlands for 0.5 mi, assume groundwater; ends near
5	\$1,036,772	70% wetlands/open water pond
	****	Follows trail, open country mostly, some forest
. 6	\$831,334	70% (assume 10%)
		Begins near Calhoun, one stream crossing; becoming
		urban again but still follows trail and is mostly open, crosses Calhoun and ends near Moorland, assume
7	\$1,133,637	70% 10% forest
•	ψ1,100,001	Still in trail, no crossings; very open; Ends near
8	\$787,692	70% Sunnyslope Rd
ū	4.0.,002	1070 Carmy Glopo Na
9	\$787,692	70% Still in trail, no crossings; very open; Ends at 124th st
		Going north under 124th st, crosses Greenfield (hwy
10	\$1, 7 48,736	59), ends near 124th and Zinke Dr
. 11	\$2,533,386	Last section follows Underwood Creek, Crosses I-94
subtotal	\$15,463,160	
10% Valves	\$1,547,862	
Total	\$17,011,022	

288 288

	Pipeline Construction Difficulty	·
Alignment	Factors	Seg A cost
Category	(source: CPES)	\$/If
Open country	0.74	213
Low urban	1.00	288
Medium urban	1.19	343
High urban	1.37	395
Groundwater	1.30	374
Forest	1.15	331
Gravel roads	0.85	245

Creek crossing

HWY crossing

miles	0.13	0.25
feet	660	1320

2.00

4.00

4620 3960

576

1152

O&M Cost Alternative 4 - Lake Michigan and Shallow wells

Source of Supply	<u>Units</u>	Quantity	Unit Cost	Ext. Cost	<u>\$/yr</u>		<u>Total</u>
Shallow Well Pumping/Mainten Purchased water	ance \$/1000 ga 1000 gals				\$ 281,050 \$ 2,227,960		
Total Supply						\$	2,509,010
Treatment/Pumping Shallow Wells Residuals Lake MI Energy Lake MI O&M	<u>Units</u> mgd	Quantity 144175 4.4 2% of Capital cost of pump station	<u>Unit Cost</u> \$ 4 \$ 0.0200	, 210,100	\$/yr \$ 2,228,000 \$ 576,700 \$ 75,732 \$ 108,000) 2	
Return Flow Ener Return O&M	gy mg d	4.4 2% of Capital cos	\$ 0.0200	\$ 2,200,000	\$ 56,619 \$ 44,000		
Total Treatment/Pumpi	ng					\$	3,085,051
Home Softening Salt/Equipment/R ment	<u>Units</u> eplac 1	Quantity	<u>Unit Cost</u>	Ext. Cost	\$/vr \$ 1,804,253	3	
		:				\$	1,804,253
<u>Fransmission</u> Shallow Aquifer	<u>Units</u> \$/lf/yr	<u>Quantity</u> 137,280	<u>Unit Cost</u> \$ 0.52	Ext. Cost \$ 71,386	\$/ <u>vr</u> \$ 71,386	6	·
Total Transmissio	ρ π					\$	71,386
Alternative Total O&M (\$/yr.)						\$	7,500,000
PRESENT WORTH (6%, 20 yr	<u>s)</u>					\$	86,000,000
PRESENT WORTH (6%, 50 yr	<u>s)</u>					\$ 1	18,000,000

