ORIGINAL

0000128236

Steve Wene, State Bar No. 019630
MOYES SELLERS & HENDRICKS LTD.
1850 N. Central Ave., Suite 1100
Phoenix, Arizona 85004
Telephone: 602-604-2141
swene@law-msh.com

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

GARY PIERCE, CHAIRMAN
PAUL NEWMAN
SANDRA D. KENNEDY
BOB STUMP
BRENDA BURNS

IN THE MATTER OF THE APPLICATION OF INDIADA WATER COMPANY, INC., FOR APPROVAL OF A PERMANENT INCREASE IN ITS WATER RATES.	DOCKET NO. W-02031A-10-0168
IN THE MATTER OF THE APPLICATION OF ANTELOPE RUN WATER COMPANY FOR APPROVAL OF A PERMANENT INCREASE IN ITS WATER RATES.	DOCKET NO. W-02327A-10-0169
IN THE MATTER OF THE APPLICATION OF BOB B. WATKINS DBA EAST SLOPE WATER COMPANY FOR APPROVAL OF ITS PERMANENT INCREASE IN ITS WATER RATES.	DOCKET NO. W-01906A-10-0170
IN THE MATTER OF THE APPLICATION OF BOB B. WATKINS DBA EAST SLOPE WATER COMPANY, INDIADA WATER COMPANY, INC., AND ANTELOPE RUN WATER COMPANY FOR APPROVAL OF A TRANSFER OF ASSETS AND	DOCKET NO. W-01906A-10-0171 DOCKET NO. W-02031A-10-0171 DOCKET NO. W-02327A-10-0171

CERTIFICATES OF CONVENIENCE AND NECESSITY.	
IN THE MATTER OF THE APPLICATION OF BOB B. WATKINS DBA EAST SLOPE WATER COMPANY FOR AUTHORITY TO INCUR LONG-TERM DEBT.	DOCKET NO. W-01906A-10-0183
IN THE MATTER OF THE APPLICATION OF INDIADA WATER COMPANY, INC. FOR AUTHORITY TO INCUR LONG-TERM DEBT.	DOCKET NO. W-02031A-10-0184
IN THE MATTER OF THE APPLICATION OF ANTELOPE RUN WATER COMPANY FOR AUTHORITY TO INCUR LONG-TERM DEBT.	DOCKET NO. W-02327A-10-0185

REBUTTAL TESTIMONY OF JAMES DOWNING

Q-1 Please state your name and current employment position:

A-1 James D. Downing.

Q-2 Describe your educational and professional background:

A-2 I graduated from Mississippi State University with a Bachelor of Science Degree in Engineering and I am a Professional Engineer registered with the State of Arizona (no. 19202). I have practiced engineering in the State of Arizona for more than 27 years. I have extensive experience analyzing and designing utility systems for residential, commercial, industrial, and agricultural purposes. This experience includes projects developing groundwater and surface water resources as well as analysis and design of water distribution systems, wastewater collection systems, and drainage systems. I also manage Electrical District No. 8 and McMullen Valley Water Conservation and Drainage District.

Q-3 What is the purpose of your testimony?

A-3 The purpose of my testimony is to explain the condition of East Slope Water Company, Antelope Run Water Company, and Indiada Water Company (collectively "Companies") as well as the proposed capital improvement project for all three companies. My analysis, recommended improvements, and cost estimates are set forth in the attached Pre-Design Report dated May 23, 2011. *See* Attachment 1.

Q-4 How much did it cost to produce the Pre-Design Report?

A-4 To produce the Pre-Design Report, it was necessary to survey the existing water systems, generate maps of the Companies' systems, develop a master plan with phasing and interconnection options, and prepare cost estimates. My understanding is that the Companies received a WIFA technical assistance grant that paid for 66% of the $52,500 estimated cost to produce the report. However, my understanding is that the actual cost exceeded this estimate, primarily due to the fact that there were many unforeseen costs encountered during this project. For example, after pledging to provide previously generated electronic maps at no cost to the Companies, Cochise County decided to charge the Companies $3,500 for the electronic maps. I estimate the actual cost to produce the Pre-Design Report would have been approximately $65,000, but Southwestern Utility Management and the Harcuvar Company performed a significant amount of work at no additional cost to the Company so $52,500 budget could be met.

Q-5 Does that conclude your testimony?

A-5 Yes.

Attachment 1

PRE-DESIGN REPORT

FOR

CAPITAL IMPROVEMENT PROJECT

FOR

ANTELOPE RUN WATER CO.

EAST SLOPE WATER CO.

