

BASS

BERRY • SIMS PC

David Killion
PHONE: (615) 742-7718
FAX: (615) 742-0414
E-MAIL: dkillion@bassberry.com

150 Third Avenue South, Suite 2800
Nashville, TN 37201
(615) 742-6200

October 4, 2010

Via Hand-Delivery

Chairman Mary W. Freeman
c/o Sharla Dillon
Tennessee Regulatory Authority
460 James Robertson Parkway
Nashville, Tennessee 37243

filed electronically in docket office on 10/04/10

Re: *Petition Of Tennessee American Water Company To Change And Increase Certain Rates And Charges So As To Permit It To Earn A Fair And Adequate Rate Of Return On Its Property Used And Useful In Furnishing Water Service To Its Customers, Docket No. 10-00189*

Dear Chairman Freeman:

Enclosed please find the original and fourteen (14) sets of copies of Tennessee American Water Company's Responses to the TRA's Data Requests dated September 20, 2010. These responses constitute the remaining outstanding responses, as well as a supplement to Questions 13, 35 and 71.

A compact disc has been provided for each set which contains copies of the responses, plus attachments that, due to volume or specific instructions in the data requests, are included only in electronic form. In addition, we are including a disc marked "Docket Manager Disc," which contains the entire filing in PDF format, excluding Excel spreadsheets.

Please return a copy of these Responses, which I would appreciate your stamping as "filed," and returning to me by way of our courier.

Should you have any questions concerning any of the enclosed, please do not hesitate to contact me.

Sincerely,



David Killion

Enclosures

cc: Hon. Sara Kyle (w/o enclosure)
Hon. Eddie Roberson (w/o enclosure)

Chairman Mary W. Freeman
October 4, 2010
Page 2

Mr. David Foster, Chief of Utilities Division (*w/o enclosure*)
Richard Collier, Esq. (*w/o enclosure*)
Mr. Jerry Kettles, Chief of Economic Analysis & Policy Division (*w/o enclosure*)
Vance Broemel, Esq. (*w/enclosure*)

8889189.1

**BEFORE THE TENNESSEE REGULATORY AUTHORITY
NASHVILLE, TENNESSEE**

**PETITION OF TENNESSEE AMERICAN
WATER COMPANY TO CHANGE AND
INCREASE CERTAIN RATES AND
CHARGES SO AS TO PERMIT IT TO
EARN A FAIR AND ADEQUATE
RATE OF RETURN ON ITS PROPERTY
USED AND USEFUL IN FURNISHING
WATER SERVICE TO ITS CUSTOMERS**

DOCKET NO. 10-00189

AFFIDAVIT

STATE OF WEST VIRGINIA

COUNTY OF KANAWHA

I, MICHAEL A. MILLER, Treasurer/Comptroller for Tennessee American Water Company, do hereby certify that the foregoing responses to the Data Requests from the Tennessee Regulatory Authority were prepared by me or under my supervision and are true and accurate to the best of my knowledge and information.

DATED this 30th day of September, 2010.

Michael A. Miller
(signature)

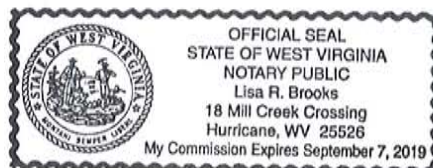
Michael A. Miller
(printed name)

Sworn to and subscribed before me this 30th day of September, 2010.

Lisa R. Brooks
NOTARY PUBLIC

My Commission Expires:

September 7, 2019



TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: Michael A. Miller

GENERAL

Question:

8. Provide any costs associated with any employment and/or termination contracts TAWC, its Parent, Multi-State Utility, or Affiliated Utility Service Company has or has had with management personnel since the last rate filing in Tennessee, and provide copies of such.

Response:

There were no employment or termination costs related to TAWC employees included in the historical test year, and none are being requested in the attrition year.

There were costs associated with employment contracts for AWWSC employees. The costs for signing bonuses billed to TAWC were \$1,573 in 2008, \$1,062 in 2009 and \$1,854 year-to-date September 2010. Please see the response to TRA 1-10 for the costs associated with termination contracts for AWWSC that was billed to TAWC since the last rate filing.

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: John S. Watson

GENERAL

Question:

10. If TAWC, its Parent, Multi-State Utility, or Affiliated Utility Service Company, seeks to recover in its rates to the Tennessee ratepayers any employment separation payments made under any of the contracts, state the amount of any separation payments since the last rate filing in Tennessee.

Response:

The Company has requested no employment separation payments in the cost of service requested in this proceeding related to the separation of TAWC employees.

The Company excluded \$23,181 of the \$28,651 test year costs of AWWSC employee separation payments that were billed to TAWC during the test year. The Company agrees to exclude the remaining \$5,470 from the requested cost of service.

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: All Witnesses

GENERAL

Question:

13. Provide all detailed workpapers, cost studies, or other data supporting all proposed tariff changes, adjustments to revenues, expenses, rate base, and other changes included in the testimony and exhibits filed by TAWC. Provide computer files containing schedules for all computer-based calculations.

Response:

Workpapers of Patrick L. Baryenbruch, Paul R. Herbert, and Edward L. Spitznagel are attached. Workpapers of Sheila A. Miller are filed under a separate cover. The Excel files are on the enclosed CD and refer to the folder titled as TRA-01-Q013-Workpapers.

Supplemental Response:

Please find attached additional workpapers for Edward L. Spitznagel. Also attached are the workpapers for James H. Vander Weide. This information is also included on the enclosed CD in the folder labeled as TRA-01-Q013-SUPPLEMENTAL.

```
data a; infile "h:\c\chattanooga\2010\TEST2MOAVG\FitSeparateMonthlyRegressions.lst" trunccover;
input line $char80.;
file "h:\c\chattanooga\2010\TEST2MOAVG\intercept.out" NEW; if index(line,"Intercept") then put line $char80.;
file "h:\c\chattanooga\2010\TEST2MOAVG\since_2000.out" NEW; if index(line,"since_2000") then put line $char80.;
file "h:\c\chattanooga\2010\TEST2MOAVG\pmdi.out" NEW; if index(line,"pmdi") then put line $char80.;run;
```

```

options nodate nonumber ps=500 ls=150 nocenter;

*proc printto print="h:\c\chattanooga\2010\TEST2MOAVG\FitSeparateMonthlyRegressions.lst" NEW;

title1 "Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS";

data pmdi; infile 'h:\c\Chattanooga\2010\noaa\drd964x.pmdi.txt' LRECL=500;
input state 1-2 division 3-4 year 7-10 x1-x12;
if state=40 and division=01;
array x(*) x1-x12; do month=1 to 12; pmdi = x(month); output; end;

data pmdi; set pmdi; pmdi_avg = (pmdi + lag1(pmdi))/2;

data residential; infile 'h:\c\chattanooga\2010\chatres.txt' trunccover;
input year x1-x12;
array x(*) x1-x12; do month=1 to 12; residential= 1000*x(month); output; end;

data commercial; infile 'h:\c\chattanooga\2010\chatcomm.txt' trunccover;
input year x1-x12;
array x(*) x1-x12; do month=1 to 12; commercial= 1000*x(month); output; end;

data combo; merge pmdi residential commercial; by year month; if residential ne .;

since_2000 = year - 2000;

proc reg; model residential = since_2000; where month=01; title2 "Residential Model, JANUARY";
proc reg; model residential = since_2000; where month=02; title2 "Residential Model, FEBRUARY";
proc reg; model residential = since_2000; where month=03; title2 "Residential Model, MARCH";
proc reg; model residential = since_2000; where month=04; title2 "Residential Model, APRIL";

proc reg; model residential = pmdi_avg since 2000; where month=05; title2 "Residential Model, MAY";
proc reg; model residential = pmdi_avg since 2000; where month=06; title2 "Residential Model, JUNE";
proc reg; model residential = pmdi_avg since 2000; where month=07; title2 "Residential Model, JULY";
proc reg; model residential = pmdi_avg since 2000; where month=08; title2 "Residential Model, AUGUST";
proc reg; model residential = pmdi_avg since 2000; where month=09; title2 "Residential Model, SEPTEMBER";
proc reg; model residential = pmdi_avg since 2000; where month=10; title2 "Residential Model, OCTOBER";
proc reg; model residential = pmdi_avg since 2000; where month=11; title2 "Residential Model, NOVEMBER";
proc reg; model residential = pmdi_avg since 2000; where month=12; title2 "Residential Model, DECEMBER";

proc reg; model commercial = since 2000; where month=01; title2 "Commercial Model, JANUARY";
proc reg; model commercial = since 2000; where month=02; title2 "Commercial Model, FEBRUARY";
proc reg; model commercial = since 2000; where month=03; title2 "Commercial Model, MARCH";
proc reg; model commercial = since 2000; where month=04; title2 "Commercial Model, APRIL";

proc reg; model commercial = pmdi_avg since 2000; where month=05; title2 "Commercial Model, MAY";
proc reg; model commercial = pmdi_avg since 2000; where month=06; title2 "Commercial Model, JUNE";

```

```
proc reg; model commercial = pmdi_avg since_2000; where month=07; title2 "Commercial Model, JULY";  
proc reg; model commercial = pmdi_avg since_2000; where month=08; title2 "Commercial Model, AUGUST";  
proc reg; model commercial = pmdi_avg since_2000; where month=09; title2 "Commercial Model, SEPTEMBER";  
proc reg; model commercial = pmdi_avg since_2000; where month=10; title2 "Commercial Model, OCTOBER";  
proc reg; model commercial = pmdi_avg since_2000; where month=11; title2 "Commercial Model, NOVEMBER";  
proc reg; model commercial = pmdi_avg since_2000; where month=12; title2 "Commercial Model, DECEMBER";
```

```
run;
```

```
options nodate nonumber ps=500 ls=150 nocenter;

title1 "Chattanooga -- Obtain 30 Year Averages of pmdi";

data pmdi; infile 'h:\c\chattanooga\2010\ncaa\drd964x.pmdi.txt' LRECL=500;
input state 1-2 division 3-4 year 7-10 x1-x12; if state=40 and division=01;
array x(*) x1-x12; do month=1 to 12; pmdi = x(month); output; end;

data pmdi; set pmdi;
pmdi_avg = (pmdi + lag(pmdi))/2;

data pmdi; set pmdi; if 1980<=year<=2010;
if year=2010 and month>=4 then delete;
if year=1980 and month<=3 then delete;

proc sort; by month;

proc means noprint; var pmdi_avg; by month;
output out=monthlymeans mean=pmdi_avg; run;

proc print; id month; var pmdi_avg; run;
```


Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Residential Model, JANUARY

The REG Procedure

Model: MODEL1

Dependent Variable: residential

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	613.33640	613.33640	13.91	0.0058
Error	8	352.78205	44.09776		
Corrected Total	9	966.11845			

Root MSE	6.64061	R-Square	0.6348
Dependent Mean	133.37500	Adj R-Sq	0.5892
Coeff Var	4.97890		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	148.37133	4.53640	32.71	<.0001
since_2000	1	-2.72661	0.73111	-3.73	0.0058

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Residential Model, FEBRUARY

The REG Procedure

Model: MODEL1

Dependent Variable: residential

Number of Observations Read 10

Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	508.52461	508.52461	4.15	0.0760
Error	8	980.09360	122.51170		
Corrected Total	9	1488.61821			

Root MSE	11.06850	R-Square	0.3416
Dependent Mean	135.47700	Adj R-Sq	0.2593
Coeff Var	8.17002		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	149.13200	7.56123	19.72	<.0001
since_2000	1	-2.48273	1.21860	-2.04	0.0760

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Residential Model, MARCH

The REG Procedure

Model: MODEL1

Dependent Variable: residential

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	636.39816	636.39816	6.82	0.0311
Error	8	746.94225	93.36778		
Corrected Total	9	1383.34041			

Root MSE	9.66270	R-Square	0.4600
Dependent Mean	132.99700	Adj R-Sq	0.3926
Coeff Var	7.26535		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	148.27267	6.60088	22.46	<.0001
since_2000	1	-2.77739	1.06383	-2.61	0.0311

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Residential Model, APRIL

The REG Procedure

Model: MODEL1

Dependent Variable: residential

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	360.07571	360.07571	13.02	0.0069
Error	8	221.18838	27.64855		
Corrected Total	9	581.26409			

Root MSE	5.25819	R-Square	0.6195
Dependent Mean	135.98900	Adj R-Sq	0.5719
Coeff Var	3.86663		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	145.39018	3.09052	47.04	<.0001
since_2000	1	-2.08915	0.57891	-3.61	0.0069

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Residential Model, MAY

The REG Procedure

Model: MODEL1

Dependent Variable: residential

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	350.80272	175.40136	4.91	0.0464
Error	7	249.91269	35.70181		
Corrected Total	9	600.71541			

Root MSE	5.97510	R-Square	0.5840
Dependent Mean	146.42300	Adj R-Sq	0.4651
Coeff Var	4.08071		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	155.84019	3.54907	43.91	<.0001
pmdi_avg	1	-0.51448	0.99377	-0.52	0.6206
since_2000	1	-2.10649	0.67267	-3.13	0.0166

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Residential Model, JUNE

The REG Procedure

Model: MODEL1

Dependent Variable: residential

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	362.97763	181.48882	1.73	0.2454
Error	7	734.91346	104.98764		
Corrected Total	9	1097.89109			

Root MSE	10.24635	R-Square	0.3306
Dependent Mean	161.64100	Adj R-Sq	0.1394
Coeff Var	6.33895		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	167.58682	6.13078	27.34	<.0001
pmdi_avg	1	-2.49156	1.48051	-1.68	0.1363
since_2000	1	-1.24212	1.14712	-1.08	0.3148

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Residential Model, JULY

The REG Procedure

Model: MODEL1

Dependent Variable: residential

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	125.12313	62.56156	0.52	0.6176
Error	7	847.67688	121.09670		
Corrected Total	9	972.80001			

Root MSE	11.00439	R-Square	0.1286
Dependent Mean	171.07700	Adj R-Sq	-0.1203
Coeff Var	6.43242		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	174.64866	6.76548	25.81	<.0001
pmdi_avg	1	-1.47209	1.51660	-0.97	0.3641
since_2000	1	-0.63128	1.24207	-0.51	0.6269

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Residential Model, AUGUST

The REG Procedure

Model: MODEL1

Dependent Variable: residential

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	537.11658	268.55829	5.93	0.0311
Error	7	316.83551	45.26222		
Corrected Total	9	853.95209			

Root MSE	6.72772	R-Square	0.6290
Dependent Mean	166.46900	Adj R-Sq	0.5230
Coeff Var	4.04143		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	178.17605	4.13297	43.11	<.0001
pmdi_avg	1	-1.73946	0.85343	-2.04	0.0809
since_2000	1	-2.34336	0.75390	-3.11	0.0171

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Residential Model, SEPTEMBER

The REG Procedure

Model: MODEL1

Dependent Variable: residential

Number of Observations Read 10

Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	920.34622	460.17311	8.69	0.0127
Error	7	370.64803	52.94972		
Corrected Total	9	1290.99425			

Root MSE	7.27666	R-Square	0.7129
Dependent Mean	165.51500	Adj R-Sq	0.6309
Coeff Var	4.39637		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	175.98098	4.48389	39.25	<.0001
pmdi_avg	1	-3.24953	0.83069	-3.91	0.0058
since_2000	1	-1.69500	0.81294	-2.09	0.0755

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Residential Model, OCTOBER

The REG Procedure

Model: MODEL1

Dependent Variable: residential

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	558.26097	279.13048	9.61	0.0098
Error	7	203.34307	29.04901		
Corrected Total	9	761.60404			

Root MSE	5.38971	R-Square	0.7330
Dependent Mean	154.26600	Adj R-Sq	0.6567
Coeff Var	3.49378		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	165.14234	3.26564	50.57	<.0001
pmdi_avg	1	-1.71672	0.56796	-3.02	0.0193
since_2000	1	-2.06427	0.59637	-3.46	0.0105

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Residential Model, NOVEMBER

The REG Procedure

Model: MODEL1

Dependent Variable: residential

Number of Observations Read 10

Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	860.85425	430.42712	25.44	0.0006
Error	7	118.45600	16.92229		
Corrected Total	9	979.31025			

Root MSE	4.11367	R-Square	0.8790
Dependent Mean	145.01500	Adj R-Sq	0.8445
Coeff Var	2.83672		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	159.78421	2.44844	65.26	<.0001
pmdi_avg	1	-0.71435	0.41182	-1.73	0.1264
since_2000	1	-3.15957	0.45315	-6.97	0.0002

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Residential Model, DECEMBER

The REG Procedure

Model: MODEL1

Dependent Variable: residential

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	742.28192	371.14096	9.11	0.0113
Error	7	285.24029	40.74861		
Corrected Total	9	1027.52221			

Root MSE	6.38346	R-Square	0.7224
Dependent Mean	140.28300	Adj R-Sq	0.6431
Coeff Var	4.55042		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	152.86119	3.78289	40.41	<.0001
pmdi_avg	1	0.68004	0.64879	1.05	0.3294
since_2000	1	-2.91499	0.70283	-4.15	0.0043

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Commercial Model, JANUARY

The REG Procedure

Model: MODEL1

Dependent Variable: commercial

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	12172	12172	2.52	0.1509
Error	8	38609	4826.11322		
Corrected Total	9	50781			

Root MSE	69.47023	R-Square	0.2397
Dependent Mean	926.58600	Adj R-Sq	0.1447
Coeff Var	7.49744		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	993.39267	47.45720	20.93	<.0001
since_2000	1	-12.14667	7.64842	-1.59	0.1509

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Commercial Model, FEBRUARY

The REG Procedure

Model: MODEL1

Dependent Variable: commercial

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	2564.79273	2564.79273	0.22	0.6529
Error	8	94027	11753		
Corrected Total	9	96591			

Root MSE	108.41274	R-Square	0.0266
Dependent Mean	942.19100	Adj R-Sq	-0.0951
Coeff Var	11.50645		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	972.85733	74.06000	13.14	<.0001
since_2000	1	-5.57570	11.93585	-0.47	0.6529

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Commercial Model, MARCH

The REG Procedure

Model: MODEL1

Dependent Variable: commercial

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	7788.83142	7788.83142	0.86	0.3808
Error	8	72431	9053.88094		
Corrected Total	9	80220			

Root MSE	95.15188	R-Square	0.0971
Dependent Mean	973.24200	Adj R-Sq	-0.0158
Coeff Var	9.77680		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1026.68267	65.00111	15.79	<.0001
since_2000	1	-9.71648	10.47588	-0.93	0.3808

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Commercial Model, APRIL

The REG Procedure

Model: MODEL1

Dependent Variable: commercial

Number of Observations Read 10

Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	14608	14608	2.94	0.1246
Error	8	39719	4964.85468		
Corrected Total	9	54327			

Root MSE	70.46172	R-Square	0.2689
Dependent Mean	962.58000	Adj R-Sq	0.1775
Coeff Var	7.32009		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1022.45945	41.41415	24.69	<.0001
since_2000	1	-13.30655	7.75758	-1.72	0.1246

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Commercial Model, MAY

The REG Procedure

Model: MODEL1

Dependent Variable: commercial

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	2944.42768	1472.21384	0.15	0.8657
Error	7	69975	9996.37941		
Corrected Total	9	72919			

Root MSE	99.98190	R-Square	0.0404
Dependent Mean	1024.68200	Adj R-Sq	-0.2338
Coeff Var	9.75736		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1040.92892	59.38700	17.53	<.0001
pmdi_avg	1	-8.06066	16.62885	-0.48	0.6427
since_2000	1	-3.82627	11.25585	-0.34	0.7439

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Commercial Model, JUNE

The REG Procedure

Model: MODEL1

Dependent Variable: commercial

Number of Observations Read 10

Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	8890.52515	4445.26258	0.71	0.5253
Error	7	44032	6290.23107		
Corrected Total	9	52922			

Root MSE	79.31098	R-Square	0.1680
Dependent Mean	1106.15700	Adj R-Sq	-0.0697
Coeff Var	7.16996		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1144.51008	47.45481	24.12	<.0001
pmdi_avg	1	-10.36564	11.45976	-0.90	0.3958
since_2000	1	-8.19351	8.87915	-0.92	0.3868

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Commercial Model, JULY

The REG Procedure

Model: MODEL1

Dependent Variable: commercial

Number of Observations Read 10

Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	43800	21900	3.16	0.1050
Error	7	48439	6919.88551		
Corrected Total	9	92239			

Root MSE	83.18585	R-Square	0.4749
Dependent Mean	1155.54400	Adj R-Sq	0.3248
Coeff Var	7.19885		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1227.95111	51.14253	24.01	<.0001
pmdi_avg	1	-26.92554	11.46444	-2.35	0.0512
since_2000	1	-13.11968	9.38922	-1.40	0.2050

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Commercial Model, AUGUST

The REG Procedure

Model: MODEL1

Dependent Variable: commercial

Number of Observations Read 10
Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	10485	5242.70700	1.83	0.2293
Error	7	20042	2863.12932		
Corrected Total	9	30527			

Root MSE	53.50822	R-Square	0.3435
Dependent Mean	1151.09700	Adj R-Sq	0.1559
Coeff Var	4.64845		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1196.59782	32.87116	36.40	<.0001
pmdi_avg	1	-10.27801	6.78769	-1.51	0.1737
since_2000	1	-8.58558	5.99608	-1.43	0.1953

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Commercial Model, SEPTEMBER

The REG Procedure

Model: MODEL1

Dependent Variable: commercial

Number of Observations Read 10

Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	52035	26017	11.45	0.0062
Error	7	15908	2272.50272		
Corrected Total	9	67942			

Root MSE	47.67077	R-Square	0.7659
Dependent Mean	1184.20900	Adj R-Sq	0.6990
Coeff Var	4.02554		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1237.20453	29.37485	42.12	<.0001
pmdi_avg	1	-25.91745	5.44198	-4.76	0.0021
since_2000	1	-6.74592	5.32570	-1.27	0.2458

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Commercial Model, OCTOBER

The REG Procedure

Model: MODEL1

Dependent Variable: commercial

Number of Observations Read 10

Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	20446	10223	2.58	0.1449
Error	7	27753	3964.76849		
Corrected Total	9	48200			

Root MSE	62.96641	R-Square	0.4242
Dependent Mean	1117.83400	Adj R-Sq	0.2597
Coeff Var	5.63289		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1191.28011	38.15153	31.22	<.0001
pmdi_avg	1	-2.66150	6.63536	-0.40	0.7003
since_2000	1	-15.77457	6.96726	-2.26	0.0580

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Commercial Model, NOVEMBER

The REG Procedure

Model: MODEL1

Dependent Variable: commercial

Number of Observations Read 10

Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	32658	16329	6.58	0.0247
Error	7	17368	2481.10471		
Corrected Total	9	50026			

Root MSE	49.81069	R-Square	0.6528
Dependent Mean	1055.02500	Adj R-Sq	0.5536
Coeff Var	4.72128		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1128.95324	29.64706	38.08	<.0001
pmdi_avg	1	-13.12306	4.98651	-2.63	0.0338
since_2000	1	-14.17862	5.48705	-2.58	0.0363

Chattanooga -- Fit Separate Monthly Regressions USING AVERAGE OF PMDI OVER TWO MONTHS
Commercial Model, DECEMBER

The REG Procedure

Model: MODEL1

Dependent Variable: commercial

Number of Observations Read 10

Number of Observations Used 10

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	10966	5482.79791	0.59	0.5781
Error	7	64701	9242.94406		
Corrected Total	9	75666			

Root MSE	96.14023	R-Square	0.1449
Dependent Mean	995.12000	Adj R-Sq	-0.0994
Coeff Var	9.66117		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	1045.23220	56.97342	18.35	<.0001
pmdi_avg	1	-4.66067	9.77130	-0.48	0.6479
since_2000	1	-10.31473	10.58521	-0.97	0.3623

Intercept	1	148.37133	4.53640	32.71	<.0001
Intercept	1	149.13200	7.56123	19.72	<.0001
Intercept	1	148.27267	6.60088	22.46	<.0001
Intercept	1	145.39018	3.09052	47.04	<.0001
Intercept	1	155.84019	3.54907	43.91	<.0001
Intercept	1	167.58682	6.13078	27.34	<.0001
Intercept	1	174.64866	6.76548	25.81	<.0001
Intercept	1	178.17605	4.13297	43.11	<.0001
Intercept	1	175.98098	4.48389	39.25	<.0001
Intercept	1	165.14234	3.26564	50.57	<.0001
Intercept	1	159.78421	2.44844	65.26	<.0001
Intercept	1	152.86119	3.78289	40.41	<.0001
Intercept	1	993.39267	47.45720	20.93	<.0001
Intercept	1	972.85733	74.06000	13.14	<.0001
Intercept	1	1026.68267	65.00111	15.79	<.0001
Intercept	1	1022.45945	41.41415	24.69	<.0001
Intercept	1	1040.92892	59.38700	17.53	<.0001
Intercept	1	1144.51008	47.45481	24.12	<.0001
Intercept	1	1227.95111	51.14253	24.01	<.0001
Intercept	1	1196.59782	32.87116	36.40	<.0001
Intercept	1	1237.20453	29.37485	42.12	<.0001
Intercept	1	1191.28011	38.15153	31.22	<.0001
Intercept	1	1128.95324	29.64706	38.08	<.0001
Intercept	1	1045.23220	56.97342	18.35	<.0001

pmdi_avg	1	-0.51448	0.99377	-0.52	0.6206
pmdi_avg	1	-2.49156	1.48051	-1.68	0.1363
pmdi_avg	1	-1.47209	1.51660	-0.97	0.3641
pmdi_avg	1	-1.73946	0.85343	-2.04	0.0809
pmdi_avg	1	-3.24953	0.83069	-3.91	0.0058
pmdi_avg	1	-1.71672	0.56796	-3.02	0.0193
pmdi_avg	1	-0.71435	0.41182	-1.73	0.1264
pmdi_avg	1	0.68004	0.64879	1.05	0.3294
pmdi_avg	1	-8.06066	16.62885	-0.48	0.6427
pmdi_avg	1	-10.36564	11.45976	-0.90	0.3958
pmdi_avg	1	-26.92554	11.46444	-2.35	0.0512
pmdi_avg	1	-10.27801	6.78769	-1.51	0.1737
pmdi_avg	1	-25.91745	5.44198	-4.76	0.0021
pmdi_avg	1	-2.66150	6.63536	-0.40	0.7003
pmdi_avg	1	-13.12306	4.98651	-2.63	0.0338
pmdi_avg	1	-4.66067	9.77130	-0.48	0.6479

since_2000	1	-2.72661	0.73111	-3.73	0.0058
since_2000	1	-2.48273	1.21860	-2.04	0.0760
since_2000	1	-2.77739	1.06383	-2.61	0.0311
since_2000	1	-2.08915	0.57891	-3.61	0.0069
since_2000	1	-2.10649	0.67267	-3.13	0.0166
since_2000	1	-1.24212	1.14712	-1.08	0.3148
since_2000	1	-0.63128	1.24207	-0.51	0.6269
since_2000	1	-2.34336	0.75390	-3.11	0.0171
since_2000	1	-1.69500	0.81294	-2.09	0.0755
since_2000	1	-2.06427	0.59637	-3.46	0.0105
since_2000	1	-3.15957	0.45315	-6.97	0.0002
since_2000	1	-2.91499	0.70283	-4.15	0.0043
since_2000	1	-12.14667	7.64842	-1.59	0.1509
since_2000	1	-5.57570	11.93585	-0.47	0.6529
since_2000	1	-9.71648	10.47588	-0.93	0.3808
since_2000	1	-13.30655	7.75758	-1.72	0.1246
since_2000	1	-3.82627	11.25585	-0.34	0.7439
since_2000	1	-8.19351	8.87915	-0.92	0.3868
since_2000	1	-13.11968	9.38922	-1.40	0.2050
since_2000	1	-8.58558	5.99608	-1.43	0.1953
since_2000	1	-6.74592	5.32570	-1.27	0.2458
since_2000	1	-15.77457	6.96726	-2.26	0.0580
since_2000	1	-14.17862	5.48705	-2.58	0.0363
since_2000	1	-10.31473	10.58521	-0.97	0.3623

Custom Report - Artesian Res Corp (ARTNA)

Enter ticker:

ARTNA Get Profile

Symbol	Last	Open	Change	% Change	Year High	Year Low	Last Trade
ARTNA	NA	NA	+NA	+NA%	NA	NA	2010-04-23 - Closed

Pricing/Earnings		Ratings*		% Annualized Return (EOM)		
Recent Price	18.39	Financial Strength	NMF			
P/E Ratio	NMF	Stock's Price Stability	100			
P/E (Trailing)	18.959	Price Growth	50			
P/E (Median)	21	Persistence		1 yr	31.822	91.065
Rel. P/E Ratio	0.998	Earnings	85	3 yrs	-1.004	2.471
		Predictability		5 yrs	4.085	7.382

Value Line Ranks*			3 to 5 Year Projections		
Performance: 3	(Raised - 04/02/2010)		Price Gain	Ann'l Tot. Return	
Safety: 2	(Lowered - 04/23/2010)				
Technical: 3	(Raised - 10/16/2009)		High	N/A	N/A
Industry: 92	(Water Utility)		Low	N/A	N/A
BETA: 0.55	(1.00 = Market)				

*Data based on the latest 04/23/2010 issue.

Business Profile

BUSINESS: Artesian Resources Corporation, through its subsidiaries, engages in the distribution and sale of water to residential, commercial, industrial, governmental, municipal, and utility customers in the state of Delaware. It also provides water for public and private fire protection to customers in its service territories. In addition, the company offers wastewater services, as well as designs and constructs wastewater facilities and infrastructure. As of December 31, 2006, Artesian Resources had approximately 73,800 metered customers and served a population of approximately 243,000. As of the above date, it served customers through approximately 1,050 miles of transmission and distribution mains. Has 198 employees. Chairman, C.E.O. & President: Dian C. Taylor. Address: 664 Churchmans Rd., Newark, DE 19702. Tel.: 302 453-6900. Internet: <http://www.artesianwater.com>

Schedule 6
Using the Arithmetic Mean to Estimate
the Cost of Equity Capital

End Year 1

<i>Ending Wealth</i>	<i>Probability</i>
\$1.30	0.5
\$0.90	0.5

End of Year 2

<i>Ending Wealth</i>		<i>Value</i>	<i>Probability</i>	<i>Value x Probability</i>
(1.30) (1.30)	=	\$ 1.69	0.25	\$ 0.42
(1.30) (.9)	=	\$ 1.17	0.50	\$ 0.59
(.9) (.9)	=	\$ 0.81	0.25	\$ 0.20
Expected Wealth	=			\$ 1.21

Cost of Equity = $1(1+k)^2 = 1.21$

Cost of Equity = $k = (1.21/1)^{.5} - 1 = 10\%$ 10%

Arithmetic mean = $(30\%) (.5) + (-10\%) (.5) = 10\%$ 10%

Geometric mean = $[(1.3) (.9)]^{.5} - 1 = .082 = 8.2\%$ 8.2%

Thus, the geometric mean is not equal to the cost of equity capital.

For an investment with an uncertain outcome, the arithmetic mean is the best measure of the cost of equity capital

Schedule 7
Calculation of Capital Asset pricing Model Cost of Equity
Using SBBi 6.7 percent Risk Premium

Line

No.	Proxy Companies	
1	Risk-free Rate	4.75% 20-year Treasury Bond Yield Forecast
2	Beta	0.71 Average Beta Proxy Companies
3	Risk Premium	6.70% Long-horizon SBBi risk premium
4	Beta x Risk Premium	4.76%
5	Flotation cost	0.25%
6	Cost of Equity	9.8%

Forecast Treasury bond yield from
Value Line Selection & Opinion,
February 26, 2010, p. 3019; SBBi^{*}
risk premium from Ibbotson^{*} SBBi
2010^{*} Valuation Edition Yearbook,
Value Line beta for comparable
companies from Value Line
Investment Analyzer.

TENNESSEE AMERICAN WATER COMPANY
EXHIBIT __ (JVW-1)
SCHEDULE 7 (continued)
COMPARABLE COMPANY BETAS

Line No.	Company	Beta
1	Amer. States Water	0.80
2	Amer. Water Works	NA
3	Aqua America	0.65
4	Artesian Res. 'A'	0.55
4	California Water	0.75
5	Connecticut Water	0.80
6	Middlesex Water	0.80
7	York Water	0.65
8	Average	0.71

Betas from Value Line Investment Analyzer, March 2010

TENNESSEE AMERICAN WATER COMPANY
EXHIBIT __ (JVW-1)
Schedule 8
Calculation of Capital Asset pricing Model Cost of Equity
Using DCF Estimate of the Expected Rate of Return
on the Market Portfolio

Line		
No.		
1	Risk-free Rate	4.75% 20-year Treasury Bond Yield--Value Line Forecast Data
2	Beta	0.71 Average Beta Comparable Companies
3	DCF S&P 500	12.5% DCF Cost of Equity S&P 500 (see following)
4	Risk Premium	7.75%
5	Beta * Risk Premium	5.50%
6	Flotation cost	0.25%
7	Cost of Equity	10.5%

TENNESSEE AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
Schedule 8 (continued)
Calculation of Capital Asset pricing Model Cost of Equity
Using DCF Estimate of the Expected Rate of Return
on the Market Portfolio

Company	P ₀	D ₀	Growth	Cost of Equity
AMERISOURCEBERGEN	27.66	0.32	13.10%	14.4%
AUTOMATIC DATA PROC.	42.11	1.36	10.93%	14.6%
ALLERGAN	60.05	0.20	13.55%	13.9%
ASSURANT	31.51	0.60	8.50%	10.6%
APPLIED MATS.	12.96	0.28	11.50%	13.9%
AMPHENOL 'A'	42.38	0.06	12.53%	12.7%
AIRGAS	54.86	0.88	8.98%	10.7%
AVON PRODUCTS	31.55	0.88	10.43%	13.5%
AMERICAN EXPRESS	39.41	0.72	9.86%	11.9%
ALLEGHENY EN.	22.57	0.60	10.00%	13.0%
BOEING	62.89	1.68	8.33%	11.3%
BAXTER INTL.	58.23	1.16	11.81%	14.1%
BEST BUY	38.53	0.56	12.42%	14.1%
C R BARD	82.34	0.68	11.73%	12.7%
BECTON DICKINSON	77.55	1.48	11.38%	13.5%
FRANKLIN RESOURCES	104.05	0.88	10.00%	10.9%
BANK OF NEW YORK MELLON	29.16	0.36	11.00%	12.4%
CA	22.67	0.16	11.00%	11.8%
CARDINAL HEALTH	33.66	0.70	9.76%	12.1%
CHUBB	49.95	1.48	9.20%	12.5%
CBS 'B'	13.58	0.20	10.40%	12.0%
COLGATE-PALM.	81.98	2.12	9.00%	11.8%
COMCAST 'A'	16.63	0.38	11.63%	14.2%
CME GROUP	304.43	4.60	11.40%	13.1%
CSX	47.53	0.96	8.63%	10.8%
CINTAS	25.62	0.48	9.38%	11.4%
CVS CAREMARK	33.78	0.35	11.79%	13.0%
DEERE	55.84	1.12	9.75%	12.0%
QUEST DIAGNOSTICS	57.25	0.40	12.23%	13.0%
DANAHER	75.04	0.16	14.02%	14.3%
WALT DISNEY	31.49	0.35	9.57%	10.8%
DIAMOND OFFS.DRL.	92.16	0.50	11.14%	11.7%
DUKE ENERGY	16.61	0.96	4.33%	10.5%
EOG RES.	93.62	0.62	10.40%	11.1%
ENTERGY	78.81	3.32	6.96%	11.5%
EXPEDIA	22.97	0.28	11.60%	13.0%
FEDEX	84.27	0.44	11.75%	12.3%
FEDERATED INVR.'B'	25.89	0.96	7.67%	11.7%
FLUOR	45.91	0.50	10.25%	11.5%
FPL GROUP	48.62	2.00	7.32%	11.8%
GENERAL DYNAMICS	70.92	1.68	7.80%	10.4%
GENERAL ELECTRIC	16.52	0.40	8.80%	11.5%
GENERAL MILLS	71.14	1.96	8.10%	11.1%
CORNING	18.71	0.20	12.80%	14.0%
GENUINE PARTS	39.92	1.64	7.33%	11.8%
GAP	20.97	0.40	10.73%	12.9%
GOODRICH	65.42	1.08	8.53%	10.3%
HALLIBURTON	30.97	0.36	10.67%	12.0%
HARTFORD FINL.SVS.GP.	25.46	0.20	11.77%	12.7%

HJ HEINZ	44.76	1.68	6.53%	10.6%
HONEYWELL INTL.	40.73	1.21	9.00%	12.3%
HEWLETT-PACKARD	50.28	0.32	13.40%	14.1%
INTERNATIONAL BUS.MCHS.	126.99	2.20	8.86%	10.8%
ITT	50.98	1.00	8.67%	10.8%
PENNEY JC	27.56	0.80	7.27%	10.4%
NORDSTROM	36.98	0.64	12.26%	14.2%
KELLOGG	53.66	1.50	10.25%	13.4%
KRAFT FOODS	28.93	1.16	7.53%	11.9%
KROGER	21.60	0.38	8.65%	10.6%
L3 COMMUNICATIONS	89.04	1.60	10.12%	12.1%
LOCKHEED MARTIN	78.21	2.52	8.92%	12.5%
LOWE'S COMPANIES	23.25	0.36	12.27%	14.0%
MARRIOTT INTL.'A'	27.94	0.16	10.08%	10.7%
MCDONALDS	64.15	2.20	10.01%	13.8%
MCKESSON	61.06	0.48	11.45%	12.3%
MOODY'S	27.95	0.42	10.57%	12.2%
MEDTRONIC	44.15	0.82	10.25%	12.3%
MASSEY EN.	44.99	0.24	11.00%	11.6%
METLIFE	37.59	0.74	9.04%	11.2%
MCGRAW-HILL	34.82	0.94	7.87%	10.8%
MEAD JOHNSON NUTRITION	47.20	0.90	9.77%	11.9%
MICROSOFT	29.05	0.52	11.25%	13.3%
NIKE 'B'	66.73	1.08	12.33%	14.2%
NORTHROP GRUMMAN	60.19	1.72	11.00%	14.2%
NORFOLK SOUTHERN	51.36	1.36	8.75%	11.7%
NATIONAL SEMICON.	14.34	0.32	9.33%	11.8%
NORTHEAST UTILITIES	26.16	1.02	7.81%	12.1%
NEWELL RUBBERMAID	14.37	0.20	9.33%	10.9%
OMNICOM GP.	37.26	0.80	10.93%	13.3%
PEOPLES UNITED FINANCIAL	15.85	0.61	9.00%	13.3%
PACCAR	37.35	0.36	11.25%	12.3%
PG&E	42.84	1.82	7.00%	11.6%
PREC.CASTPARTS	113.47	0.12	14.00%	14.1%
PRINCIPAL FINL.GP.	24.61	0.50	9.45%	11.7%
PROCTER & GAMBLE	62.30	1.76	9.33%	12.5%
PROGRESS ENERGY	39.13	2.48	3.72%	10.5%
PERKINELMER	21.87	0.28	13.05%	14.5%
PINNACLE WEST CAP.	36.78	2.10	7.00%	13.2%
PEPCO HOLDINGS	16.81	1.08	5.33%	12.3%
PRUDENTIAL FINL.	52.71	0.70	11.42%	12.9%
PRAXAIR	77.96	1.80	11.33%	13.9%
POLO RALPH LAUREN 'A'	82.39	0.40	10.63%	11.2%
ROPER INDS.NEW	54.04	0.38	12.00%	12.8%
RAYTHEON 'B'	54.78	1.50	8.67%	11.7%
SCANA	36.49	1.90	5.32%	10.9%
SIGMA ALDRICH	50.01	0.64	9.47%	10.9%
SARA LEE	12.98	0.44	8.47%	12.2%
SOUTHERN	32.38	1.75	4.77%	10.5%
STATE STREET	45.03	0.04	10.50%	10.6%
STRYKER	53.88	0.60	12.07%	13.3%
AT&T	25.92	1.68	5.79%	12.8%
TECO ENERGY	15.67	0.80	7.93%	13.5%
TIFFANY & CO	43.95	0.80	11.30%	13.3%
TJX COS.	39.86	0.48	12.44%	13.8%
TORCHMARK	46.98	0.60	9.38%	10.8%
T ROWE PRICE GP.	51.66	1.08	10.75%	13.1%
TOTAL SYSTEM SERVICES	15.21	0.28	8.70%	10.7%
TIME WARNER CABLE	46.54	1.60	8.27%	12.0%
UNUM GROUP	21.15	0.33	8.80%	10.5%
UNION PACIFIC	66.59	1.08	10.88%	12.7%

UNITED PARCEL SER.	60.00	1.88	8.22%	11.7%
UNITED TECHNOLOGIES	69.52	1.70	10.72%	13.5%
V F	75.66	2.40	9.60%	13.1%
VULCAN MATERIALS	46.64	1.00	10.60%	13.0%
VERIZON COMMUNICATIONS	30.19	1.90	4.86%	11.6%
WISCONSIN ENERGY	49.34	1.60	9.87%	13.5%
WELLS FARGO & CO	28.48	0.20	12.00%	12.8%
WAL MART STORES	54.05	1.21	10.80%	13.3%
WESTERN UNION	17.66	0.06	12.57%	13.0%
XCEL ENERGY	20.96	0.98	6.12%	11.2%
DENTSPLY INTL.	34.13	0.20	11.67%	12.3%
Market-weighted Average				12.5%

Table 5
Cost of Equity Model Results

Method	Model Result
Discounted Cash Flow-water	12.3%
Discounted Cash Flow-LDC	10.9%
Ex Ante Risk Premium	11.3%
Ex Post Risk Premium	11.2%
Range of Results	10.9% - 12.3%

TENNESSEE-AMERICAN WATER COMPANY
EXHIBIT (JVW-1)
SCHEDULE 1
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR PROXY WATER COMPANY COMPANIES

Line No.	Company	d ₀	3-Mo. Ave. Price	Value Line			Market Value	Cost of Equity			No. of I/B/E/S Analysts	Line No.	Company	Safety Rank	Beta	Market Cap \$ (Mil)
				I/B/E/S Growth	Forecasted or Reported EPS Growth	Average Growth		Equity	1+g	1+k						
1	Amer. States Water	0.260	33.625	4.00%	9.5%	6.8%	667	10.3%	1.0675	1.1029	1	1	Amer. States Water	3	0.80	667
2	Amer. Water Works	0.210	22.023	9.92%	nml	9.9%	3,869	14.5%	1.0992	1.1451	4	2	Amer. Water Works	3		3,869
3	Aqua America	0.145	17.131	8.33%	10.0%	9.2%	2,455	13.1%	1.0917	1.1310	3	3	Aqua America	3	0.65	2,455
4	Artesian Res. 'A'	0.187	17.948	6.00%		6.0%	120	10.7%	1.0600	1.1071	1	4	Artesian Res. 'A'	2	0.55	120
5	California Water	0.298	36.608	6.00%	8.5%	7.3%	808	11.0%	1.0725	1.1105	2	5	California Water	3	0.75	808
6	Connecticut Water	0.228	23.298		9.0%	9.0%	202	13.7%	1.0900	1.1368	NA	6	Connecticut Water	2	0.80	202
7	Middlesex Water	0.180	17.050		9.0%	9.0%	239	14.1%	1.0900	1.1406	NA	7	Middlesex Water	2	0.80	239
8	York Water	0.128	13.843	6.00%	7.5%	6.8%	178	11.0%	1.0675	1.1104	1	8	York Water	3	0.65	178
9	Market-weighted Average							13.3%		1.1329		9	Market-weighted Average	3		8,538
10	Average							12.3%		1.1230		10	Average	3	0.71	

TENNESSEE-AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)

SCHEDULE 2

SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS FOR NATURAL GAS COMPANIES

Line No.	Company	d_0	P_0	Growth	Cost of Equity	1+g	1+k	No. of I/B/E/S Estimates	Line No.	Company	Safety Rank	S&P BOND RATING	S&P BOND RATING (Numerical)	Beta	Market Cap \$ (Mil)
1	AGL Resources	0.440	36.405	5.07%	10.5%	1.05	1.11	3	1	AGL Resources	2	A-	5	0.75	3,062
2	Atmos Energy	0.335	28.110	4.20%	9.6%	1.04	1.10	3	2	Atmos Energy	2	BBB+	6	0.65	2,735
3	Nicor Inc.	0.465	41.380	4.30%	9.4%	1.04	1.09	2	3	Nicor Inc.	3	AA	1	0.70	1,922
4	National Fuel Gas	0.335	49.633	8.10%	11.3%	1.08	1.11	3	4	National Fuel Gas	2	BBB	7	0.95	4,226
5	NiSource Inc.	0.230	15.060	3.00%	9.9%	1.03	1.10	2	5	NiSource Inc.	3	BBB-	8	0.85	4,509
6	Northwest Nat. Gas	0.415	44.379	5.50%	9.7%	1.06	1.10	2	6	Northwest Nat. Gas	1	A+	3	0.60	1,260
7	ONEOK Inc.	0.440	44.172	7.23%	11.7%	1.07	1.12	3	7	ONEOK Inc.	3	BBB	7	0.95	5,042
8	Piedmont Natural Gas	0.270	26.075	7.00%	11.9%	1.07	1.12	2	8	Piedmont Natural Gas	2	A	4	0.65	1,981
9	South Jersey Inds.	0.330	39.410	11.67%	15.6%	1.12	1.16	3	9	South Jersey Inds.	2	BBB+	6	0.60	1,286
10	Market-weighted Average				10.9%	0.25%				Market-weighted Average	2		5.9	0.80	
11	Average				11.1%					Average	2		5.2	0.74	

TENNESSEE-AMERICAN WATER COMPANY EXHIBIT (JWV-1) SCHEDULE 3 Comparison of DCF Expected Return on an Equity Investment in Natural Gas Distribution Companies to the Interest Rate on Moody's A-rated Utility Bonds				Adjusted RP = RP - coefficient x lag RP Regression of Relationship Between Risk Pr Adjusted Yld = Yld - coefficient x lag yield on an Investment in Natural Gas Distribution Companies and Yield to Maturity on Moody's A-Rated Intercept coefficient = Serial correlation coefficient r estimated via 0.012585 0.0126 Y _t = a(1-r) ^t + rY _{t-1} + bX _t - brX _{t-1} + e _t / (1-0.8218) 0.1782 0.8218 RP _t - .8218 x F -0.3494 -0.3494				Projected A utility bond yield 6.57% Value Line Feb-10			
		-B - C		Yt-1		Yt-1		Y		X	
Line No.	Date	DCF	Bond Yield	Risk Premium	Bond Lag Risk Premium	Lag Bond Yield	Adjusted Risk Premium	Adjusted Bond Yield	Forecast Bond RP	Cost of Equity	
Line N Date		DCF	Bond Yield	Risk Premium							Ex Ante Risk Premium Cost of Equity
1 Jun-98	0.1154	0.0703	0.0451								
2 Jul-98	0.1186	0.0703	0.0483	0.0451	0.0703	0.01131	0.0125	0.0461	0.1164	1 0.0706 + (0.3494) x 6.57% = 0.0477	
3 Aug-98	0.1234	0.0700	0.0534	0.0483	0.0703	0.01363	0.0122	0.0462	0.1162	2 intercept coefficient/(1-serial correlation coefficient) = 0.0706	
4 Sep-98	0.1273	0.0693	0.0580	0.0534	0.0700	0.01419	0.0118	0.0464	0.1157	3 Bond coefficient (0.3494)	
5 Oct-98	0.1260	0.0696	0.0564	0.0580	0.0693	0.00867	0.0126	0.0463	0.1159	4 Bond yield = 0.0657	
6 Nov-98	0.1211	0.0703	0.0508	0.0564	0.0696	0.00449	0.0131	0.0461	0.1164	5 Bond coefficient * Bond yield = (0.0730)	
7 Dec-98	0.1185	0.0691	0.0494	0.0508	0.0703	0.00760	0.0113	0.0465	0.1156	6 Expected Risk Premium 0.0477	
8 Jan-99	0.1195	0.0697	0.0498	0.0494	0.0691	0.00927	0.0129	0.0463	0.1160	7 Bond yield = 0.0657	
9 Feb-99	0.1243	0.0709	0.0534	0.0498	0.0697	0.01246	0.0136	0.0459	0.1168	8 Ex Ante Risk Premium Cost of Equity = 11.34%	
10 Mar-99	0.1257	0.0726	0.0531	0.0534	0.0709	0.00918	0.0143	0.0453	0.1179		
11 Apr-99	0.1260	0.0722	0.0538	0.0531	0.0726	0.01022	0.0125	0.0454	0.1176		
12 May-99	0.1221	0.0747	0.0474	0.0538	0.0722	0.00318	0.0154	0.0445	0.1192		
13 Jun-99	0.1208	0.0774	0.0434	0.0474	0.0747	0.00439	0.0160	0.0436	0.1210		
14 Jul-99	0.1222	0.0771	0.0451	0.0434	0.0774	0.00948	0.0135	0.0437	0.1208		
15 Aug-99	0.1220	0.0791	0.0429	0.0451	0.0771	0.00586	0.0157	0.0430	0.1221		
16 Sep-99	0.1226	0.0793	0.0433	0.0429	0.0791	0.00800	0.0143	0.0429	0.1222		
17 Oct-99	0.1233	0.0806	0.0427	0.0433	0.0793	0.00712	0.0154	0.0425	0.1231		
18 Nov-99	0.1240	0.0794	0.0446	0.0427	0.0806	0.00952	0.0132	0.0429	0.1223		
19 Dec-99	0.1280	0.0814	0.0466	0.0446	0.0794	0.00992	0.0161	0.0422	0.1236		
20 Jan-00	0.1301	0.0835	0.0466	0.0466	0.0814	0.00928	0.0166	0.0415	0.1250		
21 Feb-00	0.1344	0.0835	0.0519	0.0466	0.0835	0.01361	0.0139	0.0418	0.1243		
22 Mar-00	0.1344	0.0828	0.0516	0.0519	0.0825	0.00902	0.0150	0.0417	0.1245		
23 Apr-00	0.1316	0.0829	0.0487	0.0516	0.0828	0.00629	0.0149	0.0417	0.1246		
24 May-00	0.1292	0.0870	0.0422	0.0487	0.0829	0.00213	0.0189	0.0402	0.1272		
25 Jun-00	0.1295	0.0836	0.0459	0.0422	0.0870	0.01128	0.0121	0.0414	0.1250		
26 Jul-00	0.1317	0.0825	0.0492	0.0459	0.0836	0.01143	0.0138	0.0418	0.1243		
27 Aug-00	0.1290	0.0813	0.0477	0.0492	0.0825	0.00732	0.0135	0.0422	0.1235		
28 Sep-00	0.1257	0.0823	0.0434	0.0477	0.0813	0.00419	0.0155	0.0419	0.1242		
29 Oct-00	0.1260	0.0814	0.0446	0.0434	0.0823	0.00887	0.0138	0.0422	0.1236		
30 Nov-00	0.1251	0.0811	0.0440	0.0446	0.0814	0.00740	0.0142	0.0423	0.1234		
31 Dec-00	0.1239	0.0784	0.0455	0.0440	0.0811	0.00930	0.0118	0.0432	0.1216		
32 Jan-01	0.1261	0.0780	0.0481	0.0455	0.0784	0.01076	0.0136	0.0434	0.1214		
33 Feb-01	0.1261	0.0774	0.0487	0.0481	0.0780	0.00913	0.0133	0.0436	0.1210		
34 Mar-01	0.1275	0.0768	0.0507	0.0487	0.0774	0.01074	0.0132	0.0438	0.1206		
35 Apr-01	0.1227	0.0794	0.0433	0.0507	0.0768	0.00159	0.0163	0.0429	0.1223		
36 May-01	0.1302	0.0799	0.0503	0.0433	0.0794	0.01476	0.0146	0.0427	0.1226		
37 Jun-01	0.1304	0.0785	0.0519	0.0503	0.0799	0.01055	0.0128	0.0432	0.1217		
38 Jul-01	0.1338	0.0778	0.0560	0.0519	0.0785	0.01334	0.0133	0.0434	0.1212		
39 Aug-01	0.1327	0.0759	0.0568	0.0560	0.0778	0.01077	0.0120	0.0441	0.1200		
40 Sep-01	0.1268	0.0775	0.0493	0.0568	0.0759	0.00258	0.0151	0.0436	0.1211		
41 Oct-01	0.1268	0.0763	0.0505	0.0493	0.0775	0.01006	0.0126	0.0440	0.1203		
42 Nov-01	0.1268	0.0757	0.0511	0.0505	0.0763	0.00960	0.0130	0.0442	0.1199		
43 Dec-01	0.1254	0.0783	0.0471	0.0511	0.0757	0.00510	0.0161	0.0433	0.1216		
44 Jan-02	0.1236	0.0766	0.0470	0.0471	0.0783	0.00831	0.0123	0.0439	0.1205		
45 Feb-02	0.1241	0.0754	0.0487	0.0470	0.0766	0.01007	0.0124	0.0443	0.1197		
46 Mar-02	0.1189	0.0776	0.0413	0.0487	0.0754	0.00127	0.0156	0.0435	0.1211		
47 Apr-02	0.1159	0.0757	0.0402	0.0413	0.0776	0.00626	0.0119	0.0442	0.1199		
48 May-02	0.1162	0.0752	0.0410	0.0402	0.0757	0.00798	0.0130	0.0444	0.1196		
49 Jun-02	0.1170	0.0741	0.0429	0.0410	0.0752	0.00920	0.0123	0.0447	0.1188		
50 Jul-02	0.1242	0.0731	0.0511	0.0429	0.0741	0.01582	0.0122	0.0451	0.1182		
51 Aug-02	0.1234	0.0717	0.0517	0.0511	0.0731	0.00972	0.0116	0.0456	0.1173		
52 Sep-02	0.1260	0.0708	0.0552	0.0517	0.0717	0.01268	0.0119	0.0459	0.1167		
53 Oct-02	0.1250	0.0723	0.0527	0.0552	0.0708	0.00737	0.0141	0.0454	0.1177		
54 Nov-02	0.1221	0.0714	0.0507	0.0527	0.0723	0.00736	0.0120	0.0457	0.1171		
55 Dec-02	0.1216	0.0707	0.0509	0.0507	0.0714	0.00921	0.0120	0.0459	0.1166		
56 Jan-03	0.1219	0.0706	0.0513	0.0509	0.0707	0.00948	0.0125	0.0460	0.1166		
57 Feb-03	0.1232	0.0693	0.0539	0.0513	0.0706	0.01176	0.0113	0.0464	0.1157		
58 Mar-03	0.1195	0.0679	0.0516	0.0539	0.0693	0.00728	0.0109	0.0469	0.1148		
59 Apr-03	0.1162	0.0664	0.0498	0.0516	0.0679	0.00738	0.0106	0.0474	0.1138		
60 May-03	0.1126	0.0636	0.0490	0.0498	0.0664	0.00813	0.0090	0.0484	0.1120		
61 Jun-03	0.1114	0.0621	0.0493	0.0490	0.0636	0.00901	0.0098	0.0489	0.1110		
62 Jul-03	0.1127	0.0657	0.0470	0.0493	0.0621	0.00645	0.0147	0.0477	0.1134		
63 Aug-03	0.1139	0.0678	0.0461	0.0470	0.0657	0.00747	0.0138	0.0469	0.1147		
64 Sep-03	0.1127	0.0656	0.0471	0.0461	0.0678	0.00927	0.0099	0.0477	0.1133		
65 Oct-03	0.1123	0.0643	0.0480	0.0471	0.0656	0.00927	0.0104	0.0482	0.1125		
66 Nov-03	0.1089	0.0637	0.0452	0.0480	0.0643	0.00576	0.0109	0.0484	0.1121		
67 Dec-03	0.1071	0.0627	0.0444	0.0452	0.0637	0.00720	0.0103	0.0487	0.1114		
68 Jan-04	0.1059	0.0615	0.0444	0.0444	0.0627	0.00797	0.0100	0.0491	0.1105		
69 Feb-04	0.1039	0.0615	0.0424	0.0444	0.0615	0.00592	0.0110	0.0491	0.1106		
70 Mar-04	0.1037	0.0597	0.0440	0.0424	0.0615	0.00915	0.0092	0.0498	0.1095		
71 Apr-04	0.1041	0.0635	0.0406	0.0440	0.0597	0.00442	0.0144	0.0484	0.1119		
72 May-04	0.1045	0.0662	0.0383	0.0406	0.0635	0.00493	0.0140	0.0475	0.1137		
73 Jun-04	0.1036	0.0646	0.0390	0.0383	0.0662	0.00758	0.0102	0.0481	0.1127		
74 Jul-04	0.1011	0.0627	0.0384	0.0390	0.0646	0.00628	0.0096	0.0487	0.1114		
75 Aug-04	0.1008	0.0614	0.0394	0.0384	0.0627	0.00791	0.0099	0.0482	0.1106		
76 Sep-04	0.0975	0.0598	0.0378	0.0394	0.0614	0.00542	0.0093	0.0497	0.1095		
77 Oct-04	0.0974	0.0584	0.0380	0.0378	0.0598	0.00691	0.0103	0.0499	0.1093		
78 Nov-04	0.0962	0.0597	0.0365	0.0380	0.0597	0.00530	0.0109	0.0498	0.1095		
79 Dec-04	0.0970	0.0592	0.0378	0.0365	0.0597	0.00779	0.0101	0.0499	0.1091		
80 Jan-05	0.0990	0.0578	0.0412	0.0378	0.0592	0.01017	0.0091	0.0504	0.1082		
81 Feb-05	0.0979	0.0561	0.0418	0.0412	0.0578	0.00791	0.0086	0.0510	0.1071		
82 Mar-05	0.0979	0.0583	0.0396	0.0418	0.0561	0.00521	0.0122	0.0503	0.1086		
83 Apr-05	0.0988	0.0564	0.0424	0.0396	0.0583	0.00986	0.0085	0.0509	0.1073		
84 May-05	0.0981	0.0553	0.0427	0.0424	0.0564	0.00789	0.0090	0.0513	0.1066		
85 Jun-05	0.0976	0.0540	0.0436	0.0427	0.0553	0.00850	0.0085	0.0518	0.1058		
86 Jul-05	0.0966	0.0551	0.0415	0.0436	0.0540	0.00562	0.0107	0.0514	0.1065		
87 Aug-05	0.0959	0.0550	0.0419	0.0415	0.0551	0.00778	0.0097	0.0514	0.1064		
88 Sep-05	0.0980	0.0552	0.0428	0.0419	0.0550	0.00842	0.0100	0.0513	0.1065		
89 Oct-05	0.0990	0.0579	0.0411	0.0428	0.0552	0.00591	0.0125	0.0504	0.1083		
90 Nov-05	0.1049	0.0588	0.0461	0.0411	0.0579	0.01230	0.0112	0.0501	0.1089		
91 Dec-05	0.1045	0.0580	0.0465	0.0461	0.0588	0.00864	0.0097	0.0504	0.1084		
92 Jan-06	0.0982	0.0575	0.0407	0.0465	0.0580	0.00243	0.0098	0.0505	0.1080		
93 Feb-06	0.1124	0.0582	0.0542	0.0407	0.0575	0.02082	0.0109	0.0503	0.1085		
94 Mar-06	0.1127	0.0598	0.0529	0.0542	0.0582	0.00837	0.0120	0.0497	0.1095		
95 Apr-06	0.1100	0.0629	0.0471	0.0529	0.0598	0.00359	0.0138	0.0487	0.1116		
96 May-06	0.1056	0.0642	0.0414	0.0471	0.0629	0.00270	0.0125				

102 Dec-06	0.1035	0.0581	0.0454	0.0453	0.0580	0.00817	0.0104	0.0503	0.1084
104 Jan-07	0.1013	0.0596	0.0417	0.0454	0.0581	0.00444	0.0119	0.0498	0.1094
105 Feb-07	0.1018	0.0590	0.0428	0.0417	0.0596	0.00851	0.0100	0.0500	0.1090
106 Mar-07	0.1018	0.0585	0.0433	0.0428	0.0590	0.00811	0.0100	0.0502	0.1087
107 Apr-07	0.1007	0.0597	0.0410	0.0433	0.0585	0.00547	0.0116	0.0498	0.1095
108 May-07	0.0967	0.0599	0.0368	0.0410	0.0597	0.00309	0.0108	0.0497	0.1096
109 Jun-07	0.0970	0.0630	0.0340	0.0368	0.0599	0.00374	0.0138	0.0486	0.1116
110 Jul-07	0.1006	0.0625	0.0381	0.0340	0.0630	0.01021	0.0107	0.0488	0.1113
111 Aug-07	0.1021	0.0624	0.0397	0.0381	0.0625	0.00834	0.0110	0.0488	0.1112
112 Sep-07	0.1014	0.0618	0.0396	0.0397	0.0624	0.00702	0.0105	0.0490	0.1108
113 Oct-07	0.1080	0.0611	0.0469	0.0396	0.0618	0.01436	0.0103	0.0493	0.1104
114 Nov-07	0.1083	0.0597	0.0486	0.0469	0.0611	0.00999	0.0095	0.0498	0.1095
115 Dec-07	0.1084	0.0616	0.0468	0.0486	0.0597	0.00693	0.0125	0.0491	0.1107
116 Jan-08	0.1113	0.0602	0.0511	0.0468	0.0616	0.01260	0.0096	0.0496	0.1098
117 Feb-08	0.1139	0.0621	0.0518	0.0511	0.0602	0.00983	0.0126	0.0489	0.1110
118 Mar-08	0.1147	0.0621	0.0526	0.0518	0.0621	0.01003	0.0111	0.0489	0.1110
119 Apr-08	0.1167	0.0629	0.0538	0.0526	0.0621	0.01056	0.0119	0.0487	0.1116
120 May-08	0.1089	0.0627	0.0442	0.0538	0.0629	-0.00002	0.0110	0.0487	0.1114
121 Jun-08	0.1062	0.0638	0.0424	0.0442	0.0627	0.00611	0.0122	0.0484	0.1121
122 Jul-08	0.1086	0.0640	0.0446	0.0424	0.0638	0.00978	0.0116	0.0483	0.1123
123 Aug-08	0.1123	0.0637	0.0486	0.0446	0.0640	0.01189	0.0111	0.0484	0.1121
124 Sep-08	0.1130	0.0649	0.0481	0.0486	0.0637	0.00817	0.0125	0.0480	0.1129
125 Oct-08	0.1213	0.0756	0.0457	0.0481	0.0649	0.00618	0.0222	0.0442	0.1158
126 Nov-08	0.1221	0.0760	0.0461	0.0457	0.0756	0.00856	0.0139	0.0441	0.1201
127 Dec-08	0.1162	0.0654	0.0508	0.0461	0.0760	0.01291	0.0029	0.0478	0.1132
128 Jan-09	0.1131	0.0639	0.0492	0.0508	0.0654	0.00745	0.0101	0.0483	0.1122
129 Feb-09	0.1155	0.0630	0.0524	0.0492	0.0492	0.01200	0.0106	0.0486	0.1116
130 Mar-09	0.1198	0.0642	0.0556	0.0524	0.0630	0.01250	0.0124	0.0482	0.1124
131 Apr-09	0.1146	0.0648	0.0498	0.0556	0.0642	0.00405	0.0121	0.0480	0.1128
132 May-09	0.1225	0.0649	0.0576	0.0498	0.0648	0.01675	0.0116	0.0480	0.1129
133 Jun-09	0.1208	0.0670	0.0588	0.0576	0.0649	0.01148	0.0086	0.0490	0.1109
134 Jul-09	0.1145	0.0597	0.0548	0.0588	0.0620	0.00641	0.0088	0.0498	0.1095
135 Aug-09	0.1109	0.0571	0.0538	0.0548	0.0597	0.00883	0.0080	0.0507	0.1078
136 Sep-09	0.1109	0.0553	0.0556	0.0538	0.0571	0.01130	0.0084	0.0513	0.1066
137 Oct-09	0.1146	0.0555	0.0592	0.0556	0.0553	0.01349	0.0100	0.0513	0.1067
138 Nov-09	0.1148	0.0564	0.0584	0.0592	0.0555	0.00974	0.0108	0.0509	0.1073
139 Dec-09	0.1123	0.0579	0.0544	0.0584	0.0564	0.00641	0.0115	0.0504	0.1083
140 Jan-10	0.1198	0.0577	0.0621	0.0544	0.0579	0.01746	0.0101	0.0505	0.1082
141 Feb-10	0.1167	0.0587	0.0580	0.0621	0.0577	0.00688	0.0113	0.0501	0.1088
142 Mar-10	0.1074	0.0584	0.0490	0.0580	0.0587	0.00134	0.0102	0.0502	0.1086

Discounted Cash Flow Analysis Natural Gas Companies

Month Ending	AGL High	AGL Low	AGL Average	AGL Dividend	AGL Growth	AGL DCF	AGL DCF	ATO High	ATO Low	ATO Average	ATO Dividend	ATO Growth
Jun-98	20.00	19.38	19.69	1.08	4.32%	10.48%	0.0073	30.50	29.25	29.88	1.06	8.53%
Jul-98	20.56	18.56	19.56	1.08	4.36%	10.56%	0.0076	30.94	28.25	29.59	1.06	8.53%
Aug-98	19.44	17.94	18.69	1.08	4.43%	10.93%	0.0061	30.50	27.63	29.06	1.06	8.53%
Sep-98	19.56	17.69	18.63	1.08	4.54%	11.07%	0.0060	28.88	24.75	26.81	1.06	8.53%
Oct-98	21.19	18.81	20.00	1.08	4.54%	10.61%	0.0059	30.94	28.13	29.53	1.10	8.53%
Nov-98	22.00	20.31	21.16	1.08	4.54%	10.27%	0.0058	32.25	29.19	30.72	1.10	8.45%
Dec-98	23.38	21.19	22.28	1.08	4.54%	9.98%	0.0056	32.25	27.63	29.94	1.10	8.95%
Jan-99	23.38	19.81	21.59	1.08	4.54%	10.15%	0.0067	33.00	28.88	30.94	1.10	8.95%
Feb-99	20.06	18.31	19.19	1.08	4.59%	10.93%	0.0072	29.69	23.25	26.47	1.10	8.95%
Mar-99	20.00	17.50	18.75	1.08	4.66%	11.15%	0.0071	26.25	22.75	24.50	1.10	8.95%
Apr-99	18.94	16.81	17.88	1.08	4.66%	11.48%	0.0065	27.38	23.88	25.63	1.10	8.12%
May-99	19.06	17.88	18.47	1.08	4.66%	11.25%	0.0062	25.94	23.75	24.84	1.10	8.12%
Jun-99	19.44	18.44	18.94	1.08	4.66%	11.09%	0.0060	26.31	24.38	25.34	1.10	8.12%
Jul-99	20.75	18.50	19.63	1.08	4.61%	10.80%	0.0057	26.25	24.13	25.19	1.10	8.12%
Aug-99	19.19	17.88	18.53	1.08	4.66%	11.23%	0.0059	26.38	24.25	25.31	1.10	8.12%
Sep-99	18.88	15.63	17.25	1.08	4.66%	11.73%	0.0062	25.50	23.75	24.63	1.10	8.12%
Oct-99	17.88	15.56	16.72	1.08	4.89%	12.21%	0.0058	25.00	22.50	23.75	1.14	7.96%
Nov-99	19.19	17.19	18.19	1.08	5.16%	11.89%	0.0057	23.63	22.00	22.81	1.14	7.39%
Dec-99	19.00	16.56	17.78	1.08	5.16%	12.05%	0.0059	22.69	19.63	21.16	1.14	7.39%
Jan-00	18.00	16.00	17.00	1.08	5.16%	12.37%	0.0065	20.50	16.75	18.63	1.14	7.39%
Feb-00	17.44	16.00	16.72	1.08	5.24%	12.58%	0.0067	18.25	15.69	16.97	1.14	7.34%
Mar-00	18.38	16.75	17.56	1.08	5.24%	12.22%	0.0062	18.88	15.25	17.06	1.14	7.09%
Apr-00	18.31	16.88	17.59	1.08	5.24%	12.21%	0.0067	16.88	14.25	15.56	1.14	7.09%
May-00	18.44	15.75	17.09	1.08	5.36%	12.54%	0.0072	18.38	14.94	16.66	1.14	6.59%
Jun-00	17.31	15.50	16.41	1.08	5.36%	12.85%	0.0073	20.56	17.50	19.03	1.14	7.09%
Jul-00	18.19	16.06	17.13	1.08	5.96%	13.17%	0.0055	20.63	17.75	19.19	1.14	6.84%
Aug-00	19.56	17.91	18.73	1.08	5.96%	12.54%	0.0052	23.25	20.00	21.63	1.14	6.84%
Sep-00	20.50	18.75	19.63	1.08	5.96%	12.23%	0.0048	22.38	19.50	20.94	1.14	6.67%
Oct-00	20.94	18.81	19.88	1.08	5.96%	12.15%	0.0056	23.13	19.19	21.16	1.16	6.67%
Nov-00	23.00	19.88	21.44	1.08	5.95%	11.68%	0.0055	25.44	23.00	24.22	1.16	6.95%
Dec-00	23.19	21.44	22.31	1.08	5.95%	11.45%	0.0055	26.25	21.56	23.91	1.16	6.34%
Jan-01	22.31	19.50	20.91	1.08	5.95%	11.83%	0.0060	25.75	23.25	24.50	1.16	6.95%
Feb-01	21.94	20.00	20.97	1.08	5.95%	11.81%	0.0060	24.70	22.51	23.61	1.16	6.95%
Mar-01	21.99	20.01	21.00	1.08	5.95%	11.80%	0.0059	23.99	20.85	22.42	1.16	6.95%
Apr-01	22.86	20.90	21.88	1.08	5.51%	11.10%	0.0048	24.05	21.15	22.60	1.16	6.93%
May-01	24.25	22.10	23.18	1.08	6.59%	11.92%	0.0049	23.98	22.45	23.22	1.16	7.36%
Jun-01	24.09	22.50	23.30	1.08	6.59%	11.89%	0.0051	24.00	22.49	23.24	1.16	7.36%
Jul-01	24.22	22.18	23.20	1.08	7.16%	12.51%	0.0062	24.55	19.60	22.07	1.16	8.00%
Aug-01	24.50	21.10	22.80	1.08	7.16%	12.60%	0.0063	22.84	19.85	21.35	1.16	7.50%
Sep-01	22.05	18.95	20.50	1.08	6.59%	12.63%	0.0067	22.35	20.66	21.51	1.16	6.33%
Oct-01	21.49	19.50	20.49	1.08	6.75%	12.80%	0.0068	22.21	20.30	21.25	1.16	6.33%
Nov-01	22.19	20.55	21.37	1.08	6.75%	12.54%	0.0066	21.94	19.46	20.70	1.16	6.33%
Dec-01	23.24	21.08	22.16	1.08	7.00%	12.60%	0.0067	21.70	19.45	20.58	1.18	6.00%
Jan-02	23.02	20.60	21.81	1.08	7.00%	12.69%	0.0069	21.99	20.54	21.27	1.18	6.00%

Discounted Cash Flow Analysis Natural Gas Companies

Month Ending	AGL High	AGL Low	AGL Average	AGL Dividend	AGL Growth	AGL DCF	AGL DCF	ATO High	ATO Low	ATO Average	ATO Dividend	ATO Growth
Feb-02	22.78	20.95	21.87	1.08	8.43%	14.18%	0.0081	22.65	20.26	21.46	1.18	6.00%
Mar-02	23.69	22.16	22.93	1.08	8.43%	13.91%	0.0078	24.50	22.13	23.31	1.18	6.00%
Apr-02	24.34	22.80	23.57	1.08	7.00%	12.25%	0.0068	24.55	23.44	23.99	1.18	6.00%
May-02	24.17	22.80	23.48	1.08	7.00%	12.27%	0.0066	24.29	22.73	23.51	1.18	7.60%
Jun-02	23.50	21.51	22.51	1.08	7.00%	12.51%	0.0064	23.65	21.00	22.32	1.18	7.33%
Jul-02	23.35	17.25	20.30	1.08	7.00%	13.12%	0.0068	23.47	17.56	20.51	1.18	7.14%
Aug-02	23.28	20.50	21.89	1.08	7.13%	12.80%	0.0064	22.95	20.41	21.68	1.18	7.14%
Sep-02	23.70	21.52	22.61	1.08	7.13%	12.62%	0.0066	22.35	20.70	21.53	1.18	7.71%
Oct-02	24.09	20.50	22.30	1.08	7.00%	12.55%	0.0068	22.30	20.62	21.46	1.18	7.71%
Nov-02	24.50	22.70	23.60	1.08	7.00%	12.25%	0.0066	23.15	21.27	22.21	1.18	6.57%
Dec-02	25.00	23.75	24.38	1.08	7.00%	12.08%	0.0069	23.88	22.38	23.13	1.20	6.71%
Jan-03	25.41	22.71	24.06	1.08	7.00%	12.15%	0.0070	24.31	21.40	22.85	1.20	6.71%
Feb-03	23.14	21.90	22.52	1.08	7.00%	12.50%	0.0072	22.47	21.01	21.74	1.20	6.43%
Mar-03	23.70	22.03	22.87	1.08	6.47%	11.86%	0.0065	21.90	20.85	21.38	1.20	6.29%
Apr-03	25.87	23.30	24.59	1.08	6.23%	11.23%	0.0061	22.94	21.05	21.99	1.20	6.09%
May-03	26.98	24.50	25.74	1.08	5.59%	10.33%	0.0055	24.98	22.37	23.68	1.20	6.09%
Jun-03	26.98	25.28	26.13	1.12	5.59%	10.44%	0.0061	25.50	23.60	24.55	1.20	6.09%
Jul-03	27.67	25.35	26.51	1.12	5.53%	10.30%	0.0061	25.14	24.05	24.60	1.20	6.09%
Aug-03	27.92	26.82	27.37	1.12	5.53%	10.15%	0.0060	24.84	23.00	23.92	1.20	6.09%
Sep-03	28.49	27.77	28.13	1.12	5.43%	9.92%	0.0064	24.98	23.81	24.40	1.20	6.09%
Oct-03	29.04	27.24	28.14	1.12	5.43%	9.92%	0.0064	24.95	24.05	24.50	1.20	6.09%
Nov-03	28.72	27.50	28.11	1.12	4.71%	9.17%	0.0059	24.89	24.27	24.58	1.20	5.67%
Dec-03	29.35	28.25	28.80	1.12	4.71%	9.06%	0.0059	25.00	23.92	24.46	1.22	5.67%
Jan-04	30.63	28.60	29.62	1.12	4.71%	8.94%	0.0062	25.96	24.30	25.13	1.22	5.67%
Feb-04	29.39	27.87	28.63	1.12	4.31%	8.67%	0.0057	26.70	24.80	25.75	1.22	5.67%
Mar-04	29.02	28.01	28.52	1.16	4.03%	8.56%	0.0055	26.99	25.04	26.02	1.22	5.60%
Apr-04	29.41	27.53	28.47	1.16	4.40%	8.95%	0.0057	26.16	24.10	25.13	1.22	5.60%
May-04	28.99	26.51	27.75	1.16	4.80%	9.49%	0.0065	25.10	23.40	24.25	1.22	6.67%
Jun-04	29.20	27.92	28.56	1.16	4.83%	9.38%	0.0067	25.60	24.20	24.90	1.22	4.40%
Jul-04	29.75	28.60	29.18	1.16	4.83%	9.29%	0.0057	26.18	24.40	25.29	1.22	4.07%
Aug-04	30.50	28.82	29.66	1.16	4.33%	8.69%	0.0056	25.55	24.45	25.00	1.22	3.80%
Sep-04	31.27	30.20						25.87	24.70			
Oct-04	31.26	30.11						25.90	24.60			
Nov-04	33.26	30.64						27.06	25.15			
Dec-04												
Jan-05	34.80	32.00	33.40	1.16	4.33%	8.20%	0.0050	27.70	25.90	26.80	1.24	4.40%
Feb-05	36.09	33.91	35.00	1.16	4.32%	8.01%	0.0058	29.15	27.20	28.18	1.24	4.40%
Mar-05	35.84	34.07	34.96	1.24	4.32%	8.27%	0.0058	28.45	26.70	27.58	1.24	4.40%
Apr-05	27.75	25.50	26.63	1.24	4.32%	9.53%	0.0079	36.30	33.80	35.05	1.24	5.54%
May-05	28.29	26.15	27.22	1.24	3.93%	9.00%	0.0075	35.29	33.40	34.35	1.24	5.54%
Jun-05	28.99	28.03	28.51	1.24	4.58%	9.45%	0.0076	38.89	35.15	37.02	1.24	5.92%
Jul-05	29.59	28.53	29.06	1.24	4.58%	9.36%	0.0073	39.32	37.42	38.37	1.24	5.92%
Aug-05	29.97	28.26	29.12	1.24	4.58%	9.35%	0.0073	39.09	35.29	37.19	1.24	5.92%
Sep-05	29.74	28.10	28.92	1.24	4.64%	9.44%	0.0069	37.95	35.93	36.94	1.24	5.92%

Discounted Cash Flow Analysis Natural Gas Companies

Month Ending	AGL High	AGL Low	AGL Average	AGL Dividend	AGL Growth	AGL DCF	AGL DCF	ATO High	ATO Low	ATO Average	ATO Dividend	ATO Growth
Oct-05	28.62	25.55	27.09	1.48	4.64%	10.79%	0.0078	37.54	32.25	34.90	1.24	5.92%
Nov-05	27.20	25.85	26.53	1.48	4.64%	10.92%	0.0083	36.68	34.55	35.62	1.24	5.92%
Dec-05	35.99	33.74	34.87	1.48	4.63%	9.38%	0.0069	26.90	25.83	26.37	1.24	5.70%
Jan-06	36.28	34.83	35.56	1.48	4.63%	9.29%	0.0065	27.08	26.02	26.55	1.26	6.40%
Feb-06	36.48	34.40	35.44	1.48	4.63%	9.31%	0.0130	27.01	25.97	26.49	1.26	5.32%
Mar-06	36.28	34.75	35.52	1.48	4.63%	9.30%	0.0130	26.95	25.98	26.47	1.26	5.32%
Apr-06	36.37	34.43	35.40	1.48	4.43%	9.10%	0.0091	26.80	26.09	26.45	1.26	5.40%
May-06	36.67	34.63	35.65	1.48	4.25%	8.88%	0.0075	27.73	25.55	26.64	1.26	6.17%
Jun-06	38.13	35.36	36.75	1.48	4.25%	8.74%	0.0077	28.03	26.01	27.02	1.26	6.17%
Jul-06	39.40	37.16	38.28	1.48	4.25%	8.56%	0.0069	29.25	27.75	28.50	1.26	6.17%
Aug-06	40.00	34.97	37.49	1.48	4.28%	8.68%	0.0070	29.15	27.63	28.39	1.26	6.17%
Sep-06	36.85	34.76	35.81	1.48	4.28%	8.89%	0.0074	28.97	27.80	28.39	1.26	6.17%
Oct-06	38.66	36.04	37.35	1.48	4.21%	8.63%	0.0072	30.96	28.40	29.68	1.26	6.17%
Nov-06	38.83	37.18	38.01	1.48	4.21%	8.55%	0.0075	33.09	30.73	31.91	1.26	6.17%
Dec-06	40.09	38.11	39.10	1.48	4.25%	8.47%	0.0074	32.87	31.50	32.19	1.26	6.17%
Jan-07	40.21	38.20	39.21	1.48	4.50%	8.71%	0.0071	32.30	30.36	31.33	1.28	6.15%
Feb-07	42.90	39.53	41.22	1.64	4.10%	8.53%	0.0074	33.07	31.23	32.15	1.28	6.15%
Mar-07	42.99	39.62	41.31	1.64	4.50%	8.94%	0.0076	42.99	39.62	41.31	1.28	6.17%
Apr-07	44.67	42.67	43.67	1.64	4.30%	8.48%	0.0072	32.71	30.66	31.69	1.28	6.17%
May-07	44.01	41.50	42.76	1.64	4.50%	8.78%	0.0069	33.47	31.59	32.53	1.28	5.75%
Jun-07	42.80	39.52	41.16	1.64	4.50%	8.95%	0.0071	32.60	29.11	30.86	1.28	5.10%
Jul-07								30.84	28.01	29.43	1.28	6.17%
Aug-07								28.90	23.87	26.39	1.28	6.17%
Sep-07								28.73	27.28	28.01	1.28	6.17%
Oct-07	41.16	36.65	38.91	1.64	4.97%	9.71%	0.0075	29.63	27.54	28.59	1.28	5.63%
Nov-07	39.21	35.85	37.53	1.64	4.97%	9.88%	0.0076	28.18	26.01	27.10	1.30	5.63%
Dec-07	38.65	35.42	37.04	1.64	4.97%	9.95%	0.0077	28.83	26.10	27.47	1.30	5.63%
Jan-08	38.69	35.49	37.09	1.68	4.97%	10.06%	0.0078	28.85	26.00	27.43	1.30	5.63%
Feb-08	39.13	34.63	36.88	1.68	5.25%	10.39%		29.29	25.84	27.57	1.30	5.22%
Mar-08	35.62	33.45	34.54	1.68	5.25%	10.74%		26.52	25.00	25.76	1.30	5.22%
Apr-08	36.05	33.73	34.89	1.68	5.25%	10.69%		28.27	25.55	26.91	1.30	5.22%
May-08	36.50	34.06	35.28	1.68	5.25%	10.63%	0.0059	28.64	27.14	27.89	1.30	4.67%
Jun-08	36.42	33.46	34.94	1.68	5.25%	10.68%	0.0061	27.84	26.31	27.08	1.30	4.67%
Jul-08	35.44	32.66	34.05	1.68	5.25%	10.82%	0.0075	28.00	25.00	26.50	1.30	4.67%
Aug-08	34.66	32.20	33.43	1.68	5.25%	10.93%	0.0075	27.80	25.61	26.71	1.30	5.00%
Sep-08	35.01	30.60	32.81	1.68	4.83%	10.60%	0.0089	28.66	25.52	27.09	1.30	5.00%
Oct-08	32.07	24.02	28.05	1.68	4.83%	11.60%	0.0098	28.25	19.68	23.97	1.30	5.00%
Nov-08	31.00	25.95	28.48	1.68	4.83%	11.49%	0.0100	25.23	22.26	23.75	1.30	5.00%
Dec-08	31.39	26.90	29.15	1.68	4.25%	10.72%	0.0086	24.97	21.98	23.48	1.30	5.00%
Jan-09	32.11	29.67	30.89	1.68	4.25%	10.35%	0.0084	25.22	23.20	24.21	1.32	5.00%
Feb-09	34.93	27.13	31.03	1.72	4.25%	10.47%	0.0086	26.17	21.54	23.86	1.32	5.00%
Mar-09	27.97	24.02	26.00	1.72	4.25%	11.70%	0.0099	23.94	20.07	22.01	1.32	5.00%
Apr-09	31.50	26.00	28.75	1.72	4.25%	10.97%	0.0093	25.30	22.52	23.91	1.32	5.00%
May-09	31.97	28.12	30.05	1.72	4.25%	10.68%	0.0119	26.43	23.44	24.94	1.32	5.00%

Discounted Cash Flow Analysis Natural Gas Companies

Month Ending	AGL	AGL	AGL	AGL	AGL	AGL	AGL	ATO	ATO	ATO	ATO	ATO
	High	Low	Average	Dividend	Growth	DCF	DCF	High	Low	Average	Dividend	Growth
Jun-09	32.38	29.15	30.77	1.72	4.25%	10.52%	0.0117	25.51	24.20	24.86	1.32	5.00%
Jul-09	34.43	30.05	32.24	1.72	4.50%	10.49%	0.0082	27.39	24.41	25.90	1.32	5.00%
Aug-09	35.00	33.12	34.06	1.72	4.50%	10.17%	0.0081	28.58	27.06	27.82	1.32	5.00%
Sep-09	35.79	33.07	34.43	1.72	4.50%	10.10%	0.0080	28.95	26.62	27.79	1.32	5.00%
Oct-09	37.47	34.11	35.79	1.72	4.25%	9.62%	0.0083	29.31	27.22	28.27	1.34	5.00%
Nov-09	35.83	33.50	34.67	1.72	4.25%	9.80%	0.0085	29.31	27.22	28.27	1.34	5.00%
Dec-09	37.52	34.51	36.02	1.72	4.25%	9.59%	0.0083	30.32	27.35	28.83	1.34	5.00%
Jan-10	37.24	34.91	36.08	1.72	4.00%	9.32%	0.0101	29.82	27.60	28.71	1.34	5.00%
Feb-10	36.86	34.26	35.56	1.76	5.75%	11.37%	0.0121	28.19	26.33	27.26	1.34	4.20%
Mar-10	38.83	36.33	37.58	1.76	5.07%	10.35%	0.0122	29.24	27.48	28.36	1.34	4.20%

Discounted Cash Flow

	ATO	ATO	Cascade	Cascade	Cascade	Cascade	Cascade	Cascade	Cascade	Cascade	EGN	EGN
Month Ending	DCF	DCF	High	Low	Average	Dividend	Growth	DCF	DCF	DCF	High	Low
Jun-98	12.64%	0.0070	15.88	15.50	15.69	0.96	3.38%	10.20%	0.0011		20.44	19.75
Jul-98	12.68%	0.0075	15.81	14.69	15.25	0.96	3.38%	10.40%	0.0012		20.75	17.06
Aug-98	12.76%	0.0058	16.31	14.63	15.47	0.96	3.38%	10.30%	0.0009		19.25	15.25
Sep-98	13.12%	0.0058	16.50	15.19	15.84	0.96	3.38%	10.13%	0.0009		19.13	15.13
Oct-98	12.85%	0.0055	17.56	16.00	16.78	0.96	3.38%	9.75%	0.0009		19.13	17.69
Nov-98	12.60%	0.0054	18.31	16.13	17.22	0.96	3.38%	9.58%	0.0009		19.44	17.44
Dec-98	13.23%	0.0057	18.69	17.31	18.00	0.96	3.38%	9.31%	0.0008		19.50	17.81
Jan-99	13.09%	0.0060	18.13	15.88	17.00	0.96	3.38%	9.66%	0.0010		19.75	16.38
Feb-99	13.79%	0.0063	16.75	15.06	15.91	0.96	3.38%	10.11%	0.0010		17.25	13.25
Mar-99	14.19%	0.0062	16.63	14.88	15.75	0.96	3.38%	10.17%	0.0010		15.75	13.13
Apr-99	13.09%	0.0047	16.25	14.38	15.31	0.96	3.38%	10.37%	0.0009		17.44	14.50
May-99	13.25%	0.0047	16.94	15.63	16.28	0.96	3.45%	10.02%	0.0009		19.81	17.00
Jun-99	13.15%	0.0046	19.75	16.38	18.06	0.96	3.45%	9.36%	0.0008		19.94	18.13
Jul-99	13.18%	0.0051	18.88	17.13	18.00	0.96	3.45%	9.38%	0.0009		19.31	18.38
Aug-99	13.15%	0.0051	18.44	16.19	17.31	0.96	3.45%	9.62%	0.0009		19.31	17.50
Sep-99	13.29%	0.0051	18.69	17.44	18.06	0.96	3.45%	9.36%	0.0009		20.38	18.81
Oct-99	13.52%	0.0050	18.38	16.81	17.59	0.96	3.45%	9.52%	0.0009		21.25	18.13
Nov-99	13.15%	0.0049	18.06	16.44	17.25	0.96	4.20%	10.44%	0.0010		19.75	18.31
Dec-99	13.61%	0.0051	17.81	15.38	16.59	0.96	4.20%	10.69%	0.0010		19.25	15.75
Jan-00	14.48%	0.0052	16.44	14.19	15.31	0.96	4.20%	11.25%	0.0011		18.94	16.13
Feb-00	15.13%	0.0055	15.50	13.38	14.44	0.96	4.20%	11.69%	0.0012		17.75	14.75
Mar-00	14.82%	0.0052	16.13	13.50	14.81	0.96	4.20%	11.49%	0.0011		18.69	14.69
Apr-00	15.59%	0.0049	16.38	14.94	15.66	0.96	4.20%	11.09%	0.0009		18.88	16.00
May-00	14.48%	0.0048	17.75	15.94	16.84	0.96	4.27%	10.67%	0.0009		23.69	17.06
Jun-00	14.00%	0.0046	18.13	15.31	16.72	0.96	4.27%	10.72%	0.0009		22.50	19.50
Jul-00	13.68%	0.0039	17.06	15.81	16.44	0.96	4.27%	10.83%	0.0010		24.50	21.00
Aug-00	12.89%	0.0036	17.94	16.38	17.16	0.96	4.27%	10.55%	0.0010		26.50	21.50
Sep-00	12.92%	0.0034	17.88	15.50	16.69	0.96	4.27%	10.73%	0.0010		30.38	25.25
Oct-00	12.96%	0.0037	18.63	16.75	17.69	0.96	4.27%	10.36%	0.0009		33.56	26.94
Nov-00	12.44%	0.0036	20.50	17.31	18.91	0.96	4.20%	9.88%	0.0008		31.81	28.00
Dec-00	11.88%	0.0035	20.88	17.38	19.13	0.96	4.20%	9.82%	0.0009		33.50	26.06
Jan-01	12.38%	0.0036	20.69	17.38	19.03	0.96	4.20%	9.84%	0.0009		32.44	27.50
Feb-01	12.59%	0.0037	19.21	17.85	18.53	0.96	4.27%	10.07%	0.0010		32.06	27.50
Mar-01	12.89%	0.0037	21.00	18.81	19.90	0.96	4.27%	9.67%	0.0009		35.30	27.75
Apr-01	12.83%	0.0045	20.60	18.70	19.65	0.96					38.10	32.70
May-01	13.12%	0.0044	20.97	19.00	19.98	0.96					40.25	31.70
Jun-01	13.11%	0.0046	20.50	19.05	19.77	0.96					34.80	28.80
Jul-01	14.10%	0.0052	21.30	19.10							28.21	23.95
Aug-01	13.78%	0.0052	22.00	19.35							27.20	24.70
Sep-01	12.50%	0.0050	22.50	19.50							27.28	21.50
Oct-01	12.57%	0.0050	21.60	19.62							25.20	21.50
Nov-01	12.74%	0.0051	22.80	19.66							25.05	22.00
Dec-01	12.55%	0.0048									25.09	22.17
Jan-02	12.33%	0.0048									24.68	22.16

Discounted Cash Flow

[illegible]

Discounted Cash Flow

	EGN	EGN	EGN	EGN	EGN	EQT	EQT	EQT	EQT	EQT	EQT	EQT
Month Ending	Average	Dividend	Growth	DCF	DCF	High	Low	Average	Dividend	Growth	DCF	DCF
Jun-98	20.09	0.62	8.05%	11.60%	0.0042	28.45	25.13	26.79	1.18	8.56%	13.68%	0.0092
Jul-98	18.91	0.64	8.05%	11.95%	0.0045	28.22	22.97	25.60	1.18	9.00%	14.39%	0.0081
Aug-98	17.25	0.64	8.05%	12.33%	0.0036	23.49	20.30	21.90	1.18	8.44%	14.72%	0.0057
Sep-98	17.13	0.64	8.05%	12.36%	0.0035	24.43	19.42	21.93	1.18	8.44%	14.72%	0.0064
Oct-98	18.41	0.64	8.05%	12.06%	0.0032	27.50	23.61	25.56	1.18	7.42%	12.74%	0.0063
Nov-98	18.44	0.64	8.05%	12.05%	0.0032	28.15	25.49	26.82	1.18	7.42%	12.48%	0.0066
Dec-98	18.66	0.64	8.05%	12.00%	0.0032	28.57	25.52	27.05	1.18	7.58%	12.61%	0.0066
Jan-99	18.06	0.64	8.05%	12.14%	0.0032	28.39	24.33	26.36	1.18	7.58%	12.74%	0.0059
Feb-99	15.25	0.64	7.55%	12.38%	0.0033	25.39	23.40	24.40	1.18	7.93%	13.53%	0.0063
Mar-99	14.44	0.64	7.24%	12.33%	0.0032	25.94	24.67	25.31	1.18	7.56%	12.94%	0.0059
Apr-99	15.97	0.64	7.24%	11.84%	0.0027	26.00	22.44	24.22	1.18	7.21%	12.81%	0.0060
May-99	18.41	0.64	7.24%	11.22%	0.0025	31.15	25.51	28.33	1.18	6.79%	11.55%	0.0061
Jun-99	19.03	0.64	7.24%	11.09%	0.0025	36.82	30.54	33.68	1.18	6.79%	10.78%	0.0067
Jul-99	18.84	0.66	7.24%	11.25%	0.0031	38.04	35.78	36.91	1.18	7.58%	11.25%	0.0067
Aug-99	18.41	0.66	7.20%	11.30%	0.0031	37.61	35.84	36.73	1.18	7.44%	11.12%	0.0065
Sep-99	19.59	0.66	7.20%	11.05%	0.0031	37.30	35.33	36.32	1.18	7.61%	11.34%	0.0069
Oct-99	19.69	0.66	7.20%	11.03%	0.0032	37.73	34.72	36.23	1.18	7.61%	11.35%	0.0066
Nov-99	19.03	0.66	7.20%	11.17%	0.0032	36.68	34.32	35.50	1.18	7.83%	11.65%	0.0064
Dec-99	17.50	0.66	7.20%	11.52%	0.0034	35.75	32.28	34.02	1.18	7.83%	11.82%	0.0063
Jan-00	17.53	0.66	7.20%	11.51%	0.0029	36.74	32.28	34.51	1.18	7.83%	11.76%	0.0070
Feb-00	16.25	0.66	7.20%	11.86%	0.0030	37.88	32.25	35.07	1.18	8.39%	12.28%	0.0081
Mar-00	16.69	0.66	7.20%	11.73%	0.0029	46.00	35.81	40.91	1.18	11.17%	14.58%	0.0110
Apr-00	17.44	0.66	7.89%	12.25%	0.0030	47.25	41.62	44.44	1.18	11.17%	14.31%	0.0120
May-00	20.38	0.66	7.89%	11.62%	0.0030	50.88	46.06	48.47	1.18	12.22%	15.12%	0.0143
Jun-00	21.00	0.66	7.89%	11.50%	0.0029	51.38	45.62	48.50	1.18	12.11%	15.01%	0.0135
Jul-00	22.75	0.68	7.89%	11.32%	0.0034	54.44	46.81	50.63	1.18	12.38%	15.16%	0.0125
Aug-00	24.00	0.68	9.46%	12.76%	0.0038	59.75	52.31	56.03	1.18	12.25%	14.76%	0.0127
Sep-00	27.81	0.68	9.70%	12.55%	0.0035	63.44	56.38	59.91	1.18	12.25%	14.60%	0.0134
Oct-00	30.25	0.68	9.70%	12.32%	0.0044	64.38	56.50	60.44	1.18	11.69%	14.00%	0.0111
Nov-00	29.91	0.68	9.70%	12.35%	0.0045	60.00	55.75	57.88	1.18	13.08%	15.53%	0.0121
Dec-00	29.78	0.68	11.75%	14.46%	0.0053	66.75	55.75	61.25	1.18	13.08%	15.39%	0.0145
Jan-01	29.97	0.68	11.75%	14.44%	0.0052	66.69	55.38	61.04	1.18	13.92%	16.26%	0.0131
Feb-01	29.78	0.68	11.75%	14.46%	0.0052	63.34	57.04	60.19	1.18	12.64%	14.98%	0.0118
Mar-01	31.52	0.68	11.75%	14.31%	0.0050	70.50	57.55	64.03	1.28	12.94%	15.34%	0.0142
Apr-01	35.40	0.68	11.40%	13.67%	0.0050	40.00	39.26	39.63	0.64	11.44%	13.35%	0.0068
May-01	35.98	0.68	11.00%	13.23%	0.0046	40.50	38.04	39.27	0.64	12.34%	14.28%	0.0130
Jun-01	31.80	0.68	11.00%	13.52%	0.0049	37.88	31.80	34.84	0.64	11.75%	13.93%	0.0118
Jul-01	26.08	0.68	11.00%	14.08%	0.0048	36.60	31.35	33.98	0.64	11.75%	13.98%	0.0134
Aug-01	25.95	0.68	11.00%	14.09%	0.0048	36.05	31.83	33.94	0.64	10.50%	12.71%	0.0109
Sep-01	24.39	0.70	11.50%	14.91%	0.0055	32.32	26.00	29.16	0.64	10.44%	13.01%	0.0112
Oct-01	23.35	0.70	11.50%	15.06%	0.0055	33.80	29.15	31.48	0.64	10.44%	12.82%	0.0120
Nov-01	23.52	0.70	11.50%	15.03%	0.0055	34.69	31.00	32.85	0.64	10.44%	12.72%	0.0117
Dec-01	23.63	0.70	11.50%	15.02%	0.0048	34.38	31.00	32.69	0.64	10.44%	12.73%	0.0123
Jan-02	23.42	0.70	11.50%	15.05%	0.0050	33.92	29.32	31.62	0.64	10.25%	12.62%	0.0113