Printed by: 4/5/2010 5:07 PM <u>C</u> H2M HILL <u>P</u> arametric Cost <u>E</u> stimating <u>S</u> ystem (CPES) 2 FACILITIES LIFE CYCLE COST ANALYSIS 3 1/5/2010 <u>File</u> 4 Version: \\ Gecko\ wbg\ Curl\ WaukeshaWI\ Treatment plant Surface water alt 1.xis Brow Glick for GPES QA/QC 5 6 Waukesha WTP Project Name: Life Cycle Analysis: 7 *i* = 6.00% 8 Project Number: Linda Mohr 25 Project Manager: 9 4.50% Annual Estimator: Jason Curl Inflation %: Fox River Alluvium and Shallow Groundwater 11 Project Description: To Global Life Cycle Data Sheet Milwaukee 12 Project Location (City): 13 Project Location (State): WISCONSIN To Annual O.&M Cost Summary Sheet USA 14 Project Location (Country): Jan 15 Construction Start (Month): 16 Construction Start (Year): 2011 This Report is for INTERNAL Distribution 17 Construction Duration (months) 24 Jan/2012 18 Mid-Point of Construction: This Report is for EXTERNAL Distribution 19 SCOPE OF PROJECT Construction Life Cycle Cost Is This Facility Annual *Item* Cost **O&M Cost** (NPV) Included in (Escalated) Project? (Yes or No) \$1,252,729 Inline Rapid Mix: RMX \$1,124,218 \$10,054 21 Yes Flocculation: FLOC \$2,758,162 \$3,019,917 \$20,477 22 Yes \$5,554,216 Lamella Clarifier: LAM \$4,276,418 \$99,959 Yes Filters: FILT \$9,077,505 \$74,615 \$10,031,332 Yes Surge Basin-Decanter: BWW \$2,773,337 \$38.555 \$3,266,193 UV Disinfection: UVD \$0 \$0 \$0 26 No Concrete Clearwell: FWT \$2,371,500 \$1,111 \$2,385,692 27 Yes Steel Clearwell: FWT \$0 \$0 No 28 In-Plant PS: FWPS \$0 \$0 \$0 29 No Vertical Turbine PS: FWPS \$5,495,750 \$738,581 \$14,937,283 30 Yes Filter BW PS: BWSPS \$1,988,991 \$2,558,947 Yes \$44,586 31 U.D. Facility: GEN \$0 Yes 32 Liquid Chemical: FeCl3 \$708,914 Yes \$220,946 \$3,533,337 33 Liquid Chemical: NaOCI \$534,622 \$98,204 \$1,789,986 Yes 34 Liquid Chemical: FLUOR Yes \$8,675 \$335,846 \$446,737 35 Liquid Chemical: POLYPHOS Yes \$333,051 \$39,577 \$838,978 36 O&M Building: OMB \$5,146,925 \$11,636 \$5,295,664 Yes 37 38 Additional Project Costs: 39 Biosolids Disposal \$0 \$0 40 Standard Items \$13,413,828 \$384,177 \$18,324,898 41 User Defined Items \$0 42 43 Plant O & M Labor \$434,906 \$5,559,555 44 45 \$50,339,067 \$2,226,059 \$78,795,464 TOTAL - Life Cycle Analysis 46 Construction Cost per GPD (based on Maximum Daily Flow Rate) \$4.19 / GPD 47 Non-Construction Cost 48 Capital Cost per GPD (based on Maximum Daily Flow Rate) \$4.19 / GPD Note: "Capital Cost" equals

1.016 / Thousand Gallons

Construction Cost plus Non-Construction Cost)

50

Annual O & M Cost per 1,000 Gallons (based on Average Annual Daily Flow Rate)

10%

5,595

6,154

559

Subtotal Annual O&M Cost

Total Annual O&M Cost

Contingency

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4/5/2010

arge System Combination Wastewater Surge Basin							
nd Floating Tube Decanter Clarification (>= 5 MGD)	To Sun	mary Sheet					
				 			
