Hopi Arsenic Mitigation Project
FMCV Treatment Cost Estimate
Date: 3/5/2014
Prepared By: Adam E Hughes, PE

FMCV TREATMENT COST ESTIMATE

Schedule A: Planning and Design

Item	Description	Quantity	Units	Units Cost	Total
1	Geotechnical Investigation	1	LS	$ 50,000.00	$ 50,000.00
2	Hydrogeologic Consulting	1	LS	$ 85,000.00	$ 85,000.00
3	Well Drilling (new 255 gpm well)	2,000	FT	$ 500.00	$ 1,000,000.00
4	Environmental Assessment	1	LS	$ 25,000.00	$ 25,000.00
5	Utility Management Plan	1	LS	$ 20,000.00	$ 20,000.00
				Construction Total:	**$ 1,180,000.00**

Schedule B: Construction

Item	Description	Quantity	Units	Units Cost	Total
6	200,000 Gallon Water Storage Tank	1	LS	$ 260,000.00	$ 260,000.00
7	Backup Generators	4	EA	$ 100,000.00	$ 400,000.00
8	8" Water Main, C900-07 PVC DR 18	27,050	LF	$ 35.00	$ 946,750.00
9	8" Gate Valves	10	EA	$ 1,700.00	$ 17,000.00
10	Air Relief Valves	2	EA	$ 2,750.00	$ 5,500.00
11	Power Line Extension	1.1	MILE	$ 120,000.00	$ 132,000.00
12	Rehabilitate Existing Well #5	1	LS	$ 65,000.00	$ 65,000.00
13	60 hp Submersible Well Pump, Controls, Drop Pipe, etc.	1	LS	$ 100,000.00	$ 100,000.00
14	Arsenic Treatment Facility	1	LS	$ 1,000,000.00	$ 1,000,000.00
15	East Polacca Tank Interconnection	1	LS	$ 20,000.00	$ 20,000.00
16	Telemetry	1	LS	$ 50,000.00	$ 50,000.00
17	Road Excavation and Repair - Unpaved Open Cut	2,300	LF	$ 26.00	$ 59,800.00
18	Road Excavation and Repair - Paved Open Cut	150	LF	$ 170.00	$ 25,500.00
	West Tank Dedicated Fill From PZ1				
19	8" Water Main	2,450	LF	$ 45.00	$ 110,250.00
20	Altitude Valve and Vault	1	LS	$ 30,000.00	$ 30,000.00
21	West Tank Connection	1	LS	$ 20,000.00	$ 20,000.00
				Construction Total:	**$ 3,241,800.00**

Schedule C: O&M Support

Item	Description	Quantity	Units	Units Cost	Total
22	1-Year Start-Up Assistance	45	DAYS	$ 500.00	$ 22,500.00
23	O&M Materials, Equipment and Space	1	LS	$ 40,000.00	$ 40,000.00
24	O&M Manual Development	1	LS	$ 30,000.00	$ 30,000.00
				Post Construction Total:	**$ 92,500.00**

Planning & Design Total (Schedule A)		**$ 1,180,000.00**	
Construction Total (Schedule B)		**$ 3,241,800.00**	
O&M Support Total (Schedule C)		**$ 92,500.00**	
Contingency (Schedules A, B, & C)		**$ 451,430.00**	10.00%
		Subtotal	**$ 4,965,730.00**
TERO/Tribal Tax	0.5%	**$ 24,828.65**	
Tribal Procurement 1=YES, 0=NO	1		
Tribal Administrative Support Fee		**$ 101,564.60**	
		Subtotal Tribal Fees	**$ 126,393.25**
PROFESSIONAL FEES:			
IHS Engineering Program Support (EPS)		**$ 297,943.80**	6.00%
Outside Engineering (A&E)		**$ 100,000.00**	
		Subtotal Professional Fees	**$ 397,943.80**
IHS Project Technical Support Fee (PTS)		**$ 595,887.60**	12.00%
		Subtotal PTS	**$ 595,887.60**
		Total Phase Cost	**$ 6,085,954.65**
		Rounded	**$ 6,086,000.00**