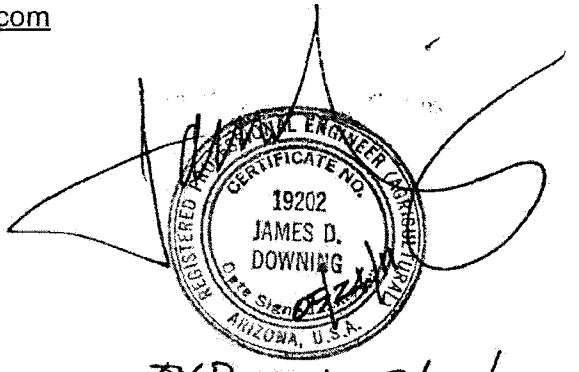
AND

INDIADA WATER CO.

FOR

SOUTHWESTERN UTILITIES MANAGEMENT, INC.

PREPARED BY
THE HARCUVAR CO.
P. O. BOX 70
SALOME, AZ 85348
928-859-3647
jim@harcuvarco.com



EXPIRES 09/30/11

Revision 1 dated 05/23/11

PRE-DESIGN REPORT FOR ANTELOPE RUN, EAST SLOPE AND INDIADA
CONTENTS

EXPIRES 09/30/11

1.0 Introduction, Location and Description

All three companies are located south of Sierra Vista in Cochise County and are managed by Southwestern Utilities Management, Inc. (SWUM). East Slope (ESWC) is located east of SR92. Antelope Run (ARWC) and Indiada (IWC) are located between the Ft. Huachuca boundary and SR92. IWC is south of and adjacent to ARWC. SWUM proposes a capital improvement project (CIP) including all three systems to correct supply shortages, system pressures, well failures and delivery deficiencies. A pre-design report was submitted to ACC Staff. Staff generated a second set of data requests. This revised report was prepared to respond to those requests. Subsequent to the first report another facility inspection was performed with Ms. Katrin Stukov of the ACC. Several new issues were discovered.

2.0 Antelope Run

Both wells have problems. Well 3 has collapsed at 180 feet. The pump in Well 5 requires replacement often due to sediment passage. See Antelope Run work sheets 1 - 4 for revised design basis, recommended improvements and cost estimates.

3.0 Indiada

See Indiada work sheets 1 - 4 for revised design basis, recommended improvements and cost estimates.

4.0 Antelope Run and Indiada Consolidated

Antelope Run and Indiada are adjacent and should be combined. The combined systems should be subdivided into four pressure zones. See Antelope Run and Indiada consolidated work sheets 1 - 5 for revised design basis, recommended improvements and cost estimates.

5.0 East Slope

Well 2 has collapsed at about 40 feet. See East Slope work sheets 1 - 4 for revised design basis, recommended improvements and cost estimates.

ANTELOPE RUN WATER CO.
Year ending 12/31/09

Month	Meters	Pumped gal	gpd	gpd/mtr	gpm
1	164	1,421,000	46,718	284.9	32.4
2	164	1,430,000	47,014	286.7	32.6
3	164	1,650,000	54,247	330.8	37.7
4	164	2,244,000	73,775	449.8	51.2
5	164	3,722,000	122,367	746.1	85.0
6	167	3,186,000	104,745	627.2	72.7
7	168	2,744,000	90,214	537.0	62.6
8	168	2,780,000	91,397	544.0	63.5
9	168	2,820,000	92,712	551.9	64.4
10	168	1,533,000	50,400	300.0	35.0
11	168	1,623,000	53,359	317.6	37.1
12	168	1,473,000	48,427	288.3	33.6
Total		26,626,000			
Average day (ADD)	166	2,218,833	72,948	438.8	50.7
Average day peak month (ADPM)		3,328,250	109,422	658.2	76.0
Peak day (MDD)		4,437,667	145,896	877.6	101.3
Peak hour peak day (PHPD)					177.3
Instantaneous demand (ID)					223.2

Maximum meters	number	200
ADD	gpd	87,757
	gpm	60.9
ADPM	gpd	131,635
	gpm	91.4
MDD	gpd	175,514
	gpm	121.9
PHPD	gpm	213.3
ID	gpm	247.9

Well site		1	3	5	Total
All sites operating					
ADD	gpm	20.3	20.3	20.3	60.9
ADPM	gpm	30.5	30.5	30.5	91.4
MDD	gpm	40.6	40.6	40.6	121.9
PHPD	gpm	71.1	71.1	71.1	213.3
ID	gpm	82.6	82.6	82.6	247.9
Well 5 inoperable					
ADD	gpm	20.3	60.9		81.3
ADPM	gpm	30.5	91.4		121.9
MDD	gpm	40.6	121.9		162.5
PHPD	gpm	71.1	71.1	71.1	213.3
ID	gpm	82.6	82.6	82.6	247.9