						ļ	•
instruction Cost:				·		\$2,	773,337
en er en							
nnual O & M Cost:	and the second	Total HP	Average-to-Maximum	Annual Usage	\$/kwh	Pov	ver Cos
Selection of the Select		100	Flow Factor	(Hours / Year)			
		av.				1.0	
Equipment Power		43	50%	8,760	\$ 0.06	\$	7,8
		Building	Watts / SF	Annual Usage	\$/kwh	Other	Electri
Other Electrical:		Area (SF)		(Hours / Year)			Cost
					2.00		
		100					
			2.0				
Building Electrical		81	2.00	8,760	\$ 0.06	\$	
Chemicals:						S	
			AND THE PROPERTY OF THE PROPER	THE PARTY OF THE P		I WATER CALLSON	Same and the
Repair and Maintenance, and Replacement:					Replacement	Ann	ual Co
					"Yes"; 0 =		
20.0					, "No")	\$	11,5
Maintenance & Repair Cost Replacement Cost	and the second second			3 2 2 2 2 3 3 4 3 9 3 9 3 9 3 9 3 9 3 9 3 9 3 9 3			
		planta Signa Nederland			- 12.00 m	e serence	000000000000000000000000000000000000000
Other				Total Annual O&M Cost		011	ier Cos
Other Cost			<u> </u>	\$ 19,506	10.0%	\$	1,9
User Defined Annual O&M Items:				- 1 (18 m)		Ann	ual Co
item 1	- 18 <u>-25-8-18-16-1</u>					\$	écertier
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tem 8 Programme 1	The second secon			grafia est		\$	
Item 10						\$	STATE
Item 11 Item 12		至上 数 有公路 5.5600000000000000000000000000000000000				\$	
Item 12 Item 13					Variante de Artistation Variante de Artistation	\$	
Item 14		. Y 8944"		es 15 de 162 (62)	法并被通信	\$	
Item 15			[19 - 10일 [20] 기보면 다음 기계를 가장 		1944 (194) 1	\$	20.5%
Silvines Annual ORM Cost	i .	I,	1	1	I	j \$	21,4
Subtotal Annual O&M Cost Contingency					10%	\$	2,1
Fotal Annual O&M Cost	•	 				\$	23,6

Area (SF)

1,022

		12.00		
Other Cost \$	562,769.52	10.0%	\$	56,27
User Defined Annual O&M Items:			Anr	ual Cos
ftem ⁻¹	and while or of		\$	
Item 2			\$	
Item 3	gran ar oto Geogra	October Sections	\$	gang g
Item 4	ri ayar sinda		\$ Y	grans .
ttem 5			\$	
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item 7			\$	
tem 8			\$	V- 19,465
Item 9	Ar, Colwan	정보기하면 건강	\$	9 -348
Item 10	\$6, Xe. S. 2, \$6.85.		\$	
item 1			\$	
Item 12			\$	
Item 13			\$	
Item 14	C ARAMERICAN		\$	7. .
Item 15	gaganara a		\$	PONT.
ubtotal Annual O&M Cost	2	•	\$	619,04
ontingency		10%	\$	61,90

Cost

1,003

Annual Cost

Other Cost

74,141

680,951

8,760

Total Annual O&M

Replacement

Included?.(1 "Yes".0=

other"

Building Electrical

Repair and Maintenance, and

Maintenance & Repair Cost Replacement Cost

Chemicals:

Replacements

Other:

Total Annual O&M Cost

	1			<u>-</u>		
	To Sun	mary Sheet				
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			and the second		· · · · · · · · · · · · · · · · · · ·	\$5,495,7
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	IOIAI			nual Usage (Hours /Year)).kwn	Power C
			L.			
				0.700	4 000	
<u>na Tipovat lakujula</u> T		800 5	U%	8,760	: э О.06:	\$ 329
			s / SF 🛒 🚊 An		\$/kwh	Other Elec
40 <u>474289</u>	3	189	2.00	8,760	\$ 0.06	\$ 3
						\$::25:
					Replacement	Annual G
					Included? (1 =	
					P. "No")	
						\$ 41 \$
			-	Color Paragonia (COM NA CO		- CHC
				Cost	Percent	Other C
			\$	373,672	10.0%	\$ 37
	345-757-757-757-75					Annual C
						\$
				50,000, 60 a 60 a 66 a 6	and the second	\$
86.415		st ean took S'ases was	Commence of the Commence of th			\$ \$
presentation		o o represión			voltorer wit	\$ @ .fe
						\$
2008 100 100 100 100 100 100 100 100 100	College and College	rasan gar	Raw Ger		a dan ka	\$ 100
		Carly States				\$
TO STATE OF THE ST	Percentification	enga ukon salas	2-17 (2-10-40)			\$
	Control of the Contro		and the second	en arganisa a Standa Shirir Tanan arganis dalah dalam		\$ \$
anna ta kingga ta romato kalaya ya dilaya rata ta ka						\$
						\$
I		I	i			\$ 411
	4				10%	\$ 41
		Total) Area (3.3. 3.4. 3.4. 4.5. 4.	1,800 5 Building Wat Aen (SE) 3,189	Total HPS Average fold Maximum And Flow Factors (SF) 1,800 50% Building Watts (SF) Avea (SF) 3,189 2,000 \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$	Total RP Average to Maximum Annual Usage (Hours Flow Factor 1 Year) 1,800 50% 8,760 Building Watts / ST Annual Usage (Hours / Year) 3,189 2,00 8,760 \$ \$10tal Annual OsM Cost \$ 373,672	Total HP Average fold aximum Amuel Usage (Rours S. SAwn Floor actor S. SAwn S. Sawn