Hopi Arsenic Mitigation Project
Sipualovi/Mishongnovi Treatment Cost Estimate
Date: 3/5/2014
Prepared By: Adam E Hughes, PE

SIPAULOVI/MISHONGNOVI TREATMENT COST ESTIMATE

Schedule A: Planning and Design

Item	Description	Quantity	Units	Units Cost	Total
1	Geotechnical Investigation	1	LS	$ 30,000.00	$ 30,000.00
2	Hydrogeologic Consulting	1	LS	$ 60,000.00	$ 60,000.00
3	Well Drilling	1,000	FT	$ 500.00	$ 500,000.00
4	Environmental Assessment	1	LS	$ 25,000.00	$ 25,000.00
5	Utility Management Plan	1	LS	$ 20,000.00	$ 20,000.00
				Construction Total:	**$ 635,000.00**

Schedule B: Construction

Item	Description	Quantity	Units	Units Cost	Total
6	100,000 Gallon Water Storage Tank	1	LS	$ 170,000.00	$ 170,000.00
7	Backup Generators	2	EA	$ 75,000.00	$ 150,000.00
8	6" Water Main, C900-07 PVC DR 18	19,050	LF	$ 30.00	$ 571,500.00
9	6" Gate Valves	10	EA	$ 1,500.00	$ 15,000.00
10	Air Relief Valves	4	EA	$ 2,750.00	$ 11,000.00
11	Electric Power Drop	1	EA	$ 15,000.00	$ 15,000.00
12	Existing Lower Sipaulovi Well - Replacement	1,000	FT	$ 500.00	$ 500,000.00
13	40 hp Submersible Well Pump, Controls, Drop Pipe, etc.	2	LS	$ 85,000.00	$ 170,000.00
14	Arsenic Treatment Facility	1	LS	$ 1,000,000.00	$ 1,000,000.00
15	Upper Sipaulovi/Mishongnovi Master Meter	1	LS	$ 10,000.00	$ 10,000.00
16	Lower Sipaulovi Tank Interconnection	1	LS	$ 20,000.00	$ 20,000.00
17	Telemetry	1	LS	$ 50,000.00	$ 50,000.00
18	Road Excavation and Repair - Unpaved Open Cut	2,400	LF	$ 26.00	$ 62,400.00
19	Road Excavation and Repair - Paved Open Cut	2,400	LF	$ 170.00	$ 408,000.00
20	Paved Road Crossing - Bore with Casing	100	LF	$ 450.00	$ 45,000.00
				Construction Total:	**$ 3,197,900.00**

Schedule C: O&M Support

Item	Description	Quantity	Units	Units Cost	Total
21	1-Year Start-Up Assistance	45	DAYS	$ 500.00	$ 22,500.00
22	O&M Materials, Equipment and Space	1	LS	$ 40,000.00	$ 40,000.00
23	O&M Manual Development	1	LS	$ 30,000.00	$ 30,000.00
				Post Construction Total:	**$ 92,500.00**

Planning & Design Total (Schedule A)		**$ 635,000.00**	
Construction Total (Schedule B)		**$ 3,197,900.00**	
O&M Support Total (Schedule C)		**$ 92,500.00**	
Contingency (Schedules A, B, & C)		**$ 392,540.00**	10.00%
		Subtotal	**$ 4,317,940.00**
TERO/Tribal Tax	0.5%	**$ 21,589.70**	
Tribal Procurement 1=YES, 0=NO	1		
Tribal Administrative Support Fee		**$ 88,608.80**	
		Subtotal Tribal Fees	**$ 110,198.50**
PROFESSIONAL FEES:			
IHS Engineering Program Support (EPS)		**$ 259,076.40**	6.00%
Outside Engineering (A&E)		**$ 100,000.00**	
		Subtotal Professional Fees	**$ 359,076.40**
IHS Project Technical Support Fee (PTS)		**$ 518,152.80**	12.00%
		Subtotal PTS	**$ 518,152.80**
		Total Phase Cost	**$ 5,305,367.70**
		Rounded	**$ 5,305,000.00**