Discounted Cash Flow

Month Ending	EGN	EGN	EGN	EGN	EGN	EQT	EQT	EQT	EQT	EQT	EQT	EQT
	Average	Dividend	Growth	DCF	DCF	High	Low	Average	Dividend	Growth	DCF	DCF
Feb-02	22.65	0.70	11.25%	14.91%	0.0049	33.00	29.50	31.25	0.64	10.00%	12.39%	0.0115
Mar-02	24.49	0.70	9.75%	13.09%	0.0042	35.66	32.68	34.17	0.64	10.00%	12.18%	0.0114
Apr-02	27.85	0.70	7.40%	10.27%	0.0032	37.55	34.00	35.78	0.64	9.81%	11.89%	0.0116
May-02	27.60	0.70	7.20%	10.09%	0.0031	37.27	35.45	36.36	0.68	10.19%	12.38%	0.0117
Jun-02	26.26	0.70	7.20%	10.24%	0.0035	36.22	33.54	34.88	0.68	10.19%	12.47%	0.0107
Jul-02	24.59	0.70	7.40%	10.65%	0.0037	34.72	28.67	31.70	0.68	10.19%	12.70%	0.0110
Aug-02	25.75	0.70	7.40%	10.51%	0.0039	36.49	32.82	34.66	0.68	10.19%	12.48%	0.0119
Sep-02	25.17	0.72	7.40%	10.67%	0.0040	36.25	33.17	34.71	0.68	10.19%	12.48%	0.0116
Oct-02	25.35	0.72	7.00%	10.23%	0.0037	36.00	32.09	34.05	0.68	10.19%	12.53%	0.0115
Nov-02	27.66	0.72	7.00%	9.96%	0.0036	36.55	34.10	35.33	0.68	10.19%	12.44%	0.0114
Dec-02	28.35	0.72	7.00%	9.89%	0.0039	36.89	34.62	35.76	0.68	10.17%	12.39%	0.0112
Jan-03	29.52	0.72	7.00%	9.77%	0.0038	37.30	34.83	36.07	0.68	10.17%	12.37%	0.0118
Feb-03	29.66	0.72	7.20%	9.97%	0.0039	37.84	34.44	36.14	0.68	10.17%	12.37%	0.0115
Mar-03	31.19	0.72	7.20%	9.83%	0.0046	37.90	36.05	36.98	0.68	9.56%	11.70%	0.0115
Apr-03	32.45	0.72	7.20%	9.73%	0.0045	39.00	37.08	38.04	0.68	9.56%	11.64%	0.0116
May-03	32.78	0.72	7.25%	9.75%	0.0044	40.27	37.72	39.00	0.80	9.56%	11.95%	0.0123
Jun-03	33.32	0.72	7.25%	9.71%	0.0040	42.00	40.02	41.01	0.80	9.56%	11.83%	0.0103
Jul-03	33.08	0.72	7.00%	9.47%	0.0039	41.27	38.37	39.82	1.20	9.56%	13.08%	0.0110
Aug-03	34.48	0.72	7.00%	9.37%	0.0039	39.80	37.85	38.83	1.20	9.44%	13.04%	0.0111
Sep-03	36.20	0.74	7.00%	9.32%	0.0044	41.65	39.29	40.47	1.20	9.44%	12.90%	0.0119
Oct-03	37.54	0.74	7.00%	9.24%	0.0043	41.97	40.68	41.33	1.20	9.50%	12.89%	0.0119
Nov-03	37.83	0.74	7.00%	9.22%	0.0043	41.60	39.95	40.78	1.20	9.78%	13.22%	0.0121
Dec-03	40.28	0.74	7.00%	9.08%	0.0044	43.42	41.34	42.38	1.20	9.78%	13.09%	0.0121
Jan-04	42.72	0.74	7.00%	8.96%	0.0046	44.92	42.34	43.63	1.20	9.75%	12.96%	0.0128
Feb-04	42.19	0.74	7.00%	8.98%	0.0044	44.86	42.50	43.68	1.20	9.75%	12.96%	0.0121
Mar-04	41.54					44.45	42.10	43.28	1.20	9.75%	12.99%	0.0125
Apr-04	41.51					47.80	43.99	45.90	1.20	9.71%	12.76%	0.0123
May-04	42.54					48.70	45.16	46.93	1.20	9.40%	12.37%	0.0127
Jun-04	46.01					51.72	47.34	49.53	1.52	9.33%	12.90%	0.0169
Jul-04	47.64	0.74	7.00%	8.75%	0.0053	52.58	49.89	51.24	1.52	9.33%	12.78%	0.0143
Aug-04	46.76	0.74	7.00%	8.78%	0.0051	52.51	49.92	51.22	1.52	9.43%	12.89%	0.0137
Sep-04	49.61	0.74	7.00%	8.68%	0.0056	54.49	52.15	53.32	1.52	9.43%	12.75%	0.0151
Oct-04	52.39					55.80	53.36	54.58	1.52	9.43%	12.67%	0.0166
Nov-04	56.21					59.85	55.01	57.43	1.52	9.43%	12.51%	0.0164
Dec-04						61.18	56.54	58.86	1.52	9.49%	12.50%	0.0173
Jan-05		0.38				61.18	55.78	58.48	1.52	9.49%	12.52%	0.0152
Feb-05		0.38				60.06	56.96	58.51	1.52	9.50%	12.53%	0.0144
Mar-05	33.10	0.40	6.50%			61.24	56.01	58.63	1.52	9.50%	12.52%	0.0144
Apr-05	32.03	0.40	6.50%	7.91%	0.0057	29.52	28.16	28.84	0.76	9.40%	12.47%	0.0153
May-05	30.70	0.40	6.50%	7.97%	0.0057	31.87	28.77	30.32	0.76	9.40%	12.32%	0.0151
Jun-05	33.67	0.40	6.50%	7.84%	0.0061	34.42	31.78	33.10	0.84	9.40%	12.35%	0.0157
Jul-05	35.99	0.40	6.50%	7.75%	0.0059	36.30	34.01	35.16	0.84	9.40%	12.18%	0.0151
Aug-05	36.11	0.40	6.50%	7.75%	0.0059	37.71	34.02	35.87	0.84	9.40%	12.12%	0.0150
Sep-05	40.87	0.40	6.50%	7.60%	0.0056	39.90	37.62	38.76	0.84	9.40%	11.92%	0.0148

Discounted Cash Flow

	EGN	EGN	EGN	EGN	EGN	EQT	EQT	EQT	EQT	EQT	EQT	EQT
Month Ending	Average	Dividend	Growth	DCF	DCF	High	Low	Average	Dividend	Growth	DCF	DCF
Oct-05	40.22	0.40	6.50%	7.62%	0.0056	41.15	34.51	37.83	0.84	9.40%	11.98%	0.0149
Nov-05	36.62	0.40	6.50%	7.73%	0.0060	38.98	36.08	37.53	0.84	9.40%	12.00%	0.0157
Dec-05	37.46	0.40	6.50%	7.70%	0.0058	39.51	36.01	37.76	0.84	9.40%	11.98%	0.0142
Jan-06	37.92	0.40	6.50%	7.69%	0.0055	39.02	35.82	37.42	0.84	9.40%	12.01%	0.0136
Feb-06						37.19	34.05	35.62	0.84	9.50%	12.24%	0.0275
Mar-06						37.87	35.22	36.55	0.84	9.50%	12.17%	0.0265
Apr-06						37.00	34.92	35.96	0.84	9.80%	12.52%	0.0196
May-06	33.96	0.44	7.33%	8.80%	0.0065	35.85	32.20	34.03	0.88	9.80%	12.82%	0.0150
Jun-06	35.66	0.44	7.33%	8.73%	0.0067	34.78	31.59	33.19	0.88	9.80%	12.90%	0.0157
Jul-06	40.05	0.44	7.33%	8.58%	0.0074	36.29	32.55	34.42	0.88	9.80%	12.78%	0.0154
Aug-06	42.76	0.44	7.33%	8.50%	0.0073	36.91	34.85	35.88	0.88	9.80%	12.66%	0.0153
Sep-06	41.90	0.44	7.33%	8.52%	0.0077	37.48	34.12	35.80	0.88	9.80%	12.67%	0.0159
Oct-06	40.70	0.44	6.00%	7.21%	0.0064	42.35	34.83	38.59	0.88	9.75%	12.41%	0.0173
Nov-06	43.89	0.44	5.67%	6.79%	0.0065	44.48	40.06	42.27	0.88	9.75%	12.17%	0.0182
Dec-06	46.30	0.44	5.67%	6.73%	0.0064	44.10	41.58	42.84	0.88	9.75%	12.14%	0.0183
Jan-07	45.37	0.45	5.00%	6.09%	0.0053	43.69	39.26	41.48	0.88	9.80%	12.27%	0.0167
Feb-07	47.55	0.46	5.00%	6.07%	0.0057	44.55	42.00	43.28	0.88	9.80%	12.17%	0.0171
Mar-07	48.99	0.46	5.00%	6.04%	0.0060	50.50	41.19	45.85	0.88	9.75%	11.98%	0.0190
Apr-07	54.03	0.46	5.00%	5.94%	0.0059	53.39	47.96	50.68	0.88	9.83%	11.85%	0.0188
May-07	58.18	0.46	5.00%	5.88%	0.0060	52.77	49.75	51.26	0.88	9.75%	11.75%	0.0178
Jun-07	56.74	0.46	5.00%	5.90%	0.0060	53.70	48.11	50.91	0.88	9.75%	11.76%	0.0179
Jul-07	54.97	0.46	7.00%	7.95%	0.0095	53.37	46.31	49.84	0.88	10.00%	12.06%	0.0221
Aug-07	52.85	0.46	7.00%	7.98%	0.0096	54.42	44.57	49.50	0.88	10.00%	12.07%	0.0221
Sep-07	55.50	0.46	7.00%	7.94%	0.0095	52.46	48.42	50.44	0.88	10.00%	12.03%	0.0220
Oct-07	60.65	0.46	11.13%	12.02%	0.0151	56.71	52.12	54.41	0.88	11.20%	13.11%	0.0233
Nov-07	62.98	0.46	11.13%	11.99%	0.0151	56.75	51.54	54.15	0.88	11.20%	13.11%	0.0233
Dec-07	66.73	0.46	11.13%	11.94%	0.0150	55.58	51.55	53.57	0.88	11.20%	13.14%	0.0234
Jan-08	62.25	0.48	11.50%	12.41%	0.0151	57.62	47.16	52.39	0.88	11.38%	13.36%	0.0255
Feb-08	62.16	0.48	8.50%	9.38%	0.0115	63.77	55.08	59.43	0.88	14.15%	15.94%	0.0326
Mar-08	61.00	0.48	8.50%	9.40%	0.0116	65.05	55.65	60.35	0.88	14.15%	15.91%	0.0326
Apr-08	67.18	0.48	10.83%	11.67%	0.0157	69.54	58.94	64.24	0.88	14.15%	15.80%	0.0319
May-08	72.34	0.48	10.83%	11.61%	0.0138	76.14	63.04	69.59	0.88	10.50%	11.98%	0.0214
Jun-08	76.36	0.48	10.83%	11.57%	0.0142	74.22	66.96	70.59	0.88	10.50%	11.96%	0.0183
Jul-08	69.44	0.48	10.25%	11.05%	0.0127	71.33	51.47	61.40	0.88	10.50%	12.18%	0.0225
Aug-08	56.34	0.48	10.75%	11.75%	0.0127	54.88	46.79	50.84	0.88	11.67%	13.72%	0.0242
Sep-08	48.89	0.48	10.75%	11.67%	0.0114	49.19	33.62	41.41	0.88	11.67%	14.19%	0.0226
Oct-08	35.05	0.48	10.75%	11.67%	0.0102	36.70	20.71	28.71	0.88	11.67%	15.32%	0.0225
Nov-08	28.68	0.48	10.75%	12.71%	0.0106	34.98	24.73	29.86	0.88	11.67%	15.18%	0.0249
Dec-08	28.25	0.48	3.75%	5.62%	0.0040	33.88	26.09	29.99	0.88	11.67%	15.16%	0.0219
Jan-09	29.92	0.48	3.50%	5.26%	0.0038	38.27	30.30	34.29	0.88	11.67%	14.72%	0.0236
Feb-09	29.45	0.50	3.50%	5.36%	0.0040	39.69	29.12	34.41	0.88	11.67%	14.71%	0.0227
Mar-09	27.04	0.50	3.50%	5.53%	0.0050	35.52	27.39	31.46	0.88	11.67%	15.00%	0.0244
Apr-09	32.50	0.50	3.50%	5.19%	0.0047	36.21	30.38	33.30	0.88	11.67%	14.81%	0.0241
May-09	36.95	0.50	5.00%	6.50%		39.50	33.49	36.50	0.88	12.00%	14.87%	0.0302

Discounted Cash Flow

[illegible]

Discounted Cash Flow

Month Ending								Laclede			
	Keyspan High	Keyspan Low	Keyspan Average	Keyspan Dividend	Keyspan Growth	Keyspan DCF	Keyspan DCF	LG High	LG Low	LG Average	LG Dividend
Jun-98	30.69	29.25	29.97	1.50				24.69	24.25	24.47	1.32
Jul-98	30.75	26.50	28.63	1.20				25.00	23.06	24.03	1.32
Aug-98	30.25	26.69	28.47	1.20	7.88%	12.75%	0.0315	23.81	22.38	23.09	1.32
Sep-98	29.25	25.38	27.31	1.20	9.50%	14.65%	0.0351	24.31	22.38	23.34	1.32
Oct-98	32.25	28.69	30.47	1.78	9.50%	16.39%	0.0342	26.00	23.00	24.50	1.32
Nov-98	30.75	29.56	30.16	1.78	7.88%	14.74%	0.0308	26.06	24.44	25.25	1.32
Dec-98	31.25	29.19	30.22	1.78	7.88%	14.73%	0.0308	27.00	24.63	25.81	1.32
Jan-99	31.31	27.06	29.19	1.78	7.88%	14.97%	0.0326	27.00	23.44	25.22	1.32
Feb-99	28.94	26.50	27.72	1.78	7.88%	15.36%	0.0333	24.19	22.38	23.28	1.32
Mar-99	28.13	25.13	26.63	1.78	7.88%	15.67%	0.0329	23.69	20.63	22.16	1.32
Apr-99	26.88	24.63	25.75	1.78	7.88%	15.95%	0.0310	21.31	20.00	20.66	1.34
May-99	27.63	26.50	27.06	1.78	7.88%	15.55%	0.0296	22.38	20.13	21.25	1.34
Jun-99	27.69	25.88	26.78	1.78	7.88%	15.63%	0.0294	23.63	21.50	22.56	1.34
Jul-99	27.94	26.38	27.16	1.78	8.88%	16.59%	0.0303	23.75	23.00	23.38	1.34
Aug-99	30.00	26.56	28.28	1.78	8.88%	16.27%	0.0297	23.75	21.56	22.66	1.34
Sep-99	31.06	28.31	29.69	1.78	8.88%	15.92%	0.0291	23.38	21.25	22.31	1.34
Oct-99	29.69	27.00	28.34	1.78	8.88%	16.26%	0.0310	23.44	21.00	22.22	1.34
Nov-99	29.69	24.88	27.28	1.78	9.08%	16.77%	0.0321	23.00	21.13	22.06	1.34
Dec-99	26.06	22.50	24.28	1.78	9.08%	17.74%	0.0345	23.00	20.00	21.50	1.34
Jan-00	24.25	22.06	23.16	1.78	9.08%	18.18%	0.0307	21.88	18.88	20.38	1.34
Feb-00	23.63	20.31	21.97	1.78	9.16%	18.77%	0.0319	20.00	17.50	18.75	1.34
Mar-00	27.88	20.19	24.03	1.78	9.16%	17.92%	0.0293	21.38	18.63	20.00	1.34
Apr-00	30.13	26.00	28.06	1.78	9.44%	16.93%	0.0271	20.63	19.25	19.94	1.34
May-00	30.88	28.50	29.69	1.78	9.64%	16.73%	0.0280	20.50	19.13	19.81	1.34
Jun-00	32.69	30.13	31.41	1.78	9.64%	16.33%	0.0269	19.94	18.75	19.34	1.34
Jul-00	33.19	30.94	32.06	1.78	9.64%	16.19%	0.0326	20.13	19.19	19.66	1.34
Aug-00	36.94	31.88	34.41	1.78	9.64%	15.73%	0.0311	21.88	19.63	20.75	1.34
Sep-00	40.14	34.19	37.16	1.78	9.68%	15.32%	0.0286	22.69	20.88	21.78	1.34
Oct-00	40.63	34.94	37.78	1.78	9.68%	15.22%	0.0306	22.94	21.38	22.16	1.34
Nov-00	38.63	33.50	36.06	1.78	9.64%	15.45%	0.0317	23.63	21.75	22.69	1.34
Dec-00	43.63	38.00	40.81	1.78	9.64%	14.76%	0.0307	24.75	22.13	23.44	1.34
Jan-01	41.94	35.19	38.56	1.78	9.64%	15.07%	0.0341	24.63	21.25	22.94	1.34
Feb-01	40.80	37.15	38.98	1.78	9.64%	15.01%	0.0342	24.15	21.26	22.70	1.34
Mar-01	38.90	34.20	36.55	1.78	9.64%	15.37%	0.0343	24.48	22.28	23.38	1.34
Apr-01	41.10	38.15	39.63	1.78	9.64%	14.92%	0.0317	24.48	23.10	23.79	1.34
May-01	40.50	37.85	39.17	1.78	11.07%	16.48%	0.0335	25.30	23.10	24.20	1.34
Jun-01	40.05	36.37	38.21	1.78	11.07%	16.62%	0.0351	25.30	23.58	24.44	1.34
Jul-01	37.20	29.10	33.15	1.78	11.39%	17.82%	0.0329	25.40	21.75	23.57	1.34
Aug-01	32.86	29.85	31.36	1.78	11.39%	18.20%	0.0341	25.35	21.95	23.65	1.34
Sep-01	33.40	31.50	32.45	1.78	8.38%	14.77%	0.0296	24.87	22.40		
Oct-01	35.35	31.86	33.60	1.78	8.38%	14.55%	0.0290	25.30	22.60		
Nov-01	34.44	32.52	33.48	1.78	8.38%	14.57%	0.0291	25.10	22.70		
Dec-01	34.98	31.53	33.26	1.78	7.83%	14.04%	0.0298				
Jan-02	35.55	31.25	33.40	1.78	7.17%	13.31%	0.0281				

Discounted Cash Flow

Month Ending								Laclede			
	Keyspan High	Keyspan Low	Keyspan Average	Keyspan Dividend	Keyspan Growth	Keyspan DCF	Keyspan DCF	LG High	LG Low	LG Average	LG Dividend
Feb-02	32.59	30.01	31.30	1.78	6.83%	13.37%	0.0280				
Mar-02	36.72	31.98	34.35	1.78	6.83%	12.78%	0.0259				
Apr-02	37.45	34.35	35.90	1.78	6.71%	12.39%	0.0248				
May-02	38.20	35.15	36.68	1.78	6.71%	12.27%	0.0239				
Jun-02	38.00	35.60	36.80	1.78	6.71%	12.25%	0.0251				
Jul-02	38.19	27.41	32.80	1.78	6.71%	12.94%	0.0270				
Aug-02	36.68	33.78	35.23	1.78	6.71%	12.50%	0.0252				
Sep-02	34.85	31.96	33.41	1.78	7.75%	13.92%	0.0288				
Oct-02	36.98	30.75	33.86	1.78	7.75%	13.84%	0.0282	24.35	21.79		
Nov-02	37.15	33.80	35.48	1.78	7.75%	13.55%	0.0275	24.50	22.75		
Dec-02	36.16	34.20	35.18	1.78	7.88%	13.74%	0.0282	24.84	23.00		
Jan-03	38.14	33.01	35.57	1.78	8.00%	13.80%	0.0282	24.90	23.00		
Feb-03	34.19	31.02	32.60	1.78	7.78%	14.11%	0.0290	23.80	21.85		
Mar-03	33.44	31.07	32.25	1.78	7.10%	13.46%	0.0255	23.96	21.90		
Apr-03	34.25	31.87	33.06	1.78	7.10%	13.30%	0.0249	24.29	23.10		
May-03	37.51	33.28	35.39	1.78	6.64%	12.40%	0.0228	26.92	23.80		
Jun-03	36.70	35.12	35.91	1.78	6.64%	12.31%	0.0240				
Jul-03	35.80	33.52	34.66	1.78	6.64%	12.52%	0.0248				
Aug-03	34.47	32.30	33.39	1.78	6.64%	12.75%	0.0252				
Sep-03	35.83	33.83	34.83	1.78	6.55%	12.40%	0.0246				
Oct-03	36.28	34.37	35.33	1.78	6.55%	12.31%	0.0244				
Nov-03	35.45	33.64	34.55	1.78	5.88%	11.74%	0.0230				
Dec-03	37.09	34.86	35.98	1.78	5.88%	11.50%	0.0218				
Jan-04	37.26	35.72	36.49	1.78	5.88%	11.42%	0.0229				
Feb-04	38.00	36.16	37.08	1.78	5.29%	10.71%	0.0204				
Mar-04	38.60	36.87	37.74	1.78	5.29%	10.62%	0.0227				
Apr-04	38.99	35.41	37.20	1.78	5.14%	10.54%	0.0225				
May-04	36.90	33.87	35.39	1.78	4.89%	10.56%	0.0241				
Jun-04	36.78	34.67	35.73	1.78	4.89%	10.50%	0.0250				
Jul-04	37.38	35.19	36.29	1.78	4.89%	10.41%	0.0218				
Aug-04	38.10	35.74	36.92	1.78	4.89%	10.32%	0.0205				
Sep-04	39.49	38.06	38.78	1.78	5.04%	10.21%	0.0227				
Oct-04	39.99	38.22	39.11	1.78	4.89%	10.01%	0.0222				
Nov-04	41.53	39.46	40.50	1.78	4.71%	9.64%	0.0214				
Dec-04	39.87	37.57	38.72	1.78	4.33%	9.47%	0.0222				
Jan-05	39.79	38.04	38.92	1.82	4.33%	9.56%	0.0203				
Feb-05	40.61	39.02	39.82	1.82	4.20%	9.31%	0.0193				
Mar-05	40.90	38.21	39.56	1.82	4.20%	9.34%	0.0188				
Apr-05	39.89	36.83	38.36	1.82	4.30%	9.61%	0.0187	30.75	26.90		
May-05	39.98	37.62	38.80	1.82	4.30%	9.55%	0.0186	30.35	27.26		
Jun-05	40.88	39.45	40.17	1.82	3.63%	8.66%	0.0160	32.00	29.86		
Jul-05	41.03	39.33	40.18	1.82	3.63%	8.66%	0.0156	33.59	31.25		
Aug-05	40.79	36.68	38.74	1.82	3.63%	8.85%	0.0159	33.10	30.40		
Sep-05	38.79	36.35	37.57	1.82	3.70%	9.09%	0.0147	34.31	31.44		

[illegible]

Discounted Cash Flow

[illegible]

Discounted Cash Flow

Month Ending	New Jersey Resources									
	LG	LG	LG	NJR	NJR		NJR	NJR	NJR	NJR
	Growth	DCF	DCF	High	Low	Average	Dividend	Growth	DCF	
Jun-98					36.00	34.81	35.41	1.64	5.83%	11.09%
Jul-98					36.50	33.63	35.06	1.64	5.83%	11.14%
Aug-98					34.44	31.50	32.97	1.64	5.83%	11.48%
Sep-98					37.19	33.38	35.28	1.64	5.83%	11.10%
Oct-98					40.25	35.75	38.00	1.64	5.88%	10.77%
Nov-98					40.00	38.00	39.00	1.64	5.88%	10.65%
Dec-98					39.63	37.63	38.63	1.64	5.88%	10.69%
Jan-99					40.13	36.00	38.06	1.68	5.88%	10.89%
Feb-99					36.38	33.63	35.00	1.68	6.00%	11.46%
Mar-99					37.88	34.69	36.28	1.68	6.00%	11.26%
Apr-99					38.00	35.44	36.72	1.68	6.00%	11.20%
May-99					38.19	35.00	36.59	1.68	6.00%	11.22%
Jun-99					39.50	37.00	38.25	1.68	6.00%	10.99%
Jul-99					39.94	37.50	38.72	1.68	6.00%	10.92%
Aug-99					40.13	38.56	39.34	1.68	6.00%	10.85%
Sep-99					40.13	37.50	38.81	1.68	6.00%	10.91%
Oct-99					41.13	39.44	40.28	1.68	6.00%	10.73%
Nov-99					41.13	39.00	40.06	1.68	5.90%	10.65%
Dec-99					40.50	38.88	39.69	1.68	5.90%	10.70%
Jan-00					39.75	36.50	38.13	1.72	5.90%	11.02%
Feb-00					39.31	36.19	37.75	1.72	6.10%	11.28%
Mar-00					42.88	36.50	39.69	1.72	6.10%	11.02%
Apr-00					42.75	38.50	40.63	1.72	6.10%	10.91%
May-00					41.00	38.63	39.81	1.72	6.38%	11.30%
Jun-00					41.38	37.88	39.63	1.72	6.38%	11.32%
Jul-00					40.69	37.63	39.16	1.72	6.38%	11.38%
Aug-00					43.13	39.13	41.13	1.72	6.38%	11.14%
Sep-00	3.67%	10.55%	0.0016		41.75	38.94	40.34	1.72	6.38%	11.24%
Oct-00	3.67%	10.43%	0.0019		41.44	37.63	39.53	1.72	6.38%	11.34%
Nov-00	3.67%	10.27%	0.0019		41.63	37.50	39.56	1.72	6.50%	11.46%
Dec-00	3.67%	10.05%	0.0019		44.63	40.13	42.38	1.72	6.50%	11.12%
Jan-01	3.67%	10.19%	0.0018		43.25	37.26	40.25	1.76	6.50%	11.49%
Feb-01	3.67%	10.26%	0.0018		39.09	37.26	38.17	1.76	6.83%	12.11%
Mar-01	3.67%	10.07%	0.0017		41.15	38.00	39.58	1.76	6.83%	11.92%
Apr-01	3.67%	9.95%	0.0018		43.40	40.20	41.80	1.76	6.83%	11.64%
May-01	3.33%	9.49%	0.0016		46.00	42.53	44.26	1.76	6.83%	11.37%
Jun-01	3.33%	9.42%	0.0017		45.96	42.27	44.11	1.76	6.83%	11.39%
Jul-01	3.33%	9.65%	0.0018		45.33	41.00	43.17	1.76	6.83%	11.49%
Aug-01	3.33%	9.63%	0.0018		45.81	42.85	44.33	1.76	6.38%	10.90%
Sep-01					45.50	42.24	43.87	1.76	6.38%	10.94%
Oct-01					46.95	43.45	45.20	1.76	6.38%	10.81%
Nov-01					48.80	44.91	46.85	1.76	6.38%	10.65%
Dec-01					47.35	44.82	46.09	1.76	6.38%	10.72%
Jan-02					46.86	44.20	45.53	1.76	6.33%	10.72%

Discounted Cash Flow

Month Ending	New Jersey Resources								
	LG Growth	LG DCF	LG DCF	NJR High	NJR Low	NJR Average	NJR Dividend	NJR Growth	NJR DCF
Feb-02					31.16	29.23	30.20	1.20	6.33% 10.85%
Mar-02					32.00	30.06	31.03	1.20	6.33% 10.72%
Apr-02					32.90	30.29	31.60	1.20	6.33% 10.65%
May-02					32.59	30.20	31.40	1.20	6.67% 11.03%
Jun-02					30.70	28.45	29.58	1.20	6.67% 11.30%
Jul-02					31.10	24.35	27.73	1.20	6.67% 11.61%
Aug-02					32.87	29.50	31.18	1.20	6.67% 11.06%
Sep-02					33.29	30.65	31.97	1.20	6.67% 10.95%
Oct-02					33.20	29.52	31.36	1.20	6.67% 11.03%
Nov-02					32.03	29.86	30.94	1.20	6.67% 11.09%
Dec-02					33.60	31.20	32.40	1.20	6.67% 10.89%
Jan-03					33.60	30.01	31.80	1.24	6.67% 11.12%
Feb-03					32.67	30.42	31.54	1.24	7.00% 11.50%
Mar-03					33.70	31.70	32.70	1.24	7.00% 11.34%
Apr-03					34.79	32.25	33.52	1.24	7.00% 11.23%
May-03					35.49	32.60	34.05	1.24	6.50% 10.64%
Jun-03					36.60	35.12	35.86	1.24	6.50% 10.43%
Jul-03					36.87	34.50	35.69	1.24	6.50% 10.45%
Aug-03					36.39	33.70	35.05	1.24	6.50% 10.52%
Sep-03					37.36	35.81	36.59	1.24	6.50% 10.35%
Oct-03					38.00	35.76	36.88	1.24	6.50% 10.32%
Nov-03					39.25	36.45	37.85	1.30	6.50% 10.40%
Dec-03					39.54	37.55	38.55	1.30	6.00% 9.81%
Jan-04					39.49	37.75	38.62	1.30	6.00% 9.81%
Feb-04					40.00	37.63	38.82	1.30	6.00% 9.79%
Mar-04					39.20	36.81	38.01	1.30	6.25% 10.13%
Apr-04					38.90	36.55	37.73	1.30	6.33% 10.24%
May-04					41.98	38.51			
Jun-04					42.40	40.24			
Jul-04					42.40	40.24	41.32	1.30	5.45% 8.99%
Aug-04					40.97	39.54	40.26	1.30	5.45% 9.08%
Sep-04					42.35	40.38	41.37	1.30	5.45% 8.98%
Oct-04					42.49	40.54	41.52	1.36	5.45% 9.13%
Nov-04					44.55	40.95	42.75	1.36	5.50% 9.08%
Dec-04					44.43	42.35	43.39	1.36	5.60% 9.13%
Jan-05					44.09	41.20	42.65	1.36	5.60% 9.19%
Feb-05					44.66	42.98	43.82	1.36	5.86% 9.36%
Mar-05					45.50	42.69	44.10	1.36	5.86% 9.34%
Apr-05					44.57	42.63	43.60	1.36	5.86% 9.38%
May-05					46.02	43.45	44.74	1.36	5.86% 9.29%
Jun-05					48.42	45.20	46.81	1.36	5.30% 8.56%
Jul-05					49.34	46.51	47.93	1.36	5.30% 8.48%
Aug-05					47.54	44.43	45.99	1.36	5.30% 8.62%
Sep-05					47.26	44.78	46.02	1.36	5.30% 8.61%

Discounted Cash Flow

Month Ending	New Jersey Resources									
	LG	LG	LG	NJR	NJR	NJR	NJR	NJR	NJR	
	Growth	DCF	DCF	High	Low	Average	Dividend	Growth	DCF	
Oct-05					46.95	40.80	43.88	1.36	5.30%	8.78%
Nov-05					43.32	41.37	42.35	1.36	5.30%	8.91%
Dec-05					44.58	41.51	43.05	1.36	5.33%	8.88%
Jan-06					45.55	41.49	43.52	1.44	5.33%	9.05%
Feb-06					45.96	42.99	44.48	1.44	5.25%	8.88%
Mar-06					45.32	42.70	44.01	1.44	5.25%	8.92%
Apr-06					46.43	43.70	45.07	1.44	5.25%	8.84%
May-06					45.72	42.85	44.29	1.44	5.67%	9.33%
Jun-06					47.38	43.95	45.67	1.44	5.67%	9.22%
Jul-06					50.90	46.34	48.62	1.44	6.00%	9.34%
Aug-06					51.39	47.41	49.40	1.44	6.00%	9.29%
Sep-06										
Oct-06					52.11	48.49	50.30	1.44	5.25%	8.46%
Nov-06					53.16	50.53	51.85	1.44	5.67%	8.79%
Dec-06					52.54	48.46	50.50	1.52	5.25%	8.62%
Jan-07					48.70	46.30	47.50	1.52	5.33%	8.92%
Feb-07					51.10	46.73	48.92	1.52	5.33%	8.82%
Mar-07					50.60	48.19	49.40	1.52	5.33%	8.78%
Apr-07					54.83	50.05	52.44	1.52	5.33%	8.58%
May-07					56.45	53.69				
Jun-07					55.24	49.80				
Jul-07					51.82	45.91	48.87	1.52	5.67%	9.17%
Aug-07					52.70	45.50	49.10	1.52	5.67%	9.16%
Sep-07					50.50	46.26	48.38	1.52	5.67%	9.21%
Oct-07					33.47	30.59				
Nov-07					32.29	29.62				
Dec-07					33.23	30.95				
Jan-08										
Feb-08					33.47	30.59	32.03	1.07	5.50%	9.25%
Mar-08					32.29	29.62	30.96	1.07	5.50%	9.38%
Apr-08					33.23	30.95	32.09	1.12	5.50%	9.43%
May-08					34.35	31.47	32.91	1.12	6.00%	9.85%
Jun-08					34.63	32.09	33.36	1.12	6.00%	9.80%
Jul-08										
Aug-08										
Sep-08										
Oct-08										
Nov-08										
Dec-08										
Jan-09										
Feb-09										
Mar-09					35.98	29.95	32.97	1.24	7.00%	11.30%
Apr-09					34.84	30.79	32.81	1.24	7.00%	11.32%
May-09					33.60	30.95	32.28	1.24	7.00%	11.39%

Discounted Cash Flow

Month Ending	NJR	NiSource								NI	NI	NI	NI
		DCF	GAS High	GAS Low	GAS Average	GAS Dividend	GAS Growth	GAS DCF	GAS DCF				
Jun-98		0.0046	40.31	39.81	40.06	1.48	7.26%	11.49%	0.0146				
Jul-98		0.0046	41.00	37.13	39.06	1.48	7.80%	12.16%	0.0152				
Aug-98		0.0036	39.75	37.38	38.56	1.48	7.26%	11.66%	0.0112				
Sep-98		0.0034	41.94	37.13	39.53	1.48	7.26%	11.55%	0.0107				
Oct-98		0.0034	44.25	40.44	42.34	1.48	6.83%	10.82%	0.0105				
Nov-98		0.0034	44.44	42.00	43.22	1.48	6.83%	10.73%	0.0104				
Dec-98		0.0034	42.94	40.38	41.66	1.48	5.48%	9.48%	0.0092				
Jan-99		0.0037	42.94	38.13	40.53	1.48	5.48%	9.59%	0.0092				
Feb-99		0.0039	38.63	36.50	37.56	1.48	5.48%	9.92%	0.0095				
Mar-99		0.0037	38.81	34.69	36.75	1.48	5.70%	10.25%	0.0095				
Apr-99		0.0037	37.63	34.13	35.88	1.56	5.70%	10.62%	0.0098				
May-99		0.0037	38.63	36.38	37.50	1.56	5.70%	10.41%	0.0094				
Jun-99		0.0035	39.50	36.81	38.16	1.56	5.70%	10.32%	0.0092				
Jul-99		0.0037	39.44	36.75	38.09	1.56	5.82%	10.46%	0.0091				
Aug-99		0.0037	39.50	37.63	38.56	1.56	6.13%	10.72%	0.0093				
Sep-99		0.0037	40.00	35.69	37.84	1.56	6.13%	10.81%	0.0094				
Oct-99		0.0037	39.38	36.56	37.97	1.56	6.56%	11.24%	0.0096				
Nov-99		0.0036	38.69	34.38	36.53	1.56	6.49%	11.36%	0.0098				
Dec-99		0.0037	34.94	31.19	33.06	1.56	6.49%	11.88%	0.0104				
Jan-00		0.0041	36.38	31.31	33.84	1.56	6.49%	11.75%	0.0093				
Feb-00		0.0042	35.69	29.69	32.69	1.56	6.21%	11.65%	0.0093				
Mar-00		0.0040	33.31	29.38	31.34	1.56	6.21%	11.88%	0.0091				
Apr-00		0.0039	34.88	32.06	33.47	1.66	6.21%	11.86%	0.0098				
May-00		0.0042	37.13	32.75	34.94	1.66	6.24%	11.65%	0.0101				
Jun-00		0.0042	37.50	32.38	34.94	1.66	6.24%	11.65%	0.0099				
Jul-00		0.0037	35.50	32.13	33.81	1.66	6.24%	11.84%	0.0091				
Aug-00		0.0035	40.06	34.81	37.44	1.66	6.24%	11.29%	0.0085				
Sep-00		0.0034	39.38	35.25	37.31	1.66	6.24%	11.30%	0.0080				
Oct-00		0.0034	36.38	32.19	34.28	1.66	6.24%	11.76%	0.0079				
Nov-00		0.0036	40.00	34.81	37.41	1.66	6.13%	11.18%	0.0077				
Dec-00		0.0035	43.88	38.00	40.94	1.66	6.13%	10.73%	0.0075				
Jan-01		0.0035	42.38	35.21	38.79	1.66	6.13%	10.99%	0.0083				
Feb-01		0.0037	39.20	35.95	37.58	1.66	6.13%	11.15%	0.0085				
Mar-01		0.0036	38.49	35.12	36.81	1.66	6.13%	11.26%	0.0084				
Apr-01		0.0032	39.90	35.95	37.93	1.76	5.93%	11.20%	0.0075				
May-01		0.0030	39.47	37.20	38.34	1.76	5.94%	11.15%	0.0071				
Jun-01		0.0031	39.20	37.98	38.59	1.76	5.94%	11.12%	0.0074				
Jul-01		0.0037	39.40	34.00	36.70	1.76	5.79%	11.23%	0.0083				
Aug-01		0.0035	39.23	36.70	37.97	1.76	5.79%	11.05%	0.0083				
Sep-01		0.0038	39.74	37.00	38.37	1.76	5.90%	11.11%	0.0089				
Oct-01		0.0037	40.90	38.14	39.52	1.76	5.90%	10.95%	0.0087				
Nov-01		0.0037	39.84	37.52	38.68	1.76	5.90%	11.06%	0.0088				
Dec-01		0.0039	42.00	38.20	40.10	1.76	6.00%	10.98%	0.0089				
Jan-02		0.0040	41.90	39.55	40.73	1.76	6.00%	10.90%	0.0088				

Discounted Cash Flow

Month Ending	NJR	NiSource								NI	NI	NI	NI
		DCF	GAS High	GAS Low	GAS Average	GAS Dividend	GAS Growth	DCF	DCF				
Feb-02		0.0041	42.69	39.67	41.18	1.76	6.00%	10.85%	0.0094				
Mar-02		0.0038	46.20	41.69	43.94	1.76	6.00%	10.54%	0.0091				
Apr-02		0.0037	49.00	44.99	47.00	1.76	5.80%	10.03%	0.0086				
May-02		0.0038	49.00	46.05	47.52	1.84	5.80%	10.18%	0.0084				
Jun-02		0.0036	48.70	45.75	47.23	1.84	5.80%	10.21%	0.0084				
Jul-02		0.0037	47.83	18.09	32.96	1.84	6.00%	12.37%	0.0104				
Aug-02		0.0036	31.50	23.80	27.65	1.84	6.00%	13.62%	0.0087				
Sep-02		0.0039	29.39	17.25	23.32	1.84	6.00%	15.08%	0.0081				
Oct-02		0.0040	31.77	24.25	28.01	1.84	5.50%	12.99%	0.0070				
Nov-02		0.0040	33.29	29.72	31.51	1.84	5.17%	11.79%	0.0063				
Dec-02		0.0039	35.39	30.55	32.97	1.84	5.17%	11.49%	0.0066				
Jan-03		0.0040	35.62	30.65	33.13	1.84	5.17%	11.45%	0.0066				
Feb-03		0.0041	32.30	29.75	31.02	1.84	5.17%	11.89%	0.0068				
Mar-03		0.0041	31.85	23.70	27.78	1.84	5.17%	12.70%	0.0059				
Apr-03		0.0040	30.47	27.05	28.76	1.84	5.17%	12.43%	0.0057				
May-03		0.0037	36.30	29.07	32.68	1.86	5.17%	11.61%	0.0052				
Jun-03		0.0035	39.30	35.29	37.30	1.86	5.17%	10.80%	0.0063				
Jul-03		0.0035	37.70	35.35	36.53	1.86	4.38%	10.09%	0.0060				
Aug-03		0.0036	36.40	33.51	34.96	1.86	4.38%	10.35%	0.0061				
Sep-03		0.0036	36.05	34.00	35.03	1.86	4.38%	10.34%	0.0056				
Oct-03		0.0036	36.62	32.75	34.69	1.86	4.33%	10.35%	0.0056				
Nov-03		0.0036	34.45	32.03	33.24	1.86	4.04%	10.30%	0.0055				
Dec-03		0.0034	34.65	32.86	33.76	1.86	3.86%	10.02%	0.0052				
Jan-04		0.0036	34.24	32.49	33.37	1.86	3.83%	10.06%	0.0055				
Feb-04		0.0034	36.25	32.55	34.40	1.86	3.73%	9.76%	0.0051				
Mar-04		0.0036	37.43	34.76	36.10	1.86	3.68%	9.42%	0.0054				
Apr-04		0.0036	35.65	33.31	34.48	1.86	3.68%	9.69%	0.0055				
May-04			34.50	32.04	33.27	1.86	3.67%	9.91%	0.0060				
Jun-04			35.18	33.04	34.11	1.86							
Jul-04		0.0033	34.29	32.37	33.33	1.86							
Aug-04		0.0035	36.00	32.65	34.33	1.86	3.10%	9.11%	0.0047				
Sep-04		0.0039	37.36	35.72	36.54	1.86	2.63%	8.24%	0.0047				
Oct-04		0.0040	37.80	36.30	37.05	1.86	2.72%	8.26%	0.0048				
Nov-04		0.0040	39.65	36.89	38.27	1.86	2.72%	8.08%	0.0047				
Dec-04		0.0042	38.00	35.89	36.95	1.86	2.15%	7.67%	0.0047				
Jan-05		0.0037	37.30	35.50	36.40	1.86	2.15%	7.76%	0.0042				
Feb-05		0.0034	38.33	36.37	37.35	1.86	1.83%	7.27%	0.0038				
Mar-05		0.0036	38.13	36.10	37.12	1.86	1.83%	7.31%	0.0037				
Apr-05		0.0036	37.81	35.76	36.79	1.86	1.83%	7.36%	0.0039				
May-05		0.0035	39.82	36.81	38.32	1.86	1.83%	7.13%	0.0038				
Jun-05		0.0031	41.87	39.38	40.63	1.86	2.17%	7.18%	0.0036				
Jul-05		0.0030	42.15	40.01	41.08	1.86	2.17%	7.13%	0.0035				
Aug-05		0.0030	41.98	39.10	40.54	1.86	2.17%	7.19%	0.0036				
Sep-05		0.0027	42.59	40.53	41.56	1.86	2.17%	7.07%	0.0033				

Discounted Cash Flow

Month Ending	NJR								NiSource			
		GAS	GAS	GAS	GAS	GAS	GAS	GAS	NI	NI	NI	NI
	DCF	High	Low	Average	Dividend	Growth	DCF	DCF				
Oct-05	0.0027	42.97	37.45	40.21	1.86	2.17%	7.24%	0.0034				
Nov-05	0.0029	41.15	38.72	39.94	1.86	3.00%	8.14%	0.0040				
Dec-05	0.0029	42.09	39.03	40.56	1.86	3.00%	8.06%	0.0039				
Jan-06	0.0028	42.83	39.25	41.04	1.86	3.00%	8.00%	0.0037				
Feb-06	0.0054											
Mar-06	0.0056	42.93	39.25									
Apr-06	0.0039	40.69	38.72	39.71	1.86	3.10%	8.28%	0.0053				
May-06	0.0034	42.29	39.26	40.78	1.86	3.10%	8.14%	0.0043				
Jun-06	0.0036	41.87	39.58	40.73	1.86	3.10%	8.15%	0.0045				
Jul-06	0.0036	44.40	41.01	42.71	1.86	2.67%	7.46%	0.0040				
Aug-06	0.0036	44.39	42.29	43.34	1.86	2.67%	7.39%	0.0040				
Sep-06		43.89	42.15	43.02	1.86	2.67%	7.42%	0.0041				
Oct-06	0.0034	46.54	42.38	44.46	1.86	2.67%	7.27%	0.0039				
Nov-06	0.0036											
Dec-06	0.0035											
Jan-07	0.0030	47.38	44.46	45.92	1.86	3.37%	7.85%	0.0042				
Feb-07	0.0033											
Mar-07	0.0033											
Apr-07	0.0032	53.66	48.47									
May-07		51.74	46.80	49.27	1.86	4.60%	8.82%	0.0041				
Jun-07		47.47	42.17	44.82	1.86	4.60%	9.24%	0.0043				
Jul-07	0.0037											
Aug-07	0.0037											
Sep-07	0.0037											
Oct-07												
Nov-07												
Dec-07												
Jan-08												
Feb-08	0.0032	42.62	33.99	38.31	1.86	4.00%	9.42%	0.0040				
Mar-08	0.0032	34.29	32.35	33.32	1.86	4.00%	10.25%	0.0044				
Apr-08	0.0032	36.00	33.33	34.67	1.86	4.00%	10.00%	0.0042				
May-08	0.0029	41.60	36.08	38.84	1.86	4.20%	9.55%	0.0037				
Jun-08	0.0030	44.55	40.20	42.38	1.86	4.20%	9.10%	0.0036				
Jul-08		43.25	38.01	40.63	1.86	4.50%	9.63%	0.0046				
Aug-08		46.84	39.29	43.07	1.86	4.25%	9.07%	0.0051				
Sep-08		51.99	42.00	47.00	1.86	4.25%	8.66%	0.0063				
Oct-08		48.42	35.25	41.84	1.86	4.25%	9.22%	0.0070				
Nov-08		47.60	34.46	41.03	1.86	4.25%	9.31%	0.0065				
Dec-08		39.50	32.53	36.02	1.86	2.85%	8.56%	0.0044	11.97	10.45	11.21	0.92
Jan-09		35.89	31.95	33.92	1.86	2.85%	8.92%	0.0046	11.40	9.60	10.50	0.92
Feb-09		36.34	28.38	32.36	1.86	2.85%	9.22%	0.0050	10.88	8.47	9.68	0.92
Mar-09		34.46	27.50	30.98	1.86	6.00%	12.86%		10.32	7.79	9.06	0.92
Apr-09		34.00	30.78	32.39	1.86	6.00%	12.55%		11.20	9.64	10.42	0.92
May-09		34.03	30.28	32.16	1.86	4.30%	10.80%	0.0076	11.62	10.39	11.01	0.92

Discounted Cash Flow

Month Ending	NJR									NiSource			
		GAS	GAS	GAS	GAS	GAS	GAS	GAS		NI	NI	NI	NI
	DCF	High	Low	Average	Dividend	Growth	DCF	DCF					
Jun-09		35.37	31.73	33.55	1.86	4.30%	10.52%	0.0074		11.82	10.79	11.31	0.92
Jul-09	0.0045	37.42	32.83	35.13	1.86	4.33%	10.27%	0.0049		13.39	11.41	12.40	0.92
Aug-09	0.0044	38.08	35.14	36.61	1.86	4.33%	10.02%	0.0047		13.78	12.79	13.29	0.92
Sep-09	0.0045	37.65	35.30	36.48	1.86	4.33%	10.04%	0.0047		14.03	12.93	13.48	0.92
Oct-09		40.21	36.81	38.51	1.86	2.85%	8.18%	0.0046		14.58	12.83	13.71	0.92
Nov-09		40.21	36.81	38.51	1.86	2.85%	8.18%	0.0046		14.58	12.83	13.71	0.92
Dec-09		43.39	39.28	41.34	1.86	2.85%	7.81%	0.0043		15.82	14.33	15.08	0.92
Jan-10	0.0066	42.83	40.00	41.42	1.86	4.35%	9.37%	0.0068		15.69	14.24	14.97	0.92
Feb-10	0.0060	41.89	37.99	39.94	1.86	4.30%	9.51%	0.0069		15.29	14.25	14.77	0.92
Mar-10		43.75	41.82	42.79	1.86	4.30%	9.16%	0.0068		16.03	14.86	15.45	0.92

Discounted Cash Flow

Month Ending	NI	NI	NI	Northwest						
				NWN	NWN	NWN	NWN	NWN	NWN	NWN
				High	Low	Average	Dividend	Growth	DCF	DCF
Feb-02										
Mar-02										
Apr-02										
May-02										
Jun-02				30.10	27.60	28.85	1.26	5.30%	10.23%	0.0029
Jul-02				30.20	23.46	26.83	1.26	5.30%	10.60%	0.0031
Aug-02				29.70	27.53	28.62	1.26	5.30%	10.27%	0.0031
Sep-02				29.99	27.00	28.50	1.26	5.30%	10.29%	0.0032
Oct-02				30.70	28.54	29.62	1.26	5.30%	10.09%	0.0030
Nov-02				30.18	25.50	27.84	1.26	5.30%	10.41%	0.0031
Dec-02				27.84	25.63	26.73	1.26	5.67%	11.01%	0.0031
Jan-03				28.47	25.49	26.98	1.26	5.67%	10.96%	0.0030
Feb-03				26.26	24.05	25.15	1.26	4.67%	10.30%	0.0029
Mar-03				25.72	24.13	24.92	1.26	4.67%	10.35%	0.0029
Apr-03				26.00	24.77	25.39	1.26	4.67%	10.25%	0.0029
May-03				28.52	25.52	27.02	1.26	4.67%	9.90%	0.0027
Jun-03				28.88	27.20	28.04	1.26	4.67%	9.71%	0.0032
Jul-03				28.65	27.03	27.84	1.26	4.67%	9.75%	0.0033
Aug-03				29.00	27.02	28.01	1.26	4.67%	9.71%	0.0033
Sep-03				30.10	28.40	29.25	1.26	4.67%	9.50%	0.0026
Oct-03				30.50	28.51	29.51	1.26	4.67%	9.46%	0.0026
Nov-03				30.85	28.91	29.88	1.30	4.17%	9.02%	0.0024
Dec-03				31.30	29.50	30.40	1.30	4.17%	8.94%	0.0024
Jan-04				31.97	29.95	30.96	1.30	4.17%	8.85%	0.0025
Feb-04				32.00	30.07	31.04	1.30	4.88%	9.58%	0.0026
Mar-04				33.00	30.90	31.95	1.30	4.88%	9.44%	0.0028
Apr-04				31.65	29.15	30.40	1.30	4.88%	9.68%	0.0028
May-04				29.84	27.46	28.65	1.30	4.88%	9.98%	0.0031
Jun-04				30.75	28.89	29.82	1.30	4.88%	9.78%	0.0029
Jul-04				31.55	29.13	30.34	1.30	4.17%	8.95%	0.0023
Aug-04				30.90	28.84					
Sep-04				32.37	30.48					
Oct-04				32.35	30.77					
Nov-04				34.13	31.34					
Dec-04				34.06	32.04	33.05	1.30	5.50%	9.94%	0.0033
Jan-05				34.02	32.42	33.22	1.30	5.50%	9.91%	0.0030
Feb-05				37.24	33.73	35.49	1.30	5.50%	9.63%	0.0028
Mar-05				37.17	35.04	36.11	1.30	5.50%	9.56%	0.0029
Apr-05				36.50	34.36					
May-05				37.71	35.04					
Jun-05				38.67	36.14	37.41	1.30			
Jul-05				39.20	37.67	38.44	1.30	5.60%	9.41%	0.0026
Aug-05				39.63	35.62	37.63	1.30	5.60%	9.49%	0.0026
Sep-05				37.74	35.60	36.67	1.30	5.60%	9.60%	0.0025

Discounted Cash Flow

	Northwest										
	NI	NI	NI	NWN	NWN	NWN	NWN	NWN	NWN	NWN	
Month Ending				High	Low	Average	Dividend	Growth	DCF	DCF	
Oct-05					37.77	33.25	35.51	1.30	5.30%	9.42%	0.0024
Nov-05					35.48	33.88	34.68	1.38	5.30%	9.78%	0.0026
Dec-05					35.78	33.95	34.87	1.38	5.63%	10.10%	0.0026
Jan-06					36.57	34.54	35.56	1.38	5.30%	9.67%	0.0024
Feb-06					35.83	32.83	34.33	1.38	5.30%	9.83%	0.0048
Mar-06					35.49	33.08	34.29	1.38	5.30%	9.83%	0.0048
Apr-06					35.79	33.79	34.79	1.38	5.38%	9.85%	0.0034
May-06					36.00	33.30	34.65	1.38	5.38%	9.87%	0.0028
Jun-06					37.04	34.23	35.64	1.38	5.96%	10.35%	0.0031
Jul-06					38.43	35.81	37.12	1.38	5.96%	10.17%	0.0030
Aug-06					38.53	36.70	37.62	1.38	5.96%	10.11%	0.0030
Sep-06					40.08	37.67	38.88	1.38	5.96%	9.98%	0.0030
Oct-06					41.94	38.85	40.40	1.42	5.88%	9.85%	0.0030
Nov-06					41.51	38.53	40.02	1.42	4.88%	8.85%	0.0029
Dec-06					43.69	40.80	42.25	1.42	4.88%	8.64%	0.0028
Jan-07					42.98	39.89	41.44	1.42	4.88%	8.71%	0.0025
Feb-07					46.30	39.79	43.05	1.42	4.88%	8.57%	0.0028
Mar-07					46.34	42.47	44.41	1.42	4.88%	8.46%	0.0030
Apr-07					51.50	45.57	48.54	1.42	4.88%	8.15%	0.0029
May-07					52.85	44.05	48.45	1.42	4.88%	8.15%	0.0025
Jun-07					50.49	44.35	47.42	1.42	4.88%	8.23%	0.0025
Jul-07											
Aug-07											
Sep-07											
Oct-07					48.45	44.28	46.37	1.50	4.88%	8.50%	0.0030
Nov-07					50.89	44.62	47.76	1.50	4.88%	8.39%	0.0029
Dec-07					50.58	46.35	48.47	1.50	4.88%	8.34%	0.0029
Jan-08					50.74	45.87	48.31	1.50	4.88%	8.35%	0.0029
Feb-08					48.81	41.88	45.35	1.50	4.90%	8.60%	0.0026
Mar-08					43.92	41.07	42.50	1.50	4.90%	8.85%	0.0027
Apr-08					45.74	43.08	44.41	1.50	4.90%	8.68%	0.0026
May-08					46.50	43.46	44.98	1.50	4.88%	8.61%	0.0023
Jun-08					48.22	44.36	46.29	1.50	4.88%	8.50%	0.0023
Jul-08					47.19	43.89	45.54	1.50	4.83%	8.51%	0.0027
Aug-08					49.56	43.66	46.61	1.50	4.83%	8.43%	0.0029
Sep-08					78.55	20.00	49.28	1.50	4.83%	8.23%	0.0039
Oct-08					53.71	36.61	45.16	1.50	4.83%	8.54%	0.0042
Nov-08					52.39	45.59	48.99	1.50	4.83%	8.25%	0.0041
Dec-08	3.00%	12.19%	0.0123		49.26	42.13	45.70	1.58	4.75%	8.61%	0.0032
Jan-09	1.60%	11.30%	0.0106		44.55	40.63	42.59	1.58	4.75%	8.90%	0.0034
Feb-09	1.60%	12.16%	0.0112		45.66	40.43	43.05	1.58	4.75%	8.86%	0.0037
Mar-09	3.00%	14.47%	0.0157		45.19	37.71	41.45	1.58	4.75%	9.02%	0.0035
Apr-09	3.00%	12.91%	0.0140		44.16	39.58	41.87	1.58	4.75%	8.97%	0.0035
May-09	1.60%	10.84%	0.0159		43.79	39.63	41.71	1.58	4.75%	8.99%	0.0047

Discounted Cash Flow

Month Ending	Northwest									
	NI	NI	NI	NWN High	NWN Low	NWN Average	NWN Dividend	NWN Growth	NWN DCF	NWN DCF
Jun-09	1.60%	10.59%	0.0155	46.07	42.67	44.37	1.58	4.75%	8.73%	0.0046
Jul-09	3.67%	12.01%	0.0127	46.00	42.23	44.12	1.66	5.17%	9.40%	0.0030
Aug-09	3.67%	11.44%	0.0124	45.06	41.72	43.39	1.66	5.17%	9.47%	0.0030
Sep-09	3.67%	11.32%	0.0123	42.86	41.12	41.99	1.66	5.17%	9.62%	0.0030
Oct-09	3.00%	10.47%	0.0115	44.55	41.28	42.92	1.66	4.75%	9.08%	0.0037
Nov-09	3.00%	10.47%	0.0115	44.55	41.28	42.92	1.66	4.75%	9.08%	0.0037
Dec-09	3.00%	9.78%	0.0107	46.47	42.82	44.65	1.66	4.75%	8.91%	0.0037
Jan-10	3.00%	9.83%	0.0161	45.82	42.79	44.31	1.66	6.00%	10.24%	0.0046
Feb-10	3.00%	9.92%	0.0158	44.84	41.05	42.95	1.66	5.50%	9.86%	0.0046
Mar-10	3.00%	9.61%	0.0167	47.55	44.23	45.89	1.66	5.50%	9.58%	0.0046

Discounted Cash Flow

Month Ending	NUI							ONEOK			
	High	Low	Average	Dividend	Growth	DCF	DCF	OKE High	OKE Low	OKE Average	OKE Dividend
Jun-98	25.63	25.00	25.31	0.98	10.60%	15.18%	0.0034	20.16	19.31	19.73	0.60
Jul-98	25.94	22.13	24.03	0.98	10.60%	15.42%	0.0033	20.47	17.00	18.73	0.60
Aug-98	22.44	20.31	21.38	0.98	10.60%	16.04%	0.0026	17.59	14.88	16.23	0.60
Sep-98	23.44	20.63	22.03	0.98	10.60%	15.87%	0.0025	18.63	14.97	16.80	0.60
Oct-98	23.44	21.56	22.50	0.98	10.27%	15.41%	0.0024	18.16	16.50	17.33	0.60
Nov-98	25.94	23.31	24.63	0.98	10.27%	14.96%	0.0023	18.97	17.13	18.05	0.60
Dec-98	27.00	23.81	25.41	0.98	10.27%	14.82%	0.0023	18.47	16.19	17.33	0.60
Jan-99	27.06	22.19	24.63	0.98	10.27%	14.96%	0.0023	18.59	14.25	16.42	0.62
Feb-99	23.25	20.38	21.81	0.98	10.27%	15.58%	0.0024	15.44	13.00	14.22	0.62
Mar-99	22.94	20.75	21.84	0.98	9.70%	14.97%	0.0022	14.94	12.25	13.59	0.62
Apr-99	22.75	20.81	21.78	0.98	9.70%	14.99%	0.0023	14.53	12.25	13.39	0.62
May-99	25.00	21.69	23.34	0.98	9.70%	14.63%	0.0022	15.25	13.72	14.48	0.62
Jun-99	25.63	23.25	24.44	0.98	9.70%	14.40%	0.0021	16.06	14.50	15.28	0.62
Jul-99	28.06	24.88	26.47	0.98	9.70%	14.04%	0.0022	16.56	15.41	15.98	0.62
Aug-99	27.00	24.75	25.88	0.98	9.70%	14.14%	0.0022	16.34	15.00	15.67	0.62
Sep-99	26.56	24.63	25.59	0.98	9.70%	14.19%	0.0022	15.78	14.81	15.30	0.62
Oct-99	25.63	23.44	24.53	0.98	9.70%	14.39%	0.0022	15.38	14.00	14.69	0.62
Nov-99	27.16	24.00	25.58	0.98	9.70%	14.19%	0.0022	15.06	13.13	14.09	0.62
Dec-99	28.19	24.75	26.47	0.98	9.70%	14.04%	0.0022	14.63	12.50	13.56	0.62
Jan-00	30.75	25.06	27.91	0.98	9.70%	13.81%	0.0024	14.13	12.19	13.16	0.62
Feb-00	27.94	22.94	25.44	0.98	12.20%	16.82%	0.0029	13.34	10.88	12.11	0.62
Mar-00	26.25	23.25	24.75	0.98	12.20%	16.95%	0.0028	12.78	11.16	11.97	0.62
Apr-00	27.81	25.25	26.53	0.98	12.20%	16.63%	0.0030	13.19	12.06	12.63	0.62
May-00	28.19	25.94	27.06	0.98	12.20%	16.54%	0.0031	14.72	12.34	13.53	0.62
Jun-00	28.19	26.56	27.38	0.98	12.20%	16.49%	0.0030	15.63	12.88	14.25	0.62
Jul-00	28.69	26.19	27.44	0.98	13.16%	17.47%	0.0029	13.89	12.63	13.26	0.62
Aug-00	30.31	27.63	28.97	0.98	13.16%	17.24%	0.0028	16.28	13.31	14.80	0.62
Sep-00	32.44	28.63	30.53	0.98	13.16%	17.03%	0.0027	20.00	15.91	17.95	0.62
Oct-00	31.19	27.88	29.53	0.98	13.16%	17.16%	0.0029	22.38	19.00	20.69	0.62
Nov-00	31.00	28.88	29.94	0.98	11.95%	15.86%	0.0027	21.56	19.81	20.69	0.62
Dec-00	33.94	28.00	30.97	0.98	11.95%	15.73%	0.0027	25.31	20.41	22.86	0.62
Jan-01	32.31	25.31	28.81	0.98	11.95%	16.01%	0.0025	24.34	21.44	22.89	0.62
Feb-01	28.28	26.35	27.32	0.98	11.95%	16.24%	0.0026	23.98	21.33	22.65	0.62
Mar-01	28.40	25.44	26.92	0.98	11.95%	16.30%	0.0025	22.71	18.13	20.42	0.62
Apr-01	27.03	21.95	24.49	0.98	10.92%	15.67%	0.0022	22.50	19.31	20.90	0.62
May-01	22.92	20.62	21.77	0.98	10.95%	16.30%	0.0022	21.95	20.38	21.16	0.62
Jun-01	22.40	20.60	21.50	0.98	10.95%	16.37%	0.0023	21.80	19.01	20.40	0.62
Jul-01	23.60	21.40	22.50	0.98	10.95%	16.12%	0.0020	20.48	17.45	18.97	0.62
Aug-01	23.95	22.30	23.13	0.98	10.95%	15.98%	0.0020	18.45	15.80	17.13	0.62
Sep-01	22.70	20.08						16.95	14.17	15.56	0.62
Oct-01	22.19	20.18						18.40	16.15	17.27	0.62
Nov-01	23.15	20.45						18.30	16.70	17.50	0.62
Dec-01								18.22	16.40	17.31	0.62
Jan-02								17.99	16.82	17.41	0.62

Discounted Cash Flow

Month Ending								ONEOK			
	NUI High	NUI Low	NUI Average	NUI Dividend	NUI Growth	NUI DCF	NUI DCF	OKE High	OKE Low	OKE Average	OKE Dividend
Feb-02								18.70	16.34	17.52	0.62
Mar-02								20.92	18.11	19.52	0.62
Apr-02	26.91	24.50	25.70	0.98	7.33%	11.70%	0.0015	21.95	20.28	21.12	0.62
May-02	27.25	25.35	26.30	0.98	7.33%	11.60%	0.0014	23.14	20.77	21.95	0.62
Jun-02	27.50	24.24	25.87	0.98	7.33%	11.67%	0.0018	22.00	19.70	20.85	0.62
Jul-02	27.45	15.87	21.66	0.98	7.67%	12.89%	0.0021	22.19	14.62	18.41	0.62
Aug-02	20.60	17.85	19.23	0.98	7.67%	13.56%	0.0020	21.00	17.21	19.10	0.62
Sep-02	22.25	18.84	20.55	0.98	7.67%	13.18%	0.0019	19.95	17.85	18.90	0.62
Oct-02	22.25	9.65	15.95	0.98	7.67%	14.80%	0.0022	19.36	16.67	18.02	0.62
Nov-02	15.27	12.40	13.84	0.98	5.33%	13.41%	0.0019	19.55	17.43	18.49	0.62
Dec-02	17.50	15.25	16.38	0.98	5.33%	12.12%	0.0014	19.71	18.56	19.13	0.62
Jan-03	17.40	15.20	16.30	0.98	5.33%	12.16%	0.0014	20.20	16.75	18.48	0.68
Feb-03	16.03	14.90	15.47	0.98	5.33%	12.53%	0.0014	17.55	16.00	16.77	0.68
Mar-03	15.74	13.13						18.58	17.13	17.85	0.68
Apr-03	15.83	14.00						19.45	18.14	18.80	0.68
May-03	16.05	13.20						20.58	18.50	19.54	0.68
Jun-03								20.99	19.28	20.14	0.68
Jul-03								21.28	19.56	20.42	0.68
Aug-03								21.20	18.75	19.98	0.68
Sep-03								21.68	20.17	20.93	0.68
Oct-03								21.24	19.45	20.35	0.68
Nov-03								20.16	19.20	19.68	0.72
Dec-03								22.44	19.65	21.05	0.72
Jan-04								23.32	21.64	22.48	0.72
Feb-04								22.78	21.65	22.22	0.76
Mar-04								23.47	21.66	22.57	0.76
Apr-04								23.04	20.75	21.90	0.76
May-04								21.45	19.69	20.57	0.84
Jun-04								22.19	20.90	21.55	0.84
Jul-04								22.20	20.72	21.46	0.84
Aug-04								23.59	20.61	22.10	0.92
Sep-04								26.13	23.48	24.81	0.92
Oct-04								26.90	25.66	26.28	0.92
Nov-04								28.56	26.13	27.35	1.00
Dec-04								28.99	26.85	27.92	1.00
Jan-05								28.55	26.86	27.71	1.00
Feb-05								29.80	27.79	28.80	1.00
Mar-05								31.03	29.42	30.23	1.00
Apr-05								31.70	27.98	29.84	1.00
May-05								30.88	28.81	29.85	1.12
Jun-05								32.71	30.59	31.65	1.12
Jul-05								35.24	32.05	33.65	1.12
Aug-05								35.85	32.15	34.00	1.12
Sep-05								35.40	32.41	33.91	1.12

Discounted Cash Flow

Month Ending	NUI High	NUI Low	NUI Average	NUI Dividend	NUI Growth	NUI DCF	NUI DCF	ONEOK			
								OKE High	OKE Low	OKE Average	OKE Dividend
Oct-05								35.29	27.78	31.54	1.12
Nov-05								28.70	26.52	27.61	1.12
Dec-05								28.3	26.3	27.30	1.12
Jan-06								29.76	26.77	28.27	1.12
Feb-06											
Mar-06								32.58	28.89		
Apr-06								33.75	32.09	32.92	1.20
May-06								33.71	30.04	31.88	1.20
Jun-06								35.15	32.10	33.63	1.20
Jul-06								37.82	32.99	35.41	1.20
Aug-06								39.25	37.14	38.20	1.20
Sep-06								39.33	36.63	37.98	1.28
Oct-06								41.99	37.67	39.83	1.28
Nov-06								43.68	38.81	41.25	1.28
Dec-06								44.48	42.71	43.60	1.28
Jan-07								43.65	41.00	42.33	1.28
Feb-07								43.85	41.00	42.43	1.36
Mar-07								46.33	39.26	42.80	1.36
Apr-07								49.15	44.21	46.68	1.36
May-07								54.90	47.93	51.42	1.36
Jun-07								54.82	47.91	51.37	1.36
Jul-07								55.27	50.45	52.86	1.44
Aug-07								52.09	41.85	46.97	1.44
Sep-07								47.80	45.60	46.70	1.44
Oct-07								50.20	46.91	48.56	1.44
Nov-07								52.16	45.96	49.06	1.44
Dec-07								48.11	43.71	45.91	1.44
Jan-08								49.38	43.38	46.38	1.52
Feb-08								49.69	45.76	47.73	1.52
Mar-08								48.66	43.60	46.13	1.52
Apr-08								49.63	44.68	47.16	1.52
May-08								51.33	46.57	48.95	1.52
Jun-08								50.69	47.15	48.92	1.52
Jul-08								50.05	44.44	47.25	1.52
Aug-08								46.59	41.80	44.20	1.52
Sep-08								45.97	33.00	39.49	1.60
Oct-08								34.98	21.56	28.27	1.60
Nov-08								32.52	23.51	28.02	1.60
Dec-08								30.04	24.19	27.12	1.60
Jan-09								31.74	27.05	29.40	1.60
Feb-09								29.72	20.92	25.32	1.60
Mar-09								23.84	18.10	20.97	1.60
Apr-09								27.01	21.91	24.46	1.60
May-09								29.31	25.51	27.41	1.60

Discounted Cash Flow

Month Ending								ONEOK			
	NUI High	NUI Low	NUI Average	NUI Dividend	NUI Growth	NUI DCF	NUI DCF	OKE High	OKE Low	OKE Average	OKE Dividend
Jun-09								30.50	27.93	29.22	1.60
Jul-09								33.46	27.50	30.48	1.68
Aug-09								36.03	32.95	34.49	1.68
Sep-09								37.12	32.62	34.87	1.68
Oct-09								40.38	35.53	37.96	1.68
Nov-09								40.38	35.53	37.96	1.68
Dec-09								44.97	39.70	42.34	1.68
Jan-10								46.51	42.19	44.35	1.76
Feb-10								44.60	39.95	42.28	1.76
Mar-10								47.34	44.44	45.89	1.76

Discounted Cash Flow

Month Ending											Piedmont	
	OKE Growth	OKE DCF	OKE DCF	Peoples High	Peoples Low	Peoples Average	Peoples Dividend	Peoples Growth	Peoples DCF	Peoples DCF	PNY High	
Jun-98	7.00%	10.47%	0.0080	39.00	36.75	37.88	1.92	5.61%	11.36%	0.0094		33.81
Jul-98	7.00%	10.65%	0.0084	38.63	33.88	36.25	1.92	5.61%	11.62%	0.0099		34.63
Aug-98	7.00%	11.22%	0.0068	37.00	33.06	35.03	1.92	5.61%	11.84%	0.0078		30.88
Sep-98	7.00%	11.08%	0.0065	38.00	32.13	35.06	1.92	5.61%	11.83%	0.0075		34.50
Oct-98	7.67%	11.65%	0.0065	38.19	35.50	36.84	1.92	4.81%	10.68%	0.0071		35.44
Nov-98	7.67%	11.49%	0.0064	39.50	37.13	38.31	1.92	4.81%	10.45%	0.0069		35.50
Dec-98	7.00%	10.95%	0.0061	40.13	37.19	38.66	1.92	4.36%	9.92%	0.0066		36.13
Jan-99	7.00%	11.32%	0.0057	40.25	33.56	36.91	1.92	4.36%	10.19%	0.0067		36.63
Feb-99	7.00%	12.00%	0.0061	34.75	31.75	33.25	1.92	4.36%	10.85%	0.0071		34.81
Mar-99	6.50%	11.71%	0.0057	36.00	32.06	34.03	1.92	4.64%	10.99%	0.0070		35.00
Apr-99	6.50%	11.79%	0.0053	38.44	32.13	35.28	1.96	4.64%	10.89%	0.0072		35.88
May-99	6.50%	11.38%	0.0050	39.88	37.00	38.44	1.96	4.64%	10.37%	0.0068		33.94
Jun-99	6.50%	11.12%	0.0048	39.94	37.63	38.78	1.96	4.64%	10.32%	0.0066		33.88
Jul-99	6.67%	11.09%	0.0052	39.50	36.56	38.03	1.96	4.64%	10.43%	0.0070		34.38
Aug-99	6.67%	11.18%	0.0052	38.00	35.81	36.91	1.96	4.64%	10.61%	0.0071		34.19
Sep-99	6.67%	11.29%	0.0053	37.88	34.00	35.94	1.96	4.64%	10.78%	0.0073		34.00
Oct-99	6.67%	11.49%	0.0053	39.00	34.50	36.75	1.96	4.44%	10.43%	0.0065		32.50
Nov-99	6.67%	11.70%	0.0055	39.44	35.63	37.53	1.96	5.13%	11.03%	0.0069		33.19
Dec-99	6.67%	11.90%	0.0056	38.00	33.25	35.63	1.96	5.13%	11.35%	0.0072		32.88
Jan-00	6.67%	12.06%	0.0055	33.69	30.38	32.03	2.00	5.13%	12.21%	0.0077		30.69
Feb-00	6.67%	12.54%	0.0058	32.88	27.44	30.16	2.00	5.13%	12.66%	0.0081		29.69
Mar-00	6.67%	12.61%	0.0056	29.50	26.19	27.84	2.00	5.13%	13.31%	0.0082		26.75
Apr-00	6.67%	12.29%	0.0046	32.19	26.63	29.41	2.00	5.19%	12.93%	0.0071		28.25
May-00				34.38	29.88	32.13	2.00	5.19%	12.25%	0.0071		30.38
Jun-00				35.06	32.00	33.53	2.00	5.19%	11.95%	0.0068		31.31
Jul-00	6.67%	12.02%	0.0049	33.50	31.25	32.38	2.00	5.44%	12.47%	0.0072		29.13
Aug-00	6.67%	11.45%	0.0046	35.13	31.63	33.38	2.00	6.06%	12.91%	0.0073		29.94
Sep-00	6.67%	10.60%	0.0040	35.38	31.50	33.44	2.00	6.06%	12.90%	0.0069		31.19
Oct-00	6.67%	10.08%	0.0046	34.88	31.75	33.31	2.00	6.06%	12.92%	0.0065		30.63
Nov-00	6.67%	10.08%	0.0047	43.00	34.00	38.50	2.00	6.25%	12.18%	0.0063		34.38
Dec-00				46.94	41.13	44.03	2.00	6.25%	11.42%	0.0059		39.44
Jan-01				44.63	35.88	40.25	2.04	6.25%	12.03%	0.0081		38.00
Feb-01				40.40	36.74	38.57	2.04	6.25%	12.29%	0.0083		34.19
Mar-01				41.95	37.01	39.48	2.04	6.25%	12.15%	0.0080		35.50
Apr-01	7.67%	11.07%	0.0057	41.12	37.80	39.46	2.04	6.25%	12.15%	0.0076		36.55
May-01	11.60%	15.08%	0.0074	41.15	38.45	39.80	2.04	5.57%	11.38%	0.0069		36.00
Jun-01	11.60%	15.21%	0.0077	42.30	38.65	40.48	2.04	5.57%	11.28%	0.0071		35.90
Jul-01	11.60%	15.49%	0.0060	40.75	34.35	37.55	2.04	5.43%	11.59%	0.0067		35.80
Aug-01	11.60%	15.91%	0.0063	39.91	36.56	38.24	2.04	5.57%	11.63%	0.0068		34.11
Sep-01	10.00%	14.69%	0.0062	39.98	36.81	38.40	2.04	5.57%	11.60%	0.0072		35.10
Oct-01	10.00%	14.21%	0.0060	42.94	37.70	40.32	2.04	5.57%	11.31%	0.0070		32.15
Nov-01	10.00%	14.16%	0.0060	40.35	37.54	38.95	2.04	5.57%	11.51%	0.0071		34.80
Dec-01	10.00%	14.21%	0.0064	38.68	35.40	37.04	2.04	5.58%	11.84%	0.0068		36.60
Jan-02	10.00%	14.18%	0.0067	38.99	35.50	37.25	2.04	5.58%	11.80%	0.0072		35.89

Discounted Cash Flow

Month Ending	Piedmont										
	OKE Growth	OKE DCF	OKE DCF	Peoples High	Peoples Low	Peoples Average	Peoples Dividend	Peoples Growth	Peoples DCF	Peoples DCF	PNY High
Feb-02	8.67%	12.77%	0.0067	37.40	35.25	36.33	2.08	5.58%	12.09%	0.0074	34.05
Mar-02	9.20%	12.90%	0.0067	39.98	37.06	38.52	2.08	5.58%	11.71%	0.0071	36.25
Apr-02	9.20%	12.61%	0.0065	40.18	38.01	39.09	2.08	5.58%	11.62%	0.0069	37.95
May-02	9.20%	12.48%	0.0062	40.45	38.00	39.23	2.08	5.58%	11.60%	0.0067	38.00
Jun-02	9.20%	12.66%	0.0065	39.40	36.05	37.73	2.08	5.75%	12.02%	0.0066	37.94
Jul-02	9.20%	13.12%	0.0068	37.97	29.07	33.52	2.08	5.69%	12.76%	0.0072	37.70
Aug-02	8.92%	12.69%	0.0062	33.95	27.80	30.88	2.08	5.75%	13.45%	0.0070	37.21
Sep-02	8.58%	12.38%	0.0064	35.32	32.51	33.92	2.08	5.75%	12.74%	0.0064	37.00
Oct-02	8.58%	12.57%	0.0063	36.60	31.06	33.83	2.08	5.50%	12.50%	0.0062	36.45
Nov-02	8.58%	12.46%	0.0062	37.25	33.69	35.47	2.08	5.50%	12.16%	0.0060	36.50
Dec-02	8.58%	12.33%	0.0061	38.99	35.41	37.20	2.08	5.50%	11.85%	0.0063	36.77
Jan-03	8.58%	12.85%	0.0063	40.35	36.14	38.24	2.12	5.50%	11.79%	0.0063	36.87
Feb-03	8.50%	13.20%	0.0065	37.56	35.31	36.44	2.12	5.00%	11.58%	0.0062	35.40
Mar-03	8.80%	13.23%	0.0072	36.43	34.93	35.68	2.12	5.25%	11.99%	0.0066	35.88
Apr-03	8.80%	13.00%	0.0070	39.34	35.16	37.25	2.12	4.74%	11.16%	0.0060	37.65
May-03	8.80%	12.84%	0.0068	44.60	38.46	41.53	2.12	4.99%	10.75%	0.0057	39.69
Jun-03	8.80%	12.72%	0.0083	45.25	42.45	43.85	2.12	4.99%	10.44%	0.0057	41.50
Jul-03	8.80%	12.66%	0.0084	44.30	40.89	42.60	2.12	4.99%	10.60%	0.0059	39.74
Aug-03	8.00%	11.92%	0.0079	41.36	39.53	40.45	2.12	5.14%	11.06%	0.0061	39.32
Sep-03	8.67%	12.44%	0.0072	42.56	40.06	41.31	2.12	5.14%	10.94%	0.0059	39.95
Oct-03	8.65%	12.52%	0.0072	42.72	40.03	41.38	2.12	5.14%	10.93%	0.0059	39.98
Nov-03	7.98%	12.20%	0.0070	40.90	38.82	39.86	2.12	4.80%	10.79%	0.0058	41.13
Dec-03	7.98%	11.92%	0.0070	42.64	40.06	41.35	2.12	4.80%	10.57%	0.0055	43.95
Jan-04	7.98%	11.67%	0.0072	43.26	41.37	42.32	2.12	5.00%	10.65%	0.0058	
Feb-04	7.98%	11.92%	0.0070	44.70	42.47	43.59	2.16	5.00%	10.59%	0.0055	41.86
Mar-04	7.73%	11.60%	0.0099	46.03	43.52	44.78	2.16	5.00%	10.43%	0.0063	43.06
Apr-04	7.73%	11.72%	0.0100	45.19	41.15	43.17	2.16	5.00%	10.64%	0.0064	43.03
May-04	6.50%	11.15%	0.0102	42.01	38.91	40.46	2.16	4.50%	10.50%	0.0068	41.05
Jun-04	6.50%	10.94%	0.0104	42.75	40.80	41.78	2.16	4.50%	10.30%	0.0065	43.18
Jul-04	6.33%	10.78%	0.0091	43.00	38.79	40.90	2.16	4.13%	10.04%	0.0054	42.92
Aug-04	6.33%	11.07%	0.0089	41.68	38.50	40.09	2.16	4.33%	10.37%	0.0053	21.73
Sep-04	6.33%	10.54%	0.0095	43.86	41.21	42.54	2.16	4.33%	10.02%	0.0058	22.55
Oct-04	6.33%	10.30%	0.0105	43.27	41.05	42.16	2.16	4.26%	10.00%	0.0062	23.03
Nov-04	6.40%	10.56%	0.0107	45.25	42.55	43.90	2.16	4.26%	9.77%	0.0060	24.35
Dec-04	6.40%	10.47%	0.0112	45.38	43.46	44.42	2.16	4.26%	9.70%	0.0063	23.89
Jan-05	6.40%	10.50%	0.0103	44.32	41.95	43.14	2.18	4.26%	9.92%	0.0056	23.50
Feb-05	6.50%	10.45%	0.0096	44.00	41.80	42.90	2.18	4.26%	9.95%	0.0054	24.27
Mar-05	6.50%	10.26%	0.0099	45.10	41.11	43.11	2.18	4.26%	9.92%	0.0052	24.44
Apr-05	6.50%	10.31%	0.0098	42.68	38.75						23.40
May-05	6.50%	10.77%	0.0102	42.89	39.40						24.70
Jun-05	7.00%	11.04%	0.0105	44.97	42.62						24.99
Jul-05	7.00%	10.80%	0.0100	45.52	42.43						24.91
Aug-05	7.00%	10.76%	0.0100	43.43	39.80						24.82
Sep-05	7.00%	10.77%	0.0077	43.46	38.71						25.80

Discounted Cash Flow

Month Ending	Piedmont										
	OKE Growth	OKE DCF	OKE DCF	Peoples High	Peoples Low	Peoples Average	Peoples Dividend	Peoples Growth	Peoples DCF	Peoples DCF	PNY High
Oct-05	6.00%	10.02%	0.0072	39.90	34.34						25.45
Nov-05	7.00%	11.64%	0.0088	37.25	35.41						23.62
Dec-05	6.88%	11.57%	0.0081	37.96	34.88	36.42	2.18	4.47%	11.21%	0.0042	
Jan-06	6.88%	11.41%	0.0077	37.56	35.11	36.34	2.18	3.97%	10.69%	0.0038	24.94
Feb-06											
Mar-06				37.97	35.35						
Apr-06	6.42%	10.56%	0.0149	37.16	35.33	36.25	2.18	4.53%	11.31%	0.0057	
May-06	6.88%	11.18%	0.0131	37.59	35.34	36.47	2.18	4.53%	11.26%	0.0047	24.88
Jun-06	6.88%	10.95%	0.0134								25.4
Jul-06	6.88%	10.74%	0.0134								26.17
Aug-06	6.88%	10.46%	0.0130								26.18
Sep-06	6.88%	10.72%	0.0139								26.46
Oct-06	7.46%	11.14%	0.0145								
Nov-06	7.46%	11.01%	0.0151								
Dec-06	7.46%	10.82%	0.0149								
Jan-07	7.82%	11.29%	0.0139								27.25
Feb-07	7.65%	11.33%	0.0144								26.96
Mar-07	8.20%	11.87%	0.0160								27.31
Apr-07	8.20%	11.56%	0.0156								27.50
May-07	8.80%	11.86%	0.0162								27.50
Jun-07	8.80%	11.86%	0.0162								27.47
Jul-07	8.80%	11.95%	0.0168								
Aug-07	8.80%	12.35%	0.0173								
Sep-07	8.80%	12.37%	0.0174								
Oct-07	8.80%	12.24%	0.0153								
Nov-07	8.80%	12.20%	0.0153								
Dec-07	8.80%	12.44%	0.0156								
Jan-08	8.80%	12.60%	0.0168								
Feb-08	9.07%	12.77%	0.0159								25.95
Mar-08	9.07%	12.90%	0.0160								27.32
Apr-08	9.07%	12.82%	0.0157								27.68
May-08	8.60%	12.19%	0.0124								27.42
Jun-08	8.60%	12.20%	0.0128								27.95
Jul-08	9.07%	12.81%	0.0163								27.06
Aug-08	9.07%	13.07%	0.0161								29.20
Sep-08	8.60%	13.31%	0.0155								35.29
Oct-08	9.07%	15.71%	0.0199								33.96
Nov-08	9.07%	15.78%	0.0182								34.19
Dec-08	9.07%	16.00%	0.0164								32.94
Jan-09	9.07%	15.45%	0.0144								31.98
Feb-09	9.07%	16.51%	0.0149								27.55
Mar-09	7.25%	16.13%	0.0163								26.74
Apr-09	7.25%	14.83%	0.0150								26.75
May-09	7.25%	13.99%	0.0195								24.86

Discounted Cash Flow

Month Ending											Piedmont
	OKE Growth	OKE DCF	OKE DCF	Peoples High	Peoples Low	Peoples Average	Peoples Dividend	Peoples Growth	Peoples DCF	Peoples DCF	PNY High
Jun-09	7.25%	13.57%	0.0189								25.50
Jul-09	7.25%	13.61%	0.0143								25.18
Aug-09	7.25%	12.86%	0.0141								25.87
Sep-09	7.25%	12.79%	0.0140								24.58
Oct-09	9.07%	14.24%	0.0164								24.05
Nov-09	9.07%	14.24%	0.0164								24.05
Dec-09	9.07%	13.70%	0.0158								27.84
Jan-10	10.00%	14.67%	0.0262								27.10
Feb-10	9.55%	14.43%	0.0265								25.98
Mar-10	7.23%	11.62%	0.0225								28.04

Discounted Cash Flow

Month Ending	PNY Low	PNY Average	PNY Dividend	PNY Growth	PNY DCF	PNY DCF	Semco High	Semco Low	Semco Average	Semco Dividend	Semco Growth
Jun-98		32.94	33.38	1.30	7.33%	11.80%	0.0071	17.75	17.38	17.56	0.76
Jul-98		28.88	31.75	1.30	7.33%	12.03%	0.0077	18.00	17.00	17.50	0.80
Aug-98		27.88	29.38	1.30	7.33%	12.42%	0.0061	17.25	13.50	15.38	0.80
Sep-98		28.06	31.28	1.30	7.33%	12.10%	0.0058	15.75	13.13	14.44	0.80
Oct-98		32.38	33.91	1.30	7.33%	11.73%	0.0060	17.25	14.50	15.88	0.80
Nov-98		32.75	34.13	1.30	6.75%	11.10%	0.0057	17.50	15.75	16.63	0.80
Dec-98		33.75	34.94	1.30	6.75%	10.99%	0.0056	17.25	15.50	16.38	0.80
Jan-99		30.00	33.31	1.30	6.75%	11.20%	0.0057	17.50	15.88	16.69	0.80
Feb-99		28.63	31.72	1.30	6.75%	11.43%	0.0058	16.38	14.75	15.56	0.80
Mar-99		32.88	33.94	1.30	6.60%	10.96%	0.0054	15.94	14.25	15.09	0.80
Apr-99		31.13	33.50	1.38	6.10%	10.78%	0.0061	16.88	14.00	15.44	0.80 12.17%
May-99		31.06	32.50	1.38	6.10%	10.92%	0.0060	15.00	13.25	14.13	0.80 12.17%
Jun-99		30.75	32.31	1.38	6.10%	10.95%	0.0060	15.56	13.25	14.41	0.80 12.17%
Jul-99		30.69	32.53	1.38	6.10%	10.92%	0.0053	16.00	15.13	15.56	0.82 12.17%
Aug-99		32.75	33.47	1.38	6.10%	10.78%	0.0052	16.00	14.00	15.00	0.82 12.17%
Sep-99		30.31	32.16	1.38	6.10%	10.97%	0.0053	14.75	13.00	13.88	0.82 12.17%
Oct-99		30.25	31.38	1.38	6.10%	11.10%	0.0053	15.38	13.63	14.50	0.82
Nov-99		30.50	31.84	1.38	6.10%	11.02%	0.0053	14.25	13.13	13.69	0.82
Dec-99		28.94	30.91	1.38	6.07%	11.14%	0.0054	13.88	10.94	12.41	0.82
Jan-00		28.25	29.47	1.38	6.07%	11.40%	0.0059	12.88	11.25	12.06	0.82 8.25%
Feb-00		23.69	26.69	1.38	6.07%	11.96%	0.0062	14.00	11.00	12.50	0.82 8.60%
Mar-00		24.00	25.38	1.38	6.00%	12.20%	0.0061	12.25	10.75	11.50	0.82 8.60%
Apr-00		25.19	26.72	1.46	6.00%	12.23%	0.0054	13.13	11.13	12.13	0.84 8.60%
May-00		27.00	28.69	1.46	5.67%	11.45%	0.0053	15.00	11.81	13.41	0.84 8.60%
Jun-00		26.56	28.94	1.46	5.67%	11.39%	0.0052	13.94	11.50	12.72	0.84 8.60%
Jul-00		26.88	28.00	1.46	5.67%	11.59%	0.0053	15.19	12.25	13.72	0.84 8.60%
Aug-00		26.50	28.22	1.46	5.67%	11.54%	0.0052	16.06	14.25	15.16	0.84 8.60%
Sep-00		27.13	29.16	1.46	5.67%	11.35%	0.0048	16.94	14.50	15.72	0.84 8.60%
Oct-00		28.25	29.44	1.46	5.67%	11.30%	0.0045	15.94	13.75	14.84	0.84 8.60%
Nov-00		29.19	31.78	1.46	5.67%	10.87%	0.0044	16.63	14.81	15.72	0.84 8.60%
Dec-00		32.50	35.97	1.46	5.67%	10.26%	0.0042	16.13	14.50	15.31	0.84 8.60%
Jan-01		33.00	35.50	1.46	5.43%	10.07%	0.0046	15.44	13.19	14.31	0.84 8.25%
Feb-01		31.75	32.97	1.46	5.43%	10.43%	0.0048	15.10	13.81	14.46	0.84 7.75%
Mar-01		31.82	33.66	1.46	5.43%	10.33%	0.0047	14.50	13.53	14.01	0.84 7.75%
Apr-01		34.20	35.38	1.54	5.43%	10.34%	0.0045	15.05	13.85	14.45	0.84 7.75%
May-01		34.01	35.00	1.54	5.43%	10.40%	0.0043	15.20	14.00	14.60	0.84 7.28%
Jun-01		33.56	34.73	1.54	5.43%	10.44%	0.0045	14.98	13.61	14.29	0.84 7.28%
Jul-01		32.15	33.98	1.54	5.33%	10.45%	0.0047	15.24	14.05	14.64	0.84 7.28%
Aug-01		31.93	33.02	1.54	5.00%	10.25%	0.0047	15.75	14.10	14.93	0.84 7.14%
Sep-01		29.19	32.14	1.54	4.75%	10.13%	0.0050	14.70	13.90	14.30	0.84 6.54%
Oct-01		30.01	31.08	1.54	4.75%	10.32%	0.0050	14.85	11.43	13.14	0.84 6.54%
Nov-01		30.55	32.67	1.54	4.75%	10.04%	0.0049	12.90	11.25	12.07	0.84 6.54%
Dec-01		32.60	34.60	1.54	4.67%	9.66%	0.0048	12.12	8.88	10.50	0.84 6.40%
Jan-02		32.90	34.40	1.54	4.67%	9.69%	0.0048	11.40	9.91	10.66	0.84 5.50%

Discounted Cash Flow

Month Ending	PNY Low	PNY Average	PNY Dividend	PNY Growth	PNY DCF	PNY DCF	Semco High	Semco Low	Semco Average	Semco Dividend	Semco Growth
Feb-02		31.79	32.92	1.60	4.67%	10.13%	0.0050				
Mar-02		32.01	34.13	1.60	4.50%	9.75%	0.0046				
Apr-02		35.00	36.48	1.60	4.50%	9.41%	0.0044				
May-02		35.00	36.50	1.60	4.50%	9.41%	0.0043				
Jun-02		33.68	35.81	1.60	4.50%	9.50%	0.0041				
Jul-02		27.35	32.53	1.60	4.50%	10.02%	0.0044				
Aug-02		32.80	35.00	1.60	4.50%	9.62%	0.0045				
Sep-02		33.62	35.31	1.60	4.50%	9.57%	0.0047				
Oct-02		31.55	34.00	1.60	4.50%	9.77%	0.0049	8.15	6.85		
Nov-02		32.76	34.63	1.60	4.50%	9.68%	0.0048	7.37	6.40		
Dec-02		34.25	35.51	1.60	4.50%	9.55%	0.0047	7.25	5.60		
Jan-03		33.95	35.41	1.66	4.50%	9.75%	0.0048	6.20	4.49		
Feb-03		33.22	34.31	1.66	4.50%	9.92%	0.0049	4.94	3.15		
Mar-03		33.53	34.70	1.66	4.50%	9.86%	0.0046	4.26	3.52		
Apr-03		35.15	36.40	1.66	4.50%	9.61%	0.0044	5.65	3.51		
May-03		36.53	38.11	1.66	4.67%	9.55%	0.0043	7.34	5.03		
Jun-03		38.78	40.14	1.66	5.00%	9.65%	0.0043				
Jul-03		37.38	38.56	1.66	5.00%	9.84%	0.0044				
Aug-03		37.23	38.28	1.66	5.20%	10.09%	0.0046				
Sep-03		38.69	39.32	1.66	5.20%	9.95%	0.0047				
Oct-03		38.85	39.42	1.66	5.20%	9.94%	0.0047				
Nov-03		39.41	40.27	1.66	5.20%	9.84%	0.0046				
Dec-03		40.71	42.33	1.66	5.20%	9.61%	0.0046				
Jan-04											
Feb-04		40.39	41.13	1.72	5.00%	9.70%	0.0047				
Mar-04		40.70	41.88	1.72	4.75%	9.35%	0.0047				
Apr-04		39.80	41.42	1.72	4.75%	9.40%	0.0047				
May-04		38.32	39.69	1.72	4.80%	9.66%	0.0051				
Jun-04		40.53	41.86	1.72	4.50%	9.09%	0.0058				
Jul-04		40.30	41.61	1.72	4.50%	9.12%	0.0049				
Aug-04		20.45	21.09	0.86	4.50%	9.06%	0.0049				
Sep-04		21.50	22.03	0.86	4.50%	8.86%	0.0054				
Oct-04		21.92	22.48	0.86	4.63%	8.91%	0.0058				
Nov-04		22.70	23.53	0.86	4.63%	8.71%	0.0057				
Dec-04		22.75	23.32	0.86	5.20%	9.34%	0.0065				
Jan-05		22.01	22.76	0.92	5.20%	9.75%	0.0059				
Feb-05		22.65	23.46	0.92	5.25%	9.66%	0.0056				
Mar-05		22.63	23.54	0.92	5.25%	9.65%	0.0055				
Apr-05		21.76	22.58	0.92	5.25%	9.84%	0.0057				
May-05		22.84	23.77	0.92	4.98%	9.32%	0.0054				
Jun-05		23.34	24.17	0.92	4.73%	8.99%	0.0047				
Jul-05		23.76	24.34	0.92	4.73%	8.96%	0.0046				
Aug-05		23.22	24.02	0.92	4.73%	9.02%	0.0046				
Sep-05		24.33	25.07	0.92	5.00%	9.12%	0.0043				