Item 15

Contingency

Subtotal Annual O&M Cost

Total Annual O&M Cost

\$

\$

\$

10%

24,813 2,481

27,294

			1			
Liquid Chemical Storage & Feed				To Summary She	et	
Construction Cost:			7.	:		\$708,913
			<u> </u>			
Annual O & M Cost:		Total HP	Average to	Veniel Henry	S/kwh	Power Cost
Power			Maximum Flow		JAWI	FOWE COST
			Factor			
Equipment Power		3	50%	8,760	\$ 0.06	\$ 549
Se Other Electrical:		Building	/// Watts // SF	Annual Usage	\$/kwh	. Other Electrical
Wine Electrical		Area (SF)		(Hours:/Year)		Cost
CONTROL OF THE STATE OF THE STA						
Building Electrical	DATE NOT THE PROPERTY OF THE P	1,226	2.00	8,760	\$ 0.06	\$ 1,203
Saliguid Chemicals:		Annual	Average-to-1		Cost (\$/dry ton)	Chemical Cost ■
		Usage (% of year)	Maximum Flow Factor	(dry tons / year)		
THE RELEASE OF THE PROPERTY OF						
Aluminum Sulfate (Alum) Aqueous Ammonia		100% 100%	50% 50%		\$ 644.17 \$ 404.57	\$ - \$ -
Ferric Chloride		. 100%	50%	274	\$ 782.93	\$ 107,249
Hydroffuoros Ilicic Acid Hyrogen Peroxide (35%)		100% 100%	50% 50%		\$ 360.00 \$ 1,734,23	\$ \$
Liquid Polymer Sodium Bisulfite		100% 100%	50% 50%		\$ 3,140.89 \$ 920.91	\$ - \$ -
Sodium Hydroxide (50%) Sodium Hypochlorite (12:5%)		100% 100%	50% 50%		\$ 825.32 \$ 1,672.13	\$ \$
Sulfuric Acid Other:Chemical		100% 100%	50% 50%		\$ 138.09 \$	\$ \$ -
Total Chemical Cost						\$ 107,249
Repair and Maintenance; and Replacement					Replacement	- Annual Cost
					Included? (1 = "Yes"; 0 =	
Maintenance & Repair Cost					No")	\$ 2,783
Replacement Cost						\$
Other:				Total Annual	"Other"	Other Cost
				O&M Cost	Percent	
Other Cost		T		\$ 111,783	10.0%	\$ 11,178
User Defined Annual O&M Items:						Annual Cost
Item 1						\$ \$
ltem 3						\$
Item 4						\$ 15 m
ltem 6						\$ \$
Item 8						\$ -
Item 9 Item 10						\$
Item 11						\$ -
Item 12 Item 13				1.6486.965 1.148.155		\$ - ·
Item 14		19-143				\$
Item 15			Harvin Mind		1000	\$