Hopi Arsenic Mitigation Project
Shungopavi Treatment Cost Estimate
Date: 3/5/2014
Prepared By: Adam E Hughes, PE

SHUNGOPAVI TREATMENT COST ESTIMATE

Schedule A: Planning and Design

Item	Description	Quantity	Units	Units Cost	Total
1	Environmental Assessment	1	LS	$ 20,000.00	$ 20,000.00
2	Utility Management Plan	1	LS	$ 20,000.00	$ 20,000.00
				Construction Total:	**$ 40,000.00**

Schedule B: Construction

Item	Description	Quantity	Units	Units Cost	Total
3	Backup Generator	2	EA	$ 75,000.00	$ 150,000.00
4	6" Water Main, C900-07 PVC DR 18	5,150	LF	$ 30.00	$ 154,500.00
5	6" Gate Valves	6	EA	$ 1,500.00	$ 9,000.00
6	Air Relief Valves	1	EA	$ 2,750.00	$ 2,750.00
7	40 hp Submersible Well Pump, Controls, Drop Pipe, etc.	2	LS	$ 85,000.00	$ 170,000.00
8	Existing Shungopavi Well - Replacement	1,600	FT	$ 500.00	$ 800,000.00
9	Arsenic Treatment Facility	1	LS	$ 1,000,000.00	$ 1,000,000.00
10	Telemetry	1	LS	$ 50,000.00	$ 50,000.00
11	Road Excavation and Repair - Unpaved Open Cut	1,400	LF	$ 26.00	$ 36,400.00
				Construction Total:	**$ 2,372,650.00**

Schedule C: O&M Support

Item	Description	Quantity	Units	Units Cost	Total
12	1-Year Start-Up Assistance	45	DAYS	$ 500.00	$ 22,500.00
13	O&M Materials, Equipment and Space	1	LS	$ 40,000.00	$ 40,000.00
14	O&M Manual Development	1	LS	$ 30,000.00	$ 30,000.00
				Post Construction Total:	**$ 92,500.00**

Planning & Design Total (Schedule A)		**$ 40,000.00**	
Construction Total (Schedule B)		**$ 2,372,650.00**	
O&M Support Total (Schedule C)		**$ 92,500.00**	
Contingency (Schedules A, B, & C)		**$ 250,515.00**	10.00%
		Subtotal	**$ 2,755,665.00**
TERO/Tribal Tax	0.5%	**$ 13,778.33**	
Tribal Procurement 1=YES, 0=NO	1		
Tribal Administrative Support Fee		**$ 57,363.30**	
		Subtotal Tribal Fees	**$ 71,141.63**
PROFESSIONAL FEES:			
IHS Engineering Program Support (EPS)		**$ 165,339.90**	6.00%
Outside Engineering (A&E)		**$ 100,000.00**	
		Subtotal Professional Fees	**$ 265,339.90**
IHS Project Technical Support Fee (PTS)		**$ 330,679.80**	12.00%
		Subtotal PTS	**$ 330,679.80**
		Total Phase Cost	**$ 3,422,826.33**
		Rounded	**$ 3,423,000.00**

Hopi Arsenic Mitigation Project
Treatment Cost Estimate Summary
Date: 3/5/2014
Prepared By: Adam E Hughes, PE

FMCV Treatment	$ 6,086,000
Sipaulovi/Mishongnovi Treatment	$ 5,305,000
Shungopavi Treatment	$ 3,423,000
Total Cost of Treatment	$ 14,814,000