Discounted Cash Flow

Month Ending	PNY Low	PNY Average	PNY Dividend	PNY Growth	PNY DCF	PNY DCF	Semco High	Semco Low	Semco Average	Semco Dividend	Semco Growth
Oct-05		22.33	23.89	0.92	5.00%	9.32%	0.0044				
Nov-05		21.52	22.57	0.92							
Dec-05											
Jan-06		23.83									
Feb-06											
Mar-06											
Apr-06											
May-06		23.31	24.10	0.96	4.40%	8.85%	0.0050				
Jun-06		23.46	24.43	0.96	4.40%	8.79%	0.0051				
Jul-06		24.3	25.24	0.96	4.40%	8.64%	0.0046				
Aug-06		25.04	25.61	0.96	4.30%	8.48%	0.0046				
Sep-06		24.72	25.59	0.96	4.30%	8.48%	0.0047				
Oct-06											
Nov-06											
Dec-06											
Jan-07		25.78	26.52	0.96	4.15%	8.18%	0.0041				
Feb-07		24.55	25.76	0.96	4.33%	8.48%	0.0044				
Mar-07		24.33	25.82	0.96							
Apr-07		26.22	26.86	0.96							
May-07		25.74	26.62	0.96							
Jun-07		24.37	25.92	0.96							
Jul-07											
Aug-07											
Sep-07											
Oct-07											
Nov-07											
Dec-07											
Jan-08											
Feb-08		24.28	25.12	1.00	5.17%	9.65%	0.0047				
Mar-08		24.05	25.69	1.00	5.17%	9.55%	0.0046				
Apr-08		26.03	26.86	1.04	5.54%	9.91%	0.0047				
May-08		25.70	26.56	1.04	5.54%	9.96%	0.0041				
Jun-08		25.23	26.59	1.04	5.54%	9.95%	0.0042				
Jul-08		25.00	26.03	1.04	5.75%	10.27%	0.0054				
Aug-08		26.19	27.70	1.04	5.75%	9.99%	0.0057				
Sep-08		27.53	31.41	1.04	7.93%	11.74%	0.0099				
Oct-08		20.52	27.24	1.04	7.93%	12.33%	0.0107				
Nov-08		28.85	31.52	1.04	7.93%	11.73%	0.0109				
Dec-08		29.21	31.08	1.04	7.87%	11.72%	0.0080				
Jan-09		24.77	28.38	1.04	7.13%	11.32%	0.0072				
Feb-09		23.62	25.59	1.04	7.13%	11.79%	0.0080				
Mar-09		20.68	23.71	1.08	7.00%	12.22%	0.0076				
Apr-09		24.11	25.43	1.08	7.00%	11.86%	0.0074				
May-09		21.65	23.26	1.08	6.77%	12.09%	0.0096				

Discounted Cash Flow

Month Ending	PNY Low	PNY Average	PNY Dividend	PNY Growth	PNY DCF	PNY DCF	Semco High	Semco Low	Semco Average	Semco Dividend	Semco Growth
Jun-09		22.71	24.11	1.08	6.77%	11.90%	0.0094				
Jul-09		22.50	23.84	1.08	6.20%	11.36%	0.0057				
Aug-09		23.48	24.68	1.08	6.20%	11.18%	0.0055				
Sep-09		23.10	23.84	1.08	6.20%	11.36%	0.0056				
Oct-09		22.51	23.28	1.08	7.87%	13.23%	0.0106				
Nov-09		22.51	23.28	1.08	7.87%	13.23%	0.0106				
Dec-09		23.66	25.75	1.08	7.87%	12.71%	0.0102				
Jan-10		25.51	26.31	1.08	7.00%	11.70%	0.0086				
Feb-10		23.87	24.93	1.12	7.00%	12.15%	0.0089				
Mar-10		25.95	27.00	1.12	7.00%	11.75%	0.0089				

Discounted Cash Flow

Month Ending	South Jersey								
	Semco	Semco	SJI	SJI	SJI	SJI	SJI	SJI	SJI
	DCF	DCF	High	Low	Average	Dividend	Growth	DCF	DCF
Jun-98				27.88	27.25	27.56	1.44		
Jul-98				27.88	25.50	26.69	1.44		
Aug-98				26.38	22.75	24.56	1.44		
Sep-98				26.31	22.00	24.16	1.44		
Oct-98				27.00	25.44	26.22	1.44		
Nov-98				26.13	25.00	25.56	1.44		
Dec-98				26.25	25.06	25.66	1.44		
Jan-99				26.69	25.50	26.09	1.44		
Feb-99				25.50	21.50	23.50	1.44		
Mar-99				25.00	21.63	23.31	1.44		
Apr-99	18.42%	0.0024		24.81	21.63	23.22	1.44		
May-99	19.01%	0.0024		30.00	23.06	26.53	1.44		
Jun-99	18.87%	0.0023		28.69	26.81	27.75	1.44		
Jul-99	18.52%	0.0022		30.75	28.19	29.47	1.44		
Aug-99	18.77%	0.0023		30.75	28.38	29.56	1.44		
Sep-99	19.31%	0.0023		30.13	26.06	28.09	1.44		
Oct-99				27.38	25.50	26.44	1.44	3.67%	9.74%
Nov-99				30.25	26.13	28.19	1.44	3.67%	9.36%
Dec-99				29.50	28.00	28.75	1.44	3.67%	9.24%
Jan-00	16.21%	0.0019		29.50	28.38	28.94	1.46	4.33%	9.98%
Feb-00	16.30%	0.0019		29.63	28.75	29.19	1.46	4.33%	9.93%
Mar-00	16.98%	0.0020		29.44	27.56	28.50	1.46	4.50%	10.25%
Apr-00	16.74%	0.0018		28.81	26.56	27.69	1.46	5.00%	10.95%
May-00	15.94%	0.0018		27.00	25.94	26.47	1.46	5.00%	11.23%
Jun-00	16.35%	0.0019		27.63	24.50	26.06	1.46	5.00%	11.33%
Jul-00	15.77%	0.0017		27.56	26.06	26.81	1.46	5.00%	11.15%
Aug-00	15.08%	0.0016		27.75	26.38	27.06	1.46	5.00%	11.09%
Sep-00	14.84%	0.0015		29.25	26.94	28.09	1.46	5.00%	10.86%
Oct-00	15.22%	0.0019		30.13	28.25	29.19	1.46	5.20%	10.85%
Nov-00	14.84%	0.0019		29.75	28.56	29.16	1.46	5.25%	10.91%
Dec-00	15.01%	0.0020		29.81	29.00	29.41	1.46	5.25%	10.86%
Jan-01	15.09%	0.0017		32.25	29.19	30.72	1.46	5.25%	10.62%
Feb-01	14.49%	0.0017		32.00	29.00	30.50	1.46	5.25%	10.65%
Mar-01	14.71%	0.0017		31.85	27.60	29.73	1.46	5.25%	10.80%
Apr-01	14.50%	0.0014		30.95	29.05	30.00	1.48	6.00%	11.61%
May-01	13.93%	0.0013		31.55	29.95	30.75	1.48	6.00%	11.47%
Jun-01	14.07%	0.0014		31.12	29.95	30.54	1.48	6.00%	11.51%
Jul-01	13.91%	0.0015		31.95	30.65	31.30	1.48	6.00%	11.38%
Aug-01	13.63%	0.0015		32.65	30.75	31.70	1.48	5.67%	10.96%
Sep-01	13.28%	0.0016		32.96	29.30	31.13	1.48	5.83%	11.23%
Oct-01	13.89%	0.0016		34.00	30.41	32.20	1.48	5.83%	11.04%
Nov-01	14.56%	0.0017		34.08	32.57	33.33	1.48	5.83%	10.86%
Dec-01	15.65%	0.0014		34.10	32.50	33.30	1.48	6.20%	11.26%
Jan-02	14.53%	0.0013		32.79	31.40	32.10	1.48	6.20%	11.45%

Discounted Cash Flow

	South Jersey									
	Semco	Semco	SJI	SJI	SJI	SJI	SJI	SJI	SJI	
Month Ending	DCF	DCF	High	Low	Average	Dividend	Growth		DCF	DCF
Feb-02				31.65	29.95	30.80	1.48	6.20%	11.67%	0.0019
Mar-02				32.70	30.30	31.50	1.48	5.33%	10.64%	0.0017
Apr-02				35.50	31.70	33.60	1.50	5.33%	10.37%	0.0017
May-02				36.65	34.19	35.42	1.50	5.33%	10.10%	0.0016
Jun-02				35.05	32.30	33.67	1.50	5.33%	10.36%	0.0016
Jul-02				36.05	28.20	32.13	1.50	5.33%	10.60%	0.0017
Aug-02				33.60	31.80	32.70	1.50	5.33%	10.51%	0.0018
Sep-02				33.10	31.01	32.06	1.50	5.33%	10.61%	0.0018
Oct-02				33.30	31.40	32.35	1.50	5.33%	10.57%	0.0016
Nov-02				32.60	31.50	32.05	1.50	5.33%	10.62%	0.0016
Dec-02				33.65	32.24					
Jan-03				33.75	31.75					
Feb-03				32.41	30.55					
Mar-03				32.05	30.94					
Apr-03				35.15	31.54					
May-03				37.75	34.80					
Jun-03										
Jul-03										
Aug-03										
Sep-03										
Oct-03										
Nov-03										
Dec-03										
Jan-04										
Feb-04										
Mar-04										
Apr-04										
May-04										
Jun-04										
Jul-04										
Aug-04										
Sep-04										
Oct-04										
Nov-04										
Dec-04										
Jan-05										
Feb-05										
Mar-05										
Apr-05				29.68	26.66					
May-05				29.00	27.23					
Jun-05				31.50	28.42					
Jul-05				32.38	28.54					
Aug-05				29.85	27.73					
Sep-05				29.96	28.46					

Discounted Cash Flow

Month Ending	Semco		South Jersey		SJL Average	SJL Dividend	SJL Growth	SJL DCF	SJL DCF
	DCF	DCF	SJI High	SJI Low					
Oct-05				29.24	25.80				
Nov-05				29.61	26.22				
Dec-05									
Jan-06									
Feb-06									
Mar-06				28.84	26.72				
Apr-06				27.48	25.80	26.64	0.90	5.30%	9.09% 0.0026
May-06				27.89	25.63	26.76	0.90	5.30%	9.08% 0.0021
Jun-06				27.52	25.80	26.66	0.90	5.30%	9.09% 0.0022
Jul-06									
Aug-06									
Sep-06									
Oct-06				31.33	29.10	30.22	0.90	6.00%	9.36% 0.0024
Nov-06				33.35	30.35	31.85	0.90	6.33%	9.53% 0.0027
Dec-06				34.26	32.42	33.34	0.90	6.33%	9.38% 0.0026
Jan-07				33.95	31.81	32.88	0.98	7.00%	10.40% 0.0027
Feb-07				35.30	33.05	34.18	0.98	6.67%	9.93% 0.0027
Mar-07				38.56	33.02	35.79	0.98	6.75%	9.86% 0.0029
Apr-07				40.28	37.06	38.67	0.98	6.75%	9.63% 0.0028
May-07				41.27	37.93	39.60	0.98	7.25%	10.07% 0.0026
Jun-07				39.28	34.53	36.91	0.98	7.25%	10.28% 0.0027
Jul-07				36.48	32.37	34.43	0.98	7.00%	10.24% 0.0030
Aug-07				35.98	31.20	33.59	0.98	7.00%	10.32% 0.0031
Sep-07				36.41	31.83	34.12	0.98	7.00%	10.27% 0.0030
Oct-07				37.78	33.80	35.79	0.98	7.00%	10.12% 0.0029
Nov-07				38.50	35.32	36.91	0.98	7.00%	10.02% 0.0029
Dec-07				38.03	34.73	36.38	0.98	7.00%	10.07% 0.0029
Jan-08				38.41	33.82	36.12	1.03	6.63%	9.87% 0.0028
Feb-08				36.88	34.05	35.47	1.03	6.60%	9.90% 0.0027
Mar-08				35.71	31.90	33.81	1.03	6.60%	10.07% 0.0028
Apr-08				37.54	35.31	36.43	1.08	6.60%	9.97% 0.0027
May-08				39.25	36.36	37.81	1.08	6.60%	9.84% 0.0024
Jun-08				39.36	36.70	38.03	1.08	6.60%	9.82% 0.0024
Jul-08				38.90	36.00	37.45	1.08	7.00%	10.29% 0.0030
Aug-08				37.47	33.10	35.29	1.08	6.67%	10.15% 0.0029
Sep-08									
Oct-08									
Nov-08									
Dec-08				40.58	33.58	37.08	1.14	7.00%	10.49% 0.0040
Jan-09				40.78	35.33	38.06	1.14	7.50%	10.92% 0.0039
Feb-09				38.68	34.66	36.67	1.14	7.50%	11.05% 0.0046
Mar-09				35.93	31.98	33.96	1.19	7.00%	11.00% 0.0040
Apr-09				36.20	33.70	34.95	1.19	7.00%	10.89% 0.0039
May-09				36.20	33.04	34.62	1.19	9.67%	13.69% 0.0066

Discounted Cash Flow

	South Jersey									
	Semco	Semco	SJI	SJI	SJI	SJI	SJI	SJI	SJI	
Month Ending	DCF	DCF	High	Low	Average	Dividend	Growth		DCF	DCF
Jun-09				35.13	33.23	34.18	1.19	9.67%	13.74%	0.0066
Jul-09				37.53	33.96	35.75	1.19	9.63%	13.52%	0.0040
Aug-09				37.32	34.42	35.87	1.19	9.63%	13.51%	0.0042
Sep-09				35.68	33.12	34.40	1.19	9.63%	13.68%	0.0042
Oct-09				36.68	34.07	35.37	1.32	7.00%	11.27%	
Nov-09				36.68	34.07	35.37	1.32	7.00%	11.27%	
Dec-09				40.24	36.09	38.17	1.32	7.00%	10.95%	
Jan-10				39.25	37.39	38.32	1.32	11.67%	15.77%	0.0070
Feb-10				40.50	37.19	38.85	1.32	13.50%	17.61%	0.0079
Mar-10				42.50	39.63	41.07	1.32	11.67%	15.50%	0.0077

Discounted Cash Flow

Month Ending	Southwest									UGI		
	SWX	SWX	SWX	SWX	SWX	SWX	SWX	SWX		UGI	UGI	UGI
	High	Low	Average	Dividend	Growth	DCF	DCF	DCF		High	Low	Average
Jun-98		25.00	23.88	24.44	0.82	4.53%	8.27%	0.0029		25.13	23.75	24.44
Jul-98		24.50	22.69	23.59	0.82	4.53%	8.41%	0.0035		25.81	23.44	24.63
Aug-98		23.94	17.38	20.66	0.82	8.18%	12.77%	0.0040		24.06	21.88	22.97
Sep-98		20.69	18.06	19.38	0.82	8.18%	13.08%	0.0040		23.75	20.50	22.13
Oct-98		24.13	20.19	22.16	0.82	8.18%	12.46%	0.0036		23.88	22.19	23.03
Nov-98		24.94	22.00	23.47	0.82	8.18%	12.21%	0.0036		25.75	22.88	24.31
Dec-98		26.88	23.19	25.03	0.82	4.83%	8.49%	0.0025		24.63	21.63	23.13
Jan-99		26.69	25.81	26.25	0.82	4.83%	8.32%	0.0034		24.38	21.38	22.88
Feb-99		29.00	25.25	27.13	0.82	4.53%	7.90%	0.0032		22.44	19.56	21.00
Mar-99		28.94	26.50	27.72	0.82	4.90%	8.20%	0.0032		20.38	15.00	17.69
Apr-99		29.50	26.88	28.19	0.82	4.90%	8.15%	0.0034		17.94	16.56	17.25
May-99		29.50	28.13	28.81	0.82	4.90%	8.08%	0.0033		21.00	17.06	19.03
Jun-99		28.69	28.00	28.34	0.82	4.90%	8.13%	0.0033		20.44	19.31	19.88
Jul-99		29.13	28.63	28.88	0.82	4.90%	8.07%	0.0033		23.88	19.75	21.81
Aug-99		28.94	27.75	28.34	0.82	4.90%	8.13%	0.0033		24.69	22.81	23.75
Sep-99		28.75	26.88	27.81	0.82	4.90%	8.19%	0.0033		24.19	22.38	23.28
Oct-99		27.31	22.88	25.09	0.82	5.00%	8.66%	0.0035		24.00	22.25	23.13
Nov-99		24.81	22.88	23.84	0.82	5.00%	8.85%	0.0036		23.94	19.13	21.53
Dec-99		23.63	20.38	22.00	0.82	5.00%	9.18%	0.0038		22.13	19.31	20.72
Jan-00		23.00	19.00	21.00	0.82	5.00%	9.38%	0.0033		22.25	19.88	21.06
Feb-00		19.94	17.06	18.50	0.82	5.00%	9.99%	0.0036		21.25	18.56	19.91
Mar-00		19.94	17.50	18.72	0.82	5.00%	9.93%	0.0034		22.31	18.19	20.25
Apr-00		19.38	17.75	18.56	0.82	5.00%	9.97%	0.0033		22.44	19.75	21.09
May-00		20.19	18.00	19.09	0.82	5.00%	9.83%	0.0034		22.63	20.56	21.59
Jun-00		19.69	17.50	18.59	0.82	5.00%	9.96%	0.0034		22.25	20.13	21.19
Jul-00		18.56	16.88	17.72	0.82	5.00%	10.21%	0.0029		22.44	20.56	21.50
Aug-00		19.25	17.13	18.19	0.82	4.75%	9.81%	0.0028		23.31	21.44	22.38
Sep-00		21.25	18.94	20.09	0.82	4.75%	9.32%	0.0025		24.31	22.31	23.31
Oct-00		22.50	20.06	21.28	0.82	4.75%	9.06%	0.0024		24.69	21.38	23.03
Nov-00		20.88	19.38	20.13	0.82	4.75%	9.32%	0.0025		24.00	22.13	23.06
Dec-00		22.44	19.31	20.88	0.82	4.75%	9.15%	0.0025		26.31	22.38	24.34
Jan-01		22.44	19.50	20.97	0.82	4.75%	9.13%	0.0026		25.38	22.50	23.94
Feb-01		23.10	20.79	21.95	0.82	4.75%	8.93%	0.0025		25.20	23.18	24.19
Mar-01		21.15	19.16	20.15	0.82	4.75%	9.31%	0.0026		25.10	23.13	24.11
Apr-01		21.20	19.90	20.55	0.82	4.75%	9.22%	0.0024		26.98	24.20	25.59
May-01		23.45	20.46	21.95	0.82	4.67%	8.85%	0.0022		27.90	25.50	26.70
Jun-01		24.67	23.08	23.88	0.82	4.67%	8.51%	0.0022		27.26	25.42	26.34
Jul-01		24.24	22.75	23.49	0.82	4.67%	8.57%	0.0024		27.30	25.30	26.30
Aug-01		24.40	22.52	23.46	0.82	4.67%	8.57%	0.0024		29.48	26.50	27.99
Sep-01		23.23	18.61							29.10	25.12	27.11
Oct-01		22.56	20.31							29.40	26.69	28.05
Nov-01		21.60	20.48							30.42	28.93	29.68
Dec-01										31.53	29.33	30.43
Jan-02										31.15	27.77	29.46

Discounted Cash Flow

Month Ending	Southwest			SWX Dividend	SWX Growth	SWX DCF	SWX DCF	UGI		
	SWX High	SWX Low	SWX Average					UGI High	UGI Low	UGI Average
Feb-02								29.35	27.09	28.22
Mar-02								31.49	28.45	29.97
Apr-02								33.21	30.99	32.10
May-02	24.75	23.40	24.07	0.82	5.00%	8.82%	0.0028	32.95	31.00	31.98
Jun-02	24.75	23.01	23.88	0.82	5.00%	8.85%	0.0027	32.47	29.40	30.94
Jul-02	24.75	18.10	21.43	0.82	5.00%	9.29%	0.0029	33.08	25.67	29.38
Aug-02	23.65	21.15	22.40	0.82	5.75%	9.88%	0.0030	36.48	30.90	33.69
Sep-02	22.50	20.60	21.55	0.82	5.00%	9.27%	0.0029	36.76	33.58	35.17
Oct-02	22.75	19.82	21.28	0.82	5.00%	9.32%	0.0028	26.23	23.27	24.75
Nov-02	22.90	21.40	22.15	0.82	5.00%	9.15%	0.0027	26.99	24.53	25.76
Dec-02	23.63	22.00	22.81	0.82	5.00%	9.03%	0.0029	25.43	24.47	24.95
Jan-03	23.64	21.11	22.38	0.82	5.00%	9.11%	0.0029	27.89	24.93	26.41
Feb-03	21.96	19.92	20.94	0.82	4.75%	9.14%	0.0029	28.37	26.03	27.20
Mar-03	20.89	19.30	20.09	0.82	5.00%	9.58%	0.0026	30.57	27.41	28.99
Apr-03	21.28	19.74	20.51	0.82	5.00%	9.49%	0.0026	32.55	29.00	30.77
May-03	21.77	20.05	20.91	0.82	5.25%	9.66%	0.0026	34.49	30.60	32.55
Jun-03	22.45	20.78	21.62	0.82	5.25%	9.52%	0.0024	35.05	30.70	32.88
Jul-03	21.72	20.14	20.93	0.82	5.25%	9.66%	0.0025	33.45	30.90	32.18
Aug-03	22.83	20.80	21.82	0.82	5.25%	9.48%	0.0025	31.45	28.95	30.20
Sep-03	23.49	22.25	22.87	0.82	5.45%	9.49%	0.0026	31.09	28.86	29.98
Oct-03	23.48	22.28	22.88	0.82	5.45%	9.48%	0.0026	31.44	28.85	30.15
Nov-03	23.15	22.01	22.58	0.82	5.50%	9.59%	0.0026	32.69	30.57	31.63
Dec-03	23.18	22.05	22.62	0.82	5.50%	9.58%	0.0025	34.20	32.10	33.15
Jan-04	24.05	22.39	23.22	0.82	5.33%	9.30%	0.0025	34.35	31.40	32.88
Feb-04	23.99	22.68	23.34	0.82	5.33%	9.28%	0.0024	33.10	31.90	32.50
Mar-04	23.57	22.81	23.19	0.82	5.33%	9.31%	0.0026	33.47	31.80	
Apr-04	24.06	22.75	23.41	0.82	5.33%	9.27%	0.0026	33.40	31.29	
May-04	23.36	21.50						32.14	29.85	
Jun-04	24.20	22.29								
Jul-04	24.46	22.70	23.58	0.82	3.70%	7.55%	0.0021			
Aug-04	23.82	22.87	23.35	0.82	3.70%	7.59%	0.0020			
Sep-04	24.15	23.15	23.65	0.82	3.70%					
Oct-04	24.68	23.45	24.07	0.82	3.70%					
Nov-04	25.98	24.42	25.20	0.82	3.70%					
Dec-04	26.15	24.46	25.31	0.82	3.70%					
Jan-05	25.68	24.00	24.84	0.82	3.70%	7.35%	0.0022			
Feb-05	25.90	24.00	24.95	0.82	6.47%	10.20%	0.0030			
Mar-05	26.13	23.66	24.90	0.82	6.47%	10.21%	0.0029			
Apr-05	25.59	23.53						25.30	22.20	
May-05	25.38	24.35						27.26	25.20	
Jun-05	26.35	24.85						27.95	24.62	
Jul-05	26.95	25.00						29.66	27.27	
Aug-05	27.42	25.64						29.98	25.50	
Sep-05	28.07	26.88						29.25	26.88	

Discounted Cash Flow

Month Ending	Southwest			SWX Dividend	SWX Growth	SWX DCF	SWX DCF	UGI		
	SWX High	SWX Low	SWX Average					UGI High	UGI Low	UGI Average
Oct-05		27.86	25.14					28.64	22.60	
Nov-05		27.56	26.00					24.36	21.17	
Dec-05										
Jan-06										
Feb-06										
Mar-06										
Apr-06										
May-06										
Jun-06										
Jul-06										
Aug-06										
Sep-06										
Oct-06										
Nov-06										
Dec-06										
Jan-07										
Feb-07										
Mar-07										
Apr-07										
May-07										
Jun-07										
Jul-07										
Aug-07										
Sep-07										
Oct-07										
Nov-07										
Dec-07										
Jan-08										
Feb-08	29.96	25.48	27.72	0.86	5.67%	9.16%	0.0030			
Mar-08	28.35	25.14	26.75	0.86	5.67%	9.29%	0.0030			
Apr-08	30.05	27.90	28.98	0.86	5.67%	9.01%	0.0029			
May-08	31.74	28.90	30.32	0.90	6.00%	9.35%	0.0025			
Jun-08	31.35	28.98	30.17	0.90	6.00%	9.37%	0.0026			
Jul-08	30.07	27.63	28.85	0.90	6.00%	9.52%	0.0032			
Aug-08	30.69	27.56	29.13	0.90	6.00%	9.49%	0.0034			
Sep-08	33.29	28.27	30.78	0.90	6.00%	9.30%	0.0037			
Oct-08	30.78	21.46	26.12	0.90	6.00%	9.90%	0.0046			
Nov-08	26.84	21.11	23.98	0.90	6.00%	10.25%	0.0044			
Dec-08	25.80	22.74	24.27	0.90	6.00%	10.20%	0.0037			
Jan-09	26.36	23.97	25.17	0.90	6.00%	10.05%	0.0037			
Feb-09	26.38	19.35	22.87	0.95	6.00%	10.72%	0.0035			
Mar-09	22.28	17.08	19.68	0.95	6.00%	11.49%	0.0036			
Apr-09	21.61	19.77	20.69	0.95	6.00%	11.22%	0.0035			
May-09	21.15	18.96	20.06	0.95	6.00%	11.39%	0.0051			

[illegible]

Discounted Cash Flow

Month Ending	UGI Dividend	UGI Growth	UGI DCF	UGI DCF	WGL High	WGL Low	WGL Average	WGL Dividend	WGL Growth	WGL DCF	WGL DCF	NFG High
Jun-98	1.44				27.88	26.19	27.03	1.20	4.63%	9.61%	0.0073	41.22
Jul-98	1.46				27.69	23.63	25.66	1.20	4.71%	9.96%	0.0072	41.22
Aug-98	1.46				25.56	23.06	24.31	1.20	4.71%	10.26%	0.0057	42.22
Sep-98	1.46				27.88	23.75	25.81	1.20	4.71%	9.93%	0.0053	44.72
Oct-98	1.46				28.75	26.13	27.44	1.20	4.71%	9.61%	0.0059	47.22
Nov-98	1.46				26.63	24.94	25.78	1.20	4.83%	10.06%	0.0062	46.86
Dec-98	1.46				27.13	25.13	26.13	1.20	4.83%	9.99%	0.0061	44.66
Jan-99	1.46				27.38	23.44	25.41	1.20	4.71%	10.01%	0.0056	44.68
Feb-99	1.46				24.75	22.25	23.50	1.20	4.71%	10.45%	0.0058	41.20
Mar-99	1.46	6.00%	15.51%	0.0057	25.00	21.31	23.16	1.20	4.75%	10.58%	0.0057	42.52
Apr-99	1.46	6.00%	15.76%	0.0044	24.44	21.00	22.72	1.22	4.75%	10.80%	0.0061	42.74
May-99	1.46	6.00%	14.82%	0.0041	25.38	23.25	24.31	1.22	4.75%	10.39%	0.0057	46.93
Jun-99	1.46	6.00%	14.44%	0.0039	27.06	24.06	25.56	1.22	4.75%	10.11%	0.0055	48.57
Jul-99	1.46	6.00%	13.67%	0.0041	28.69	25.00	26.84	1.22	4.71%	9.81%	0.0057	48.78
Aug-99	1.46	6.00%	13.03%	0.0039	28.88	26.50	27.69	1.22	4.71%	9.65%	0.0056	47.19
Sep-99	1.46	6.67%	13.89%	0.0042	28.13	25.38	26.75	1.22	4.71%	9.83%	0.0057	48.11
Oct-99	1.50	6.67%	14.14%	0.0042	27.31	25.00	26.16	1.22	4.71%	9.95%	0.0062	48.59
Nov-99	1.50	6.67%	14.71%	0.0044	29.44	26.50	27.97	1.22	4.71%	9.60%	0.0060	52.43
Dec-99	1.50	6.67%	15.03%	0.0046	29.25	27.06	28.16	1.22	4.63%	9.48%	0.0060	50.26
Jan-00	1.50	6.67%	14.89%	0.0047	27.56	24.50	26.03	1.22	4.63%	9.89%	0.0068	46.75
Feb-00	1.50	6.67%	15.39%	0.0049	26.00	21.75	23.88	1.22	4.63%	10.37%	0.0072	45.13
Mar-00	1.50	6.67%	15.23%	0.0047	27.63	23.00	25.31	1.22	4.63%	10.04%	0.0067	44.75
Apr-00	1.50	6.67%	14.88%	0.0043	26.94	24.88	25.91	1.24	4.63%	10.00%	0.0061	48.06
May-00	1.50				27.63	25.63	26.63	1.24	4.57%	9.79%	0.0062	51.88
Jun-00	1.50	6.67%	14.84%	0.0044	27.44	24.06	25.75	1.24	4.63%	10.04%	0.0063	51.88
Jul-00	1.55	6.67%	15.00%	0.0043	25.50	23.94	24.72	1.24	4.63%	10.27%	0.0059	52.38
Aug-00	1.55	6.67%	14.66%	0.0041	27.06	24.50	25.78	1.24	4.63%	10.03%	0.0057	53.69
Sep-00	1.55	6.67%	14.33%	0.0038	27.75	24.94	26.34	1.24	4.63%	9.91%	0.0053	58.81
Oct-00	1.55	6.67%	14.43%	0.0039	27.50	24.81	26.16	1.24	4.63%	9.95%	0.0050	59.62
Nov-00	1.55				28.50	25.38	26.94	1.24	4.43%	9.58%	0.0049	59.19
Dec-00	1.55				31.50	27.44	29.47	1.24	4.43%	9.13%	0.0048	64.50
Jan-01	1.55				30.50	27.06	28.78	1.24	4.43%	9.25%	0.0050	63.19
Feb-01	1.55				28.70	26.37	27.54	1.24	4.43%	9.47%	0.0052	55.40
Mar-01	1.55				27.95	25.82	26.89	1.24	4.43%	9.59%	0.0052	56.00
Apr-01	1.55	6.00%	12.92%	0.0034	29.10	26.30	27.70	1.26	4.43%	9.52%	0.0049	57.61
May-01	1.55	7.00%	13.69%	0.0035	29.40	27.90	28.65	1.26	4.43%	9.35%	0.0046	57.97
Jun-01	1.55	7.00%	13.78%	0.0036	28.65	26.00	27.32	1.26	4.43%	9.59%	0.0049	57.94
Jul-01	1.60	7.00%	14.02%	0.0045	28.40	25.26	26.83	1.26	4.40%	9.66%	0.0052	52.76
Aug-01	1.60	6.50%	13.05%	0.0042	28.10	26.60	27.35	1.26	4.40%	9.56%	0.0052	50.30
Sep-01	1.60	7.00%	13.80%	0.0048	27.64	25.30	26.47	1.26	4.40%	9.73%	0.0056	24.20
Oct-01	1.60	7.00%	13.57%	0.0047	28.53	26.00	27.27	1.26	4.40%	9.57%	0.0055	24.90
Nov-01	1.60	7.00%	13.20%	0.0047	28.17	26.80	27.48	1.26	4.40%	9.53%	0.0055	23.89
Dec-01	1.60	7.00%	13.05%	0.0047	29.75	27.00	28.38	1.26	4.20%	9.16%	0.0054	24.95
Jan-02	1.60	7.00%	13.25%	0.0049	29.48	25.85	27.67	1.26	4.20%	9.29%	0.0057	25.00

Discounted Cash Flow

Month Ending	UGI Dividend	UGI Growth	UGI DCF	UGI DCF	WGL High	WGL Low	WGL Average	WGL Dividend	WGL Growth	WGL DCF	WGL DCF	NFG High
Feb-02	1.60	6.50%	13.00%	0.0047	27.13	25.71	26.42	1.26	4.20%	9.53%	0.0056	24.90
Mar-02	1.60	6.50%	12.61%	0.0045	27.54	26.31	26.93	1.26	4.17%	9.40%	0.0052	25.70
Apr-02	1.60	6.17%	11.85%	0.0042	27.95	26.25	27.10	1.26	3.80%	8.97%	0.0049	24.98
May-02	1.60	6.17%	11.87%	0.0041	27.40	25.68	26.54	1.27	3.80%	9.14%	0.0049	23.90
Jun-02	1.60	6.17%	12.07%	0.0039	26.70	24.46	25.58	1.27	3.80%	9.34%	0.0047	23.25
Jul-02	1.65	6.17%	12.59%	0.0042	26.22	19.25	22.73	1.27	4.40%	10.69%	0.0055	22.84
Aug-02	1.65	6.88%	12.50%	0.0044	25.15	23.50	24.32	1.27	4.40%	10.27%	0.0050	21.00
Sep-02	1.65	6.88%	12.26%	0.0048	24.62	22.75	23.69	1.27	4.40%	10.43%	0.0052	20.91
Oct-02	1.10	6.88%	11.97%	0.0048	25.15	21.94	23.55	1.27	4.40%	10.46%	0.0052	20.48
Nov-02	1.10	6.88%	11.77%	0.0048	24.45	22.18	23.32	1.27	4.40%	10.53%	0.0052	21.00
Dec-02	1.10	6.88%	11.93%	0.0049	24.49	22.65	23.57	1.27	4.40%	10.46%	0.0052	21.86
Jan-03	1.10	6.88%	11.64%	0.0048	25.69	23.15	24.42	1.27	4.40%	10.24%	0.0050	21.54
Feb-03	1.10	7.25%	11.89%	0.0049	26.10	24.38	25.24	1.27	4.20%	9.84%	0.0049	20.75
Mar-03	1.10	6.33%	10.64%	0.0054	26.96	25.00	25.98	1.27	4.33%	9.81%	0.0050	22.25
Apr-03	1.14	6.33%	10.54%	0.0053	27.50	26.30	26.90	1.27	4.33%	9.62%	0.0048	23.62
May-03	1.14	6.33%	10.31%	0.0051	28.14	25.97	27.05	1.28	4.43%	9.73%	0.0048	25.75
Jun-03	1.14	6.33%	10.26%	0.0049	28.79	26.62	27.71	1.28	4.43%	9.60%	0.0046	26.90
Jul-03	1.14	6.33%	10.35%	0.0050	27.62	25.21	26.42	1.28	4.43%	9.86%	0.0048	27.51
Aug-03	1.14	6.33%	10.62%	0.0052	26.90	25.28	26.09	1.28	4.64%	10.15%	0.0049	23.95
Sep-03	1.14	6.33%	10.65%	0.0050	27.97	26.90	27.44	1.28	4.64%	9.87%	0.0046	24.10
Oct-03	1.14	6.33%	10.63%	0.0050	28.47	27.37	27.92	1.28	4.64%	9.78%	0.0046	23.85
Nov-03	1.14	6.33%	10.42%	0.0048	28.16	26.20	27.18	1.28	4.14%	9.40%	0.0044	23.90
Dec-03	1.14	6.33%	10.23%	0.0049	28.55	26.63	27.59	1.28	4.14%	9.32%	0.0042	25.01
Jan-04	1.14	6.00%	9.92%	0.0051	28.70	27.15	27.93	1.28	3.86%	8.96%	0.0042	25.74
Feb-04	1.14	6.33%	10.31%	0.0050	28.98	27.74	28.36	1.28	3.86%	8.88%	0.0040	26.48
Mar-04					30.18	28.88	29.53	1.28	3.86%	8.68%	0.0043	26.25
Apr-04					30.39	27.75	29.07	1.28	3.86%	8.76%	0.0044	25.20
May-04					29.15	26.66	27.91	1.30	3.93%	9.12%	0.0049	25.57
Jun-04					29.42	27.36	28.39	1.30	3.67%	8.76%	0.0049	25.38
Jul-04					29.04	26.91	27.98	1.30	3.57%	8.73%	0.0041	26.78
Aug-04					28.97	27.30	28.14	1.30	3.67%	8.80%	0.0040	27.11
Sep-04					29.67	27.74	28.71	1.30	3.48%	8.50%	0.0043	28.43
Oct-04					29.18	27.71	28.45	1.30	3.57%	8.64%	0.0047	29.06
Nov-04					30.97	28.20	29.59	1.30	3.57%	8.44%	0.0046	28.75
Dec-04					31.43	29.63	30.53	1.30	3.88%	8.61%	0.0050	
Jan-05					31.27	28.85	30.06	1.30	3.88%	8.69%	0.0043	
Feb-05					31.66	29.93	30.80	1.30	3.88%	8.57%	0.0041	
Mar-05					31.97	30.00	30.99	1.30	3.88%	8.54%	0.0041	
Apr-05					31.35	29.66	30.51	1.30	3.88%	8.62%	0.0042	29.33
May-05					32.80	30.32	31.56	1.33	3.88%	8.57%	0.0042	28.20
Jun-05					33.96	32.40	33.18	1.33	3.80%	8.26%	0.0037	29.49
Jul-05					34.79	32.96	33.88	1.33	3.80%	8.16%	0.0035	30.40
Aug-05					34.70	31.50	33.10	1.33	3.80%	8.27%	0.0036	30.40
Sep-05					33.49	31.39	32.44	1.33	4.00%	8.57%	0.0035	35.04

Discounted Cash Flow

Month Ending	UGI Dividend	UGI Growth	UGI DCF	UGI DCF	WGL High	WGL Low	WGL Average	WGL Dividend	WGL Growth	WGL DCF	WGL DCF	NFG High
Oct-05					32.88	29.10	30.99	1.33	4.00%	8.79%	0.0036	35.27
Nov-05					31.31	29.80	30.56	1.33	4.00%	8.86%	0.0038	32.66
Dec-05					31.14	29.74	30.44	1.33	3.75%	8.61%	0.0034	34.1
Jan-06					31.30	29.77	30.54	1.33	3.75%	8.60%	0.0033	35.43
Feb-06					31.49	29.61	30.55	1.33	3.75%	8.59%	0.0065	
Mar-06					31.08	29.59	30.34	1.33	3.75%	8.62%	0.0063	
Apr-06					30.74	28.80	29.77	1.35	3.75%	8.79%	0.0046	
May-06					29.93	27.04	28.49	1.35	3.75%	9.02%	0.0037	35.98
Jun-06					29.39	27.82	28.61	1.35	3.75%	9.00%	0.0038	36.75
Jul-06					30.32	28.44	29.38	1.35	3.75%	8.86%	0.0036	37.43
Aug-06					31.18	29.01	30.10	1.35	3.75%	8.74%	0.0035	39.16
Sep-06					31.82	30.05	30.94	1.35	3.75%	8.60%	0.0036	38.71
Oct-06					33.02	31.16	32.09	1.35	3.50%	8.16%	0.0037	37.96
Nov-06					33.41	31.84	32.63	1.35	3.33%	7.90%	0.0037	39.10
Dec-06					33.55	32.33	32.94	1.35	3.33%	7.86%	0.0036	40.21
Jan-07					32.98	30.99	31.99	1.35	3.25%	7.91%	0.0032	40.94
Feb-07					33.00	31.23	32.11	1.35	3.50%	8.16%	0.0034	43.79
Mar-07					32.52	30.37	31.45	1.35	3.50%	8.26%	0.0035	43.60
Apr-07					34.61	31.88	33.25	1.37	3.50%	8.07%	0.0034	47.87
May-07					35.77	33.82	34.80	1.37	3.50%	7.86%	0.0032	47.65
Jun-07					35.91	31.82	33.87	1.37	3.50%	7.98%	0.0032	46.94
Jul-07					33.44	29.79	31.62	1.37	3.33%	8.13%	0.0039	46.72
Aug-07					35.01	29.79	32.40	1.37	3.33%	8.01%	0.0038	46.02
Sep-07					34.60	31.55	33.08	1.37	3.33%	7.92%	0.0038	47.00
Oct-07												49.29
Nov-07												49.06
Dec-07												50.29
Jan-08												46.90
Feb-08					33.38	31.11	32.25	1.37	4.00%	8.74%		48.70
Mar-08					33.49	30.26	31.88	1.37	4.00%	8.79%		48.78
Apr-08					33.94	31.84	32.89	1.44	5.50%	10.45%		53.35
May-08					35.69	33.51	34.60	1.44	5.50%	10.20%	0.0038	
Jun-08					36.22	34.17	35.20	1.44	5.50%	10.12%	0.0039	
Jul-08												
Aug-08												
Sep-08												
Oct-08												
Nov-08												
Dec-08												
Jan-09												
Feb-09												
Mar-09					34.32	28.89	31.61	1.47	4.00%	9.19%		32.75
Apr-09					33.29	30.21	31.75	1.47	4.00%	9.16%		34.17
May-09					31.70	28.59	30.15	1.47	4.00%	9.44%		34.34

[illegible]

Discounted Cash Flow

	NFG		NFG	NFG	NFG	NFG	STR	STR	STR	STR	STR	STR
Month Ending	Low	Average	Dividend	Growth	DCF	DCF	High	Low	Average	Dividend	Growth	DCF
Jun-98	38.51	39.87	1.800	7.42%	12.62%	0.0126	20.50	18.69	19.59	0.660	8.75%	12.66%
Jul-98	37.51	39.37	1.800	8.10%	13.40%	0.0132	18.55	16.85	17.70	0.660	8.95%	13.29%
Aug-98	37.87	40.05	1.800	8.10%	13.31%	0.0100	17.49	15.35	16.42	0.660	9.15%	13.84%
Sep-98	38.45	41.59	1.800	7.70%	12.69%	0.0107	18.54	14.94	16.74	0.660	9.06%	13.66%
Oct-98	44.06	45.64	1.800	7.70%	12.24%	0.0108	19.25	17.83	18.54	0.660	9.11%	13.26%
Nov-98	42.70	44.78	1.800	7.50%	12.12%	0.0104	19.17	18.01	18.59	0.660	9.11%	13.25%
Dec-98	42.94	43.80	1.800	7.50%	12.23%	0.0104	18.69	16.55	17.62	0.660	9.11%	13.48%
Jan-99	40.60	42.64	1.800	7.50%	12.36%	0.0098	18.46	15.84	17.15	0.660	8.83%	13.31%
Feb-99	38.55	39.88	1.800	8.07%	13.30%	0.0101	17.31	15.36	16.34	0.660	8.83%	13.53%
Mar-99	38.12	40.32	1.800	7.81%	12.97%	0.0093	17.79	16.11	16.95	0.660	8.61%	13.13%
Apr-99	36.42	39.58	1.800	7.50%	12.74%	0.0107	18.09	15.21	16.65	0.660	8.55%	13.15%
May-99	42.43	44.68	1.800	7.36%	11.99%	0.0107	18.82	17.31	18.07	0.660	8.55%	12.79%
Jun-99	45.29	46.93	1.860	7.36%	11.91%	0.0108	19.35	17.89	18.62	0.660	8.55%	12.66%
Jul-99	45.35	47.07	1.860	7.58%	12.13%	0.0104	18.86	17.59	18.23	0.660	8.50%	12.70%
Aug-99	44.68	45.94	1.860	7.58%	12.24%	0.0105	19.03	18.01	18.52	0.680	8.50%	12.75%
Sep-99	44.19	46.15	1.860	7.58%	12.22%	0.0107	19.22	17.50	18.36	0.680	8.50%	12.79%
Oct-99	45.56	47.08	1.860	7.58%	12.12%	0.0108	18.73	17.14	17.94	0.680	8.50%	12.90%
Nov-99	48.47	50.45	1.860	7.19%	11.41%	0.0105	17.75	16.19	16.97	0.680	8.21%	12.85%
Dec-99	46.19	48.23	1.860	7.19%	11.61%	0.0102	17.05	14.58	15.82	0.680	8.50%	13.49%
Jan-00	43.12	44.94	1.860	7.19%	11.94%	0.0109	16.56	14.40	15.48	0.680	8.50%	13.60%
Feb-00	39.38	42.26	1.860	7.19%	12.24%	0.0104	15.63	13.56	14.60	0.680	8.50%	13.92%
Mar-00	39.69	42.22	1.860	7.19%	12.25%	0.0109	19.00	14.00	16.50	0.680	8.50%	13.28%
Apr-00	43.12	45.59	1.860	7.19%	11.87%	0.0121	19.31	17.12	18.22	0.680	8.50%	12.83%
May-00	46.25	49.07	1.860	6.79%	11.12%	0.0130	20.56	18.00	19.28	0.680	8.55%	12.64%
Jun-00	48.00	49.94	1.920	7.19%	11.59%	0.0126	20.62	18.88	19.75	0.680	8.55%	12.54%
Jul-00	48.12	50.25	1.920	7.19%	11.57%	0.0107	20.19	18.88	19.54	0.680	8.55%	12.58%
Aug-00	49.50	51.60	1.920	7.19%	11.45%	0.0111	22.00	19.56	20.78	0.680	8.55%	12.34%
Sep-00	52.38	55.60	1.920	7.19%	11.14%	0.0109	28.00	21.38	24.69	0.680	8.39%	11.57%
Oct-00	51.12	55.37	1.920	7.44%	11.42%	0.0101	29.50	26.00	27.75	0.680	8.94%	11.78%
Nov-00	53.50	56.35	1.920	7.58%	11.49%	0.0110	31.88	27.00	29.44	0.700	8.93%	11.68%
Dec-00	53.38	58.94	1.920	7.58%	11.32%	0.0121	31.25	26.38	28.82	0.700	8.92%	11.73%
Jan-01	52.43	57.81	1.920	7.58%	11.39%	0.0099	29.94	27.12	28.53	0.700	8.92%	11.76%
Feb-01	50.97	53.19	1.920	7.50%	11.64%	0.0100	28.45	26.70	27.58	0.700	8.92%	11.86%
Mar-01	50.01	53.01	1.920	7.50%	11.66%	0.0102	29.95	26.35	28.15	0.700	8.79%	11.67%
Apr-01	53.59	55.60	1.920	7.50%	11.46%	0.0099	33.17	26.80	29.99	0.700	8.58%	11.27%
May-01	53.07	55.52	1.920	8.51%	12.51%	0.0107	33.75	30.05	31.90	0.700	9.27%	11.82%
Jun-01	51.79	54.87	2.020	8.51%	12.78%	0.0103	31.34	24.00	27.67	0.700	8.56%	11.48%
Jul-01	44.85	48.81	2.020	8.51%	13.32%	0.0104	25.12	21.33	23.23	0.700	9.29%	12.80%
Aug-01	46.94	48.62	2.020	7.78%	12.57%	0.0099	24.40	22.35	23.38	0.700	10.11%	13.62%
Sep-01	21.96	23.08	1.010	8.00%	13.06%	0.0106	23.10	18.58	20.84	0.700	10.38%	14.33%
Oct-01	22.30	23.60	1.010	8.00%	12.95%	0.0107	23.56	19.60	21.58	0.700	9.75%	13.55%
Nov-01	21.95	22.92	1.010	7.57%	12.65%	0.0100	24.47	21.65	23.06	0.720	10.38%	14.05%
Dec-01	22.06	23.51	1.010	7.57%	12.52%	0.0109	25.48	23.08	24.28	0.720	9.75%	13.22%
Jan-02	22.16	23.58	1.010	7.57%	12.50%	0.0103	25.55	23.10	24.33	0.720	9.75%	13.21%

Discounted Cash Flow

	NFG	NFG	NFG	NFG	NFG	NFG	STR	STR	STR	STR	STR	STR
Month Ending	Low	Average	Dividend	Growth	DCF	DCF	High	Low	Average	Dividend	Growth	DCF
Feb-02	22.00	23.45	1.010	7.57%	12.53%	0.0108	24.13	21.40	22.77	0.720	9.75%	13.45%
Mar-02	23.90	24.80	1.010	7.57%	12.26%	0.0102	25.84	22.29	24.07	0.720	9.75%	13.25%
Apr-02	23.10	24.04	1.010	7.57%	12.41%	0.0100	29.45	25.68	27.57	0.720	9.75%	12.80%
May-02	22.02	22.96	1.010	7.57%	12.64%	0.0097	29.10	26.80	27.95	0.720	9.75%	12.76%
Jun-02	21.38	22.32	1.040	7.57%	12.95%	0.0092	27.50	23.65	25.58	0.720	9.75%	13.04%
Jul-02	15.61	19.23	1.040	7.57%	13.83%	0.0086	25.04	18.01	21.53	0.720	9.75%	13.67%
Aug-02	18.60	19.80	1.040	7.57%	13.64%	0.0097	25.61	21.30	23.46	0.720	10.13%	13.73%
Sep-02	19.58	20.25	1.040	7.57%	13.51%	0.0093	25.10	22.55	23.83	0.720	10.13%	13.68%
Oct-02	17.95	19.22	1.040	7.57%	13.83%	0.0093	26.15	21.41	23.78	0.720	10.13%	13.68%
Nov-02	19.76	20.38	1.040	7.57%	13.47%	0.0093	27.01	24.50	25.76	0.740	10.13%	13.50%
Dec-02	20.54	21.20	1.040	7.57%	13.23%	0.0091	28.39	25.74	27.07	0.740	10.00%	13.20%
Jan-03	20.02	20.78	1.040	7.57%	13.35%	0.0090	28.97	26.50	27.74	0.740	10.00%	13.12%
Feb-03	18.97	19.86	1.040	7.17%	13.20%	0.0085	28.64	26.04	27.34	0.740	10.20%	13.37%
Mar-03	19.63	20.94	1.040	6.50%	12.18%	0.0090	29.85	27.92	28.89	0.740	9.82%	12.81%
Apr-03	21.60	22.61	1.040	6.50%	11.75%	0.0093	31.75	29.35	30.55	0.740	9.00%	11.81%
May-03	23.15	24.45	1.040	6.33%	11.17%	0.0094	33.00	29.72	31.36	0.740	9.00%	11.73%
Jun-03	25.60	26.25	1.08	6.33%	11.01%	0.0079	34.12	32.34	33.23	0.740	9.09%	11.67%
Jul-03	24.13	25.82	1.08	6.33%	11.09%	0.0075	33.99	31.35	32.67	0.740	9.09%	11.71%
Aug-03	22.51	23.23	1.08	6.17%	11.46%	0.0075	32.70	30.11	31.41	0.82	9.00%	12.03%
Sep-03	22.64	23.37	1.08	6.17%	11.43%	0.0077	33.00	30.68	31.84	0.82	9.00%	11.99%
Oct-03	21.71	22.78	1.08	6.17%	11.57%	0.0076	33.35	30.75	32.05	0.82	8.73%	11.69%
Nov-03	22.76	23.33	1.08	4.80%	10.00%	0.0067	34.22	31.80	33.01	0.82	8.60%	11.47%
Dec-03	23.16	24.09	1.08	4.80%	9.83%	0.0068	35.50	33.57	34.54	0.82	8.60%	11.34%
Jan-04	24.40	25.07	1.08	4.25%	9.06%	0.0063	37.08	34.76	35.92	0.82	8.56%	11.19%
Feb-04	24.75	25.62	1.08	4.25%	8.95%	0.0059	36.89	34.40	35.65	0.82	8.33%	10.98%
Mar-04	24.26	25.26	1.08	4.25%	9.02%	0.0067	36.50	33.82	35.16	0.82	8.00%	10.68%
Apr-04	23.75	24.48	1.08	4.00%	8.92%	0.0067	37.00	34.51	35.76	0.82	8.00%	10.63%
May-04	23.90	24.74	1.08	3.00%	7.82%	0.0062	37.05	34.26	35.66	0.82	8.17%	10.81%
Jun-04	24.20	24.79	1.08	3.25%	8.07%	0.0064	38.85	36.58	37.72	0.86	8.14%	10.76%
Jul-04	24.84	25.81	1.08	4.33%	9.00%	0.0061	42.06	37.83	39.95	0.86	8.33%	10.81%
Aug-04	25.05	26.08	1.12	4.33%	9.13%	0.0059	41.40	39.80	40.60	0.86	8.57%	11.01%
Sep-04	26.60	27.52	1.12	4.33%	8.87%	0.0073	46.40	40.01	43.21	0.86	8.57%	10.86%
Oct-04	27.80	28.43	1.12	4.33%	8.72%	0.0073	49.70	45.02	47.36	0.86	8.44%	10.53%
Nov-04	27.30	28.03	1.12	4.33%	8.79%	0.0074	51.54	47.36	49.45	0.86	8.56%	10.56%
Dec-04							52.12	47.40	49.76	0.86	8.69%	10.68%
Jan-05							51.52	46.73	49.13	0.86	8.64%	10.66%
Feb-05							53.57	49.38	51.48	0.86	8.50%	10.42%
Mar-05							62.75	52.19	57.47	0.86	8.50%	10.22%
Apr-05	26.80						61.50	54.49	58.00	0.86	8.81%	10.52%
May-05	26.20						63.19	54.85	59.02	0.86	8.81%	10.49%
Jun-05	27.72						67.19	62.16	64.68	0.90	9.30%	10.91%
Jul-05	28.86						71.47	65.95	68.71	0.90	9.30%	10.81%
Aug-05	27.74						78.24	69.43	73.84	0.90	9.30%	10.71%
Sep-05	29.70	32.37	1.16	6.00%	10.06%	0.0069	88.77	76.00	82.39	0.90	9.71%	10.98%

Discounted Cash Flow

Month Ending	NFG Low	NFG Average	NFG Dividend	NFG Growth	NFG DCF	NFG DCF	STR High	STR Low	STR Average	STR Dividend	STR Growth	STR DCF
Oct-05	29.51	32.39	1.16	5.03%	9.05%	0.0062	89.56	71.12	80.34	0.90	9.71%	11.01%
Nov-05	29.25	30.96	1.16	5.03%	9.23%	0.0066	81.35	73.75	77.55	0.90	11.44%	12.81%
Dec-05	30.58	32.34	1.16	5.03%	9.05%	0.0067	84.77	74.43	79.60	0.90	11.71%	13.05%
Jan-06	31.09	33.26	1.16	4.03%	7.90%	0.0056	85.70	75.77	80.74	0.90	11.71%	13.03%
Feb-06							82.35	71.26	76.81	0.90	11.38%	12.76%
Mar-06							75.45	67.37	71.41	0.90	11.38%	12.87%
Apr-06							81.90	68.43	75.17	0.90	11.57%	12.98%
May-06	33.30	34.64	1.20	5.00%	8.88%	0.0076	82.08	67.48	74.78	0.94	11.16%	12.64%
Jun-06	33.18	34.97	1.20	5.00%	8.84%	0.0079	81.00	67.68	74.34	0.94	11.16%	12.65%
Jul-06	34.95	36.19	1.20	5.00%	8.71%	0.0080	89.00	75.68	82.34	0.94	13.26%	14.63%
Aug-06	36.76	37.96	1.20	5.00%	8.54%	0.0077	91.02	84.85	87.94	0.94	11.59%	12.85%
Sep-06	35.42	37.07	1.20	5.00%	8.62%	0.0080	87.00	78.06	82.53	0.94	11.59%	12.93%
Oct-06	35.02	36.49	1.20	5.40%	9.10%	0.0082	86.88	77.48	82.18	0.94	11.16%	12.50%
Nov-06	36.50	37.80	1.20	4.67%	8.21%	0.0077	87.30	79.78	83.54	0.94	11.52%	12.85%
Dec-06	37.67	38.94	1.20	5.53%	9.00%	0.0084	89.56	82.45	86.01	0.94	11.59%	12.88%
Jan-07	36.94	38.94	1.20	4.67%	8.11%	0.0074	82.81	75.96	79.39	0.94	11.82%	13.22%
Feb-07	40.60	42.20	1.20	4.57%	7.74%	0.0073	86.32	79.33	82.83	0.94	11.82%	13.16%
Mar-07	40.46	42.03	1.20	4.57%	7.75%	0.0075	91.15	81.65	86.40	0.94	11.18%	12.46%
Apr-07	43.28	45.58	1.20	4.57%	7.50%	0.0073	50.00	44.61	47.30	0.49	11.18%	12.40%
May-07	44.91	46.28	1.20	4.57%	7.45%	0.0068	54.32	48.16	51.24	0.49	9.25%	10.35%
Jun-07	42.75	44.85	1.24	4.57%	7.65%	0.0070	55.84	51.49	53.66	0.49	9.25%	10.30%
Jul-07	43.19	44.96	1.24	5.23%	8.32%	0.0094	58.75	49.50	54.13	0.49	8.50%	9.54%
Aug-07	40.95	43.49	1.24	5.23%	8.42%	0.0095	52.54	44.42	48.48	0.49	8.50%	9.66%
Sep-07	43.20	45.10	1.24	5.23%	8.31%	0.0094	53.27	48.52	50.90	0.49	8.50%	9.60%
Oct-07	45.20	47.25	1.24	5.23%	8.17%	0.0086	57.36	50.67	54.02	0.49	8.70%	9.74%
Nov-07	45.63	47.35	1.24	5.23%	8.16%	0.0086	57.16	51.46	54.31	0.49	8.70%	9.74%
Dec-07	46.56	48.43	1.24	5.23%	8.10%	0.0085	56.59	53.02	54.81	0.49	8.70%	9.73%
Jan-08	38.04	42.47	1.24	5.23%	8.50%	0.0089	57.48	45.00	51.24	0.49	8.88%	9.98%
Feb-08	41.56	45.13	1.24	3.65%	6.68%		58.00	49.42	53.71	0.49	9.00%	10.05%
Mar-08	44.27	46.53	1.24	3.65%	6.59%		58.32	52.70	55.51	0.49	9.00%	10.02%
Apr-08	47.00	50.18	1.24	3.65%	6.37%		65.03	56.17	60.60	0.49	9.00%	9.93%
May-08							68.74	60.59	64.67	0.49	9.00%	9.88%
Jun-08							71.64	63.42	67.53	0.49	9.00%	9.84%
Jul-08							74.87	52.02	63.44	0.49	9.00%	9.89%
Aug-08							54.64	46.91	50.78	0.49	9.00%	10.12%
Sep-08							50.69	36.96	43.83	0.49	9.00%	10.29%
Oct-08							40.35	20.66	30.51	0.49	9.00%	10.86%
Nov-08							35.26	22.59	28.93	0.49	9.00%	10.96%
Dec-08							34.10	24.26	29.18	0.49	9.00%	10.95%
Jan-09							37.70	30.00	33.85	0.49	9.00%	10.68%
Feb-09							37.73	28.14	32.94	0.50	9.00%	10.75%
Mar-09	26.67	29.71	1.30	5.00%	9.92%		33.55	24.85	29.20	0.50	8.00%	9.96%
Apr-09	29.83	32.00	1.30	5.00%	9.56%		32.69	28.51	30.60	0.50	8.00%	9.87%
May-09	30.56	32.45	1.34	5.00%	9.64%		36.93	28.98	32.96	0.50	7.00%	8.72%

Discounted Cash Flow

Month Ending	NFG Low	NFG Average	NFG Dividend	NFG Growth	NFG DCF	NFG DCF	STR High	STR Low	STR Average	STR Dividend	STR Growth	STR DCF
Jun-09	33.09	35.35	1.34	5.00%	9.25%		36.52	30.46	33.49	0.50	7.00%	8.69%
Jul-09	33.77	37.44	1.34	8.50%	12.65%	0.0135	35.40	27.98	31.69	0.50	1.00%	2.69%
Aug-09	40.15	44.42	1.34	8.50%	11.99%	0.0126	35.54	32.46	34.00	0.50	1.00%	2.57%
Sep-09	42.94	45.62	1.34	8.50%	11.89%	0.0125	37.89	32.72	35.31	0.50	1.00%	2.51%
Oct-09	44.91	47.56	1.34	5.00%	8.15%		43.20	38.88	41.04	0.52	9.00%	10.46%
Nov-09	44.91	47.56	1.34	5.00%	8.15%		43.20	38.88	41.04	0.52	9.00%	10.46%
Dec-09	45.90	48.95	1.34	5.00%	8.06%		43.26	37.51	40.39	0.52	9.00%	10.48%
Jan-10	46.92	49.46	1.34	12.00%	15.23%	0.0235						
Feb-10	45.64	48.35	1.34	8.50%	11.70%	0.0183						
Mar-10	49.71	51.10	1.34	8.10%	11.12%	0.0181						

Discounted Cash Flow

Month Ending	STR	Market Capitalization					Laclede		New Jersey	NICOR	NiSource Northwest		NUI
		AGL	ATO	CGC	EGN	EQT	KSE	LG	NJR	GAS	NI	NWN	
	DCF												
Jun-98	0.0122	1.10	0.88	0.18	0.58	1.06			0.65	2.00		0.65	0.35
Jul-98	0.0125	1.10	0.90	0.18	0.58	0.85			0.63	1.90		0.62	0.33
Aug-98	0.0088	1.10	0.90	0.18	0.58	0.77	4.90		0.63	1.90		0.62	0.33
Sep-98	0.0100	1.10	0.90	0.18	0.58	0.89	4.90		0.63	1.90		0.62	0.33
Oct-98	0.0103	1.10	0.85	0.18	0.53	0.97	4.10		0.63	1.90		0.65	0.30
Nov-98	0.0102	1.10	0.85	0.18	0.53	1.04	4.10		0.63	1.90		0.65	0.30
Dec-98	0.0105	1.10	0.85	0.18	0.53	1.03	4.10		0.63	1.90		0.65	0.30
Jan-99	0.0088	1.30	0.90	0.20	0.53	0.92	4.30		0.68	1.90		0.68	0.30
Feb-99	0.0097	1.30	0.90	0.20	0.53	0.93	4.30		0.68	1.90		0.68	0.30
Mar-99	0.0086	1.30	0.90	0.20	0.53	0.93	4.30		0.68	1.90		0.68	0.30
Apr-99	0.0097	1.10	0.70	0.18	0.45	0.91	3.80		0.65	1.80		0.60	0.30
May-99	0.0098	1.10	0.70	0.18	0.45	1.05	3.80		0.65	1.80		0.60	0.30
Jun-99	0.0096	1.10	0.70	0.18	0.45	1.26	3.80		0.65	1.80		0.60	0.30
Jul-99	0.0092	1.10	0.80	0.20	0.58	1.23	3.80		0.70	1.80		0.65	0.33
Aug-99	0.0094	1.10	0.80	0.20	0.58	1.22	3.80		0.70	1.80		0.65	0.33
Sep-99	0.0090	1.10	0.80	0.20	0.58	1.26	3.80		0.70	1.80		0.65	0.33
Oct-99	0.0090	1.00	0.78	0.20	0.60	1.22	4.00		0.72	1.80		0.65	0.33
Nov-99	0.0086	1.00	0.78	0.20	0.60	1.14	4.00		0.72	1.80		0.65	0.33
Dec-99	0.0080	1.00	0.78	0.20	0.60	1.09	4.00		0.72	1.80		0.65	0.33
Jan-00	0.0090	1.00	0.69	0.19	0.48	1.13	3.20		0.71	1.50		0.60	0.33
Feb-00	0.0085	1.00	0.69	0.19	0.48	1.25	3.20		0.71	1.50		0.60	0.33
Mar-00	0.0102	1.00	0.69	0.19	0.48	1.47	3.20		0.71	1.50		0.60	0.33
Apr-00	0.0107	1.00	0.58	0.15	0.45	1.52	2.90		0.65	1.50		0.48	0.33
May-00	0.0118	1.00	0.58	0.15	0.45	1.64	2.90		0.65	1.50		0.48	0.33
Jun-00	0.0110	1.00	0.58	0.15	0.45	1.59	2.90		0.65	1.50		0.48	0.33
Jul-00	0.0094	0.88	0.60	0.20	0.63	1.71	4.20		0.68	1.60		0.58	0.35
Aug-00	0.0101	0.88	0.60	0.20	0.63	1.83	4.20		0.68	1.60		0.58	0.35
Sep-00	0.0115	0.88	0.60	0.20	0.63	2.07	4.20	0.35	0.68	1.60		0.58	0.35
Oct-00	0.0107	1.10	0.68	0.20	0.85	1.89	4.80	0.43	0.73	1.60		0.60	0.40
Nov-00	0.0112	1.10	0.68	0.20	0.85	1.82	4.80	0.43	0.73	1.60		0.60	0.40
Dec-00	0.0123	1.10	0.68	0.20	0.85	2.18	4.80	0.43	0.73	1.60		0.60	0.40
Jan-01	0.0111	1.20	0.70	0.23	0.85	1.92	5.40	0.42	0.73	1.80		0.63	0.38
Feb-01	0.0110	1.20	0.70	0.23	0.85	1.87	5.40	0.42	0.73	1.80		0.63	0.38
Mar-01	0.0107	1.20	0.70	0.23	0.85	2.24	5.40	0.42	0.73	1.80		0.63	0.38
Apr-01	0.0114	1.10	0.90		0.93	1.30	5.40	0.45	0.70	1.70		0.60	0.37
May-01	0.0111	1.10	0.90		0.93	2.42	5.40	0.45	0.70	1.70		0.60	0.37
Jun-01	0.0090	1.10	0.90		0.93	2.17	5.40	0.45	0.70	1.70		0.60	0.37
Jul-01	0.0100	1.20	0.90		0.83	2.34	4.50	0.45	0.78	1.80		0.63	0.30
Aug-01	0.0104	1.20	0.90		0.83	2.05	4.50	0.45	0.78	1.80		0.63	0.30
Sep-01	0.0104	1.20	0.90		0.83	1.93	4.50		0.78	1.80		0.63	0.30
Oct-01	0.0107	1.20	0.90		0.83	2.11	4.50		0.78	1.80		0.63	
Nov-01	0.0118	1.19	0.90		0.83	2.08	4.50		0.78	1.80		0.63	
Dec-01	0.0120	1.20	0.86		0.73	2.18	4.78		0.81	1.82			
Jan-02	0.0117	1.20	0.85		0.73	1.97	4.64		0.82	1.78			

Discounted Cash Flow

Month Ending	STR DCF	Market Capitalization					Laclede	New Jersey	NICOR	NiSource	Northwest	NUI
		AGL	ATO	CGC	EGN	EQT	LG	NJR	GAS	NI	NWN	
Feb-02	0.0109	1.29	0.92		0.74	2.09	4.72		0.84	1.95		
Mar-02	0.0119	1.30	0.95		0.74	2.18	4.70		0.83	2.00		0.30
Apr-02	0.0124	1.30	0.95		0.74	2.28	4.70		0.83	2.00		0.30
May-02	0.0119	1.30	0.95		0.74	2.28	4.70		0.83	2.00		0.30
Jun-02	0.0104	1.30	0.90		0.88	2.17	5.20		0.80	2.10	0.73	0.40
Jul-02	0.0101	1.30	0.90		0.88	2.17	5.20		0.80	2.10	0.73	0.40
Aug-02	0.0122	1.14	0.85		0.85	2.18	4.62		0.75	1.46	0.68	0.34
Sep-02	0.0111	1.21	0.88		0.87	2.14	4.78		0.81	1.24	0.71	0.33
Oct-02	0.0120	1.30	0.93		0.88	2.21	4.90		0.88	1.30	0.73	0.35
Nov-02	0.0119	1.30	0.93		0.88	2.20	4.90		0.88	1.30	0.73	0.35
Dec-02	0.0124	1.40	0.95		0.95	2.19	5.00		0.88	1.40	0.68	0.28
Jan-03	0.0121	1.40	0.95		0.95	2.32	5.00		0.88	1.40	0.68	0.28
Feb-03	0.0126	1.40	0.95		0.95	2.27	5.00		0.88	1.40	0.68	0.28
Mar-03	0.0131	1.30	0.95		1.10	2.34	4.50		0.85	1.10	0.68	
Apr-03	0.0122	1.30	0.95		1.10	2.39	4.50		0.85	1.10	0.68	
May-03	0.0128	1.30	0.95		1.10	2.51	4.50		0.85	1.10	0.68	
Jun-03	0.0111	1.70	1.20		1.20	2.54	5.70		0.98	1.70	0.98	
Jul-03	0.0107	1.70	1.20		1.20	2.41	5.70		0.98	1.70	0.98	
Aug-03	0.0111	1.70	1.20		1.20	2.46	5.70		0.98	1.70	0.98	
Sep-03	0.0110	1.80	1.20		1.30	2.56	5.50		0.98	1.50	0.75	
Oct-03	0.0111	1.80	1.20		1.30	2.56	5.50		0.98	1.50	0.75	
Nov-03	0.0116	1.80	1.20		1.30	2.56	5.50		0.98	1.50	0.75	
Dec-03	0.0114	1.90	1.30		1.40	2.67	5.50		1.00	1.50	0.78	
Jan-04	0.0114	1.90	1.30		1.40	2.70	5.50		1.00	1.50	0.78	
Feb-04	0.0107	1.90	1.30		1.40	2.70	5.50		1.00	1.50	0.78	
Mar-04	0.0114	1.80	1.40			2.70	6.00		1.00	1.60	0.83	
Apr-04	0.0113	1.80	1.40			2.70	6.00		1.00	1.60	0.83	
May-04	0.0123	1.80	1.40			2.70	6.00			1.60	0.83	
Jun-04	0.0132	1.80	1.30			3.30	6.00				0.75	
Jul-04	0.0124	1.80	1.30		1.80	3.30	6.20	1.10			0.75	
Aug-04	0.0120	2.00	1.60		1.80	3.30	6.20	1.20	1.60			
Sep-04	0.0133				1.80	3.30	6.20	1.20	1.60			
Oct-04	0.0153					3.60	6.10	1.20	1.60			
Nov-04	0.0154					3.60	6.10	1.20	1.60			
Dec-04	0.0164					3.60	6.10	1.20	1.60		0.88	
Jan-05	0.0151	1.80	1.30			3.60	6.30	1.20	1.60		0.90	
Feb-05	0.0140	2.20	2.15			3.50	6.30	1.10	1.60		0.90	
Mar-05	0.0144	2.20	2.18			3.60	6.30	1.20	1.60		0.95	
Apr-05	0.0175	2.75	2.28		2.38	4.05	6.42	1.26	1.76			
May-05	0.0175	2.75	2.28		2.38	4.05	6.42	1.26	1.76			
Jun-05	0.0201	2.89	2.38		2.81	4.58	6.65	1.29	1.83			
Jul-05	0.0194	2.89	2.38		2.81	4.58	6.65	1.29	1.83		1.01	
Aug-05	0.0192	2.89	2.38		2.81	4.58	6.65	1.29	1.83		1.01	
Sep-05	0.0197	2.74	2.12		2.79	4.69	6.08	1.17	1.78		0.97	

Discounted Cash Flow

Month Ending	STR	Market Capitalization				EQT	KSE	Laclede LG	New Jersey NJR	NICOR GAS	NiSource NI	Northwest NWN	NUI
		AGL	ATO	CGC	EGN								
Month Ending	DCF												
Oct-05	0.0198	2.74	2.12		2.79	4.69	6.08		1.17	1.78		0.97	
Nov-05	0.0242	2.74	2.12		2.79	4.69	6.08		1.17	1.78		0.97	
Dec-05	0.0236	2.75	2.14		2.79	4.43	6.25		1.21	1.81		0.96	
Jan-06	0.0224	2.75	2.14		2.79	4.43	6.25		1.21	1.81		0.96	
Feb-06	0.0436	2.75	2.14			4.43			1.21			0.96	
Mar-06	0.0448	2.75	2.15			4.28			1.22			0.95	
Apr-06	0.0324	2.75	2.15			4.28			1.22	1.75		0.95	
May-06	0.0226	2.88	2.19		2.53	4.01			1.27	1.82		0.98	
Jun-06	0.0236	2.88	2.19		2.53	4.01			1.27	1.82		0.98	
Jul-06	0.0316	2.84	2.34		3.06	4.27			1.37	1.89		1.03	
Aug-06	0.0278	2.84	2.34		3.06	4.27			1.37	1.89		1.03	
Sep-06	0.0291	2.84	2.33		3.06	4.27				1.89		1.03	
Oct-06	0.0250	2.92	2.55		3.15	4.92			1.44	1.89		1.08	
Nov-06	0.0275	3.07	2.62		3.33	5.25			1.44			1.14	
Dec-06	0.0277	3.05	2.61		3.33	5.28			1.43			1.14	
Jan-07	0.0240	3.18	2.59		3.40	5.29			1.31	2.06		1.13	
Feb-07	0.0257	3.16	2.56		3.40	5.11			1.36			1.18	
Mar-07	0.0262	3.41	2.84		4.00	6.35			1.50			1.41	
Apr-07	0.0260	3.41	2.84		4.00	6.35			1.50			1.41	
May-07	0.0238	3.19	2.70		4.10	6.13				1.90		1.23	
Jun-07	0.0237	3.19	2.70		4.10	6.13				1.90		1.23	
Jul-07	0.0242		2.58		4.23	6.47			1.41				
Aug-07	0.0245		2.58		4.23	6.47			1.41				
Sep-07	0.0243		2.58		4.23	6.47			1.41				
Oct-07	0.0250	2.86	2.51		4.66	6.58						1.29	
Nov-07	0.0250	2.86	2.51		4.66	6.58						1.29	
Dec-07	0.0250	2.86	2.51		4.66	6.58						1.29	
Jan-08	0.0242	2.82	2.46		4.45	6.98						1.26	
Feb-08	0.0271		2.52		4.93	8.21			1.37	1.71		1.20	
Mar-08	0.0270		2.52		4.93	8.21			1.37	1.71		1.20	
Apr-08	0.0264		2.52		5.48	8.21			1.37	1.71		1.20	
May-08	0.0263	2.57	2.50		5.48	8.21			1.36	1.78		1.22	
Jun-08	0.0270	2.57	2.50		5.48	6.84			1.36	1.78		1.22	
Jul-08	0.0241	2.57	2.39		4.26	6.84				1.78		1.19	
Aug-08	0.0246	2.54	2.50		4.00	6.53				2.07		1.29	
Sep-08	0.0216	2.40	2.50		2.78	4.54				2.09		1.36	
Oct-08	0.0236	2.33	2.20		2.41	4.06				2.09		1.35	
Nov-08	0.0230	2.31	2.27		2.21	4.36				1.84		1.32	
Dec-08	0.0214	2.40	2.20		2.12	4.30				1.52	3.01	1.12	
Jan-09	0.0212	2.58	2.38		2.30	5.05				1.63	2.95	1.20	
Feb-09	0.0207	2.13	2.00		1.92	4.02				1.42	2.40	1.08	
Mar-09	0.0199	2.46	2.43		2.61	4.73					3.15	1.14	
Apr-09	0.0198	2.46	2.43		2.61	4.73					3.15	1.14	
May-09		2.44	2.30			4.46				1.54	3.22	1.15	

Discounted Cash Flow

Month Ending	STR DCF	Market Capitalization					Laclede		New Jersey	NICOR	NiSource Northwest		NUI
		AGL	ATO	CGC	EGN	EQT	KSE	LG	NJR	GAS	NI	NWN	
Jun-09		2.44	2.30			4.46				1.54	3.22	1.15	
Jul-09		2.65	2.58			5.58			1.52	1.62	3.62	1.10	
Aug-09		2.74	2.63			5.53			1.49	1.62	3.76	1.09	
Sep-09		2.74	2.63			5.53			1.49	1.62	3.76	1.09	
Oct-09	0.0237	2.41	2.18			4.70				1.56	3.06	1.15	
Nov-09	0.0237	2.41	2.18			4.70				1.56	3.06	1.15	
Dec-09	0.0237	2.41	2.18			4.70				1.56	3.06	1.15	
Jan-10		2.76	2.57						1.51	1.84	4.18	1.15	
Feb-10		2.86	2.66						1.55	1.93	4.27	1.24	
Mar-10		3.06	2.73							1.92	4.51	1.26	

Discounted Cash Flow

Month Ending	Oneoke										Total	Ave. DCF
	OKE	PGL	PNY	SEN	SJI	SWX	UGI	WGL	NFG	STR	Mkt Cap	
Jun-98	1.20	1.30	0.95			0.55		1.20	1.57	1.51	15.72	11.54%
Jul-98	1.20	1.30	0.98			0.63		1.10	1.49	1.43	15.20	11.86%
Aug-98	1.20	1.30	0.98			0.63		1.10	1.49	1.26	19.84	12.34%
Sep-98	1.20	1.30	0.98			0.63		1.10	1.72	1.50	20.43	12.73%
Oct-98	1.10	1.30	1.00			0.58		1.20	1.73	1.53	19.62	12.60%
Nov-98	1.10	1.30	1.00			0.58		1.20	1.68	1.51	19.62	12.11%
Dec-98	1.10	1.30	1.00			0.58		1.20	1.67	1.52	19.62	11.85%
Jan-99	1.00	1.30	1.00			0.80		1.10	1.57	1.31	19.78	11.95%
Feb-99	1.00	1.30	1.00			0.80		1.10	1.50	1.42	19.82	12.43%
Mar-99	1.00	1.30	1.00			0.80	0.75	1.10	1.47	1.34	20.47	12.57%
Apr-99	0.88	1.30	1.10	0.25		0.83	0.55	1.10	1.64	1.45	19.57	12.60%
May-99	0.88	1.30	1.10	0.25		0.83	0.55	1.10	1.79	1.53	19.94	12.21%
Jun-99	0.88	1.30	1.10	0.25		0.83	0.55	1.10	1.84	1.53	20.20	12.08%
Jul-99	0.98	1.40	1.00	0.25		0.85	0.63	1.20	1.78	1.51	20.77	12.22%
Aug-99	0.98	1.40	1.00	0.25		0.85	0.63	1.20	1.79	1.53	20.79	12.20%
Sep-99	0.98	1.40	1.00	0.25		0.85	0.63	1.20	1.81	1.47	20.79	12.26%
Oct-99	0.98	1.30	1.00		0.33	0.85	0.63	1.30	1.88	1.46	20.99	12.33%
Nov-99	0.98	1.30	1.00		0.33	0.85	0.63	1.30	1.92	1.40	20.90	12.40%
Dec-99	0.98	1.30	1.00		0.33	0.85	0.63	1.30	1.80	1.22	20.56	12.80%
Jan-00	0.87	1.20	0.98	0.23	0.33	0.68	0.60	1.30	1.74	1.25	18.97	13.01%
Feb-00	0.87	1.20	0.98	0.23	0.33	0.68	0.60	1.30	1.60	1.15	18.85	13.44%
Mar-00	0.87	1.20	0.98	0.23	0.33	0.68	0.60	1.30	1.74	1.50	19.56	13.44%
Apr-00	0.68	1.00	0.80	0.20	0.33	0.60	0.53	1.10	1.85	1.52	18.14	13.16%
May-00		1.00	0.80	0.20	0.33	0.60		1.10	2.03	1.62	17.34	12.92%
Jun-00		1.00	0.80	0.20	0.33	0.60	0.53	1.10	1.91	1.55	17.62	12.95%
Jul-00	0.85	1.20	0.95	0.23	0.30	0.60	0.60	1.20	1.93	1.56	20.83	13.17%
Aug-00	0.85	1.20	0.95	0.23	0.30	0.60	0.60	1.20	2.06	1.74	21.26	12.90%
Sep-00	0.85	1.20	0.95	0.23	0.30	0.60	0.60	1.20	2.20	2.23	22.47	12.57%
Oct-00	1.10	1.20	0.95	0.30	0.33	0.63	0.65	1.20	2.11	2.17	23.89	12.60%
Nov-00	1.10	1.20	0.95	0.30	0.33	0.63		1.20	2.24	2.23	23.36	12.51%
Dec-00		1.20	0.95	0.30	0.33	0.63		1.20	2.47	2.42	23.05	12.39%
Jan-01		1.60	1.10	0.28	0.34	0.68		1.30	2.07	2.24	23.83	12.61%
Feb-01		1.60	1.10	0.28	0.34	0.68		1.30	2.05	2.21	23.73	12.61%
Mar-01		1.60	1.10	0.28	0.34	0.68		1.30	2.12	2.21	24.17	12.75%
Apr-01	1.30	1.60	1.10	0.25	0.35	0.65	0.68	1.30	2.20	2.58	25.44	12.27%
May-01	1.30	1.60	1.10	0.25	0.35	0.65	0.68	1.30	2.26	2.50	26.55	13.02%
Jun-01	1.30	1.60	1.10	0.25	0.35	0.65	0.68	1.30	2.06	2.00	25.60	13.04%
Jul-01	0.95	1.40	1.10	0.27	0.38	0.68	0.78	1.30	1.90	1.90	24.36	13.38%
Aug-01	0.95	1.40	1.10	0.27	0.38	0.68	0.78	1.30	1.90	1.83	24.00	13.27%
Sep-01	0.95	1.40	1.10	0.27	0.38		0.78	1.30	1.83	1.63	22.48	12.68%
Oct-01	0.95	1.40	1.10	0.27	0.38		0.78	1.30	1.86	1.78	22.54	12.68%
Nov-01	0.95	1.40	1.10	0.27	0.38		0.80	1.30	1.78	1.89	22.55	12.68%
Dec-01	1.02	1.30	1.11	0.20	0.38		0.81	1.33	1.96	2.04	22.53	12.54%
Jan-02	1.04	1.34	1.10	0.20	0.39		0.82	1.35	1.82	1.95	22.00	12.36%

Discounted Cash Flow

Month Ending	Oneoke				SJI	SWX	UGI	WGL	NFG	STR	Total	
	OKE	PGL	PNY	SEN							Mkt Cap	Ave. DCF
Feb-02	1.18	1.39	1.11		0.37		0.82	1.34	1.95	1.82	22.52	12.41%
Mar-02	1.20	1.40	1.10		0.38		0.83	1.29	1.94	2.09	23.22	11.89%
Apr-02	1.20	1.40	1.10		0.38		0.83	1.29	1.90	2.28	23.46	11.59%
May-02	1.20	1.40	1.10		0.38	0.78	0.83	1.29	1.86	2.25	24.17	11.62%
Jun-02	1.30	1.40	1.10		0.40	0.78	0.83	1.29	1.80	2.02	25.38	11.70%
Jul-02	1.30	1.40	1.10		0.40	0.78	0.83	1.29	1.55	1.85	24.95	12.42%
Aug-02	1.11	1.19	1.07		0.38	0.70	0.81	1.10	1.63	2.04	22.89	12.34%
Sep-02	1.20	1.16	1.13		0.39	0.72	0.90	1.15	1.59	1.87	23.09	12.60%
Oct-02	1.20	1.20	1.20		0.38	0.73	0.98	1.20	1.62	2.11	24.06	12.50%
Nov-02	1.20	1.20	1.20		0.38	0.73	0.98	1.20	1.66	2.14	24.13	12.21%
Dec-02	1.20	1.30	1.20			0.78	1.00	1.20	1.67	2.28	24.34	12.16%
Jan-03	1.20	1.30	1.20			0.78	1.00	1.20	1.66	2.25	24.43	12.19%
Feb-03	1.20	1.30	1.20			0.78	1.00	1.20	1.57	2.28	24.33	12.32%
Mar-03	1.30	1.30	1.10			0.65	1.20	1.20	1.76	2.43	23.76	11.95%
Apr-03	1.30	1.30	1.10			0.65	1.20	1.20	1.89	2.48	23.99	11.62%
May-03	1.30	1.30	1.10			0.65	1.20	1.20	2.07	2.67	24.47	11.26%
Jun-03	1.90	1.60	1.30			0.75	1.40	1.40	2.10	2.77	29.22	11.14%
Jul-03	1.90	1.60	1.30			0.75	1.40	1.40	1.95	2.64	28.81	11.27%
Aug-03	1.90	1.60	1.30			0.75	1.40	1.40	1.88	2.66	28.80	11.39%
Sep-03	1.60	1.50	1.30			0.75	1.30	1.30	1.86	2.55	27.74	11.27%
Oct-03	1.60	1.50	1.30			0.75	1.30	1.30	1.82	2.63	27.79	11.23%
Nov-03	1.60	1.50	1.30			0.75	1.30	1.30	1.88	2.83	28.05	10.89%
Dec-03	1.70	1.50	1.40			0.75	1.40	1.30	1.99	2.92	29.01	10.71%
Jan-04	1.70	1.50				0.75	1.40	1.30	1.90	2.80	27.43	10.59%
Feb-04	1.70	1.50	1.40			0.75	1.40	1.30	1.90	2.80	28.83	10.39%
Mar-04	2.40	1.70	1.40			0.78		1.40	2.10	3.00	28.10	10.37%
Apr-04	2.40	1.70	1.40			0.78		1.40	2.10	3.00	28.10	10.41%
May-04	2.40	1.70	1.40					1.40	2.10	3.00	26.33	10.45%
Jun-04	2.40	1.60	1.60					1.40	2.00	3.10	25.25	10.36%
Jul-04	2.50	1.60	1.60			0.83		1.40	2.00	3.40	29.58	10.11%
Aug-04	2.50	1.60	1.70			0.83		1.40	2.00	3.40	31.13	10.08%
Sep-04	2.50	1.60	1.70			0.83		1.40	2.30	3.40	27.83	9.76%
Oct-04	2.80	1.70	1.80			0.90		1.50	2.30	4.00	27.50	9.74%
Nov-04	2.80	1.70	1.80			0.90		1.50	2.30	4.00	27.50	9.62%
Dec-04	2.80	1.70	1.80			0.90		1.50		4.00	26.08	9.70%
Jan-05	2.90	1.66	1.79			0.90		1.47		4.20	29.62	9.90%
Feb-05	2.80	1.65	1.77			0.90		1.44		4.10	30.41	9.79%
Mar-05	3.00	1.63	1.78			0.90		1.49		4.40	31.23	9.79%
Apr-05	3.13		1.90					1.60		5.50	33.04	9.88%
May-05	3.13		1.90					1.60		5.50	33.04	9.81%
Jun-05	3.43		1.88					1.60		6.64	35.98	9.76%
Jul-05	3.43		1.88					1.60		6.64	36.99	9.66%
Aug-05	3.43		1.88					1.60		6.64	36.99	9.69%
Sep-05	2.71		1.79					1.53	2.57	6.78	37.72	9.80%

Discounted Cash Flow

Month Ending	Oneoke										Total	Ave. DCF
	OKE	PGL	PNY	SEN	SJI	SWX	UGI	WGL	NFG	STR	Mkt Cap	
Oct-05	2.71		1.79					1.53	2.57	6.78	37.72	9.90%
Nov-05	2.71							1.53	2.57	6.78	35.93	10.49%
Dec-05	2.63	1.40						1.49	2.75	6.74	37.34	10.45%
Jan-06	2.63	1.40	1.83					1.49	2.75	6.74	39.17	9.82%
Feb-06								1.49		6.74	19.71	11.24%
Mar-06								1.43		6.84	19.64	11.27%
Apr-06	3.87	1.39			0.77			1.43		6.84	27.42	11.00%
May-06	4.01	1.42	1.92		0.78			1.39	2.94	6.13	34.27	10.56%
Jun-06	4.01		1.92		0.78			1.39	2.94	6.13	32.85	10.49%
Jul-06	4.41		1.90					1.43	3.26	7.65	35.44	10.87%
Aug-06	4.41		1.90					1.43	3.17	7.65	35.36	10.41%
Sep-06	4.41		1.90					1.43	3.17	7.65	33.97	10.53%
Oct-06	4.58				0.91			1.59	3.18	7.05	35.25	10.30%
Nov-06	4.80				0.97			1.62	3.29	7.49	35.02	10.33%
Dec-06	4.81				0.97			1.61	3.26	7.52	35.00	10.35%
Jan-07	4.77		1.97		1.00			1.55	3.56	7.06	38.86	10.13%
Feb-07	4.60		1.88		1.00			1.53	3.43	7.08	36.28	10.18%
Mar-07	5.40				1.16			1.68	3.89	8.41	40.05	10.18%
Apr-07	5.40				1.16			1.68	3.89	8.41	40.05	10.07%
May-07	5.51				1.06			1.62	3.68	9.29	40.40	9.67%
Jun-07	5.51				1.06			1.62	3.68	9.29	40.40	9.70%
Jul-07	4.96				1.05			1.70	3.98	8.95	35.33	10.06%
Aug-07	4.96				1.05			1.70	3.98	8.95	35.33	10.21%
Sep-07	4.96				1.05			1.70	3.98	8.95	35.33	10.14%
Oct-07	4.64				1.07				3.89	9.50	37.00	10.80%
Nov-07	4.64				1.07				3.89	9.50	37.00	10.83%
Dec-07	4.64				1.07				3.89	9.50	37.00	10.84%
Jan-08	4.87				1.04				3.84	8.88	36.58	11.13%
Feb-08	4.98		1.94		1.10	1.32				10.80	40.07	11.39%
Mar-08	4.98		1.94		1.10	1.32				10.80	40.07	11.47%
Apr-08	4.98		1.94		1.10	1.32				10.80	40.63	11.67%
May-08	4.69		1.90		1.11	1.23		1.70		12.27	46.03	10.69%
Jun-08	4.69		1.90		1.11	1.23		1.70		12.27	44.66	10.62%
Jul-08	4.69		1.95		1.07	1.23				8.99	36.95	10.86%
Aug-08	4.57		2.12		1.06	1.32				9.00	36.99	11.23%
Sep-08	3.33		2.41			1.14				5.98	28.52	11.30%
Oct-08	3.49		2.39			1.29				5.99	27.58	12.13%
Nov-08	3.07		2.46			1.14				5.58	26.57	12.21%
Dec-08	3.05		2.02		1.13	1.08				5.82	29.77	11.62%
Jan-09	2.93		2.00		1.13	1.15				6.25	31.56	11.31%
Feb-09	2.35		1.77		1.07	0.86				5.00	26.03	11.55%
Mar-09	2.93		1.82		1.05	0.91				5.82	29.04	11.98%
Apr-09	2.93		1.82		1.05	0.91				5.82	29.04	11.46%
May-09	3.06		1.75		1.06	0.99					21.97	12.25%

Discounted Cash Flow

Month Ending	Oneoke										Total	Ave. DCF
	OKE	PGL	PNY	SEN	SJI	SWX	UGI	WGL	NFG	STR	Mkt Cap	
Jun-09	3.06		1.75		1.06	0.99					21.97	12.08%
Jul-09	3.59		1.70		1.01	1.09	2.76	1.63	3.62		34.05	11.45%
Aug-09	3.79		1.72		1.07	1.14	2.70	1.66	3.65		34.57	11.09%
Sep-09	3.79		1.72		1.07	1.14	2.70	1.66	3.65		34.57	11.09%
Oct-09	3.22		2.23			1.11				6.33	27.97	11.46%
Nov-09	3.22		2.23			1.11				6.33	27.97	11.48%
Dec-09	3.22		2.23			1.11				6.33	27.97	11.23%
Jan-10	4.57		1.89		1.14				3.94		25.55	11.98%
Feb-10	4.92		1.96		1.20				4.18		26.78	11.67%
Mar-10	5.04		1.98		1.29				4.23		26.02	10.74%

=R - S											
		X		Y							
Line No.	Date	DCF	Bond Yield	Risk Premium	y	x	x	x			
					Risk Premium	Lag Risk Premium	A Bond Yield	Lag Yield	Adjusted Risk Premium	Adjusted Bond Yield	
1	Jun-98	0.1154	0.0703	0.0451							
2	Jul-98	0.1186	0.0703	0.0483	0.0483	0.0451	0.0703	0.0703	0.0113	0.0125	
3	Aug-98	0.1234	0.0700	0.0534	0.0534	0.0483	0.0700	0.0703	0.0136	0.0122	
4	Sep-98	0.1273	0.0693	0.0580	0.0580	0.0534	0.0693	0.0700	0.0142	0.0118	
5	Oct-98	0.1260	0.0696	0.0564	0.0564	0.0580	0.0696	0.0693	0.0087	0.0126	
6	Nov-98	0.1211	0.0703	0.0508	0.0508	0.0564	0.0703	0.0696	0.0045	0.0131	
7	Dec-98	0.1185	0.0691	0.0494	0.0494	0.0508	0.0691	0.0703	0.0076	0.0113	
8	Jan-99	0.1195	0.0697	0.0498	0.0498	0.0494	0.0697	0.0691	0.0093	0.0129	
9	Feb-99	0.1243	0.0709	0.0534	0.0534	0.0498	0.0709	0.0697	0.0125	0.0136	
10	Mar-99	0.1257	0.0726	0.0531	0.0531	0.0534	0.0726	0.0709	0.0092	0.0143	
11	Apr-99	0.1260	0.0722	0.0538	0.0538	0.0531	0.0722	0.0726	0.0102	0.0125	
12	May-99	0.1221	0.0747	0.0474	0.0474	0.0538	0.0747	0.0722	0.0032	0.0154	
13	Jun-99	0.1208	0.0774	0.0434	0.0434	0.0474	0.0774	0.0747	0.0044	0.0160	
14	Jul-99	0.1222	0.0771	0.0451	0.0451	0.0434	0.0771	0.0774	0.0095	0.0135	
15	Aug-99	0.1220	0.0791	0.0429	0.0429	0.0451	0.0791	0.0771	0.0059	0.0157	
16	Sep-99	0.1226	0.0793	0.0433	0.0433	0.0429	0.0793	0.0791	0.0080	0.0143	
17	Oct-99	0.1233	0.0806	0.0427	0.0427	0.0433	0.0806	0.0793	0.0071	0.0154	
18	Nov-99	0.1240	0.0794	0.0446	0.0446	0.0427	0.0794	0.0806	0.0095	0.0132	
19	Dec-99	0.1280	0.0814	0.0466	0.0466	0.0446	0.0814	0.0794	0.0099	0.0161	
20	Jan-00	0.1301	0.0835	0.0466	0.0466	0.0466	0.0835	0.0814	0.0083	0.0166	
21	Feb-00	0.1344	0.0825	0.0519	0.0519	0.0466	0.0825	0.0835	0.0136	0.0139	
22	Mar-00	0.1344	0.0828	0.0516	0.0516	0.0519	0.0828	0.0825	0.0090	0.0150	
23	Apr-00	0.1316	0.0829	0.0487	0.0487	0.0516	0.0829	0.0828	0.0063	0.0149	
24	May-00	0.1292	0.0870	0.0422	0.0422	0.0487	0.0870	0.0829	0.0021	0.0189	
25	Jun-00	0.1295	0.0836	0.0459	0.0459	0.0422	0.0836	0.0870	0.0113	0.0121	
26	Jul-00	0.1317	0.0825	0.0492	0.0492	0.0459	0.0825	0.0836	0.0114	0.0138	
27	Aug-00	0.1290	0.0813	0.0477	0.0477	0.0492	0.0813	0.0825	0.0073	0.0135	
28	Sep-00	0.1257	0.0823	0.0434	0.0434	0.0477	0.0823	0.0813	0.0042	0.0155	
29	Oct-00	0.1260	0.0814	0.0446	0.0446	0.0434	0.0814	0.0823	0.0089	0.0138	
30	Nov-00	0.1251	0.0811	0.0440	0.0440	0.0446	0.0811	0.0814	0.0074	0.0142	
31	Dec-00	0.1239	0.0784	0.0455	0.0455	0.0440	0.0784	0.0811	0.0093	0.0118	
32	Jan-01	0.1261	0.0780	0.0481	0.0481	0.0455	0.0780	0.0784	0.0108	0.0136	
33	Feb-01	0.1261	0.0774	0.0487	0.0487	0.0481	0.0774	0.0780	0.0091	0.0133	
34	Mar-01	0.1275	0.0768	0.0507	0.0507	0.0487	0.0768	0.0774	0.0107	0.0132	
35	Apr-01	0.1227	0.0794	0.0433	0.0433	0.0507	0.0794	0.0768	0.0016	0.0163	
36	May-01	0.1302	0.0799	0.0503	0.0503	0.0433	0.0799	0.0794	0.0148	0.0146	
37	Jun-01	0.1304	0.0785	0.0519	0.0519	0.0503	0.0785	0.0799	0.0106	0.0128	
38	Jul-01	0.1338	0.0778	0.0560	0.0560	0.0519	0.0778	0.0785	0.0133	0.0133	
39	Aug-01	0.1327	0.0759	0.0568	0.0568	0.0560	0.0759	0.0778	0.0108	0.0120	
40	Sep-01	0.1268	0.0775	0.0493	0.0493	0.0568	0.0775	0.0759	0.0026	0.0151	
41	Oct-01	0.1268	0.0763	0.0505	0.0505	0.0493	0.0763	0.0775	0.0101	0.0126	
42	Nov-01	0.1268	0.0757	0.0511	0.0511	0.0505	0.0757	0.0763	0.0096	0.0130	
43	Dec-01	0.1254	0.0783	0.0471	0.0471	0.0511	0.0783	0.0757	0.0051	0.0161	
44	Jan-02	0.1236	0.0766	0.0470	0.0470	0.0471	0.0766	0.0783	0.0083	0.0123	
45	Feb-02	0.1241	0.0754	0.0487	0.0487	0.0470	0.0754	0.0766	0.0101	0.0124	
46	Mar-02	0.1189	0.0776	0.0413	0.0413	0.0487	0.0776	0.0754	0.0013	0.0156	
47	Apr-02	0.1159	0.0757	0.0402	0.0402	0.0413	0.0757	0.0776	0.0063	0.0119	
48	May-02	0.1162	0.0752	0.0410	0.0410	0.0402	0.0752	0.0757	0.0080	0.0130	
49	Jun-02	0.1170	0.0741	0.0429	0.0429	0.0410	0.0741	0.0752	0.0092	0.0123	
50	Jul-02	0.1242	0.0731	0.0511	0.0511	0.0429	0.0731	0.0741	0.0158	0.0122	
51	Aug-02	0.1234	0.0717	0.0517	0.0517	0.0511	0.0717	0.0731	0.0097	0.0116	