1	ANTELOPE RUN WATER CO.			
2	Well Site Improvements			
3	Well Site 1			
4	Well inoperable - only storage and pressure pumps			
5	Repair storage tank.			
6	Replace pressure pumps.			
7	Use VFD's to reduce required PRV's.			
8	Existing storage tank volume		gal	15,000
9	Storage tank capital repair		$/gal	$0.50
10				$7,500
11	ADPM - well discharge		gpm	10.4
12	Supply from sites 3 & 5		gpm	20.1
13	Pressure pump peak discharge		gpm	82.6
14	Pressure		psig	82
15	Total pumps		number	2
16	Operating pumps		number	1
17	Pressure pump peak discharge		gpm each	82.6
18	Pressure pump		hp each	6.1
19		use	hp each	7.5
20	Required pressure tank volume		gal	1,653
21	Existing pressure tank		gal	1,000
22	Required additional volume		gal	500
23	Pressure pump installed cost		$/hp	$500.00
24				$7,500
25	Pressure tank installed cost		$/gal	$5.00
26				$2,500
27	Pressure pump and tank installed cost			$10,000
28	VFD pressure pump installed cost		$/hp	$700.00
29				$10,500
30	Note: Using VFD reduces cost and required PRV's.			
31	Eliminate pressure tank		$/gal	$1.00
32				$1,000
33	Fencing		ls	$2,000
34	Security lighting		ls	$1,000
35	Generator		hp	15
36			$/hp	$200.00
37				$3,000
38	Utility relocation		ls	$0
39	Total site cost			$25,000
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50			Sheet 2 of 4	

1	ANTELOPE RUN WATER CO.				
2	Well Site Improvements				
3	Well Sites 3 & 5				
4	Replace well 3.				
5	Discharge wells into new storage tank to reduce well discharge and prolong well life.				
6	Use VFD's to reduce required PRV's.				
7	New storage tank volume			gal	100,000
8	Installed cost			$/gal	$2.00
9					$200,000
10	ADPM - well discharge			gpm	69
11	Well discharge			gpm	22
12	New well pump			hp	1.7
13			use	hp	3
14	Installed cost each			$/hp	$1,000.00
15					$3,000
16				both	$6,000
17	New well	casing diamater		inches	8
18		casing depth		ft	800
19		installed cost		$/ft	$50.00
20					$40,000
21	Pressure pump peak discharge			gpm	248
22	Pressure			psig	80
23	Total pumps			number	2
24	Operating pumps			number	1
25	Pressure pump peak discharge			gpm each	248
26	Pressure pump			hp each	17.8
27			use	hp each	20
28	Required pressure tank volume			gal	4,958
29	Existing pressure tank			gal	5,000
30	Required additional volume			gal	0
31	Pressure pump installed cost			$/hp	$500.00
32					$20,000
33	Pressure tank installed cost			$/gal	$5.00
34					$0
35	Pressure pump and tank installed cost				$20,000
36	VFD pressure pump installed cost			$/hp	$700.00
37					$28,000
38	Note: Using VFD reduces cost and required PRV's.				
39	Eliminate pressure tank			$/gal	$1.00
40					$5,000
41	Fencing			ls	$2,000
42	Security lighting			ls	$1,000
43	Generator			hp	46
44				$/hp	$200.00
45					$9,200
46	Utility relocation (SSVEC)			ls	$0
47	Total site cost				$291,200
48					
49					
50				Sheet 3 of 4	

1	ANTELOPE RUN WATER CO.			
2				
3	Total Estimated Cost			
4	Site 1			$25,000
5	Site 3 & 5			$291,200
6	Sub-total			$316,200
7	Water main additions and replacements		lf	8,250
8			$/lf	$40.00
9				$330,000
10	Sub-total			$646,200
11	Administration and legal fees	2.00%		$12,924
12	Engineering fees	8.00%		$51,696
13	Survey, geotech, etc.	2.00%		$12,924
14	Inspections and approvals	4.00%		$25,848
15	Sub-total			$749,592
16	Contingencies	20.00%		$149,918
17	Total			$899,510
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50			Sheet 4 of 4	