\$

\$

Item 10

Item 11 Item 12

Item 13 Item 14

Item 15

\$

Item 13

Item 14

Item 15

5:10 PM					· · · · · · · · · · · · · · · · · · ·	
Linuid Chaminal Stayona P Food				To Summary She	et	
Liquid Chemical Storage & Feed						
Construction Cost:	· · · · · · · · · · · · · · · · · · ·	· · · · · ·			<u> </u>	\$333,051
Annual O & M Cost:		Total HP	Average-to-		\$/kwh	Power Cost
Power:			Maximum Flow			discount of
			Factor			
Equipment Power		2	50%	8,760	\$ 0.06	\$ 366
Other Electrical:		Building	Watts / SF	Annual Usage	\$/kwh	Other Electrical
		Area (SF)		(Hours / Year)		Cost
Hart Control of the C						
Building Electrical		714	2.00	8,760	\$ 0.06	\$ 701
	l e	Annual	Average-to-	Annual Usage	Coet/@ldocton	Chemical Costa
Liquid Chemicals:		Usage (% of	Maximum Flow			Chemical Cost
Applications of the contract of the contract	100	year)	Factor			
en e				100		
		100%	50%		\$ 644.17	
Aluminum Sulfate (Alum) Aqueous Ammonia		100%	50%		\$ 404,57	\$ - \$ -
Ferric Chloride Hydrofluorosilicia Acid		100% 100%	50% 50%		\$ 782.93 \$ 360.00	\$ - \$ -
Hyrogen Peroxide (35%)		100%	50%	SAZENÁ DE	\$ 1,734.23	\$ -
Liquid Polymer Sodium Bisulfite		100% 100%	50% 50%		\$ 3,140.89 \$ 920.91	\$ - \$ -
Sodium Hydroxide (50%) Sodium Hypochlorite (12.5%)		100% 100%	50% 50%		\$ 825.32 \$ 1,672.13	\$ \$
Sulfuric Acid		100%	50%		\$ 138.09	\$
Other Chemical Total Chemical Cost		100%	50%	18	\$ 2,000.00	\$ 18,265 \$ 18,265
		A Parket of the Store of the Labor.				
Repair and Maintenance, and Replacement:					Replacement Included? (1 =	Annual Cost
					"Yes" 0 = "No")	
Maintenance & Repair Cost		iemeratus Andre			New York Statemen	\$ 692
Replacement Cost		<u> </u>				\$
Other				Total Annual	"Other"	Other Cost
			12	O&M Cost	Percent	2702
Other Cost				\$ 20,023	10.0%	\$ 2,002
User Defined Annual O&M Items:	<u> </u> 					Annual Cost
Item 1		AND THE PERSON OF THE PERSON O				\$
item 2						\$
Item 3 Item 4						\$
Item 5			g eftingen, kön und die Treffender Treffender in die stellen			\$ -
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ltem 9			<u> </u>	<u>t da kana</u> Babaran		\$ \$
Item 10 Item 11			thise.			\$ -
item 12				el Terredo do Signa. Constantes do Signa		\$
Item 13 Item 14		<u>- 1</u> 54.044.67.00 20448.68.08.57				\$ 3000 - \$ 4000 - 1-
Item 15			NEW CONT			\$ -

4/5/2010	Liquid Chemical POLYPHOS	Printed by:
5:10 PM		, , , , , , , , , , , , , , , , , , , ,
Subtotal Annual O&M Cost	나는 사람들은 사람들이 얼마나 얼마를 살아 있다면 하는데 얼마를 하는데 되었다.	\$ 22,026
Contingency		10% \$ 2,203
Total Association (Inc.)		\$ 24,228

	T	ı		T	T		
) & M Building	To Sum	mary Sheet				ļ	
	<u></u>						
							·····
	<u> </u>	<u> </u>					\$5,146,924
onstruction Cost:	-		<u> </u>	1			ψ0,140,524
nnual O & M Cost:							
Power:		Total HP	Average-to- Maximum Flow	Annual Usage (Hours / Year)		1	Power Cos
			Factor				
	100000000000000000000000000000000000000		F1.00				
			50%	8,760	S	0.06	\$
Equipment Power	<u> </u>		9,70	0,7,00		0.00	· ·
Other Electrical:		Building		Annual Usage		1	Other Electri
		Area (SF)		(Hours / Year)			Cost
	100						
Building Electrical		6,000	2.00	8,760	3	0.06	\$ 5,8
Chemicals:		1014				11114	\$ 2
	n Terra TV salas Vikiras a kali katasa kan a kali k	escupitation and the latest			action results consider the		
Repair and Maintenance, and Replacement					Replacement (1 = "Yes", 0		Annual Co
Maintenance & Repair Cost Replacement Cost							S
Replacement Cost		Ī		1			- 12 - 12 - 12 - 12 - 12 - 12 - 12 - 12
Other:				Total Annual O&M Cost	"Other" Pr	rcent	Other Cos
Market Control of the					100		
011				\$ 5,887	10.0%	6 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	\$ 5
Other Cost		T		1 × 1 × 1 × 1 × 1 × 1 × 1 × 1 × 1 × 1 ×		251165 (550,67,50	
User Defined Annual O&M Items						State of the state	Annual Co
Item 1		8 8 7 20 4					\$ \$
Item 3				and the state of	eden (de la company)		\$
Item 4		Paris Paris	CARVELO SE SEAU	Constitution of the second	. Na 94 da ₁₆ da	学成为为	\$ Spine !
Item 5							\$
Item 6 Item 7	viete erreger Likopolijavnicije						\$ \$
Item 8	THE SALES OF THE SALES		and the state of the first state of the stat		V. 10.000 1985		\$
ltem 9					714	**************************************	\$
Item 10							\$ \$
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Item 13							\$
Item 14			10 10 10 10 10 10 10 10 10 10 10 10 10 1				\$
Item 15						<u>- A </u>	\$
Subtotal Annual O&M Cost	1	I		I	I		\$ 6,4
Contingency					10%		\$ 6
Total Annual O&M Cost							\$ 7,1