52	Sep-02	0.1260	0.0708	0.0552	0.0552	0.0517	0.0708	0.0717	0.0127	0.0119
53	Oct-02	0.1250	0.0723	0.0527	0.0527	0.0552	0.0723	0.0708	0.0074	0.0141
54	Nov-02	0.1221	0.0714	0.0507	0.0507	0.0527	0.0714	0.0723	0.0074	0.0120
55	Dec-02	0.1216	0.0707	0.0509	0.0509	0.0507	0.0707	0.0714	0.0092	0.0120
56	Jan-03	0.1219	0.0706	0.0513	0.0513	0.0509	0.0706	0.0707	0.0095	0.0125
57	Feb-03	0.1232	0.0693	0.0539	0.0539	0.0513	0.0693	0.0706	0.0118	0.0113
58	Mar-03	0.1195	0.0679	0.0516	0.0516	0.0539	0.0679	0.0693	0.0073	0.0109
59	Apr-03	0.1162	0.0664	0.0498	0.0498	0.0516	0.0664	0.0679	0.0074	0.0106
60	May-03	0.1126	0.0636	0.0490	0.0490	0.0498	0.0636	0.0664	0.0081	0.0090
61	Jun-03	0.1114	0.0621	0.0493	0.0493	0.0490	0.0621	0.0636	0.0090	0.0098
62	Jul-03	0.1127	0.0657	0.0470	0.0470	0.0493	0.0657	0.0621	0.0065	0.0147
63	Aug-03	0.1139	0.0678	0.0461	0.0461	0.0470	0.0678	0.0657	0.0075	0.0138
64	Sep-03	0.1127	0.0656	0.0471	0.0471	0.0461	0.0656	0.0678	0.0093	0.0099
65	Oct-03	0.1123	0.0643	0.0480	0.0480	0.0471	0.0643	0.0656	0.0093	0.0104
66	Nov-03	0.1089	0.0637	0.0452	0.0452	0.0480	0.0637	0.0643	0.0058	0.0109
67	Dec-03	0.1071	0.0627	0.0444	0.0444	0.0452	0.0627	0.0637	0.0072	0.0103
68	Jan-04	0.1059	0.0615	0.0444	0.0444	0.0444	0.0615	0.0627	0.0080	0.0100
69	Feb-04	0.1039	0.0615	0.0424	0.0424	0.0444	0.0615	0.0615	0.0059	0.0110
70	Mar-04	0.1037	0.0597	0.0440	0.0440	0.0424	0.0597	0.0615	0.0091	0.0092
71	Apr-04	0.1041	0.0635	0.0406	0.0406	0.0440	0.0635	0.0597	0.0044	0.0144
72	May-04	0.1045	0.0662	0.0383	0.0383	0.0406	0.0662	0.0635	0.0049	0.0140
73	Jun-04	0.1036	0.0646	0.0390	0.0390	0.0383	0.0646	0.0662	0.0076	0.0102
74	Jul-04	0.1011	0.0627	0.0384	0.0384	0.0390	0.0627	0.0646	0.0063	0.0096
75	Aug-04	0.1008	0.0614	0.0394	0.0394	0.0384	0.0614	0.0627	0.0079	0.0099
76	Sep-04	0.0976	0.0598	0.0378	0.0378	0.0394	0.0598	0.0614	0.0054	0.0093
77	Oct-04	0.0974	0.0594	0.0380	0.0380	0.0378	0.0594	0.0598	0.0069	0.0103
78	Nov-04	0.0962	0.0597	0.0365	0.0365	0.0380	0.0597	0.0594	0.0053	0.0109
79	Dec-04	0.0970	0.0592	0.0378	0.0378	0.0365	0.0592	0.0597	0.0078	0.0101
80	Jan-05	0.0990	0.0578	0.0412	0.0412	0.0378	0.0578	0.0592	0.0102	0.0091
81	Feb-05	0.0979	0.0561	0.0418	0.0418	0.0412	0.0561	0.0578	0.0079	0.0086
82	Mar-05	0.0979	0.0583	0.0396	0.0396	0.0418	0.0583	0.0561	0.0052	0.0122
83	Apr-05	0.0988	0.0564	0.0424	0.0424	0.0396	0.0564	0.0583	0.0099	0.0085
84	May-05	0.0981	0.0553	0.0427	0.0427	0.0424	0.0553	0.0564	0.0079	0.0090
85	Jun-05	0.0976	0.0540	0.0436	0.0436	0.0427	0.0540	0.0553	0.0085	0.0085
86	Jul-05	0.0966	0.0551	0.0415	0.0415	0.0436	0.0551	0.0540	0.0056	0.0107
87	Aug-05	0.0969	0.0550	0.0419	0.0419	0.0415	0.0550	0.0551	0.0078	0.0097
88	Sep-05	0.0980	0.0552	0.0428	0.0428	0.0419	0.0552	0.0550	0.0084	0.0100
89	Oct-05	0.0990	0.0579	0.0411	0.0411	0.0428	0.0579	0.0552	0.0059	0.0125
90	Nov-05	0.1049	0.0588	0.0461	0.0461	0.0411	0.0588	0.0579	0.0123	0.0112
91	Dec-05	0.1045	0.0580	0.0465	0.0465	0.0461	0.0580	0.0588	0.0086	0.0097
92	Jan-06	0.0982	0.0575	0.0407	0.0407	0.0465	0.0575	0.0580	0.0024	0.0098
93	Feb-06	0.1124	0.0582	0.0542	0.0542	0.0407	0.0582	0.0575	0.0208	0.0109
94	Mar-06	0.1127	0.0598	0.0529	0.0529	0.0542	0.0598	0.0582	0.0084	0.0120
95	Apr-06	0.1100	0.0629	0.0471	0.0471	0.0529	0.0629	0.0598	0.0036	0.0138
96	May-06	0.1056	0.0642	0.0414	0.0414	0.0471	0.0642	0.0629	0.0027	0.0125
97	Jun-06	0.1049	0.0640	0.0409	0.0409	0.0414	0.0640	0.0642	0.0069	0.0112
98	Jul-06	0.1087	0.0637	0.0450	0.0450	0.0409	0.0637	0.0640	0.0114	0.0111
99	Aug-06	0.1041	0.0620	0.0421	0.0421	0.0450	0.0620	0.0637	0.0051	0.0096
100	Sep-06	0.1053	0.0600	0.0453	0.0453	0.0421	0.0600	0.0620	0.0107	0.0090
101	Oct-06	0.1030	0.0598	0.0432	0.0432	0.0453	0.0598	0.0600	0.0060	0.0105
102	Nov-06	0.1033	0.0580	0.0453	0.0453	0.0432	0.0580	0.0598	0.0098	0.0089
103	Dec-06	0.1035	0.0581	0.0454	0.0454	0.0453	0.0581	0.0580	0.0082	0.0104
104	Jan-07	0.1013	0.0596	0.0417	0.0417	0.0454	0.0596	0.0581	0.0044	0.0119
105	Feb-07	0.1018	0.0590	0.0428	0.0428	0.0417	0.0590	0.0596	0.0085	0.0100

106	Mar-07	0.1018	0.0585	0.0433	0.0433	0.0428	0.0585	0.0590	0.0081	0.0100
107	Apr-07	0.1007	0.0597	0.0410	0.0410	0.0433	0.0597	0.0585	0.0055	0.0116
108	May-07	0.0967	0.0599	0.0368	0.0368	0.0410	0.0599	0.0597	0.0031	0.0108
109	Jun-07	0.0970	0.0630	0.0340	0.0340	0.0368	0.0630	0.0599	0.0037	0.0138
110	Jul-07	0.1006	0.0625	0.0381	0.0381	0.0340	0.0625	0.0630	0.0102	0.0107
111	Aug-07	0.1021	0.0624	0.0397	0.0397	0.0381	0.0624	0.0625	0.0083	0.0110
112	Sep-07	0.1014	0.0618	0.0396	0.0396	0.0397	0.0618	0.0624	0.0070	0.0105
113	Oct-07	0.1080	0.0611	0.0469	0.0469	0.0396	0.0611	0.0618	0.0144	0.0103
114	Nov-07	0.1083	0.0597	0.0486	0.0486	0.0469	0.0597	0.0611	0.0100	0.0095
115	Dec-07	0.1084	0.0616	0.0468	0.0468	0.0486	0.0616	0.0597	0.0069	0.0125
116	Jan-08	0.1113	0.0602	0.0511	0.0511	0.0468	0.0602	0.0616	0.0126	0.0096
117	Feb-08	0.1139	0.0621	0.0518	0.0518	0.0511	0.0621	0.0602	0.0098	0.0126
118	Mar-08	0.1147	0.0621	0.0526	0.0526	0.0518	0.0621	0.0621	0.0100	0.0111
119	Apr-08	0.1167	0.0629	0.0538	0.0538	0.0526	0.0629	0.0621	0.0106	0.0119
120	May-08	0.1069	0.0627	0.0442	0.0442	0.0538	0.0627	0.0629	0.0000	0.0110
121	Jun-08	0.1062	0.0638	0.0424	0.0424	0.0442	0.0638	0.0627	0.0061	0.0122
122	Jul-08	0.1086	0.0640	0.0446	0.0446	0.0424	0.0640	0.0638	0.0098	0.0116
123	Aug-08	0.1123	0.0637	0.0486	0.0486	0.0446	0.0637	0.0640	0.0119	0.0111
124	Sep-08	0.1130	0.0649	0.0481	0.0481	0.0486	0.0649	0.0637	0.0082	0.0125
125	Oct-08	0.1213	0.0756	0.0457	0.0457	0.0481	0.0756	0.0649	0.0062	0.0222
126	Nov-08	0.1221	0.0760	0.0461	0.0461	0.0457	0.0760	0.0756	0.0086	0.0139
127	Dec-08	0.1162	0.0654	0.0508	0.0508	0.0461	0.0654	0.0760	0.0129	0.0029
128	Jan-09	0.1131	0.0639	0.0492	0.0492	0.0508	0.0639	0.0654	0.0075	0.0101
129	Feb-09	0.1155	0.0630	0.0524	0.0524	0.0492	0.0630	0.0639	0.0120	0.0106
130	Mar-09	0.1198	0.0642	0.0556	0.0556	0.0524	0.0642	0.0630	0.0125	0.0124
131	Apr-09	0.1146	0.0648	0.0498	0.0498	0.0556	0.0648	0.0642	0.0041	0.0121
132	May-09	0.1225	0.0649	0.0576	0.0576	0.0498	0.0649	0.0648	0.0168	0.0116
133	Jun-09	0.1208	0.0620	0.0588	0.0588	0.0576	0.0620	0.0649	0.0115	0.0086
134	Jul-09	0.1145	0.0597	0.0548	0.0548	0.0588	0.0597	0.0620	0.0064	0.0088
135	Aug-09	0.1109	0.0571	0.0538	0.0538	0.0548	0.0571	0.0597	0.0088	0.0080
136	Sep-09	0.1109	0.0553	0.0556	0.0556	0.0538	0.0553	0.0571	0.0113	0.0084
137	Oct-09	0.1146	0.0555	0.0592	0.0592	0.0556	0.0555	0.0553	0.0135	0.0100
138	Nov-09	0.1148	0.0564	0.0584	0.0584	0.0592	0.0564	0.0555	0.0097	0.0108
139	Dec-09	0.1123	0.0579	0.0544	0.0544	0.0584	0.0579	0.0564	0.0064	0.0115
140	Jan-10	0.1198	0.0577	0.0621	0.0621	0.0544	0.0577	0.0579	0.0175	0.0101
141	Feb-10	0.1167	0.0587	0.0580	0.0580	0.0621	0.0587	0.0577	0.0069	0.0113
142	Mar-10	0.1074	0.0584	0.0490	0.0490	0.0580	0.0584	0.0587	0.0013	0.0102

Simple Regression - Risk Premium vs. Bond Yield

Dependent variable: Risk Premium

Independent variable: Bond Yield

Linear model: $Y = a + b \cdot X$

Coefficients

Parameter	Least Squares	Standard	T	P-Value
	Estimate	Error	Statistic	
Intercept	0.0423881	0.00376698	11.2525	0
Slope	0.0699798	0.0555388	1.26002	0.2098

Analysis of Variance

Source	Sum of Squares	Df	Mean Square	F-Ratio	P-Value
Model	5.02382E-05	1	5.02382E-05	1.59	0.2098
Residual	0.00443006	140	3.16433E-05		
Total (Corr.)	0.0044803	141			

Correlation Coefficient = 0.105892

R-squared = 1.12131 percent

R-squared (adjusted for d.f.) = 0.415038 percent

Standard Error of Est. = 0.00562524

Mean absolute error = 0.00459166

Durbin-Watson statistic = 0.404208 (P=0.0000)

Lag 1 residual autocorrelation = 0.796626

Multiple Regression - Risk Premium__1

Dependent variable: Risk Premium__1

Independent variables:

Lag Risk Premium

A Bond Yield

Lag Yield

Parameter	Estimate	Standard Error	T Statistic	P-Value
CONSTANT	0.00708738	0.0029183	2.4286	0.0165
Lag Risk Premium	0.821823	0.0476845	17.2346	0
A Bond Yield	-0.6036	0.136824	-4.41152	0
Lag Yield	0.622583	0.136957	4.54584	0

Analysis of Variance

Source	Sum of Squares	Df	Mean Square	F-Ratio	P-Value
Model	0.00311286	3	0.00103762	104.26	0.00
Residual	0.00136343	137	9.95202E-06		
Total (Corr.)	0.00447628	140			

R-squared = 69.5411 percent

R-squared (adjusted for d.f.) = 68.8741 percent

Standard Error of Est. = 0.00315468

Mean absolute error = 0.00228199

Durbin-Watson statistic = 1.86973 (P=0.2206)

Lag 1 residual autocorrelation = 0.0440114

Simple Regression - Adjusted Risk Premium vs. Adjusted Bond Yield

Dependent variable: Adjusted Risk Premium

Independent variable: Adjusted Bond Yield

Linear model: $Y = a + b \cdot X$

Coefficients

Parameter	Least Squares Estimate	Standard Error	T Statistic	P-Value
Intercept	0.0125847	0.00141899	8.86878	0
Slope	-0.349376	0.116853	-2.98987	0.0033

Analysis of Variance

Source	Sum of Squares	Df	Mean Square	F-Ratio	P-Value
Model	9.54778E-05	1	9.54778E-05	8.94	0.0033
Residual	0.00148461	139	1.06806E-05		
Total (Corr.)	0.00158009	140			

Correlation Coefficient = -0.245816

R-squared = 6.04256 percent

R-squared (adjusted for d.f.) = 5.36661 percent

Standard Error of Est. = 0.00326813

Mean absolute error = 0.00248973

Durbin-Watson statistic = 1.84152 (P=0.1743)

Lag 1 residual autocorrelation = 0.0559634

Value Line Selection & Opinion, February 26, 2010, p. 3019

Value Line	2010	2011	Change
AAA-rated Corporate	5.80%	6.00%	0.20%
Long-term Treasury	4.60%	4.90%	0.30%

Mar-10

Mar-10 Spread Forecast

AAA-rated Corporate	5.27%		
A-rated Utility	5.84%	0.57%	6.57% Current spread AAA to A is 57 basis points. Add 57 basis points to the 6% AAA forecast
30-year Treasury	4.64%		
20-year Treasury	4.49%	-0.15%	4.75% Current spread 30 year to 20 year; add negative 15 to 4.9% long-term forecast

A-rated utility forecast =
20-year Treasury forecast =

VL AAA-rated Corporate + spread to A-util	6.00%	0.57%	6.57%
VL LT Treasury + spread between 30-yr an	4.90%	-0.15%	4.75%

Schedule 4
Comparative Returns on S&P 500 Stock Index
and Moody's A-Rated Utility Bonds 1937 - 2010

Line No.	Year	S&P 500 Stock Price	Stock Dividend Yield	Stock Return	A-rated Bond Price	Bond Return	Risk Premium
1	2010	1,123.58	0.0203		\$75.02		
2	2009	865.58	0.0310	32.91%	\$68.43	15.48%	17.43%
3	2008	1,380.33	0.0211	-35.19%	\$72.25	0.24%	-35.43%
4	2007	1,424.16	0.0181	-1.27%	\$72.91	4.59%	-5.86%
5	2006	1,278.72	0.0183	13.20%	\$75.25	2.20%	11.01%
6	2005	1,181.41	0.0177	10.01%	\$74.91	5.80%	4.21%
7	2004	1,132.52	0.0162	5.94%	\$70.87	11.34%	-5.40%
8	2003	895.84	0.0180	28.22%	\$62.26	20.27%	7.95%
9	2002	1,140.21	0.0138	-20.05%	\$57.44	15.35%	-35.40%
10	2001	1,335.63	0.0116	-13.47%	\$56.40	8.93%	-22.40%
11	2000	1,425.59	0.0118	-5.13%	\$52.60	14.82%	-19.95%
12	1999	1,248.77	0.0130	15.46%	\$63.03	-10.20%	25.66%
13	1998	963.35	0.0162	31.25%	\$62.43	7.38%	23.87%
14	1997	766.22	0.0195	27.68%	\$56.62	17.32%	10.36%
15	1996	614.42	0.0231	27.02%	\$60.91	-0.48%	27.49%
16	1995	465.25	0.0287	34.93%	\$50.22	29.26%	5.68%
17	1994	472.99	0.0269	1.05%	\$60.01	-9.65%	10.71%
18	1993	435.23	0.0288	11.56%	\$53.13	20.48%	-8.93%
19	1992	416.08	0.0290	7.50%	\$49.56	15.27%	-7.77%
20	1991	325.49	0.0382	31.65%	\$44.84	19.44%	12.21%
21	1990	339.97	0.0341	-0.85%	\$45.60	7.11%	-7.96%
22	1989	285.41	0.0364	22.76%	\$43.06	15.18%	7.58%
23	1988	250.48	0.0366	17.61%	\$40.10	17.36%	0.25%
24	1987	264.51	0.0317	-2.13%	\$48.92	-9.84%	7.71%
25	1986	208.19	0.0390	30.95%	\$39.98	32.36%	-1.41%
26	1985	171.61	0.0451	25.83%	\$32.57	35.05%	-9.22%
27	1984	166.39	0.0427	7.41%	\$31.49	16.12%	-8.72%
28	1983	144.27	0.0479	20.12%	\$29.41	20.65%	-0.53%
29	1982	117.28	0.0595	28.96%	\$24.48	36.48%	-7.51%
30	1981	132.97	0.0480	-7.00%	\$29.37	-3.01%	-3.99%
31	1980	110.87	0.0541	25.34%	\$34.69	-3.81%	29.16%
32	1979	99.71	0.0533	16.52%	\$43.91	-11.89%	28.41%
33	1978	90.25	0.0532	15.80%	\$49.09	-2.40%	18.20%
34	1977	103.80	0.0399	-9.06%	\$50.95	4.20%	-13.27%
35	1976	96.86	0.0380	10.96%	\$43.91	25.13%	-14.17%
36	1975	72.56	0.0507	38.56%	\$41.76	14.75%	23.81%
37	1974	96.11	0.0364	-20.86%	\$52.54	-12.91%	-7.96%
38	1973	118.40	0.0269	-16.14%	\$58.51	-3.37%	-12.77%
39	1972	103.30	0.0296	17.58%	\$56.47	10.69%	6.89%
40	1971	93.49	0.0332	13.81%	\$53.93	12.13%	1.69%
41	1970	90.31	0.0356	7.08%	\$50.46	14.81%	-7.73%
42	1969	102.00	0.0306	-8.40%	\$62.43	-12.76%	4.36%
43	1968	95.04	0.0313	10.45%	\$66.97	-0.81%	11.26%
44	1967	84.45	0.0351	16.05%	\$78.69	-9.81%	25.86%
45	1966	93.32	0.0302	-6.48%	\$86.57	-4.48%	-2.00%
46	1965	86.12	0.0299	11.35%	\$91.40	-0.91%	12.26%
47	1964	76.45	0.0305	15.70%	\$92.01	3.68%	12.02%
48	1963	65.06	0.0331	20.82%	\$93.56	2.61%	18.20%
49	1962	69.07	0.0297	-2.84%	\$89.60	8.89%	-11.73%
50	1961	59.72	0.0328	18.94%	\$89.74	4.29%	14.64%
51	1960	58.03	0.0327	6.18%	\$84.36	11.13%	-4.95%
52	1959	55.62	0.0324	7.57%	\$91.55	-3.49%	11.06%
53	1958	41.12	0.0448	39.74%	\$101.22	-5.60%	45.35%
54	1957	45.43	0.0431	-5.18%	\$100.70	4.49%	-9.67%
55	1956	44.15	0.0424	7.14%	\$113.00	-7.35%	14.49%
56	1955	35.60	0.0438	28.40%	\$116.77	0.20%	28.20%
57	1954	25.46	0.0569	45.52%	\$112.79	7.07%	38.45%
58	1953	26.18	0.0545	2.70%	\$114.24	2.24%	0.46%
59	1952	24.19	0.0582	14.05%	\$113.41	4.26%	9.79%
60	1951	21.21	0.0634	20.39%	\$123.44	-4.89%	25.28%
61	1950	16.88	0.0665	32.30%	\$125.08	1.89%	30.41%
62	1949	15.36	0.0620	16.10%	\$119.82	7.72%	8.37%
63	1948	14.83	0.0571	9.28%	\$118.50	4.49%	4.79%
64	1947	15.21	0.0449	1.99%	\$126.02	-2.79%	4.79%
65	1946	18.02	0.0356	-12.03%	\$126.74	2.59%	-14.63%
66	1945	13.49	0.0460	38.18%	\$119.82	9.11%	29.07%
67	1944	11.85	0.0495	18.79%	\$119.82	3.34%	15.45%
68	1943	10.09	0.0554	22.98%	\$118.50	4.49%	18.49%
69	1942	8.93	0.0788	20.87%	\$117.63	4.14%	16.73%
70	1941	10.55	0.0638	-8.98%	\$116.34	4.55%	-13.52%
71	1940	12.30	0.0458	-9.65%	\$112.39	7.08%	-16.73%
72	1939	12.50	0.0349	1.89%	\$105.75	10.05%	-8.16%
73	1938	11.31	0.0784	18.36%	\$99.83	9.94%	8.42%
74	1937	17.59	0.0434	-31.36%	\$103.18	0.63%	-31.99%
75	Average			11.06%		6.42%	4.64%

Time	SP500 Return	Bond Rate of Return	Time	SP500 Risk Premium
2009	0.3291	0.1548	2009	0.1743
2008	-0.3519	0.0024	2008	-0.3543
2007	-0.0127	0.0459	2007	-0.0586
2006	0.1320	0.0220	2006	0.1101
2005	0.1001	0.0580	2005	0.0421
2004	0.0594	0.1134	2004	-0.0540
2003	0.2822	0.2027	2003	0.0795
2002	-0.2005	0.1535	2002	-0.3540
2001	-0.1347	0.0893	2001	-0.2240
2000	-0.0513	0.1482	2000	-0.1995
1999	0.1546	-0.1020	1999	0.2566
1998	0.3125	0.0738	1998	0.2387
1997	0.2768	0.1732	1997	0.1036
1996	0.2702	-0.0048	1996	0.2749
1995	0.3493	0.2926	1995	0.0568
1994	0.0105	-0.0965	1994	0.1071
1993	0.1156	0.2048	1993	-0.0893
1992	0.0750	0.1527	1992	-0.0777
1991	0.3165	0.1944	1991	0.1221
1990	-0.0085	0.0711	1990	-0.0796
1989	0.2276	0.1518	1989	0.0758
1988	0.1761	0.1736	1988	0.0025
1987	-0.0213	-0.0984	1987	0.0771
1986	0.3095	0.3236	1986	-0.0141
1985	0.2583	0.3505	1985	-0.0922
1984	0.0741	0.1612	1984	-0.0872
1983	0.2012	0.2065	1983	-0.0053
1982	0.2896	0.3648	1982	-0.0751
1981	-0.0700	-0.0301	1981	-0.0399
1980	0.2534	-0.0381	1980	0.2916
1979	0.1652	-0.1189	1979	0.2841
1978	0.1580	-0.0240	1978	0.1820
1977	-0.0906	0.0420	1977	-0.1327
1976	0.1096	0.2513	1976	-0.1417
1975	0.3856	0.1475	1975	0.2381
1974	-0.2086	-0.1291	1974	-0.0796
1973	-0.1614	-0.0337	1973	-0.1277
1972	0.1758	0.1069	1972	0.0689
1971	0.1381	0.1213	1971	0.0169
1970	0.0708	0.1481	1970	-0.0773
1969	-0.0840	-0.1276	1969	0.0436
1968	0.1045	-0.0081	1968	0.1126
1967	0.1605	-0.0981	1967	0.2586
1966	-0.0648	-0.0448	1966	-0.0200
1965	0.1135	-0.0091	1965	0.1226
1964	0.1570	0.0368	1964	0.1202
1963	0.2082	0.0261	1963	0.1820
1962	-0.0284	0.0889	1962	-0.1173
1961	0.1894	0.0429	1961	0.1464
1960	0.0618	0.1113	1960	-0.0495
1959	0.0757	-0.0349	1959	0.1106
1958	0.3974	-0.0560	1958	0.4535
1957	-0.0518	0.0449	1957	-0.0967
1956	0.0714	-0.0735	1956	0.1449
1955	0.2840	0.0020	1955	0.2820
1954	0.4552	0.0707	1954	0.3845
1953	0.0270	0.0224	1953	0.0046
1952	0.1405	0.0426	1952	0.0979
1951	0.2039	-0.0489	1951	0.2528
1950	0.3230	0.0189	1950	0.3041
1949	0.1610	0.0772	1949	0.0837
1948	0.0928	0.0449	1948	0.0479
1947	0.0199	-0.0279	1947	0.0479
1946	-0.1203	0.0259	1946	-0.1463
1945	0.3818	0.0911	1945	0.2907
1944	0.1879	0.0334	1944	0.1545
1943	0.2298	0.0449	1943	0.1849
1942	0.2087	0.0414	1942	0.1673
1941	-0.0898	0.0455	1941	-0.1352
1940	-0.0965	0.0708	1940	-0.1673
1939	0.0189	0.1005	1939	-0.0816
1938	0.1836	0.0994	1938	0.0842
1937	-0.3136	0.0063	1937	-0.3199

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.168
R Square	0.028
Adjusted R Square	0.015
Standard Error	0.168
Observations	73

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.058	0.058	2.074	0.154
Residual	71	1.993	0.028		
Total	72	2.051			

	<i>Coefficient</i>	<i>Standard Err.</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	2.691	1.836	1.465	0.147	(0.971)	6.352	(0.971)	6.352
Time	(0.001)	0.001	(1.440)	0.154	(0.003)	0.001	(0.003)	0.001

Table 2

REGRESSION OUTPUT FOR RISK PREMIUM ON S&P 500

Line No.		Intercept	Time	Adjusted R Square	F
1	Coefficient	2.691	(0.001)	0.015	2.07
2	T Statistic	1.465	(1.440)		

Schedule 5
Comparative Returns on S&P Utility Stock Index
and Moody's A-Rated Utility Bonds 1937 - 2010

Line No.	Year	S&P Utility Stock Price	Stock Dividend Yield	Stock Return	A-rated Bond Yield	Bond Return	Risk Premium
1	2010				\$75.02		
2	2009			10.71%	\$68.43	15.48%	-4.77%
3	2008			-25.90%	\$72.25	0.24%	-26.14%
4	2007			16.56%	\$72.91	4.59%	11.96%
5	2006			20.76%	\$75.25	2.20%	18.56%
6	2005			16.05%	\$74.91	5.80%	10.25%
7	2004			22.84%	\$70.87	11.34%	11.50%
8	2003			23.48%	\$62.26	20.27%	3.21%
9	2002			-14.73%	\$57.44	15.35%	-30.08%
10							
11	2002	243.79	0.0362		\$57.44		
12	2001	307.70	0.0287	-17.90%	\$56.40	8.93%	-26.83%
13	2000	239.17	0.0413	32.78%	\$52.60	14.82%	17.96%
14	1999	253.52	0.0394	-1.72%	\$63.03	-10.20%	8.48%
15	1998	228.61	0.0457	15.47%	\$62.43	7.38%	8.09%
16	1997	201.14	0.0492	18.58%	\$56.62	17.32%	1.26%
17	1996	202.57	0.0454	3.83%	\$60.91	-0.48%	4.31%
18	1995	153.87	0.0584	37.49%	\$50.22	29.26%	8.23%
19	1994	168.70	0.0496	-3.83%	\$60.01	-9.65%	5.82%
20	1993	159.79	0.0537	10.95%	\$53.13	20.48%	-9.54%
21	1992	149.70	0.0572	12.46%	\$49.56	15.27%	-2.81%
22	1991	138.38	0.0607	14.25%	\$44.84	19.44%	-5.19%
23	1990	146.04	0.0558	0.33%	\$45.60	7.11%	-6.78%
24	1989	114.37	0.0699	34.68%	\$43.06	15.18%	19.51%
25	1988	106.13	0.0704	14.80%	\$40.10	17.36%	-2.55%
26	1987	120.09	0.0588	-5.74%	\$48.92	-9.84%	4.10%
27	1986	92.06	0.0742	37.87%	\$39.98	32.36%	5.51%
28	1985	75.83	0.0860	30.00%	\$32.57	35.05%	-5.04%
29	1984	68.50	0.0925	19.95%	\$31.49	16.12%	3.83%
30	1983	61.89	0.0948	20.16%	\$29.41	20.65%	-0.49%
31	1982	51.81	0.1074	30.20%	\$24.48	36.48%	-6.28%
32	1981	52.01	0.0978	9.40%	\$29.37	-3.01%	12.41%
33	1980	50.26	0.0953	13.01%	\$34.69	-3.81%	16.83%
34	1979	50.33	0.0893	8.79%	\$43.91	-11.89%	20.68%
35	1978	52.40	0.0791	3.96%	\$49.09	-2.40%	6.36%
36	1977	54.01	0.0714	4.16%	\$50.95	4.20%	-0.04%
37	1976	46.99	0.0776	22.70%	\$43.91	25.13%	-2.43%
38	1975	38.19	0.0920	32.24%	\$41.76	14.75%	17.49%
39	1974	48.60	0.0713	-14.29%	\$52.54	-12.91%	-1.38%
40	1973	60.01	0.0556	-13.45%	\$58.51	-3.37%	-10.08%
41	1972	60.19	0.0542	5.12%	\$56.47	10.69%	-5.57%
42	1971	63.43	0.0504	-0.07%	\$53.93	12.13%	-12.19%
43	1970	55.72	0.0561	19.45%	\$50.46	14.81%	4.64%
44	1969	68.65	0.0445	-14.38%	\$62.43	-12.76%	-1.62%
45	1968	68.02	0.0435	5.28%	\$66.97	-0.81%	6.08%
46	1967	70.63	0.0392	0.22%	\$78.69	-9.81%	10.03%
47	1966	74.50	0.0347	-1.72%	\$86.57	-4.48%	2.76%
48	1965	75.87	0.0315	1.34%	\$91.40	-0.91%	2.25%
49	1964	67.26	0.0331	16.11%	\$92.01	3.68%	12.43%
50	1963	63.35	0.0330	9.47%	\$93.56	2.61%	6.86%
51	1962	62.69	0.0320	4.25%	\$89.60	8.89%	-4.64%
52	1961	52.73	0.0358	22.47%	\$89.74	4.29%	18.18%
53	1960	44.50	0.0403	22.52%	\$84.36	11.13%	11.39%
54	1959	43.96	0.0377	5.00%	\$91.55	-3.49%	8.49%
55	1958	33.30	0.0487	36.88%	\$101.22	-5.60%	42.48%
56	1957	32.32	0.0487	7.90%	\$100.70	4.49%	3.41%
57	1956	31.55	0.0472	7.16%	\$113.00	-7.35%	14.51%
58	1955	29.89	0.0461	10.16%	\$116.77	0.20%	9.97%
59	1954	25.51	0.0520	22.37%	\$112.79	7.07%	15.30%
60	1953	24.41	0.0511	9.62%	\$114.24	2.24%	7.38%
61	1952	22.22	0.0550	15.36%	\$113.41	4.26%	11.10%
62	1951	20.01	0.0606	17.10%	\$123.44	-4.89%	21.99%
63	1950	20.20	0.0554	4.60%	\$125.08	1.89%	2.71%
64	1949	16.54	0.0570	27.83%	\$119.82	7.72%	20.10%
65	1948	16.53	0.0535	5.41%	\$118.50	4.49%	0.92%
66	1947	19.21	0.0354	-10.41%	\$126.02	-2.79%	-7.62%
67	1946	21.34	0.0298	-7.00%	\$126.74	2.59%	-9.59%
68	1945	13.91	0.0448	57.89%	\$119.82	9.11%	48.79%
69	1944	12.10	0.0569	20.65%	\$119.82	3.34%	17.31%
70	1943	9.22	0.0621	37.45%	\$118.50	4.49%	32.96%
71	1942	8.54	0.0940	17.36%	\$117.63	4.14%	13.22%
72	1941	13.25	0.0717	-28.38%	\$116.34	4.55%	-32.92%
73	1940	16.97	0.0540	-16.52%	\$112.39	7.08%	-23.60%
74	1939	16.05	0.0553	11.26%	\$105.75	10.05%	1.21%
75	1938	14.30	0.0730	19.54%	\$99.83	9.94%	9.59%
76	1937	24.34	0.0432	-36.93%	\$103.18	0.63%	-37.55%
77	Average			10.5%		6.4%	4.1%

Time	Utilities Return	Bond Rate of Return	Time	SP Util Risk Premium
2009	0.1071	0.1548	2009	-0.0477
2008	-0.2590	0.0024	2008	-0.2614
2007	0.1656	0.0459	2007	0.1196
2006	0.2076	0.0220	2006	0.1856
2005	0.1605	0.0580	2005	0.1025
2004	0.2284	0.1134	2004	0.1150
2003	0.2348	0.2027	2003	0.0321
2002	-0.1473	0.1535	2002	-0.3008
2001	-0.1790	0.0893	2001	-0.2683
2000	0.3278	0.1482	2000	0.1796
1999	-0.0172	-0.1020	1999	0.0848
1998	0.1547	0.0738	1998	0.0809
1997	0.1858	0.1732	1997	0.0126
1996	0.0383	-0.0048	1996	0.0431
1995	0.3749	0.2926	1995	0.0823
1994	-0.0383	-0.0965	1994	0.0582
1993	0.1095	0.2048	1993	-0.0954
1992	0.1246	0.1527	1992	-0.0281
1991	0.1425	0.1944	1991	-0.0519
1990	0.0033	0.0711	1990	-0.0678
1989	0.3468	0.1518	1989	0.1951
1988	0.1480	0.1736	1988	-0.0255
1987	-0.0574	-0.0984	1987	0.0410
1986	0.3787	0.3236	1986	0.0551
1985	0.3000	0.3505	1985	-0.0504
1984	0.1995	0.1612	1984	0.0383
1983	0.2016	0.2065	1983	-0.0049
1982	0.3020	0.3648	1982	-0.0628
1981	0.0940	-0.0301	1981	0.1241
1980	0.1301	-0.0381	1980	0.1683
1979	0.0879	-0.1189	1979	0.2068
1978	0.0396	-0.0240	1978	0.0636
1977	0.0416	0.0420	1977	-0.0004
1976	0.2270	0.2513	1976	-0.0243
1975	0.3224	0.1475	1975	0.1749
1974	-0.1429	-0.1291	1974	-0.0138
1973	-0.1345	-0.0337	1973	-0.1008
1972	0.0512	0.1069	1972	-0.0557
1971	-0.0007	0.1213	1971	-0.1219
1970	0.1945	0.1481	1970	0.0464
1969	-0.1438	-0.1276	1969	-0.0162
1968	0.0528	-0.0081	1968	0.0608
1967	0.0022	-0.0981	1967	0.1003
1966	-0.0172	-0.0448	1966	0.0276
1965	0.0134	-0.0091	1965	0.0225
1964	0.1611	0.0368	1964	0.1243
1963	0.0947	0.0261	1963	0.0686
1962	0.0425	0.0889	1962	-0.0464
1961	0.2247	0.0429	1961	0.1818
1960	0.2252	0.1113	1960	0.1139
1959	0.0500	-0.0349	1959	0.0849
1958	0.3688	-0.0560	1958	0.4248
1957	0.0790	0.0449	1957	0.0341
1956	0.0716	-0.0735	1956	0.1451
1955	0.1016	0.0020	1955	0.0997
1954	0.2237	0.0707	1954	0.1530
1953	0.0962	0.0224	1953	0.0738
1952	0.1536	0.0426	1952	0.1110
1951	0.1710	-0.0489	1951	0.2199
1950	0.0460	0.0189	1950	0.0271
1949	0.2783	0.0772	1949	0.2010
1948	0.0541	0.0449	1948	0.0092
1947	-0.1041	-0.0279	1947	-0.0762
1946	-0.0700	0.0259	1946	-0.0959
1945	0.5789	0.0911	1945	0.4879
1944	0.2065	0.0334	1944	0.1731
1943	0.3745	0.0449	1943	0.3296
1942	0.1736	0.0414	1942	0.1322
1941	-0.2838	0.0455	1941	-0.3292
1940	-0.1652	0.0708	1940	-0.2360
1939	0.1126	0.1005	1939	0.0121
1938	0.1954	0.0994	1938	0.0959
1937	-0.3693	0.0063	1937	-0.3755

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.125
R Square	0.016
Adjusted R Square	0.002
Standard Error	0.150
Observations	73

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.025	0.025	1.124	0.293
Residual	71	1.598	0.023		
Total	72	1.623			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	1.784	1.644	1.085	0.282	(1.494)	5.062	(1.494)	5.062
Time	(0.001)	0.001	(1.060)	0.293	(0.003)	0.001	(0.003)	0.001

Table 2

REGRESSION OUTPUT FOR RISK PREMIUM ON S&P UTILITIES

Line No.		Intercept	Time	Adjusted R Square	F
1	Coefficient	1.784	(0.001)	0.002	1.12
2	T Statistic	1.085	(1.060)		

Ex Post Risk Premium Cost of Equity

Risk Premium Utility Stock Index	4.1%
Risk Premium SP500	4.6%
A-rated Utility Bond Yield	6.6%
Risk Premium Cost of Equity Utilities	10.6%
Risk Premium Cost of Equity S&P500	11.2%
Flotation cost	0.25%
Ex Post Risk Premium Cost of Equity	11.2%

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: Michael A. Miller

GENERAL

Question:

14. Provide a detailed list of all TAWC's affiliated party transactions for the past two years, including the nature and amount of each transaction.

Response:

Tennessee-American Water has affiliated transactions with 3 American Water subsidiaries.

American Anglian Technologies - provides leasing of carbon for water treatment purposes

American Water Capital Corp - provides short and long term debt funding and investments

American Water Works Service Company - provides accounting, tax, legal, finance, human resources and other management services

Please see the attached document labeled as TRA-01-Q014-ATTACHMENT. This file is also included on the enclosed CD in the folder labeled as TRA-01-Q014.

Tennessee American Water Company
For the 12 Months Ended 12/31/2008
American Anglian Environmental

Function	Object Account	Object Account Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Grand Total
American Anglian Environmental	518001	Chemicals Carbon AWSI	8,319	(8,319)	8,219	7,746	49,582	17,350	17,350	17,350	17,211	15,851	17,350	17,491	185,500
American Anglian Environmental Total			8,319	(8,319)	8,219	7,746	49,582	17,350	17,350	17,350	17,211	15,851	17,350	17,491	185,500

Tennessee American Water Company
For the 12 Months Ended 12/31/2009
American Anglian Environmental

Function	Object Account	Object Account Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Grand Total
American Anglian Environmental	518001	Chemicals Carbon AWSI	15,824	12,092	(2,341)	(5,353)	-	11,701	-	24,045	-	-	-	-	55,968
American Anglian Environmental Total			15,824	12,092	(2,341)	(5,353)	-	11,701	-	24,045	-	-	-	-	55,968

Tennessee American Water Company
For the 12 Months Ended 12/31/2008
American Water Capital Corp Expenses

Function	Object Account	Object Account Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Grand Total
AWCC Service Fees	575261	Credit Line Fees AW46	2,715	1,887	969	2,330	1,911	1,789	3,081	1,724	1,752	3,249	2,041	3,444	26,872
AWCC Interest Short Term	830100	Int STD inside AW46	42,068	32,086	35,981	19,692	21,062	36,612	36,349	32,039	36,785	48,207	36,168	32,445	409,494
AWCC Interest Long Term	810400	Int LTD Inside AW46	179,716	179,716	179,522	173,877	173,877	173,877	173,877	173,877	173,877	173,877	173,877	173,877	2,103,847
American Water Capital Corp Total			224,499	213,669	216,472	195,899	196,850	212,278	213,307	207,640	212,414	225,333	212,086	209,766	2,540,213

Tennessee American Water Company
For the 12 Months Ended 12/31/2009
American Water Capital Corp Expenses

Function	Object Account	Object Account Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Grand Total
AWCC Service Fees	575261	Credit Line Fees AW46	2,969	(41)	2,088	1,450	2,197	1,821	2,433	1,602	2,159	2,164	865	3,841	23,548
AWCC Interest Short Term	830100	Int STD inside AW46	10,984	10,004	15,057	14,399	13,159	10,964	8,369	6,726	5,734	4,715	3,931	1,262	105,304
AWCC Interest Long Term	810400	Int LTD Inside AW46	173,877	173,877	173,682	168,037	168,037	168,037	168,037	168,037	168,037	168,037	168,037	214,187	2,079,919
American Water Capital Corp Total			187,830	183,840	190,827	183,886	183,393	180,822	178,839	176,365	175,930	174,916	172,833	219,290	2,208,771

Tennessee American Water Company
American Water Works Service Company Expenses (O&M portion)
For the 12 Months Ended 12/31/2008

Function	Business Unit	Business Unit Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Grand Total
Admin	032000	CORP-Balance Sheet	-	-	(0)	-	-	18	(14)	-	-	-	-	-	4
	032005	CORP-CEO	(14)	(1)	131	1,064	73	5,685	759	777	(1)	(14)	416	(382)	8,493
	032088	CORP-Business Change	17,252	4,195	5,015	2,472	2,755	1,088	(1,332)	699	2,603	107	2,128	3,892	40,874
	032089	CORP-AWE Pass-Thru	573	534	644	468	504	510	614	580	590	497	249	196	5,959
	032091	CORP-STEP Project	(38)	-	-	-	-	-	-	-	-	-	-	-	(38)
	032098	CORP-Non-Departmental Costs	3,652	10,703	12,321	13,670	12,981	26,087	(952)	8,661	5,863	3,584	(473)	(28,524)	67,572
	Admin Total		21,425	15,432	18,112	17,674	16,313	33,387	(925)	10,717	9,055	4,173	2,320	(24,819)	122,864
	032060	CORP-Audit	2,111	1,856	2,710	2,367	2,365	2,625	2,775	2,585	2,556	2,510	2,134	2,723	29,317
	Audit Total		2,111	1,856	2,710	2,367	2,365	2,625	2,775	2,585	2,556	2,510	2,134	2,723	29,317
	032014	CORP-Benefits Service Center	2,201	2,024	2,018	2,017	2,027	1,904	2,092	2,360	2,522	2,104	1,956	2,158	25,384
Business Development	032020	CORP-Corporate Bus Development	1,669	1,712	2,062	1,244	892	1,058	979	1,042	1,115	1,025	984	1,048	14,830
	033020	WE-Business Development	6	(3)	48	9	16	12	7	5	7	5	5	7	124
	033520	CE-Business Development	21	13	20	91	7	30	(15)	8	3	7	2	(9)	177
	035020	SE-Business Development	3,095	2,323	2,550	1,609	4,362	2,049	2,339	1,937	1,786	1,457	1,362	2,521	27,391
	036520	NE-Business Development	2	2	4	2	2	(2)	7	1	6	2	2	(2)	27
	Business Development Total		4,794	4,047	4,684	2,955	5,278	3,147	3,316	2,994	2,917	2,495	2,355	3,566	42,549
	032040	CORP-Business Transformation	-	-	-	-	-	-	-	-	-	-	-	-	-
	Business Transformation Total		-	-	-	-	-	-	-	-	-	-	-	-	-
	CSC		-	-	-	-	-	-	-	-	-	-	-	-	-
CSC	034005	CCA-Administration	6,187	6,099	8,577	8,167	7,422	8,474	8,134	8,735	7,829	7,946	8,152	9,888	95,621
	034070	CCA-Call Handling	17,392	15,198	16,115	17,584	17,187	16,492	17,191	16,228	16,870	16,582	14,724	17,763	199,425
	034071	CCA-Billing	11,156	10,013	9,704	9,866	9,922	11,049	10,818	9,555	9,940	9,774	10,793	10,379	122,969
	034072	CCA-Collections	6,910	9,248	8,188	5,123	8,768	9,069	8,539	8,789	5,473	8,896	9,471	(2,865)	85,609
	034073	CCA-Operations & Performance	16,863	16,813	16,489	16,201	13,346	19,982	22,961	21,497	19,949	9,267	12,171	13,026	198,565
	034074	CCA-Business Services	1,583	1,770	1,840	1,872	1,901	3,291	2,423	2,161	2,290	2,099	1,884	2,130	25,244
	034075	CCA-Education & Development	2,122	1,021	1,586	2,206	1,719	2,690	2,821	1,507	2,240	1,804	1,463	2,225	23,404
	037005	CCP-Administration	3,448	3,584	5,155	5,001	4,408	5,820	4,445	4,836	5,762	4,608	4,536	4,945	56,549
	037070	CCP-Call Handling	17,777	15,225	16,434	19,108	19,151	17,273	18,013	17,196	20,693	18,631	16,188	18,436	214,125
	037072	CCP-Collections	-	-	-	-	-	-	-	-	-	-	-	-	0
CSC Total	037073	CCP-Operations and Support	4,783	6,409	5,725	4,344	5,531	6,665	8,753	6,532	4,340	5,431	5,038	7,942	71,494
	037075	CCP-Education & Development	712	1,107	664	721	749	697	625	646	655	547	840	565	8,528
	External Affairs/Communication		88,993	86,487	90,477	90,195	90,102	101,502	104,773	97,693	96,041	85,685	85,260	84,445	1,101,532
	032022	CORP-Government Affairs	367	542	1,100	806	745	834	897	715	1,057	954	748	849	9,614
	032025	CORP-External Affairs	1,281	1,682	1,364	1,509	1,143	1,339	1,297	1,329	1,380	1,262	980	1,234	15,800
	032068	CORP-Marketing	3,124	3,319	2,701	1,728	2,803	2,592	2,263	2,005	2,960	4,257	1,635	5,310	34,698
	032085	CORP-External Communications	1,686	1,153	1,348	1,369	742	1,141	490	628	769	850	2,248	488	12,912
	032086	CORP-Internal Communications	978	91	616	541	638	616	795	505	752	705	888	1,181	8,246
	032087	CORP-Corp Social Resp	1,291	351	(5)	62	2,214	155	325	73	323	173	414	1,390	6,767
	033025	WE-External Affairs	2	36	5	2	7	(2)	10	34	11	4	8	6	122
Finance	033525	CE-External Affairs	6	21	8	12	(1)	35	2	(7)	26	9	(4)	(13)	93
	035025	SE-External Affairs	3,207	4,123	4,439	5,008	5,918	5,900	8,727	7,100	7,110	7,291	6,619	9,434	74,876
	035525	NE-External Affairs	1	51	280	12	15	(4)	30	(16)	2	2	4	2	384
	External Affairs/Communication Total		11,943	11,369	11,856	11,050	14,224	12,606	14,777	12,365	14,389	15,512	13,540	19,881	163,512
	032007	CORP-Finance	5,262	3,546	1,761	3,624	4,183	3,460	3,368	3,122	3,566	3,194	2,695	3,516	41,297
	032017	CORP-Planning & Reporting	4,297	3,417	3,955	3,504	3,165	4,067	3,990	3,786	3,852	4,344	6,002	48,038	48,038
	032027	CORP-Reporting & Compliance	46,865	36,903	40,261	34,214	17,358	20,334	15,146	13,899	11,442	12,810	13,680	17,437	277,349
	032047	CORP-Income Tax	3,923	3,285	3,574	4,893	5,446	6,653	6,653	6,388	7,713	3,484	4,081	5,524	63,595
	032057	CORP-Treasury	2,511	2,425	2,750	2,821	2,436	2,349	2,186	2,891	3,006	2,724	2,084	2,321	30,503
	033007	WE-Finance	65	(112)	36	184	263	167	267	179	181	179	180	271	1,860
Finance Total	033507	CE-Finance	38	34	41	90	137	185	(107)	28	48	24	33	(31)	520
	035007	SE-Finance	31,261	29,393	33,604	27,987	25,941	33,845	45,408	45,598	30,877	26,306	23,585	23,253	377,058
	036507	NE-Finance	4	11	66	10	2	178	-	9	(28)	2	(1)	24	277
	Human Resources		94,227	78,902	86,048	74,327	58,931	71,239	78,580	76,130	60,541	52,575	50,580	58,318	840,498
	032002	CORP-HR Comp/Benefits	2,027	3,167	3,557	1,802	2,412	2,629	2,873	2,570	3,246	2,301	2,233	2,874	31,692
	032003	CORP-HR Talent Development	480	251	309	171	720	177	542	618	537	749	549	1,161	6,264
	032004	CORP-HR Labor Relations	645	648	771	631	636	706	722	644	699	721	638	8,198	7,736
	032006	CORP-Business Center HR	2,121	1,000	1,072	1,709	1,408	2,170	1,502	1,206	2,305	1,671	1,818	1,077	19,058
	032012	CORP-HR Strategic Staffing	-	-	-	-	-	-	-	-	-	-	-	-	-
	032013	CORP-HR Systems & Processes	972	1,381	1,778	691	834	1,154	2,106	652	1,333	643	1,049	854	13,448
032018	CORP-Human Resources		986	327	769	1,034	929	1,506	1,049	1,128	1,358	878	989	1,384	12,335
	WE-Human Resources		3	(0)	4	5	6	8	9	4	3	2	3	5	51
	CE-Human Resources		59	15	11	42	30	94	354	(281)	561	137	568	(135)	1,436

Function	Business Unit	Business Unit Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Grand Total
Human Resources Total	034018	CCA-Human Resources	3,665	809	747	1,342	1,590	2,174	2,195	2,802	2,838	2,026	1,233	3,206	24,625
	035018	SE-Human Resources	4,667	6,973	7,137	4,656	4,309	8,129	7,304	6,731	6,028	7,073	4,452	3,141	70,600
	036518	NE-Human Resources	10	6	20	6	2	11	7	105	(46)	12	(48)	8	94
	037018	CCP-Human Resources ODI	492	341	377	346	692	255	188	-	-	-	-	-	2,692
Investor Relations			16,127	14,917	16,552	12,435	13,569	19,012	18,831	16,180	18,861	16,214	13,485	14,311	190,493
ITS	032037	CORP-Investor Relations	1,288	580	285	781	1,229	1,354	727	759	547	605	758	470	9,363
	032030	CORP-ITS Client Rel Admin	1,345	622	946	556	1,055	471	359	468	559	786	362	(73)	7,456
	032031	CORP-Service Desk	(209)	366	1,206	1,216	1,173	1,023	1,298	1,137	1,181	986	1,242	1,145	11,764
	032032	CORP-ITS-BAD-Core Shared	699	902	800	760	649	743	586	629	599	685	627	747	8,428
Investor Relations	032033	Chg Ctrl & Desktop Automation	269	371	356	5,212	1,174	1,632	1,341	3,051	680	2,046	410	61	16,602
	032034	CORP-ITS Appl Adm & Security	1,071	1,035	1,148	1,111	1,126	1,053	1,049	1,025	1,016	1,050	918	1,112	12,714
	032071	CORP-ITS Admin	4,231	8,562	8,481	7,394	7,997	9,148	8,881	10,220	6,281	8,564	9,574	30,716	120,047
	032072	CORP-ITS PMO	1,413	1,340	1,708	1,580	946	1,734	2,515	1,218	1,254	3,346	3,346	3,346	23,532
Investor Relations	032073	CORP-ITS Infra/Oper Admin	472	479	502	385	509	589	502	454	514	440	412	1,927	7,184
	032074	CORP-ITS Production	15,311	16,847	11,676	14,885	13,831	16,581	14,370	23,371	15,693	14,550	14,683	27,205	199,002
	032075	CORP-Enterprise Server	14,431	7,683	9,669	18,549	9,727	10,726	8,091	1,175	833	11,274	7,682	9,141	108,981
	032076	CORP-Communications	3,053	3,312	3,738	3,710	3,255	1,847	4,525	1,108	451	6,000	1,971	1,778	34,748
Investor Relations	032078	CORP-ITS Adm Business Appl Dev	362	479	591	640	1,230	1,324	1,555	1,276	1,378	1,460	1,170	900	12,964
	032079	CORP-ITS-BAD-Middle Office App	4,384	4,183	7,001	6,132	6,305	5,172	4,164	5,168	6,943	3,918	4,599	5,046	63,016
	032080	CORP-ITS-BAD-Back Office Apps	3,883	5,022	4,394	3,826	4,209	3,945	2,973	4,573	2,658	3,781	6,365	3,041	48,669
	032081	CORP-ITS-BAD-Quality&Methodlogy	1,171	1,223	1,213	1,119	1,196	802	790	774	1,006	864	2,337	2,311	14,805
Investor Relations	032082	CORP-ITS-BAD-Customer Facing	443	376	597	447	(108)	504	773	1,210	1,029	1,309	999	1,368	8,947
	032083	CORP-ITS-BAD-Field Svc Apps	1,172	986	1,289	1,233	1,340	1,788	1,989	1,702	1,475	1,107	1,531	1,595	17,208
	032093	CORP-ITS-Architecture	244	767	489	738	113	5,863	(3,656)	5,863	562	532	671	845	7,748
	033531	CE-Western CS & S	0	5	120	123	142	425	439	262	751	307	231	559	3,363
Investor Relations	035031	SE-ITS Client Relations	3,958	4,453	5,189	5,854	3,510	11,146	(2,090)	9,887	4,661	3,335	2,751	4,868	57,522
	036531	NE-Eastern CS & S	57,702	59,011	61,113	75,693	60,533	76,563	50,601	69,669	50,081	66,227	62,251	98,401	787,844
Laboratory			8,984	10,259	13,829	12,363	10,400	11,566	6,903	10,336	9,979	11,468	8,982	10,658	125,725
Legal	034517	BVLAB-Water Quality	8,984	10,259	13,829	12,363	10,400	11,566	6,903	10,336	9,979	11,468	8,982	10,658	125,725
	032008	CORP-Legal Admin	71	(22)	10	6	22	22	73	22	42	29	14	-	296
	032015	CORP-Legal	2,847	3,056	3,204	3,152	3,370	4,240	4,872	4,282	3,965	4,359	3,168	4,141	44,654
	033015	WE-Legal	16	(14)	46	7	9	39	8	65	7	4	11	2	200
Legal	033515	CE-Legal	47	18	22	17	9	89	(71)	12	13	9	23	(37)	149
	035015	SE-Legal	7,469	4,351	5,217	7,334	4,643	4,874	5,877	4,572	4,993	4,127	4,371	2,808	60,635
	036515	NE-Legal	3	8	30	8	2	12	-	10	(24)	1	(2)	12	61
Operation Services			10,453	7,396	8,529	10,523	8,060	9,277	10,759	8,964	8,996	8,529	7,584	6,925	105,994
Operation Services	032011	CORP-Chief Operating Officer	2,653	1,737	2,177	2,212	1,906	1,881	1,880	1,885	1,858	1,827	1,325	1,442	22,782
	032016	CORP-Maintenance Services	2,985	7,954	4,577	3,613	4,836	2,690	4,416	4,456	3,829	3,647	3,925	3,529	50,458
	032019	CORP-Operational Risk	1,596	1,341	1,610	1,278	1,389	1,163	1,426	1,326	1,432	1,200	969	1,227	15,958
	032064	CORP-Operational Performance	307	278	584	207	263	341	439	1,113	666	198	325	322	5,422
Operation Services	032065	CORP-Asset Management	2	(1)	16	3	3	(2)	(2,922)	3,807	396	198	294	294	2,090
	033016	WE-Maintenance	2	0	4	4	5	(2)	6	2	5	3	3	4	36
	033019	WE-Operational Risk	180	229	179	267	220	391	223	203	207	226	208	(1,659)	876
	033516	CE-Maintenance	11	9	21	21	9	44	(40)	6	58	5	7	(12)	128
Operation Services	033519	CE-Operational Risk	12,143	8,297	8,706	9,984	9,348	44,203	3,562	13,987	8,967	11,301	10,816	10,123	151,438
	035019	SE-Maintenance	2,750	4,109	2,768	2,702	3,432	2,923	3,490	3,353	3,447	2,171	4,180	1,970	37,294
	036516	NE-Maintenance	27	5	8	1	0	4	-	11	26	13	324	134	553
	036519	NE-Operational Risk	28	76	69	99	25	24	-	3	(248)	1	(2)	9	84
Operation Services	036550	CORP-COE-Engineering	195	160	227	149	242	199	119	173	196	156	137	61	2,013
	036551	CORP-COE-Technical Services	478	131	199	793	147	163	107	131	172	138	126	112	2,695
Procurement			23,355	24,325	21,135	21,333	21,826	54,021	12,707	30,506	20,960	21,465	22,659	17,554	291,827
Procurement	032009	CORP-Supply Chain-Pass Thru	0	0	0	0	3,645	3,897	3,077	3,470	3,978	3,945	3,152	2,903	42,286
	032010	CORP-Supply Chain-Sourcing	3,575	3,418	3,618	3,607	3,645	3,897	3,077	3,470	3,978	3,945	3,152	2,903	42,286
	033010	WE-Supply Chain	(0)	17	(7)	2	2	(0)	1	1	1	1	1	2	22
	033510	CE-Supply Chain	3	3	4	4	2	13	(11)	2	2	2	2	(3)	22
Procurement Total	035010	SE-Supply Chain	960	857	1,039	865	943	896	911	963	963	948	798	780	10,922
	036510	NE-Supply Chain	0	1	4	1	0	1	-	1	(3)	0	(0)	5	11
	032042	CORP-1000 Voorhees Building	4,558	4,297	4,658	4,478	4,592	4,808	3,979	4,437	4,942	4,896	3,953	3,687	53,264
	Property		738	679	772	877	699	852	834	741	1,016	1,388	2,012	(976)	9,631

Function	Business Unit	Business Unit Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Grand Total
Property Total	032046	CORP-3906 Church Road	888	690	1,197	983	1,039	142	681	907	825	556	838	567	9,314
	032062	CORP-Building Services	12,271	11,850	15,255	14,140	13,320	14,231	11,594	22,027	14,506	14,143	13,565	13,383	170,285
	032063	CORP-Building Services Woodcre	5,920	6,073	5,875	5,836	5,449	5,284	5,319	5,486	5,483	5,788	5,515	5,197	67,226
	036576	NE-Building Services Woodcrest	0	1	14	1	0	1	-	4	(5)	0	(0)	(5)	12
Regulated Operations	19,818		19,293	23,113	21,837	20,508	20,510	18,428	29,165	21,876	21,825	21,876	21,930	18,166	256,468
	2,205		2,082	3,307	2,915	3,499	2,930	3,531	2,327	2,713	2,713	2,967	1,891	2,005	32,372
	2,698		3,142	3,625	2,212	2,975	2,429	2,483	1,606	3,248	(30)	3,812	2,767	30,967	0
	9		12	80	101	55	(229)	2	2	31	4	(24)	(4)	2	38
Regulatory Services	032023	CORP-Eastern Division Ops	6	(1)	2	24	(20)	(0)	1	1	1	0	1	1	15
	032024	Corp-Western Division Ops	36	(17)	34	65	90	(13)	62	33	43	45	77	73	529
	032026	CORP-Regulated Ops	1	1	24	6	7	13	(13)	(4)	3	(35)	(57)	(12)	(66)
	032066	WE-Service Delivery	1	(0)	1	1	2	(0)	1	0	1	0	0	1	7
SSC	033001	WE-Environmental Mgmt	1	0	1	1	1	(1)	1	-	1	1	(0)	0	5
	033014	WE-Engineering	77	(77)	1	2	2	(0)	2	1	1	1	1	3	14
	033028	WE-Asset Planning	2	2	3	3	1	17	(8)	2	2	1	1	(1)	25
	033501	CE-Production	5	2	3	3	1	21	(18)	19	7	5	10	(10)	46
SSC	033502	CE-Network	56	26	44	32	21	147	(98)	19	22	16	20	(32)	273
	033503	CE-Customer Relations	358	301	651	431	1,768	1,617	(2,826)	250	277	150	239	(397)	2,818
	033505	CE-Administration	12	22	15	225	7	105	(35)	2	17	12	14	(26)	369
	033511	CE-Environmental Mgmt	850	(752)	44	2	19	131	3	30	1,509	303	(36)	65	2,168
SSC	035001	SE-Production	753	398	814	725	799	639	863	1,076	1,206	311	503	773	8,860
	035002	SE-Network	11,883	14,682	10,560	9,950	11,238	9,715	11,607	15,869	11,264	9,711	10,546	13,275	138,275
	035003	SE-Customer Relations	26,522	26,450	38,436	22,419	28,313	24,637	39,245	4,459	22,978	21,086	20,818	20,248	295,612
	035011	SE-Environmental Mgmt	251	574	611	538	623	516	665	607	431	537	580	600	6,531
SSC	035014	SE-Engineering	281	299	722	354	247	131	166	276	257	192	211	210	3,348
	036501	NE-Production	1	2	7	2	0	1	-	5	(6)	3	(0)	3	17
	036503	NE-Customer Field Services	142	22	67	21	4	36	-	19	(60)	4	(9)	49	295
	036505	NE-Administration	(0)	5											(0)
Regulated Operations Total	036511	NE-Environmental Mgmt	(0)												(0)
	036514	NE-Engineering	46,151	47,178	59,057	40,034	49,666	44,444	53,720	22,371	48,528	36,820	37,790	36,859	522,618
	032050	CORP-Backfill Reg App	(13)	-	57	57	(3)	(7)	-	636	676	598	565	612	38
	032089	CORP-Regulatory UFS	350	545	846	462	553	707	652	636	676	598	571	611	7,203
Regulatory Services Total	336		336	545	846	519	553	700	652	636	676	598	571	611	7,242
	032084	SSC-Accounts Payable	1,147	3,185	3,190	3,384	3,679	3,261	852	3,251	3,471	3,412	3,033	3,437	35,302
	032505	SSC-Administration	7,060	6,512	7,126	6,039	7,102	5,326	7,092	7,090	5,531	7,602	5,535	6,191	78,206
	032560	SSC-Financial Reporting	0	(0)	-										0
SSC	032570	SSC-General Accounting	5,670	5,341	5,762	5,595	4,969	5,055	5,292	4,949	4,662	5,276	4,526	5,302	62,398
	032571	SSC-Tax	2,079	2,193	1,542	1,941	2,050	1,693	1,965	1,945	2,260	2,125	1,855	2,021	23,669
	032572	SSC-Business Support Services	1,335	1,281	1,782	1,316	1,686	1,981	1,293	2,001	1,641	1,747	1,332	1,689	19,085
	032574	SSC-Rates & Regulation	2,349	3,275	1,639	2,630	2,501	1,326	1,893	2,289	2,021	2,227	2,046	2,353	26,549
SSC	032575	SSC-Cash Operations	1,879	1,764	1,688	1,770	1,606	1,823	2,227	1,459	3,021	2,163	2,090	2,789	24,278
	032576	SSC-Facility Services	-	0	(0)										0
	032577	SSC-Utility Plant Accounting	3,351	3,755	3,953	3,196	2,693	2,345	2,710	2,371	2,565	2,649	2,529	2,641	34,756
	032578	SSC-Project Management	414	301	455	444	447	420	493	382	375	380	312	367	4,789
SSC	032579	SSC-Employee Services	3,660	3,242	3,641	3,390	3,417	3,604	3,530	3,022	3,613	3,577	3,225	3,818	41,736
	032580	SSC-AVE	358	356	409	257	236	231	230	321	291	236	239	285	3,447
			29,301	31,203	31,186	29,962	30,385	27,064	27,577	29,080	29,452	31,394	26,720	30,891	354,214
	443,687		443,687	419,121	456,207	430,543	410,561	495,708	410,221	426,938	402,866	385,151	366,140	389,342	5,036,484

Less: Adjustments

SC Adjustment for AIP Expenses
SC Adjustment for Call Center Expenses

(7,223)
(7,826)

Total Service Company Management Fee Expense

(7,223)
(7,826)

Tennessee American Water Company
American Water Works Service Company Expenses (O&M portion)
For the 12 Months Ended 12/31/2009

Function	Business Unit	Business Unit Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Grand Total
Admin	032000	CORP-Balance Sheet	-	-	-	-	-	-	-	-	-	-	-	-	-
	032088	CORP-Business Change	135	237	61	1,533	1,038	-	-	(70)	-	-	-	-	2,933
	032089	CORP-AWE Pass-Thru	298	278	490	(410)	232	149	196	9	266	274	322	256	2,361
	032098	CORP-Non-Departmental Costs	11,790	(3,628)	(36,457)	40,465	2,671	92	1,236	682	791	4,111	59	6,040	27,853
	Admin Total		12,223	(3,113)	(35,906)	41,589	3,941	240	1,361	691	1,057	4,385	381	6,296	33,146
Audit	032060	CORP-Audit	2,396	1,458	2,590	2,978	2,574	2,780	2,675	3,341	3,565	4,274	4,385	4,989	38,005
	Audit Total		2,396	1,458	2,590	2,978	2,574	2,780	2,675	3,341	3,565	4,274	4,385	4,989	38,005
Benefit Svc Ctr	032014	CORP-Benefits Service Center	2,302	2,314	2,431	2,196	2,415	2,505	2,665	2,487	2,673	2,570	2,823	2,888	30,269
	032020	CORP-Corporate Bus Development	2,430	1,312	2,865	2,513	2,611	1,234	2,634	2,994	2,480	2,530	1,769	2,431	27,804
	033020	WE-Business Development	21	13	0	2	(2)	49	38	3	3	51	126	34	125
	033520	CE-Business Development	11	18	5	(2)	34	80	39	49	43	43	126	34	486
	035020	SE-Business Development	3,464	2,181	2,533	2,089	4,331	4,856	3,349	4,533	6,292	2,449	3,013	4,578	43,469
Business Development	036520	NE-Business Development	2	(1)	3	2	1	(0)	-	-	-	-	-	-	6
	Business Development Total		5,928	3,523	5,406	6,976	6,020	6,059	7,576	8,318	8,318	5,030	4,908	7,044	71,890
Business Transformation	032040	CORP-Business Transformation	847	(784)	8	298	(229)	249	(525)	37	(78)	285	(91)	-	17
	032051	CORP-Bsns Trans-Procure To Pay	5,377	2,432	5,102	5,444	4,930	5,381	5,725	5,739	5,995	5,582	5,305	9,595	66,604
	032052	CORP-Bsns Trans-Recruit To Ret	20,270	19,814	19,705	17,175	19,078	19,656	21,124	19,172	19,811	19,487	20,003	31,883	247,178
	032053	CORP-Bsns Trans-Record To Rpt	13,898	14,144	13,708	12,073	12,762	12,753	13,372	12,569	13,235	13,139	12,862	16,263	160,769
	034072	CCA-Collections	9,974	7,723	6,216	7,002	4,733	3,930	4,441	4,149	4,171	4,643	4,611	5,144	66,737
	034073	CCA-Operations & Performance	14,931	15,069	2,053	8,727	8,899	10,215	12,011	10,946	10,684	10,891	9,778	12,567	126,770
	034074	CCA-Business Services	2,553	2,525	2,853	2,409	2,645	2,651	2,573	2,360	2,448	2,183	2,495	2,214	29,907
	034075	CCA-Education & Development	2,602	2,622	2,281	1,930	2,301	2,319	2,192	2,202	2,169	(374)	1,629	6,070	27,945
	037005	CCP-Administration	3,094	(73)	1,011	2,229	2,191	2,184	2,191	2,174	2,196	2,417	2,429	2,234	24,276
	037070	CCP-Call Handling	22,670	22,503	23,092	19,968	21,803	23,009	24,554	22,558	23,526	21,927	22,962	21,618	270,189
CSC	037073	CCP-Operations and Support	5,404	5,912	3,695	5,527	6,237	5,614	10,673	5,851	7,230	3,345	6,477	5,871	71,835
	037075	CCP-Education & Development	802	771	1,597	1,343	1,309	1,251	1,578	1,457	1,487	4,091	1,943	(1,549)	16,080
	CSC Total		101,575	93,440	81,312	83,826	86,887	88,962	100,436	89,178	92,951	87,331	90,492	111,901	1,108,290
External Affairs/Communication	032022	CORP-Government Affairs	965	846	1,010	851	866	871	1,135	526	1,380	963	916	978	11,307
	032025	CORP-External Affairs	1,361	1,739	1,709	1,588	1,642	1,838	1,720	1,955	1,446	1,868	1,576	1,774	20,216
	032068	CORP-Marketing	2,357	2,271	2,464	2,200	3,046	2,436	2,386	2,982	1,955	3,702	2,384	2,343	30,525
	032085	CORP-External Communications	2,075	1,639	1,941	1,796	1,625	1,656	1,572	1,319	2,699	1,501	1,362	2,249	21,433
	032086	CORP-Internal Communications	770	632	875	400	503	822	655	749	845	668	432	983	8,335
	032087	CORP-Corp Social Resp	892	17	313	912	(165)	2,190	2,200	386	920	567	1,124	1,224	10,579
	033025	WE-External Affairs	6	8	5	2	2	79	54	2	1	(0)	1	8	167
	033525	CE-External Affairs	8	18	28	33	81	228	94	116	120	133	415	100	1,373
	035025	SE-External Affairs	6,671	7,152	7,773	7,151	7,621	9,555	7,023	6,774	8,017	8,161	9,062	5,339	90,299
	036525	NE-External Affairs	0	1	12	(1)	4	13	2	3	7	2	4	2	50
	External Affairs/Communication Total		15,104	14,323	16,130	14,932	15,226	19,688	16,841	14,811	17,389	17,564	17,277	14,999	194,284
Finance	032007	CORP-Finance	3,281	3,608	3,831	3,157	4,081	4,100	3,985	8,513	3,702	4,668	3,412	4,004	50,343
	032017	CORP-Planning & Reporting	6,188	6,350	5,750	4,488	4,735	4,224	4,286	3,883	3,962	4,249	3,749	8,894	60,756
	032027	CORP-Reporting & Compliance	15,559	4,038	89	4,312	4,294	4,385	4,521	3,462	3,753	5,986	9,128	8,833	63,359
	032047	CORP-Income Tax	4,868	3,921	4,039	3,362	3,211	8,131	3,442	4,236	4,781	4,140	2,476	4,108	50,717
	032057	CORP-Treasury	2,519	2,926	3,761	3,017	3,060	3,908	3,929	3,685	4,210	3,987	3,539	4,052	42,593
	033007	WE-Finance	184	163	214	(23)	50	2,370	1,564	11	(105)	(783)	11	16	3,673
	033507	CE-Finance	277	91	75	124	317	910	364	467	485	488	1,655	354	5,606
	035007	SE-Finance	27,458	22,716	30,160	25,985	34,209	36,348	32,858	33,271	37,262	30,877	30,356	30,266	371,767
	036507	NE-Finance	35	4	0	(12)	21	426	22	(3)	25	-	14	533	2,298
	037777	CORP-IFRS-Finance									1,035	-	1,346	(83)	2,298
Finance Total			60,369	43,817	47,921	44,411	53,977	64,803	54,971	57,526	59,110	53,611	55,672	55,458	651,646
	Human Resources		1,926	2,199	2,898	2,537	2,548	2,910	2,858	3,297	1,704	3,003	2,204	3,970	32,054
Human Resources	032002	CORP-HR Comp/Benefits	1,473	512	1,299	1,273	1,414	1,189	1,723	1,895	2,139	1,750	1,286	4,807	20,700
	032003	CORP-HR Talent Development													

Tennessee American Water Company
American Water Works Service Company Expenses (O&M portion)
For the 12 Months Ended 12/31/2009

Function	Business Unit	Business Unit Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Grand Total
Laboratory	032004	CORP-HR Labor Relations	649	881	871	639	802	727	744	729	765	753	715	723	8,997
	032006	CORP-Business Center HR	2,495	1,313	1,338	1,529	1,275	1,333	1,368	1,648	1,816	1,451	1,677	1,564	19,105
	032013	CORP-HR Systems & Processes	768	927	1,542	1,691	1,008	1,148	748	2,244	1,119	1,751	1,130	1,876	15,953
	032018	CORP-Human Resources	2,293	2,018	5,300	1,328	1,356	1,639	1,648	1,774	2,486	2,052	1,694	5,758	29,345
	032028	CORP-ED Human Resources				1,201	1,570	9,862	2,330	3,223	4,037	3,420	2,117	1,674	19,534
	032038	CORP-WD Human Resources			1,292	822	1,070	1,046	1,281	1,443	1,160	1,226	1,124	1,331	11,794
	033018	WE-Human Resources	5	6	1	(8)	0	1	2					(0)	6
	033518	CE-Human Resources	69	28	140	93	91	79	49	80	54	46	75	26	830
	034018	CCA-Human Resources	1,677	2,174	1,559	1,768	1,700	1,570	1,607	2,420	2,528	2,449	1,977	2,645	24,074
	035018	SE-Human Resources	2,833	1,833	(1,050)	1,185	(1,205)	142	121	991	422	(49)	183	29	5,436
NE-Human Resources			12	0	(0)	(0)		(1)		(0)	0			0	10
Human Resources Total			14,200	11,891	15,179	14,058	11,629	21,644	14,726	19,845	18,230	17,853	14,182	24,403	197,840
Investor Relations	032037	CORP-Investor Relations	804	1,009	1,080	1,095	857	867	892	951	1,340	1,184	859	1,299	12,238
	Investor Relations Total		804	1,009	1,080	1,095	857	867	892	951	1,340	1,184	859	1,299	12,238
ITS	032030	CORP-ITS Client Rel Admin	387	403	495	213	388	487	452	380	423	416	404	813	5,261
	032031	CORP-Service Desk	1,053	865	2,874	2,661	2,425	2,406	2,779	2,470	2,613	2,396	2,478	3,683	28,651
	032032	CORP-ITS-BAD-Core Shared	1,066	1,028	2,587	2,642	2,182	3,320	2,293	1,728	4,345	1,825	1,372	4,455	28,842
	032033	Chg Ctrl & Desktop Automation	738	643	565	464	471	435	501	469	506	496	506	586	6,381
	032034	CORP-ITS Appl Adm & Security	1,467	3,409	742	(345)	5	3	3	2	2	-			5,288
	032035	CORP-ITS Sec Arch & Strategy	194	696	725	518	1,509	136	126	119	119	101	103	93	4,431
	032071	CORP-ITS Admin	2,992	(16,015)	2,006	3,840	4,361	4,203	5,066	4,692	3,758	4,567	8,040	6,835	34,345
	032072	CORP-ITS PMO	2,285	2,634	1,981	1,639	2,222	2,395	3,267	1,830	3,501	2,196	4,313	23,445	51,608
	032073	CORP-ITS Infra/Oper Admin	1,952	621	633	509	559	630	569	662	628	600	680	944	8,987
	032074	CORP-ITS Production	22,973	(1,593)	4,810	20,079	24,865	21,909	21,897	21,200	23,216	23,185	20,980	26,753	230,273
Laboratory	032075	CORP-Enterprise Server	12,276	12,939	6,771	7,827	8,642	8,461	9,485	7,629	8,190	7,965	7,373	12,024	109,580
	032076	CORP-Communications	3,351	11,005	6,728	5,671	6,688	6,252	9,103	7,028	9,287	8,508	8,105	9,086	90,821
	032077	CORP-ITS Security Operations	1,784	2,227	1,813	1,883	2,102	2,139	2,714	2,422	2,720	2,630	2,901	3,198	28,533
	032078	CORP-ITS Adm Business Appl Dev	1,514	1,964	1,134	670	1,055	602	982	1,021	1,069	1,017	1,197	1,217	13,440
	032079	CORP-ITS-BAD-Middle Office App	6,545	7,247	1,344	2,059	3,366	(180)	1,965	2,236	2,550	447	1,963	3,085	32,627
	032080	CORP-ITS-BAD-Back Office Apps	6,166	3,530	3,178	2,139	3,346	2,893	3,263	3,290	4,863	3,678	4,777	4,393	45,517
	032081	CORP-ITS-BAD-Quality&Methodology	1,547	1,836	1,631	1,046	1,346	1,150	1,401	978	1,015	1,332	1,287	1,724	17,291
	032082	CORP-ITS-BAD-Customer Facing	1,625	1,668	2,141	1,824	1,917	2,093	2,106	2,228	3,538	3,193	2,697	5,537	30,567
	032083	CORP-ITS-BAD-Field Svc Apps	274	746	2,731	3,287	2,601	4,637	3,871	3,013	4,536	4,818	1,321	4,850	36,685
	032093	CORP-ITS-Architecture	2,168	2,006	2,296	2,444	2,200	1,925	3,498	2,780	3,105	3,202	4,288	10,912	40,824
Legal	033531	CE-Western CS & S	540	503	759	2,669	3,259	14,041	3,157	3,903	3,441	3,970	8,522	3,076	47,878
	035031	SE-ITS Client Relations	163	372	(494)	503	598	626	540	825	786	901	1,192	1,050	7,063
	036531	NE-Eastern CS & S	3,881	4,726	4,998	900	348	409	283	328	193	259	240	266	16,831
	ITS Total		76,943	43,359	52,448	65,140	76,453	80,970	79,358	71,233	84,385	77,703	84,729	129,001	921,723
	034517	BVLAB-Water Quality	10,455	12,451	11,132	9,898	10,607	10,198	10,395	9,474	10,002	9,083	9,949	8,590	122,234
	Laboratory Total		10,455	12,451	11,132	9,898	10,607	10,198	10,395	9,474	10,002	9,083	9,949	8,590	122,234
	032015	CORP-Legal	4,257	5,128	6,911	5,874	5,253	5,158	5,100	5,298	4,455	5,050	5,217	6,119	63,919
	033015	WE-Legal	15	7	5	(4)	2	55	40		11	(11)	12	131	
	033515	CE-Legal	65	56	40	54	183	564	227	266	261	264	986	253	3,218
	035015	SE-Legal	5,364	5,495	5,508	3,798	7,068	5,131	6,550	4,690	6,668	4,901	3,734	4,366	63,272
	036515	NE-Legal	19	0	0	(5)		20	1		4		4		43
Legal Total			9,721	10,687	12,463	9,816	12,505	10,927	11,917	10,255	11,999	10,204	9,937	10,753	130,583
Operation Services	032011	CORP-Chief Operating Officer	2,320	3,317	2,760	2,311	2,607	2,847	3,158	3,303	2,126	3,352	2,961	3,809	34,871
	032016	CORP-Maintenance Services	335	384	386	420	446	487	435	604	315	529	536	456	5,335
	032019	CORP-Operational Risk	2,314	1,097	1,752	1,512	1,695	1,499	1,605	1,391	1,873	1,573	1,127	1,685	19,073
	032064	CORP-Operational Performance	1,510	900	1,343	1,117	1,202	1,462	1,446	1,349	1,127	1,261	962	1,061	14,741
	032065	CORP-Asset Management	679	283	363	421	137	209	432	254	410	269	185	227	3,870
	033016	WE-Maintenance	297	297	299	399	293	71	45					0	1,701
	033019	WE-Operational Risk	3	4	2	1	1	30	19	1	1	(0)	1	8	69
	033516	CE-Maintenance	68	35	39	78	119	789	909	1,270	1,164	1,029	1,669	2,454	9,622
	033519	CE-Operational Risk	6	106	112	41	363	1,197	461	901	829	839	891	823	14,660
	035016	SE-Maintenance	10,546	8,447	4,759	9,588	7,458	6,724	7,040	7,861	6,414	8,141	6,913	5,988	89,880
Investor Relations	035019	SE-Operational Risk	698	1,451	(1,279)	(161)	111	118	102	259	(157)	95	(18)	32	1,252
	036516	NE-Maintenance	147	(2)	90	14	4	23	4	29	4	3	3	78	397
	036519	NE-Operational Risk	14	0	10	0	5	36	(5)	4	20	3	3	7	97
	Investor Relations Total		14	0	10	0	5	36	(5)	4	20	3	3	7	97

Tennessee American Water Company
American Water Works Service Company Expenses (O&M portion)
For the 12 Months Ended 12/31/2009

Function	Business Unit	Business Unit Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Grand Total
Operation Services Total	036550	CORP-COE-Engineering	250	307	405	168	239	245	312	298	334	287	161	276	3,282
	036551	CORP-COE-Technical Services	291	362	738	236	373	285	382	347	181	382	198	314	4,089
			13,477	16,989	11,779	16,144	15,051	16,024	16,346	17,871	14,642	17,784	23,663	17,168	202,940
	032009	CORP-Supply Chain-Pass Thru	(3)	7	(6)			2	0	0	1	(0)	0	0	2
	032010	CORP-Supply Chain-Sourcing	3,746	3,417	4,112	3,567	3,651	3,289	3,929	3,547	3,866	4,808	2,752	4,043	44,726
	033010	WE-Supply Chain	1	1	1	(2)	0	15	8	1	(1)	-	4	(4)	24
	033510	CE-Supply Chain	5	92	57	61	75	140	66	45	31	42	106	33	753
	035010	SE-Supply Chain	1,624	946	933	818	1,057	1,070	1,076	912	976	953	723	853	11,942
	036510	NE-Supply Chain	27	2	(61)	(0)		0			54				22
			5,399	4,465	5,038	4,443	4,784	4,516	5,079	4,505	4,927	5,803	3,586	4,925	57,470
Property	032042	CORP-1000 Voorhees Building	3,234	(1,310)	945	1,122	902	795	951	1,002	1,056	1,513	1,233	2,629	14,074
	032046	CORP-3906 Church Road	822	1,071	897	824	936	690	958	852	891	862	527	869	10,198
	032062	CORP-Building Services	13,090	13,840	12,200	12,424	15,476	15,348	14,913	15,908	16,313	14,494	14,055	19,260	177,320
	032063	CORP-Building Services Woodcre	6,128	3,083	5,178	5,659	5,603	5,423	5,916	5,613	5,846	4,067	6,985	7,037	66,539
	036576	NE-Building Services Woodcrest	2	0	(0)	(2)		1		0	1			1	2
			23,276	16,685	19,220	20,027	22,917	22,256	22,789	23,376	24,106	20,936	22,800	29,795	268,132
	032023	CORP-Eastern Division Ops	1,331	2,753	1,553	1,249	1,474	2,567	3,119	720	1,512	1,424	872	1,716	20,291
	032024	Corp-Western Division Ops	311	(90)	(141)	(56)	14	18	16	18	18	18	17	18	160
	032026	CORP-Regulated Ops	1,627	3,178	3,126	2,548	2,644	3,148	2,729	2,996	2,242	3,139	2,819	3,188	33,384
	032066	CORP-Innov & Env Stewardship	4,691	2,392	435	2,751	1,880	2,443	3,401	3,894	2,513	2,997	2,337	1,216	30,950
Property Total	033001	WE-Production	0	(0)											-
	033002	WE-Network	2	(2)											0
	033003	WE-Customer Relations	3	44	(35)	0	3	59	37	1	-	-	0	0	111
	033004	WE-Technical Services	(0)	-	-										(0)
	033005	WE-Administration	64	10	25	68	11	307	276					2	764
	033006	WE-Service Delivery	22	(17)	(23)	33	2	59	36					0	112
	033011	WE-Environmental Mgmt	1	1	0	(2)	0	1	0					-	1
	033014	WE-Engineering	6	8	5	4	2	91	56	555	(60)	(210)	1	1	459
	033028	WE-Asset Planning	1	(1)	-										0
	033501	CE-Production	3	3	(3)	(7)	1	(1)	-	-	0	(0)	-	0	(4)
Regulatory Services	033502	CE-Network	11	16	20	39	72	205	87	101	101	105	358	95	1,210
	033503	CE-Customer Relations	62	92	64	134	276	782	331	397	410	443	1,668	370	5,028
	033505	CE-Administration	230	240	32	414	497	1,604	661	666	425	709	2,682	569	8,731
	033511	CE-Environmental Mgmt	6	7	14	22	36	105	44	52	55	52	166	39	598
	033514	CE-Engineering	30	33	46	73	145	404	173	205	208	203	654	151	2,325
	035001	SE-Production	31	(31)	-										(0)
	035002	SE-Network	579	1,068	1,246	825	1,166	598	1,225	1,087	1,358	1,322	(75)	1,026	11,425
	035003	SE-Customer Relations	14,033	13,568	14,420	12,458	14,827	14,491	12,860	12,881	12,079	3,415	3,892	3,383	132,306
	035005	SE-Administration	11,376	6,660	3,079	8,019	9,048	8,955	7,935	8,280	7,824	7,821	7,609	7,205	93,811
	035011	SE-Environmental Mgmt	192	(192)	-										(0)
Regulatory Services Total	035014	SE-Engineering	419	431	582	419	558	576	529	542	492	465	422	350	5,785
	035503	ED-Customer Relations						906	10,805	11,347	14,494	12,235	13,888	14,836	78,512
	036501	NE-Production	6	2	(0)	(1)		31	2	2	5		5		51
	036502	NE-Network	-	-											-
	036505	NE-Administration	17	(0)											17
			35,063	30,173	24,445	28,991	32,656	37,349	44,321	43,743	43,676	34,137	37,309	34,172	426,026
	032050	CORP-Backfill Reg App	1	(0)	5	2	1	1	(9)						0
	032069	CORP-Regulatory UFS	544	919	2,284	1,122	1,334	1,287	1,449	1,260	1,300	1,272	1,052	1,160	14,985
			545	919	2,284	1,122	1,334	1,287	1,449	1,260	1,300	1,272	1,052	1,160	14,985
	032084	SSC-Accounts Payable	3,613	1,061	3,648	3,308	3,624	3,685	3,970	1,577	2,580	3,724	2,720	3,073	36,583
SSC	032505	SSC-Administration	5,745	4,519	3,997	3,763	3,874	4,455	4,879	4,193	4,447	4,399	4,257	4,947	53,515
	032570	SSC-General Accounting	5,398	5,250	5,315	4,603	4,410	7,187	7,798	7,166	8,566	8,404	9,602	8,341	82,039
	032571	SSC-Tax	1,825	2,035	2,272	2,212	2,352	2,295	2,815	1,997	2,226	2,233	2,165	2,258	26,683
	032572	SSC-Business Support Services	1,833	1,873	1,949	1,835	2,281	2,390	2,515	2,495	2,566	2,548	2,625	2,804	27,716
	032574	SSC-Rates & Regulation	1,830	1,782	2,755	2,121	3,060	2,467	2,595	2,319	2,816	2,434	3,052	3,343	30,572
	032575	SSC-Cash Operations	2,982	2,562	3,460	4,288	3,005	3,683	3,273	3,193	3,463	3,417	3,165	3,886	40,478
	032577	SSC-Utility Plant Accounting	2,881	2,713	3,224	2,682	2,920	3,236	3,293	3,163	3,027	3,361	4,434	4,171	39,107
	032578	SSC-Project Management	505	486	619	478	563	611	572	599	560	580	535	609	6,749
	032579	SSC-Employee Services	3,938	3,752	4,271	3,691	3,401	4,448	7,271	3,688	4,159	4,055	4,507	4,004	51,185

Tennessee American Water Company
American Water Works Service Company Expenses (O&M portion)
For the 12 Months Ended 12/31/2009

Function	Business Unit	Business Unit Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Grand Total
	032580	SSC-AWE	269	298	455	72	260	307	361	310	367	324	303	264	3,589
SSC Total			30,821	26,531	31,967	29,052	29,751	34,762	39,381	30,673	34,815	35,398	37,366	37,699	398,217
Grand Total			427,439	330,137	306,926	394,619	390,718	425,766	431,398	408,558	434,415	406,387	421,095	502,461	4,879,920

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: John S. Watson/Michael A. Miller

GENERAL

Question:

16. Provide a list of TAWC's customer service initiatives, and performance measures, including a description and analysis of the effectiveness of each for the last two (2) years. If applicable, the analysis should include, but not be limited to, time to connect the customer to the system, response time to service inquiries, restoring of service, new meter installations, billing inquiries, meeting appointment times, etc. If you have identified other areas that you monitor, include them in this response.

Response:

TAWC as required in the settlement agreement in its 2004 rate case provides the TRA and the Consumer Advocate Office of the Attorney General monthly reports on agreed to service metrics for its local operation and the national call center. Attached to this response is the report which details these service metrics from January 2005 through August 2010.

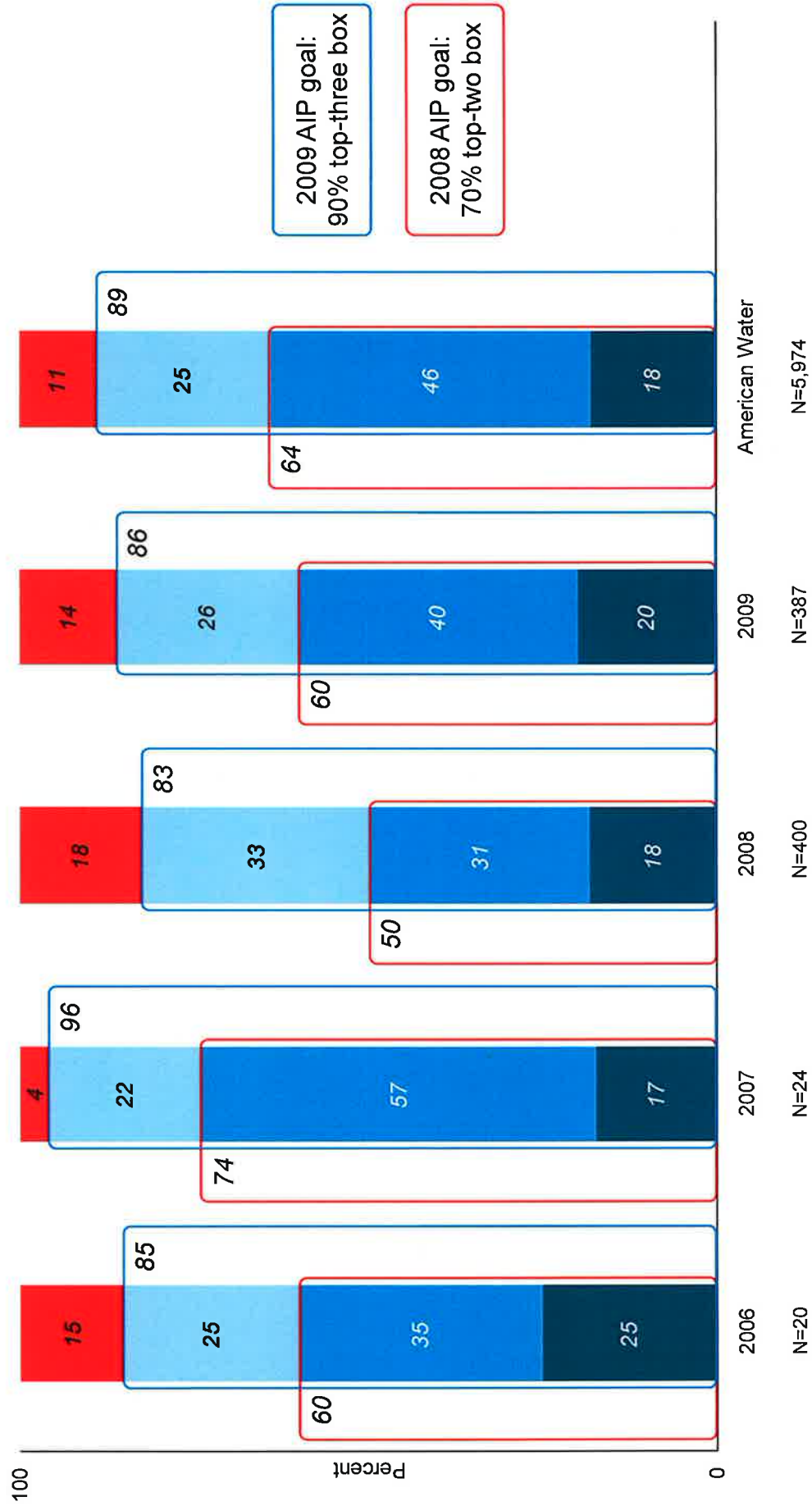
Also attached are the customer satisfaction results, as well as the service quality results for the period 2006 through 2010 YTD years. Please refer to the document labeled TRA-01-Q016-ATTACHMENT.