INDIADA WATER CO.
Year ending 12/31/09

Month	Meters	Pumped gal	gpd	gpd/mtr	gpm
1	54	243,000	7,989	147.9	5.5
2	55	402,000	13,216	240.3	9.2
3	55	505,000	16,603	301.9	11.5
4	56	595,000	19,562	349.3	13.6
5	55	784,000	25,775	468.6	17.9
6	55	676,000	22,225	404.1	15.4
7	57	576,000	18,937	332.2	13.2
8	56	507,000	16,668	297.7	11.6
9	55	629,000	20,679	376.0	14.4
10	55	412,000	13,545	246.3	9.4
11	56	506,000	16,636	297.1	11.6
12	55	320,000	10,521	191.3	7.3
Total		6,155,000			
Average day (ADD)	55	512,917	16,863	304.8	11.7
Average day peak month (ADPM)		769,375	25,295	457.1	17.6
Peak day (MDD)		1,025,833	33,726	609.5	23.4
Peak hour peak day (PHPD)					41.0
Instantaneous demand (ID)					112.4

Maximum meters	number	70
ADD	gpd	21,333
	gpm	14.8
ADPM	gpd	31,999
	gpm	22.2
MDD	gpd	42,665
	gpm	29.6
PHPD	gpm	51.9
ID	gpm	130.9

Well site		2	3	4	Total
All sites operating					
ADD	gpm	4.9	4.9	4.9	14.8
ADPM	gpm	7.4	7.4	7.4	22.2
MDD	gpm	9.9	9.9	9.9	29.6
PHPD	gpm	17.3	17.3	17.3	51.9
ID	gpm	43.6	43.6	43.6	130.9
Site 4 inoperable					
ADD	gpm	7.4	7.4	0.0	14.8
ADPM	gpm	11.1	11.1	0.0	22.2
MDD	gpm	14.8	14.8	0.0	29.6
PHPD	gpm	25.9	25.9	0.0	51.9
ID	gpm	65.5	65.5	0.0	130.9

1	INDIADA WATER CO.			
2	Well Site Improvements			
3	Well Site 2			
4	Add pressure pumps to meet required demand			
5	Use VFD's to reduce required PRV's.			
6	Existing storage tank volume		gal	12,000
7	Storage tank repair		$/gal	$0.50
8				$6,000
9	ADPM - well discharge		gpm	8.3
10	Well discharge		gpm	3.0
11	New well pump		hp	0.5
12		use	hp	0.5
13	Installed cost		$/hp	na
14				$2,500
15	Pressure pump peak discharge		gpm	65.5
16	Pressure		psig	40
17	Total pumps		number	2
18	Operating pumps		number	1
19	Pressure pump peak discharge		gpm each	65.5
20	Pressure pump		hp each	2.3
21		use	hp each	5
22	Required pressure tank volume		gal	1,309
23	Existing pressure tank		gal	0
24	Required additional volume		gal	1,500
25	Pressure pump installed cost		$/hp	$500.00
26				$5,000
27	Pressure tank installed cost		$/gal	$5.00
28				$7,500
29	Pressure pump and tank installed cost			$12,500
30	VFD pressure pump installed cost		$/hp	$700.00
31				$7,000
32	VFD savings			$5,500
33	Note: Using VFD reduces cost and required PRV's.			
34	Eliminate pressure tank		$/gal	na
35				$1,000
36	Fencing		ls	$2,000
37	Security lighting		ls	$1,000
38	Generator		hp	10.5
39			$/hp	$200.00
40				$2,100
41	Utility relocation (SSVEC)		ls	$10,000
42	Total site cost			$31,600
43				
44				
45				
46				
47				
48				
49				
50			Sheet 2 of 4	

1	INDIADA WATER CO.			
2	Well Site Improvements			
3	Well Sites 3 & 4			
4	Discharge well into new storage tank to reduce well discharge and prolong well life.			
5	Add pressure pumps to meet required demand			
6	Use VFD's to reduce required PRV's.			
7	New storage tank volume		gal	12,000
8	Installed cost		$/gal	$2.00
9				$24,000
10	ADPM - well discharge		gpm	8.3
11	Well discharge		gpm	3.0
12	New well pump		hp	0.5
13		use	hp	0.5
14	Installed cost		$/hp	na
15				$2,500
16	Pressure pump peak discharge		gpm	65.5
17	Pressure		psig	58
18	Total pumps		number	2
19	Operating pumps		number	1
20	Pressure pump peak discharge		gpm each	65.5
21	Pressure pump		hp each	3.4
22		use	hp each	5
23	Required pressure tank volume		gal	1,309
24	Existing pressure tank		gal	1,000
25	Required additional volume		gal	500
26	Pressure pump installed cost		$/hp	$500.00
27				$5,000
28	Pressure tank installed cost		$/gal	$5.00
29				$2,500
30	Pressure pump and tank installed cost			$7,500
31	VFD pressure pump installed cost		$/hp	$700.00
32				$7,000
33	VFD savings			$500
34	Note: Using VFD reduces cost and required PRV's.			
35	Eliminate pressure tank		$/gal	$1.00
36				$1,000
37	Fencing		ls	$2,000
38	Security lighting		ls	$1,000
39	Generator		hp	10.5
40			$/hp	$200.00
41				$2,100
42	Utility relocation (SSVEC)		ls	$10,000
43	Total site cost			$49,600
44				
45				
46				
47				
48				
49				
50			Sheet 3 of 4	