Milwaukee Water Supply - 24" the entire alignment

ADD

Pipeline			60th & Howard Ground Elevation	1 2007.80
Segment	Miles	Oiameter	Hillcrest WSE	3000
Α	7	24	Segment A Piping K	6.85 (one K=1.0 entr, ten K=0.30 90-elb, 3 open bfly valve K=0.25,one bend thru rdcr tee K=1.80+0.3)
. В	7.1	24	Segment B Piping K	5.65 (one flow thru tee K=0.6, five K=0.3 90-elb, one bend thru tee K=1.80, three open bfly valve K=0.25, one exit K=0.5)
			Piping Friction Factor	<u> </u>
			Power cost, \$/kw	368 0006
			Power efficiency	019
			GHG, lbs CO2/Mwhr	3859

Supply	Supply	A Pipeline	A Pipeline	A Piping	B RW	B Pipeline	_	Total FW Piping	Total Static	Total Friction	Available Suction					Annual Power	Annual
Flow Rate	Flow Rate	Velocity	Frict Loss	Misc K Loss	Velocity	Frict Loss	Misc K Loss	Fric Loss	Loss	Head	Head	TDH	TDH	Power	Power	Usage	Power Cost
mgd	gpm	ft/s	ft	ft	ft/s	ft	ft	ft	ft	ft	ft	ft	psi	hp	kw	kw	\$
// O (多数)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	220	220	81	139	60	0	0	0	\$0
 4.4	3054	2.17	20.15	0.50	2.17	20.21	0.41	41.27	220	261	B1	180	78	174	144	1262200	\$75,732

Underwood Creek Return Flow - 24" the entire alignment

ADD

Pipeline			Waukesha WWTP	794 google earth elevation at WWTP
Segment	Miles	Diameter	elevation at watershed divide	895
Α	11.4	24	Discharge at Underwood Creek	7.18
			Segment A Piping K	6.85 (one K=1.0 entr, ten K=0.30 90-elb, 3 open bfly valve K=0.25,one bend thru rdcr tee K=1.80+0.3)
			Segment B Piping K	5.65 (one flow thru tee K=0.6, five K=0.3 90-elb, one bend thru tee K=1.80, three open bfly valve K=0.25, one
			Piping Friction Factor	0.015
			Power cost, \$/kw	
			Power efficiency	[6:0.000]
			GHG, lbs CO2/Mwhr	8 7 1859

			Α	Α	Α	Total	Total	Total					Annual	
	Supply	Supply	Pipeline	Pipeline	Piping	FW Piping	Static	Friction					Power	Annual
F	low Rate	Flow Rate	Velocity	Frict Loss	Misc K Loss	Fric Loss	Loss	Head	TDH	TDH	Power	Power	Usage	Power Cost
	mgd	gpm	ft/s	ft	ft	ft	ft	ft	ft	psi	hp	kw	kw	\$
1	4.4	3054	2.17	32.70	0.50	33.20	102	135	135	58	130	108	943656	\$56,619