2009 Customer Satisfaction Survey

- Tennessee American Water
 - Systematic Survey of 401 residential customers
 - Margin of Error: +/- 4.9%
 - Administered: November 12 – December 11, 2009

Overall satisfaction with Tennessee American Water (AIP Metric)

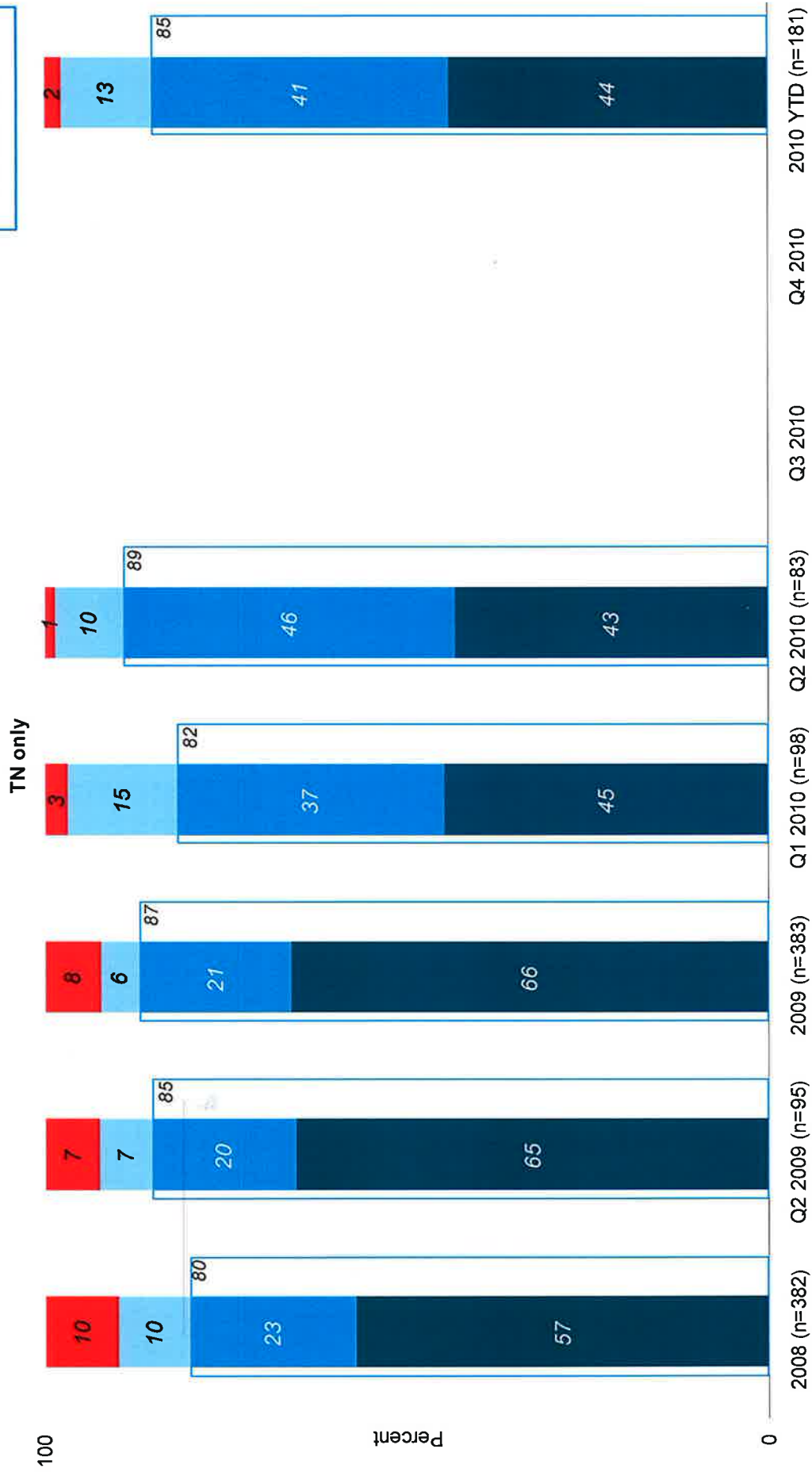


■ Extremely satisfied ■ Very satisfied ■ Somewhat satisfied ■ Dissatisfied

Q04: Overall, how satisfied have you been with your water company in general during the past 12 months?

Overall satisfaction with service contact (AIP)—compared over time

2010 AIP goal:
85% top-two box



■ Extremely satisfied ■ Very satisfied ■ Somewhat satisfied ■ Somewhat / Very Dissatisfied

Q54: Overall, how satisfied were you with the outcome of your service contact?



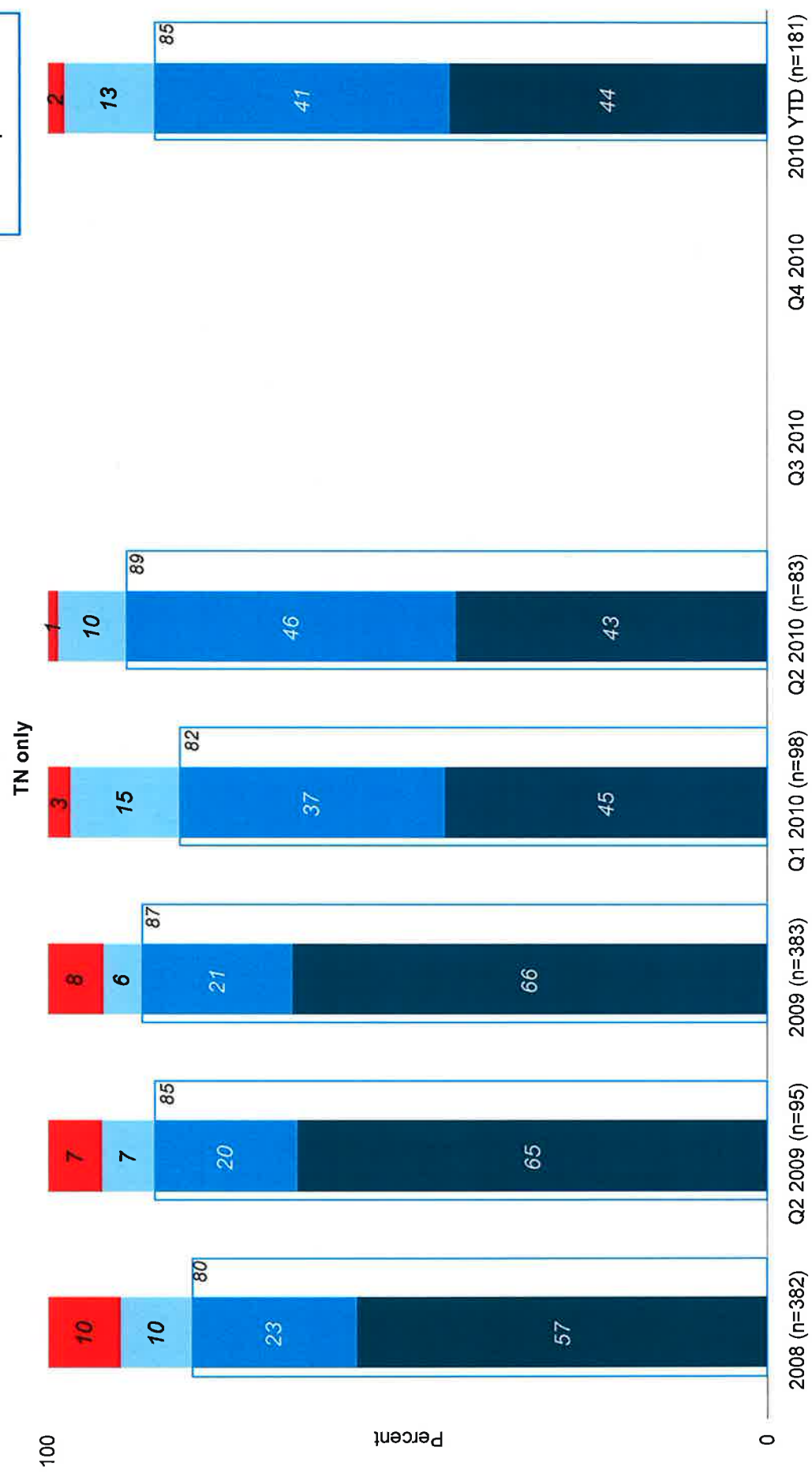
AMERICAN WATER

AW Tactical Service Quality Audit



Overall satisfaction with service contact (AIP)—compared over time

2010 AIP goal:
85% top-two box



■ Extremely satisfied ■ Very satisfied ■ Somewhat satisfied ■ Somewhat / Very Dissatisfied

Q54: Overall, how satisfied were you with the outcome of your service contact?

Tactical Service Quality Study – Q4 2009

Methodology

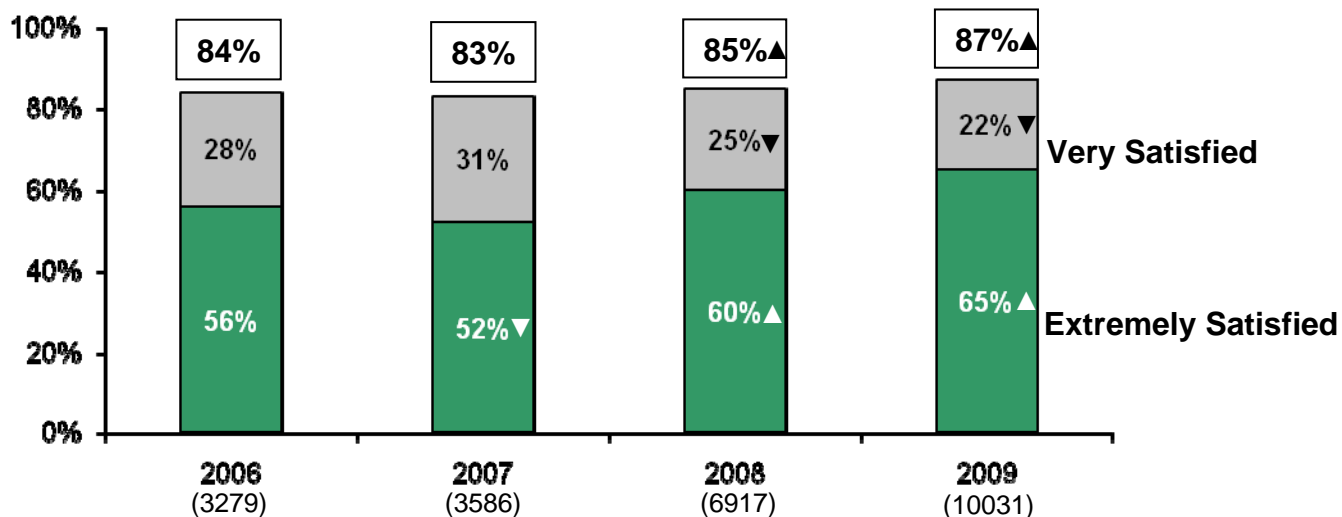
- A seven-day contact rule was established to ensure recall of the most recent contact with American Water.
- A total of 3,475 interviews were conducted in 2006; 3,816 in 2007; 7,457 in 2008; and 10,388 have been conducted in 2009.
- Results have been weighted to proportionally represent the annual volume of customer contacts at the State/Subsidiary level.
- The results are reliable within $\pm 2\%$ for 2006; $\pm 2\%$ for 2007; $\pm 1\%$ for 2008 and $\pm 1\%$ for YTD 2009 at the 95% confidence level for the national total.
- When comparing the results from 2006 to 2007, a difference of $\pm 2\%$ is needed for the change to be significant at the 95% confidence level; when comparing 2007 to 2008 a difference of $\pm 2\%$ is needed; when comparing 2008 to YTD 2009 a difference of $\pm 1\%$ is needed.

Results

- Operational initiatives implemented over the past few years have contributed to significant increases in the evaluation of the recent contact (outcome of the contact). Specifically, the proportion of customers who have provided a rating of “extremely satisfied” has grown from 52% in 2007 to 60% in 2008 and is now 65% in YTD 2009.
- Overall satisfaction with the outcome of the contact has increased significantly (▲) from 2008 to YTD 2009 at a national level. Thirteen of the fifteen state groupings are currently meeting or exceeding their goal. Significant shifts in performance are noted for American Water (▲), the Eastern Division (▲), Kentucky (▲), Tennessee (▲), Indiana/Michigan (▲) and New Mexico (▲) from 2008 to YTD 2009.
- The overall evaluation of the Customer Service Representatives has been stable from 2008 to YTD 2009. Today, nearly nine in ten customers provide an evaluation of excellent or very good for these key associates. Significant shifts in performance are noted for New Mexico (▲) from 2008 to YTD 2009.
- The overall evaluation of the Field Service Representatives remained relatively stable from 2008 to YTD 2009 at the national level. Nine in ten customers offer an excellent or very good evaluation of these key associates at a national level. No states have experienced a significant change from 2008 to YTD 2009.
- The overall satisfaction level with American Water during the past twelve months has declined significantly (▼) from 2008 to YTD 2009. Significant shifts also occurred in the Western Division (▼) and Illinois (▼), from 2008 to YTD 2009.

Q29 Overall, how satisfied were you with the outcome of your service contact?

Overall Satisfaction with Outcome of Contact



Region	Utility Subsidiary	2009 Total Resp.	2006 (Q1-Q4)	2007 (Q1-Q4)	2008 (Q1-Q4)	YTD 2009 (Q1-Q4)	Change from Previous Measure	Year-End 2009 Goal	Over / Under Goal
American Water		10031	84%	83%	85%	87%	2%▲	85%	2%
New Jersey		1141	80%	78%	83%	85%	2%	85%	0%
Pennsylvania		1157	81%	84%	83%	83%	0%	85%	-2%
Eastern Division		4087	84%	84%	86%	88%	2%▲	85%	3%
	Long Island	223	75%	71%	66%	70%	4%	85%	-15%
	Kentucky	395	88%	87%	83%	88%	5%▲	85%	3%
	Virginia/Maryland	373	89%	87%	84%	85%	1%	85%	0%
	Tennessee	383	86%	84%	80%	87%	7%▲	85%	2%
	West Virginia	782	84%	80%	85%	88%	3%	85%	3%
	Indiana/Michigan**	1553	88%	86%	88%	91%	3%▲	85%	6%
	Ohio	378	88%	85%	87%	87%	0%	85%	2%
Western Division		3646	85%	83%	87%	87%	0%	85%	2%
	Iowa	391	89%	86%	89%	90%	1%	85%	5%
	Illinois	1140	88%	80%	87%	87%	0%	85%	2%
	Missouri/Texas	775	82%	84%	88%	88%	0%	85%	3%
	Arizona/Hawaii**	422	87%	84%	86%	86%	0%	85%	1%
	California	761	84%	83%	86%	86%	0%	85%	1%
	New Mexico	157	84%	89%	85%	96%	11%▲	85%	11%

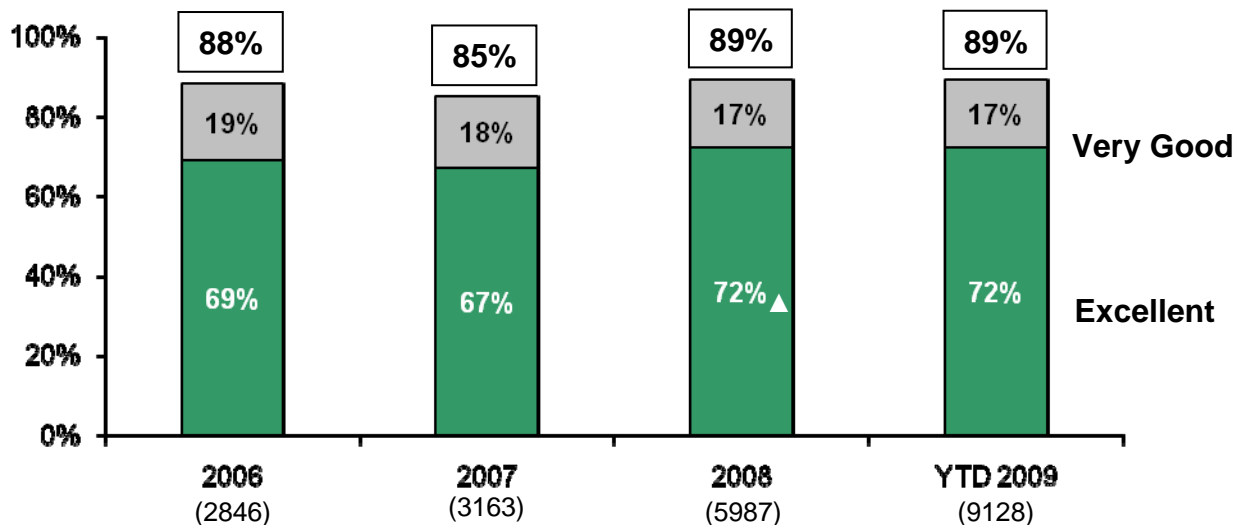
*Caution: very small number of respondents therefore results can be unstable.

**Subsidiary not included in survey due to sample availability.

▲ or ▼ indicates the change is significant at the 95% confidence level.

Q7i How would you evaluate the telephone representative on overall performance?

Overall Performance of Customer Service Reps



Region	Utility Subsidiary	2009 Total Resp.	2006 (Q1-Q4)	2007 (Q1-Q4)	2008 (Q1-Q4)	YTD 2009 (Q1-Q4)	Change from Previous Measure
American Water		9128	88%	85%	89%	89%	0%
New Jersey		1076	87%	80%	86%	89%	3%
Pennsylvania		1064	86%	87%	90%	87%	-3%
Eastern Division		3727	88%	87%	89%	90%	1%
	Long Island	228	82%	82%	77%	81%	4%
	Kentucky	347	93%	89%	89%	89%	0%
	Virginia/Maryland	325	90%	88%	86%	90%	4%
	Tennessee	349	88%	87%	85%	91%	6%
	West Virginia	706	91%	87%	89%	89%	0%
	Indiana/Michigan**	1431	93%	85%	91%	92%	1%
	Ohio	341	89%	87%	86%	89%	3%
Western Division		3261	87%	86%	90%	89%	-1%
	Iowa	350	89%	90%	94%	89%	-5%
	Illinois	987	86%	84%	89%	87%	-2%
	Missouri/Texas	699	86%	86%	90%	91%	1%
	Arizona/Hawaii**	381	90%	87%	90%	90%	0%
	California	705	87%	85%	89%	88%	-1%
	New Mexico	139	88%	92%	88%	96%	8%▲

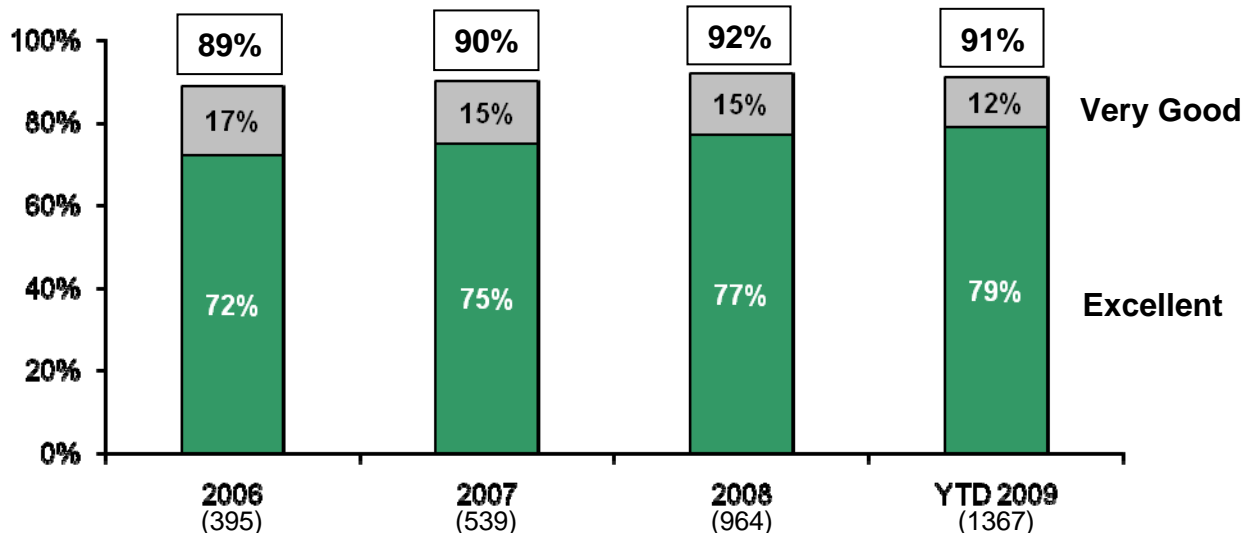
*Caution: very small number of respondents therefore results can be unstable.

**Subsidiary not included in survey due to sample availability.

▲ or ▼ indicates the change is significant at the 95% confidence level.

Q21i How would you evaluate the field service representative on overall performance?

Overall Performance of Field Service Reps



Region	Utility Subsidiary	2009 Total Resp.	2006 (Q1-Q4)	2007 (Q1-Q4)	2008 (Q1-Q4)	YTD 2009 (Q1-Q4)	Change from Previous Measure
American Water		1367	89%	90%	92%	91%	-1%
	New Jersey	132	88%	88%	97%	89%	-8%
	Pennsylvania	165	85%	90%	93%	92%	-1%
Eastern Division		569	90%	90%	92%	93%	1%
	Long Island	26*	88%	89%	76%	93%	17%
	Kentucky	34	70%	78%	93%	100%	7%
	Virginia/Maryland	40	94%	95%	95%	82%	-13%
	Tennessee	38	88%	95%	79%	94%	15%
	West Virginia	78	97%	92%	98%	95%	-3%
	Indiana/Michigan**	282	93%	89%	90%	92%	2%
	Ohio	71	94%	90%	89%	95%	6%
Western Division		501	87%	90%	89%	90%	1%
	Iowa	60	95%	86%	97%	93%	-4%
	Illinois	183	95%	83%	90%	90%	0%
	Missouri/Texas	137	84%	95%	91%	90%	-1%
	Arizona/Hawaii**	34	82%	93%	91%	91%	0%
	California	72	84%	95%	74%	85%	11%
	New Mexico	15*	84%	80%	74%	91%	17%

*Caution: very small number of respondents therefore results can be unstable.

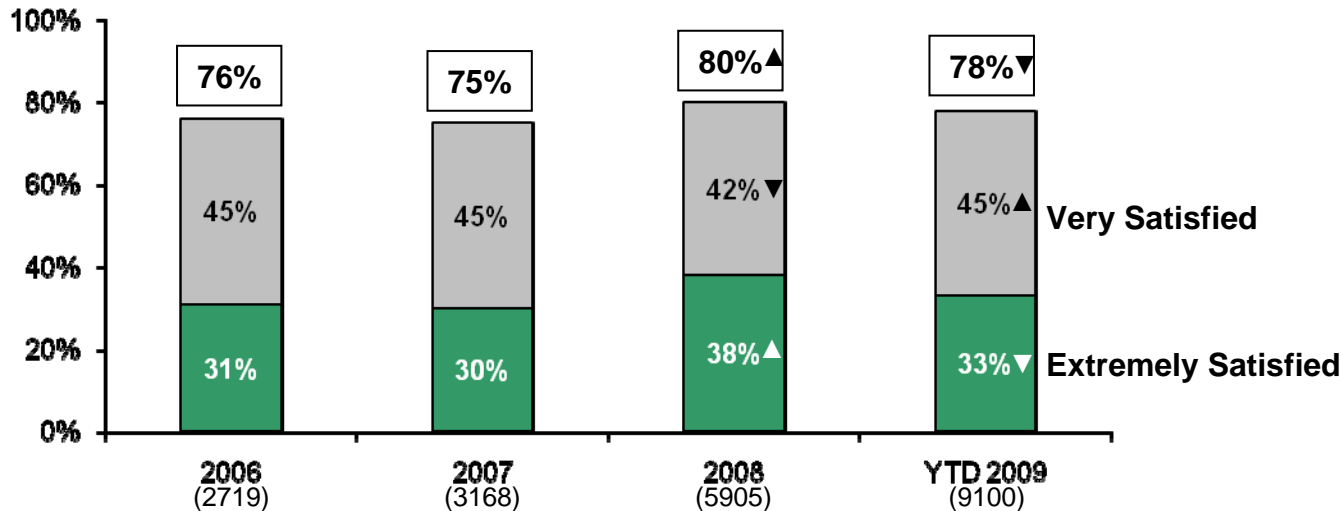
**Subsidiary not included in survey due to sample availability.

***Single respondent not asked this question due to previous survey responses.

▲ or ▼ indicates the change is significant at the 95% confidence level.

Q32A Overall, how satisfied have you been with American Water in general, during the past 12 months?

Overall Satisfaction with American Water During the Past 12 Months



Region	Utility Subsidiary	YTD 2009 Total Resp.	2006 (Q1-Q4)	2007 (Q1-Q4)	2008 (Q1-Q4)	YTD 2009 (Q1-Q4)	Change from Previous Measure
American Water		9100	76%	75%	80%	78%	-2% ▼
New Jersey		988	73%	73%	78%	78%	0%
Pennsylvania		1065	73%	73%	76%	76%	0%
Eastern Division		3750	76%	76%	80%	80%	0%
	Long Island	200	64%	64%	53%	66%	13%
	Kentucky	363	83%	87%	78%	79%	1%
	Virginia/Maryland	309	78%	76%	77%	80%	3%
	Tennessee	362	76%	77%	74%	76%	2%
	West Virginia	736	79%	73%	81%	82%	1%
	Indiana/Michigan**	1424	77%	75%	83%	82%	-1%
	Ohio	356	79%	78%	78%	72%	-6%
Western Division		3297	75%	76%	81%	78%	-3% ▼
	Iowa	358	82%	78%	84%	82%	-2%
	Illinois	1073	76%	75%	82%	77%	-5% ▼
	Missouri/Texas	709	73%	76%	83%	79%	-4%
	Arizona/Hawaii**	374	75%	74%	76%	75%	-1%
	California	646	71%	75%	77%	75%	-2%
	New Mexico	137	78%	81%	82%	88%	6%

*Caution: very small number of respondents therefore results can be unstable.

**Subsidiary not included in survey due to sample availability.

▲ or ▼ indicates the change is significant at the 95% confidence level.

2009 Priorities of Focus

- This analysis is used to focus action and ultimately resources to influence customer advocacy and support.
- The matrix *columns* represent different levels of impact with the highest impact items in the right column.
 - The items in the right column will drive reputation, satisfaction and advocacy in a positive direction.
 - The items in the left column are table stakes meaning they will lead to dissatisfaction and the erosion of the reputation in the event performance declines.
- The matrix *rows* represent different levels of performance based on the average.
 - The items in the top row include those where performance is below average.
 - The items in the bottom row include those where performance is above average.
- The boxes in the matrix have various levels of priority and recommended actions.

Table Stakes / Impact Reputation / Dissatisfaction		Impact Reputation / Satisfaction	Impact Reputation / Satisfaction / Advocacy	
Performance	Below Average	Priority III Identify Acceptable Performance <ul style="list-style-type: none">• Q6d. IVR - Ease of reaching rep• Q6g. IVR – Time it took to reach rep• Q10a. CSR – Explain why call needed to be transferred• Q23c. FSR – FSR left indication requested work was completed	Priority II Improve Performance <ul style="list-style-type: none">• Q10b. CSR – Explain where call was being transferred (person & dept)• Q11b. CSR – Notify you of how long you may be on hold• Q22c. FSR – Explain how he/she would handle the situation• Q22d. FSR – Review the service performed• Q22e. FSR – Provide follow-up contact info in the event it was needed• Q33i. Image – Is involved in your local community• Q33j. Image – Provides useful information about its products & services• Q33k. Image – Offers helpful tips to maximize value of what it provides	Priority I Improve Performance Immediately <ul style="list-style-type: none">• Q6a. IVR – Ease of following the system's menu• Q33b. Image – Cares about its customers
	Average	Priority IV Maintain Performance	Priority III Improve Performance Over Time <ul style="list-style-type: none">• Q6c. IVR – Ability to accomplish what you needed• Q11a. CSR – Explain why you were being placed on hold• Q19a. Appt. Setting – Ease of setting an appointment• Q19b. Appt. Setting – Ability to arrange visit at a time convenient for you• Q22a. FSR – Introduce himself/herself & the company• Q22b. FSR – Describe the reason for visit• Q22h. FSR – Arrive as scheduled during the agreed upon appt. window• Q33h. Image – Is an environmentally responsible company	Priority II Create a Strength <ul style="list-style-type: none">• Q7g. CSR – Ability to solve problem or request• Q8a. CSR – Introduce himself/herself & the department• Q22f. FSR – Thank you for recent contact• Q33e. Image – Consistently delivers what it promises
	Above Average	Priority IV Maintain Performance <ul style="list-style-type: none">• Q21c. FSR – Ability to understand your situation• Q21d. FSR – Ability to clearly communicate• Q21e. FSR – Helpfulness	Priority III Promote the Strength <ul style="list-style-type: none">• Q7a. CSR – Courtesy• Q7b. CSR – Professionalism• Q7c. CSR – Ability to understand situation• Q7d. CSR – Ability to clearly communicate• Q7e. CSR – Helpfulness• Q7f. CSR – Ability to provide the needed info• Q7h. CSR – Time it took to handle request• Q8b. CSR – Ask how he/she could help you• Q10d. CSR – Transfer the call to correct person or dept.• Q21a. FSR – Courtesy• Q21f. FSR – Ability to provided needed info• Q21h. FSR – Time it took to handle request	Priority II Promote the Strength <ul style="list-style-type: none">• Q8d. CSR – Thank you for the call• Q8f. CSR – Ask “is there anything else I can help you with?”• Q21b. FSR - Professionalism• Q21g. FSR – Ability to solve problem or request

Tennessee-American Water Company Report on Field Service Operations

Service Metric		January	February	March	April	May	June	July	August	September	October	November	December		
A	Number of Service Orders Worked Monthly	2005	4,971	4,326	5,162	4,556	4,680	5,113	4,508	4,698	5,051	6,356	6,022	5,726	
		2006	6,053	6,838	7,540	6,867	7,900	7,900	7,419	7,235	6,766	6,783	6,852	7,054	
		2007	7,908	6,378	6,378	7,280	6,831	8,006	7,994	7,243	8,448	7,516	8,124	6,931	
		2008	6,258	7,093	6,507	7,758	6,945	7,171	7,340	6,945	6,528	6,516	6,528	4,959	
		2009	7,854	8,275	7,518	7,906	6,705	7,637	7,637	7,305	7,337	7,075	6,156	6,087	
		2010	6,981	6,535	6,756	6,216	6,234	6,932	6,567	7,604					
		2005	99.13%	99.40%	99.40%	99.78%	99.72%	99.73%	99.73%	99.71%	99.49%	99.49%	99.56%	99.55%	99.60%
B	Appointments-% appointment orders on time	2006	99.77%	99.65%	99.83%	99.82%	99.84%	99.69%	99.84%	99.82%	99.86%	99.50%	99.62%	99.89%	
		2007	99.76%	99.78%	99.73%	99.87%	99.69%	99.84%	99.84%	99.85%	99.96%	99.57%	99.77%	99.64%	99.70%
		2008	98.70%	99.69%	99.89%	99.91%	99.87%	99.87%	99.87%	99.88%	99.81%	99.66%	99.89%	99.92%	99.86%
		2009	98.78%	99.82%	99.84%	99.87%	99.78%	99.69%	99.80%	99.84%	99.75%	99.73%	99.74%	99.59%	
		2010	99.20%	99.48%	99.50%	99.60%	99.62%	99.75%	97.49%	99.36%					
		2005	43	26	31	10	13	14	13	24	25	28	27	23	
		2006	14	24	13	12	13	23	13	10	10	12	21	8	
C	# appointments missed	2007	19	14	20	9	25	13	45	88	32	19	25	19	
		2008	25	22	7	7	9	9	10	11	22	7	4	19	
		2009	17	15	12	10	15	24	13	26	15	19	16	86	
		2010	56	34	34	25	86	17	165	49					
		2005	78,179	78,179	76,338	76,553	78,756	79,025	79,223	79,508	79,736	80,082	80,433	80,712	
		2006	81,095	81,502	82,152	82,551	83,353	83,983	84,278	85,064	85,654	86,940	86,436	86,777	
		2007	87,464	87,819	88,485	89,484	89,972	89,905	89,923	89,936	89,971	88,983	88,997	90,825	
D	Total # of Meters in Accounts (Active 5/2008 to present) Active and Inactive Incl. Meters in Shop-2008/April 2008	2008	93,181	93,221	93,760	94,393	74,178	N/A	74,251	74,214	74,046	73,867	73,860	73,562	
		2009	73,619	73,546	73,648	73,740	73,854	74,020	73,892	73,856	73,623	73,519	73,355	73,432	
		2010	73,512	73,713	73,929	73,920	74,147	74,314							
		2005	76,487	49,215	77,762	67,679	68,344	76,572	60,764	65,048	73,466	69,736	66,204	41,313	
		2006	97,287	67,283	86,674	64,463	88,653	80,139	87,114	71,229	83,391	68,988	76,873	70,170	
		2007	80,378	70,389	74,207	71,046	70,418	72,853	75,370	81,454	69,778	81,708	71,828	71,968	
		2008	82,129	75,145	65,140	76,281	68,137	73,783	77,738	75,508	72,316	82,567	62,397	78,707	
E	# meters estimated	2009	74,653	72,676	79,020	68,545	70,701	78,811	79,340	75,750	75,755	75,592	66,124	81,988	
		2010	74,648	69,639	80,641	73,342	71,539	79,318	75,716						
		2005	9,108	8,364	8,909	6,186	3,420	4,131	3,069	3,032	6,412	9,449	3,797	6,045	
		2006	6,413	1,615	1,112	788	1,172	882	733	700	817	2,380	3,024	1,134	
		2007	1,077	716	822	535	540	412	476	606	456	488	568	197	
		2008	568	475	368	516	352	417	401	360	423	443	291	689	
		2009	491	263	333	249	394	361	303	403	339	470	414	695	
F	% of meters estimated	2010	542	2,070	356	400	258	386	330						
		2005	10.64%	14.53%	10.36%	8.33%	4.77%	5.12%	4.85%	4.45%	10.27%	11.59%	5.42%	12.77%	
		2006	6.18%	2.71%	1.27%	1.22%	1.30%	1.09%	1.08%	0.97%	0.97%	3.35%	3.89%	1.59%	
		2007	1.32%	1.01%	1.10%	0.75%	0.76%	0.56%	0.63%	0.74%	0.66%	0.57%	0.78%	0.89%	
		2008	0.70%	0.63%	0.56%	0.66%	0.51%	0.56%	0.51%	0.50%	0.56%	0.53%	0.45%	0.87%	
		2009	0.65%	0.36%	0.42%	0.42%	0.54%	0.46%	0.39%	0.53%	0.45%	0.62%	0.60%	0.84%	
		2010	0.72%	2.89%	0.44%	0.54%	0.36%	0.50%	0.43%						
G	# of meters not billed:	2005	0	0	0	0	0	0	0	0	0	0	0	0	
		2006	0	0	0	0	0	0	0	0	0	0	0	0	
		2007	0	0	0	0	0	0	0	0	0	0	0	0	
		2008	1	1	0	0	1	0	1	0	0	0	0	0	
		2009													
		2010													
		for 3 months	2005	0	0	0	0	0	0	0	0	0	0	0	0
H	for 6 months	2006	0	0	0	0	0	0	0	0	0	0	0	0	
		2007	0	0	0	0	0	0	0	0	0	0	0	0	
		2008	0	0	0	0	0	0	0	0	0	0	0	0	
		2009	0	0	0	0	0	0	0	0	0	0	0	0	
		2010	0	0	0	0	0	0	0	0	0	0	0	0	
		2005	0	0	0	0	0	0	0	0	0	0	0	0	
		2006	0	0	0	0	0	0	0	0	0	0	0	0	
I	for 12 months	2007	0	0	0	0	0	0	0	0	0	0	0	0	
		2008	0	0	0	0	0	0	0	0	0	0	0	0	
		2009	0	0	0	0	0	0	0	0	0	0	0	0	
		2010	0	0	0	0	0	0	0	0	0	0	0	0	
		2005	0	0	0	0	0	0	0	0	0	0	0	0	
		2006	0	0	0	0	0	0	0	0	0	0	0	0	
		2007	0	0	0	0	0	0	0	0	0	0	0	0	

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: John S. Watson

REVENUES

Question:

24. Provide the computation of the average cost of adding a new residential customer in Tennessee for the last three (3) fiscal years.

Response:

Year 2007	\$1,280
Year 2008	\$1,400
Year 2009	\$1,590

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: Sheila A. Miller

EXPENSES

Question:

35. Provide a liability and property insurance schedule for the test period, identifying the policies in effect, the type of coverage, the coverage period, the annual premiums, the amount included as an expense, the account charged, the beneficiaries and the allocation used. Also, provide the same information for those policies currently in effect and any anticipated changes in policies through the attrition period. Where applicable, provide the name of the insurance company with a contact person and telephone number.

Response:

See attached schedule labeled as TRA-01-Q035-ATTACHMENT.

Supplemental Response:

See the attached revised schedule correcting the attrition year expense amounts which agrees to the expense included in the Company's original petition filing. The test year amount did not change. Also attached is a listing of contact names and telephone numbers for each policy. Please refer to the attached schedules labeled as TRA-01-Q035-SUPPLEMENTAL-ATTACHMENT.

Tennessee American Water Company
Liability and Property Insurance
TRA Data Request 1 question 35

Policy Description	Test Year Premium Amount	Expense account	Revised 2011 TY Budget based on % inc	Policy Period		Vendor	Phone
Fiduciary Liability	\$1,929.72	557000.16	3,034.33	4/1/2010	4/1/2011	Willis of PA	(610) 964-8700
Employment Practices Liability - Willis	\$1,863.88	557000.16	1,954.38	4/22/2010	4/22/2011	Willis of PA	(610) 964-8700
Excess Liability - Marsh USA	\$71,046.04	557000.16	71,431.18	1/1/2010	12/31/2010	Marsh USA	(212) 345-6000
General Liability - Marsh USA	\$192,236.88	557000.16	196,899.19	1/1/2010	12/31/2010	Marsh USA	(212) 345-6000
Auto Liability - Marsh USA	\$28,887.51	559000.16	31,130.40	1/1/2010	12/31/2010	Marsh USA	(212) 345-6000
Workers Compensation - Marsh USA	\$176,456.45	558000.16	163,671.35	1/1/2010	12/31/2010	Marsh USA	(212) 345-6000
Crime Special Insurance	\$550.89	559000.16	574.66	4/1/2010	4/1/2011	Willis of PA	(610) 964-8700
Special Kidnap & Ransom-spec conting	\$271.98	559000.16	69.81	1/1/2010	12/31/2013	Willis of NY	(212) 915-8888
Travel	\$82.92	559000.16	273.54	4/1/3/2008	4/1/3/2011	Marsh USA	(212) 345-6000
Property All Risk	\$29,174.51	559000.16	31,705.48	1/1/2010	12/31/2010	Marsh USA	(212) 345-6000
Consultation fee	\$4,171.59	559000.16	4,353.83	1/1/2010	12/31/2010	Marsh USA	(212) 345-6000
Cyber Crime-ITS	\$2,432.67	559000.16	3,050.31	1/1/2010	12/31/2010	Marsh USA	(212) 345-6000
Surety Bond-three invoices	\$2,046.54	559000.16	\$1,842.70	1/1/2010	12/31/2010	Marsh USA	(212) 345-6000
Directors & Officers Liability - Willis	\$8,100.84	559000.16	7,043.02	4/1/2010	4/1/2011	Willis of PA	(610) 964-8700
Totals	\$519,242.42		\$517,034.18				

**Tennessee American Water
Property & Liability Insurance
TRA DR 1 item 35**

Employment Practices Liability

Willis of Pennsylvania – (610-964-8700)
Contact: Michael Snee
Coverage Period 4/22/10-4/22/11

Crime

Willis of Pennsylvania – (610-964-8700)
Contact: Michael Snee
Coverage Period 4/1/10-4/1/11

Fiduciary Liability

Willis of Pennsylvania – (610-964-8700)
Contact: Michael Snee
Coverage Period 4/1/10-4/1/11

Directors & Officers Liability

Willis of Pennsylvania – (610-964-8700)
Contact: Michael Snee
Coverage Period 4/1/10-4/1/11

Travel

Marsh USA Inc. – (973-401-5151)
Contact: Tony Schmitt
Coverage Period 4/13/08-4/13/11

General, Auto, Workmen's Compensation

Marsh USA Inc. – (973-401-5151)
Contact: Tony Schmitt
Coverage Period 1/1/10-12/31/10

Excess Liability

Marsh USA Inc. – (973-401-5151)
Contact: Tony Schmitt
Coverage Period 1/1/10-12/31/10

Property

Marsh USA Inc. – (973-401-5151)
Contact: Tony Schmitt
Coverage Period 1/1/10-12/31/10

Cyber Crime

Marsh USA Inc. – (973-401-5151)

Contact: Tony Schmitt

Coverage Period 1/1/10-12/31/10

Special Contingency Risk

Willis of New York Inc. – (212-915-8888)

Contact: Todd Cranche

Coverage Period 1/1/10-12/31/12

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: Michael A. Miller

EXPENSES

Question:

42. Provide the amount of direct and allocated charges to TAWC from its Parent, Multi-State Utility, or Affiliated Utility Service Company, by account, for each month of the test period and the projected amount for each month of the attrition period.

Response:

See attached schedule labeled as TRA-01-Q042-ATTACHMENT.

Tennessee-American Water
Base Year O&M Service Company Charges by Formula Allocation Type and Object Account
April 2009 - March 2010
TRA 1 Q 42

FORMULATYPE	WDDBI	Plain Object Description	2009 Apr	2009 May	2009 Jun	2009 Jul	2009 Aug	2009 Sep	2009 Oct	2009 Nov	2009 Dec	2010 Jan	2010 Feb	2010 Mar	Base Year Total	Adjust 2010 Increase	Adjust 2011 Increase	Total Attrition Yr
Direct Charge																		
	501200	Labor	25,992	32,458	48,331	32,237	32,556	35,513	27,418	43,067	35,921	31,109	23,941	20,179	388,721	11,692	9,032	410,444
	501210	Labor Non Scheduled Overtime										121			121			121
	501211	Incentive Plan-Off Annual	2,382	3,406	4,541	2,828	2,957	3,654	2,670	4,557	2,935	2,977	2,438	2,257	37,602	1,128	871	39,601
	504100	Group Ins Maintenance	20	27	36	22	20	16	7	9	3	38	6	8	212	6	5	223
	504600	Other Welfare Maintenance																
	504660	Tuition Aid																
	504670	Training	386				45	219				162				162	5	4
	504700	401k	611	770	1,157	748		735	674	879	567	699	474	424	650	20	15	170
	508101	Defined Contribution Plan	620	704	1,057	669	591	647	555	1,051	538	695	518	389	8,486	255	197	8,937
	520100	Materials & Supplies Operations							55						8,462	241	186	8,462
	535000	Contract Services-Other													55	2	1	58
	541000	Rents-Real Property	11,151						(1,289)						11,151	335	258	11,744
	541001	Rents-Real Property Intercompany	562	562	562	562		726	1,949	654	771	632	696	708	2,249	67	52	2,369
	550000	Transportation Tr-Admin										29			5,411	162	125	5,699
	550002	Transportation Lease Fuel										100			29	1	1	30
	575000	Miscellaneous										51			100	3	2	106
	575280	Dues/Membership Deductible										(268)			(2,401)	(72)	(56)	(2,511)
	575340	Employee Expense P/R IE	679	1,300	1,212	1,159	2,636	1,570	1,520	1,092	1,997	2,455	62	1,435	17,117	513	397	18,027
	575342	Employee Exp Conf/Registration							7						640	19	15	674
	575350	Meals Deduct	80	312	471	(275)	249	116	103	44	95	293		169	1,657	50	38	1,746
	575351	Meals Non Deduct	80	312	471	(275)	249	116	103	44	95	293		169	1,658	50	38	1,746
	575620	Office & Admin Supplies					5	140		68	74	41	312	113	679	20	16	715
	575625	Overnight Shipping	120											109	303	9	7	319
	575741	Cell Phone													11	0	0	11
	575998	Card Undersubstituted																
	620000	Materials & Supplies Maintenance																
Direct Charge Total			43,683	40,091	57,942	37,938	38,755	42,901	33,832	51,316	42,815	39,426	28,294	26,437	484,429	566	17	596
National Allocation			106,521	104,176	97,820	114,419	101,409	106,314	106,637	92,818	116,032	107,680	99,529	113,907	1,284,272	14,526	11,222	1,313,500
	501200	Labor	192	288	515	3,714	3,714	494	3,444	1,079	312	921	482	690	9,400	282	218	9,900
	501210	Labor Non Scheduled Overtime																
	501211	Incentive Plan-Off Annual	2,066	2,305	4,147	3,737	4,303	5,382	4,074	7,831	3,312	3,856	3,864	3,462	44,318	1,450	1,120	50,887
	504100	Group Ins Maintenance	33,479	8,556	13,031	8,983	9,557	8,247	8,317	14,805	9,859	10,161	9,502	10,215	144,691	4,341	3,353	152,384
	504341	Defined Cont Supp Exec Retirement Plan Exp	(486)	632	1,088	924	1,002	1,125	1,057	1,799	842	985	847	821	10,737	322	249	11,308
	504342	401 K Restoration Exp	47												36	1	1	38
	504500	Other Welfare Maintenance	53												20	1	0	21
	504620	Employee Awards	2,967	3,988	689	3,233	2,064	1,351	1,878	350	6,405	4,276	853	5,961	34,015	1,020	788	35,824
	504660	Tuition Aid	132	175	81	144	356	469	377	231	871	246	124	183	3,929	118	91	4,138
	504670	Training	438	756	391	273	924	273	624	285	569	1,031	278	524	6,848	205	159	7,212
	507100	401k	412	356	632	420	925	1,299	882	420	2,591	318	(2)	392	13,043	391	302	13,737
	508101	Defined Contribution Plan	1,646	1,653	2,559	1,711	1,683	1,656	1,635	2,512	1,606	1,937	1,847	1,823	22,268	668	516	23,452
	508200	Employee Stock Purchase Plan	1,490	1,516	2,297	1,652	1,649	1,695	1,627	2,492	1,730	1,862	1,821	1,800	21,631	649	501	22,781
	520100	Materials & Supplies Operations	311	311	369	369	369	259	259	314	314	315	236	239	3,607	108	84	3,799
	531000	Contract Services-Engineering	1	2			1			2	7		30	3	46	1	1	48
	532000	Contract Services-Accounting	1,230	1,230	1,230	3,048	1,915	1,915	1,888	1,447	378	336			14,280	428	331	15,040
	533000	Contract Services-Legal		182	2,478	821	(12)	691		(976)					3,520	106	82	3,707
	534001	Contract Services-Litigation	1,085	1,916	1,023	(393)	838	583	943	631	1,061	464	935	1,604	10,689	321	248	11,258
	534998	Benefit Overhead	(0)													(0)		(0)
	534999	General Overhead	60,942	85,986	89,178	85,936	82,579	92,826	84,217	81,310	83,083	88,931	81,038	62,478	978,505	29,355	22,677	1,030,537
	535000	Contract Services-Other	75,795	89,025	86,668	94,559	86,052	92,780	81,339	92,643	115,491	108,422	95,844	96,841	1,119,458	33,584	25,943	1,178,985
	535001	Contract Services-Temp Employee	14,695	12,392	11,970	13,338	15,416	17,650	19,022	21,412	57,370	11,104	13,852	12,110	220,330	6,610	5,106	232,046
	536000	Contract Services-Lab Testing	942	467	1,136	1,972	1,564	1,511	1,314	2,279	2,509	934	903	803	18,142	544	420	19,107
	(621)	(658)	(621)	(658)	(515)	(616)	(681)	(825)	(1,654)	(722)	(1,134)	(733)	(852)	(1,336)	(10,345)	(310)	(240)	(10,895)
	541000	Rents-Real Property	1,586	1,578	809	1,583	1,581	1,189	1,548	1,560	1,560	1,485	1,517	1,493	17,489	525	405	18,419
	541001	Rents-Real Property Intercompany																
	541400	Rents-Equipment	123	106	19	94	19	16	33	30	37	96	63	23	659	9	7	302
	550000	Transportation Tr-Admin	393	391	371	409	382	380	387	372	369				3,454	104	80	3,637
	550001	Transportation Lease Cost																
	550002	Transportation Lease Fuel																
	550003	Transportation Lease Maintenance																
	570100	Uncollectible Accounts																
	570000	Miscellaneous	(20)	(11)	1	(1)	1	7	(25)	0	738	(14)	13	9	518	16	12	545
	570002	Miscellaneous	(1,057)	(638)	911	137	(911)	(1,450)	2,899	753	(1,924)	(3,281)	(2,458)	42	(6,937)	(209)	(161)	(7,327)
	575002	Misc General Office	146	285	324	450	283	34	557	142	14	155	201	156	2,748	82	64	2,894
	575030	Advertising	298	568	4	124	677	368	(128)	60	217	610	65	163	3,026	-	-	-
	575100	Bank Service Charges									84				84	3	2	88

	1	2	22	101	(34)	7	98	21	12	242	65	10	546	-	-	-
575130 Brochures and Handouts	116	40	1,609					105	922				2,792	-	-	-
575140 Charitable Contributions Deduct	40												40	-	-	-
575141 Charitable Contributions Nondeductible													414	-	-	-
575200 Community Relations	87	113	187	0	38	15	5	11	242	20	2	34	809	-	-	-
575240 Co Dues/Membership Deduct				20	25	(2)	46	16	2	16	183	117	4	0	0	1
575242 Co Dues Deduct AWWA							0						69	-	-	-
575350 Condemnation Costs													7,196	-	-	-
575360 Credit Line Fees													3	0	0	0
575280 Dues/Membership Deductible	524	410	650	615	353	920	548	(166)	1,333	646	1	386	7,484	-	-	-
575281 Dues/Membership Nondeductible							3						3	0	0	0
575320 Electricity	464	636	786	579	689	673	610	648	504	790	629	455	30,775	224	173	7,861
575340 Employee Expense P/R IE	3,097	2,424	1,774	3,105	2,243	2,458	2,342	2,740	2,693	1,862	2,581	2,554	7,484	676	522	31,474
575342 Employee Exp Conf/Registration	572	566	261	239	230	516	91	53	967	577	(92)	1,101	5,101	153	118	5,372
575350 Meals Deduct	565	94	161	279	281	266	312	288	206	318	332	369	3,471	104	80	3,656
575351 Meals Non Deduct	348	96	169	290	285	273	321	295	157	318	332	369	3,254	98	75	3,427
575420 Forms	10				3	(3)	53	4	99	14	233	7	421	13	10	443
575460 Grounds Keeping				14	11	8	3		28	9	10	-	146	4	3	154
575480 Heat - Oil/Gas	(21)	266	(13)	2	25	25	13	22	28	39	31	25	443	13	10	466
575500 Janitorial	39	39	83	(3)	37	39	39	39		1,293	1,416	1,590	4,299	129	100	4,528
575545 Lab Supplies													1	0	0	0
575610 Merger Transactional Costs							0						21,753	653	504	22,910
575620 Office & Admin Supplies	2,706	2,265	2,727	2,465	1,953	2,348	2,246	1,862	2,433	138	191	418	821	25	19	864
575625 Overnight Shipping	45	41	34	23	43	29	26	55	23	177	131	193	201	6	5	211
575640 Penalties Nondeductible	(1)	(22)	0	0		67		(5)	42	61	(73)	(167)	13,075	-	-	13,075
575660 Postage	-	40	12	(2)	31	45	11	(860)	707	346	484	362	10	0	0	10
575670 Relocation Expenses	956	693	588	1,226	4,928	2,137	1,329		9	1			10	0	0	10
575680 Research & Development Exp													203	6	5	213
575710 Security Service	87	17	74	1	3	3	-	1	2,630	1,483	1,149	1,978	18,654	560	432	19,646
575715 Software Licenses & Support	700	321	1,279	2,626	2,022	300	1,936	2,229	573	867	718	1,081	12,036	361	279	12,676
575740 Telephone	1,222	1,417	1,016	475	1,055	715	845	1,301	546	457	718	589	6,650	200	154	7,004
575741 Cell Phone	613	606	106	475	579	520	110	602	138	102	118	136	1,356	41	31	1,428
575742 Data Lines	94	106	137	113	106	156	110	89	112	840	58	26	3,372	-	-	-
575775 Trade Shows	83	113	270	158	(74)	100	1,164	522	112	840	58	26	3,372	-	-	-
575780 Trash Removal	1	8	17	-	1	10	13	10	13	9	10	13	105	3	2	111
575998 PCard Undistributed	(67)	(108)	104	(308)	123	(28)	(68)	60	(99)	(108)	230	(70)	(240)	-	-	-
675000 Misc Maintenance	322	208	5,715	574	950	421	1,788	142	779	426	380	(86)	11,619	349	269	12,236
675250 Comp Equip Hardware	109	69		62	109	128	66	(39)	285	45	(286)	1	582	17	13	581
675350 HVAC Equipment	96	103		6	16	91	31	27	110	(12)	25	101	595	18	14	627
675450 Office Equipment	36	-		36	-	-	-	36	(108)	77		-	77	2	2	81
663325 FICA													(108)	(3)	(3)	(114)
663350 SUTA	7			18									5	0	0	6
685430 Other Taxes and Licenses	9												36	1	1	38
690220 SIT-Prior Year Adjustment	(133)												(133)	(4)	(3)	(141)
711304 (blank)													134	4	3	141
723006 Gains Other Non-OR	3,088	2,504	2,463	311	2,656	1,682	1,954	(286)	1,837	(6)	63	690	16,357	509	393	17,859
810300 Interest Cap Lease-Outside		7		6	6	6	6	5	5	5	4	4	60	2	1	64
840000 Other Interest Expense	4	(24)	3	0									(45)	(1)	(1)	(67)
Regional Allocation	323,483	327,935	340,649	355,233	333,173	350,984	338,764	340,045	421,689	353,318	321,930	326,571	4,133,725	122,855	34,906	4,335,744
501200 Labor	20,389	17,803	19,417	24,961	26,263	27,406	24,052	19,162	26,663	20,499	22,432	25,832	274,978	8,246	6,370	289,494
501210 Labor Non Scheduled Overtime										264		31	295	9	7	310
501711 Incentive Plan-Off-Annual	2,339	2,299	3,619	2,346	2,570	2,400	2,728	4,046	2,284	2,370	2,366	2,314	32,120	964	744	33,828
504100 Group Ins Maintenance	1	1	2	2	4	5	3	38	2	37	4	7	106	3	2	111
504500 Other Welfare Maintenance	35	(49)		112	606	139	249	58	980	34	413	837	3,414	102	79	3,596
504610 Employee Awards										208	50		258	8	6	272
504620 Employee Physical Exam					89		56	16					161	5	4	169
504660 Tuition Aid		168			160		17						345	10	8	364
504670 Training	397		90	133	1,005	-	15	16	9	44	39	64	1,813	54	42	1,909
507100 401k	434	421	514	276	351	489	480	836	418	515	516	513	5,760	173	133	6,066
508101 Defined Contribution Plan	628	637	1,281	702	952	931	870	1,306	823	828	828	867	10,652	320	247	11,219
533000 Contract Services-Legal	132	132	132	132	137	139			281				952	25	22	1,003
535000 Contract Services-Other				5,009	-	535	99	(443)		471	139	182	5,992	180	139	6,310
535001 Contract Services-Temp Employee	889	808	709	102	585	715	393	438	1,395	210	741	(0)	6,986	210	162	7,358
541001 Rents-Real Property							(2,664)						8	0	0	8
541001 Rents-Real Property Intercompany						2,664	4,030	1,353	1,594	1,429	1,573	1,638	11,618	349	269	12,236
541400 Rents-Equipment	34	20	20	36	27	77	25	22	18	(2)	1	8	31	1	1	33
550000 Transportation Tr-Admin													284	9	7	299
550001 Transportation Lease Cost								4	0	4	117	59	180	5	4	190
550002 Transportation Lease Fuel									(0)	1	9	31	44	1	1	47
550003 Transportation Lease Maintenance									1	3	6	45	1,305	0	0	4
575000 Miscellaneous	69	(58)	360	625	76	69	120	(19)	17	(3)	6	45	1,305	39	30	1,375
575002 Misc General Office	51	51	27	53	2	53	91	(69)	5	5	57	29	300	9	7	316

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: Sheila A. Miller/Michael A. Miller

EXPENSES

Question:

46. Provide depreciation rates by each plant account of TAWC and each plant account of TAWC's Parent, Multi-State Utility, or Affiliated Utility Service Company which allocate plant and the associated depreciation expense to TAWC. Additionally, provide an Excel schedule showing the calculation of depreciation expense incurred by, and/or allocated to TAWC for each month of the test period through the end of the attrition period.

Response:

The depreciation calculation was previously supplied in the petition filed in this case, identified as Exhibit 2, Schedule 4, page 2 of 2. We are also attaching those depreciation calculations by plant account for March 2010 and the 13-month average utility plant balances for the attrition year using the currently approved depreciation rates. Please refer to the document labeled as TRA-01-Q046-ATTACHMENT.

The Company has not calculated monthly depreciation expense for the attrition year, instead the Company has calculated depreciation expense for the attrition year based on the 13-month average utility plant balances.

Attrition Year Provision for Depreciation Expense
For Utility Plant in Service

Tennessee Regulatory Authority
Company: Tennessee-American Water Company
Case No:

Test Year: Twelve Months Ended: March 31, 2010
Exhibit No. 2, Schedule 4
Page 2 of 2

Line No.	Account Number	Account Description	Depreciable Property at 3/31/10	Depreciation Rate	Normalized Test Year Depreciation Expense	13 Month Avg. Depreciable Property at End of Attrition Year	New Depreciation Rates	Attrition Year Depreciation Expense
1	339600	Comprehensive Planning Study	\$144,499	10.00%	\$14,450	144,499	10.00%	\$14,450
2	304100	SS Structures	\$47,382	1.98%	\$938	47,382	1.98%	\$938
3	304200	Pumping Structures	3,933,768	1.98%	\$77,889	4,266,507	1.98%	84,477
4	304300	Water Treatment Structures	2,128,558	4.11%	\$87,484	7,408,035	4.11%	304,470
5	304301	Water Treatment Structures-Depr	1,694,808	0.00%	\$0	1,694,808	0.00%	0
6	304400	T & D Structures	524,049	2.13%	\$11,162	524,049	2.13%	11,162
7	304600	Office Structures	394,768	1.13%	\$4,461	394,768	1.13%	4,461
8	304700	Stores, Shop, & Garage Structures	312,642	0.73%	\$2,282	312,642	0.73%	2,282
9	304800	Miscellaneous Structures	654,998	0.49%	\$3,209	654,998	0.49%	3,209
10	306000	Lakes, Rivers, & Other Intakes	489,123	0.83%	\$4,060	489,123	0.83%	4,060
11	309000	Supply Mains	603,834	1.87%	\$11,292	603,834	1.87%	11,292
12	310100	Power Generation Equipment	227,422	12.33%	\$28,041	227,422	12.33%	28,041
13	311200	Electric Pumping Equipment	5,604,762	2.45%	\$137,317	5,908,060	2.45%	144,772
14	311300	Deisel Pumping Equipment	119,296	2.50%	\$2,982	119,296	2.50%	2,982
15	311500	Other Pumping Equipment	251,454	1.83%	\$4,602	251,454	1.83%	4,602
16	311520	Other Pumping Equipment SS	169,477	2.45%	\$4,152	169,477	2.45%	4,152
17	320100	Water Treatment Equipment	12,603,650	1.09%	\$137,380	12,612,181	1.09%	137,473
18	320200	Granular Activated Carbon	228,199	30.31%	\$69,167	442,199	30.31%	134,031
19	330000	T & D Reservoirs & Standpipes	6,464,368	2.08%	\$134,459	6,610,309	2.08%	137,494
20	330003	T & D Reservoirs & Standpipes	3,477,221	11.08%	\$385,276	3,477,221	11.08%	385,276
21	330100	Elevated Tanks & Standpipes	1,900,254	2.74%	\$52,067	1,900,254	2.74%	52,067
22	330200	Ground Level Facilities	2,571	2.74%	\$70	2,571	2.74%	70
23	330400	Clearwells	680,784	1.65%	\$11,233	680,784	1.65%	11,233
24	331001	T & D Mains not Classified	1,931,852	1.25%	\$24,148	2,039,803	1.25%	25,498
25	331100	T & D Mains - Mains (4" or less)	5,358,217	1.25%	\$66,978	5,349,391	1.25%	66,867
26	331200	T & D Mains - Mains (6" - 8")	1,458	1.25%	\$18	1,458	1.25%	18
27	331210	T & D Mains - Mains (8" - 10")	64,594,213	1.25%	\$807,428	67,319,897	1.25%	841,499
28	331300	T & D Mains - Mains (10" - 16")	9,816,243	1.25%	\$122,703	9,816,243	1.25%	122,703
29	331350	T & D Mains - Mains (16" - 24")	24,867,028	1.25%	\$310,838	27,318,258	1.25%	341,478
30	333000	Services	21,084,061	1.11%	\$234,033	22,657,562	1.11%	251,499
31	334100	Meters	4,487,775	7.47%	\$335,237	5,098,755	7.47%	380,877
32	334110	Meters-Metal Case/Old Style	3,274,936	7.23%	\$236,778	3,274,936	7.23%	236,778
33	334120	Meters - Plastic Case	0	7.23%	\$0	0	7.23%	0
34	334131	Meters-rem rdr	17,907	7.23%	\$1,295	17,907	7.23%	1,295
35	334200	Meter Installations	11,004,198	2.73%	\$300,415	11,757,829	2.73%	320,989
36	335000	Hydrants	8,046,226	2.30%	\$185,063	8,536,536	2.30%	196,386
37	339200	Other P/E SS	8,526	4.68%	\$399	8,526	4.68%	399
38	340100	Office Furniture	500,945	1.39%	\$6,963	591,337	1.39%	8,220
39	340200	Computer & Peripheral Equipment	181,673	2.19%	\$3,979	319,777	2.19%	7,003
40	340210	Computer & Mainframe Equipment	603,486	0.00%	\$0	603,486	0.00%	0
41	340220	Computer & Periph Personal	345,333	2.19%	\$7,563	353,178	2.19%	7,735
42	340230	Computer & Periph Other	294,721	2.19%	\$6,454	294,721	2.19%	6,454
43	340300	Computer Software	415,069	0.00%	\$0	431,702	0.00%	0
44	340310	Computer Software Mainframe	3,535,059	0.00%	\$0	3,535,059	0.00%	0
45	340320	Computer Software Personal	177,213	0.00%	\$0	177,213	0.00%	0
46	340330	Computer Software Other	15,284	0.00%	\$0	14,222	0.00%	0
47	340400	Data Handling Equipment	15,284	4.94%	\$755	15,284	4.94%	755
48	340500	Other Office Equipment	95,208	1.39%	\$1,339	95,208	1.39%	1,339
49	341100	Light Trucks	980,312	16.00%	\$156,850	1,204,633	16.00%	192,741
50	341200	Heavy Trucks	1,130,223	16.62%	\$187,843	1,308,187	16.62%	217,421
51	341300	Automobiles	255,706	11.38%	\$29,099	261,215	11.38%	29,726
52	341400	Transportation-Other	452,786	7.24%	\$32,782	452,786	7.24%	32,782
53	342000	Stores Equipment	43,392	0.00%	\$0	43,392	0.00%	0
54	343000	Tools, Shop, & Garage Equipment	1,207,973	6.89%	\$83,229	1,290,439	6.89%	86,911
55	344000	Laboratory Equipment	396,388	1.01%	\$4,024	419,542	1.01%	4,237
56	345000	Power Operated Equipment	287,063	0.00%	\$0	287,063	0.00%	0
57	346100	Communication Equipment	517,256	4.21%	\$21,776	517,256	4.21%	21,776
58	346200	Communication Equipment-Telephone	90,325	3.51%	\$3,170	90,325	3.51%	3,170
59	347000	Miscellaneous Equipment	1,102,699	6.33%	\$69,601	1,110,618	6.33%	70,302
60	348000	Other Tangible Plant	4,918	5.10%	\$251	4,918	5.10%	251
61		Amortization of CIAC			(178,032)			(189,877)
62		Total Plant in Service	209,759,771		4,246,580	225,523,525		4,771,654

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: Sheila A. Miller

TAXES

Question:

47. Provide copies of the following tax returns (state and federal) for the most recent three (3) tax years:
- a. Tennessee Gross Receipts Tax Returns
 - b. Tennessee Franchise and Excise Tax Returns
 - c. Property tax statement Tennessee Ad Valorem Tax Report
 - d. Employer's Quarterly Federal Tax Returns (Form 941)
 - e. Employer's Annual Federal Unemployment Tax Return (Form 940)
 - f. Employer's Quarterly Contribution Report to the Tennessee Department of Employment Security

Response:

The tax returns are included on the enclosed CD in the folder labeled as TRA-01-Q047(A thru F)-ATTACHMENT.

.

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: John S. Watson

RATE BASE (EXCLUDING WORKING CAPITAL)

Question:

51. Provide monthly plant additions and retirements by account number for the last three (3) fiscal years to include the test period. Please break down plant additions into normal or special projects, as defined below:
- a. Normal construction requirements should be considered to include the needs created through normal system expansions, such as serving residential areas, shopping areas, old home conversions, replacements of tools and work equipment, transportation equipment, etc.
 - b. Special construction requirements should be considered to arise from extensive replacement of old facilities which cannot be foreseen, major expansion projects, and changes required by government action such as street improvement and relocation, community and neighborhood development, bridge replacement, etc. These requirements should be considered to be outside the control of TAWC.
 - c. For the last three (3) fiscal years, identify any contributions in aid of construction.

Response:

- a. See attached.
- b. See the response to sub-part a.
- c. See attached.

Refer to the above documents labeled as TRA-01-Q051-ATTACHMENT.

Sum of activity cost Funding Project	utility account id	Add/Ret	Month/Year											
			Jan-2008	Feb-2008	Mar-2008	Apr-2008	May-2008	Jun-2008	Jul-2008	Aug-2008	Sep-2008	Oct-2008		
00000026 - Conversion Funding Project	331210 Addition	Transfer	\$0											
	331350 Addition	Transfer	\$0											
	333000 Addition	Transfer	\$0											
	340100 Retirement													
	340200 Retirement													
	340230 Retirement													
	340320 Retirement													
	340500 Retirement													
	346100 Retirement													
	346200 Retirement													
26020003 - CHAT-Design Eastridge Tank	331100 Retirement													
	331350 Addition													
	334100 Addition													
	340300 Addition													
	344000 Addition													
	331001 Addition													
	331100 Addition													
	331210 Addition													
	331350 Retirement													
	333000 Addition													
26020008 - Developer/Govt. Contributions	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
26020081 - CHAT-Network-Replace/Renewal	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
26020083 - Hydrants - Replacement	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
26020084 - Hydrants New	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
26020085 - Services - Replacement	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
26020086 - Meters - Replacement	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
26020087 - Meters New	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
26020088 - Meters New	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
26020089 - ITS Equipment & Systems	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
26020090 - Offices & Operations Centers	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
26020091 - Vehicles	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
26020092 - Tools and Equipment	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													
	331210 Addition													
	331350 Addition													
	333000 Addition													
	335000 Addition													
	331100 Addition													

Sum of activity cost Funding Project	utility account id	Add/Ret	Month/Year											
			Jan-2008	Feb-2008	Mar-2008	Apr-2008	May-2008	Jun-2008	Jul-2008	Aug-2008	Sep-2008	Oct-2008		
26020093 - Process Plant - Replacement	344000	Addition												
	345000	Addition												
	304200	Addition				\$0								
	304300	Addition				\$0								
	304500	Addition												
	311200	Addition												
	311500	Addition												
	311920	Addition												
	311530	Addition												
	347000	Addition												
26020096 - Tank Rehabilitation/Painting	320100	Addition												
	320200	Addition												
	330003	Addition												
	339600	Addition												
	331210	Addition												
	331350	Addition												
	330100	Addition												
	331100	Addition												
	331210	Addition												
	Retirement													
26020703 - SCADA EQUIPMENT & SYSTEMS	331300	Addition												
	331350	Addition												
	333000	Addition												
	335000	Addition												
	Retirement													
	340210	Addition												
	346190	Addition												
	347000	Addition												
	311520	Adjustment												
	311530	Adjustment												
260209511 - CHAT-Install Main in ROW	334200	Addition												
	306000	Addition												
	311520	Addition												
	320100	Addition												
	344000	Addition												
	334100	Addition												
	303501	Addition												
	331210	Addition												
	331350	Addition												
	340230	Addition												
26029612 - CHAT-Electronic Imaging of CS	340300	Addition												
	331210	Addition												
	331350	Addition												
	333000	Addition												
	335000	Addition												
	341300													
	333000	Addition												
	334200	Addition												
	333000	Addition												
	334200	Addition												
26029999 - CHAT-Unathorized	339600	Addition												
	340300	Addition												
	304200	Addition												
	331100	Addition												
	Retirement													
	331210	Addition												
	Retirement													
	331350	Addition												
	333000	Addition												
	333000	Addition												
DV-2602-1 - Projects Funded by Others	331100	Addition												
	Retirement													
	331210	Addition												
	Retirement													
	331350	Addition												
	333000	Addition												
	333000	Addition												
	333000	Addition												
	333000	Addition												
	333000	Addition												

Sum of activity cost Funding Project	utility_account_id	Add/Ret	Month/Year											
			Jan-2008	Feb-2008	Mar-2008	Apr-2008	May-2008	Jun-2008	Jul-2008	Aug-2008	Sep-2008	Oct-2008		
DV-2604-1 - Projects Funded by Others	335000	Addition	\$6,208	\$7,230	\$7,055	\$44,516	\$6,219	(\$425)	\$13,121	\$21,558	\$9,371	\$6,604		
		Retirement							(\$2,905)			(\$1,029)		
	331210	Addition	\$210			(\$3,372)								
	333000	Addition	\$5			\$562								
	335000	Addition	\$24			\$2,810								
IP-2602-10 - Rehab of Aldrich Units #3 and #4	304200	Addition												
	320100	Retirement												
	330003	Addition												
	331100	Addition			\$13,283		\$0	\$72						
		Retirement	\$0											
RP-2602-A1 - Mains - New	331210	Addition	\$160	\$27,830	\$8,343	(\$2,353)	(\$276)	\$12,265				\$0		
	331350	Addition												
	333000	Addition												
	335000	Addition	\$15				\$2,054							
	331001	Retirement	\$804		\$17,557		(\$140)		(\$429)					
RP-2602-B1 - Mains - Replaced / Restored	331100	Addition												
	331210	Addition	\$32,737	\$52,873	\$54,181	\$91,593	\$60,664	\$98,808	\$206,602	\$2,127	(\$1,964)	\$1,357		
		Retirement							(\$550)			(\$2,744)		
	331350	Addition	\$43,735	(\$40,982)	\$6,790	\$214,668	\$47,259	\$10,728	(\$84)	(\$43,129)	\$22,391	\$30,427		
		Retirement							(\$930)			(\$930)		
RP-2602-C1 - Mains - Unscheduled	333000	Addition	\$17			\$778			(\$22)			(\$52)		
	334100	Retirement												
	335000	Addition	\$756	\$677	\$1,017	\$399	\$422	\$8,364	\$74,402	\$12,652	\$997	\$4,688		
		Retirement							(\$5,775)			(\$675)		
	331001	Transfer			(\$4)	\$0								
RP-2602-D1 - Mains - Relocated	331100	Addition	\$437	\$3,037		\$11,737	(\$9,709)	\$2,698	\$1,683	\$737	\$398	\$4,142		
		Retirement			(\$106)	\$0			(\$1,595)	(\$185)	(\$453)	(\$58)		
	331210	Addition	\$67,895	\$12,694	\$1,719	(\$12,736)	\$540	\$5,225	\$3,880	\$1,797	\$1,674	\$8,685		
		Retirement							(\$925)	(\$247)	(\$1,366)	(\$925)		
	331350	Addition	\$4,104	\$7,391		\$371	\$462	\$5,009	\$3,068	\$1,292	\$646	\$1,400		
RP-2602-E1 - Hydrants, Valves, and Manholes-New		Retirement			\$262						(\$213)			
	333000	Addition	\$1			\$1,616								
	335000	Addition	\$566			\$14,013		(\$0)						
		Retirement												
	304400	Addition												
RP-2602-F1 - Hydrants, Valves, and Manholes-Rep	331100	Addition												
		Retirement												
	331210	Addition						\$0						
	331350	Addition												
	335000	Addition	\$244		\$27,848		(\$222)	(\$1,055)						
RP-2602-G1 - Hydrants, Valves, and Manholes-Rep	333000	Addition												
		Retirement												
	331210	Addition	\$4											
	331350	Addition												
	335000	Addition	\$55		\$4,433	\$398	\$2,065	\$3,978	\$0		\$0			
RP-2602-H1 - Hydrants, Valves, and Manholes-Rep		Retirement				\$3,835	(\$33)							
	347000	Addition												
	331001	Retirement												
	331100	Addition	\$349	\$330	\$201	\$1,293	\$1,807	\$363	\$383	\$164	\$187	\$2,431		
		Retirement			\$0					(\$2,077)				
RP-2602-I1 - Hydrants, Valves, and Manholes-Rep	331210	Addition	\$769	\$1,591	\$731	\$1,635	\$3,750	\$1,794	\$2,425	\$835	\$766	\$1,495		
		Retirement									(\$3,822)			
	331350	Addition									\$176	\$1,770		
		Retirement									(\$1,218)			
	335000	Addition	\$4,725	\$9,711	\$5,450	\$3,982	\$18,021	\$16,041	\$9,251	\$3,368	\$5,512	\$30,753		

Sum of activity cost			Month/Year												
Funding Project			utility_account_id	Add/Ret	Jan-2008	Feb-2008	Mar-2008	Apr-2008	May-2008	Jun-2008	Jul-2008	Aug-2008	Sep-2008	Oct-2008	
RP-2602-Q1 - Process Plant - Facilities and Equi		343000 Addition		\$48,846			\$0			\$6,941	\$6,656	\$16,561	\$6,901	\$34,093	
		304100 Addition								\$29,428	\$8,319				
		304200 Addition	Retirement							\$3,118	\$9,329	\$0			
		304300 Addition	Retirement							\$5,184		\$0	(\$884)		
		304310 Addition	Retirement										(\$2,586)		
		304400 Addition										\$741	\$0		
		304500 Addition													
		311200 Addition	Adjustment												
		311520 Addition	Retirement												
		311520 Addition	Adjustment	\$49,098				\$10,131	\$0		(\$2,551)	(\$9,154)	\$0		\$5,427
		311530 Addition	Retirement								(\$81)				
		311530 Addition	Adjustment	\$49											
		320100 Addition	Adjustment	(\$49,098)											
		320100 Addition	Retirement	\$79							\$355,754	(\$183,336)	\$0		
		320200 Addition	Retirement									(\$5,371)			
		330000 Addition	Adjustment												
		330100 Addition	Retirement										(\$181)		
		330200 Addition	Adjustment								\$6,888	\$29	(\$56)		
		330300 Addition	Retirement												
		331210 Retirement	Retirement												
		331350 Addition	Retirement												
	333000 Retirement	Retirement													
	335000 Retirement	Retirement													
	344000 Addition	Retirement								\$4,788	\$0	\$6,747	\$0		
	346190 Addition	Retirement												(\$1,276)	
	347000 Addition	Retirement								\$0					
	347000 Addition	Retirement								\$84	(\$42)	\$0		(\$0)	
RP-2602-R1 - Capitalized Tank Rehabilitation / P		348000 Addition	Retirement												
		304300 Addition	Retirement												
		330000 Retirement	Retirement												
		330003 Addition	Retirement												
		330200 Addition	Retirement												
		335000 Addition	Retirement												
		333000 Addition	Retirement												
		334110 Addition	Retirement												
		334200 Addition	Retirement												
		334200 Addition	Retirement												
RP-2603-E1 - Hydrants, Valves, and Manholes-New RP-2603-G1 - Services and Laterals - New RP-2603-I1 - Meters - New		334300 Addition	Retirement												
		331200 Retirement	Retirement												
		311520 Addition	Retirement												
		344000 Addition	Retirement												
		333000 Addition	Retirement												
RP-2603-J1 - Meters - Replaced RP-2603-P1 - Tools and Equipment RP-2603-Q1 - Process Plant - Facilities and Equi		331001 Adjustment	Retirement												
		331001 Adjustment	Retirement												
		331001 Adjustment	Retirement												
		331001 Adjustment	Retirement												
		331001 Adjustment	Retirement												
RP-2604-G1 - Services and Laterals - New CAPEX ACCRUALS FOR SC		331001 Adjustment	Retirement												
		331001 Adjustment	Retirement												
		331001 Adjustment	Retirement												
		331001 Adjustment	Retirement												
		331001 Adjustment	Retirement												
Grand Total					\$1,683,860	\$195,961	\$240,226	\$935,561	\$1,016,801	\$213,827	\$538,007	\$224,308	\$467,888	\$346,151	

Sum of activity cost		utility account id	Add/Ret	Nov-2008	Dec-2008	Jan-2009	Feb-2009	Mar-2009	Apr-2009	May-2009	Jun-2009	Jul-2009	Aug-2009
Funding Project 00000026 - Conversion Funding Project		331210	Addition										
		331350	Transfer										
		333000	Addition										
		333000	Transfer										
		340100	Addition										
		340200	Retirement										
		340230	Retirement										
		340320	Retirement										
		340500	Retirement										
		346100	Retirement										
26020003 - CHAT-Design Eastridge Tank		346200	Retirement										
		331100	Retirement										
		331350	Addition										
		334100	Addition	\$1,024									
		340300	Addition		\$1,037								
		344000	Addition	\$860									
		331001	Addition		\$0								
		331100	Retirement		\$0								
		331100	Addition	\$9,432									
		331210	Retirement		\$0								
26020000A - CHAT-Invest Item A		331210	Addition										
		331350	Retirement		\$0								
		333000	Retirement		\$0								
		333000	Addition		\$0								
		334100	Retirement		\$0								
		335000	Retirement		\$0								
		341100	Retirement		\$0								
		341200	Retirement		\$0								
		341200	Retirement		\$0								
		341300	Retirement		\$0								
26020080 - Developer/Govt. Contributions		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
26020081 - CHAT-Network-Replace/Renewal		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
26020083 - Hydrants - Replacement		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
26020084 - Hydrants New		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
26020085 - Services - Replacement		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
26020086 - Meters - Replacement		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
26020087 - Meters New		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
26020088 - ITS Equipment & Systems		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
26020090 - Offices & Operations Centers		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
26020091 - Tools and Equipment		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										

Sum of activity cost Funding Project	utility_account_id	Add/Ret	Nov-2008	Dec-2008	Jan-2009	Feb-2009	Mar-2009	Apr-2009	May-2009	Jun-2009	Jul-2009	Aug-2009
26020093 - Process Plant - Replacement	344000 Addition			\$2,123								
	345000 Addition			\$789								
	304200 Addition											
	304300 Addition											
	304500 Addition											\$5,354
	311200 Addition											
	311500 Addition											
	311520 Addition		\$5,789									
	311530 Addition											
	347000 Addition											(\$5,354)
26020096 - Tank Rehabilitation/Painting	320100 Addition		\$0									
	320200 Addition											
	330003 Addition											
	339600 Addition											
	331210 Addition			\$16		(\$16)						
	331350 Addition			\$34		(\$34)						
	330100 Addition		\$3,274									
	331100 Addition		\$19,813									
	331210 Addition		\$52,619	\$4,974	\$3,521							
	Retirement					(\$3,349)						
26020703 - SCADA EQUIPMENT & SYSTEMS	331300 Addition		\$1,144									
	331350 Addition		\$140,060									
	333000 Addition		\$9,475	\$3,183	(\$23,528)							
	335000 Addition		\$3,775	\$1,268	(\$4,897)							
	Retirement					(\$368)						
	340210 Addition											
	346190 Addition											
	347000 Addition			\$508	(\$497)							
	311520 Adjustment											
	311530 Adjustment											
26029606 - CHAT-Filter #2 Improvements	334200 Addition							\$0				
	306000 Addition							\$0				
	311520 Addition							\$0				
	320100 Addition							\$0				
	344000 Addition							\$0				
	334100 Addition		\$43									
	303501 Addition											
	331210 Addition		\$7,840	\$5,096	\$0		\$158,533	\$3,642	\$147	\$0	\$34	\$34
	331350 Addition											
	340230 Addition							\$0				
26029810 - CHAT-Electronic Imaging of CS	340300 Addition							\$0				
	331210 Addition							\$0				
	331350 Addition								\$0	\$0	\$0	\$0
	333000 Addition								\$0	\$0	\$0	\$0
	335000 Addition								\$0	\$0	\$0	\$0
	341300											
	333000 Addition								\$0			
	334200 Addition								\$0			
	333000 Addition								\$0			
	334200 Addition								\$0			
26029999 - CHAT-Unathorized	339600 Addition											
	339600 Addition											
	340300 Addition											
	304200 Addition											
	331100 Addition											
	Retirement											
	331210 Addition		\$4,692	\$131,318	(\$97,406)	\$18,543	\$8,699	\$1,093	\$33,934	\$220	\$2,783	
	Retirement			(\$4,411)								
	331350 Addition		\$66,955	\$50,136	(\$50,136)	\$364						
	333000 Addition		(\$1,347)	\$6,164	(\$3,804)	\$3,116	\$2,599	\$151	\$59	\$90	\$1,026	
26030086 - Services New	26030088 - Meters New											
	26040086 - Services New											
	26040088 - Meters New											
	CS-2602-1 - Business Transformation CPS											
	CS-2602-3 - Business Transformation											
	DV-2602-1 - Projects Funded by Others											
	304200 Addition											
	331100 Addition			\$3,162	\$2,108	\$22,177	\$9,922	\$957	(\$11,405)	(\$90)	\$1,548	
	Retirement											
	331210 Addition											

Sum of activity cost		Funding Project											
utility_account_id	Add/Ret	Nov-2008	Dec-2008	Jan-2009	Feb-2009	Mar-2009	Apr-2009	May-2009	Jun-2009	Jul-2009	Aug-2009		
333000	Retirement	\$0	(\$1,638)										
RP-2602-G1 - Services and Laterals - New	Addition	\$56,679	\$103,058	\$73,829	\$60,428	\$28,577	\$102,018	\$60,289	\$18,529	\$119,420	\$57,306		
	Adjustment								\$0				
	Retirement	\$0											
	Transfer												
334200	Addition												
RP-2602-H1 - Services and Laterals - Replaced	Retirement												
331100	Retirement												
333000	Addition	\$3,763	\$20,174	\$3,941	\$2,176	\$4,736	\$5,234	\$6,248	(\$335)	\$19,522	\$9,352		
	Retirement	(\$2,817)			(\$58)						(\$850)		
RP-2602-I1 - Meters - New	Addition												
333000	Addition												
334100	Addition	(\$1,584)	\$1,783	(\$1,783)	\$846	(\$839)			\$4	\$613			
334110	Addition	\$30,035	\$33,936	\$19,157	\$17,842	\$32,165	\$26,922	\$14,377	\$4,476	\$24,825	\$14,452		
334130	Addition												
334131	Addition												
RP-2602-J1 - Meters - Replaced	Addition	\$3,785	\$87,034	\$23,339	\$43,690	(\$19,012)	\$53,091	\$31,605	\$5,779	\$53,273	\$32,177		
334200	Retirement		(\$191,308)			(\$149)							
334110	Addition	\$25,005	\$19,895	\$156,806	\$6,448	\$6,327	\$43,183	\$34,188	\$4,045	\$64,883	\$5,047		
334200	Retirement	(\$17,421)	\$3,656	\$13,004	\$1,592	(\$1,169)	(\$138)	\$3,858	(\$3,678)	\$122	(\$241)		
	Retirement	\$0		\$0		(\$983)	\$0		\$0	\$0	\$0		
RP-2602-K1 - ITS Equipment and Systems	Addition												
340200	Addition												
339600	Addition												
340200	Retirement												
340220	Addition	\$11,041		\$8,572	\$0			\$0					
340230	Addition	(\$0)											
	Retirement	\$0											
340240	Addition								\$6,595				
346200	Addition												
304300	Addition												
304300	Addition												
304100	Addition												
346190	Addition												
304200	Addition	\$47,313		\$14,737	\$33,313	\$0	\$0			\$6,973			
RP-2602-L1 - SCADA Equipment and Systems	Retirement												
304300	Addition												
304400	Retirement												
304500	Addition												
347000	Retirement												
304100	Addition												
304200	Retirement												
304500	Addition												
304600	Addition	\$0											
RP-2602-M1 - Security Equipment and Systems	Retirement												
340100	Addition												
333000	Addition												
341100	Addition	\$78,198		\$33,649	\$0				\$0				
341200	Retirement												
341300	Addition												
341400	Retirement												
343000	Retirement												
304500	Retirement												
311500	Retirement												
311520	Addition												
340100	Addition												
341400	Addition												
RP-2602-N1 - Offices and Operations Centers	Addition												
340100	Addition												
333000	Addition												
341100	Addition												
341200	Retirement												
341300	Addition												
341400	Retirement												
343000	Retirement												
304500	Retirement												
311500	Retirement												
311520	Addition												
340100	Addition												
341400	Addition												

Sum of activity cost		utility account id	Add/Ret	Nov-2008	Dec-2008	Jan-2009	Feb-2009	Mar-2009	Apr-2009	May-2009	Jun-2009	Jul-2009	Aug-2009
RP-2602-Q1 - Process Plant - Facilities and Equi	Funding Project	343000 Addition		\$3,799	\$0								
		304100 Addition		\$0									
		304200 Retirement		\$0			\$2,898	\$293		\$21,966	(\$1,547)	\$49,154	\$574
		304300 Addition			\$943				(\$1,967)				\$87,407
		304310 Retirement											
		304310 Addition											
		304400 Addition											
		304500 Addition								\$9,489	(\$9,489)		
		311200 Adjustment											
		311520 Retirement											
		311520 Addition			\$943	\$0			(\$1,967)				
		311520 Adjustment											
		311530 Retirement											
		320100 Addition											
		320100 Adjustment											
		320200 Retirement											
		330000 Addition						\$232,220	(\$1,299)	\$0			
		330000 Adjustment											
		330100 Retirement											(\$17,955)
		330200 Addition								\$2,571		\$0	
		330300 Addition											
		331210 Retirement											
		331350 Addition											
		333000 Retirement			(\$1,588)								
		333000 Retirement											
		335000 Retirement								(\$1,526)			
		344000 Addition								\$9,489			
		346190 Retirement											
		347000 Addition			(\$1,364)								
		347000 Retirement											
RP-2602-R1 - Capitalized Tank Rehabilitation / P		348000 Addition											
		304300 Addition			\$0								
		330000 Retirement			\$0								\$0
		330003 Addition			\$0								
RP-2603-E1 - Hydrants, Valves, and Manholes-New		330200 Addition											
		335000 Addition							(\$3,599)				
		333000 Addition									\$923	\$2,275	\$767
		334110 Addition									\$506	\$0	
RP-2603-I1 - Meters - New		334200 Addition											
		334200 Addition			\$80		\$0				\$144		
		334200 Addition					\$0						
		334200 Retirement					\$0						
RP-2603-J1 - Meters - Replaced		343000 Addition											
		311200 Retirement											
		311520 Addition											
		344000 Addition											
RP-2603-P1 - Tools and Equipment		333000 Addition											
		333000 Addition											
		333000 Addition											
		331001 Adjustment											
RP-2604-G1 - Services and Laterals - New		331001 Adjustment											
		331001 Adjustment											
		331001 Adjustment											
		331001 Adjustment											
Grand Total				\$471,177	\$1,891,002	\$715,123	\$164,822	\$473,064	\$231,084	\$110,570	(\$22,177)	\$375,856	\$204,547

Sum of activity_cost		utility_account_id	Add/Ret	Sep-2009	Oct-2009	Nov-2009	Dec-2009	Jan-2010	Feb-2010	Mar-2010	Apr-2010	May-2010	Jun-2010
Funding Project	00000026 - Conversion Funding Project	331210	Addition										
		331350	Addition										
		Transfer											
		333000	Addition										
		Transfer											
		340100	Retirement							(\$2,220)			
		340200	Retirement							(\$85,722)			
		340230	Retirement				(\$4,367)						
		340320	Retirement										
		340500	Retirement							(\$11,106)			
		346100	Retirement							(\$2,102)			
		346200	Retirement							(\$697)			
		347000	Retirement										
		331100	Retirement							(\$2,026)			
		331350	Addition										
		334100	Addition										
		340300	Addition										
		344000	Addition										
		331001	Addition										
		Retirement											
		331100	Addition										
		Retirement											
		331210	Addition										
		Retirement											
		331350	Retirement										
		333000	Addition										
		Retirement											
		334100	Retirement										
		335000	Retirement										
		341100	Retirement										
		341200	Retirement										
		341300											
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		Retirement											
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition										
		331210	Addition										
		331350	Addition										
		333000	Addition										
		335000	Addition										
		331100	Addition						</				

Sum of activity cost		Funding Project											
utility account id	Add/Ret	Sep-2009	Oct-2009	Nov-2009	Dec-2009	Jan-2010	Feb-2010	Mar-2010	Apr-2010	May-2010	Jun-2010		
344000	Addition												
345000	Addition												
304200	Addition												
304300	Addition												
304500	Addition												
311200	Addition												
311500	Addition												
311520	Addition												
311530	Addition												
347000	Addition												
320100	Addition												
320200	Addition												
330003	Addition												
339600	Addition	\$136,437											
331210	Addition												
331350	Addition												
330100	Addition												
331100	Addition												
331210	Addition												
	Retirement												
331300	Addition												
331350	Addition												
333000	Addition												
335000	Addition												
	Retirement												
340210	Addition												
346190	Addition												
347000	Addition												
311520	Adjustment												
311530	Adjustment												
334200	Addition												
306000	Addition												
311520	Addition												
320100	Addition												
344000	Addition												
334100	Addition												
303501	Addition	\$4,770											
331210	Addition												
331350	Addition												\$55,643
340230	Addition									\$210,898	\$19,928		
340300	Addition									\$884,498	\$121,479		
331210	Addition												
331210	Addition												
331350	Addition												
333000	Addition												
335000	Addition												
341300	Addition												
333000	Addition												
334200	Addition												
333000	Addition												
334200	Addition												
339600	Addition												
339600	Addition												
340300	Addition												
304200	Addition												
331100	Addition	\$9	\$54	\$108,665	\$3,409								
	Retirement												\$61
331210	Addition	\$16	\$84,034	\$278,932	\$103,524	(\$50,001)	\$12,896	\$31,846	(\$3,607)	(\$6,423)	\$16,441		
331350	Addition												
333000	Addition	\$6	\$6,474	\$87,397	\$6,818	(\$5,318)	(\$4,892)	(\$3,085)	\$448	(\$77)	\$21,015		

Sum of activity cost Funding Project	utility_account_id	Add/Ret	Sep-2009	Oct-2009	Nov-2009	Dec-2009	Jan-2010	Feb-2010	Mar-2010	Apr-2010	May-2010	Jun-2010
DV-2604-1 - Projects Funded by Others	335000	Retirement										
		Addition	\$0	\$7,250	\$16,930	\$25,677	(\$7,663)	\$12,388	\$4,042	\$5,645	\$3,357	\$2,695
	331210	Retirement										
		Addition										
	333000	Addition										
		Addition										
	304200	Addition										
	320100	Retirement										
	330003	Addition										
	331100	Addition	\$34									
RP-2602-A1 - Mains - New		Retirement										
	331210	Addition	\$34									
	331350	Addition										
	333000	Addition										
	335000	Addition	\$1									
	331001	Retirement		\$0								
		Addition	(\$1)	(\$14,564)	\$1	\$10	(\$5)	\$64,738	\$22,562	\$16,265	(\$15,841)	\$0
		Retirement		\$0		(\$280)		(\$1,491)	\$0		(\$1,856)	\$0
	331210	Addition	\$188,641	\$33,240	\$30,185	\$46,021	(\$17,888)	\$1,651	\$1,608			
		Retirement		\$0		(\$18,424)		\$0				
RP-2602-B1 - Mains - Replaced / Restored	331350	Addition										
		Retirement										
	333000	Addition			\$1,740	\$1,520	(\$694)	\$6	(\$1,796)			
	334100	Retirement										
	335000	Addition	(\$1)									
	331001	Retirement										
		Transfer										
	331100	Addition	\$6,843	(\$936)	\$9,115	\$2,429	\$1,305	(\$561)	\$460	(\$283)	\$1,483	\$53,090
		Retirement	\$0	(\$71)	\$0				\$0	(\$1,181)	\$0	
		Transfer										
RP-2602-C1 - Mains - Unscheduled	331210	Addition	\$4,050	\$394	\$0	\$1,356	\$1,178	\$1,818	\$82	\$6,616	(\$5,296)	\$30,104
		Retirement	\$0	(\$322)	\$0		(\$221)	\$0				\$0
	331350	Addition	(\$394)	(\$1,479)	\$131,929	(\$21,166)	\$1,485	\$294	\$0			\$10,976
		Retirement	\$0				(\$7,038)					
	333000	Addition										
	335000	Addition										
		Retirement										
	304400	Addition										
	331100	Addition										
		Retirement										
RP-2602-D1 - Mains - Relocated	331210	Addition										
		Retirement										
	331350	Addition										
	333000	Addition			\$5,018	(\$50)	(\$107)		\$3,145	\$40	\$87	\$9,091
	331210	Addition										
	331350	Addition										
	335000	Addition										
		Retirement										
	347000	Addition										
	331001	Retirement	(\$13)	\$0								
RP-2602-E1 - Hydrants, Valves, and Manholes-New	331100	Addition	\$103	\$3,166	\$2,865	\$234	\$596	\$11,345	\$2,433	\$503	(\$1,229)	\$177
		Retirement	(\$136)	\$0				\$0		(\$19)		
		Transfer										
	331210	Addition	\$738	\$3,235	\$168	(\$168)	\$1,217	(\$355)	\$3,072	(\$1,140)	\$1,920	(\$2,358)
		Retirement	\$0	\$0				\$0	\$0	(\$159)	\$159	
	331350	Addition	\$733	(\$733)	\$157	\$1,791	\$1,132	(\$1,112)	\$1,828	(\$487)	(\$1,022)	\$290
		Retirement										
	335000	Addition	\$5,239	\$3,676	(\$1,589)	\$1,006	\$6,042	(\$5,951)	\$10,897	\$5,687	(\$3,689)	\$6,796
		Retirement										
		Addition										
RP-2602-F1 - Hydrants, Valves, and Manholes-Rep		Retirement										
	331001	Retirement	(\$13)	\$0								
	331100	Addition	\$103	\$3,166	\$2,865	\$234	\$596	\$11,345	\$2,433	\$503	(\$1,229)	\$177
		Retirement	(\$136)	\$0				\$0		(\$19)		
		Transfer										
	331210	Addition	\$738	\$3,235	\$168	(\$168)	\$1,217	(\$355)	\$3,072	(\$1,140)	\$1,920	(\$2,358)
		Retirement	\$0	\$0				\$0	\$0	(\$159)	\$159	
	331350	Addition	\$733	(\$733)	\$157	\$1,791	\$1,132	(\$1,112)	\$1,828	(\$487)	(\$1,022)	\$290
		Retirement										
	335000	Addition	\$5,239	\$3,676	(\$1,589)	\$1,006	\$6,042	(\$5,951)	\$10,897	\$5,687	(\$3,689)	\$6,796