1	INDIADA WATER CO.			
2				
3	Total Estimated Cost			
4	Site 2			$31,600
5	Site 3			$49,600
6	Site 4			$49,600
7	Sub-total			$130,800
8	Water main additions and replacements		lf	1,250
9			$/lf	$40.00
10				$50,000
11	Sub-total			$180,800
12	Administration and legal fees	2.00%		$3,616
13	Engineering fees	8.00%		$14,464
14	Survey, geotech, etc.	2.00%		$3,616
15	Inspections and approvals	4.00%		$7,232
16	Sub-total			$209,728
17	Contingencies	20.00%		$41,946
18	Total			$251,674
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				Sheet 4 of 4

ANTELOPE RUN AND INDIADA CONSOLIDATED WATER CO.
Year ending 12/31/09

Month	Meters	Pumped gal	gpd	gpd/mtr	gpm
1	218	1,664,000	54,707	250.9	38.0
2	219	1,832,000	60,230	275.0	41.8
3	219	2,155,000	70,849	323.5	49.2
4	220	2,839,000	93,337	424.3	64.8
5	219	4,506,000	148,142	676.4	102.9
6	222	3,862,000	126,970	571.9	88.2
7	225	3,320,000	109,151	485.1	75.8
8	224	3,287,000	108,066	482.4	75.0
9	223	3,449,000	113,392	508.5	78.7
10	223	1,945,000	63,945	286.7	44.4
11	224	2,129,000	69,995	312.5	48.6
12	223	1,793,000	58,948	264.3	40.9
Total		32,781,000			
Average day (ADD)	222	2,731,750	89,811	405.3	62.4
Average day peak month (ADPM)		4,097,625	134,716	608.0	93.6
Peak day (MDD)		5,463,500	179,622	810.6	124.7
Peak hour peak day (PHPD)					218.3
Instantaneous demand (ID)					263.0

Maximum meters	number	270
ADD	gpd	109,435
	gpm	76.0
ADPM	gpd	164,152
	gpm	114.0
MDD	gpd	218,870
	gpm	152.0
PHPD	gpm	266.0
ID	gpm	296.9

Zone		1	2	3	4	Total
Meters		10	72	94	94	270
ADD	gpm	2.8	20.3	26.5	26.5	76.0
ADPM	gpm	4.2	30.4	39.7	39.7	114.0
MDD	gpm	5.6	40.5	52.9	52.9	152.0
PHPD	gpm	9.9	70.9	92.6	92.6	266.0
ID	gpm	38.9	133.1	156.9	156.9	

1	ANTELOPE RUN AND INDIADA CONSOLIDATED WATER CO.				
2	Well Site Improvements				
3	Zone 1				
4	Well Site Indiada 2				
5	Total site cost				$31,600
6	Zone 2				
7	Well Sites Indiada 3 & 4				
8	New storage tank volume			gal	20,000
9	Installed cost			$/gal	$2.00
10					$40,000
11	ADPM - well discharge			gpm	13.9
12	Well discharge			gpm	16.5
13	New well pump			hp	2.6
14			use	hp	3
15	Installed cost			$/hp	$1,000.00
16					$3,000
17	Pressure pump peak discharge			gpm	66.6
18	Pressure			psig	59
19	Total pumps			number	2
20	Operating pumps			number	1
21	Pressure pump peak discharge			gpm each	66.6
22	Pressure pump			hp each	3.5
23			use	hp each	5
24	Required pressure tank volume			gal	1,331
25	Existing pressure tank			gal	1,000
26	Required additional volume			gal	500
27	Pressure pump installed cost			$/hp	$500.00
28					$5,000
29	Pressure tank installed cost			$/gal	$5.00
30					$2,500
31	Pressure pump and tank installed cost				$7,500
32	VFD pressure pump installed cost			$/hp	$700.00
33					$7,000
34	Note: Using VFD reduces cost and required PRV's.				
35	Eliminate pressure tank			$/gal	$1.00
36					$1,000
37	Fencing			ls	$2,000
38	Security lighting			ls	$1,000
39	Generator			hp	13
40				$/hp	$200.00
41					$2,600
42	Utility relocation	(SSVEC)		ls	$10,000
43	Total site cost				$66,600
44					
45					
46					
47					
48					
49					
50				Sheet 2 of 5	