Sum of activity cost													
Funding Project		utility_account_id	Add/Ret	Sep-2009	Oct-2009	Nov-2009	Dec-2009	Jan-2010	Feb-2010	Mar-2010	Apr-2010	May-2010	Jun-2010
RP-2602-G1 - Services and Laterals - New		333000	Addition	\$65,578	\$24,387	\$60,328	\$210,543	\$66,189	\$11,427	\$109,344	\$46,267	\$7,831	\$126,004
			Adjustment										\$0
			Retirement										\$0
			Transfer										\$0
RP-2602-H1 - Services and Laterals - Replaced		334200	Addition										\$0
		331001	Retirement										\$0
		331100	Retirement										\$0
		333000	Addition	\$6,385	\$15,596		\$7,592	\$5,742		\$16,640	\$3,744		\$11,135
RP-2602-I1 - Meters - New			Retirement										
		333000	Addition	\$8		\$3							
		334100	Addition							\$1			
		334110	Addition										
RP-2602-J1 - Meters - Replaced		334130	Addition										
		334131	Addition										
		334200	Addition	\$28,167	\$11,823	\$27,022	\$81,083	\$22,799	\$24,424	\$9,236	\$51,599	\$11,115	\$54,297
		334100	Retirement										
RP-2602-K1 - ITS Equipment and Systems		334110	Addition	\$48,655	\$33,001	\$19,148	\$85,801	\$30,404	\$24,301	\$118,061	\$27,605		\$234,865
			Retirement										
		334200	Addition	\$5,387									
		340200	Retirement										
RP-2602-L1 - SCADA Equipment and Systems		339600	Addition										
		340200	Retirement										
		340220	Addition										
		340230	Addition	\$3	\$0	\$190	\$50			\$0			
RP-2602-M1 - Security Equipment and Systems			Retirement										
		340240	Addition										
		346200	Addition										
		304300	Addition										
RP-2602-N1 - Offices and Operations Centers		340100	Addition										
		346190	Addition										
		304200	Addition		\$0								\$5,144
		304200	Retirement										
RP-2602-O1 - Vehicles		304300	Addition										
		304400	Retirement										
		304500	Addition										
		347000	Retirement										
RP-2602-P1 - Tools and Equipment		304200	Retirement										
		304500	Addition										
		304600	Addition										
		340100	Addition										
RP-2602-Q1 - Vehicles		333000	Addition										
		341100	Addition										
		341200	Addition										
		341300	Retirement										
RP-2602-R1 - Vehicles		341400	Addition										
		343000	Retirement										
		345000	Retirement										
		304800	Retirement										
RP-2602-S1 - Tools and Equipment		311500	Retirement										
		311520	Addition										
		340100	Addition										
		341400	Addition										

Sum of activity cost Funding Project	utility_account id	Add/Ret	Sep-2009	Oct-2009	Nov-2009	Dec-2009	Jan-2010	Feb-2010	Mar-2010	Apr-2010	May-2010	Jun-2010
RP-2602-Q1 - Process Plant - Facilities and Equi	343000 Addition											
	304100 Addition											
	304200 Addition											
	Retirement											
	304300 Addition		\$0						\$3,507	\$21,205		
	Retirement		(\$12,272)									
	304310 Addition											
	304400 Addition											\$56,634
	304500 Addition											
	311200 Adjustment											
	Retirement											
	311520 Addition					\$4,735	\$0			\$25,442	(\$944)	(\$1,333)
	Adjustment										\$0	\$22
	Retirement											
	311530 Addition											
	Adjustment											
	320100 Addition					\$8,898	\$0					
	Retirement											
RP-2602-R1 - Capitalized Tank Rehabilitation / P	320200 Addition										\$14,174	\$0
	330000 Adjustment											
	Retirement											
	330100 Addition											
	330200 Addition											
	330300 Addition											
	331210 Retirement							(\$3,257)		\$48	\$18,577	\$22
	331350 Addition		\$5,000	\$1,031								
	Retirement				(\$1,866)							
	333000 Retirement											
	335000 Retirement											
	344000 Addition											
	Retirement											
	346190 Addition											
	347000 Addition		\$6,000	\$2,928								
	Retirement				(\$843)					\$14,600		
	348000 Addition											
RP-2603-E1 - Hydrants, Valves, and Manholes-New RP-2603-G1 - Services and Laterals - New RP-2603-I1 - Meters - New	304300 Addition											
	330000 Retirement											
	330003 Addition											
	330200 Addition											
	335000 Addition				\$0	\$83			\$0			
	333000 Addition		\$987			\$20			\$0			
	334110 Addition					\$146			\$1			
	334200 Addition					(\$142)			(\$1)			
	334200 Addition											
	Retirement											
	343000 Addition											
	311200 Retirement											
	311520 Addition											
	344000 Addition											
	333000 Addition		\$1,999	\$1,044		\$100			\$0			
	331001 Adjustment											
RP-2604-G1 - Services and Laterals - New CAPEX ACCRUALS FOR SC			\$473,663	\$217,538	\$785,760	\$751,803	\$69,938	\$221,098	\$274,964	\$437,501	\$1,133,130	\$845,572
	Grand Total											

Sum of activity cost	utility_account_id	Add/Ret	Jul-2010	Aug-2010	Grand Total
Funding Project					
00000026 - Conversion Funding Project	331210	Addition			\$0
		Transfer			\$0
	331350	Addition			\$0
		Transfer			\$0
	333000	Addition			\$0
		Transfer			\$0
	340100	Retirement			(\$27,126)
	340200	Retirement			(\$85,722)
	340230	Retirement			(\$4,367)
	340320	Retirement			(\$14,271)
	340500	Retirement			(\$37,484)
	346100	Retirement			(\$697)
	346200	Retirement			(\$5,935)
	347000	Retirement			(\$2,745)
	331100	Retirement			\$0
26020003 - CHAT-Design Eastridge Tank	331350	Addition			\$1,219
2602000A - CHAT-Invest Item A	334100	Addition			\$1,024
2602000E - CHAT-Invest Item E	340300	Addition			\$1,037
2602000H - CHAT-Invest Item H	344000	Addition			\$880
2602000R - CHAT-Retirements	331001	Addition			\$0
		Retirement			(\$1,747)
	331100	Addition			\$9,432
		Retirement			(\$2,855)
	331210	Addition			(\$1,067)
		Retirement			(\$21,306)
	331350	Retirement			(\$124)
	333000	Addition			\$0
		Retirement			\$0
	334100	Retirement			\$0
	335000	Retirement			(\$1,350)
	341100	Retirement			(\$83,113)
	341200	Retirement			(\$22,469)
	341300				\$0
26020080 - Developer/Govt. Contributions	331210	Addition			\$76,390
	331350	Addition			\$0
	333000	Addition			\$34,633
	335000	Addition			\$6,820
26020081 - CHAT-Network-Replace/Renewal	331100	Addition			\$0
	331210	Addition			\$39,312
		Retirement			\$0
	331350	Addition			\$25
	333000	Addition			(\$62,289)
	335000	Addition			\$23,026
26020083 - Hydrants - Replacement	335000	Addition			\$0
26020084 - Hydrants New	335000	Addition			(\$4)
26020085 - Services - Replacement	333000	Addition			(\$0)
26020086 - Services New	333000	Addition			(\$0)
26020087 - Meters - Replacement	334100	Addition			\$6,850
26020088 - Meters New	334200	Addition			(\$0)
	334100	Addition			\$17,860
	334200	Addition			\$0
	335000	Addition			\$275
26020089 - ITS Equipment & Systems	340220	Addition			(\$0)
	340230	Addition			\$0
	340300	Addition			\$1,904
26020090 - Offices & Operations Centers	340100	Addition			\$0
26020091 - Vehicles	341200	Addition			\$0
26020092 - Tools and Equipment	334100	Addition			\$443
	334131	Addition			\$934
	343000	Addition			(\$6,627)

Sum of activity cost Funding Project	utility_account_id	Add/Ret	Jul-2010	Aug-2010	Grand Total
26020093 - Process Plant - Replacement	344000	Addition			\$2,123
	345000	Addition			\$789
	304200	Addition			\$0
	304300	Addition			\$0
	304500	Addition			\$5,354
	311200	Addition			(\$31,143)
	311500	Addition			(\$13,557)
	311520	Addition			\$19,346
	311530	Addition			\$31,143
	347000	Addition			(\$5,315)
26020096 - Tank Rehabilitation/Painting	320100	Addition			\$0
	320200	Addition			(\$2,723)
	330003	Addition			(\$2,512)
	339600	Addition			\$136,437
26020097 - Comprehensive Planning Study	331210	Addition			\$0
	331350	Addition			\$0
	330100	Addition			\$3,274
	331100	Addition			\$19,613
26020402 - Construct 1.0 MG Tank - Hill	331210	Addition			\$78,099
		Retirement			(\$3,349)
	331300	Addition			\$1,144
	331350	Addition			\$140,060
26020501 - TN DOT Relocations	333000	Addition			(\$0)
	335000	Addition			\$4,476
		Retirement			(\$368)
	340210	Addition			\$0
26020703 - SCADA EQUIPMENT & SYSTEMS	346190	Addition			\$26,379
	347000	Addition			\$11,583
	311520	Adjustment			\$31,143
	311530	Adjustment			(\$31,143)
26020704 - SECURITY EQUIPMENT & SYSTEMS	334200	Addition			\$0
	306000	Addition			\$0
	311520	Addition			\$0
	320100	Addition			\$0
26029606 - CHAT-Filter #2 Improvements	344000	Addition			\$0
	334100	Addition			\$43
	303501	Addition	\$1,487	\$2,638	\$226,928
	331210	Addition	\$10,796	\$9,075	\$285,097
26029810 - CHAT-Electronic Imaging of CS	331350	Addition	\$73,204	\$62,937	\$1,142,118
	340230	Addition			\$0
	340300	Addition			\$0
	331210	Addition			\$0
26029999 - CHAT-Unathorized	331350	Addition			\$0
	333000	Addition			\$0
	335000	Addition			\$0
	341300	Addition			\$0
26030086 - Services New	333000	Addition			\$0
	334200	Addition			\$0
	333000	Addition			\$0
	334200	Addition			\$0
26040088 - Meters New	339600	Addition			\$133,299
	339600	Addition			\$16,355
	340300	Addition			(\$0)
	304200	Addition			\$458,150
DV-2602-1 - Projects Funded by Others	331100	Addition	\$14	\$19	\$173,766
		Retirement			(\$1,514)
	331210	Addition	\$131	\$171	\$1,852,602
		Retirement			(\$9,313)
CS-2602-3 - Business Transformation	331350	Addition			\$279,703
	333000	Addition	\$0	(\$0)	\$173,571

Sum of activity cost Funding Project	utility_account_id	Add/Ret	Jul-2010	Aug-2010	Grand Total
DV-2604-1 - Projects Funded by Others	335000	Retirement			(\$514)
		Addition	\$234	(\$234)	\$228,372
		Retirement			(\$5,684)
	331210	Addition			(\$3,162)
	333000	Addition			\$567
IP-2602-10 - Rehab of Aldrich Units #3 and #4	335000	Addition			\$2,834
	304200	Addition			\$0
	320100	Retirement			(\$41,951)
	330003	Addition			\$1,480,335
	331100	Addition	\$11,508	\$0	\$130,706
RP-2602-A1 - Mains - New		Retirement			\$0
	331210	Addition			\$53,934
	331350	Addition			\$59,639
	333000	Addition			\$2,708
	335000	Addition			\$2,203
RP-2602-B1 - Mains - Replaced / Restored	331001	Retirement			(\$459)
	331100	Addition			\$169,179
		Retirement			(\$17,799)
	331210	Addition		\$178,129	\$1,420,936
		Retirement			(\$79,590)
	331350	Addition			\$210,773
		Retirement			(\$739)
	333000	Addition		\$59,636	\$61,207
	334100	Retirement			(\$19)
	335000	Addition			\$112,966
RP-2602-C1 - Mains - Unscheduled		Retirement			(\$8,324)
	331001	Retirement			(\$4)
		Transfer			\$0
	331100	Addition	\$17,078	\$1,529	\$153,638
		Retirement	(\$1,041)	\$0	(\$7,664)
		Transfer			\$0
	331210	Addition	(\$15,484)	\$739	\$207,762
		Retirement	(\$1,690)	\$0	(\$3,473)
	331350	Addition	(\$3,650)	\$5,346	\$153,935
		Retirement	(\$31)	\$0	(\$7,449)
RP-2602-D1 - Mains - Relocated	333000	Addition			\$1,618
	335000	Addition			\$14,579
		Retirement			(\$675)
	304400	Addition			\$0
	331100	Addition			\$7,851
		Retirement			(\$552)
	331210	Addition	\$48,199	(\$6,243)	\$237,190
		Retirement			(\$11,120)
	331350	Addition			(\$123,500)
	333000	Addition			\$17,855
RP-2602-E1 - Hydrants, Valves, and Manholes-New		Retirement			(\$107)
	331210	Addition			\$56,170
	331350	Addition	(\$3,643)	\$10,937	\$36,587
	335000	Addition	\$3,896	\$8,287	(\$33,055)
		Retirement			\$0
RP-2602-F1 - Hydrants, Valves, and Manholes-Rep	347000	Addition			\$3,803
	331001	Retirement			(\$27)
	331100	Addition	\$2,304	(\$111)	\$58,662
		Retirement	\$0		(\$2,232)
		Transfer			\$0
	331210	Addition	\$791	\$3,450	\$44,649
		Retirement	(\$171)		(\$3,993)
	331350	Addition	(\$455)	(\$111)	\$31,212
		Retirement			(\$1,218)
	335000	Addition	\$5,305	\$11,513	\$164,970

Sum of activity cost Funding Project	utility_account_id	Add/Ret	Jul-2010	Aug-2010	Grand Total
RP-2602-G1 - Services and Lateralis - New	333000	Retirement	(\$998)	\$0	(\$46,466)
		Addition	\$55,250	\$5,254	\$2,121,037
		Adjustment			\$0
		Retirement			\$0
RP-2602-H1 - Services and Lateralis - Replaced		Transfer			\$0
	334200	Addition			\$13,739
	331001	Retirement			(\$153)
	331100	Retirement			(\$6,389)
RP-2602-I1 - Meters - New	333000	Addition	(\$84)	\$1,347	\$255,713
		Retirement		(\$11,676)	(\$196,346)
	333000	Addition			\$617
	334100	Addition	\$13,809	(\$14,243)	\$18,686
RP-2602-J1 - Meters - Replaced	334110	Addition	\$29,782	(\$8,267)	\$637,091
	334130	Addition	(\$37,344)	\$94	\$8,534
	334131	Addition			\$4
	334200	Addition	\$19,548	\$1,300	\$970,466
RP-2602-K1 - ITS Equipment and Systems	334100	Retirement			(\$236,728)
	334110	Addition	\$30,347	\$2,532	\$1,676,629
		Retirement			\$0
	334200	Addition	(\$11,204)	\$74	\$372,300
RP-2602-L1 - SCADA Equipment and Systems		Retirement	\$0		(\$59,212)
	340200	Retirement			(\$2,588)
	339600	Addition			\$8,062
	340200	Retirement			(\$26,152)
RP-2602-M1 - Security Equipment and Systems	340220	Addition	\$29,405	\$47	\$61,420
		Retirement	\$0		(\$6,595)
	340230	Addition			\$116,004
		Retirement			(\$17,884)
RP-2602-N1 - Offices and Operations Centers	340240	Addition			\$22,168
	346200	Addition			\$10,556
	304300	Addition	\$8,537		\$8,537
	340100	Addition		\$12,129	\$12,129
RP-2602-O1 - Vehicles	346190	Addition	\$0	\$4,364	\$112,080
	304200	Addition			\$6,973
		Retirement			(\$2,207)
	304300	Addition			\$16,148
RP-2602-P1 - Tools and Equipment	304400	Retirement			(\$7,650)
	304500	Addition			\$66,565
	347000	Retirement			(\$2,997)
	304100	Addition			\$9,635
RP-2602-Q1 - Vehicles	304200	Retirement			(\$1,000)
	304500	Addition			\$10,014
	304600	Addition			\$10,187
		Retirement			(\$3,981)
RP-2602-R1 - Vehicles	340100	Addition			\$2,603
	333000	Addition			\$0
	341100	Addition			\$111,847
		Retirement			(\$79,029)
RP-2602-S1 - Vehicles	341200	Addition			\$558,073
		Retirement			(\$197,755)
	341300	Addition			\$929
	341400	Retirement			\$227,692
RP-2602-T1 - Vehicles	343000	Retirement			(\$21,776)
	345000	Retirement			(\$83,737)
	304800	Retirement			(\$46,503)
	304800	Retirement			(\$2,575)
RP-2602-U1 - Vehicles	311500	Retirement			(\$3,052)
	311520	Addition			\$7,679
	340100	Addition			\$0
	341400	Addition	\$3,519		\$13,147

Sum of activity cost Funding Project	utility_account_id	Add/Ret.	Jul-2010	Aug-2010	Grand Total
RP-2602-Q1 - Process Plant - Facilities and Equi	343000 Addition			\$8,064	\$131,862
	304100 Addition				\$37,746
	304200 Addition	\$67,000	(\$22,595)		\$134,482
	Retirement	(\$23,438)			(\$25,870)
	304300 Addition				\$114,567
	Retirement				(\$14,858)
	304310 Addition				\$69,055
	304400 Addition	\$1,240	\$11,181		\$741
	304500 Addition				\$0
	311200 Adjustment	(\$7,370)			(\$7,370)
	Retirement	\$7,370			(\$8,579)
	311520 Addition	\$7,895	\$0		\$54,515
	Adjustment	\$7,478			\$56,576
	Retirement		(\$7,478)		(\$7,478)
	311530 Addition				\$49
	Adjustment				(\$49,098)
	320100 Addition				\$181,395
	Retirement				(\$5,371)
	320200 Addition				\$245,095
	330000 Adjustment	(\$108)			(\$108)
	Retirement	\$108			(\$18,028)
	330100 Addition				\$6,861
	330200 Addition				\$2,571
	330300 Addition				\$18,648
	331210 Retirement				(\$3,257)
	331350 Addition				\$6,031
	Retirement				(\$3,454)
RP-2602-R1 - Capitalized Tank Rehabilitation / P	333000 Retirement				(\$4,625)
	335000 Retirement				(\$2,362)
	344000 Addition				\$21,024
	Retirement				(\$1,985)
	346190 Addition				(\$1,364)
	347000 Addition				\$13,878
	Retirement				(\$843)
	348000 Addition				\$14,600
	304300 Addition				\$0
	330000 Retirement				\$0
	330003 Addition				\$4,829
	330200 Addition				\$0
	335000 Addition				\$4,049
	333000 Addition				\$1,513
	334110 Addition				\$147
RP-2603-J1 - Meters - Replaced	334200 Addition				\$80
	334200 Addition				\$0
	Retirement				\$0
RP-2603-P1 - Tools and Equipment	333000 Addition				(\$4,662)
	311200 Retirement				(\$12,761)
	311520 Addition				\$41,056
RP-2603-Q1 - Process Plant - Facilities and Equi	344000 Addition				\$8,124
	333000 Addition				\$5,659
	331001 Adjustment				(\$257,484)
Grand Total			\$349,527	\$889,836	\$16,927,991

Tennessee American
TRA 1-51 part c
CIAC for last three fiscal years.

Account	Description	2007	2008	2009
271110	CIAC-NT Mains	\$ (25,857.00)	\$ (26,176.00)	\$ (173,088.97)
271120	CIAC-NT Ext Dep			\$ (131,713.40)
271130	CIAC-NT Services	\$ (6,000.00)		\$ (4,181.00)
271140	CIAC-NT Meters	\$ (14,000.00)		
271150	CIAC-NT Hydrants	\$ (2,169.87)	\$ (19,824.67)	\$ (268,299.37)
271170	CIAC-NT WIP		\$ -	\$ (72,156.90)
271210	CIAC-Tax Mains	\$ (28,386.07)	\$ (273,495.53)	\$ (14,383.35)
271230	CIAC-Tax Services	\$ (156,876.00)	\$ (120,379.00)	\$ (86,266.44)
271240	CIAC-Tax Meters	\$ (8,515.00)	\$ (6,467.00)	\$ (3,486.00)
271270	CIAC-Tax WIP			\$ -
Grand Total		<u>\$ (241,803.94)</u>	<u>\$ (446,342.20)</u>	<u>\$ (753,575.43)</u>

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: John S. Watson

RATE BASE (EXCLUDING WORKING CAPITAL)

Question:

52. Break down budgeted plant additions between normal and special projects, using the criteria defined above, for the months between the end of the last fiscal year and the end of the attrition period. Provide sufficient detail of each individual project as to the date of inception and completion, and the proposed methods of financing. Identify those budgeted plant additions that are in process or have already been completed. Basic assumptions underlying budgets should also be submitted including the assumptions for sales volumes.

Response:

See attached schedule labeled as TRA-01-Q052-ATTACHMENT.

[illegible]

[illegible]

Tennessee American Water Company
TRA DR 1 # 52
Additions & retirements through the end of the attrition year

Normal Construction	NARUC Acct No.	JDE Acct No.	Jan-10		Feb-10		Mar-10		Apr-10		May-10	
			In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire
Budget												
Land & Ld Rights - AG	389	303600										
IP-2602-19 Pressure Reduction												
T & D Mains Conversion	343	331001										
IP-2602-21 Missionary Ridge Storage Tank												
Land & Ld Rights - TD	340	303500										
Elevated Tanks & Standpipes	342	330100										
26029804 Replace Lkt. Mtn Supply Line												
Land & Ld Rights - TD	340	303500										
T & D Mains 6" - 10"	343	331210									210,000	54,500
T & D Mains 12" & Greater	343	331350									1,589,000	22,500
IP-2602-4 Ringold Road at I-75												
Land & Ld Rights - TD	340	303500										
T & D Mains 18" & Greater	343	331400										
T & D Mains 6" - 10"	343	331210										
CS - 2602-1 - Business Transformation CPS												
Other P/E - Comp Plan Study	339	339600										
CS - 2602-3 - Business Transformation ERT												
Computer Software	391.25	340300										
Total			\$112,500.00	\$26,300.00	\$161,300.00	\$5,000.00	\$497,250.00	\$106,000.00	\$484,394.60	\$92,108.00	\$2,071,719.55	\$90,486.00

Additions & retirements through the end of the attrition year

Normal Construction													
Budget				Jun-10		Jul-10		Aug-10		Sep-10		Oct-10	
NARUC Acct No.				JDE Acct No.	In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire	
DV - Projects Funded by Others													
T & D Mains 4" & Less				343	331100			1,820					
T & D Mains 6" - 10"				343	331210		185,093		124,048		183,792	1,600	
T & D Mains 12" & Greater				343	331350		45,000		60,000		45,203	135,443	
Services				345	333000	17,917	12,000		16,461		8,404	55,472	
Hydrants				348	335000		10,000	2,000	8,235		28,000	52,250	
Struct & Improv - PU				321	304200				221,256		50,248		
A - Mains - New													
T & D Mains 6" - 10"				343	331210		18,235					11,583	
B - Mains - Replaced/Restored													
T & D Mains 4" & Less				343	331100			5,623				1,850	
T & D Mains 6" - 10"				343	331210	34,377	56,258		83,456	2,500		65,256	
T & D Mains 12" & Greater				343	331350								
Hydrants				348	335000			354	8,000	1,000	15,000	1,500	
C - Mains - Unscheduled												150	
T & D Mains 6" - 10"				343	331210	-	8,826	356	-	9,980	1,200	-	
T & D Mains 4" & Less				343	331100								
T & D Mains 12" & Greater				343	331350								
D - Mains - Relocated													
T & D Mains 4" & Less				343	331100								
T & D Mains 6" - 10"				343	331210								
T & D Mains 12" & Greater				343	331350				25,268	1,200	45,235	25,735	
Struct & Improv - TD				341	304400							36,895	
Services				345	333000							3,500	
E - Hydrants, Valves, and Manholes - New													
Hydrants				348	335000	3,500			7,000		17,000	15,000	
F - Hydrants, Valves, and Manholes - Replaced													
Hydrants				348	335000	11,900							
T & D Mains 4" & Less				343	331100		20,000	1,500	10,000	2,500	7,100	5,000	
T & D Mains 6" - 10"				343	331210							2,500	
T & D Mains 12" & Greater				343	331350								
G - Services and Laterals - New													
Services				345	333000	67,344	45,517		54,630		91,850	62,415	
H - Services and Laterals - Replaced													
Services				345	333000	10,756	20,756	1,244	16,000	11,000	26,555	27,000	
I - Meters - New													
Meters				346	334100	17,000							
Meter Installations				347	334200	29,000	10,000		12,000		10,000	25,000	
J - Meters - Replaced													
Meters				346	334100	101,100	20,000		36,500	1,100	25,000	91,000	
Meter Installations				347	334200	50,000	20,000		25,000	1,100	36,500	120,000	
Personal Computers & Periph				391.23	340220							10,000	
Computer Software				391.25	340300							13,000	

[illegible]

Tennessee American Water Company
TRA DR 1 # 52
Additions & retirements through the end of the attrition yea

Normal Construction

Budget	NARUC Acct No.	JDE Acct No.	Jun-10		Jul-10		Aug-10		Sep-10		Oct-10	
			In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire
Land & Ld Rights - AG	389	303600										
IP-2602-19 Pressure Reduction												
T & D Mains Conversion	343	331001										
IP-2602-21 Missionary Ridge Storage Tank												
Land & Ld Rights - TD	340	303500										
Elevated Tanks & Standpipes	342	330100										
26029804 Replace Lkt. Mtn Supply Line												
Land & Ld Rights - TD	340	303500										
T & D Mains 8" - 10"	343	331210										
T & D Mains 12" & Greater	343	331350										
IP-2602-4 Ringold Road at I-75												
Land & Ld Rights - TD	340	303500										
T & D Mains 18" & Greater	343	331400										
T & D Mains 6" - 10"	343	331210										
CS - 2602-1 - Business Transformation CPS												
Other P/E - Comp Plan Study	339	339600										
CS - 2602-3 - Business Transformation ERT												
Computer Software	391.25	340300										
Total			\$400,318.85	\$126,767.00	\$533,988.20	\$11,474.00	\$992,026.79	\$101,167.00	\$808,374.00	\$78,195.00	\$6,890,795.03	\$388,521.00

Tennessee American Water Company
TRA DR 1 # 52
Additions & retirements through the end of the attrition year

Normal Construction		Nov-10		Dec-10		Jan-11		Feb-11		Mar-11		
	NARUC Acct No.	JDE Acct No.	In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire
Budget DV - Projects Funded by Others												
	T & D Mains 4" & Less	343	331100									
	T & D Mains 6" - 10"	343	331210	181,043		205,288	4,093		50,364		68,000	
	T & D Mains 12" & Greater	343	331350									
	Services	345	333000	72,000		65,316			6,853		12,000	
	Hydrants	348	335000	30,200		12,639			13,435		7,201	2,000
	Struct & Improv - PU	321	304200									
	A - Mains - New											
	T & D Mains 6" - 10"	343	331210	20,671							20,568	
B - Mains - Replaced/Restored												
	T & D Mains 4" & Less	343	331100									
	T & D Mains 6" - 10"	343	331210	14,000		13,500		1,000	34,377	5,623		1,562
	T & D Mains 12" & Greater	343	331350			18,000	19,000	1,000			42,000	5,862
	Hydrants	348	335000		150	2,500	4,000	963			7,244	354
C - Mains - Unscheduled												
	T & D Mains 6" - 10"	343	331210			9,223	5,000					
	T & D Mains 4" & Less	343	331100						-			
	T & D Mains 12" & Greater	343	331350									
D - Mains - Relocated												
	T & D Mains 4" & Less	343	331100									
	T & D Mains 6" - 10"	343	331210	18,390		80,735	62,000	2,400	30,000		12,500	7,500
	T & D Mains 12" & Greater	343	331350			45,682	77,582	6,789		2,000		
	Struct & Improv - ID	341	304400									
E - Hydrants, Valves, and Manholes - New												
	Hydrants	348	335000	2,584		2,253	7,000		3,000		7,000	
F - Hydrants, Valves, and Manholes - Replaced												
	Hydrants	348	335000									
	T & D Mains 4" & Less	343	331100	6,000	400	6,700		800		1,500		
	T & D Mains 6" - 10"	343	331210									
G - Services and Laterals - New												
	Services	345	333000	100,841		104,876						
H - Services and Laterals - Replaced												
	Services	345	333000	7,568	2,032	9,600	3,000	1,800	7,500	2,100	7,525	2,075
I - Meters - New												
	Meters	346	334100	22,000		22,000						
	Meter Installations	347	334200	25,000		25,000	21,000		21,000		26,000	
							30,000		32,000		27,000	
J - Meters - Replaced												
	Meters	346	334100	6,500	1,100	50,000						
	Meter Installations	347	334200			56,600	6,500	1,100			56,000	37,000
	Personal Computers & Periph	391.23	340220						6,600	1,000	80,000	48,000
Computer Software	391.25	340300										

Normal Construction		NARUC Acct No.	JDE Acct No.	Nov-10		Dec-10		Jan-11		Feb-11		Mar-11	
	Budget			In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire
K - ITS Equipment and Systems Computers & Peripheral Equip		391.21	340200	2,619		12,677	1,650					23,000	
L - SCADA Equipment and Systems Struct & Improv - WT		331	304300			3,080							
M - Security Equipment and Systems Struct & Improv - WT		331	304300	5,000						3,000		2,000	500
N - Offices and Operations Centers Office Furniture		391.2	340100		2,500	9,000							
O - Vehicles Light Duty Trucks Heavy Duty Trucks Automobiles Telephone Equipment		392.11	341100										
		392.12	341200			125,252	6,400						
		392.2	341300				3,200						
		397.2	346200										
P - Tools and Equipment Tools/Shop/Garage Equipment Computers & Peripheral Equip Pumping Equipment - SS		394	343000	5,400		10,800							
		391.21	340200										
		328	311520										
Q - Process Plant Facilities and Equipment Laboratory Equip Computer Software Other Tangible Property Struct & Improv - SS Struct & Improv - PU Struct & Improv - WT Pumping Equipment - electric Miscellaneous Equipment Wtr Treat Equip (Non-Media) Wtr Treat Equip (Media) Dist. Reservoirs & Stand Conv		395	344000										
		391.23	340300		1,500			1,500					
		399	348000										
		321	304100										
		321	304200										
		331	304300	32,000						5,000	500		
		325	311200	38,211		25,000	1,876	21,500					
		398	347000			35,000		1,000					1,650
		332	320100										
		334	320200	10,000	1,500								
		342	330000										
	R - Capitalized Tank Rehabilitation/Painting Dist. Reservoirs & Stand Conv		342	330000									
S - Engineering Studies Organization		301	301000										
Special Projects													
26020503, Citico WTP Pretreatment Phase 1 Struct & Improv - WT		331	304300										
Citico WTP Filtration Phase 2 Struct & Improv - WT		331	304300										
IP-2602-7 Convert East Ridge Reservoir to Pump Storage T & D Mains Conversion Struct & Improv - WT		343	331001										
		331	304300										
IP-2602-16 - Office Building													

Tennessee American Water Company
TRA DR 1 # 52
Additions & retirements through the end of the attrition year

Normal Construction

Budget	NARUC Acct No.	JDE Acct No.	Nov-10		Dec-10		Jan-11		Feb-11		Mar-11	
			In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire
Land & Ld Rights - AG	389	303600										
IP-2602-19 Pressure Reduction T & D Mains Conversion	343	331001	50,000									
IP-2602-21 Missionary Ridge Storage Tank Land & Ld Rights - TD Elevated Tanks & Standpipes	340 342	303500 330100										
26029804 Replace Lkt. Mtn Supply Line Land & Ld Rights - TD T & D Mains 6" - 10" T & D Mains 12" & Greater	340 343 343	303500 331210 331350										
IP-2602-4 Ringold Road at I-75 Land & Ld Rights - TD T & D Mains 18" & Greater T & D Mains 6" - 10"	340 343 343	303500 331400 331210										
CS - 2602-1 - Business Transformation CPS Other P/E - Comp Plan Study	339	339600										
CS - 2602-3 - Business Transformation ERT Computer Software	391.25	340300										
Total			\$650,027.40	\$9,182.00	\$950,720.76	\$33,737.00	\$341,843.00	\$15,152.00	\$270,124.00	\$12,723.00	\$475,528.00	\$107,703.00

Normal Construction

[illegible]

[illegible]

Tennessee American Water Company
TRA DR 1 # 52
Additions & retirements through the end of the attrition year

Normal Construction

Budget	NARUC Acct No.	JDE Acct No.	Apr-11		May-11		Jun-11		Jul-11		Aug-11	
			In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire
Land & Ld Rights - AG	389	303600										
IP-2602-19 Pressure Reduction												
T & D Mains Conversion	343	331001										
IP-2602-21 Missionary Ridge Storage Tank												
Land & Ld Rights - TD	340	303500										
Elevated Tanks & Standpipes	342	330100										
26029804 Replace Lkt. Mtn Supply Line												
Land & Ld Rights - TD	340	303500										
T & D Mains 6" - 10"	343	331210										
T & D Mains 12" & Greater	343	331350										
IP-2602-4 Ringold Road at I-75												
Land & Ld Rights - TD	340	303500										
T & D Mains 18" & Greater	343	331400										
T & D Mains 6" - 10"	343	331210										
CS - 2602-1 - Business Transformation CPS												
Other P/E - Comp Plan Study	339	339600										
CS - 2602-3 - Business Transformation ERT												
Computer Software	391.25	340300										
Total			\$811,905.00	\$59,191.00	\$375,215.00	\$34,512.00	\$952,668.00	\$72,744.00	\$827,587.00	\$16,563.00	\$600,034.00	\$13,117.00

Tennessee American Water Company
TRA DR 1 # 52
Additions & retirements through the end of the attrition yea

Normal Construction

Budget	NARUC Acct No.	JDE Acct No.	Sep-11		Oct-11		Nov-11		Dec-11		Totals	
			In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire
DV - Projects Funded by Others												
T & D Mains 4" & Less	343	331100									1,600	5,320
T & D Mains 6" - 10"	343	331210	105,000		165,000		176,300		65,995		2,373,326	-
T & D Mains 12" & Greater	343	331350					38,700		19,943		150,203	-
Services	345	333000	20,000		60,000						648,984	-
Hydrants	348	335000	25,000		5,000				15,100		344,831	4,000
Struct & Improv - PU	321	304200									271,504	-
A - Mains - New												
T & D Mains 6" - 10"	343	331210			42,876		-		8,569		144,088	-
B - Mains - Replaced/Restored												
T & D Mains 4" & Less	343	331100	25,669	1,850		18,250				12,265	133,062	83,171
T & D Mains 6" - 10"	343	331210	105,236				76,910		82,000		921,717	31,382
T & D Mains 12" & Greater	343	331350			31,750						104,469	12,500
Hydrants	348	335000	3,150								73,894	7,434
C - Mains - Unscheduled												
T & D Mains 6" - 10"	343	331210	5,000		9,000	1,200			6,000	1,200	112,074	8,656
T & D Mains 4" & Less	343	331100									1,450	-
T & D Mains 12" & Greater	343	331350									1,800	-
D - Mains - Relocated												
T & D Mains 4" & Less	343	331100										2,265
T & D Mains 6" - 10"	343	331210		4,555	56,358		117,735	2,265	126,735	2,265	919,857	37,649
T & D Mains 12" & Greater	343	331350	15,645		25,369		56,458	1,582	75,236		1,154,153	35,923
Struct & Improv - TD	341	304400									6,400	-
Services	345	333000									3,500	-
E - Hydrants, Valves, and Manholes - New												
Hydrants	348	335000	7,000		17,000		10,000		7,000		143,837	-
F - Hydrants, Valves, and Manholes - Replaced												
Hydrants	348	335000										
T & D Mains 4" & Less	343	331100	8,000	500	6,000	1,500	6,000	646	10,000		187,176	21,046
T & D Mains 6" - 10"	343	331210									3,000	-
T & D Mains 12" & Greater	343	331350									3,400	200
G - Services and Laterals - New												
Services	345	333000	66,365		65,900		75,881		71,739		1,564,354	-
H - Services and Laterals - Replaced												
Services	345	333000	9,755	6,445	13,500	10,038	14,568	10,032	10,600	10,234	268,595	96,971
I - Meters - New												
Meters	346	334100	25,000		25,000		27,000		25,000		584,320	-
Meter Installations	347	334200	29,000		37,000		29,000		35,000		613,880	-
J - Meters - Replaced												
Meters	346	334100	95,100	48,900	36,500	21,100	20,500		61,000	12,000	888,700	318,300
Meter Installations	347	334200	75,000	31,000	50,500	11,100	30,500		45,000	15,000	612,900	300,200
Personal Computers & Periph	391.23	340220							7,264		33,826	7,600
Computer Software	391.25	340300					1,236		3,256		17,492	-

[illegible]

Tennessee American Water Company
TRA DR 1 # 52
Additions & retirements through the end of the attrition yea

Normal Construction		JDE		Sep-11		Oct-11		Nov-11		Dec-11		Totals	
Budget	NARUC	Acct No.	Acct No.	In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire	In Service	Retire
Land & Ld Rights - AG	389	303600						250,000				250,000	
IP-2602-19 Pressure Reduction													
T & D Mains Conversion	343	331001				94,454						144,454	
IP-2602-21 Missionary Ridge Storage Tank													
Land & Ld Rights - TD	340	303500											
Elevated Tanks & Standpipes	342	330100											
26029804 Replace Lkt. Mtn Supply Line													
Land & Ld Rights - TD	340	303500											
T & D Mains 6" - 10"	343	331210										210,000	54,500
T & D Mains 12" & Greater	343	331350										1,589,000	22,500
IP-2602-4 Ringold Road at I-75													
Land & Ld Rights - TD	340	303500											
T & D Mains 18" & Greater	343	331400											
T & D Mains 6" - 10"	343	331210											
CS - 2602-1 - Business Transformation CPS													
Other P/E - Comp Plan Study	339	339600											
CS - 2602-3 - Business Transformation ERT													
Computer Software	351.25	340300											
Total				\$681,874.00	\$98,250.00	\$1,152,017.00	\$183,444.00	\$1,286,504.00	\$50,215.00	\$1,204,594.99	\$64,440.00	\$23,333,409.16	\$1,796,991.00

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: John S. Watson

RATE BASE (EXCLUDING WORKING CAPITAL)

Question:

53. Identify all special projects from the end of the test period through the attrition period, using the criteria defined in the first rate base question above, by work order number and include the estimated cost. Provide a signed authorization for each special project and identify the planned starting and completion dates.

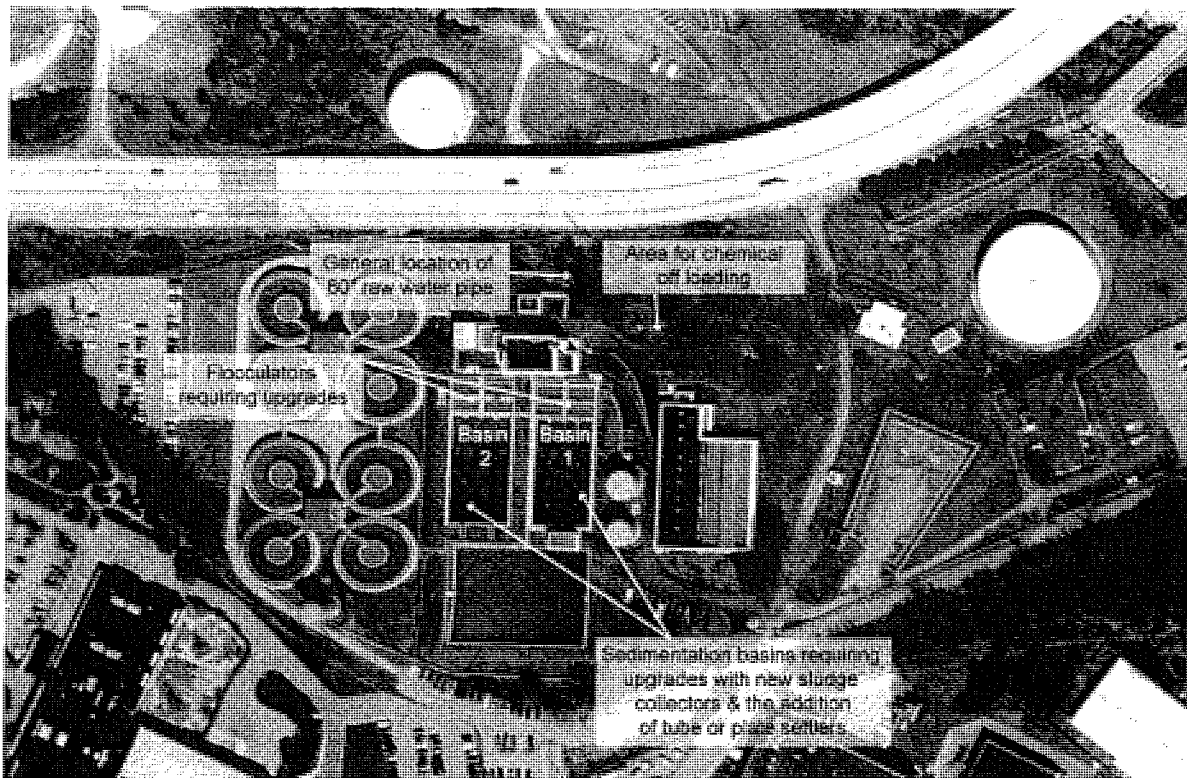
Response:

Please see the attached documents labeled as TRA-01-Q053-ATTACHMENT 1 through 5. While the Company does not necessarily consider these “special projects”, in TAWC’s accounting system, they are projects that due to their nature, size, scope and cost are identified as individual Funding Projects (FP’s) that require specific project approval by the Capital Investment Management Committee (CIMC) and/or the Board of Directors.

Tennessee American Water

Citico Water Treatment Plant Design Critique

May 2007



*Design Critique
Tennessee American Water
Citico Water Treatment Plant (WTP)*

Contents

Design Critique Tennessee American Water Citico Water Treatment Plant (WTP)

Purpose.....	1-1
Introduction	1-1
Pretreatment Improvements Flocculators	1-5
Plate Settlers versus Tube Settlers in Sedimentation Basins 1 and 2.....	1-8
Need and Capacity	1-9
Required Depth	1-9
Materials of Construction	1-10
Maintenance Accessibility	1-10
Retrofitting Existing Sedimentation Basins 1 and 2 with Tube Settlers and Plate Settlers	1-10
Comparison of Manufacturers of Plate Settlers.....	1-11
Comparison of Manufacturers of Tube Settlers.....	1-11
Cost Comparison.....	1-12
Conclusions.....	1-14
Sludge Removal Under Plate Settlers	1-14
60" Diameter Raw Water Pipe Reliability	1-15
Chemical Off-loading Truck Relocation and Containment	1-23
Summary of Alternative Design Concepts.....	1-24
Plate settlers versus tube settlers in Sedimentation Basins 1 and 2	1-24
Flocculator Replacement.....	1-25
60" Raw Water Pipeline Reliability	1-26

*List of Figures
Design Critique
Tennessee American Water
Citico Water Treatment Plant (WTP)*

Figures

1	Aerial View of Water Treatment Plant	1-2
2	TAW-Treatment Plant Process Schematic	1-3
3	Flocculator Basin at Citico WTP.....	1-5
4	Vertical Turbine Flocculators	1-6
5	Horizontal Paddle Flocculators at Similar WTPs	1-6
6	Flocculation Inlet Channel at Citico WTP	1-7
7	Leopold Claritrac Sludge Collectors in the 90 mgd treatment capacity Adkins Water Treatment Plant, Greenville, SC	1-15
8	Chemical Feed inside Raw Water Control Building at Citico WTP	1-16
9	Schematic of Existing Raw Water Pipe	1-17
10	Option 1: Parallel 60" and No New Chemical Feeds	1-19
11	Option 2: Parallel 48" and No New Chemical Feeds	1-20
12	Option 3: Parallel 60" and New Chemical Feed	1-21
13	Option 4: New Raw Water Line to Basin 1.....	1-22

*List of Tables
Design Critique
Tennessee American Water
Citico Water Treatment Plant (WTP)*

Tables

1	Summary of Treatment Facilities at the Citico WTP ²	1-4
2	Comparison of Flocculator Alternative Cost	1-8
3	Citico WTP Basins 1 and 2 Dimensions	1-11
4	50 mgd options (25 mgd per basin)	1-13
5	60" Piping Options with Estimated Construction Cost	1-23
6	50 mgd options (25 mgd per basin)	1-24
7	Comparison of Flocculator Alternative Cost	1-25

Design Critique Tennessee American Water Citico Water Treatment Plant (WTP)

Purpose

The purpose of the Design Critique is to determine which modifications to the design concept may result in a more cost-effective project, simplified construction, and/or improved operating procedures. CDM has identified several items in this regard. These are listed below and can be expanded and added (or eliminated) as desired by American Water.

Introduction

The following key issues relate primarily to cost-effectiveness of the proposed upgrade.

- Pretreatment improvements for Basins 1 and 2
 - How to retrofit the flocculation basin
 - The use of plate settlers versus tube settlers
- Sludge removal under the plate or tube settlers
- 60" raw water piping reliability
- Chemical Truck off-loading and containment area modifications

Each of these items is illustrated in the aerial photograph in **Figure 1**. A schematic of the existing plant is shown in **Figure 2** and American Water's summary of existing process capacities are presented in **Table 1** for reference. It is planned that some capacities and volumes in **Table 1** will be field verified during the design phase of the project.

The topics of filter alternatives for increased capacity and disinfection by-product (DBP) control with chloramines or other options will be addressed in separate documents (Filter Alternatives Study and DBP Desktop Study).

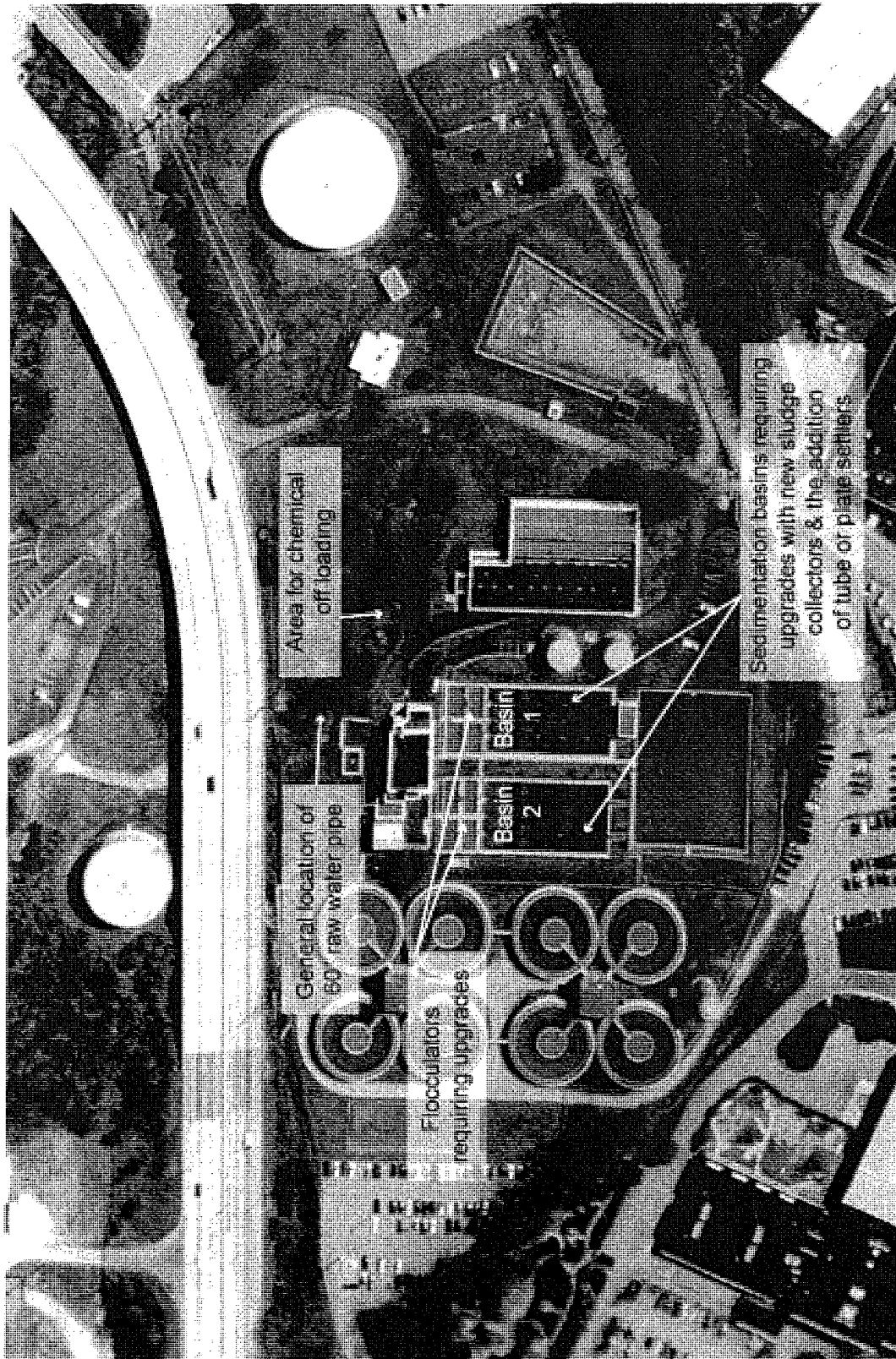


Figure 1 - Aerial View of Water Treatment Plant

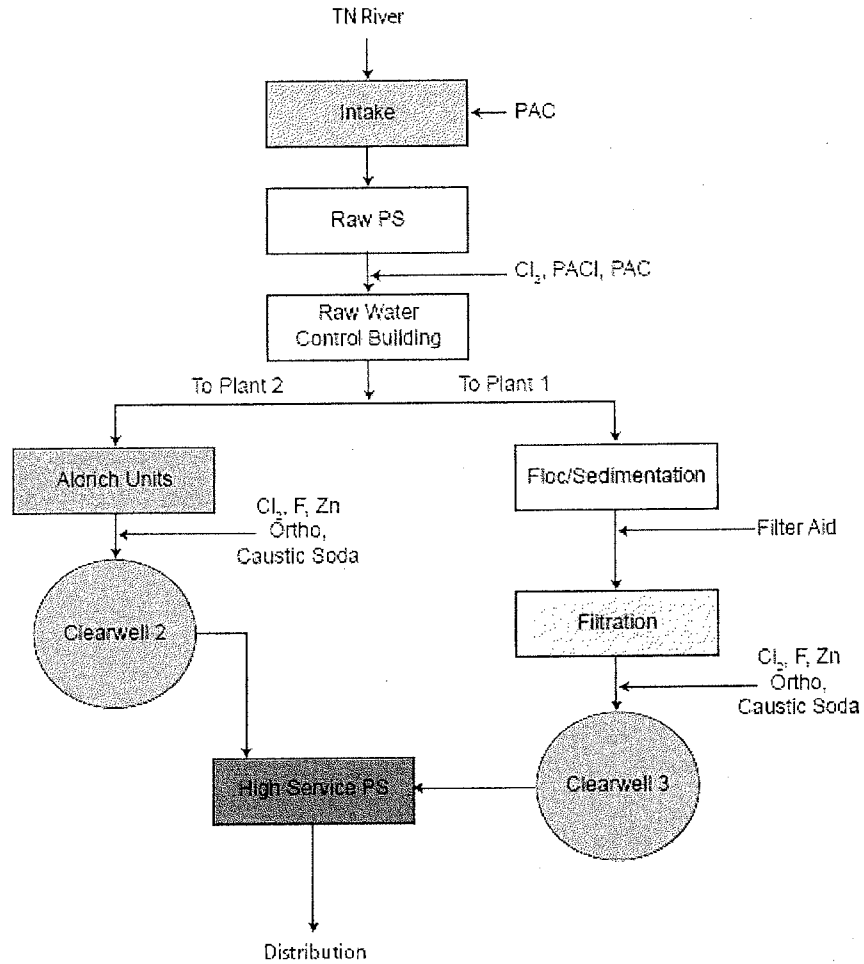


Figure 2 TAW – Treatment Plant
Process Schematic

Table 1 Summary of Treatment Facilities at the Citico WTP²

Process	Parameter	Units	Value			
Raw Water	Total pumping capacity	mgd	108.9 ⁽¹⁾			
	Reliable pumping capacity	mgd	84.0 ⁽¹⁾			
	Number of pumps		5			
Mixing	Type		Static			
	Number of Units		2			
Treatment Rate	Plant No.		Plant No. 1		Plant No. 2	
	Total filter capacity	mgd	40		25	
	Reliable filter capacity	mgd	38		21.875	
Flocculation	Basin		Basin 1	Basin 2	Basin 3	Aldrich Units
	Number of Units		2	2	n/a	8
	Volume per unit	gal	290,000	320,000		90,000
	Flow rate (total)	mgd	15	15		25
	Detention time	min	28	30		41
Sedimentation	Basin		Basin 1	Basin 2	Basin 3	Aldrich Units
	Number of Units		1	1	1	8
	Volume per unit	gal	1,200,000	1,200,000	2,200,000	600,000
	Flow rate (total)	mgd	15	15	10	25
	Basin loading rate	gpm/ft ²	0.98	0.94	0.34	0.49
	Weir loading rate	gpd/LF	9,228	9,014	n/a	12,280
Filtration	Detention time	min	107	115	307	261
	Number of Units		20			8
	Surface area per unit	ft ²	346			885
	Filtration rate	gpm/ft ²	4.0			2.45
	Empty bed contact time	min	4.4 - 4.7			6.4
Washwater	Media		28" GAC, 6" sand			
Washwater	Tank Number		Tank 1	Tank 3	Tank 2	
	Storage volume	gal	220,000	290,000	300,000	
Clearwater Storage	Clearwell Number		Clearwell 3			Clearwell 2
	Clearwell volume	gal	3,570,000			1,800,000
Distributive Pumps	Total pumping capacity					
	Reliable pumping capacity	mgd	83.7 ⁽¹⁾			
	Number of pumps	mgd	63.2 ⁽¹⁾			
Residuals			7			
	Wastewater tank volume	gal	564,000			
	Thickening tank volume	gal	530,000			

1. Sum of rated pump capacities. Actual combined output may vary with all pumps in simultaneous operation.
2. Source of Table - American Water 2006 Design Concept Document for Citico Water Treatment Plant Upgrades

Pretreatment Improvements

Flocculators

As shown in **Figure 1**, the existing facility has two parallel plants (Plants 1 and 2). Plant 1 has flocculators that are no longer operational, shown in **Figure 3**, followed by conventional rectangular basins (Basins 1 and 2) with chain and flight sedimentation sludge scrapers; both are in need of repair or replacement.

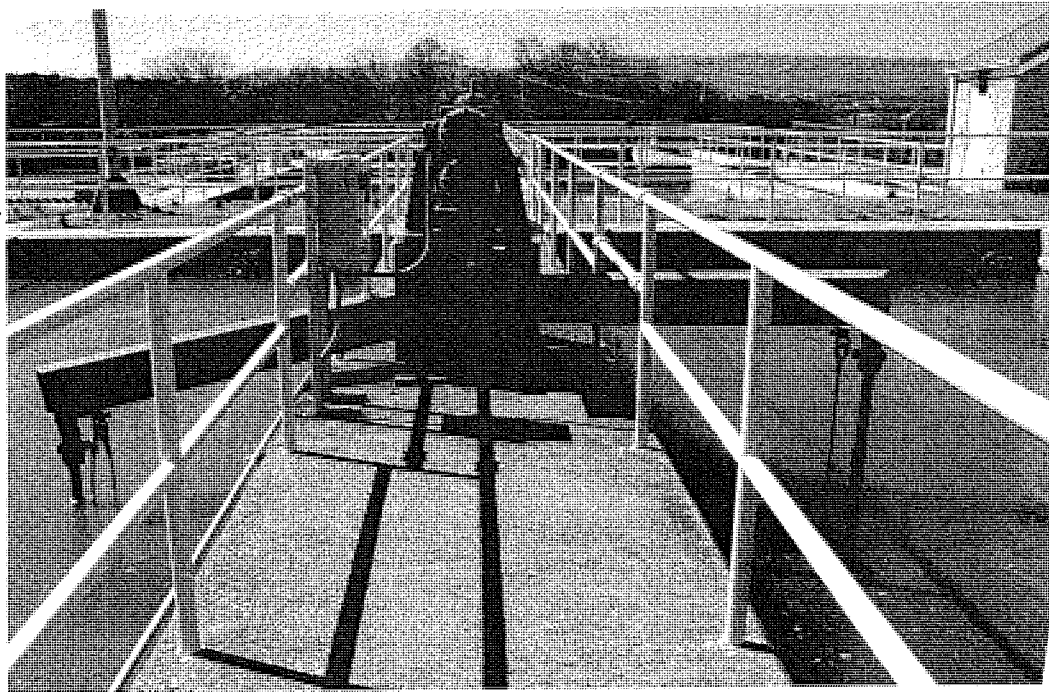


Figure 3 – Flocculator Basin at Citico WTP

Flocculation/Sedimentation Basins 1 and 2 need new baffles, flocculators, solids collection equipment and tube or plate settlers. Upgrading to vertical turbine flocculators as pictured below in **Figure 4** would improve reliability and maintainability. Nearby locations where vertical turbine flocculators designed by the CDM team are currently in use include Asheville and Charlotte, NC; DeKalb County, GA; and Florence, SC.

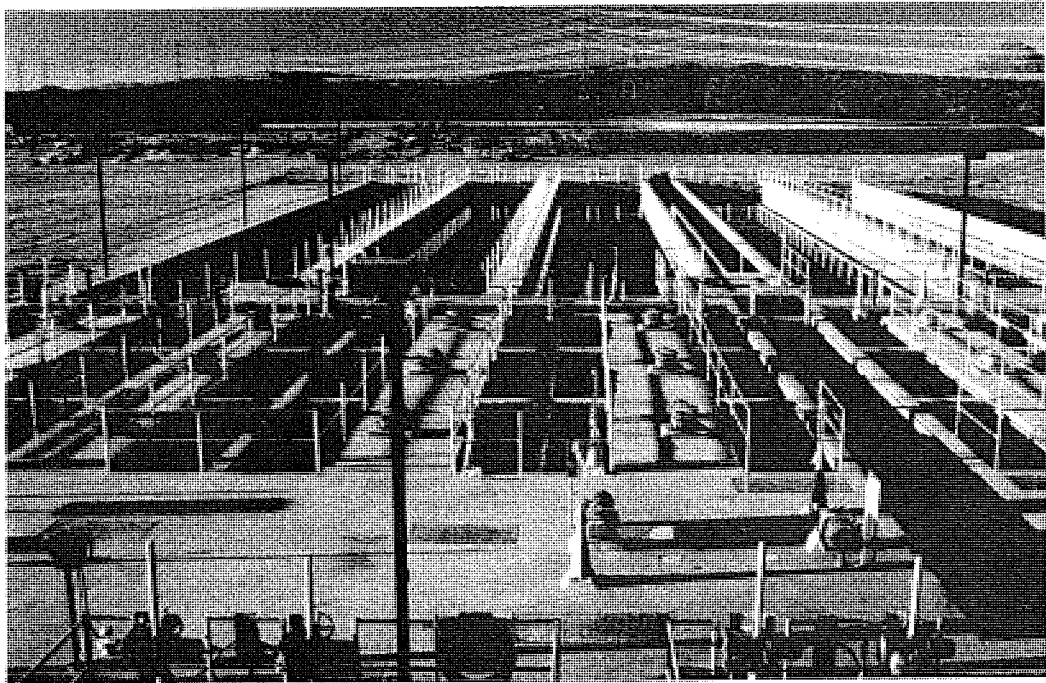


Figure 4 – Vertical Turbine Flocculators

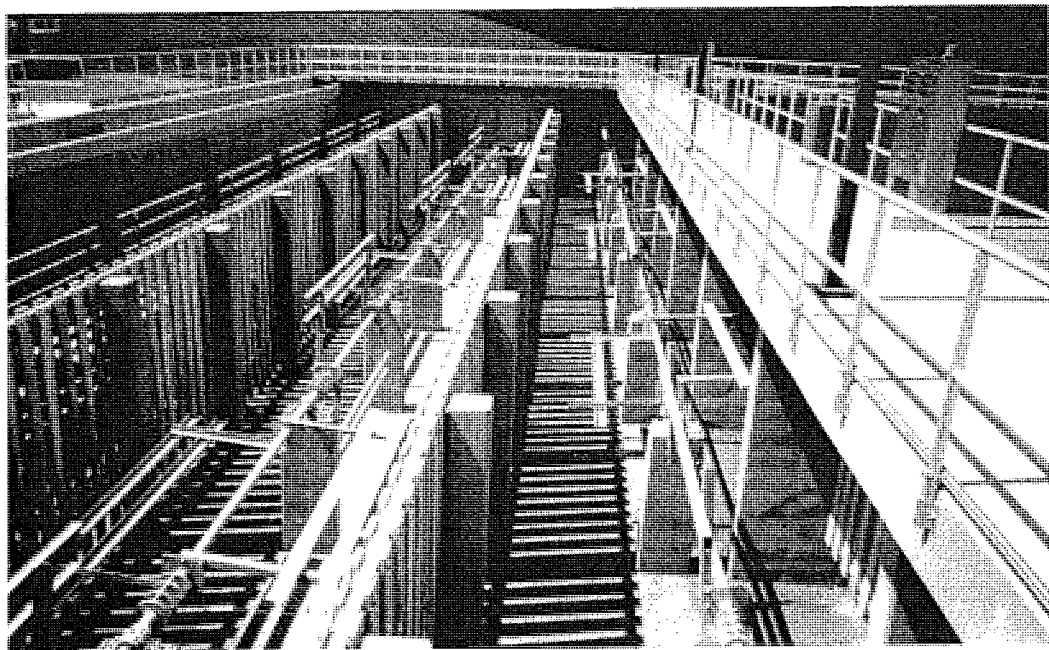


Figure 5 – Horizontal Paddle Flocculators at Similar WTPs

Horizontal paddle flocculators, as shown in **Figure 5**, are an alternate flocculator option to be considered for large basins. Two locations where horizontal paddle flocculators are currently in used are Greenville, SC and Fairfax County, VA. For this

report, costs and non-economic factors were compared for vertical turbine flocculators versus horizontal paddle flocculators.

For either flocculator option, the inlet hydraulics will need to be reviewed and potentially modified for good flow distribution. Water currently enters the flocculation inlet channel through a single pipe at relatively high velocity (Figure 6 below). Influent piping arrangements and hydraulics will be addressed separately in the Design Memorandum.

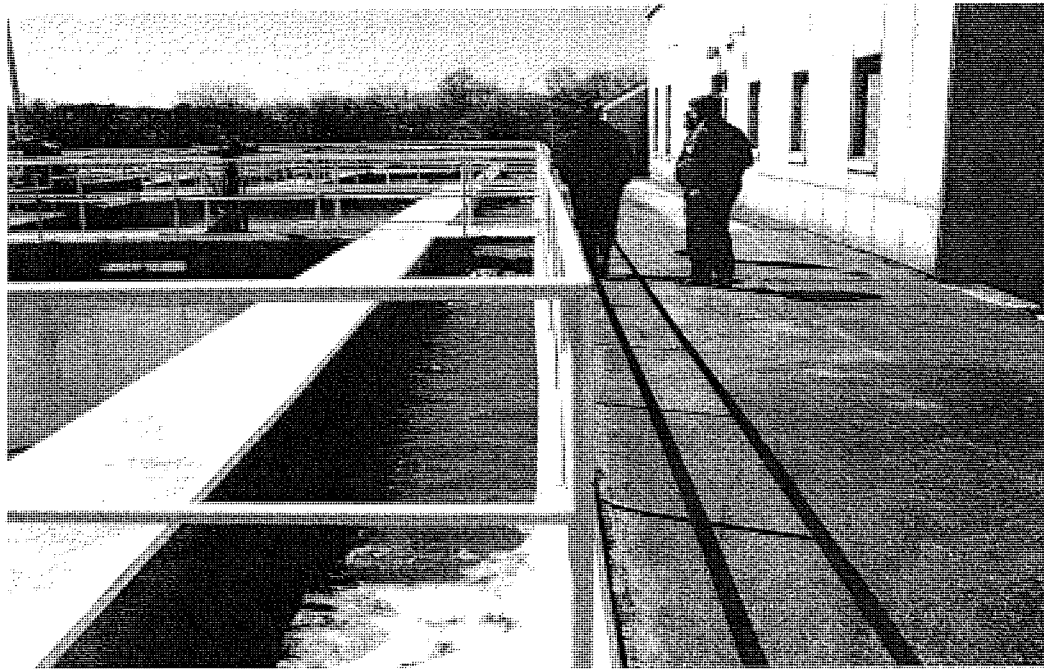


Figure 6 – Flocculation Inlet Channel at Citico WTP

If vertical turbine flocculators are used, then Basin 1 could be subdivided into 4 stages. **Table 3** provides the overall dimensions of the existing sedimentation basins. With vertical turbine flocculators, the compartment width is generally matched to the compartment length for a box shape. Concrete supports would be needed for concrete walkways for access and support of the flocculator drive units.

Horizontal paddle flocculators provide a large surface area of paddles for stirring. This results in less floc shear in the immediate vicinity of the paddle. However, in discussions with plant staff familiar with both types of flocculators, it has been revealed that large floc can be obtained with both options. Horizontal paddle flocculators require a large amount of submerged parts, such as bearings and the rotating parts, that can require appreciable maintenance. Both types of flocculators can have variable speed drives to allow reducing the agitation and hence reducing floc shear in the latter stages of flocculation. The cost of the two options are very close as shown in **Table 2**. Vertical turbine flocculators are recommended due to concerns

with potential differential settlement impacts to the shaft of the horizontal paddle flocculators.

Table 2 – Comparison of Flocculator Alternative Costs

	Horizontal Paddle Flocculators	Vertical Turbine Flocculators
Capital Cost – 50 MGD	\$1.4 million	\$1.4 million
Capital Cost – 60 MGD	\$1.6 million	\$1.7 million

These costs include equipment, structural additions to support and access the equipment, installation, contingencies, contractor overhead and profit, and engineering.

The difference in operation and maintenance (O&M) cost is considered negligible for these two types of flocculators due to very low HP and variable speed drives. Actual power draw is dependent on operating settings. Any difference would be a result of the horizontal paddles using less power, thus offsetting any increased O&M requirements. Typical O&M costs, based on supplier input for the horizontal paddle flocculator option, include \$250 per drive and \$200 per shaft bearing every six months or approximately \$15,200 per year. Typical O&M costs for the vertical turbine flocculator option are \$250 per drive every six months or approximately \$16,000 per year.

Plate Settlers versus Tube Settlers in Sedimentation Basins 1 and 2

Background

Plate and tube settlers will be designed specifically for the requirements of each project basin using the standards outlined below.

Plate Settlers

Typically plate settlers are 4 to 12 foot long (8 foot standard), inclined at 55 degrees and spaced 2" apart with a vertical depth up to 11 feet. Because there is space between the plate packs under the launders, water flows between and below the packs. Typical materials of construction are stainless steel (SS) or fiberglass reinforced plastic (FRP) plates, SS supports, and SS or FRP troughs. Aluminum plates are also available. Currently there are few aluminum plate settler installations; however, the use is expected to increase due to the high cost of stainless steel.

Tube Settlers

Typical tube settlers are 2 to 4 foot long (2" x 2" inside of each tube) with tubes inclined at 60 degrees and submerged 20" to 30" below the basin water surface. Because the tube packs cover the full width of the basin, the space below the packs has to be sufficiently deep to maintain low velocity, (i.e., space of 6 feet or more). Typical materials of construction are PVC or acrylonitrile butadiene styrene (ABS) tubes, SS or coated steel supports, and FRP or SS troughs. Currently most tube settler installations are retrofits of existing conventional settling basins.

Need and Capacity

Improvement of the performance and capacity of Sedimentation Basins 1 and 2 is a priority of American Water. Currently, there is appreciable floc carry-over in cold weather. The addition of tube or plate settlers could improve basin performance and/or increase capacity by providing more area for floc to settle on in a very compact footprint. In this particular case, given the TDEC limit of 2.5 gpm/sf for tube settlers and the fact that high tube settler loadings would defeat the goal of improved settled water turbidity, CDM recommends planning for no higher than 2.5 gpm/sf if tube settlers are selected. However this would limit the capacity of each sedimentation basin to 25 mgd.

Plate settlers can have more plate depth than tube settlers; therefore, plate settlers are generally rated based on the projected area of the plates. Ten State Standards require 0.5 gpm/sf for 80% of the projected plate area. Based on verbal discussions, TDEC indicated they would typically accept manufacturer's recommended loading rates; therefore, 0.5 gpm/sf is a reasonable rate to assume for plate settlers.

Use of plate settlers can provide up to 30 mgd of capacity per sedimentation basin. The potential increase in capacity up to 30 mgd would require further hydraulic analysis to determine any need for larger raw water pipes, but for this Design Critique it was assumed only the 30" pipe feeding each basin would be required to be replaced regardless of the selection. The raw water pipe cost and the cost of the flocculators are not included in the comparison of tube settlers versus plate settlers since these improvements are required with either selection.

Regarding improved O&M capabilities, one issue to consider during design of this upgrade is the increased durability (longer life) at increased cost for the plate settlers relative to the tube settlers. Higher capital costs for plate settlers can be reduced through the consideration of alternate grades of SS or the use of FRP or aluminum plates.

Other design considerations include the following.

Required Depth

Since the plate settlers will use a surface loading rate of 0.5 gpm/sf of projected plate area, fewer plates are needed with deeper plates. The standard for plate settlers is 8 feet plate length with a 7 foot vertical depth for the plate pack, but plates are available up to 12 feet or more in plate length. With a surface loading rate of 2.5 gpm/sf for the tube settlers, there is no regulatory capacity incentive to consider deeper tube settlers,

e.g., 30" or 48" depth instead of 24", but there would be improved performance. Because improved settling is a driver for the need for tube or plate settlers, the deeper tube settlers were considered.

Materials of Construction

Plate and tube settlers are available in multiple materials and colors. Plate settlers are typically 304 SS, 316 SS, aluminum, or FRP. Tube settlers may be PVC or ABS.

Maintenance Accessibility

A grid for walking above the tube settlers for cleaning can be provided to make the maintenance requirements more similar to plate settlers. However, the tube settlers are more fragile than the plate settlers and would have to be replaced sooner. The more frequent replacement costs for tube settlers were considered in the lifecycle cost analysis along with the lower initial capital cost.

Tube settlers would have over six feet of clearance for maintenance. As previously mentioned, plate settlers would have less clearance under the support beams. Using MRI 8 foot long plate settlers, the basins would have approximately 3.5 feet between the bottom of the plate support beams and the floor and about 5 feet between the bottom of the plate settlers and floor. This spacing is tight but acceptable for effective maintenance of these areas. Shorter plate settlers are available from MRI but at a higher cost of roughly 10 – 15% more for a 2 foot shorter plate because more plate settlers would be required. Parkson plate packs are deeper than MRI's and hence leave 1 foot less room for maintenance. A significant disadvantage of the Parkson plant settlers is that there would only be approximately 2.5 feet clear under the beam in Basin 1 for the shortest 8 foot long Parkson plate settlers.

Algae control options include partial covers like walking grids, routine wash downs, periodic pre-chlorination, or other algae inhibitors like permanganate or chlorine dioxide and ultrasonic devices. Algae tends to be more of an issue for tube settlers since they are more prone to clogging. Walking grids were assumed with the tube settlers cost comparison since CDM would recommend their use.

Retrofitting Existing Sedimentation Basins 1 and 2 with Tube Settlers and Plate Settlers

The existing Citico WTP Basins 1 and 2 dimensions are presented in Table 3. This table also identifies the portions of the basin lengths required for flocculation and tube or plate settlers at 25 MGD and 30 MGD. Tube settlers at 30 MGD would require a basin length of 103 feet $((30 \times 694 \text{ gpm}) / (2.5 \text{ gpm/sf} \times 80.7 \text{ ft wide}))$. Basin 1 only has 91 feet available therefore only plate settlers are addressed for this flowrate.

Table 3: Citico WTP Basins 1 and 2 Dimensions

	Basin 1	Basin 2
Existing Inside Width	80' 8.5"	80' 2.5"
Existing Structure Depth	Approx. 13' 8" in sed, varies approx. 14' to 15' in floc	Approx. 15' 0" in sed, varies approx. 15' 2" to 16' 3" in floc
Existing Length	172' 0" total	174' 8" total
Flocculation length at 30 minutes (excludes walls and channels, accounts for uneven floor – avg 12' 9" ft #1, 14' 0" #2)	67' 0" for 25 mgd 81' 0" for 30 mgd	62' 0" for 25 mgd 74' 0" for 30 mgd
Sedimentation length needed for 2.5 gpm/sf tube settlers at 25 mgd	91' 3.5"	91' 3.5"
Sedimentation length needed for 30 mgd at 0.5 gpm/sf with 6 ft long plate settlers	Up to 78' 0" for 25 or 30 mgd	Up to 78' 0" for 25 or 30 mgd

Comparison of Manufacturers of Plate Settlers

Plate settlers with FRP or aluminum plates are less expensive than the same unit with 304 SS plates, and depending on the manufacturer (Parkson), the savings can be as high as 25%. However, the Parkson FRP plate settler cost is approximately the same as the cost of the MRI SS plate settlers.

Plate settlers are rated on the effective surface area of the plates or 80% of actual plate area. This ranges from 0.3 to 0.7 gpm/sf. The recommendation by Ten State Standards is 0.5 gpm/sf and is used herein. Space between each plate pack across the width of the basin allows influent water to flow between the packs.

A quiescent zone (stilling zone) upstream of the plate settlers of between 5 to 15 feet is recommended by the manufacturers.

Parkson / U.S. Filter Corporation manufactures plate settlers with FRP plates and SS frame and troughs. They generally do not offer plate settlers with SS plates because they cannot compete on price. Parkson claims they have FRP plate settlers still in service after more than 25 years.

Meurer Research Inc. (MRI) is a leading supplier of plate settlers with SS and aluminum plates and seem to be the current market leader for SS plates by competitive pricing. They also make PVC tube settlers but do not make plate settlers with FRP plates.

Comparison of Manufacturers of Tube Settlers

Tube settlers are fabricated with plastic tubes (usually PVC), FRP or SS troughs and baffles, and SS supports depending on the manufacturer. This study did not identify a manufacturer that is currently producing a tube settler with SS tubes though MRI did provide example costing. In the cost provided by MRI for another project, the SS

tube settler cost 35% more than the PVC tube settler (with SS troughs and baffles), and 22% more than their SS plate settler, due to the additional material required in tube settlers.

Brentwood Industries produce their tube settlers from a corrugated PVC sheet system with FRP troughs and baffles, and SS supports. To protect the PVC from UV radiation and high pressure hose washing, the system is provided with a black FRP grating on top of the tube packs. With this grating, Brentwood claims their product has a 25 year life. Brentwood is one of the larger manufacturers of tube settlers and plastic filter media. Approximately 75% of their tube settler sales are settling tank retrofits.

Enviropax tube settlers are corrugated ABS plastic sheets with FRP troughs and baffles, and SS supports. However, they do not have a grate to protect the plastic tubes from UV light and pressure washing. Because of the materials of construction and no UV protection, a complete replacement is assumed after 15 years.

MRI tube settlers use PVC tubes with SS troughs, baffles and supports. Although they are a leading supplier of SS plate settlers they have not made SS tube settlers because, according to MRI, they cost more than SS plate settlers. The PVC tube settlers are assumed to need replacement after 15 years.

Cost Comparison

The two high rate settler options were compared based on basin dimension requirements and life cycle costs using the assumptions given below. The findings are presented in **Table 4**.

The cost differences in American Water's design concept between plate and tube settlers are as follows:

Plate Settlers - \$8.3 million (2000 CPS Cost Estimate)

Tube Settlers - \$5.8 million (2002 CPS Cost Estimate)

Updated supplier cost quotes for the options of tube and plate settlers were obtained for this report. The cost of common elements such as structural repairs to the basins and the addition of flocculators and sludge collectors were not included in the costs in **Table 4**. The costs do include the cost of the plate or tube settlers with supports, effluent launders, installation, taxes, contractor overhead and profit, and contingencies. Since the tubes often have to be replaced within approximately 15 years due to tearing from washing and UV embrittlement, the cost of one replacement for the tube settlers is included in the 25 year life cycle cost comparison even though a walking grid is included to lessen the potential for tearing. The cost comparison is as follows:

- Initial installation cost is based on the price of the settler equipment provided by the manufacturer. Tube replacement (after 15 years) assumes only the tubes are replaced and supports are unchanged.

- Costs provided by manufacturers are based on a 2.5 gpm/sf loading rate (TDEC requirement for tube settlers).
- Tube settler costs are based on costs provide by Brentwood Industries. Plate settler costs are provided by MRI. Parkson only offered plate settler costs for 8 feet long plates. Those costs were for Parkson FRP plates and were similar to MRI's costs for SS plates. The 8 feet long Parkson plate packs were determined to be too deep for the existing basins and Parkson did not offer a more shallow plate. The aluminum plate option uses 304 SS for supports with separation of dissimilar metals. Enviropax provided tube settler material cost, but did not include supports and a walkway grid in their estimate.
- 25 year comparison period
- 15 year life for PVC tube settlers, with complete replacement at year 15
- Average inflation rate of 5%
- Costs are expressed in 2007 US dollars and are based on material cost as of April 2007.
- Incremental additional cost of tube settler maintenance over plate settlers is assumed as 2 person-days per month at \$30 per hour for the 25-year comparison period; this added \$ 0.1 million to the tube settler option.

Table 4 - 50 mgd options (25 mgd per basin)

	Stainless Steel Plate Settlers	FRP Plate Settlers	Aluminum Plate Settlers	2' Deep PVC Tube Settlers	4' Deep PVC Tube Settlers
Initial Installation	\$ 5.4 million	\$ 5.0 million	\$ 4.3 million	\$ 3.1 million	\$ 3.5 million
Tube Replacement	N/A	N/A	N/A	\$ 0.4 million	\$ 0.7 million
Subtotal	\$ 5.4 million	\$ 5.0 million	\$ 4.3 million	\$ 3.5 million	\$ 4.2 million
Extra O&M	N/A	N/A	N/A	\$ 0.1 million	\$ 0.1 million
Life Cycle Comparative Cost	\$ 5.4 million	\$ 5.0 million	\$ 4.3 million	\$ 3.6 million	\$ 4.3 million

Where N/A = Not Applicable in relative comparison

60 mgd options (30 mgd per basin)

	Stainless Steel Plate Settlers	FRP Plate Settlers	Aluminum Plate Settlers
Initial Installation	\$ 6.5 million	\$ 6.0 million	\$ 5.0 million
Subtotal	\$ 6.5 million	\$ 6.0 million	\$ 5.0 million
Extra O&M	N/A	N/A	N/A
Life Cycle Comparative Cost	\$ 6.5 million	\$ 6.0 million	\$ 5.0 million

Where N/A = Not Applicable in relative comparison

These costs are fairly consistent with those of the prior studies considering the past studies may have included some of the other costs required for the basins for flocculator, sludge collector and/or structural upgrades. The fact that the costs of the tube settlers in **Table 4** appear closer to the plate settlers than in the prior study is possibly related to factors used to make this comparison a level comparison such as accounting for tube replacement and requiring 304 SS supports with the tube settlers.

Conclusions

Tube settlers would be limited to 25 mgd capacity at the TDEC requirement of 2.5 gpm/sf loading rate. Plate settlers can accommodate up to 30 mgd or higher capacity.

Tube settler packs can require less depth than plate settler packs but this dimensional advantage is reduced due to the larger flow zone below the packs required for tube settlers.

The 25-year life cycle costs indicate that the 2 foot deep tube settlers are the least cost alternative for 25 mgd capacity per basin. The 4 foot deep tube settlers would have better performance, but there is no regulatory capacity incentive to use the deeper tube settlers. Aluminum plate settlers are similar in cost to the tube settlers and would provide the structural and longevity benefits of plate settlers. However, the clearance under the plate settlers support beam would require one to duck under the beams when doing maintenance, and the tops have been reported to be slippery when walking on them. Typically tube settlers have a walking grid on top of them. If 30 mgd capacity or greater is desired, then the least cost alternative is aluminum plate settlers. SS plate settlers have appreciable more cost due to the high current cost of SS.

Tube settlers were selected by American Water assuming a treatment capacity of 50 mgd. Tube Settlers offer low cost, chemical resistance to chlorine and chloride, compatibility with shallow basin and competition between vendors. The use of either 3 foot or 4 foot tubes with limited effluent trough spacing will be reviewed further. These options will improve performance with little increase in cost.

Sludge Removal Under Plate Settlers

The sedimentation basins currently have chain and flight scrapers that were reported to be old and in need of upgrade or replacement. It is likely that the existing sludge collectors would interfere with the option of installing plate settlers given their depth.

At the existing shallow depth, Sedimentation Basin 1 would have less clearance below the plate settlers than in Sedimentation Basin 2, however plates could be used in basin 1 if low profile sludge collectors and 5 ft or shorter plates are used.

Using 8 foot long aluminum plate settlers with a beam of approximately 1.5 foot deep spaced every 15 to 20 feet, the clearance between the bottom of the beam and the sedimentation basin floor will be approximately 3 ½ feet in Basin 1 and 4 ½ feet in Basin 2. This does not provide adequate clearance for maintenance without squatting to go under the beams and leaves little room for the sludge collectors. However,

cable driven collectors such as the Claritrac by Leopold and the Hoseless Sludge Collector by MRI can work in this situation. Both of these technologies use a cable to pull a pipe with holes in it along the floor. The difference in water level from the inside of the sedimentation basin to the point of sludge discharge provides the required driving head to push the sludge through the piping. In the case of Claritrac (Figure 7), the sludge collection pipe traverses the entire length of the basin. A hose is connected to it for sludge withdrawal giving the flexibility to traverse the basin. The Hoseless Sludge Collector by MRI has the perforated pipe connected to a telescoping pipe which extends up and back to traverse the basin.

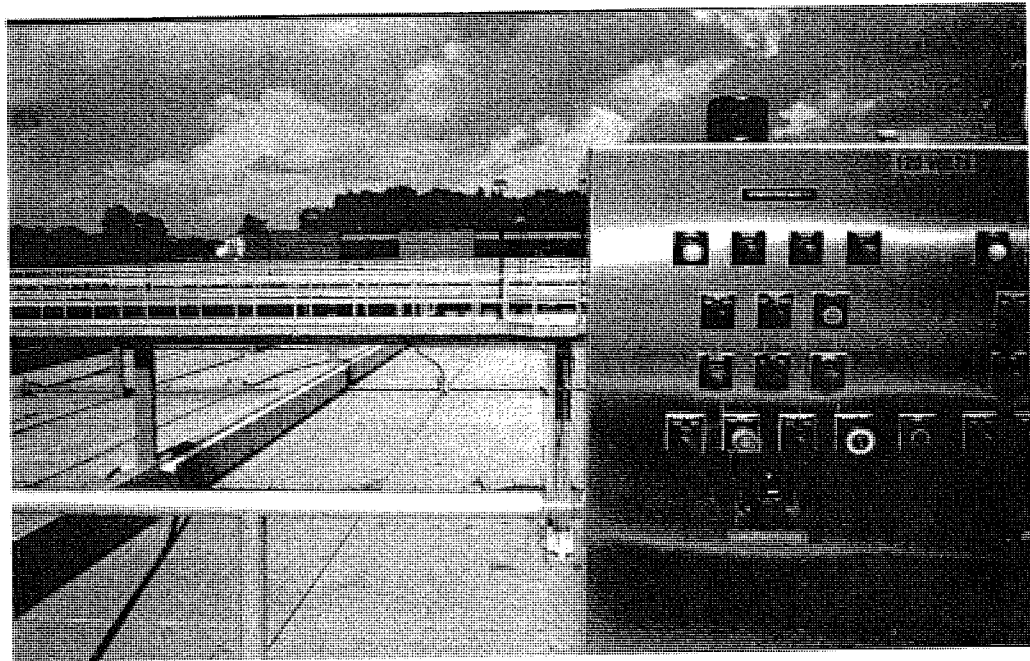


Figure 7: Leopold Claritrac Sludge Collectors in the 90 mgd treatment capacity Adkins Water Treatment Plant, Greenville, SC

The cost to replace the existing chain and flight units is estimated to be \$800,000 including demolishing the existing sludge scrapers, purchasing and installing the new sludge collectors, contingencies, and contractor mark-ups.

Since American Water and CDM have decided to pursue the use of tube settlers, there is potentially room to consider the use of chain and flight collectors. This will prevent the concerns voiced by plant staff of the sedimentation basin sludge concentration from being diluted if a low profile sludge collection system was selected.

60" Diameter Raw Water Pipe Reliability

There is a short section of raw water piping immediately upstream of the raw water control building where all of the raw water passes through a single 60" pipe with no redundant/parallel pipe. There is also some concern over reliability of the two pipes in the raw water control building where the pre-treatment chemicals are normally fed.

Please see **Figure 8** of the inside the Raw Water Control Building and **Figure 9** for a schematic of the existing piping.

This section of 60" diameter pipe is a reliability and redundancy concern that can be addressed by adding another parallel 60" raw water pipe or by implementation of one of the alternate options discussed below.

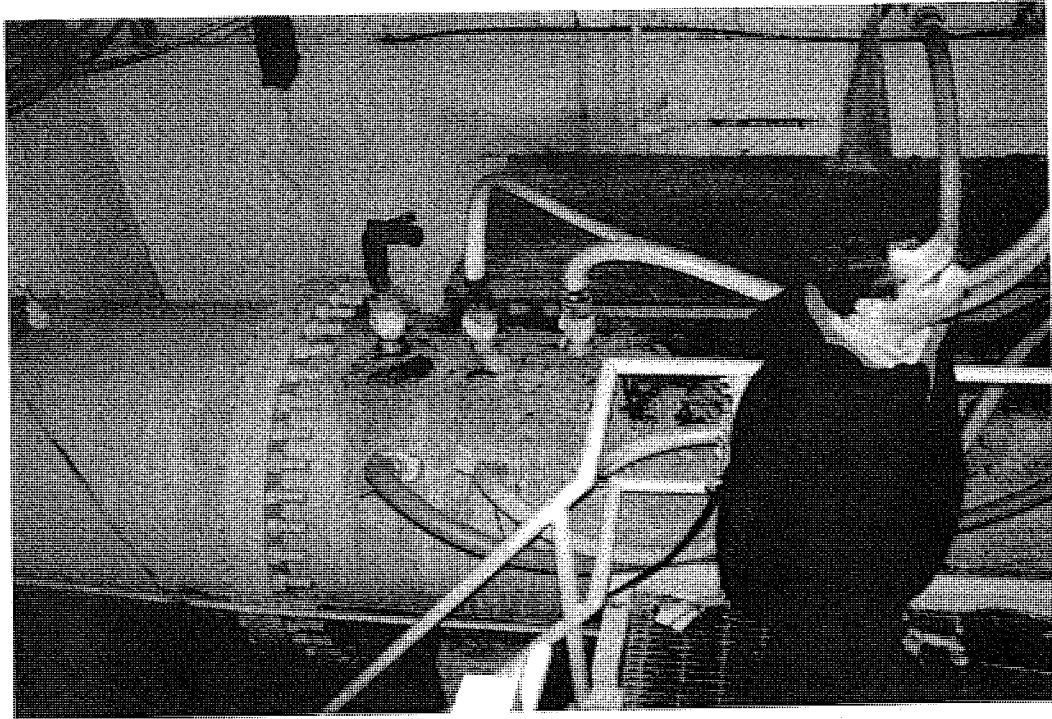


Figure 8 - Chemical Feed inside Raw Water Control Building at Citico WTP

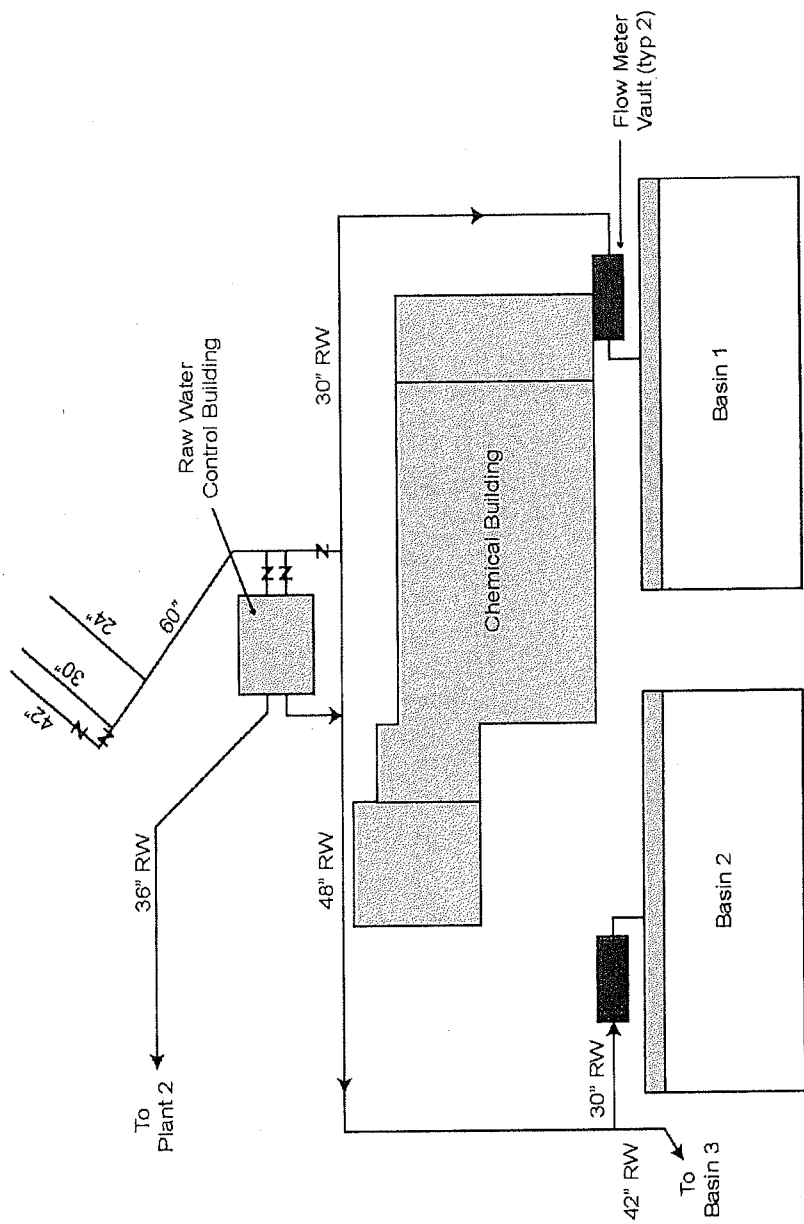


Figure 9: Schematic of Existing Raw Water Pipe

Some of the options below also increase the redundancy of pre-treatment chemical feeds. For more detail, Figures of each option are provided.

1. Option 1 - Parallel the 60" pipe with a second 60" pipe to eliminate the potential single point of failure as shown in **Figure 10**.
2. Option 2 - Parallel the 60" pipe to eliminate the potential single point of failure but with a smaller pipe that normally flows in parallel with the 60" pipe. This pipe could be downsized since it will be a back-up and could be used in emergency, lower flows only. Yard piping drawings show the 60" pipe being fed by a 42", a 30" and a 24" pipe. It would be inconsistent to parallel the 60" pipe with more than a 42" pipe when upstream reliability is limited by the 3 smaller pipes. If the 42" pipe is out of service, the 30" and 24" pipes are not equivalent to a full 60" pipe. **Figure 11** depicts paralleling the existing 60" pipe with a new 48" pipe.
3. Option 3 – **Figure 12** depicts the addition of another raw water control building similar to the existing building fed by a parallel 60" pipe and connecting to plant 1 and 2 feeds downstream of the control buildings.
4. Option 4 - Construct a separate branch from the 60" pipe that ties into Basin 1 with a new static mixer and chemical injection manhole. The construction of this new branch would result in three large separate feeds; the two existing feed in the raw water control building for plant 2 and basin 2 and the new separate feeds to Basin 1. To provide additional redundancy, a tie-in could be made prior to the raw water control building after the 60" pipe. For even greater redundancy at a higher cost, the new pipe, venturi, and chemical feeds could be upsized to fully back-up Basin 2 as well as normally serving Basin 1. This would require a branch of pipe over to Basin 2. **Figure 13** depicts this option.

A summary of each option to provide raw water piping redundancy and reliability is presented with estimated capital costs in **Table 8**.