1	ANTELOPE RUN AND INDIADA CONSOLIDATED WATER CO.			
2	Well Site Improvements			
3	Zone 3			
4	Antelope Run Well Site 1			
5	Existing storage tank volume		gal	15,000
6	Storage tank capital repair		$/gal	$0.50
7				$7,500
8	ADPM - well discharge		gpm	10.4
9	Supply from sites 3 & 5		gpm	29.3
10	Pressure pump peak discharge		gpm	156.9
11	Pressure		psig	65
12	Total pumps		number	2
13	Operating pumps		number	1
14	Pressure pump peak discharge		gpm each	156.9
15	Pressure pump		hp each	9.2
16		use	hp each	10
17	Required pressure tank volume		gal	3,138
18	Existing pressure tank		gal	1,000
19	Required additional volume		gal	2,000
20	Pressure pump installed cost		$/hp	$500.00
21				$10,000
22	Pressure tank installed cost		$/gal	$5.00
23				$10,000
24	Pressure pump and tank installed cost			$20,000
25	VFD pressure pump installed cost		$/hp	$700.00
26				$14,000
27	Note: Using VFD reduces cost and required PRV's.			
28	Eliminate pressure tank		$/gal	$1.00
29				$1,000
30	Fencing		ls	$2,000
31	Security lighting		ls	$1,000
32	Generator		hp	20
33			$/hp	$200.00
34				$4,000
35	Utility relocation		ls	$0
36	Total site cost			$29,500
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50			Sheet 3 of 5	

1	ANTELOPE RUN AND INDIADA CONSOLIDATED WATER CO.				
2	Well Site Improvements				
3	Zone 4				
4	Well Sites 3 & 5				
5	Replace well 3.				
6	Discharge wells into new storage tank to reduce well discharge and prolong well life.				
7	Use VFD's to reduce required PRV's.				
8	New storage tank volume			gal	80,000
9	Installed cost			$/gal	$2.00
10					$160,000
11	ADPM - well discharge			gpm	56
12	Well discharge			gpm	23.8
13	New well pump			hp	1.9
14			use	hp	3
15	Installed cost each			$/hp	$1,000.00
16					$3,000
17				both	$6,000
18	New well	casing diamater		inches	8
19		casing depth		ft	800
20		installed cost		$/ft	$50.00
21					$40,000
22	Pressure pump peak discharge			gpm	186
23	Pressure			psig	80.0
24	Total pumps			number	2.0
25	Operating pumps			number	1.0
26	Pressure pump peak discharge			gpm each	186.2
27	Pressure pump			hp each	13.4
28			use	hp each	15.0
29	Required pressure tank volume			gal	3,723
30	Existing pressure tank			gal	5,000
31	Required additional volume			gal	0.0
32	Pressure pump installed cost			$/hp	$500.00
33					$15,000
34	Pressure tank installed cost			$/gal	$5.00
35					$0
36	Pressure pump and tank installed cost				$15,000
37	VFD pressure pump installed cost			$/hp	$700.00
38					$21,000
39	Note: Using VFD reduces cost and required PRV's.				
40	Eliminate pressure tank			$/gal	$1.00
41					$5,000
42	Fencing			ls	$2,000
43	Security lighting			ls	$1,000
44	Generator			hp	36
45				$/hp	$200.00
46					$7,200
47	Utility relocation (SSVEC)			ls	$0
48	Total site cost				$242,200
49					
50				Sheet 4 of 5	

1	ANTELOPE RUN AND INDIADA CONSOLIDATED WATER CO.				
2					
3	Total Estimated Cost				
4	Indiada Site 2				$31,600
5	Indiada Site 3				$66,600
6	Indiada Site 4				$66,600
7	Antelope Run Site 1				$29,500
8	Antelope Run Site 3 & 5				$242,200
9	Sub-total				$436,500
10	Water main additions and replacements			lf	9,500
11				$/lf	$40.00
12					$380,000
13	Sub-total				$816,500
14	Administration and legal fees		2.00%		$16,330
15	Engineering fees		8.00%		$65,320
16	Survey, geotech, etc.		2.00%		$16,330
17	Inspections and approvals		4.00%		$32,660
18	Sub-total				$947,140
19	Contingencies		20.00%		$189,428
20	Total				$1,136,568
21					
22					
23	ANTELOPE RUN WATER CO.	Separate			$899,510
24	INDIADA WATER CO.	Separate			$251,674
25	Total				$1,151,184
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50				Sheet 5 of 5	