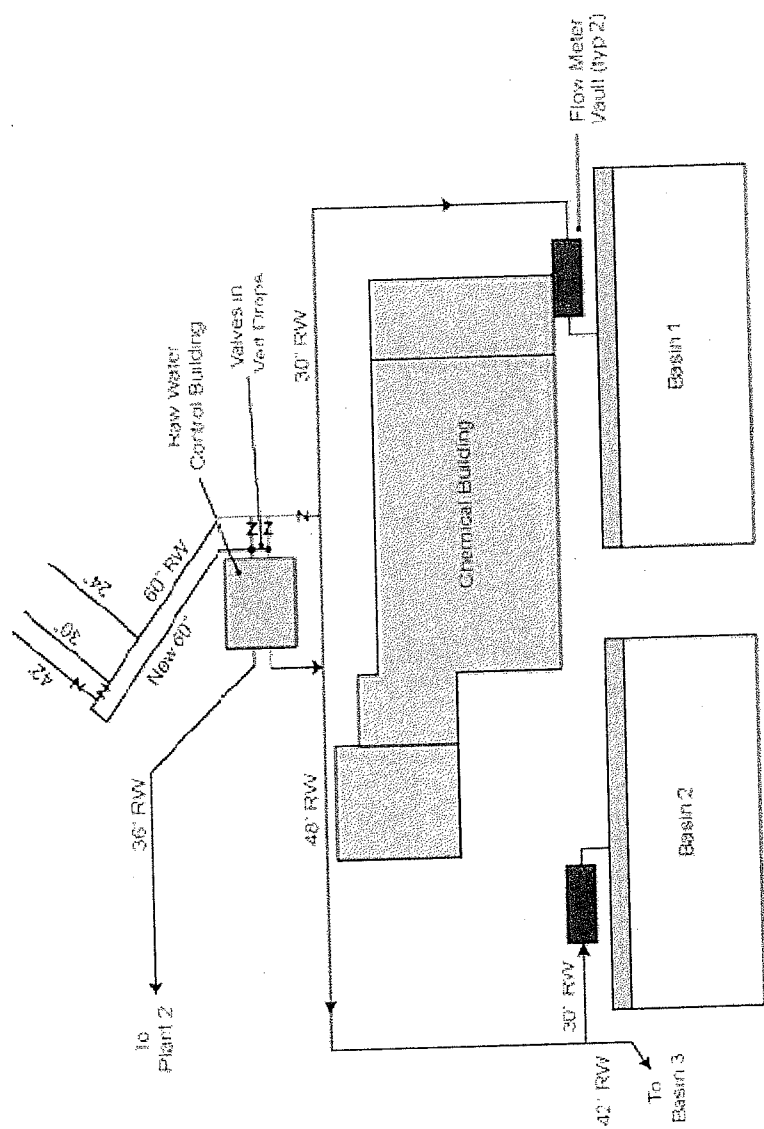


Figure 10 - Option 1: Parallel 60" and No New Chemical Feeds

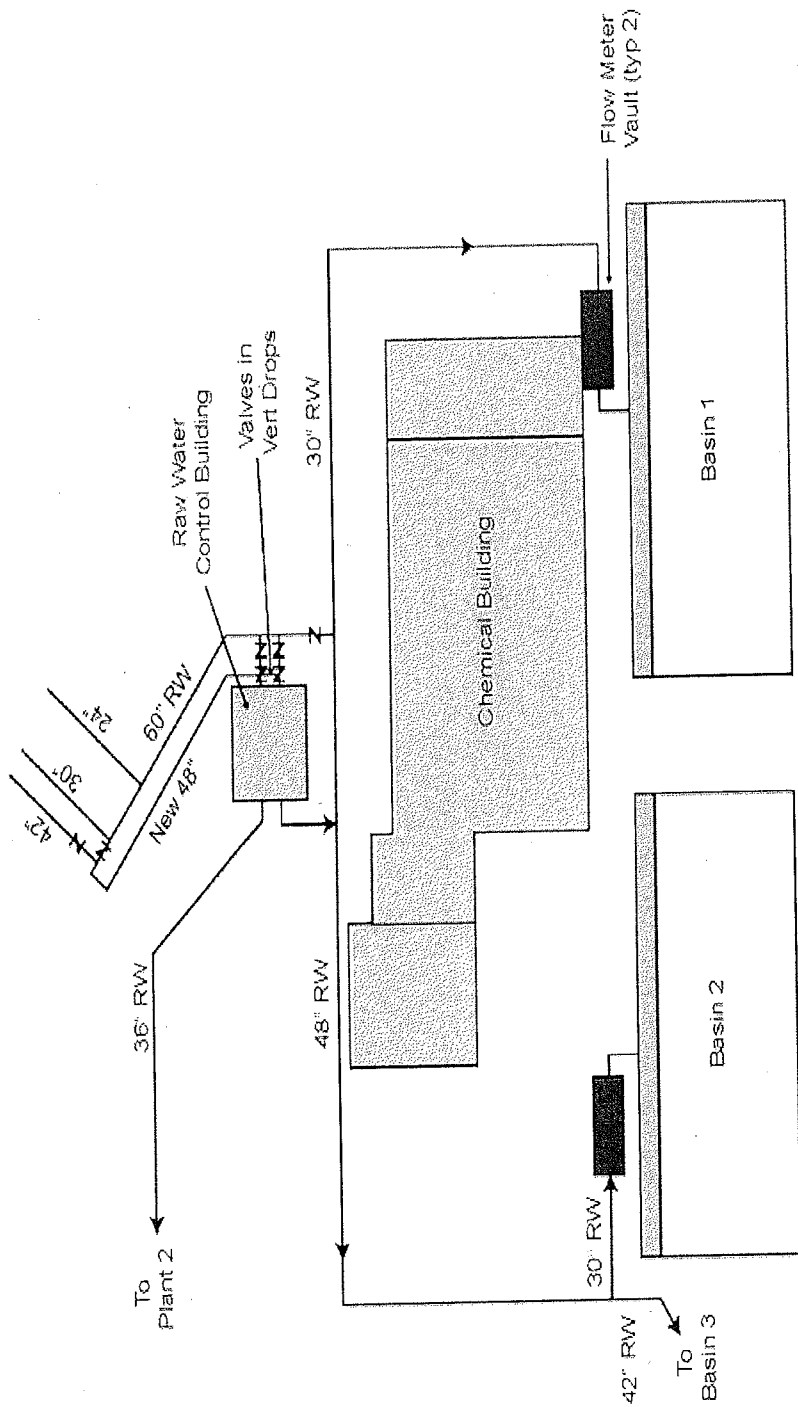


Figure 11 - Option 2: Parallel 48" and No New Chemical Feeds

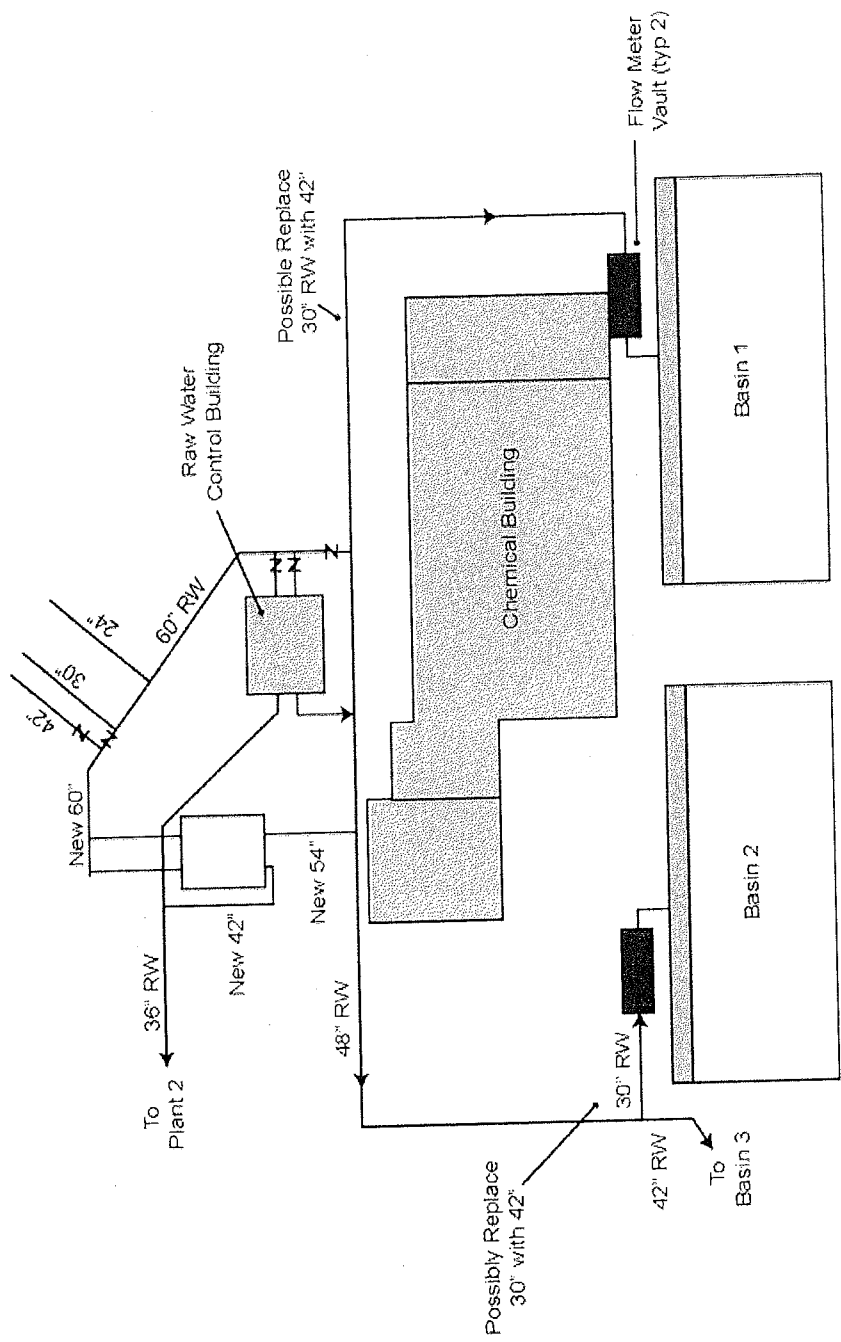


Figure 12 – Option 3: Parallel 60" and New Chemical Feed

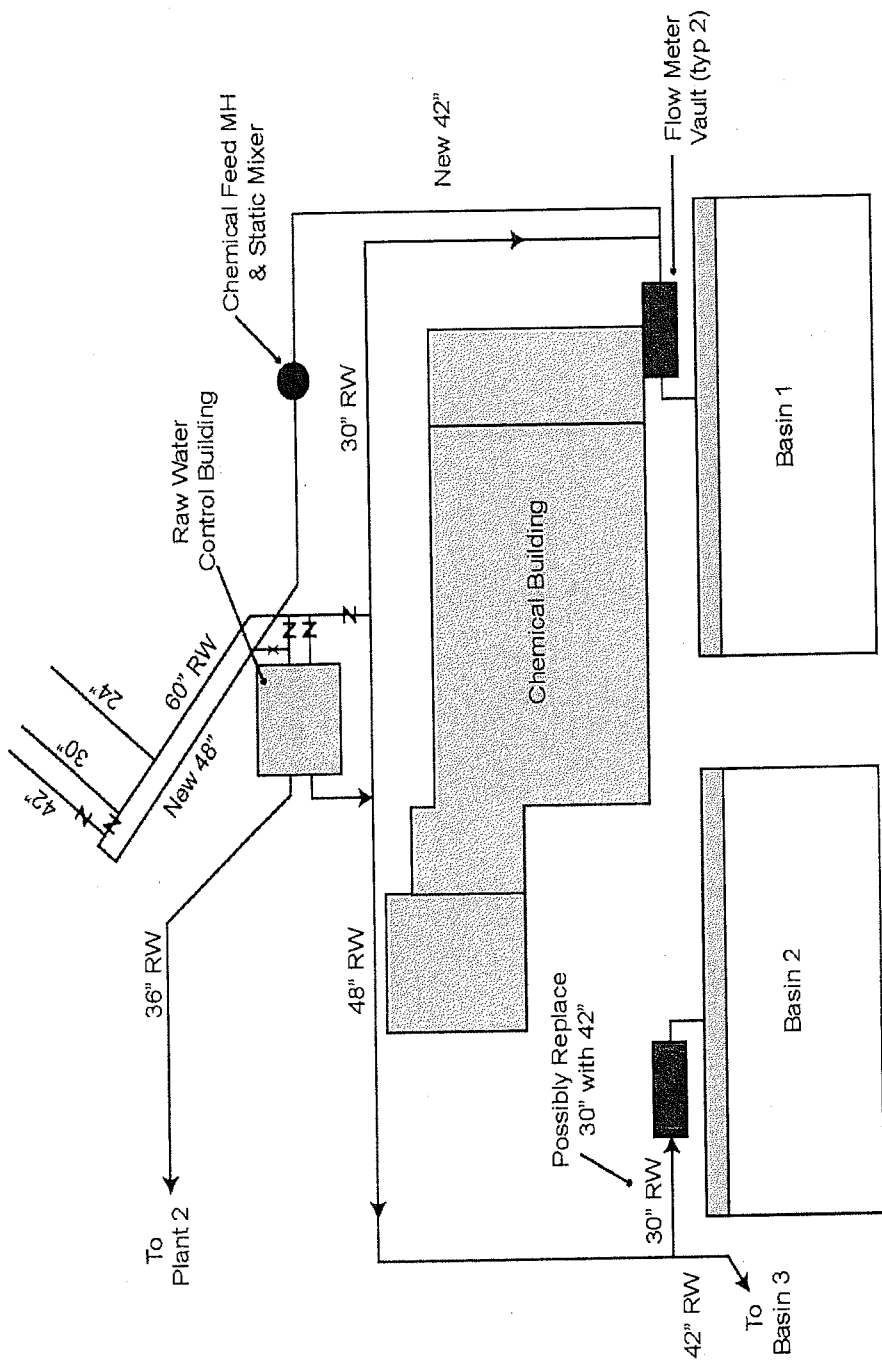


Figure 13 - Option 4: New Raw Water Line to Basin 1

Table 5. 60" Piping Options with Estimated Construction Costs

Option	Estimated Construction Cost
1. Parallel the 60" pipe with another 60" pipe	\$ 0.9 million (may also require larger feeds to Basins 1 and 2)
2. Parallel the 60" pipe with a 48" pipe	\$ 0.5 million (may also require larger feeds to Basins 1 and 2)
3. Add another raw water control building	\$ 1.5 million (may also require larger feeds to Basins 1 and 2)
4. Separate 48"/42" pipe with tie-in to RW control building and new 42" pipe to basin 1 with a new static mixer and chemical injection manhole	\$ 1.0 million (addresses need for larger feed to Basin 2 for 30 mgd)

Option 2 is the recommended approach based on cost-effectiveness pending completion of the hydraulic analysis.

Related to the above options but not included in the scope of this project is the effectiveness of the existing chemical mixing. Metal salt coagulants generally perform best with intense mixing at the point of feed. The plant does not appear to have intense mixing at the point of coagulant feed based on the current chemical feed arrangement. Plant staff could conduct jar tests to compare the currently mixing intensity to high intensity mixing to assess if the addition of flash mixing merits further analysis and possible investment in new flash mixers. The costs for the possible addition of flash mixers will be evaluated in the Design Memorandum.

Chemical Off-loading Truck Relocation and Containment

The existing location of the chemical off-loading station has created concerns regarding risks associated with chemical trucks maneuvering a steep hill and narrow curves. Relocating the off-loading station to the old alum building was suggested as an alternate site. Containment of the area must also be addressed.

The unloading area should be graded so that it is level and have curbing and drainage piping to contain any potential spills or leaks. The old alum building is a viable option for the new off-loading location; another alternate location would be closer to the highway to lessen the distance to the chemical building.

The chemicals to be transferred include caustic, orthophosphate, fluoride and polyaluminum chloride. Tank vents will be checked for ample sizing to avoid over-pressurizing the tanks. The chemical level in the tanks and high level alarms should also be displayed at the fill location.

It was determined that off-loading chemical delivery trucks at the bottom of the hill in the vicinity of the old alum building is technically feasible. Due to the distance and rise in elevation, the use of transfer pumps would be needed. Since transfer of four different chemicals is required, the old alum building is likely too small to house all the equipment.

Following the review meeting, a site visit to the plant was made to determine if the addition of a turn-around area for the chemical trucks could be added adjacent to the existing chemical building and Filter Building 2. That location is recommended to reduce the cost and maintenance of pumping and long runs of chemical piping. A containment area will be required as well as quick connections for off-loading chemicals. Complete details of this recommendation will be included in the Design Memorandum.

Summary of Alternative Design Concepts

Preliminary cost comparisons are presented below for the alternative design concepts that have been analyzed in this Design Critique.

Plate settlers versus tube settlers in Sedimentation Basins 1 and 2

- a. Comparison – Tube settlers are made of ABS or PVC and are less durable than plate settlers and therefore are not anticipated to last as long as plates under the wear of weather, time and hose cleaning. Plate settlers are typically made of FRP or SS but can be made of other materials such as aluminum. At 13' 8" depth, sedimentation Basin 1 cannot accommodate a standard 8 foot long plate pack. However, custom-length plate settlers as offered by MRI could be used.
- b. Estimate of the Proposed Construction Cost Savings: Cost savings result if aluminum plate settlers are used instead of SS plate settlers or if tube settlers are used instead of plate settlers. Tube settlers only provide increased capacity for 50 mgd (25 mgd per basin).

Four foot Tube Settlers are recommended because of their low construction cost & superior treatment as compared to 2 foot tube settlers with a small cost increase.

Table 6: 50 mgd options (25 mgd per basin)

	Stainless Steel Plate Settlers	FRP Plate Settlers	Aluminum Plate Settlers	2' Deep PVC Tube Settlers	4' Deep PVC Tube Settlers
Initial Installation	\$ 5.4 million	\$ 5.0 million	\$ 4.3 million	\$ 3.1 million	\$ 3.5 million
Tube Replacement	N/A	N/A	N/A	\$ 0.4 million	\$ 0.7 million
Subtotal	\$ 5.4 million	\$ 5.0 million	\$ 4.3 million	\$ 3.5 million	\$ 4.2 million
Extra O&M	N/A	N/A	N/A	\$ 0.1 million	\$ 0.1 million
Life Cycle Comparative Cost	\$ 5.4 million	\$ 5.0 million	\$ 4.3 million	\$ 3.4 million	\$ 4.3 million

Where N/A = Not Applicable in relative comparison

60 mgd options (30 mgd per basin)

	Stainless Steel Plate Settlers	FRP Plate Settlers	Aluminum Plate Settlers
Initial Installation	\$ 6.5 million	\$ 6.0 million	\$ 5.0 million
Tube Replacement	N/A	N/A	N/A
Subtotal	\$ 6.5 million	\$ 6.0 million	\$ 5.0 million
Extra O&M	N/A	N/A	N/A
Life Cycle Comparative Cost	\$ 6.5 million	\$ 6.0 million	\$ 5.0 million

Where N/A = Not Applicable in relative comparison

- c. Estimate of any Potential Operational Cost Savings: Tube settlers would have higher operational costs than plate settlers, primarily due to the need to replace the tube settlers more frequently than the plate settlers. Cleaning would also take longer to hose out each tube. These additional operation and maintenance cost are approximated in the cost estimate above.
- d. Estimate of any cost change for engineering services: Selection of either plate or tube settlers does not impact the cost of engineering services.

Flocculator Replacement

- a. Comparison – The existing flocculators are not functional and require replacement. Two technically viable and commonly used options for flocculators in large basins are vertical turbine flocculators and horizontal paddle flocculators. Either would function well. The cost of the two options are similar as shown in Table 7. Vertical turbine flocculators are recommended due to concerns with potential differential settlement impacts to the shafts of the horizontal paddle flocculator option and to allow maintenance items to be located above the water where feasible.
- b. Estimate of the Proposed Construction Cost Savings: The cost of the two flocculator options are summarized below:

Table 7: Comparison of Flocculator Alternative Costs

	Vertical Turbine Flocculators	Horizontal Paddle Flocculators
Capital Cost – 50 MGD	\$1.4 million	\$1.4 million
Capital Cost – 60 MGD	\$1.6 million	\$1.7 million

These costs include equipment, structural additions to support and access the equipment, installation, contingencies, contractor overhead and profit, and engineering.

- c. Estimate of any Potential Operational Cost Savings: Any operational cost saving is expected to be negligible.

- d. Estimate of any cost change for engineering services: Selection of flocculator type does not impact the cost of engineering services.

60" Raw Water Pipeline Reliability

- a. Comparison – Multiple options have been presented for paralleling the existing 60" raw water main for increased reliability. The recommended option is a new 48" parallel pipe. This option provides substantial cost savings over the options of a parallel 60" pipe or of building a second raw water control building.
- b. Estimate of the Proposed Construction Cost Savings: The cost of the recommended option is \$0.5 million. The other options range in cost up to \$1.5 million.
- c. Estimate of any Potential Operational Cost Savings: There are no significant changes in operational costs for these options.
- d. Estimate of any cost change for engineering services: The recommended option does not require increased design cost. The only option that would have increased design cost is the design of cast-in-place concrete structures, however none are recommended.

Funding Project Justification - 26020503

Company: 26-Tennessee American Water Co		District: 2602-TN-Chattanooga
FP Description: Citico WTP Improve Phase 1A & 1B		FP Number: 26020503

A1a. Document Prepared By		A1b. Asset Owner
Preliminary - 2	Galavotti, Michael	watsonj
Budget - 3	Galavotti, Michael	Watson, John S.
Preliminary - 4	McGee, Kristina	Watson, John S.
Implementation - 5	McGee, Kristina	Watson, John S.
Implementation - 6	McGee, Kristina	Watson, John

A2a. Recommended via Planning Study		A2b. Study Project Number
Preliminary - 2	yes	A2.B5,B8,B12,B15,B19
Budget - 3	yes	see above
Preliminary - 4	yes	See Above
Implementation - 5	yes	See Above
Implementation - 6	yes	See Above

A2c. Study Title & Year	
Preliminary - 2	2000
Budget - 3	2000
Preliminary - 4	2000
Implementation - 5	2000
Implementation - 6	2000

A3. Problem or Opportunity	
Preliminary - 2	The Citico WTP does not have the reliable capacity to meet projected demands to year 2020; there is no containment area for unloading bulk chemicals; and compliance with the Stage 2 D/DBP Rule may become difficult using of free chlorine.
Budget - 3	see above
Preliminary - 4	See Above
Implementation - 5	See Above
Implementation - 6	TAWC was told by TDEC that repairs to the flocculators in Basin 1 and 2 are required. Also, TDEC requested that a containment area for unloading bulk chemicals be constructed. See attached letters. Rapid mix needs to be installed as well.

Funding Project Justification - 26020503

A4. Recommended Solution

Preliminary - 2	Phase I will address flocculators and sedimentation basins (pretreatment), hydraulic bottle necks, chemical tank truck containment and ammoniation design only
Budget - 3	See above
Preliminary - 4	In addition to the scope described above, a new generator, chlorine feed and distribution equipment, and jet mixers (36 inch and 54 inch) are included in the project
Implementation - 5	See Above
Implementation - 6	Same solution as above however to maintain capital expenditures at budgeted levels, this project has been divided into two separate phases. See section A8 for the scope of work of each phase and the new schedule and costs.

A5. Measurable Benefits

Preliminary - 2	Increased reliable pretreatment capacity to 68 MGD
Budget - 3	See above
Preliminary - 4	See above
Implementation - 5	See Above
Implementation - 6	Phase 1A addresses repairs to flocculators in Basin 1&2; containment at chemical truck unloading area per TDEC's letters and other reliability items. Phase 1B addresses flocculator installation in Basin 3 and reducing DBP w/ new Chlorine injection points.

A6a. Schedule

	Est Start	Est Impl	Est In Service	Est Complete	Critical Date
Preliminary - 2	11/30/2006	8/29/2008	3/22/2010	11/22/2010	4/1/2010
Budget - 3	11/30/2006	8/29/2008	3/22/2010	11/22/2010	4/1/2010
Preliminary - 4	11/30/2006	9/30/2008	6/30/2010	12/31/2010	6/30/2010
Implementation - 5	11/30/2006	9/30/2008	6/30/2010	12/31/2010	6/30/2010
Implementation - 6	6/1/2006	10/30/2009	10/31/2010	4/1/2013	9/30/2012

A6b. Critical Date Explanation

Preliminary - 2	Rate case alignment, plant in-service prior to peak season, pretreatment complete prior to filtration addition.
Budget - 3	See above
Preliminary - 4	See above
Implementation - 5	See above
Implementation - 6	There are two separate in-service dates for the project. Phase 1A - 8/31/2010 (in-service) and 12/31/2010 (final completion) and Phase 1B - 9/30/2012 (in-service) and 4/1/2013 (final completion) which align with two different rate cases.

Funding Project Justification - 26020503

A7. Project Cost and VOW Forecast

Expenditure Type

Task	Estimate Revision: 9					
	Proj Total	Prev Total	2010	2011	2012	2013
Preliminary - 2						
Additions	0	0	0	0	0	0
<none>						
2-Preliminary (FP)	632,634	632,634	0	0	0	0
3-Implementation (FP)	10,050,000	8,560,000	1,490,000	0	0	0
AFUDC - Equity	1,253,964	524,532	729,431	0	0	0
Overheads	1,762,969	1,490,084	272,885	0	0	0
Deferred						
<none>	395	395	0	0	0	0
Overheads	0	0	0	0	0	0
Expense/Revenue						
<none>	0	0	0	0	0	0
Removals						
<none>	0	0	0	0	0	0
Total:	13,699,962	11,207,846	2,492,316	0	0	0

Budget - 3

Task	Estimate Revision: 9					
	Proj Total	Prev Total	2010	2011	2012	2013
Additions	0	0	0	0	0	0
<none>						
2-Preliminary (FP)	632,634	632,634	0	0	0	0
3-Implementation (FP)	10,050,000	8,560,000	1,490,000	0	0	0
AFUDC - Equity	1,253,964	524,532	729,431	0	0	0
Overheads	1,762,969	1,490,084	272,885	0	0	0
Deferred						
<none>	395	395	0	0	0	0
Overheads	0	0	0	0	0	0
Expense/Revenue						
<none>	0	0	0	0	0	0
Removals						
<none>	0	0	0	0	0	0
Total:	13,699,962	11,207,846	2,492,316	0	0	0

Funding Project Justification - 26020503

A7. Project Cost and VOW Forecast

Expenditure Type

Task	Estimate Revision: 17									
Preliminary - 4	ProJ Total	Prev Total	2010	2011	2012	2013	2014	2015		
Additions										
<none>	0	0	0	0	0	0	0	0	0	0
1-Planning (FP)	786,580	786,580	0	0	0	0	0	0	0	0
2-Preliminary (FP)	73,977	73,977	0	0	0	0	0	0	0	0
3-Implementation (FP)	13,586,710	10,211,000	3,375,710	0	0	0	0	0	0	0
AFUDC - Equity	1,327,665	704,761	622,905	0	0	0	0	0	0	0
Overheads	2,228,821	1,690,434	538,387	0	0	0	0	0	0	0
Deferred										
<none>	395	395	0	0	0	0	0	0	0	0
Overheads	0	0	0	0	0	0	0	0	0	0
Expense/Revenue										
<none>	0	0	0	0	0	0	0	0	0	0
Removals										
<none>	0	0	0	0	0	0	0	0	0	0
3-Implementation (FP)	100,000	100,000	0	0	0	0	0	0	0	0
Overheads	15,400	15,400	0	0	0	0	0	0	0	0
Total:	18,119,547	13,582,546	4,537,002	0	0	0	0	0	0	0
Estimate Revision: 19										
Implementation - 5	ProJ Total	Prev Total	2010	2011	2012	2013	2014	2015		
Additions										
2-Preliminary (FP)	134,243	134,243	0	0	0	0	0	0	0	0
3-Implementation (FP)	13,266,034	10,106,790	3,159,244	0	0	0	0	0	0	0
AFUDC - Equity	1,105,877	600,776	505,101	0	0	0	0	0	0	0
Overheads	173,446	136,281	37,166	0	0	0	0	0	0	0
Removals										
3-Implementation (FP)	200,000	200,000	0	0	0	0	0	0	0	0
Overheads	15,400	15,400	0	0	0	0	0	0	0	0
Total:	14,895,000	11,193,490	3,701,510	0	0	0	0	0	0	0
Estimate Revision: 28										
Implementation - 6	ProJ Total	Prev Total	2010	2011	2012	2013	2014	2015		
Additions										
2-Preliminary (FP)	25,057	25,057	0	0	0	0	0	0	0	0
3-Implementation (FP)	13,935,492	1,306,492	4,244,000	2,397,000	5,688,000	300,000	0	0	0	0

9/23/2010

Funding Justification

Funding Project Justification - 26020503

A7. Project Cost and VOW Forecast

Expenditure Type		Estimate Revision: 28							
Task		Pro Total	Prev Total	2010	2011	2012	2013	2014	2015
Implementation - 6									
Additions									
AFUDC - Equity		1,164,717	184,875	171,205	66,308	742,329	0	0	0
Overheads		244,695	109,695	54,000	27,000	54,000	0	0	0
Deferred									
<none>		395	395	0	0	0	0	0	0
Expense/Revenue									
<none>		0	0	0	0	0	0	0	0
Removals									
<none>		0	0	0	0	0	0	0	0
3-Implementation (FP)		750,000	0	300,000	450,000	0	0	0	0
Overheads		0	0	0	0	0	0	0	0
Total:		16,120,356	1,626,514	4,769,205	2,940,308	6,484,329	300,000	0	0

A8. Schedule and Cost Discussion

Preliminary - 2	The project scope has changed significantly as structural investigations identified deficiencies in existing walls and floor slabs of sed basins 1 & 2 requiring the rehab and use of Sed basin #3. The costs are based on estimates from CDM,
Budget - 3	see above
Preliminary - 4	Project costs have increased to include RPR Services, ADT Security, CA Services, & planning costs that were not accounted for in the original estimate. Cap Clearing, AFUDC, O&C of 5% and design costs have been adjusted. Also, scope has increased per A4.
Implementation - 5	Bids were received for this project on September 4, 2008. All premits are approved except the building permit with the contractor obtains. A notice to proceed will be issued as soon as approval is given. Project costs have decreased because bids received were less than the engineer's estimate resulting in a savings of \$1 million. Also, the project has been excluded from receiving engineering overhead allocation resulting in a reduction of about \$2 million. Note: The Prelim. Cost (design, etc.) is now \$ \$995,990, as shown on the detailed cost estimate attached below. Work orders are not pulling in actual preliminary charges correctly, causing all charges (prelim, impl) to be brought in as Implementation costs.

Funding Project Justification - 26020503

A8. Schedule and Cost Discussion

Implementation - 6

To maintain capital expenditures at budgeted levels, this project has been divided into two separate projects. Phase 1A which will consist of: Chemical Unloading Station, structural repairs and flocculation work for Basin 1 & 2, Jet Mixer work in Raw Water building including new roof work, Yard Piping 48" Parallel Raw Water Piping, 24" & 30" Parallel Finish Water Piping, Filter Aid building modifications and electrical gear, Generator installation, New electrical service, Necessary SCADA to support the repairs.

Phase 1B which will consist of: Replacement of Basin 3 with two new sections (3A & 3B), Installation of Chlorination Equipment and Building, Necessary SCADA to support the work in Basin 3.

This IP contains both Phase 1A and Phase 1B.

The increase to the overall project cost of approximately \$1.2 million is the result of dividing the original project into 2 phases and extending its duration over 4 years. There will be separate mobilization and demobilization for each phase of work, an addition of 15 to 18 months of field overhead and RPR services costs, as well as an increase in AFUDC and labor overhead costs because of recent increases in these rates. Construction costs which reflect the new phasing process have been verified by contractor during project re-packaging meeting in April 2009.

A9. Rate Impact (%)

Preliminary - 2

Budget - 3

Preliminary - 4

Implementation - 5

Implementation - 6

4.933 detailed Prelim 2 Citlico WTP

See above

6.263 % - See revised worksheet

5.22 % - See revised worksheet

5.657 % - See revised worksheet

A10. Asset and Purpose Codes		Asset Code	Purpose Code	%
Stage				
Preliminary - 2	WTR2. Treatment & Residuals		1. Regulatory Compliance and Goals	50
Preliminary - 2	WTR2. Treatment & Residuals		2. Capacity to Meet Growth	50
			Total for Stage 2	100
Budget - 3	WTR2. Treatment & Residuals		1. Regulatory Compliance and Goals	50
Budget - 3	WTR2. Treatment & Residuals		2. Capacity to Meet Growth	50
			Total for Stage 3	100
Preliminary - 4	320 - Water Treatment Plant Equip		1. Regulatory Compliance and Goals	50
Preliminary - 4	320 - Water Treatment Plant Equip		2. Growth/Capacity in Franchise	50
			Total for Stage 4	100

Funding Project Justification - 26020503

A10. Asset and Purpose Codes		Asset Code	Purpose Code	%
Stage	320 - Water Treatment Plant Equip		1. Regulatory Compliance and Goals	100
Implementation - 6			Total for Stage 6	100

B1. Project Manager

Preliminary - 2	Galavotti, Michael
Budget - 3	Galavotti, Michael
Preliminary - 4	McGee, Kristina
Implementation - 5	McGee, Kristina
Implementation - 6	McGee, Kristina

B2. Background

Preliminary - 2	Citico WTP existing reliable capacity is 59,875 MGD. The max day demand (including in-plant use) is projected to be 65 mgd in 2015 and 68 mgd in 2020. The existing flocculators are in disrepair and have been cited by TDEC. There is no containment at the chemical truck unloading area. WQ data indicates that the TAW system may be unable to meet the future Stage 2 D/DBP rules, that ammoniation would be an option to solve.
Budget - 3	see above
Preliminary - 4	See Above
Implementation - 5	See Above
Implementation - 6	See above and the attached TEDC Letters. This IP doesn't contain any additional pumping so increased reliable capacity will not be added at this time.

B3. Recommended Project Details

Preliminary - 2	Provide 3 stage flocculation for basins 1, 2, & 3. Increase the capacity of basin 3 to 28 MGD with the addition of plate settlers and dividing walls; provide chemical truck containment and turnaround, provide a parallel raw water line around hydraulic bottleneck and design ammoniation facilities. Construction of ammoniation facilities will be funded as a separate project.
Budget - 3	see above
Preliminary - 4	See Above
Implementation - 5	See Above

Funding Project Justification - 26020503

B3. Recommended Project Details

Implementation - 6

To maintain capital expenditures at budgeted levels, this project has been divided into two separate phases. Phase 1A which will consist of:

- Chemical Unloading Station, structural repairs and flocculation work for Basin 1 & 2,
- Jet Mixer work in Raw Water building including new roof work,
- Yard Piping 48" Parallel Raw Water Piping,
- 24" & 30" Parallel Finish Water Piping,
- Filter Aid building modifications and electrical gear,
- Generator installation,
- New electrical service,
- Necessary SCADA to support the repairs

Phase 1B which will consist of:

- Replacement of Basin 3 with two new sections (3A & 3B) including new walls and floor, new flocculation equipment, new sedimentation equipment (plates), new sludge collector system, installation of chlorination equipment and building, necessary SCADA to support the work in Basin 3.

B4. Project Delivery Risks

Preliminary - 2

Budget - 3

Preliminary - 4

Implementation - 5

Implementation - 6

Maintaining plant capacity during construction and working in and around existing structures

See above

See Above

See Above

See Above

B5. Investigated Options

Preliminary - 2

Budget - 3

Preliminary - 4

Implementation - 5

Implementation - 6

Pre-treatment options including tubes, plates and actiflo are detailed in the Summary Pre-Treatment Options & Pre-Treatment Options attached

See above

See Above

See Above

See Above

B6a. Entire Facility Retirements		Type of Facility	
Stage	Qty		
Preliminary - 2	0	Buildings	
	0	Interconnections	
	0	and	
	0	Mains (feet)	
	0	Metering/Control Stations	
	0	Pumping/Lift Stations	

Funding Project Justification - 25020503

B6a. Entire Facility Retirements		Type of Facility
Stage	Qty	
	0	Reservoirs/Dams
	0	Storage Tanks
	0	Surface Water Intakes
	0	Treatment Plants
	0	Vehicles
	0	Wells/Springs
Budget - 3		
	0	Buildings
	0	Interconnections
	0	and
	0	Mains (feet)
	0	Metering/Control Stations
	0	Pumping/Lift Stations
	0	Reservoirs/Dams
	0	Storage Tanks
	0	Surface Water Intakes
	0	Treatment Plants
	0	Vehicles
	0	Wells/Springs
Preliminary - 4		
	0	Buildings
	0	Interconnections
	0	and
	0	Mains (feet)
	0	Metering/Control Stations
	0	Pumping/Lift Stations
	0	Reservoirs/Dams
	0	Storage Tanks
	0	Surface Water Intakes
	0	Treatment Plants
	0	Vehicles
	0	Wells/Springs
Implementation - 5		
	0	Buildings
	0	Interconnections

Funding Justification

9/23/2010

Funding Project Justification - 26020503

B6a. Entire Facility Retirements		Type of Facility
Stage	Qty	
	0	and
	0	Mains (feet)
	0	Metering/Control Stations
	0	Pumping/Lift Stations
	0	Reservoirs/Dams
	0	Storage Tanks
	0	Surface Water Intakes
	0	Treatment Plants
	0	Vehicles
	0	Wells/Springs
Implementation - 6		
	0	Buildings
	0	Interconnections
	0	and
	0	Mains (feet)
	0	Metering/Control Stations
	0	Pumping/Lift Stations
	0	Reservoirs/Dams
	0	Storage Tanks
	0	Surface Water Intakes
	0	Treatment Plants
	0	Vehicles
	0	Wells/Springs

B6b. Partial Facility Retirements

Preliminary - 2	Flocculators from basins 1 & 2, rapid mix
Budget - 3	See above
Preliminary - 4	In addition to the above, other items to be removed or replaced include: roof of the raw water mixing building, concrete floor of Basin #3, and some minor structural items at the Chem Feed Building.
Implementation - 5	See above
Implementation - 6	Phase 1A - Retirement of Flocculators from Basin 1 and 2, Rapid Mix and Roof of Raw Water Mixing Building. Phase 1B - Retirement of concrete floor of Basin 3, and some minor structural items at the Filter Aid Building.

Funding Project Justification - 26020503

B7. Preliminary Deliverables

Preliminary - 2	Detailed plans and specifications, permits, and bid results. Studies for filter capacity and TOC/DBP removal.
Budget - 3	See above
Preliminary - 4	See Above
Implementation - 5	See Above
Implementation - 6	See Above

B8. Implementation Delivery Method

Preliminary - 2	Conventional Design-Bid-Build
Budget - 3	Conventional Design-Bid-Build
Preliminary - 4	Conventional Design-Bid-Build
Implementation - 5	Conventional Design-Bid-Build
Implementation - 6	Conventional Design-Bid-Build

B9a. Prelim Resources: Internal

Preliminary - 2	Technical services group
Budget - 3	See above
Preliminary - 4	See Above
Implementation - 5	See above
Implementation - 6	See Above

B9b. Prelim Resources: External

Preliminary - 2	Engineering Consultant
Budget - 3	See above
Preliminary - 4	See Above
Implementation - 5	See Above
Implementation - 6	See Above

B9c. Impl Resources: Internal

Preliminary - 2	Engineering group
Budget - 3	See above
Preliminary - 4	See Above

Funding Project Justification - 26020503

B9c. Impl Resources: Internal

Implementation - 5 See Above

Implementation - 6 See Above

B9d. Impl Resources: External

Preliminary - 2 Engineering Consultant

Budget - 3 see above

Preliminary - 4 See Above

Implementation - 5 See Above

Implementation - 6 See Above

B10b. O&M Salary & Wages

No additional staff is anticipated

see above

See above

See Above

See Above

B10a. Yr-1 NET OpEx Costs-Fuel/Pwr

Preliminary - 2 Consultant estimate \$100k

Budget - 3 see above

Preliminary - 4 See above

Implementation - 5 See Above

Implementation - 6 See Above

B10c. Purchased Water

Preliminary - 2 No purchase water is anticipated

Budget - 3 see above

Preliminary - 4 See above

Implementation - 5 See Above

Implementation - 6 See Above

B10d. Waste Disposal

No waste disposal is anticipated

see above

See above

See Above

See Above

B10e. Chemicals

Preliminary - 2 No additional chemicals are anticipated

Budget - 3 see above

Preliminary - 4 See above

Implementation - 5 See Above

Implementation - 6 See Above

B10f. Other

No additional costs are anticipated

see above

See above

See Above

See Above

Funding Project Justification - 26020503

B11. Priority Ranking

Preliminary - 2	Project No: 1 Out of 33
Budget - 3	Project No: 1 Out of 33
Preliminary - 4	Project No: 1 out of 33
Implementation - 5	Project No: 1 out of 33
Implementation - 6	Project No: 1 out of 33

9/23/2010

Funding Justification

DETAILED ESTIMATE OF COST										
Region: Eastern Division										
Company: Tennessee American Water (28)										
District: Chattanooga										
		DATE	Budget	Oct-07	Jun-08	Sep-08	Project Stage	Project Stage	Project Stage	
PROJECT SUMMARY				Preliminary	Preliminary	Implementation				
Project Title: Clio Station Water Treatment Plant Upgrades		TOTAL Project Cost	\$0	\$12,686,432	\$18,116,260	\$14,886,000	\$0	\$0	\$0	
Funding Project No.: 26028603		COMPANY FUNDED Project Cost	\$0	\$15,898,432	\$18,116,260	\$14,886,000	\$0	\$0	\$0	
Planning Costs			Budget	Preliminary	Preliminary	Implementation	Project Stage	Project Stage	Project Stage	
Water Company Labor			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
All Other Costs			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Other Costs			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Other Costs			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Other Costs			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Planning Costs Sub-Total			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Preliminary Costs			Budget	Preliminary	Preliminary	Implementation	Project Stage	Project Stage	Project Stage	
Water Company Labor			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Land and Asset Acquisition			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Preliminary Engineering and Planning			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Detailed Design, Bidding, and Award			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Permit Acquisition			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Other Costs			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Other Costs			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Other Costs			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Water Company Labor Sub-Total			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
All Other Costs			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Land and Asset Acquisition			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Preliminary Engineering and Planning			\$0	\$0	\$125,929	\$237,492	\$0	\$0	\$0	
Detailed Design, Bidding, and Award			\$0	\$820,000	\$724,931	\$740,466	\$0	\$0	\$0	
Permit Acquisition			\$0	\$0	\$10,000	\$10,000	\$0	\$0	\$0	
Utility Commission Approvals			\$0	\$450,000	\$0	\$0	\$0	\$0	\$0	
Other Costs			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Other Costs			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
All Other Costs Sub-Total			\$0	\$1,070,000	\$866,631	\$995,958	\$0	\$0	\$0	
Preliminary Costs Sub-Total			\$0	\$1,070,000	\$866,631	\$995,958	\$0	\$0	\$0	
Implementation Costs			NARUC Acct.	Budget	Preliminary	Preliminary	Implementation	Project Stage	Project Stage	Project Stage
Water Company Labor				\$0	\$0	\$100,000	\$150,000	\$0	\$0	\$0
Construction Administration				\$0	\$0	\$0	\$0	\$0	\$0	\$0
Technical Review Services				\$0	\$0	\$0	\$0	\$0	\$0	\$0
Resident Observation				\$0	\$0	\$0	\$0	\$0	\$0	\$0
Easement/Land Negotiations				\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other Costs				\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other Costs				\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water Company Labor Sub-Total				\$0	\$0	\$100,000	\$150,000	\$0	\$0	\$0
All Other Costs				\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction Administration			n/a	\$0	\$0	\$300,000	\$300,000	\$0	\$0	\$0
Technical Review Services			n/a	\$0	\$0	\$431,901	\$431,901	\$0	\$0	\$0
Resident Observation			n/a	\$0	\$0	\$360,000	\$360,000	\$0	\$0	\$0
WTP Structures			104 - Structures and Improvements	\$0	\$0	\$894,809	\$895,000	\$0	\$0	\$0
WTP Equipment			310 - Water Treatment Plant Equipment	\$0	\$9,400,000	\$10,900,000	\$5,679,151	\$0	\$0	\$0
Emergency Generator			310 - Power Generation Equipment	\$0	\$0	\$105,000	\$105,000	\$0	\$0	\$0
Description of Asset or Asset Group			NARUC Account	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Description of Asset or Asset Group			NARUC Account	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Description of Asset or Asset Group			NARUC Account	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Description of Asset or Asset Group			NARUC Account	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Description of Asset or Asset Group			NARUC Account	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Description of Asset or Asset Group			NARUC Account	\$0	\$0	\$0	\$0	\$0	\$0	\$0
All Land and Easements			NARUC Account	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Misc. Other Costs			n/a	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Easement/Land Negotiations			n/a	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Misc. Other Costs			n/a	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Misc. Other Costs			n/a	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Misc. Other Costs			n/a	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous & Contingencies			n/a	\$0	\$2,350,000	\$595,000	\$595,000	\$0	\$0	\$0
All Other Costs Sub-Total				\$0	\$11,750,000	\$13,586,710	\$12,360,062	\$0	\$0	\$0
Implementation Costs Sub-Total				\$0	\$11,750,000	\$13,586,710	\$12,360,062	\$0	\$0	\$0
Contributions or Advances			Budget	Preliminary	Preliminary	Implementation	Project Stage	Project Stage	Project Stage	
Description			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Description			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Description			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Description			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Contributions or Advances Sub-Total			\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Retirements			Budget	Preliminary	Preliminary	Implementation	Project Stage	Project Stage	Project Stage	
Roof of Raw Water Building			NARUC Account	\$0	\$0	\$0	\$150,000	\$0	\$0	\$0
Processing Piping			NARUC Account	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Description of Asset or Asset Group			NARUC Account	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Description of Asset or Asset Group			NARUC Account	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Description of Asset or Asset Group			NARUC Account	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cost of Removals Sub-Total			\$0	\$0	\$0	\$0	\$200,000	\$0	\$0	\$0
NOTE:										
The above costs are considered Item Costs, and DOES NOT INCLUDE Labor OR Capitalized Cleaning OR AFUDC.										
Powerplant WILL calculate Labor OR Capitalized Cleaning OR AFUDC for your input below.										
The below listed Overhead calculations are outputs from Powerplant.										
Overhead and AFUDC Costs (calculated in Powerplant)			Budget	Preliminary	Preliminary	Implementation	Project Stage	Project Stage	Project Stage	
Labor Overhead			\$0	\$0	\$0	\$85,254	\$0	\$0	\$0	
Capitalized Cleaning			\$0	\$226,400	\$2,186,321	\$0	\$0	\$0	\$0	
AFUDC			\$0	\$820,032	\$1,324,772	\$1,103,704	\$0	\$0	\$0	
			\$0	\$876,432	\$3,468,933	\$1,188,958	\$0	\$0	\$0	
Allocation of NARUC Accounts										
301 - Organization			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
302 - Franchises			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
303 - Land and Land Rights			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
304 - Structures and Improvements			#DIV/0!	\$0.00	\$1,362,294.61	\$1,249,042.44	#DIV/0!	#DIV/0!	#DIV/0!	
305 - Collecting and Impounding Reservoirs			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
306 - Lake, River and Other Intakes			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
307 - Walls and Structures			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
308 - Infiltration Galleries and Tunnels			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
309 - Power Mains			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
310 - Pump Generation Equipment			#DIV/0!	\$0.00	\$159,851.90	\$146,632.88	#DIV/0!	#DIV/0!	#DIV/0!	
311 - Pumping Equipment			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
320 - Water Treatment Plant Equipment			#DIV/0!	\$13,896,432.00	\$16,594,151.96	\$13,498,442.49	#DIV/0!	#DIV/0!	#DIV/0!	
330 - Distribution Reservoirs and Standpipes			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
331 - Transmission and Distribution Mains			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
333 - Services			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
334 - Meters and Meter Installations			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
335 - Hydrants			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
338 - Other Plant and Miscellaneous Equipment			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
340 - Office Furniture and Equipment			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
341 - Transportation Equipment			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
342 - Stores Equipment			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
343 - Tools, Shop and Garage Equipment			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
344 - Laboratory Equipment			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
345 - Power Operated Equipment			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
346 - Communication Equipment			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
347 - Miscellaneous Equipment			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
348 - Other Tangible Plant			#DIV/0!	\$0.00	\$0.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	
TOTAL Project Cost - Check			#DIV/0!	\$13,696,432	\$18,116,260	\$14,886,000	#DIV/0!	#DIV/0!	#DIV/0!	

TENNESSEE-AMERICAN WATER COMPANY

Project B-19

**CHATTANOOGA TREATMENT PLANT IMPROVEMENTS
CITICO STATION RELIABILITY**

Design:	9 months	Design Cost:	\$100,000
Construction:	6 months	Construction Cost:	\$1,500,000

Description

The volume of the raw water discharge piping to Plants No. 1 and No. 2 and the upper portion of the Plant No. 1 basins could easily flood the existing raw water pump pit if a check valve or pipe joint fails. During the time required to close the isolation valves on the suction and discharge piping, flood damage would likely occur, immobilizing the plant for several days. Similarly, a break on one of the distributive pump discharge lines could have a similar effect on the station by flooding the raw water pit.

Various alternatives to prevent flooding of the raw water pumping pit have been explored in the past. The flood protection improvement program recommended below has been developed as a cost effective means of limiting the impact of major flooding at the Citico Station.

Recommendation

Motorized butterfly valves are recommended for installation on each raw water discharge connection from the pumping pit. With appropriate instrumentation and controls, these valves will close upon detection of flooding conditions in the pit. The valve closure speed will minimize flooding of the pit while preventing surges for pumps in operation. Manually operated gate valves are recommended upstream and downstream of each butterfly valve to permit periodic inspection and removal of raw water debris from the butterfly disc, seat and pins. Instrumentation and electrical improvements will be required to power, monitor and control the equipment. Vaults will house the butterfly valves, motors and controls.

A possible alternative to motorized valves would be the use of inline rubber "duckbill" check valves. These flexible rubber valves open under forward hydraulic pressure. Reverse pressure seals the valve and prevents backflow. This type of valve is also capable of sealing around small objects. Surge, application and reliability issues need to be evaluated before this valve can be considered. A benefit of this valve is that it can act passively, and requires no motor operator. A disadvantage is that its expected lifetime may be shorter than a conventional valve, requiring more frequent replacement.

In addition to the automatic valves, a means of releasing any accumulated water from the raw water pump pit after a flood is also needed. As part of this project, a means to drain the raw water pump pit and distributive pump basement should be investigated. Possible options include the installation of drain lines from the pump pit and basement that would direct water to a detention basin or the river. The specific means of draining the impacted structures should be determined during the design phase. Design of any gravity drain for the raw water pump pit must consider operation during a flood event on the Tennessee River.

Alternative

Increased raw water pumping capacity may eventually be needed to meet projected demands. At that time, the existing raw water pumping pit should be replaced with a pair of wetwells equipped with vertical turbine pumps. However, increased raw water pumping capacity is not expected to be required within the planning horizon of this document.

TENNESSEE-AMERICAN WATER COMPANY

Project B-15			
CHATTANOOGA TREATMENT PLANT IMPROVEMENTS STANDBY POWER			
Design:	9 months	Design Cost:	\$150,000
Construction:	6 months	Construction Cost:	\$1,350,000

Description

Primary electrical service to the Citico Station is provided by the Electric Power Board via two power lines. The lines terminate at transformers leased from the Power Board. One service line is located underground, and the second service line is located on overhead utility poles. A backup feed from a separate substation is possible. However, this option requires the Power Board to manually transfer to service to the alternate substation.

The plant transformers are located between the Citico Station and Amnicola Highway. The Water Company's access road under the Amnicola Highway does not have adequate clearance for a tractor trailer carrying replacement equipment. In addition, overhead wires and mains buried at a shallow depth further limit the accessibility of vehicles. Currently, a transformer would have to be lowered by crane from the highway onto a truck, or transferred to a low-clearance dolly to reach this area of the plant.

Also, there are no emergency power facilities to operate the Chattanooga Treatment Plant in the event the transformers are damaged, or if the Power Board were to lose its connection to the Tennessee Valley Authority grid.

Recommendation

If major maintenance or replacement of the units is necessary, the Water Company will need to work with the Power Board to bring new equipment on site. An Emergency Response Plan should be developed between TAWC and the Power Board to address the issues related to bringing equipment on site. Local authorities should be consulted regarding use of the Amnicola Highway as a staging point for transferring equipment to the plant grounds by crane.

The greatest concern would be a failure of multiple transformers due to a "force majeure" such as a lightning strike or loss of power from the TVA power grid. The lack of a suitable access road would greatly increase the time required to replace the damaged units and restore electrical service. If the

damage were more extensive, the current volume of distribution storage would not be capable of maintaining service for more than approximately 5 hours, especially higher elevation customers.

It is recommended that equipment be installed to provide the capability to automatically switch the incoming electrical service from the Riverside substation to the 10th Street substation. This would eliminate the need for the Power Board to perform the manual switch, and reduce the time the plant is out of service.

It is also recommended that a diesel generator be installed to operate the filter plants, the DCS, emergency plant lighting and low voltage power, chemical feed equipment and a minimum of 25 mgd of raw water and finished water pumping capacity. It is estimated that a minimum of 2,000 kW of diesel generating capacity will be required. However, this figure should be confirmed during design through a detailed analysis of the potential electrical loads.

The generator should be located near the incoming electrical service to minimize the distance between the generator and the Citico Station. The generator can be located outdoors, but should be located on a site that is above the 100-year floodplain. The site should be determined during the design phase. Consideration should be given to an enclosure if noise is an issue.

In addition to increasing the plant's reliability, a generator will provide TAWC with the opportunity to reduce its electrical demand during times of peak electricity use, if such an endeavor is made economically viable by the Power Board's tariff structure.

Alternative

Engine driven pumps could be used as an alternative to the installation of a large generator. This would require installation of one new raw water pump and one new finished water pump. Each pump would be equipped with an engine drive or dual (engine/electric) drive. The minimum size for each pump is 25 mgd. The engine drives should be located at the level of the existing distributive pumps to minimize the possibility of flood damage. A smaller generator would be required to handle the remaining plant electrical lighting, motor and other low voltage loads.

September 8, 2008
FP 26020503

**TENNESSEE AMERICAN WATER
CHATTANOOGA SERVICE AREA**

Reduction of Capital Clearing Overhead Justification

To: Project File
From: K. E. McGee
RE: **Citico Water Treatment Plant Upgrades**

In developing the budget for this project, it was discovered that TAWC's capital clearing overhead rate was 15.4%. This rate resulted in over \$2 million of capital clearing overhead costs to be charged to this project which skewed the total project budget. By direction of TAWC, it was recommended and approved that the project be excluded from capital clearing overhead costs. The local water company labor costs associated with contract administration, project management and meeting attendance for this project will be charged directly to the funding project and not to the capital clearing account. This approach to distributing labor costs associated with this large one-time capital project will permit the funding project budget to reflect more reasonable costs.

To support the direct charging of the local water company labor costs, the project budget has \$150,000 earmarked for labor as well as \$85,254.00 for labor overhead. On average, this will allow for \$6,000 per month which should be sufficient for the size and complexity of this project.

Attachments:

Email to Kristina McGee from Doug Hoefle- Manager – Utility Plant Accounting dated 7/30/2008

MZ



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
CHATTANOOGA ENVIRONMENTAL FIELD OFFICE
540 McALLIE AVENUE, SUITE 550
CHATTANOOGA, TENNESSEE 37402
PHONE (423) 634-5745 STATEWIDE 1-888-891-8332 FAX (423) 634-6389

April 17, 2008

Mr. John Watson, President
Tennessee-American Water Company
P.O. Box 6338
Chattanooga, TN 37401

Re: Tennessee-American Water Company
P.W.S.I.D. No. 0000107
Hamilton County, Tennessee
Sanitary Survey of Water System

Dear Mr. Watson:

On April 9 and 10, 2008, David Bukley and Amy Francis with this division conducted a sanitary survey of the Tennessee-American Water Company. In accordance with the Sanitary Survey Manual for Community Public Water Supplies, your system earned a numerical rating of 90 and will remain among Tennessee's APPROVED public water supplies. A copy of the rating form is enclosed.

The following deficiencies, comments, and/or recommendations were identified during the survey and should be addressed, as applicable:

1. Two mechanical flocculation units are inoperable. This deficiency has been cited in previous sanitary surveys and continues to be considered a deficiency until repairs are made or the units are modified to be stationary flocculators. Therefore, the equipment should be repaired or modified in accordance with Regulation 1200-5-1-.17(17). During the survey, Tennessee American personnel stated that this deficiency is to be addressed beginning this year and has an approved budget for upgrades to return the flocculation units to operational status. This project is currently in the design phase.
2. During the survey, it was observed that tanker trucks delivering chemicals have constricted access due to layout of the facility roadways. This could possibly increase the likelihood of spills. The facility needs a spill containment system for tanker trucks delivering the liquid chemicals used in water treatment. This deficiency was noted in previous sanitary surveys. During the survey Tennessee American personnel stated that this deficiency is to be addressed beginning this year and has an approved budget for construction of a remote tanker truck offloading valve station with spill containment. This project is currently in the design phase.

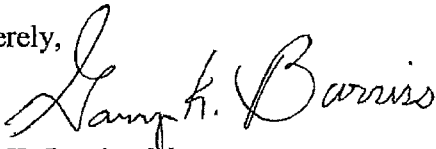
Mr. John Watson, President
April 17, 2008
Page 2

3. During the survey, it was noted that pipes and valves in the common valve pit for the two re-wash tanks are very rusty and need maintenance. This is a deficiency per Rule 1200-5-1-.17(17).
4. The turbidity monitoring capabilities of the system were examined and re-certified.

The required bacteriological sampling rate for the Tennessee-American Water Company will remain at one-hundred twenty (120) samples per month based on 74,101 connections that serve an estimated population of 178,583 people.

If you have any questions or need additional information, please contact either David Bukley or me at this office. Our telephone number is (423) 634-5745.

Sincerely,



Gary K. Burriss, Manager
Chattanooga Environmental Field Office
Division of Water Supply

Enclosure

cc: Leesa Head, Division of Water Supply, Nashville
Monty Bishop, Network Superintendent, Tennessee American Water Company
Susan Holmes, Supervisor, Tennessee American Water Company
→ Mark Zinnati, Production Superintendent, Tennessee American Water Company

Sanitary Survey Rating

System: Tennessee - American Water Co.

Date: 4-9 & 10, 2008

I. System Management and Operation (16)

Deficiency	Points Range	Deduction	Comments
A. Record Keeping (Management, Facility and Distribution Records) 1200-5-1-.20	(1-3)		✓
B. Emergency Operations Plan 1200-5-1-.17(7)	(2-5)		✓
C. Submission Of Plans and Specifications 1200-5-1-.05	(2-5)		✓
D. Construction Projects 1200-5-1-.05(4), (6) and .17(8) and (19)	(2, 5)		✓
E. Monitoring Plans and Schedules (1200-5-1-.20(1)(e), .07(1)(c)(2) and .17(c))	(1-4)		✓
F. Submission Of Monthly Operations Reports (MORs) 1200-5-1-.17(2)	(1-5)		✓
G. Reporting Requirements 1200-5-1-.18	(5)		✓
H. Customer Complaint Log 1200-5-1-.17(24)	(2, 4)		✓
I. Public Notification 1200-5-1-.19	(2-9)		✓
J. Consumer Confidence Reports 1200-5-1-.35	(1-7)		✓
K. Facility Maintenance Fee 1200-5-1-.32(1)	(2-5)		✓
L. Enforcement TCA 68-221-712(a)	(2-11)		✓
Capacity Development Plan (if required)	(3)		✓
Business Plan (if required)	(3)		✓

Deficiency Subtotal 0 (Maximum of 16)

2. Operator Compliance (11)

Deficiency	Points Range	Deduction	Comments
A. Certified Operator - Plant and Distribution System 1200-5-1-.17(1) and 1200-5-3-.04(2)	(3-11)		MARK ZINNATI
B. Availability of Certified Operator(s) and Operating Procedures 1200-5-3-.04(3)	(1-11)		✓

Deficiency Subtotal 0 (Maximum of 11)

3. Source (7)

Points deducted in the "Source" section should be assessed progressively. See "Guidance for Rating a Public Water System" for details on penalty assessments. For the second survey in which no substantial progress is made the point penalty for each item may be multiplied by 2.0. For the third survey in which no substantial progress is made the point penalty for each item may be multiplied by 3.0.

Deficiency	Points Range	Deduction	Comments
A. Source Adequacy (including GWUDI) 1200-5-1-.02, .05, .16, .17(13) and .34(3)	(3, 7)	_____	✓ ✓
B. Duplicate Pumps 1200-5-1-.17(13)	(2, 3)	_____	✓
C. Wellhead/Springbox Construction (if applicable) 1200-5-1-.02(1), .05(12), .16 and .17(3) and (16)	(2)	_____	NA NA NA
D. Intake 1200-5-1-.02 and .16	(1-2)	_____	✓
E. Source Protection (Well head Protection Plans, etc.) 1200-5-1.34	(2, 5)	_____	✓ ✓
Deficiency Subtotal	0	(Maximum of 7)	

4. Treatment (21)

Points deducted in the "Treatment" section should be assessed progressively. See "Guidance for Rating a Public Water System" for details on penalty assessments. For the second survey in which no substantial progress is made the point penalty for each item may be multiplied by 2.0. For the third survey in which no substantial progress is made the point penalty for each item may be multiplied by 3.0.

Deficiency	Points Range	Deduction	Comments
A. Aerator 1200-5-1-.02	(2-5)	_____	NA
B. Chemical Feeders 1200-5-1-.05 (8) and .17(36)	(2-5)	_____	✓ ✓
C. Mixing 1200-5-1-.02	(2)	_____	✓
D. Flocculation 1200-5-1-.02	(2-5)	-6	2 mechanical Flocculation units INOPERABLE
E. Sedimentation 1200-5-1-.02	(2-5)	_____	✓
F. Filtration 1200-5-1-.17(12) and (27)	(2-11)	_____	✓
G. Re-Wash (i.e. Filter-to-Waste) 1200-5-1-.17(35)	(3)	_____	✓ ✓
H. Turbidimeters 1200-5-1-.05(11) and .17(1) including alarm and automatic shut-off capability	(1-5)	_____	✓ ✓
I. Disinfection 1200-5-1-.02, .17(4), (11), and (28)	(2-11)	_____	✓
J. Disinfection Contact Time 1200-5-1-.02, .17(28), and (29)	(2-9)	_____	✓ ✓
K. Master Meter 1200-5-1-.17(2) and (3)	(1-2)	_____	✓
L. Maintenance of Equipment, Buildings and Grounds 1200-5-1-.02, .17(3), (17) and (19)	(1-5)	-3	Spill containment needed for unloading Liquid Chemicals

M. Laboratory Facilities 1200-5-1-.02, .14, .17(3), (17) and (26)	(2-5)	_____	✓
N. Safety 1200-5-1-.02	(1, 3)	_____	✓
O. Sludge Handling/Backwash Recycling 1200-5-1-.05 and .31(9)	(2)	_____	✓
P. Sanitary Conditions 1200-5-1-.17(17)	(1-5)	_____	✓
Q. Fluoridation Techniques 1200-5-1-.17(20)	(1-2)	_____	✓
R. Design Capacity 1200-5-1-.05(10)	(3, 6)	_____	✓
S. Filter Backwash Recycling 1200-5-1-.31(9)	(1-3)	9 _____	✓

* Note: 1200-5-1-.17(3), (17) and (19) are more specific rule cites per equipment and facility condition; 1200-5-1-.18(2) may also apply.

Deficiency Subtotal: _____ (Maximum of 21)

5. Monitoring, Reporting, Data Verification and Compliance (20)*

Deficiency	Points Range	Deduction	Comments
A. Laboratory-Process Monitoring (excluding Turbidity and Chlorine Residual) 1200-5-1-.17(3)	(2-11)	_____	✓
B. Bacteriological			✓
a. Regular Samples 1200-5-1-.07	(2-11)	_____	✓
b. Repeat Samples 1200-5-1-.07(1)	(6-11)	_____	✓
c. Bacteriological Sampling Plan 1200-5-1-.07(1)(c)	(2-4)	_____	✓
C. Bacteriological Compliance Monthly Average 1200-5-1-.06(4)(a)	(5-17)	_____	✓
D. Turbidity Monitoring and Reporting			✓
Late submittal of Turbidity Summary Report(s)	(1-3)	_____	✓
Non-submittal of Turbidity Summary Report(s)	(2-8)	_____	✓
Improper Monitoring and Record Keeping	(1-5)	_____	✓
E. Turbidity Compliance			✓
a. Monthly Average 1200-5-1-.06(3)(a)	(5-9)	_____	✓
b. Two-Day Average 1200-5-1-.06(3)(b)	(5-9)	_____	✓
c. 95% of samples not below .3 NTU or 1.0 NTU if alternative technology	(5-9)	_____	✓
F. Chlorine Residual Monitoring 1200-5-1-.17(4), .17(30), .31(5)(b) and (c)2	(1-3)	_____	✓
G. Primary Chemicals Monitoring			✓
a. Inorganic Samples 1200-5-1-.09(1)	(3-9)	_____	✓
b. Inorganic Samples - Confirmation 1200-5-1-.09(2)	(2-6)	_____	✓
c. Synthetic Organic Samples - Regulated and Unregulated 1200-5-1-.10(1) and .28	(3-9)	_____	✓
d. Synthetic Organic Samples - Confirm	(2-6)	_____	✓
e. Radionuclides 1200-5-1-.11	(3-9)	_____	✓
f. Sodium 1200-5-1-.24	(1)	_____	✓
g. HAA5 and Trihalomethanes 1200-5-1-.23	(3-9)	_____	✓
h. Volatile Organic Chemicals 1200-5-1-.26	(3-9)	_____	✓
i. Confirmation or repeat samples	(2-6)	_____	✓

H. Primary Chemicals Compliance			
a. Inorganic Chemicals 1200-5-1-.06(1)(b)	(5, 11)		✓
b. Organic Chemicals 1200-5-1-.06(2)	(5, 11)		✓
c. Radionuclides 1200-5-1-.06(5)	(5, 11)		✓
d. Trihalomethane 1200-5-1-.22(3)	(5, 11)		✓
e. Volatile Organic Chemicals (Regulated) 1200-5-1-.25	(5, 11)		✓
I. Lead and Copper Monitoring			✓
a. Regular Samples 1200-5-1-.33	(6)		✓
b. Documentation 1200-5-1-.33	(2-3)		✓
c. Corrosivity 1200-5-1-.21	(3-4)		✓
J. Lead and Copper Action Level 1200-5-1-.21	(5-11)		✓
K. Disinfection/Disinfection By-Products Monitoring 1200-5-1-.36	(1-6)		✓
L. Disinfection/Disinfection By-Products	(1-11)		✓
M. Secondary Chemicals 1200-5-1-.12	(3)		✓
N. Secondary Chemicals Compliance 1200-5-1-.12	(1-5)		✓

* Refer also to 1200-5-1-.05(11) and (12), .08(2), and .17(3) and (25)

Deficiency Subtotal 0 (Maximum of 20)

6. Finished Water Storage (8)

Points deducted in the "Finished Water Storage" section should be assessed progressively. See "Guidance for Rating a Public Water System" for details on penalty assessments. For the second survey in which no substantial progress is made the point penalty for each item may be multiplied by 2.0. For the third survey in which no substantial progress is made the point penalty for each item may be multiplied by 3.0.

Deficiency	Points Range	Deduction	Comments
A. Adequate Storage 1200-5-1-.17(14)	(3, 5)		✓
B. Inspection and Maintenance of Reservoirs, Tanks and Clearwell 1200-5-1-.17(16), (17), (33) and (34)	(1-5)	-1	Maintenance needed Rusted piping @ Common Valve-pit for Re-wash tanks
Deficiency Subtotal:		<u>1</u>	(Maximum of 8)

7. Pumps, Pump Facilities and Controls (3)

Points deducted in the "Pumps, Pump Facilities and Controls" section should be assessed progressively. See "Guidance for Rating a Public Water System" for details on penalty assessments. For the second survey in which no substantial progress is made the point penalty for each item may be multiplied by 2.0. For the third survey in which no substantial progress is made the point penalty for each item may be multiplied by 3.0.

Deficiency	Points Range	Deduction	Comments
A. Pump Stations 1200-5-1-.02(1) and .17(9) and (13)	(1-3)		✓
B. Maintenance of Pumping Equipment 1200-5-1-.02 and .17(13)	(1-3)		✓
Deficiency Subtotal:		<u>0</u>	(Maximum of 3)

8. Distribution System and Cross Connection Controls (14)

Points deducted in the "Distribution System and Cross Connection Controls" section should be assessed progressively. See "Guidance for Rating a Public Water System" for details on penalty assessments. For the second survey in which no substantial progress is made the point penalty for each item may be multiplied by 2.0. For the third survey in which no substantial progress is made the point penalty for each item may be multiplied by 3.0.

Deficiency	Points Range	Deduction	Comments
A. Chlorine Residual 1200-5-1-.17(4)	(2-7)	_____	1.5 mg/L During Survey
B. Notification, Inspection, Disinfection and Sample Collection of New or Existing Facilities 1200-5-1-.17(8), (19) and .20(1)	(3-7)	_____	✓
		_____	✓
		_____	✓
C. Flushing Program 1200-5-1-.17(10) and (23)	(3, 7)	_____	✓
D. Fire Hydrants 1200-5-1-.17(18)	(3)	_____	✓
E. Adequate Pressure 1200-5-1-.17(9)	(5, 11)	_____	✓
F. Valves and Blow-offs 1200-5-1-.17(10) and (23)	(1-3)	_____	✓
G. Map of Distribution System 1200-5-1-.17(15)	(3, 5)	_____	✓
H. Approved Cross Connection Policy or Ordinance and Plan 1200-5-1-.17(6)	(11)	_____	✓
		_____	✓
I. Working Cross Connection Program 1200-5-1-.17(6)	(1-11)	_____	✓

Deficiency Subtotal 0 : (Maximum of 14)
Total Deficiency Points 10
Overall Rating 90
Inspector's Signature _____

David Butley
Tim P. Francis

Additional Comments/Explanation:

The flocculation units are in the design phase with construction to begin in 2008 in order to correct the deficiency noted in the Treatment Section of this rating form.

Also, a truck offloading and spill containment installation is in the design phase with construction anticipated to begin in 2008.



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
CHATTANOOGA ENVIRONMENTAL FIELD OFFICE
540 McALLIE AVENUE, SUITE 650
CHATTANOOGA, TENNESSEE 37402
PHONE (423) 634-5745 STATEWIDE 1-888-891-8332 FAX (423) 634-6389

April 30, 2009

Mr. John Watson, President
Tennessee-American Water Company
P.O. Box 6338
Chattanooga, TN 37401

Re: Tennessee-American Water Company
P.W.S.I.D. No. 0000107
Hamilton County, Tennessee
Sanitary Survey of Water System

Dear Mr. Watson:

On April 21 and 22, 2009, Mohammed Faleh and Amy Francis with this division conducted a sanitary survey of the Tennessee-American Water Company. In accordance with the Sanitary Survey Manual for Community Public Water Supplies, your system earned a numerical rating of 99 and will remain among Tennessee's APPROVED public water supplies. A copy of the rating form is enclosed.

The following deficiencies, comments, and/or recommendations were identified during the survey and should be addressed, as applicable:

1. Two mechanical flocculation units are inoperable. This deficiency has been cited in previous sanitary surveys and continues to be considered a deficiency until repairs are made or the units are modified to be stationary flocculators. During the survey, Tennessee American personnel stated that the construction budget has been approved and construction is slated to begin this year. The equipment should be repaired or modified in accordance with Rule 1200-5-1-.17(17).
2. During the survey, it was observed that tanker trucks delivering chemicals have constricted access due to layout of the facility roadways. This could increase the likelihood of on-site chemical spills. The facility needs a spill containment system for tanker trucks delivering the liquid chemicals used in water treatment. This deficiency was noted during previous sanitary surveys. Tennessee American personnel stated that this deficiency is to be addressed this year and the budget has been approved for construction of a remote tanker truck offloading valve station with spill containment.

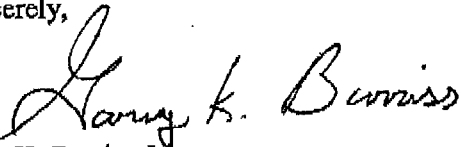
Mr. John Watson, President
April 30, 2009
Page 2

3. During the survey, it was noted that a few of the pipes and valves in the pipe gallery show signs of rust and paint peeling. The paint was also peeling from the ceiling in the gallery room and needs maintenance. All buildings and equipment used for the production and distribution of water must be properly maintained. This is in accordance with Rule 1200-5-1-.17(17).
4. A potential cross connection exists in the chemical room and other areas at the plant. Hoses that are connected to the water supply line must also have a vacuum breaker. This is a violation of Rule 1200-5-1-.17(6).
5. An inspection of the water treatment plant laboratory was performed. Analyses for pH, chlorine, temperature, alkalinity, calcium, hardness, chloride, conductivity, orthophosphate, phosphate, iron, manganese, and fluoride were performed. All tests were in compliance with shelf life and calibration standards. Also, the turbidity monitoring capabilities were examined and recertified. Your laboratory is also approved to analyze for total dissolved solids (TDS) and total suspended solids (TSS).

The required bacteriological sampling rate for the Tennessee-American Water Company will remain at one-hundred twenty (120) samples per month based on 73,801 connections that serve an estimated population of 177,860 people.

If you have any questions or need additional information, please contact Mohammed Faleh, Amy Francis or me at this office. Our telephone number is (423) 634-5745.

Sincerely,



Gary K. Burriss, Manager
Chattanooga Environmental Field Office
Division of Water Supply

Enclosure

cc: Leesa Head, Division of Water Supply, Nashville
Monty Bishop, Network Superintendent, Tennessee American Water Company
Susan Holmes, Supervisor, Tennessee American Water Company
→ Mark Zinnanti, Production Superintendent, Tennessee American Water Company

Sanitary Survey Rating

System: TENNESSEE - AMERICAN WATER COMPANY

Date: 4-21, 22, 2009

I. System Management and Operation (94)

	Requirement	Points Range	Deduction	Comments
A.	Record Keeping 1200-5-1-.20	(0)	Narrative	<u>✓</u>
B.	Construction Projects 1200-5-1-.05, 1200-5-1-.17	(1-5)		<u>✓</u>
C.	Submission of Monthly Operations Reports 1200-5-1-.17	(0)	Narrative	<u>✓</u>
D.	Reporting Requirements 1200-5-1-.18	(4-30)		<u>✓</u>
E.	Public Notification 1200-5-1-.19	(3-10)		<u>✓</u>
F.	Facility Maintenance Fee	(0)	Narrative	<u>✓</u>
G.	Enforcement - T.C.A. §88-221-701 et seq.	(4-10)		<u>✓</u>
H.	Emergency Operations Plan 1200-5-1-.17	(3)		

Deficiency Subtotal 0

2. Operator Compliance (23)

	Requirement	Points Range	Deduction	Comments
A.	Certified Operator - Plant and Distribution System 1200-5-1-.17(1) and 1200-5-3-.04	(3-15)		<u>MARK ZINNANTI</u> <u>✓</u>

Deficiency Subtotal 0

3. Source (25)

	Requirement	Points Range	Deduction	Comments
A.	Source Adequacy 1200-5-1-.02, .05, .16, .17(13) and .34(3)	(3-5)		<u>✓</u>
B.	Intake 1200-5-1-.05, .17	(2)		<u>N/A</u>

C.	Wellhead/Springbox Construction 1200-5-1-.05(12), .16 and .17(3) and (16)	(2)	_____	N/A
			_____	✓
D.	Source Protection Plans 1200-5-1-.34	(1-2)	_____	✓
			_____	✓

Deficiency Subtotal **3****4. Treatment (153)**

	Requirement	Points Range	Deduction	Comments
A.	Aerator 1200-5-1-.05, .17	(2)	_____	N/A
B.	Chemicals / Chemical Feeders 1200-5-1-.05 (8) and .17, .36	(2)	_____	✓
			_____	✓
C.	Mixing 1200-5-1-.02, .05, .17	(2)	_____	✓
D.	Flocculation 1200-5-1-.02, .05, .17	(2)	2	2 MECHANICAL FLOCCULATION UNITS INOPERABLE
E.	Sedimentation 1200-5-1.02, .05, .17	(2)	_____	✓
F.	Filtration / Alternative Technology 1200-5-1-.17(12) and (27)	(2-30)	_____	✓
G.	Re-Wash / Filter-to-Waste 1200-5-1-.17(35)	(2)	_____	✓
			_____	✓
H.	Turbidimeters / Calibration 1200-5-1-.05(11), .17, .31, .39	(2-4)	_____	✓
			_____	✓
I.	Disinfection 1200-5-1-.02, .17, .31, .36	(2-30)	_____	✓
			_____	✓
J.	Disinfection Contact Time 1200-5-1-.02, .17, .31	(2-4)	_____	✓
			_____	✓
K.	Master Meter 1200-5-1.17(2) and (3)	(1-2)	_____	✓
L.	Maintenance of Equipment, Buildings and Grounds 1200-5-1-.02, .17(3), (17) and (19)	(1)	1	SPILL CONTAINMENT NEED FOR UNLOADING LIQUID CHEMICALS.
M.	Laboratory Facilities 1200-5-1-.02, .14, .17(3)	(1-3)	_____	✓
			_____	✓
N.	Safety 1200-5-1-.02	(2)	_____	✓
O.	Sludge Handling/Backwash Handling 1200-5-1-.05	(2)	_____	✓
			_____	✓
P.	Sanitary Conditions 1200-5-1-.17(17)	(2)	_____	✓
Q.	Fluoridation Techniques 1200-5-1-.06, .12, .17	(2)	_____	✓
R.	Design Capacity 1200-5-1-.05(10)	(2-4)	_____	✓
S.	Filter Backwash Recycling 1200-5-1-.31(9)	(1)	_____	✓

Deficiency Subtotal **3**


5. Monitoring, Data Verification and Compliance (175)

	Requirement	Points Range	Deduction	Comments
A.	Laboratory-Process Monitoring (excluding Turbidity and Chlorine Residual) 1200-5-1-.17(3)	(2)		✓
B.	Bacteriological Monitoring	(2-6)		✓
C.	Bacteriological Compliance 1200-5-1-.06	(4-7)		✓
D.	Turbidity Monitoring	(2-3)		✓
E.	Turbidity Compliance	(4-7)		✓
F.	Chlorine Residual Monitoring 1200-5-1-.17, .31, .36	(2-3)		✓
G.	Primary Chemicals Monitoring	(2-3)		✓
H.	Primary Chemicals Compliance	(4)		✓
I.	Lead and Copper Monitoring 1200-5-1-.33	(2-3)		✓
J.	Lead and Copper Action Level 1200-5-1-.33	(3-5)		✓
K.	Disinfection/Disinfection By-Products and Precursors Monitoring 1200-5-1-.36, .37, .38	(2-3)		✓
L.	Disinfection/Disinfection By-Products and Precursors Compliance 1200-5-1-.06, .36	(2-30)		✓
M.	Secondary Chemicals 1200-5-1-.12	(2)		✓
N.	Secondary Chemicals Compliance 1200-5-1-.12	(3)		✓
O.	Cryptosporidium Monitoring 1200-5-1-.39	(0)	Narrative	✓

Deficiency Subtotal 

6. Finished Water Storage (25)

	Requirement	Points Range	Deduction	Comments
A.	Adequate Storage 1200-5-1-.17(14)	(2-4)		✓
B.	Inspection and Maintenance of Reservoirs, Tanks and Clearwell 1200-5-1-.17(18), (17), (33) and (34)	(1-10)		✓

Deficiency Subtotal 

7. Pumps, Pump Facilities and Controls (18)

	Requirement	Points Range	Deduction	Comments
A.	Pump Facilities 1200-5-1-.17(9) and (13)	(1-4)		
B.	Maintenance of Pumping Equipment 1200-5-1-.17(13)	(1-3)	-2	MAINTENANCE IS NEEDED SIGN OF RUST - PIPES & VALVES AT THE LOW SERVICE PUMPS.
Deficiency Subtotal			2	

8. Distribution System and Cross Connection Controls (86)

	Requirement	Points Range	Deduction	Comments
A.	Notification, Inspection, Disinfection and Sample Collection of New or Existing Facilities 1200-5-1-.17(8), (19)	(3-5)		✓
B.	Flushing Program / Blow Offs 1200-5-1-.17(10) and (23)	(3-4)		✓
C.	Fire Hydrants 1200-5-1-.17(18)	(0)	Narrative	✓
D.	Adequate Pressure 1200-5-1-.17(9)	(5)		✓
E.	Map of Distribution System 1200-5-1-.17(15)	(3)		✓
F.	Approved Cross Connection Policy or Ordinance and Plan 1200-5-1-.17(6)	(4)		✓
G.	Working Cross Connection Program 1200-5-1-.17(6)	(3-9)		✓
H.	Unaccounted Water Loss	(0)	Narrative	✓

Deficiency Subtotal
Total Deficiency Points
Overall Rating
Inspector's Signature

99

Mohamed H. Fakh
Amy P. Francis

Additional Comments/Explanation:

$$599 - 5 = 594$$

$$594 / 599 \times 100 = 99\%$$



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
CHATTANOOGA ENVIRONMENTAL FIELD OFFICE
540 McCALLIE AVENUE, SUITE 550
CHATTANOOGA, TENNESSEE 37402
PHONE (423) 634-5745 STATEWIDE 1-888-891-8332 FAX (423) 634-6389

DRINKING WATER MONITORING PROGRAM

Tennessee American Water System
April 2009

1. Raw Water
 - a. Collect a representative sample--each day plant operates
 - b. Analyses
 1. Temperature
 2. Turbidity
 3. Alkalinity (total)
 4. pH
 5. Hardness
 6. Iron
 7. Manganese
 8. Fluoride
 9. Jar Tests (as needed)
2. Finished Water
 - a. Collect a representative sample--each day plant operates
 - b. Analyses
 1. Turbidity (Continuous)
 2. Chlorine Residual (free)
 3. Alkalinity (total)
 4. pH
 5. Hardness
 6. Iron
 7. Manganese
 8. Fluoride
 - c. chlorine, pounds or gallons used
 - d. fluoride, pounds or gallons used
3. Distribution System
 - a. Collect representative samples from distribution system--5 days per week
 - b. Analyses
 1. Chlorine Residual (free)
 2. Fluoride
 3. Bacteriological: Total of one hundred twenty (120) per month to be tested by a State certified laboratory.



Memorandum

To: Dave Kaufman, John Watson, Mark Zinnanti, Susan Holmes, and Kate Narthey

From: Judy Alford

Date: July 25, 2007

*Subject: Tennessee American Water
Citico Water Treatment Plant (WTP) Evaluation of High-Rate
Pre-Treatment Options*

Purpose

The purpose of this report is to determine whether a high-rate pre-treatment process, such as Actiflo, is more cost effective or would have operation and maintenance benefits over tube settlers with vertical turbine flocculators as currently proposed upgrade of the Citico WTP. Following structural investigation of the existing Plant 1 sedimentation basin structures, it was determined that new structurally independent walls and base slabs would be required to support any modifications within the Plant 1 sedimentation basins. Once it was determined that new walls and floors would be required to upgrade the Plant 1 basins, American Water requested an evaluation of other pre-treatment process be conducted to confirm whether the currently proposed upgrades of tube settlers with vertical turbine flocculators should remain the recommended method of plant upgrade. The primary question posed by American Water was whether the Actiflo high-rate flocculation and sedimentation processes (or another high-rate treatment process) would be a cost effective alternative to the tube settlers. Because a 50 mgd Actiflo process could be installed inside existing Basin 3 while 50 mgd of tube settlers would require both Basins 2 and 3, CDM was requested to evaluate high-rate treatment alternatives to determine the cost, scheduling impacts, pros and cons, TDEC's opinion on using this type of process, other operational considerations, the impact on ancillary facilities, and the impact on the remaining scope of the project.

Actiflo has been determined to be the only applicable pre-treatment option that allows rates high enough to install 50 mgd of capacity inside of Basin 3 only. Other pre-treatment options are less applicable at the Citico WTP. Dissolved air flotation is more suited to large lake supplies with low turbidity and primarily requiring

*Tennessee American Water Citico WTP
Evaluation of High-Rate Pre-Treatment Options*

treatment for algae removal. Membranes and sludge blanket clarifiers would be such significant process changes pilot testing and potentially a coagulant change should be considered to assess applicability and cost-effectiveness. For example, a polymer is normally required with sludge blanket clarifiers. Also, sludge blanket clarifier basins are usually deeper than the current basins, have more dilute sludge (hence require another thickener), and are usually constructed in smaller basin sizes that would require construction of more walls. It is unlikely that membranes could be cost-effective unless they were to substitute for filtration as well as pre-treatment. Consequently, this evaluation focuses on the comparison of the Actiflo process to tube settlers. Both of these options are described further within this memorandum.

Introduction

The primary alternatives for upgrading the Citico Water Treatment Plant analyzed within this memorandum are as follows:

1. Option 1: Vertical turbine flocculators with tube settlers
2. Option 2: High-rate flocculation/sedimentation process, such as Actiflo

Each of these options is discussed below. **Figure 1** is a schematic of the existing plant treatment process and **Figure 2** is a schematic of the treatment plant in the Actiflo system was implemented. For reference, American Water's summary of existing process capacities, **Table 1**, is also presented on the following pages.

Option 1: Tube Settlers and Related Treatment Improvements

Flocculators

As shown in **Figure 1**, the existing facility has two parallel plants (Plants 1 and 2). Plant 1 has conventional rectangular basins (Basins 1 and 2) with inoperable flocculators, shown in **Figure 3**, and chain and flight sedimentation sludge scrapers. Basin 3 is currently used as additional storage for settled water.

The Flocculation/Sedimentation Basins 1 and 2 need new baffles, flocculators, solids collection equipment, and tube settlers. Upgrading to vertical turbine flocculators as pictured in **Figure 4** would improve reliability and maintainability.

*Tennessee American Water Citico WTP
Evaluation of High-Rate Pre-Treatment Options*

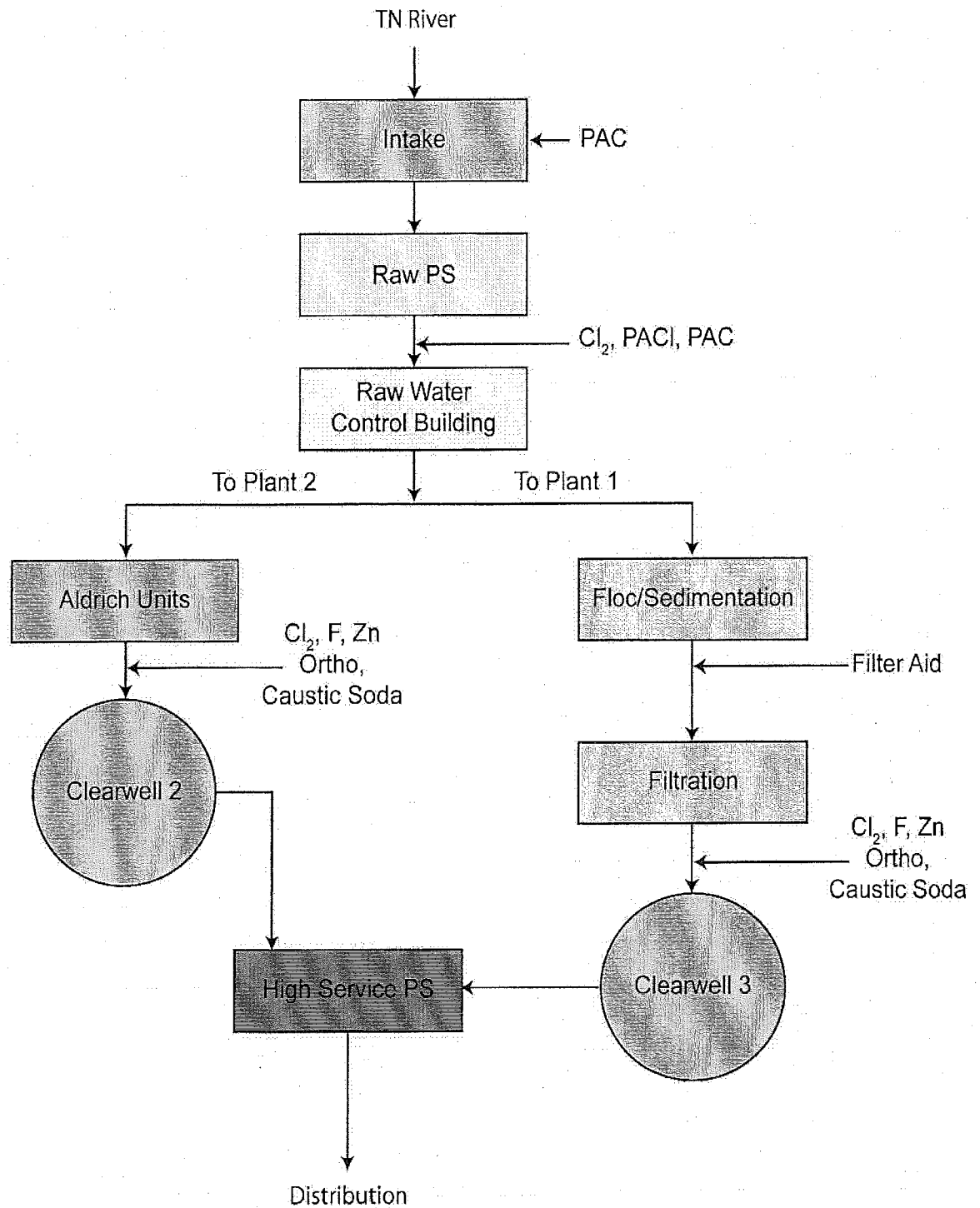


Figure 1
Process Schematic of Existing Water Treatment Plant

*Tennessee American Water Citico WTP
Evaluation of High-Rate Pre-Treatment Options*

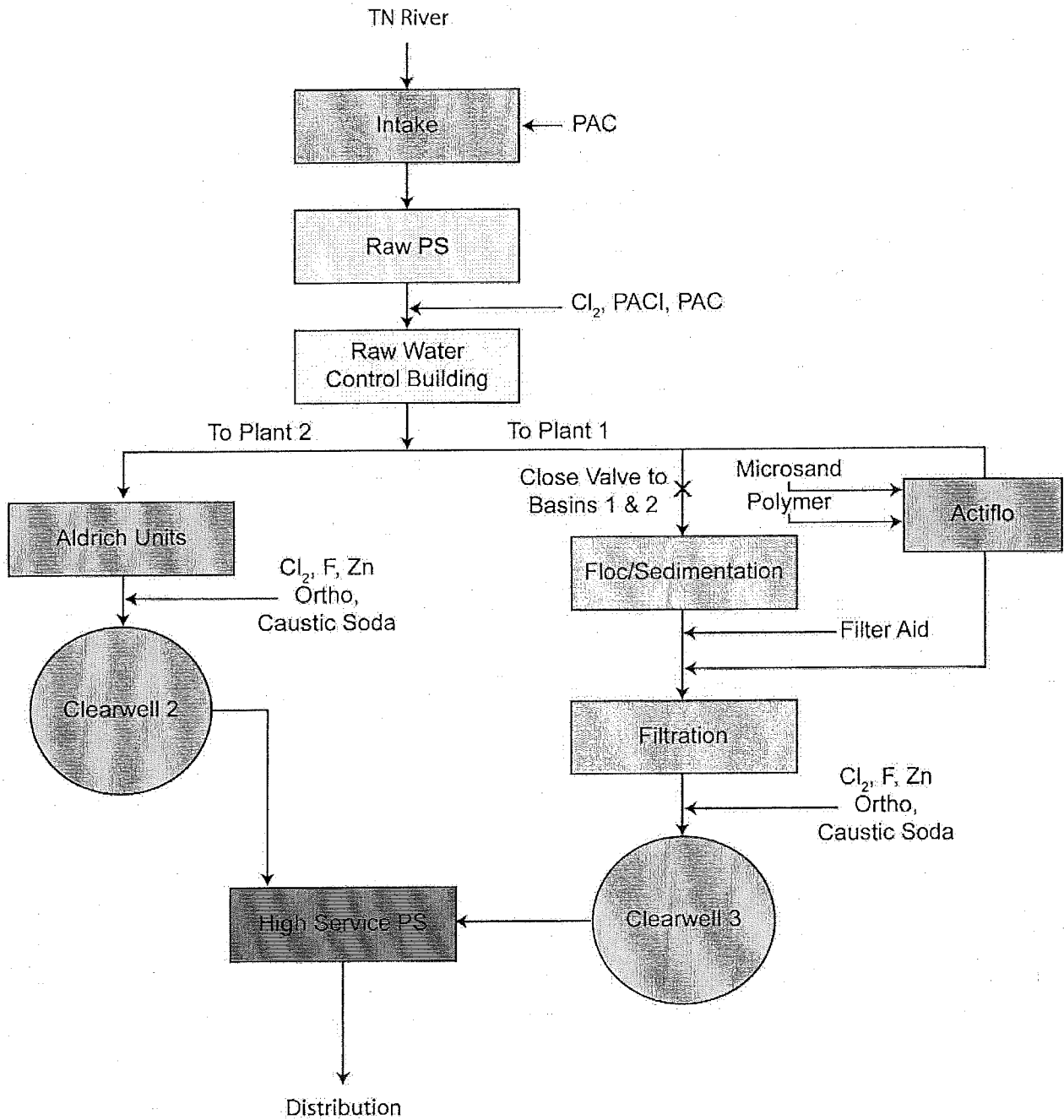


Figure 2
Process Schematic Implementing the Actiflo System

*Tennessee American Water Citico WTP
Evaluation of High-Rate Pre-Treatment Options*

**Table 1
Summary of Treatment Facilities at the Citico WTP²**

Process	Parameter	Units	Value			
Raw Water	Total pumping capacity	mgd	108.9 ⁽¹⁾			
	Reliable pumping capacity	mgd	84.0 ⁽¹⁾			
	Number of pumps		5			
Mixing	Type		Static			
	Number of Units		2			
Treatment Rate	Plant No.		Plant No. 1		Plant No. 2	
	Total filter capacity	mgd	40		25	
	Reliable filter capacity	mgd	38		21.875	
Flocculation	Basin		Basin 1	Basin 2	Basin 3	Aldrich Units
	Number of Units		2	2	n/a	8
	Volume per unit	gal	290,000	320,000		90,000
	Flow rate (total)	mgd	15	15		25
	Detention time	min	28	30		41
Sedimentation	Basin		Basin 1	Basin 2	Basin 3	Aldrich Units
	Number of Units		1	1	1	8
	Volume per unit	gal	1,200,000	1,200,000	2,200,000	600,000
	Flow rate (total)	mgd	15	15	10	25
	Basin loading rate	gpm/ft ²	0.98	0.94	0.34	0.49
	Weir loading rate	gpd/LF	9,228	9,014	n/a	12,280
	Detention time	min	107	115	307	261
Filtration	Number of Units		20			8
	Surface area per unit	ft ²	346			885
	Filtration rate	gpm/ft ²	4.0			2.45
	Empty bed contact time	min	4.4 - 4.7			6.4
	Media		28" GAC, 6" sand			
Washwater	Tank Number		Tank 1	Tank 3	Tank 2	
	Storage volume	gal	220,000	290,000	300,000	
Clearwater Storage	Clearwell Number		Clearwell 3			Clearwell 2
	Clearwell volume	gal	3,570,000			1,800,000
Distributive Pumps	Total pumping capacity		83.7 ⁽¹⁾			
	Reliable pumping capacity	mgd	63.2 ⁽¹⁾			
	Number of pumps	mgd	7			
Residuals	Wastewater tank volume	gal	564,000			
	Thickening tank volume	gal	530,000			

1. Sum of rated pump capacities. Actual combined output may vary with all pumps in simultaneous operation.
2. Source of Table = American Water 2006 Design Concept Document for Citico Water Treatment Plant Upgrades. Some of the sizes in this Table 1 will be field checked later in this project.

*Tennessee American Water Citico WTP
Evaluation of High-Rate Pre-Treatment Options*

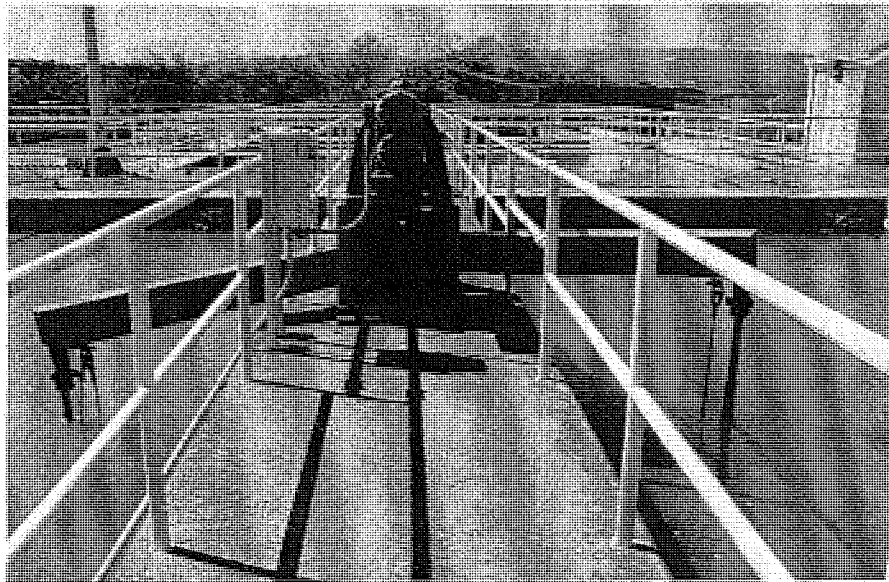


Figure 3
Plant 1 Conventional Rectangular Basin 1 and 2 with
Inoperable Flocculators

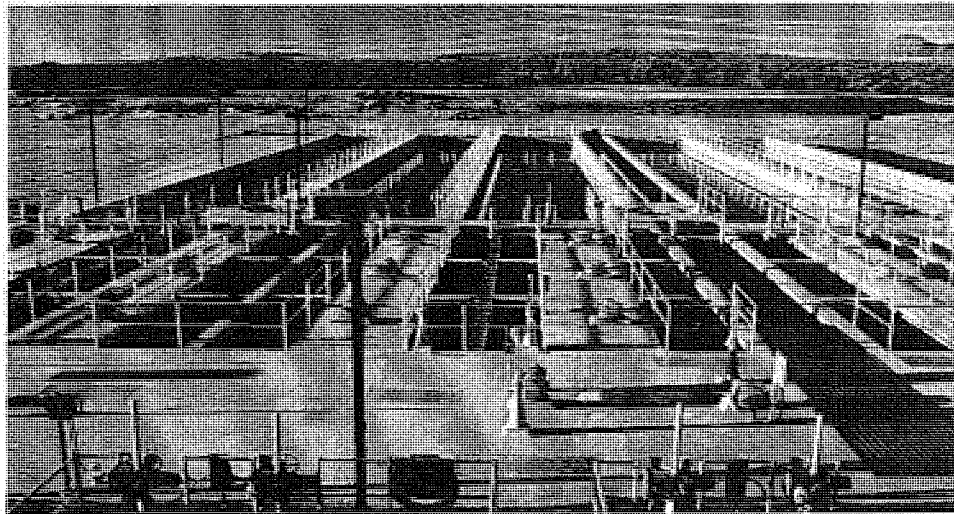


Figure 4
Vertical Turbine Flocculators

The flocculator inlet hydraulics also need to be modified for good flow distribution. As shown in Figure 5, water currently enters the flocculation inlet channel through a single pipe at relatively high velocity.