EAST SLOPE WATER COMPANY

Year ending 12/31/09

Month	Meters	Pumped gal	gpd	gpd/mtr	gpm
1	786	5,279,000	173,556	220.8	120.5
2	788	5,330,000	175,233	222.4	121.7
3	792	5,331,000	175,266	221.3	121.7
4	791	6,659,000	218,926	276.8	152.0
5	785	10,149,000	333,666	425.1	231.7
6	782	9,009,000	296,186	378.8	205.7
7	786	8,334,000	273,995	348.6	190.3
8	789	10,674,000	350,926	444.8	243.7
9	786	8,546,000	280,964	357.5	195.1
10	788	6,847,000	225,107	285.7	156.3
11	787	7,880,000	259,068	329.2	179.9
12	781	4,959,000	163,036	208.8	113.2
Total		88,997,000			
Average day (ADD)	787	7,416,417	243,827	309.9	169.3
Average day peak month (ADPM)		11,124,625	365,741	464.9	254.0
Peak day (MDD)		14,832,833	487,655	619.8	338.6
Peak hour peak day (PHPD)					592.6
Instantaneous demand (ID)					658.6

Maximum meters	number	820
ADD	gpd	254,132
	gpm	176.5
ADPM	gpd	381,198
	gpm	264.7
MDD	gpd	508,264
	gpm	353.0
PHPD	gpm	617.7
ID	gpm	681.9

Well site		1	2	3	4	Total
All sites operating						
ADD	gpm	44.1	44.1	44.1	44.1	176.5
ADPM	gpm	66.2	66.2	66.2	66.2	264.7
MDD	gpm	88.2	88.2	88.2	88.2	353.0
PHPD	gpm	154.4	154.4	154.4	154.4	617.7
ID	gpm	170.5	170.5	170.5	170.5	681.9
Site 4 inoperable						
ADD	gpm	58.8	58.8	58.8	0.0	176.5
ADPM	gpm	88.2	88.2	88.2	0.0	264.7
MDD	gpm	117.7	117.7	117.7	0.0	353.0
PHPD	gpm	205.9	205.9	205.9	0.0	617.7
ID	gpm	227.3	227.3	227.3	0.0	681.9

1	EAST SLOPE WATER COMPANY				
2	Well Site Improvements				
3	Well Site 1				
4	Discharge well into new storage tank to reduce well discharge and prolong well life.				
5	Add pressure pumps to meet required demand				
6	New storage tank volume			gal	50,000
7	Installed cost			$/gal	$2.00
8					$100,000
9	ADPM - well discharge			gpm	35
10	Well discharge			gpm	54
11	New well pump			hp	10.0
12			use	hp	10.0
13	Installed cost			$/hp	$1,000.00
14					$10,000
15	Pressure pump peak discharge			gpm	227
16	Pressure			psig	68
17	Total pumps			number	2
18	Operating pumps			number	1
19	Pressure pump peak discharge			gpm each	227
20	Pressure pump			hp each	13.8
21			use	hp each	15
22	Required pressure tank volume			gal	4,546
23	Existing pressure tank	(leaking)		gal	3,000
24	Required additional volume			gal	5,000
25	Pressure pump installed cost			$/hp	$500.00
26					$15,000
27	Pressure tank installed cost			$/gal	$5.00
28					$25,000
29	Pressure pump and tank installed cost				$40,000
30	VFD pressure pump installed cost			$/hp	$700.00
31					$21,000
32	VFD savings				$19,000
33	Note: Using VFD reduces cost and required PRV's.				
34	Eliminate pressure tank			$/gal	$1.00
35					$3,000
36	Fencing			ls	$2,000
37	Security lighting			ls	$1,000
38	Generator			hp	40
39				$/hp	$200.00
40					$8,000
41	Utility relocation	(SSVEC)		ls	$10,000
42	Total site cost				$155,000
43					
44					
45					
46					
47					
48					
49					
50				Sheet 2 of 5	

1	EAST SLOPE WATER COMPANY				
2	Well Site Improvements				
3	Well Site 2				
4	Replace collapsed well.				
5	Install new well pump.				
6	Repair existing storage tank.				
7	Eliminate pressure tank and add VFD to reduce PRV costs.				
8	Storage tank volume			gal	50,000
9	Storage tank capital repair			$/gal	$0.50
10					$25,000
11	ADPM - well discharge			gpm	35
12	Well discharge			gpm	54
13	New well pump			hp	10.0
14			use	hp	10.0
15	Installed cost			$/hp	$1,000.00
16					$10,000
17	New well	casing diamater		inches	8
18		casing depth		ft	800
19		installed cost		$/ft	$50.00
20					$40,000
21	Pressure pump peak discharge			gpm	227
22	Pressure			psig	50
23	Total pumps			number	2
24	Operating pumps			number	1
25	Pressure pump peak discharge			gpm each	227
26	Pressure pump			hp each	10.1
27			use	hp each	15
28	Required pressure tank volume			gal	4,546
29	Existing pressure tank			gal	5,000
30	Notes:				
31	Existing pumps and tank sufficient.				
32	Eliminate pressure tank and add VFD to reduce PRV costs.				
33	Eliminate pressure tank			$/gal	$1.00
34					$5,000
35	VFD installed cost			$/hp	$200.00
36				hp	35
37					$7,000
38	Fencing			ls	$2,000
39	Security lighting			ls	$1,000
40	Generator			hp	45
41				$/hp	$200.00
42					$9,000
43	Utility relocation	(SSVEC)		ls	$10,000
44	Total site cost				$109,000
45					
46					
47					
48					
49					
50				Sheet 3 of 5	

1	EAST SLOPE WATER COMPANY			
2	Well Site Improvements			
3	Well Site 3			
4	Replace well pump to reduce sand and pump wear.			
5	Eliminate pressure tank and add VFD to reduce PRV costs.			
6	Storage tank volume		gal	200,000
7	ADPM - well discharge		gpm	139
8	Well discharge		gpm	30.0
9	New well pump		hp	4.7
10		use	hp	5.0
11	Installed cost		$/hp	$1,000.00
12				$5,000
13	Pressure pump peak discharge		gpm	227
14	Pressure		psig	50
15	Total pumps		number	2
16	Operating pumps		number	1
17	Pressure pump peak discharge		gpm each	227
18	Pressure pump		hp each	10.3
19		use	hp each	15
20	Required pressure tank volume		gal	4,546
21	Existing pressure tank		gal	5,000
22	Notes:			
23	Existing pumps and tank sufficient.			
24	Eliminate pressure tank and add VFD to reduce PRV costs.			
25	Eliminate pressure tank		$/gal	$1.00
26				$5,000
27	VFD installed cost		$/hp	$200.00
28			hp	30
29				$6,000
30	Fencing		ls	$2,000
31	Security lighting		ls	$1,000
32	Generator		hp	35
33			$/hp	$200.00
34				$7,000
35	Utility relocation		ls	$0
36	Total site cost			$26,000
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50			Sheet 4 of 5	

1	EAST SLOPE WATER COMPANY			
2	Well Site Improvements			
3	Well Site 4			
4	Continue well discharge into distribution system.			
5	Add VFD to well pump motor to reduce PRV cost..			
6	Current well discharge		gpm	225
7	Current well motor		hp	75
8	Required pressure tank volume		gal	4,500
9	Existing pressure tank volume		gal	5,000
10	Eliminate pressure tank		$/gal	$1.00
11				$5,000
12	VFD installed cost		$/hp	$200.00
13				$15,000
14	Fencing		ls	$2,000
15	Security lighting		ls	$1,000
16	Generator		hp	75
17			$/hp	$200.00
18				$15,000
19	Utility relocation		ls	$10,000
20	Total site cost			$48,000
21				
22				
23				
24	Total Estimated Cost			
25	Site 1			$155,000
26	Site 2			$109,000
27	Site 3			$26,000
28	Site 4			$48,000
29	Sub-total			$338,000
30	Water main additions and replacements		lf	20,500
31			$/lf	$40.00
32				$820,000
33	Sub-total			$1,158,000
34	Administration and legal fees	2.00%		$23,160
35	Engineering fees	8.00%		$92,640
36	Survey, geotech, etc.	2.00%		$23,160
37	Inspections and approvals	4.00%		$46,320
38	Sub-total			$1,343,280
39	Contingencies	20.00%		$268,656
40	Total			$1,611,936
41				
42				
43				
44				
45				
46				
47				
48				
49				
50			Sheet 5 of 5	