*Tennessee American Water Citico WTP
Evaluation of High-Rate Pre-Treatment Options*

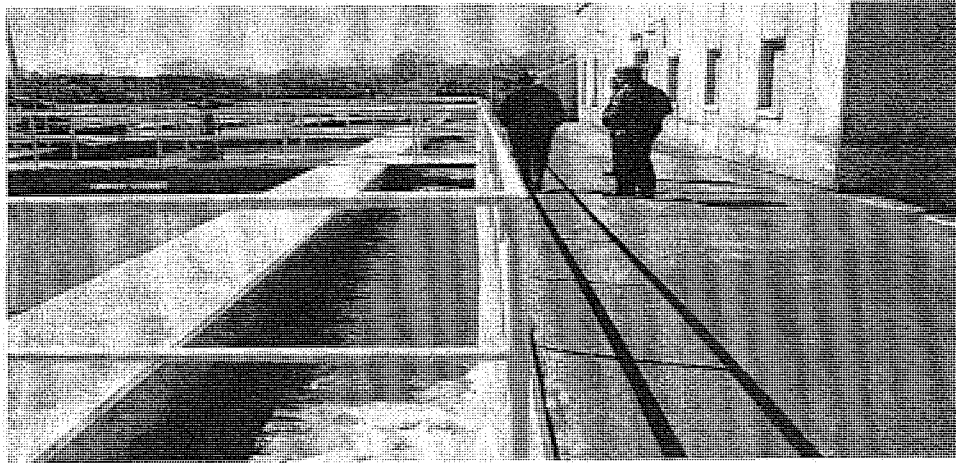


Figure 5
Water Entering the Flocculation Inlet Channel
at Plant 1 Basins 1 and 2

With the use of vertical turbine flocculators, Basin 1, 2, and/or 3 could be subdivided to have 3 stages of flocculators. **Table 2** provides the overall dimensions of the existing Basins 1 and 2. Basin 3 is larger and would more easily accommodate tube settlers than either Basin 1 or 2. With vertical turbine flocculators, the compartment width is generally matches the length for a box shape. Concrete supports would be needed for concrete walkways for access and support of the flocculator drive units.

Tube Settlers in Sedimentation Basins 1 and 2

Background

Tube settlers would be designed specifically for the requirements of each project basin and are typically 2 to 4 foot long (2"x 2" inside of each tube) with tubes inclined at 60 degrees and submerged 20 to 30 inches below the basin water surface. Because the tube packs cover the full width of the basin, the space below the packs has to be sufficiently deep (6 feet or more) to maintain low velocity.

Typical materials of construction are PVC or ABS tubes, SS or coated steel supports, and FRP or SS troughs. Currently, most tube settler installations are retrofits of existing conventional settling basins.

Need and Capacity

Improvement of the performance and capacity of sedimentation basins in Plant 1 is a priority of American Water. Currently, there is appreciable floc carry-over during cold weather conditions. The addition of flocculators and tube settlers could improve basin performance and/or capacity by providing more area for floc to settle within a very compact footprint. Given the TDEC limit for tube settler surface loading rate of 2.5 gpm/sf and the fact that higher tube settler loadings would defeat the goal of improved settled water turbidity, CDM recommends planning for a maximum surface loading rate of 2.5 gpm/sf.

*Tennessee American Water Citico WTP
Evaluation of High-Rate Pre-Treatment Options*

Required Depth

With a surface loading rate of 2.5 gpm/sf for the tube settlers, there is no regulatory capacity incentive to consider tube settlers deeper than 24 inches in length. However, use of 30- or 48-inch deep tubes would improve performance over the shorter 24-inch deep tubes. As previously agreed, the upgrades will be designed using 48" deep tubes.

Retrofitting Citico WTP Basins 1, 2 and 3 with Tubes

Table 2 presents the Plant 1 basin dimensions at the Citico WTP. In addition, Table 2 shows the lengths required for each basin in order to retrofit for tube settlers, taking into account the width lost due to construction of the new walls. The portion of the basins required for flocculation and tube settlers is also shown.

**Table 2
Citico WTP Basin Dimensions**

	Basin 3	Basin 2	Basin 1
Design Flow, mgd	28	23	23
Inside Width, ft	92	67	65
Water Depth, ft	14	14	16
Existing Basin Length Available, ft excludes inlet channel	151.25	167	166.33
Flocculation Time, minutes	30	30	30
Flocculation Length (no wall/channels), ft each flocculator (length x width)	61 20.3' x 23'	68 22.7' x 22.3'	62 20.7' x 21.7'
Overflow Rate for Tube Settlers, gpm/sf	2.5	2.5	2.5
Sedimentation Length Needed for Tubes, ft	84.5	95.3	98.2
Gap Between Floc and Tube Settlers, ft and thimble wall	0	0	0
Minimum Required Basin Length, ft	145.5	163.3	160.2

Due to the larger basin dimensions, it is recommended that 28 mgd of tube settlers be installed in Basin 3 and 23 mgd of tube settlers be installed in Basin 2. This balance of treatment rates between Basins 2 and 3 is believed to be the most cost effective option. The recommended distribution of flow between the basins reduces the depth required for the flocculators in Basin 2 which in turn reduces the cost for the new floors and foundations. More importantly, the proposed treatment rates allow the desired firm capacity of 68 mgd to be met utilizing only Basins 2 and 3 along with the Plant 2 Aldrich units capacity of 25 mgd. If preferred by American Water, 25 mgd can be installed in Basin 2 (with a Basin 3 capacity of either 25 or 28 mgd). However, this will result in a significant increase in capital cost, and the cost-savings realized through a Basin 2 capacity of 22-23 mgd is recommended. If desired, upgrade of Basin 2 to a 25

*Tennessee American Water Citico WTP
Evaluation of High-Rate Pre-Treatment Options*

mgd capacity could be designed as a bid alternate for consideration once the true construction cost impacts are known. A bid alternate approach would increase the final design scope of services. Temporary measures, such as baffles to assist in flocculation in Basin 1, to improve treatment during construction could be considered by American Water, however temporary measures are generally not as cost-effective.

Tube Settlers

Tube settlers are typically fabricated with plastic tubes (usually PVC), FRP or SS troughs and baffles. No manufacturer currently producing SS tubes was identified during this evaluation, although MRI did provide a material quote if SS tubes were desired. In the comparison costs provided by MRI for another project, the SS tube settler cost 35% more than the PVC tube settler with SS troughs and baffles. The increase in cost is due to additional material costs and fabrication required to manufacture the SS tube settlers. The estimated probable construction cost for the PVC tube settler option is \$9 million. This estimated probable construction cost includes all structural modifications and equipment installation costs associated with upgrade of Basins 2 and 3 with tube settlers. A copy of the probable construction cost estimate is provided at the end of this memorandum for your reference.

Brentwood Industries produces their tube settlers from a corrugated PVC sheet system with FRP troughs and baffles and SS supports. To protect the PVC from UV radiation and high-pressure hose washing, the system is provided with a FRP grating on top of the tube packs. With this grating, Brentwood claims their product has a 25-year life. Brentwood is one of the larger manufacturers of tube settlers and plastic filter media. About 75% of their tube settler sales are for settling tank retrofit applications. Based on the material of construction, replacement of the tubes is assumed to be needed after about 15 years of service.

Envirofax tube settlers are corrugated ABS plastic sheets with FRP troughs and baffles and SS supports. However, Envirofax tube settlers do not have a grate included in their standard scope of delivery to protect the plastic tubes from UV light and pressure washing. CDM recommends that Envirofax (or the Contractor) be required to install FRP grating to make it comparable to the Brentwood Industries product. Based on the materials of construction and the addition of a grate, replacement of the tubes is assumed to be needed after about 15 years of service.

MRI tube settlers use PVC tubes with SS troughs, baffles, and supports. Although they are a leading supplier of SS plate settlers, they have not made SS tube settlers because, according to MRI, they cost more than SS plate settlers. The PVC tubes are assumed to need replacement after 15 years.

Option 2: High-Rate Flocculation/Sedimentation Process (Actiflo)

The high-rate ballasted flocculation/sedimentation process consists of a proprietary system provided by USFilter Kruger Products with the trade name "Actiflo". This

*Tennessee American Water Cifico WTP
Evaluation of High-Rate Pre-Treatment Options*

system essentially replaces a traditional rapid mix coagulation, flocculation, and sedimentation process.

The Actiflo process operates similarly to a conventional flocculation-sedimentation process with the exception that 100 micron sand (microsand) (later changed to 130-150 microsand) is added to the water during the flocculation process to enhance both coagulation and settling. The microsand adds surface area in the coagulation process which significantly improves the frequency of collision of dispersed or colloidal particles in the raw water with oppositely charged coagulated floc. This action accelerates coagulation and flocculation. The microsand also provides "ballast" to the floc, resulting in floc settling velocities that are 25 to 35 times faster than floc produced in conventional floc-sed processes. When compared to conventional flocculation-sedimentation or "sludge blanket" processes, this combination of improved coagulation efficiency and rapid floc settling characteristics provides:

- Significantly better settled water quality (as measured via particle counts in the 2 to 4 micron range)
- More stable performance during raw water upset conditions
- Reduced coagulant demand (particularly under high algae conditions)
- A maximum turbidity of 1.0 NTU
- Typically, lower construction costs due to reduced process footprint

Process Requirements

Tables 3 and 4 provide the design criteria basis for the Actiflo process equipment at the requested re-rated finished water capacity of 50 mgd. The Actiflo basins would all fit inside existing Basin 3. Table 3 provides the design criteria for the Actiflo process equipment for 2-25 mgd trains. Table 4 provides the design criteria for the Actiflo process equipment for 4-12.5 mgd trains. Both equipment layout options use Actiflo's standard design rise rate of 16 gpm/ft². The 16 gpm/ft² rise rate is the reported approved rise rate of other Actiflo units currently in operation at a small plant in Tennessee.

Actiflo Process

The Actiflo process includes two parallel 25-mgd design flow process trains for Alternate 1. Alternate 2 includes four parallel 12.5-mgd design flow process trains. With all trains in service for either alternate, the plant will produce a maximum treated water flow of 50 mgd. Each process train is composed of four sub-process segments; coagulation tank, injection tank, maturation tank, and settling tank. The discussed flow rates in the following narrative are for a single train only.

Actiflo Coagulation Tanks

Alternate 1 (2-25 mgd trains):

The coagulation tank is to provide a minimum hydraulic retention time (HRT) of 2.5 minutes at design flows for coagulant dispersal. Each tank is 17'-4.8" long, 13'-1.2" wide, with a 26'-0" side water depth. Total surface area is 227.94 ft², and the active

*Tennessee American Water Citico WTP
Evaluation of High-Rate Pre-Treatment Options*

tank volume is 5,926 ft³ or 44,330 gallons. Each tank is equipped with one 15-hp, constant speed mixer vertically mounted on a platform in the middle of the tank.

**Table 3
Actiflo Design Summary for Two Train Configuration**

Alternate 1: 2 x 25-mgd Actiflo Design (16 gpm/ft² rise rate)	
Design Capacity	
Total Design Flow, mgd	50
No. of Trains	2
Capacity Per Train, mgd	25
Coagulation Tank Design	
HRT, min	2.5
No. of Tanks per Train	1
Length, ft	13.1
Width, ft	17.4
Side Water Depth, ft	26
Injection Tank Design	
HRT, min	2.5
No. of Tanks per Train	1
Length, ft	13.1
Width, ft	17.6
Side Water Depth, ft	26
Maturation Tank Design	
HRT, min	10
No. of Tanks per Train	1
Length, ft	25.6
Width, ft	36.0
Side Water Depth, ft	26
Settling Tank Design	
No. of Tanks per Train	1
Length, ft	36.0
Width, ft	36.0
Side Water Depth, ft	26
Lamella Settling Area, ft ²	1130
Rise Rate at Design Capacity, gpm/ft ²	16
Sand Recirculation Circuit Design	
No. of Pumps per Train	1 duty + 1 stand-by
Total Dynamic Head, ft. of water	TBD
Pump Capacity, gpm	560
Number of Hydrocyclones per Pump	2
Estimated Sludge Concentration, % solids	0.1 to 0.5
Sludge Discharge per Train at Design Flow, gpm	448

Notes: 1. HRT = Hydraulic Retention Time

Tennessee American Water Citico WTP
Evaluation of High-Rate Pre-Treatment Options

Table 4
Actiflo Design Summary for Four Train Configuration

Alternate 2: 4 x 12.5-mgd Actiflo Design (16 gpm/ft² rise rate)	
Design Capacity	
Total Design Flow, MGD	50
No. of Trains	4
Capacity Per Train, MGD	12.5
Coagulation Tank Design	
HRT, min	2.0
No. of Tanks per Train	1
Length, ft	8.7
Width, ft	12.4
Side Water Depth, ft	22
Injection Tank Design	
HRT, min	2.0
No. of Tanks per Train	1
Length, ft	8.7
Width, ft	12.4
Side Water Depth, ft	22
Maturation Tank Design	
HRT, min	9.0
No. of Tanks per Train	1
Length, ft	19.0
Width, ft	25.8
Side Water Depth, ft	22
Settling Tank Design	
No. of Tanks per Train	1
Length, ft	25.8
Width, ft	25.8
Side Water Depth, ft	18
Lamella Settling Area, ft ²	520
Rise Rate at Design Capacity, gpm/ft ²	16
Sand Recirculation Circuit Design	
No. of Pumps per Train	1 duty + 1 stand-by
Total Dynamic Head, ft. of water	TBD
Pump Capacity, gpm	260
Number of Hydrocyclones per Pump	1
Estimated Sludge Concentration, % solids	0.1 to 0.5
Sludge Discharge per Train at Design Flow, gpm	208

Notes: 1. HRT = Hydraulic Retention Time

Alternate 2 (4-12.5 mgd trains):

The coagulation tank is designed to provide a minimum HRT of 2.0 minutes at design flows for coagulant dispersal. Each tank is 8'-8.4" long, 12'-4.8" wide, with a 22'-0" side water depth. Total surface area is 107.88 ft², and the active tank volume is 2,373 ft³ or 17,753 gallons. Each tank is equipped with one 7.5- hp constant speed mixer vertically mounted on a platform in the middle of the tank.

Injection Tanks

Alternate 1 (2-25 mgd trains):

The injection tank for Alternate 1 is designed to provide a minimum HRT of 2.5 minutes at design flows for injection and mixing in the microsand. Each tank is 13'-1.2" long, 17'-7.2" wide, with a 26'-0" side water depth. This results in a total surface area of 230.56 ft² and an active volume of 5,995 ft³ or 44,839 gallons. Each tank is equipped with one 15-hp constant speed mixer, vertically mounted on a platform in the middle of the tank. The flow to each injection tank is increased by 440 gpm or 0.63 mgd due to the recycle of water carrying microsand from the hydrocyclone underflow.

Alternate 2 (4-12.5 mgd trains):

The injection tank for Alternate 2 is designed to provide a minimum HRT of 2.0 minutes at design flows for injecting and mixing in the microsand. Each tank is 8'-8.4" long, 12'-4.8" wide, with a 22'-0" side water depth. This results in a total surface area of 107.88 ft² and an active volume of 2373.36 ft³ or 17,753 gallons. Each tank is equipped with one 7.5-hp constant speed mixer, vertically mounted on a platform in the middle of the tank. The flow to each injection tank is increased by 200 gpm or 0.288 mgd due to the recycle of water carrying microsand from the hydrocyclone underflow.

Maturation Tanks

Treatment continues as water passes through the underflow passage from the injection tank into the maturation tank. In the maturation tank, mixing is controlled to provide ideal conditions for the formation of polymer bridges between the microsand and the destabilized suspended solids. This process is further augmented by the large specific surface area of the microsand providing enhanced opportunity for polymer bridging and enmeshment of microsand and floc already in suspension.

Alternate 1 (2-25 mgd trains):

The maturation tank for Alternate 1 is designed to provide a minimum HRT of 10 minutes at design flow. Each maturation tank is 25'-7.2" long and 36'-0" wide, with a 26'-0" side water depth. Each tank has a surface area of 921.6 ft² and an active volume of 23,962 ft³ or 179,233 gallons. No chemicals or sand are added into this unit. Each tank is equipped with one 25-hp variable speed mixer, vertically mounted on a platform in the middle of the tank. The flow through the maturation tank is the same as described for the injection tank.

Alternate 2 (4-12.5 mgd trains):

The maturation tank for Alternate 2 is designed to provide a minimum HRT of 9 minutes at design flow. Each maturation tank is 19'-0" long and 25'-9.6" wide, with a 22'-0" side water depth. Each tank has a surface area of 490.2 ft² and an active volume of 10,784.4 ft³ or 80,667 gallons. No chemicals or sand are added into this unit. Each tank is equipped with one 10-hp variable speed mixer, vertically mounted on a platform in the middle of the tank. The flow through the maturation tank is the same as described for the injection tank.

Settling Tanks

Flocculated water overflows from the maturation tank and enters the settling tank. Because of the high ratio of microsand to coagulant precipitate within each floc particle, the floc settles very rapidly (approximately one foot per second). The settled water, after disengaging from the floc, flows upward through a lamella settling zone where any remaining lighter floc particles are removed. Clarified water exits the system via a series of collection troughs that empty into a collection channel.

Alternate 1 (2-25 mgd trains):

The settling tank for Alternate 1 is 36'-0" wide and 36'-0" long with a 26'-0" total depth. The lamella tube settling nominal surface area is 31'-4.7" long by 36'-0" wide. This provides a surface area of 1,130 ft². The lamella tube supplier provided a multiplier factor of 10.3 to convert nominal surface area to projected surface area (PSA). The calculated PSA will be 8,454 ft². Each tank is equipped with a 3-hp sludge scraper assembly for sludge/sand removal, lamella tube assemblies, and effluent collection troughs.

Alternate 2 (4-12.5 mgd trains):

The settling tank for Alternate 2 is 25'-9.6" wide and 25'-9.6" long with an 18'-0" total depth. The lamella tube settling nominal surface area is 20'-1.9" long by 25'-9.6" wide. This provides a surface area of 520 ft². The lamella tube supplier provided a multiplier factor of 10.3 to convert nominal surface area to PSA. The calculated PSA will be 8,454 ft². Each tank is equipped with a 0.75-hp sludge scraper assembly for sludge/sand removal, lamella tube assemblies, and effluent collection troughs.

Ancillary Equipment

The microsand-floc mixture rapidly settles to the bottom of the settling tank, is directed to a central sump using a circular scraper mechanism, and is withdrawn using a rubber-lined centrifugal slurry pump. The sand-floc mixture is then pumped to a hydrocyclone box located over the injection tanks for separation.

One hydrocyclone box is provided for each train. Each box is equipped with four hydrocyclone units. Energy from pumping is effectively converted to centrifugal forces within the body of the hydrocyclone, causing iron humate and hydroxide floc to be separated from the higher density microsand. Once separated, the microsand is concentrated and discharged from the bottom of the hydrocyclone and re-injected into the process for reuse. The lighter density iron humate and hydroxide floc exits the top of the hydrocyclone and flows by gravity to a gravity thickener. Two microsand/sludge recirculation pumps, one operational and one standby, are provided for each train. The pumps are located at ground level adjacent to the settling tanks. Approximately 1,000 gpm is recycled to the hydrocyclones where 200 gpm is returned to the injection tank carrying the returned microsand and 800 gpm carries the sludge to the sludge thickeners. Since this can be a significantly higher sludge flow than with the existing basins, a new thickener is included in the Actiflo option.

Estimated Actiflo Construction Cost

The estimated probable construction cost for the Actiflo option is \$13 million. This estimated probable construction cost includes all structural modifications and equipment installation costs associated with upgrade of Basins 3 with the Alternate 1 layout (two, 25-mgd capacity trains) of the Actiflo process. A copy of the probable construction cost estimate is provided at the end of this memorandum for your reference. Since the development of the probable construction cost estimate (representing a estimated cost of \$13.7 million), additional cost savings were identified working with Kruger to lower the total estimate to \$13 million. This cost does not however include the cost of construction for an additional thickener, making this option even less affordable.

Comparison of Actiflo to Tube Settlers

As described herein, the Actiflo process requires feeding microsand and polymer to produce heavier floc to accelerate settling, allowing much smaller settling tank footprints. The microsand is recycled after it settles out. Some additional O&M would be required for maintaining the additional feed and recycle equipment. The sludge from the Actiflo process is reported to be 0.1 to 0.5%, which can be thinner than with conventional scrapers and sludge hoppers, thus a second thickener would be needed. This is the only major impact anticipated to ancillary facilities and to the scope of the project. All options require new concrete walls and floors within the existing basins.

TDEC staff has indicated they are receptive to alternate technologies and in general defer to the manufacturers for criteria on loading rates that are not covered by the existing TDEC regulations. TDEC staff said they would not mandate pilot testing for tubes, plates, sludge blanket clarification (e.g. Superpulsators), or Actiflo. Reportedly, there are numerous sludge blanket clarifiers (e.g. Superpulsators) in operation within Tennessee, but none are located on the Tennessee River. It was reported by both TDEC and Kruger that they are only aware of one small Actiflo unit within Tennessee. TDEC reported the lone Actiflo installation is located on a spring source, and Kruger reported the design loading rate for this facility is 16 gpm/sf. Since this rate has already been accepted within the state, it was used in the cost comparison herein. An Actiflo equipment quotation for a loading rate of 25 gpm/sf for clarification was also provided. At the 25 gpm/sf loading rate, the Actiflo purchase cost drops from \$4.2 million to \$ 3.55 million, so the total cost should drop from approximately \$13 to \$12 million. This design was not pursued further since the cost remained higher than the tube settler cost.

The estimated construction cost for the Actiflo system is \$13 million (at 16 gpm/sf). The estimated cost for the tube settlers option is \$9 million.

In regards to project schedule, construction of Actiflo options could be quicker than the tube settler construction since all of the Actiflo process fits within Basin 3 and hence could be constructed all at once rather than a phased construction with upgrade of Basin 3 followed by Basin 2 as would be required for the tube settlers.

*Tennessee American Water Citico WTP
Evaluation of High-Rate Pre-Treatment Options*

The advantages of the Actiflo process is the smaller footprint and hence ability to fit all 50 mgd in Basin 3. The disadvantages of the Actiflo process include an additional \$4 million in construction cost, increased O&M complexity to feed microsand and polymer and recycle the microsand, and impacts to the solids handling facilities.

Conclusions and Recommendations

The estimated construction cost for the Actiflo system is \$13 million (plus the cost of an additional thickener) compared to \$9 million for tube settlers. Based on this cost difference and the operational complexity of the high-rate pre-treatment process, remaining with the currently proposed upgrade using vertical turbine flocculators and tube settlers is recommended.

Michael D
Galavotti/KAWC/AWWSC
10/19/2007 10:39 AM

To Michael D Galavotti/KAWC/AWWSC@AWW
cc
bcc
Subject Fw: Citico WTP Revised Pretreatment Cost Comparison



Peter J
Keenan/SYSENG/CORP/AW
WSC
08/27/2007 03:53 PM

To David R Kaufman/PAWC/AWWSC@AWW, John
Watson/TAWC/AWWSC@AWW
cc Stephen P Schmitt/ADMIN/CORP/AWWSC@AWW, Gary A
Naumick/SYSENG/CORP/AWWSC@AWW
Subject Re: Fw: Citico WTP Revised Pretreatment Cost Comparison

Dave & John - Following is a summary of the issues we discussed this morning regarding the upgrade/expansion of pretreatment system capacity at the Citico WTP:

1. 68 mgd is the proposed pretreatment design capacity to meet demands thru 2015. Following is an overview of the basis for the proposed capacity:
 - 54 mgd (current MDD)
 - 4 mgd in-plant use
 - 5 mgd projected "organic growth"
 - 5 mgd for Catoosa and/or other new regional customers.
 - 68 mgd
2. The existing conventional sedimentation basins have structural deficiencies that will prevent simple retrofit modifications as was originally anticipated. Due to site constraints, new tankage will have to be constructed in place of the existing sed basin(s) to allow for upgrading of the pretreatment system.
3. CDM prepared the attached cost estimates showing that the lowest cost alternative would be to install tube settlers in Basin 3 (Option 1) to provide the requisite 68 mgd capacity. However, if future capacity increases were required (beyond 68 mgd), major modifications to Basin 2 or 1 would be required. Also, the tube settlers would be designed to operate at a loading rate of 2.5 gpm/sf. Although this rate is allowed by TDEC, it represents the upper end of the range of loading that is recommended for tube settlers.
4. The next lowest cost alternative would be to install plate settlers in Basin 3. The capital cost for this option would be an estimated \$1.4 million more than the tube settler option, although on a life cycle basis, the cost differential was projected to be closer to \$1 million.
5. The Actiflo process was also investigated as an alternative, but found to be significantly more costly than the tube and plate settlers options.
6. The plate settler option has several advantages over the tube settler option:
 - Plate settlers provide better flow distribution and solids separation mechanics than tube settlers, which means that settled water quality would likely be better from a plate settler process.
 - Maintenance of plate settlers is generally easier than tube settlers because solids have less of a tendency to accumulate within the lamella zone. Reduced maintenance requirements would be beneficial given the limited staff available to operate and maintain the facilities.
 - Improved settled water quality should reduce in-plant water use by reducing backwash frequency. This would provide additional finished water for distribution that could allow the anticipated filter expansion project to be deferred for some additional period of time. Presumably, this would allow any associated rate increase to also be deferred.
 - If additional capacity is required in the future, additional plate settlers could be added to Basin 3 at a much lower cost than adding tube settlers to Basin 2 or 1.

Given all of the advantages outlined above, it is recommended that plate settlers be selected for

upgrading the pretreatment process as the Citico WTP. Please let me know if you guys have any others thoughts or comments you think should be added to this summary. Thanks

Peter Keenan
American Water Engineering
3906 Church Road
Mt. Laurel, NJ 08054
Tel: 856-727-6112
Mob: 609-364-5937
Fax: 856-727-6199

For US Mail, please use:
PO Box 1770
Voorhees, NJ 08043
David R Kaufman/PAWC/AWWSC

David R
Kaufman/PAWC/AWWSC
08/16/2007 10:11 AM

To Peter J Keenan/SYSENG/CORP/AWWSC@AWW
cc
Subject Fw: Citico WTP Revised Pretreatment Cost Comparison

FYI. Please look at life cycle costs of 68mgd plates vs. tubes. DRK

David Kaufman
Director of Engineering
Southeast Region
American Water
800 W. Hershey Park Drive
Hershey, Pennsylvania 17033
Phone: (717) 531-3303
Fax: (717) 531-3282
dkaufman@pawc.com

----- Forwarded by David R Kaufman/PAWC/AWWSC on 08/16/2007 10:09 AM -----



"Norton, Joshua"
<NortonJM@cdm.com>
08/13/2007 02:43 PM

To <dkaufman@pawc.com>, <jwatson@amwater.com>,
<Mark.Zinnanti@amwater.com>,
<susan.holmes@amwater.com>,
<Kate.Nartey@amwater.com>,
<randytaylor@amwater.com>
cc "Alford, Judy" <AlfordJH@cdm.com>, "Dowbiggin, William"
<DowbigginWB@cdm.com>
Subject Citico WTP Revised Pretreatment Cost Comparison

All,

Please find attached the revised pretreatment option capacity and cost comparisons. These files have

been updated per our conference call discussion from Friday including:

- The cost for construction of a Basin 3 dividing wall was added to all tube and plate options.
- An additional plate option (designated as Option 4 in the attached tables) has been included to represent the cost of a 68 mgd plate option for comparison to the 68 mgd tube option.
- A relative present worth operation & maintenance cost has been added to the summary cost table.

Please revise the attached files and let me know if you have any further questions.

<<Citco Pretreatment Cost Estimate 08132007.doc>> <<Citico Capacity Options Updated 08132007.xls>>

Very truly yours,

Josh Norton, P.E., BCEE
CDM

800 Oak Ridge Turnpike
Suite B200
Oak Ridge, TN 37830
Direct: (865) 425-5401
Fax: (865) 481-3835
Mobile: (865) 806-6674



Email: nortonjm@cdm.com Citco Pretreatment Cost Estimate 08132007.doc Citico Capacity Options Updated 08132007.xls

**CITICO WATER TREATMENT PLANT
COST ESTIMATE (2007)**

Phase 1

1. Chemical Tank Truck Unload/Containment/Turnaround \$ 100,000*
2. Capacity Limitations
Hydraulic Restriction – Aldrich Plant #2 \$ 400,000*
Parallel 48" Raw Water Pipeline \$ 600,000*
3. Ammoniation \$ 200,000*

* All costs are preliminary and will be further developed as design progresses.

4. Pretreatment (Plant #1)

COSTS

Options	Rapid Mix	Vert. Turb. Flocculators	Basin 3 ¹	Basin 2	Structural Concrete Improvements	Solids Removal	Total
Option 1 – 68 mgd; 4-ft PVC tubes (2.5 gpm/sf) in Basin 3 only	\$ 0.7 M	\$ 1.7 M	\$ 2.8 M	0	\$ 1.5 M	\$ 0.7 M	\$ 7.4 M
Option 2 – 76 mgd; 4-ft PVC tubes (2.5 gpm/sf) in Basins 2 & 3	\$ 1.0 M	\$ 1.7 M	\$ 2.8 M	\$ 1.5 M	\$ 2.3 M	\$ 1 M	\$ 10.3 M
Option 3 – 75 mgd; 8-ft SS plates (0.5 gpm/sf – 80%) in Basin 3 only	\$ 0.8 M	\$ 2 M	\$ 5.0 M	0	\$ 1.7 M	\$ 0.7 M	\$ 10.2 M
Option 4 – 68 mgd; 8-ft SS plates (0.5 gpm/sf – 80%) in Basin 3 only	\$ 0.7 M	\$ 1.7 M	\$ 4.2 M	0	\$ 1.5 M	\$ 0.7 M	\$ 8.8 M
Option 5 – 75 mgd; Actiflo (two trains @ 16 gpm/sf) in Basin 3 only	n/a	n/a		n/a			\$ 13 M

¹ Includes costs for a dividing wall.

² All costs include contractor overhead and profit and construction contingency.

**CITICO WTP
PRE-TREATMENT OPTIONS EVALUATION OF 8/10/07
LIFE CYCLE COSTS AND CAPACITIES**

Options	Total Phase 1 Construction Cost	Present Worth of Extra O&M Allowance	Life Cycle Comparative Cost	Capacity	
				Total Summer	Total Winter
Option 1 – 68 mgd; 4-ft PVC tubes (2.5 gpm/sf) in Basin 3 only	\$ 7.4 million	\$ 0.5 million	\$ 7.9 million	68 MGD	57 MGD
Option 2 – 76 mgd; 4-ft PVC tubes (2.5 gpm/sf) in Basins 2 & 3	\$ 10.3 million	\$ 0.8 million	\$ 11.1 million	76 MGD	65 MGD
Option 3 – 75 mgd; 8-ft SS plates (0.5 gpm/sf – 80%) in Basin 3 only	\$ 10.2 million	\$ 0.1 million	\$ 10.3 million	75 MGD	64 MGD
Option 4 – 68 mgd; 8-ft SS plates (0.5 gpm/sf – 80%) in Basin 3 only	\$ 8.8 million	\$ 0.1 million	\$ 8.9 million	68 MGD	57 MGD
Option 5 – 75 mgd; Actiflo (two trains @ 16 gpm/sf) in Basin 3 only	\$ 13 million	\$ 0.5 million	\$ 13.5 million	75 MGD	64 MGD

Phase 2

5. 9 MGD Add Filter Capacity: \$ 3 million

CITICO WATER TREATMENT PLANT
Pretreatment Capacity Options

Options	Plant #1			Plant #2		Total	
	SB3	SB2	SB1	Summer	Winter	Summer	Winter
Option 1 - 4-ft PVC tubes (2.5 gpm/sf) in Basin 3 only	28 MGD	15 MGD*	OUT*	25 MGD	14 MGD	68 MGD	57 MGD
Option 2 - 4-ft PVC tubes (2.5 gpm/sf) in Basins 2 & 3	28 MGD	23 MGD	OUT*	25 MGD	14 MGD	76 MGD	65 MGD
Option 3 - 8-ft SS plates (0.5 gpm/sf - 80%) in Basin 3 only	35 MGD	15 MGD*	OUT*	25 MGD	14 MGD	75 MGD	64 MGD
Option 4 - 8-ft SS plates (0.5 gpm/sf - 80%) in Basin 3 only	28 MGD	15 MGD*	OUT*	25 MGD	14 MGD	68 MGD	57 MGD
Option 5 - Actiflo (two trains @ 16 gpm/sf) in Basin 3 only	50 MGD	OUT	OUT	25 MGD	14 MGD	75 MGD	64 MGD

* Floc equipment are assumed to be replaced in basins 1 and 2 with vertical turbines on beams spanning over the top of the basins with no other changes to the basins. Due to structural/reliability concerns, only one of basins 1 & 2 is counted in capacity.

TO: File

RE: Citico Water Treatment Plant
Demand & Capacity Analysis

DATE: March 2007

Demand Projection

- RFP dated 10/31/06 for Citico WTP Upgrades was based upon existing 2005 customer demands and estimated a reliable capacity requirement of 65 mgd and 68 mgd for years 2015 and 2020, respectively based on projected maximum daily demands and in plant uses.
- Demand projections were updated with 2006 historical customer demands and are shown on attached Table 3-1, Table 3-2, and Exhibit 3-12. Based on this information, the projected maximum daily demand for the existing customer base (less Walden's Ridge Utility District, Lone Oak, and Suck Creek for design year 2020 is 58.89 mgd (base condition)). When factoring in additional demands for these districts and acquisitions, plus an in-plant use of 3.70 mgd, the reliable capacity requirement for the design year 2020 is 68 mgd.

Capacity Analysis

- The existing Citico WTP filtration capacity is as follows:

	Plant No. 1	Plant No. 2	Current Total
TOTAL	40 mgd	25 mgd	65 mgd
RELIABLE	38 mgd	21.875 mgd	59.875 mgd

- The future Citico WTP upgrade proposes to add 9 mgd of filtration capacity to Plant No. 1 facilities. Under this scenario, the filtration capacities would be as follows:

	Plant No. 1	Plant No. 2	Future Total
TOTAL	49 mgd	25 mgd	74 mgd
RELIABLE	46 mgd	21.875 mgd	67.875 mgd

Under this future scenario, the total reliable filtration capacity for the design year 2020 will be met.

- Design consideration for the clarification process
 - Existing capacities (assuming no operational limitations)
 - Plant 1 - 2 @ 15 mgd ea + 10 mgd (SB #3)
 - Plant 2 - 25 mgd (Aldrich units)
 - TOTAL - 65 MGD

- Future capacities (assuming no operational limitations)
 - Plant 1 - 2 @ 25 mgd (min) * No SB #3
 - Plant 2 - 25 mgd (Aldrich units)
 - Subtotal - 75 mgd
 - Less 3 mgd (one Aldrich out of service)
 - TOTAL 72 mgd

* RFP indicated to maximize capacity up to 30 mgd.

- Conclusion
Under future upgrade scenario, design reliable capacity of 72 mgd meets the minimum capacity requirement of 68 mgd for the year 2020.

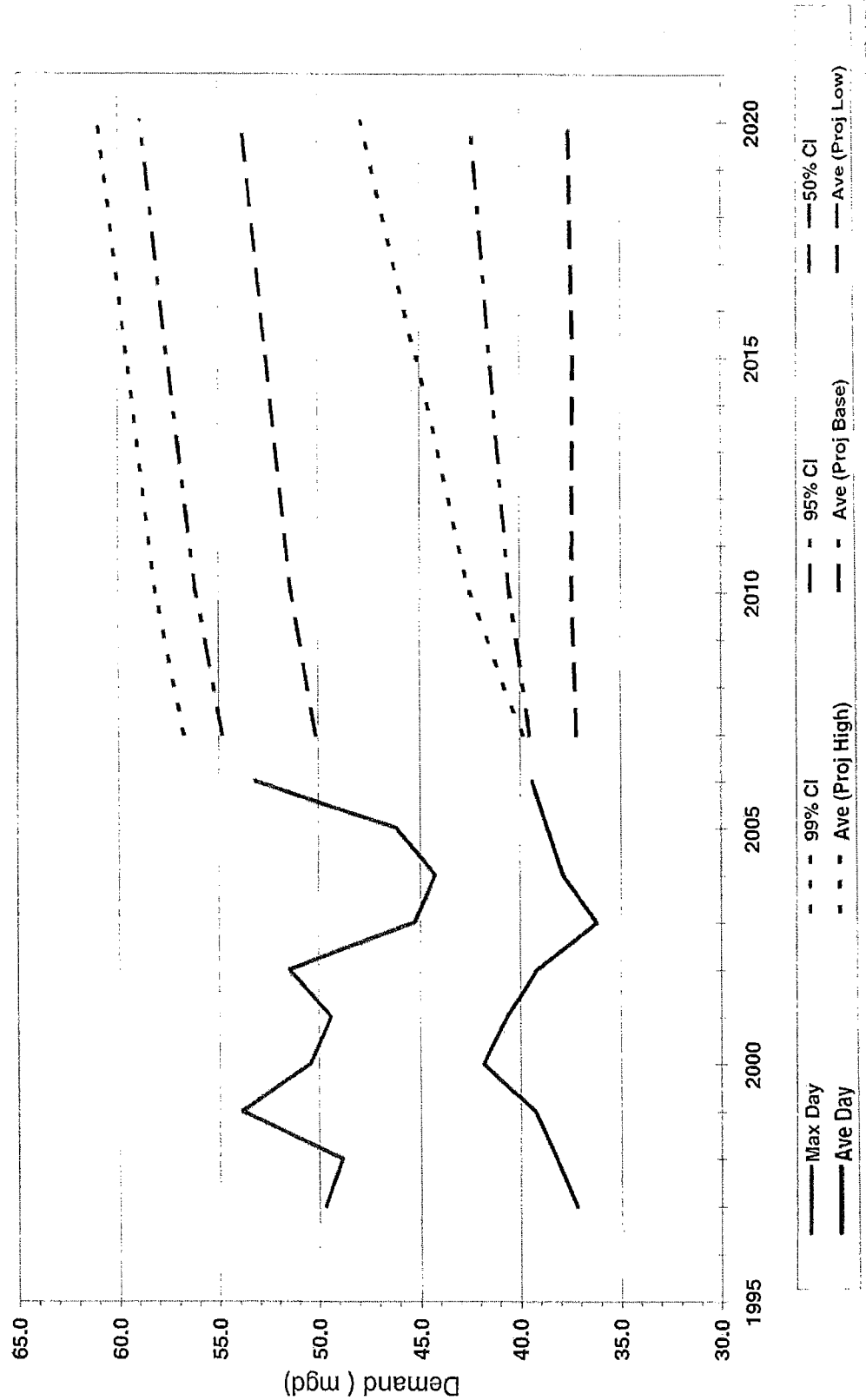
Table 3-2
Demand Summary
Tennessee American Water - Chattanooga District

Historic Demand (mgd)									
Year	Residential	Commercial	Industrial	Other	Non-Revenue	Avg Day	Max Day	Max/Avg Ratio	
1997	9.56	7.73	7.955	4.36	7.60	37.22	49.68	1.33	
1998	9.81	8.17	7.605	5.23	7.37	38.19	48.83	1.28	
1999	9.71	8.44	8.075	5.19	7.86	39.27	53.91	1.37	
2000	9.54	8.64	8.924	5.42	9.33	41.85	50.43	1.21	
2001	9.30	8.45	8.174	5.23	9.51	40.65	49.38	1.21	
2002	9.52	8.55	6.482	5.24	9.38	39.18	51.49	1.31	
2003	8.97	8.30	6.011	5.05	7.87	36.20	45.28	1.25	
2004	8.99	9.01	5.481	5.35	9.04	37.87	44.28	1.17	
2005	9.12	8.88	6.095	5.10	9.45	38.64	46.16	1.19	
2006	9.26	8.57	6.718	5.72	9.13	39.39	53.21	1.35	
Projected Demand (mgd)									
Low									
2010	9.47	8.74	5.382	5.59	8.23	37.41			
2015	9.82	8.85	4.922	5.91	7.84	37.34			
2020	10.17	8.95	4.692	6.23	7.51	37.56			
Base									
2010	9.91	9.08	6.548	6.04	8.91	40.49	56.17	1.39	
2015	10.42	9.34	6.548	6.47	8.71	41.49	57.55	1.39	
2020	10.92	9.60	6.548	6.89	8.49	42.46	58.89	1.39	
High									
2010	10.30	9.42	6.875	6.58	9.36	42.54			
2015	10.90	9.97	7.500	7.30	9.48	45.16			
2020	11.50	10.52	8.255	8.02	9.57	47.87			

Table 3-1
Customer Summary
Tennessee American Water - Chattanooga District

Historic Customers							
Year	Residential	Commercial	Industrial	Fire Service	Other	Total	
1997	59,570	7003	159	933	553	68,218	
1998	59,784	7334	158	956	587	68,819	
1999	60,141	7588	152	987	602	69,470	
2000	60,242	7863	153	1014	614	69,886	
2001	60,063	7924	151	1030	622	69,790	
2002	60,344	8192	143	1056	637	70,372	
2003	60,951	8260	139	1067	636	71,053	
2004	61,688	8189	135	1078	633	71,723	
2005	62,328	8208	130	1054	641	72,361	
2006	63,356	8168	129	1069	667	73,389	
Projected Customers							
Low	2010	65,356	8248	117	1060	699	75,480
	2015	67,856	8348	107	1065	739	78,115
	2020	70,356	8448	102	1070	779	80,755
Base	2010	66,156	8408	125	1070	711	76,470
	2015	69,656	8648	125	1075	761	80,265
	2020	73,156	8888	125	1080	811	84,060
High	2010	66,556	8568	125	1080	731	77,060
	2015	70,556	9068	125	1085	811	81,645
	2020	74,556	9568	127	1090	891	86,232


Exhibit 3-12
Tennessee American Water - Demand Summary





Memorandum

To: Dave Kaufman, John Watson, Mark Zinnanti, Susan Holmes, and Kate Narthey

From: Judy Alford 

Date: July 27, 2007

Subject: Evaluation of High-Rate Pre-Treatment Options

Attached is a copy of the evaluation American Water requested to be completed to compare high-rate pre-treatment options to the currently proposed plan to install tube settlers with vertical turbine flocculators. This request was initiated when it was determined that new walls and floors would be needed for structural support of any Plant 1 basin upgrades.

This document is being provided for your review prior to the completion of the geotechnical report so once the geotechnical report is complete, a decision can be reached quickly regarding the pre-treatment upgrade process to be utilized in the design. The only portion of the evaluation that would change as a result of the completion of the geotechnical report is the foundation requirements. We have assumed micropile foundations will be required within the current cost estimates.

In addition, we have investigated an alternate solution for consideration that may provide some relief to the construction budget concerns brought about by the necessity to rebuild the sedimentation basins. Improvements to Basin 2 could be designed as a bid alternate for construction or postponement for future work. Since we are now recommending phased construction beginning in Basin 3, there will be ample overall capacity provided if Basins 1 and 2 remain in service. The up-rated Basin 3 capacity could be increased to 28 mgd (a maximum of 30 mgd is possible). This increase would provide the needed firm capacity of 68 mgd through the combination of Basin 3 (28 mgd), the Aldrich units (25 mgd), and one of the existing Basins 1 or 2 (15 mgd). The only short-coming in this solution is if the Basin 2 work is deferred as future work, the plant will still have basins without functional flocculators. However, TDEC should accept this as a best affordable approach. If TDEC insists on flocculation, American Water could attempt to satisfy the State by requesting that the existing flocculator manufacturer repair or replace the flocculator in Basin 1. Another option would be to add additional wood baffles in Basin 1 for hydraulic flocculation. Since Basin 2 is to be upgraded eventually, it seems best to not spend time and money on a temporary fix to its flocculators. Therefore, the temporary work would be done to just Basin 1, but only if the

[Click here to enter name]

Enter Date

Page 2

Basin 2 upgrade is deferred as future work AND TDEC insists that flocculation is necessary now.

We would be happy to discuss this potential solution further during the conference call. We expect the geotechnical report to be completed early next week therefore would like to schedule a conference call as soon as possible.

If you have any questions before the conference call, please feel free to contact me, Josh or Bill.

Thank you.

cc: Josh Norton
Bill Dowbiggin

TENNESSEE-AMERICAN WATER COMPANY

Project B-8			
CHATTANOOGA TREATMENT PLANT IMPROVEMENTS FILTER HOUSE NO. 3			
Design:	12 months	Design Cost:	\$375,000
Construction:	12 months	Construction Cost:	\$5,875,000

Description

Filter House No. 3 is no longer in service, but contains six shallow filters arranged in two rows. The building and piping are old and deteriorated, the filter design results in operational limitations, and the filter pipe gallery is extremely congested. TAWC removed Filter House No. 3 from service in the early 1990s due to its condition and demand projections that indicated additional capacity was not needed at that time.

Demand forecasts performed as part of this report are projected to exceed the filter capacity of the plant. The main reasons for the increase are the growth in purchases by resale customers, and the economic rebound in Chattanooga and the surrounding area. It is recommended that a portion of the filters in Filter House No. 3 be renovated to provide the needed capacity. However, as an early phase to this project, it will be necessary to address corrosion of structural steel and damage to masonry to prevent continued deterioration. Replacement of the roof and exterior windows and doors will also be required.

Recommendation

Filter House No. 3 should be renovated in a manner that results in one row of filters. Reactivating one row of filters while removing the piping and valves associated with the other row of filters will provide adequate space for replacement piping and valves, motorized valve actuators, rate-of-flow controllers, and on-line monitoring and control instrumentation. Designing the three new filters at a filtration rate of 3 gpm/ft² will provide a additional filtration capacity of 9.0 mgd. A filtration rate greater than 3 gpm/ft² does not appear to be practical given the limited depth of the filter boxes. The depth and size of media in Filter House No. 3 should be designed to provide GAC contact time and a backwash rate comparable to the other filters.

The current plant filter capacity is 65 mgd. The capacity with one unit out of service is slightly less than 62 mgd. If all three new filters are placed in service, the total capacity will be 74 mgd, and the reliable capacity will be 71 mgd. The maximum day demand projected in this report is 65.9 mgd, and the minimum required plant capacity is 70 mgd which includes a 6.0% allowance for in-plant usage. Based

on the required capacity it is recommended that the design include renovation of the piping for three filters.

The renovation of Filter House No. 3 will also entail: architectural and structural improvements to renovate the filter building; outside piping, valving and metering improvements to regulate wash water flow rates; instrumentation and electrical improvements to power, monitor and control the filtration equipment; and heating, ventilation and dehumidification improvements to maintain performance and reliability of the filtration equipment and instrumentation.

TENNESSEE-AMERICAN WATER COMPANY

Project B-5			
CHATTANOOGA TREATMENT PLANT IMPROVEMENTS WASTEWATER TREATMENT & HANDLING FACILITIES			
Design:	18 months	Design Cost:	\$500,000
Construction:	12 months	Construction Cost:	\$6,700,000

Description

The existing spent backwash and solids handling facilities are prone to flooding and recirculate poorly treated wastewater to the raw water pumps in the intake and screen building. The overflow of the thickening tank is below the 100-year flood level. An event of this magnitude could flood the tank and release solids to the river. Based on operating experience, the tank is flooded approximately once every five years. Flooding also renders the solids handling portion of the treatment process unavailable, resulting in the potential interruption in service if settled solids cannot be removed.

Also, untreated supernatant from the tank is recirculated to the plant influent. This increases the risk of parasite (e.g., Cryptosporidium) passage through the filters, and consequently jeopardizes the public health.

Recommendation

Limited property is available to allow construction above the 100-year flood elevation. The survey recommended under Project A-1 will determine if it is possible to locate a new wastewater thickener above the 100-year flood elevation in the vicinity of Clearwell No. 2. This location will reserve space near the abandoned wastewater holding tank at Plant No. 1 for solids dewatering facilities if future disposal to the sewer is no longer possible. The thickener could also possibly be built in the floodplain, if found acceptable by regulatory agencies. In this case, the thickener would need to be constructed with a sidewall elevation above the 100-year floodplain. However, construction in the floodplain will require approvals from the Army Corps of Engineers, and replacement of the tank volume in the floodplain. The main benefit of this option is that it will allow gravity flow, reducing the need for pumping.

Due to the potential siting difficulties, this alternative can only be considered if a suitable piece of property can be located on the plant grounds above the floodplain. A survey of the plant grounds should be conducted to determine the limits of the 100-year flood.

A sampling station equipped with a flow measuring device should be provided for the supernatant effluent stream. Treated wastewater should then be discharged to a river outfall. Chemical treatment, including the addition of a polymer and dechlorinating agent, should be provided to ensure adequate treatment of the wastewater stream prior to discharge to the Tennessee River. To avoid diversion to the raw water intakes, the outfall must extend into the Tennessee River.

The thickener should include flocculators, plate or tube settlers, and a solids thickening area. The unit would be either a prepackaged system with all equipment included, or a new concrete basin with modular equipment. Redundant flocculator/settler/thickener units are recommended for reliability and ease of maintenance. Thickened solids from the units should be discharged to the City sewer. A sampling and metering station should be provided prior to the sewer tie-in. Once these improvements are complete, Sedimentation Basin No. 3 should be retired, and the space reserved for future improvements.

Alternative

Implementation of the recommended pretreatment improvements will provide space within Basin No. 3 for the construction of wastewater treatment facilities needed to improve handling of spent backwash water and solids from the settling processes. The recommended facilities consist of flocculators, modular plate settlers with integral launders, and solids thickening equipment installed within concrete tankage. The process would mimic the recommended pretreatment facilities but serve a lesser flow having a much greater concentration of solids than the raw water. Redundant flocculator/settler/thickener units are recommended for reliability and ease of maintenance. Treated wastewater will discharge to a flow measuring flume (or meter) and sampling station to an outfall. To avoid diversion to the raw water intakes, the outfall must extend into the impounded Tennessee River.

Two pump stations with wetwells, located near the abandoned wastewater holding tank at Plant No. 1 and near the existing wastewater holding tank at Plant No. 2, will deliver spent backwash and Purification Unit solids blowdowns to the flocculator/settler/thickeners. Solids blowdowns from sedimentation basins No. 1 and No. 2 and the flocculator/settler/thickeners will discharge to an equalization chamber(s) and then to a flow measuring flume (or meter) and sampling station to the City sewer.

The wastewater treatment facilities should include polymer and dechlorinating agent storage and feed facilities to provide adequate treatment of the backwash wastewater prior to discharge to the Tennessee River. The water quality parameters of concern include total suspended solids, settleable solids, chlorine residual and aluminum residual.

The wastewater treatment improvements also entail some outside piping and valving replacements and some instrumentation and electrical improvements to power, monitor and control the wastewater treatment equipment. The design will reserve space near the abandoned wastewater holding tank at Plant No. 1 for solids dewatering facilities if future disposal to the sewer is no longer possible. The total project cost for this alternative assumes no need for covers to prevent ice formation over the plate settlers. The cost estimate also assumes that Project B-5 does not precede Project A-2.

TENNESSEE-AMERICAN WATER COMPANY

Project A-2			
CHATTANOOGA TREATMENT PLANT IMPROVEMENTS PRETREATMENT FACILITIES			
Design:	18 months	Design Cost	\$500,000
Construction:	18 months	Construction Cost:	\$7,800,000

Description

Improvements are needed for each of the three sedimentation basins. The Company depends on the existing flocculation and sedimentation facilities in Plant No. 1 for the majority of pretreatment capacity. However, the flocculation and sedimentation facilities exhibit the following serious deficiencies:

- Worn out, obsolete and inoperable flocculation equipment (installed in the late 1960s).
- Deteriorating and irreparable solids collection equipment (installed in the late 1960s).
- Severely deteriorated and unbalanced effluent launders (constructed in the late 1960s).
- Severely deteriorated concrete walls and slabs (constructed between 1892 to 1925) with extensive cracking and spalling which can lead to accelerated deterioration. Problems are evident both above and below the water line.
- Short circuiting due to the weir configuration in Basin No. 1 and Basin 2, and the lack of weirs in Basin No. 3.
- Lack of flocculation and continuous solids removal equipment in Basin No. 3.
- Basin No. 3 is underutilized due to the above problems. This limits plant reliability when one of the other basins is out of service.

Flocculation equipment needs to be replaced to comply with TDEC regulations. The mechanical and structural deficiencies of the flocculation and sedimentation facilities result in poor flocculation, solids accumulation and short-circuiting of flow. These conditions hamper the Company's ability to minimize applied water turbidity, reduce particle counts and properly condition the water for filtration. However, the Company has complied with the drinking water regulations despite the deficiencies. Furthermore, the continued deterioration of the flocculation and solids collection equipment may result in an unintended shutdown of one of the basins. The extensive cracking and spalling of the concrete basins will require significant repair if deterioration accelerates due to the current poor condition.

In addition to the need for improved flocculation and sedimentation facilities, the Company requires: space for backwash wastewater handling facilities in the near-term; additional treatment capacity from Plant No. 1 in the long-term; increased hydraulic capacity between the Raw Water Control Building and the Purification Units; and a redundant pipeline between the raw water pumps and the Raw Water Control Building to improve reliability. Also, while not a pretreatment issue, concrete spalling has also been observed in Filter House No. 2. Concrete repairs for the filters can be performed in conjunction with other concrete repair work on the basins.

The following recommended pretreatment improvements satisfy these needs and address the deficiencies of the existing facilities listed above.

Recommendation

Recommended improvements for Basins No. 1 and No. 2, and for Filter House No. 2 include:

1. concrete and stone masonry repairs in and around the basins,
2. concrete repairs to address spalling of the filters in Filter House No. 2
3. replacement of flocculation and solids collection equipment,
4. construction of masonry baffle walls, and
5. installation of modular plate settlers with integral effluent launders.

The repairs and installation of new equipment will increase the capacity of each basin to a minimum of 20 mgd at a water surface loading rate over the plate settlers of 2.0 gpm/ft². When necessary in the future, the basins could be up-rated to produce 30 mgd each at a surface loading rate of 3.0 gpm/ft² over the plate settlers. No additional settling equipment would be needed to obtain the higher rate. However, Tennessee TDEC may require a demonstration study prior to allowing an increased settling rate.

The pretreatment improvements also entail some outside piping, valving and metering improvements to regulate the flow rate to each basin, and some instrumentation and electrical improvements to power, monitor and control the pretreatment equipment.

The single 60-inch diameter pipeline supplies the entire treatment plant with raw water prior to entering the Raw Water Control Building. A bypass is needed around the 60-inch line since a break in this main would result in the shutdown of the treatment plant until it can be repaired. Approximately 100 feet of main should be installed to parallel the existing line, and to provide redundancy in the event of maintenance or pipeline failure.

The Water Company reports that the flow through the Purification Units is limited to between 20 and 22 mgd. This figure is less than the rated capacity of 25 mgd. As customer demand continues to increase, this additional treatment capacity will be needed. The Water Company has inspected the piping, and was unable to find a blockage or other obstacle (such as a partially closed valve) between the Raw Water Control Building and the Purification Units. The main effluent line between the Purification Units and the clearwell is 30 inches in diameter. At a flow rate of 25 mgd, the head loss is 7.8 ft/1000 ft. The velocity at this flow rate is 7.9 ft/sec. Both of these figures exceed current design criteria. The elevation difference between the water surface of the Purification Units and the Clearwell is limited to 10 feet. The combination of head loss due to the piping size, losses through fittings, rate controllers and the Purification Unit valve houses most likely exceeds the available head at a flow rate of 25 mgd. It is recommended that the hydraulic capacity on the discharge side of the basins be increased. This project assumes that 300 feet of 30-inch main would be installed parallel to the existing line. However, a detailed hydraulic profile should be developed for Plant No. 2 to better determine the headlosses through each treatment component prior to the initiation of any piping improvements.

The improvements recommended under this project will allow the use of Basin No. 3 as a wastewater handling facility. The project cost estimate assumes no need for covers to prevent ice formation over the plate settlers.

TENNESSEE-AMERICAN WATER COMPANY

Project A-1

**CHATTANOOGA TREATMENT PLANT IMPROVEMENTS
PLANT EVALUATION & PRELIMINARY DESIGN CONCEPT**

Duration:	24 months	Cost:	\$400,000
-----------	-----------	-------	-----------

Description

Major capital improvements are recommended for the Chattanooga Treatment Plant including: pretreatment and wastewater treatment systems, flood protection modifications for the raw water pump pit, provision of ammoniation facilities to ensure compliance with the future drinking water regulations, and renovation of Filter House No. 3. The following treatment improvements have been recommended in this report:

1. Renovate Sedimentation Basins No. 1 and No. 2 and retrofit with replacement flocculation and solids collection equipment, masonry baffle walls, and modular plate settlers with integral launders. The improvements should allow the each basin to be re-rated to a capacity of 30 mgd.
2. Upgrade piping, valving and metering to better regulate flow to each sedimentation basin. Instrumentation and electrical improvements will be needed to power, monitor and control the proposed pretreatment equipment.
3. Increase the size of the common effluent piping for the Purification Units. Install a second main to parallel the single 60-inch raw water main.
4. Provide additional treatment capacity by renovating one row of filters in Filter House No. 3. Interior building modifications will also be needed.
5. Install wastewater handling facilities with integral solids thickening equipment.
6. Install ammoniation equipment to provide post-treatment disinfection with chloramines.
7. Install isolation valves on the raw water pump discharge mains to prevent flooding of the raw water pit as a result of a break on one of lines.
8. Evaluate and construct reliability improvements such as standby electrical generating capacity or engine driven pumps.

Due to the extensive scope and cost of the recommended improvements, it is recommended that a more detailed evaluation of identified deficiencies be conducted at the Chattanooga Treatment Plant. The evaluation should include a detailed survey of the Water Company's property to determine delineate the current property extent, accurately determine ground elevations, and locate the boundaries of the 100-year

floodplain and any wetlands. This should be followed by preparation of an overall design concept that encompasses all of the recommended improvements in a phased program.

The purpose of the design concept will be to assess the impact of future regulations, plant reliability issues, the cost-effectiveness of project alternatives, and development of a unified scope for the overall plant improvements. The design concept will fully address the optimum way to fit the proposed improvements on to the existing property, and will also address the logistics of keeping the plant in service while the construction activities are underway. Once the design concept is complete, it is recommended that design of the pretreatment improvements recommended under Project A-2 be initiated.

Funding Project Justification - IP-2602-4

Company:	26-Tennessee American Water Co	District:	2602-TN-Chatanooga
FP Description:	5933 If of 20" Ringgold Rd. at I-75	FP Number:	IP-2602-4

A1a. Document Prepared By

Budget - 1	Taylor, Randal D.
Preliminary - 2	Taylor, Randal D.

A1b. Asset Owner

Budget - 1	Bishop, Monty L.
Preliminary - 2	Bishop, Monty L.

A2a. Recommended via Planning Study

Budget - 1	yes
Preliminary - 2	yes

A2b. Study Project Number

Budget - 1	B-1
Preliminary - 2	See Above

A2c. Study Title & Year

Budget - 1	2000
Preliminary - 2	See Above

A3. Problem or Opportunity

Budget - 1	Recurring droughts in northern Georgia prompted CCUD to request renegotiation of the existing bulk water sales agreement. Sales will increase from 1.674mgd to 2.5 mgd . A related problem is low pressure and tank fill problems at the Jenkins Rd tank.
Preliminary - 2	See Above

A4. Recommended Solution

Budget - 1	CTI Engineering was secured to conduct a study of supplying water to CCUD (attached). The study recommended the installation of approx. 5,933 lf of minimum 20" south of Ringgold Rd under I-75 to Scruggs Road to meet CCUD's immediate need of 2.5mgd
Preliminary - 2	See Above

A5. Measurable Benefits

Budget - 1	Current engineering study by Consolidated Technology Inc. (CTI) on Catoosa Service Improvemnts indicated the recommended solution will increase CUD current ave. usage from 1.674mgd to 2.5mgd at Scruggs as well as increase pressures from 40psi to 76psi.
Preliminary - 2	See Above

A6a. Schedule

	Est Start	Est Impl	Est In Service	Est Complete	Critical Date
Budget - 1	1/1/2008	7/1/2008	12/31/2008	12/31/2008	12/31/2008
Preliminary - 2	1/1/2008	7/1/2008	12/31/2008	12/31/2008	12/31/2008

Funding Project Justification - IP-2602-4

A6b. Critical Date Explanation

Budget - 1	CCUD is currently restricting water usage due to the drought in Georgia.
Preliminary - 2	See Above

A7. Project Cost and VOW Forecast

Expenditure Type		Estimate Revision: 1								
Task		Proj Total	Prev Total	2010	2011	2012	2013	2014	2015	
Budget - 1										
Additions										
2-Preliminary (FP)		211,200	211,200	0	0	0	0	0	0	
3-Implementation (FP)		1,732,800	1,732,800	0	0	0	0	0	0	
AFUDC - Equity		40,970	40,970	0	0	0	0	0	0	
Overheads		299,376	299,376	0	0	0	0	0	0	
Total:		2,284,346	2,284,346	0	0	0	0	0	0	
Preliminary - 2										
Estimate Revision: 1										
		Proj Total	Prev Total	2010	2011	2012	2013	2014	2015	
Additions										
2-Preliminary (FP)		211,200	211,200	0	0	0	0	0	0	
3-Implementation (FP)		1,732,800	1,732,800	0	0	0	0	0	0	
AFUDC - Equity		40,970	40,970	0	0	0	0	0	0	
Overheads		299,376	299,376	0	0	0	0	0	0	
Total:		2,284,346	2,284,346	0	0	0	0	0	0	

A8. Schedule and Cost Discussion

Budget - 1	The cost was based on preliminary figures from CTT's study. Schedule and cost are based on preliminary assumptions about easement acquisitions and creek crossing permits.
Preliminary - 2	See Above

A9. Rate Impact (%)

Budget - 1	1.64
Preliminary - 2	See Above

Funding Project Justification - IP-2602-4

A10. Asset and Purpose Codes		Asset Code	Purpose Code	%
Stage				
Budget - 1	309 - Supply Mains	2. Growth/Capacity in Franchise		35
Budget - 1	309 - Supply Mains	5. Reliability & Quality of Service		15
Budget - 1	335 - Hydrants	2. Growth/Capacity in Franchise		35
		Total for Stage 1		85
Preliminary - 2	309 - Supply Mains	5. Reliability & Quality of Service		50
Preliminary - 2	335 - Hydrants	5. Reliability & Quality of Service		50
		Total for Stage 2		100

B1. Project Manager

Budget - 1

Preliminary - 2

Taylor, Randal D.

Taylor, Randal D.

B2. Background

Budget - 1

Preliminary - 2

See Above

TAW distribution system consists of 27 pressure zones and a number of interconnections to surrounding utility districts. The proposed transmission main project is located in the East-Ridge zone and will supply more water to Catoosa County Utility District at Scruggs Road on the Georgia state line. Currently TAW supplies approximately 1.674mgd average demand @ Scruggs. The Scruggs road interconnection is currently supplied by an 8" main in Ringgold Rd. and another 8" is being replaced by a 12" in Fawley road. The existing 8" main will remain in service under I-75 and an alternate route will be investigated further to determine if easements can be obtained for the proposed 20" waterline to meet CUD demand of 2.5mgd total @ Scruggs Rd. TAW desired distribution of CUD demand includes 2.5mgd @ Scruggs, 1mgd @ Lakeview Rd and 1mgd @ Chickamauga Ave. to meet their 5mgd total in 3yrs. As part of the study, CTI also recommended other improvements in the East Ridge pressure zone to be able to meet CUD total demand of 5mgd dubbed Phase 1 in the report. (See attachments for the study report). This recommended improvement will be capable of providing the needed demand and pressures for future population growth within the environs of Catoosa County as well as a potential for providing service to other parts of northern Georgia.

B3. Recommended Project Details

Budget - 1

Preliminary - 2

See Above

The recommended solution is one of the two recommended improvements by CTI in increasing the supply of water to Catoosa from 1.674mgd to 2.5mgd immediately and approximately 5mgd total within the next 3 years. Details of the recommended solution includes determining an alternate route for the proposed 20" waterline, crossing of I-75 by bore and jack in a 24" or 36" casing, crossing Chickamauga Creek by directional boring, related easements acquisition and permitting.

Funding Project Justification - IP-2602-4

B4. Project Delivery Risks

Budget - 1 Permitting issues from TDOT for crossing interstate ramps, Army Corps/TVA permits for crossing creeks can impact the project. However, this can be mitigated by selecting a route that will pose less conflicts to TDOT structures. Easement acquisition can be a risk factor depending on negotiations with specific property owners.

Preliminary - 2 See Above

B5. Investigated Options

Budget - 1 A 16 inch main was modelled but determined to be too small to meet the demands.

Preliminary - 2 See Above

B6a. Entire Facility Retirements		
Stage	Qty	Type of Facility
Budget - 1	0	Buildings
	0	Interconnections
	0	-and
	0	Mains (feet)
	0	Watering/Control Stations
	0	Pumping/Lift Stations
	0	Reservoirs/Dams
	0	Storage Tanks
	0	Surface Water Intakes
	0	Treatment Plants
	0	Vehicles
	0	Wells/Springs
Preliminary - 2	0	Buildings
	0	Interconnections
	0	-and
	0	Mains (feet)
	0	Watering/Control Stations
	0	Pumping/Lift Stations
	0	Reservoirs/Dams
	0	Storage Tanks
	0	Surface Water Intakes
	0	Treatment Plants
	0	Vehicles

Funding Project Justification - IP-2602-4

B6a. Entire Facility Retirements		
Stage	Qty	Type of Facility
	0	Wells/Springs
B6b. Partial Facility Retirements		
Budget - 1	N/A	
Preliminary - 2	See Above	
B7. Preliminary Deliverables		
Budget - 1	Drawings, Specifications, Contractor bids, Permits	
Preliminary - 2	See Above	
B8. Implementation Delivery Method		
Budget - 1	Conventional Design-Bid-Build	
Preliminary - 2	Conventional Design-Bid-Build	
B9a. Prelim Resources: Internal		
Budget - 1	Project Manager	
Preliminary - 2	See Above	
B9b. Prelim Resources: External		
Budget - 1	Design engineering firms, surveyors, property appraiser	
Preliminary - 2	See Above	
B9c. Impl Resources: Internal		
Budget - 1	Project Manager	
Preliminary - 2	See Above	
B9d. Impl Resources: External		
Budget - 1	Design engineers, RPR services, pipe an fittings vendors, construction contractors, etc.	
Preliminary - 2	See Above	
B10a. Yr-1 NET OpEx Costs-Fuel/Pwr		B10b. O&M Salary & Wages
Budget - 1	N/A	N/A
Preliminary - 2	See Above	See Above

Funding Project Justification - IP-2602-4

B10c. Purchased Water		B10d. Waste Disposal	
Budget - 1	N/A		N/A
Preliminary - 2	See Above		See Above
B10e. Chemicals		B10f. Other	
Budget - 1	N/A		N/A
Preliminary - 2	See Above		See Above
B11. Priority Ranking			
Budget - 1	Project No: 26 Out of: 31 (Prior to Drought of 2007)		
Preliminary - 2	See Above		

NOV. 13. 2003 3:08PM WV WATER

NO. 825 P. 2/7



American Water Works Service Company, Inc.

Approved at Board of
Directors Meeting
December 14, 1999

1025 Laurel Oak Road • P.O. Box 1770 • Voorhees, New Jersey 08043 • (609) 348-8201 • Fax (609) 348-8360

November 22, 1999
File No. 130-8362
IP 00-03

TENNESSEE-AMERICAN WATER COMPANY PROPOSED 2000 INVESTMENT PROJECT 1.0 MG STORAGE TANK AND TRANSMISSION IMPROVEMENTS IN EAST RIDGE

Reference: 1999 Draft Comprehensive Planning Study, Project A-8.

SUBJECT

The need for additional distribution storage capacity and associated transmission mains in the East Ridge pressure zone for flow equalization and fire protection.

RECOMMENDATION

It is recommended that funds be authorized for the design and property acquisition for a 1.0 MG storage tank to be constructed in the East Ridge pressure zone along with the design of 2,500 feet of 16-inch connecting main.

ESTIMATED COST

Total Estimated Cost	\$245,000
Proposed 2000 Expenditure	245,000

INVESTMENT PROJECT REVIEW		
DEPARTMENT	BY	DATE
ENGINEERING	<i>[Signature]</i>	11-28-99
WATER QUALITY	<i>[Signature]</i>	
INFO. SYSTEMS		
OTHERS		
RECOMMENDED FOR APPROVAL:		
<i>[Signature]</i> PRESIDENT		

NOV. 13. 2003 3:09PM WV WATER

NO. 825 P. 4/7

Tennessee-American Water Company
Proposed 2000 IP
1.0 MG Storage Tank and Transmission
Improvements in East Ridge
November 22, 1999

DISCUSSION

Portions of the Tennessee-American system in northeast Chattanooga and in East Ridge are experiencing considerable growth. The East Ridge zone covers an area of almost 50 square miles and accounts for approximately 25 percent of system demand.

While overall system demand has remained relatively steady in recent years, water consumption has declined in the central portion of the system, and has increased substantially in the extremities of the system. Medical centers, commercial complexes and residential developments are being constructed throughout the East Ridge zone. Considerable commercial growth has occurred on the eastern side of the East Ridge zone due to the Hamilton Place Mall. One of the Water Company's resale points to Catoosa Utility District is located east of I-75 at Scruggs Road. Residential growth has been strong in the Ryall Springs area which is supplied through the East Ridge zone. Also, half of new subdivisions and fire services installed in the last few years were located east of I-75 in the East Ridge zone. A County Industrial Park is proposed for the area east of I-75 and north of Bonny Oaks Drive, and additional residential development is anticipated in the northeastern and southeastern portions of the zone.

A storage analysis conducted as part of the CPS indicates that a deficit currently exists in the East Ridge zone, and continued customer growth will raise the deficit to 1.2 MG in the future. In addition, the large area served by the East Ridge zone, and the proximity to the East Ridge Booster Station limit the effectiveness of the existing East Ridge Reservoir for providing equalization storage throughout the zone during peak demand periods.

Additional storage capacity is needed to provide adequate pressure to support the associated growth in customers and fire protection needs. It is recommended that a new 1.0 MG tank be constructed. The storage tank should be located in the eastern portion of the East Ridge zone close to these growth areas. A potential location for the storage tank would be at the high elevation area on Panorama Drive south of East Brainerd Road.

In order to properly connect the proposed tank to the distribution system, approximately 2,500 feet of 16-inch main should be installed. The proposed tank should have an overflow elevation of approximately 1,000 feet, and an operating range of 960 feet to 1,000 feet. A ground storage reservoir emptied by gravity is preferred, but if property at sufficient elevation to accomplish this is not available, the tank should be constructed as an elevated tank.

The proposed tank site is located southeast of the Chattanooga Airport. Due to the airport's proximity, approval will be required from the Federal Aviation Administration (FAA). The FAA also maintains a Vortac site to the south of the proposed tank location. Vortac is part of the FAA air traffic navigation system, and additional restrictions apply to objects located within a specific radius of a Vortac site. If the proposed tank site is not approved by the FAA, an alternate site in the eastern portion of the East Ridge zone must be chosen.

NOV. 13. 2003 3:09PM WV WATER

NO. 825 P. 3/7

Tennessee-American Water Company
Proposed 2000 IP
1.0 MG Storage Tank and Transmission
Improvements in East Ridge
November 22, 1999

ADEQUACY

The funds requested by this investment project memorandum are adequate for the property acquisition, design, bidding and permitting efforts associated with this project.

NOV. 13. 2003 3:09PM WV WATER

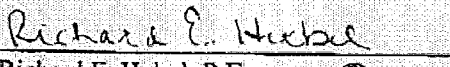

NO. 825 P. 5/7

Tennessee-American Water Company
Proposed 2000 IP
1.0 MG Storage Tank and Transmission
Improvements in East Ridge
November 22, 1999

Due to the projected customer growth in the northern half of the zone, the large area of coverage by the East Ridge zone, fire protection needs, the Tennessee DEC requirement for one day storage, and the need to take storage tanks out of service for maintenance and painting, a second tank is recommended in the future to satisfy the remaining storage deficit. It is more cost-effective to ultimately provide several tanks in this large service area than constructing a single tank and significant pipeline reinforcement to transmit fire flows throughout the gradient. Also, when the tank recommended under this memorandum is completed, the operation of the existing East Ridge Reservoir should be evaluated. Since the reservoir is located near the East Ridge Booster Station, turnover of the tank volume will be limited. If adequate turnover cannot be achieved through operational means, a booster should be installed on the reservoir to convert this tank to pumped storage.

Design, acquisition of property and easements, FAA approval, permitting and bidding are scheduled for 2000, and construction is scheduled for 2001. The estimated total project cost of ~~\$1,900,000~~ is within a ± 15 percent accuracy, assuming that a pump station is not necessary.
\$2,443,000


Timothy Z. O'Brien, P.E.


Richard E. Hubel, P.E. 
Director - Design

NOV. 13. 2003 3:09PM WY WATER

NO. 825 P. 6/7

**TENNESSEE-AMERICAN WATER COMPANY
1.0 MG STORAGE TANK AND TRANSMISSION
IMPROVEMENTS IN EAST RIDGE**

Detailed Cost Estimate

Item	Category	Estimate
<u>Tank Construction</u>		1,900,000
Property Acquisition	Company	\$100,000 275,000
Geotechnical Investigation	Contract	15,000
Surveys (tank and pipeline)	Contract	15,000
Detailed Design	Company	70,000
Permits/Easements	Company	15,000
Bidding/Evaluation	Company	15,000
		<u>\$230,000</u> 2,305,000
AFUDC		<u>15,000</u> 138,300
		<u>\$245,000</u> 2,443,000

AJB/sdb
11/22/99

%regip/tenn/tank-4.lwp

TENNESSEE-AMERICAN WATER COMPANY
ECONOMIC ANALYSIS OF THE IMPACT OF CAPITAL SPENDING PROPOSAL
IP-02-04 Lone Oak Utility District, O & M.

DETERMINATION OF REVENUE REQUIREMENT--First Full Year--2003

input	1 Authorized Rate of Return on Common Equity	11.35%
input	2 Federal Income Tax Rate	35.00%
calc	3 Return on Common Equity Before Federal Income Tax	17.46%
input	4 State Income Tax Rate	6.00%
calc	5 Required Rate of Return on Common Equity Before Income Taxes	18.58%
input	6 Common Equity Ratio for Project	40.00%
calc	7 Weighted Cost of Common Equity Before Tax	7.43%
calc	8 Long Term Debt Ratio for Project	60.00%
input	9 Estimated Cost for New Debt	5.50%
calc	10 Weighted Cost of Debt	3.30%
calc	11 Total Pre-Tax Cost of Capital	10.73%
input	12 Total Estimated Cost of Project	\$ 2,304,700
input	13 Investment by Others	\$ -
	13a Add AFUDC	\$ 138,300
calc	14 Net Investment Financed by Company	\$ 2,304,700
calc	15 New Common Equity	\$ 921,880
calc	16 New Long Term Debt	\$ 1,382,820

<u>TOTAL REVENUE REQUIREMENT</u>		<u>AMOUNT</u>	<u>RATE</u>
calc	17 Required Pre-Tax Operating Income	\$ 247,304	10.73%
input rate	18 Depreciation @Rate (Distribution system assets only-mains)	\$ 36,875	1.60%
input rate	19 Property Tax @Rate	\$ 15,902	0.69%
input	20 Change in Operating and Maintenance Expense	\$ -	
input	21 Revenue from New Customers	\$ 83,006	
calc	22 Total Net Revenue Requirement	\$ 217,076	
input rate	23 Revenue Tax @Rate	\$ 13,856	6.00%
calc	24 Total Revenue Requirement	\$ 230,932	
input	25 Latest 12 Months Revenue	\$ 30,630,972	
calc	26 Required Price Increase		0.75%

Reviewed by TAWC: _____

Approved by Southeast Region: _____

NOV. 13. 2003 3:10PM WV WATER

NO. B25 P. 7/7

Tennessee-American Water Company
Economic Analysis of the Impact of Capital
Spending Proposal
1.0 MG Storage Tank & Transmission
Improvements in East Ridge

Determination of Revenue Requirement

Authorized Rate of Return on Common Equity	11.35%
Federal Income Tax Rate	35.00%
Return on Common Equity before FIT	17.46%
State Income Tax Rate	6.00%
Required Rate of Return on CE for Project	18.57%
Common Equity Ratio for Project	40.00%
Weighted Cost of Common Equity before Tax	7.43%
Long Term Debt Ratio for Project	60.00%
Estimated Cost Rate for New Debt	7.50%
Weighted Cost of Debt	4.50%

Total Pre-Tax Cost of Capital

11.93%

Total Estimated Cost of Project

\$1,900,000

Investment by Others

0

Net Investment Financed by Company

1,900,000

New Common Equity

\$760,000

New Long Term Debt

1,140,000

Total Revenue Requirement

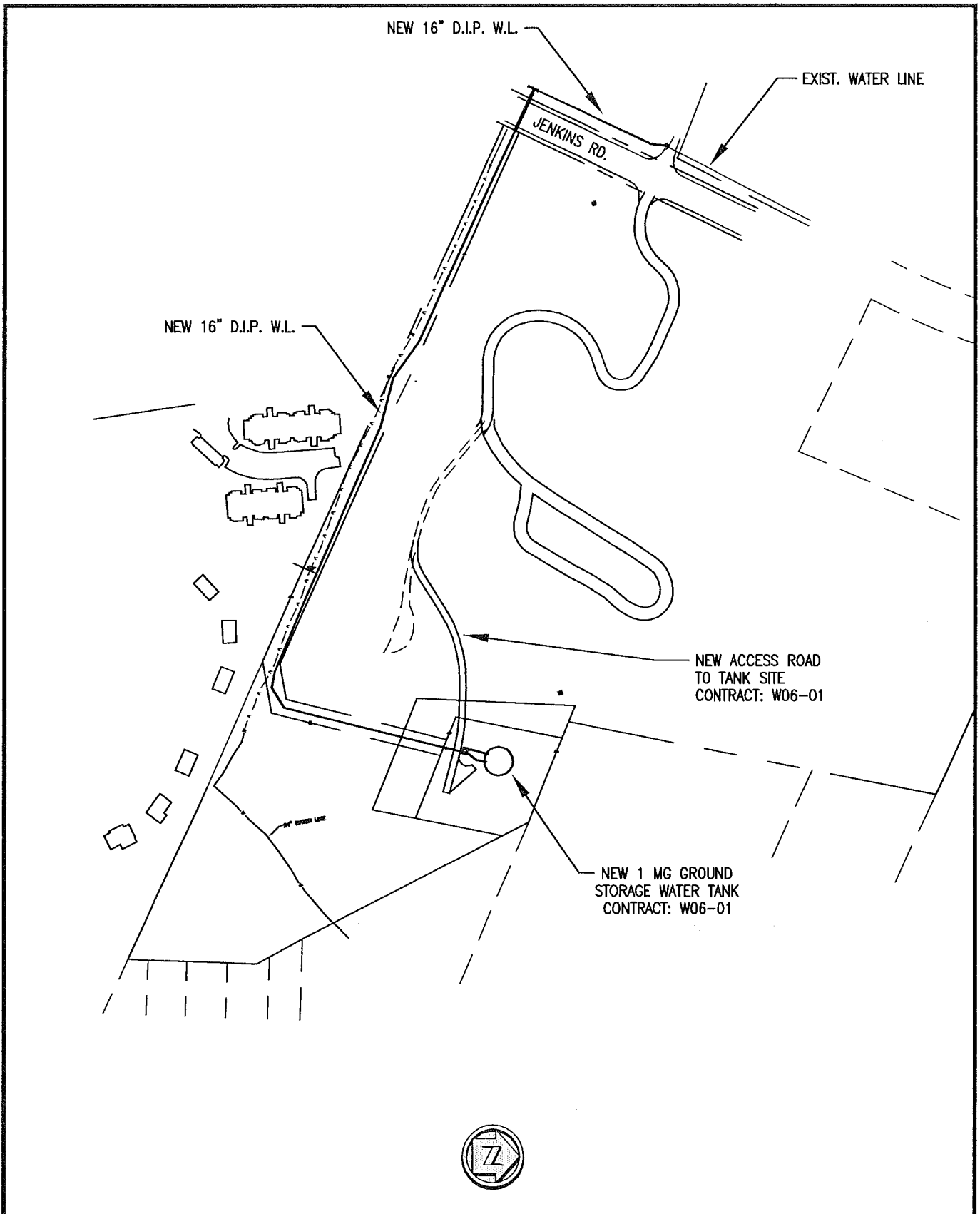
		Amount	Rate
Required Pre-Tax Operating Income		\$226,670	11.93%
Depreciation Rate	1.800%	34,200	1.80%
Property Tax Rate	1.5483%	29,418	1.55%
Change in Operation & Maint. Expense		0	0.00%
Revenue from New Customers		0	0.00%
Total Net Revenue Requirement		\$290,288	15.28%
Revenue Tax Rate	1.31160%	3,858	0.20%
Total Revenue Requirement		\$294,146	15.48%

Latest 12 Months Revenue

\$30,754,074

Required Price Increase

0.96%



GRW
GRW Engineers, Inc.
LEXINGTON LOUISVILLE NASHVILLE INDIANAPOLIS
FORT MITCHELL KNOXVILLE ARLINGTON

PROPOSED 1 MG EAST RIDGE WATER TANK

TENNESSEE AMERICAN WATER COMPANY

Scale:
1"=300'
Proj. No.
7697
Sheet:
1 of 1

TENNESSEE-AMERICAN WATER COMPANY

IP 00-03

CONSTRUCT 1.0 MG TANK & 2,500 FEET OF 16-INCH MAIN
IN EAST RIDGE ZONE

Design:	12 months	Design Cost:	\$250,000
Construction:	12 months	Construction Cost:	\$1,650,000

(* Note: Cost estimate does not include property acquisition).

Description

The East Ridge pressure zone covers a very large geographic area. Customer growth is projected, primarily in the eastern portion of zone. There are a number of large users in the East Ridge zone, and ISO has identified Needed Fire Flows up to 3,500 gpm in the southern portion of the zone. Also, water purchased by the Catoosa Utility District is obtained from the south west portion of the zone. Purchase amounts through this connection are expected to increase.

While there is also a lack of storage in the northern half of the zone, the higher priority is the existing customer base and large users located in the southern half of the pressure zone. The eastern Chattanooga area and the vicinity of the Hamilton Place Mall are experiencing considerable growth. Residential and commercial development is occurring at a rapid pace. The effectiveness of the existing East Ridge Reservoir is limited due to its proximity to the East Ridge Booster Station which supplies the zone. The only other storage is the 1.0 MG East Brainerd Standpipe.

Additional storage is needed to meet current and future equalization and fire protection needs in the zone. The current distribution storage deficit is 0.6 MG. The deficit is projected to increase to 0.7 MG by the proposed construction year of 2001, and to 1.0 MG by 2015 if no additional storage is built.

Recommendation

It is recommended that a 1.0 MG distribution storage tank be constructed in the area along East Brainerd Road and Panorama Drive to address growth in demand, and to provide improved coverage to the large area supplied by this pressure zone. Property should be purchased for this project as soon as practicable. Property selection should be based on the criteria in Appendix A.

The proposed tank should have an overflow elevation of approximately 1,000 feet, and an operating range of 960 feet to 1,000 feet. Approximately 2,500 feet of 16-inch main will be required to connect the tank to the distribution system.

Two additional projects are recommended for construction in conjunction with the proposed tank. First, 5,700 feet of 16-inch main in East Brainerd Road (Project A-4), should be installed in conjunction with the tank project. This main is needed to ensure proper refill of the proposed tank. Second, after the proposed tank is completed, a booster should be installed on the East Ridge Reservoir to convert this tank to pumped storage (Project A-5).

Computer model simulations of the proposed tank were performed under current and future conditions. The results indicate that the existing East Ridge booster pumps should operate near their design point after the new tank is constructed. The simulations included the main proposed for installation under Project A-4. Model results indicate that the new tank should raise the hydraulic grade line by approximately 25 feet under peak hour conditions.

Alternatives

If storage cannot be located within this proposed area, other potential sites to be considered are the northeast corner of the zone above Interstate 75 and the high elevation area just east of the Chattanooga City limit, near Shallowford or Standifer Gap Road. Either of these options will likely require the installation of a main to connect the storage tank to the distribution grid.



CAPITAL INVESTMENT MANAGEMENT PROJECT APPROVAL

Approved Stage: **In Progress** **Date:**
Stage: **In Progress** **Date:** 04/05/2005
Status: Saved as draft

REGION: Southeast
COMPANY: Tennessee American Water
JDE BUSINESS UNIT: Chattanooga

PROJECT TITLE: East Ridge Storage Tank
BUSINESS UNIT NO: 26020003

1. Accountability

PNI Document Prepared By Randy Taylor
Project Manager Randy Taylor
Asset Owner or Project Sponsor Monty Bishop

2. Prior Documentation

PNI



East Ridge Tank.pdf East Ridge Tank sketch 12-16-05.pdf The project was identified in the last CPS , done in 2000 as IP 00-03 and was a high priority at that time . It was listed as being in the design / construction phase at that time , but has been postponed until the land could be acquired . A copy of the CPS is attached .



East Ridge Tank -CPS.pdf

3. Need for the Project

PNI The project is needed to overcome a 1 MG storage deficit in the East Ridge zone

4. Recommended Solution

PNI The solution is to build a 1 MG storage tank

Does this project require the acquisition of land and/or buildings via either purchase or lease?	Yes
Does this project require the acquisition of easements or right-of-ways?	No
Does this project include any additional funding which is specifically for the purpose of providing an environmental benefit outside the scope of the project itself (i.e. related to Corporate Social Responsibility)?	No

5. Outputs and Benefits

PNI The project will provide an additional 1 million gallons of water storage . Computer model simulations show that pressures at the intersection of Shallowford Rd / Gunbarrell Rd. will improve from a range of 85-126 psi currently to a range of 115 - 137 after completion of the project . Likewise , fire flow capabilities at the same location will increase from 2500 to 3500 gpm .

6. Options

PNI The option to do nothing would not solve the storage deficit problem . Three other optional sites were closely

examined but were not economically available and more importantly were formally ruled on by the Federal Aviation Administration as being unacceptably limited in tank height / elevation due to proximity to an airport and flight paths.

7. **Schedule**

PNI

ACTIVITY	DATE
Project Start	July 3, 2000
Project Implementation Proposal Submission	
Substantial Project Completion (in-service)	November 17, 2006
Final Project Completion	December 15, 2006
Post Project Review	January 19, 2007

8. **Project Cost and Cash Flow**

U.S. Dollars

PNI

COMPONENT	TOTAL	PRIOR YRS	2005	2006	2007	2008	2009	2010
Preliminary Cost (PNI)	\$62,000	\$12,000	\$50,000					
Implementation Cost (PIP)	\$1,388,000				\$1,388,000			
Total Project Cost	\$1,450,000	\$12,000	\$50,000	\$0	\$1,388,000	\$0	\$0	\$0
Current SCEP Approved Cost	\$1,450,000		\$50,000		\$1,400,000			
Difference	\$0	\$12,000	\$0	\$0	\$-12,000	\$0	\$0	\$0
Advances or Contributions	\$0							
Total Company Funded	\$1,450,000	\$12,000	\$50,000	\$0	\$1,388,000	\$0	\$0	\$0
Cost of Removals	\$0							

East Ridge tank cost.XLS

9. **Budget Discussion**

PNI

Refer to Section 7

10. **Rate Impact**

PNI

11. **Risks**

PNI

12. **Project Delivery Method**

PNI

Conventional Design-Bid-Build

13. **Resource Needs**

PNI

14. **Deliverables**

PNI

15. **Drivers**

PNI

ASSET TYPE	PURPOSE	CODE	%
	Water - Central Capacity improvement for present need or 0 - 3 year growth	GCCA01	40
Drinking Water - Pumping and Storage	Water - Fire Protection	WPRQFP01	30
Drinking Water - Pumping and Storage	Water - Customer Satisfaction, Pressure	WPRQCS02	30
		TOTAL	100

16. Priority Ranking

PNI Project No: Date of Ranking: March 10, 2005
Out of: 33

17. Project Manager Routing

Stage of Project: PNI
Status of Project: Saved as draft
Approval Requested at Meetings of:

FOR ADMINISTRATIVE USE ONLY

A. Pre-CIMC Review

PNI Reviewed By:

Comments:
Action:

B. CIMC Review and Approval

PNI Reviewed By:
Approved By:

Title	Primary Approver	or	Delegated Authority

Comments:
Action:

C. CIRC Review and Approval

PNI Reviewed By:
Approved By:

Title	Primary Approver	or	Delegated Authority

Comments:
Action:

D. Modification History

04/04/2005 Randy Taylor (Saved as draft)
04/05/2005 Randy Taylor (Saved as draft)
04/05/2005 Randy Taylor PNI (Saved as draft)
04/06/2005 Lisa M Bohenick PNI (Saved as draft)
04/07/2005 Randy Taylor PNI (Saved as draft)
04/07/2005 Bruce E Juergens PNI (Saved as draft)
04/14/2005 Randy Taylor PNI (Saved as draft)
12/16/2005 Randy Taylor PNI (Saved as draft)

E. Deletion Request





Tennessee-American Water Company

P.O. Box 6338 • 1101 South Broad Street • Chattanooga, TN 37401

Approved at Board of
Directors Meeting
December 16, 1997

Richard T. Sullivan
Vice President and Manager

BP 98-04

(423) 755-76
Fax (423) 755-76
<http://www.tawc.cc>

September 3, 1997

File No. 130-8362

TENNESSEE-AMERICAN WATER COMPANY REPLACE LOOKOUT MOUNTAIN SUPPLY MAINS PROPOSED CAPITAL BUDGET PROJECT, BP 98-

SUBJECT OF STUDY

The replacement of the existing 8-inch and 12-inch steel transmission mains which supply water up the bluff face of Lookout Mountain.

RECOMMENDATION

It is recommended that 600 feet of parallel 8-inch and 12-inch steel transmission mains from the base of the bluff face of Lookout Mountain to the top be replaced with similarly sized pipelines.

ESTIMATED COST

Total Estimated Cost	\$100,000
Proposed 1998 Expenditure	\$100,000

ADEQUACY

The installation of new 8-inch and 12-inch mains will greatly reinforce the reliability of the only supply to Lookout Mountain by proactively replacing the existing 8-inch and 12-inch mains which were installed in 1929 and 1956, respectively, and which have shown rapid signs of deterioration. The funds under this budget project are adequate for the study and design work needed to address the unique installation requirements associated with these mains.

BUDGET PROJECT REVIEW		
DEPARTMENT:	BY:	DATE:
ENGINEERING	<i>[Signature]</i>	10/22/97
WATER QUALITY	<i>[Signature]</i>	10/24/97
OTHER		
RECOMMENDED FOR APPROVAL		
<i>[Signature]</i>		10/25/97
PRESIDENT		

TENNESSEE-AMERICAN WATER COMPANY
Replace Lookout Mountain Supply Mains
Proposed Capital Budget Project 98-
September 3, 1997
Page 2

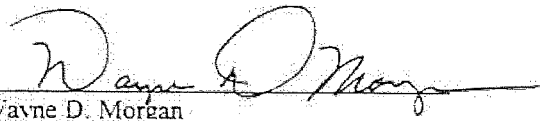
DISCUSSION

The existing 8-inch and 12-inch diameter steel mains which carry water up the bluff face of Lookout Mountain are in need of replacement due to numerous leaks which have been identified over the past several years. The leaks are typically the size of a small pinhole but, because of their inaccessible location on the mains, they are very difficult and expensive to repair. Both mains are fully exposed on the bluff face.

The 8-inch steel main was installed in 1929. One 500 foot section of this main on the bluff was replaced in 1979 but it showing advanced signs of deterioration and continues to be a problem. The 12-inch steel main was installed in 1956 and no sections have been replaced since then.

These two mains are critical to the Company's ability to reliably supply the large area of Lookout Mountain. The recommended solution to the problems of maintenance and reliability is the replacement of the mains on the bluff.

Because of the unique construction and installation requirements associated with this project, a qualified engineering firm will be required to perform the design. Design work, cost analysis, permit obtainment (from the National Park Service), easements, etc. is scheduled for 1998 and construction is scheduled for 1999. The total estimated project cost is \$428,400.


Wayne D. Morgan
Vice President

TENNESSEE-AMERICAN WATER COMPANY
REPLACE LOOKOUT MOUNTAIN SUPPLY MAINS

Detailed Cost Estimate

Design Concept and Overview	\$ 3,000
Detailed Design	\$ 70,000
Permits/Easements	\$ 15,000
Bidding/Evaluation	\$ 4,000
Subtotal	\$ 92,000
Omissions and Contingencies	\$ 5,000
AFUDC	\$ 3,000
Total	\$100,000

TENNESSEE-AMERICAN WATER COMPANY
Replace Lookout Mountain Supply Mains
Proposed Capital Budget Project 98-
September 3, 1997
Page 2

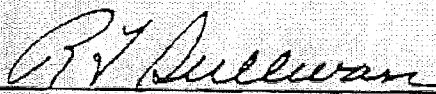
DISCUSSION

The existing 8-inch and 12-inch diameter steel mains which carry water up the bluff face of Lookout Mountain are in need of replacement due to numerous leaks which have been identified over the past several years. The leaks are typically the size of a small pinhole but, because of their inaccessible location on the mains, they are very difficult and expensive to repair. Both mains are fully exposed on the bluff face.

The 8-inch steel main was installed in 1929. One 500 foot section of this main on the bluff was replaced in 1979 but it is showing advanced signs of deterioration and continues to be a problem. The 12-inch steel main was installed in 1956 and no sections have been replaced since then.

These two mains are critical to the Company's ability to reliably supply the large area of Lookout Mountain. The recommended solution to the problems of maintenance and reliability is the replacement of the mains on the bluff.

Because of the unique construction and installation requirements associated with this project, a qualified engineering firm will be required to perform the design. Design work, cost analysis, permit obtainment (from the National Park Service), easements, etc. is scheduled for 1998 and construction is scheduled for 1999. The total estimated project cost is \$428,400.



R. T. Sullivan, Vice-President/Manager

Tennessee-American Water Company
Economic Analysis of the Impact of Capital
Spending Proposal
REPLACE LOOKOUT MOUNTAIN SUPPLY MAINS

Determination of Revenue Requirement

Authorized Rate of Return on Common Equity	11.35%
Federal Income Tax Rate	35.00%
Return on Common Equity before FIT	17.46%
State Income Tax Rate	6.00%
Required Rate of Return on CE for Project	18.57%
Common Equity Ratio for Project	40.00%
Weighted Cost of Common Equity before Tax	7.43%
Long Term Debt Ratio for Project	60.00%
Estimated Cost Rate for New Debt	7.00%
Weighted Cost of Debt	4.20%

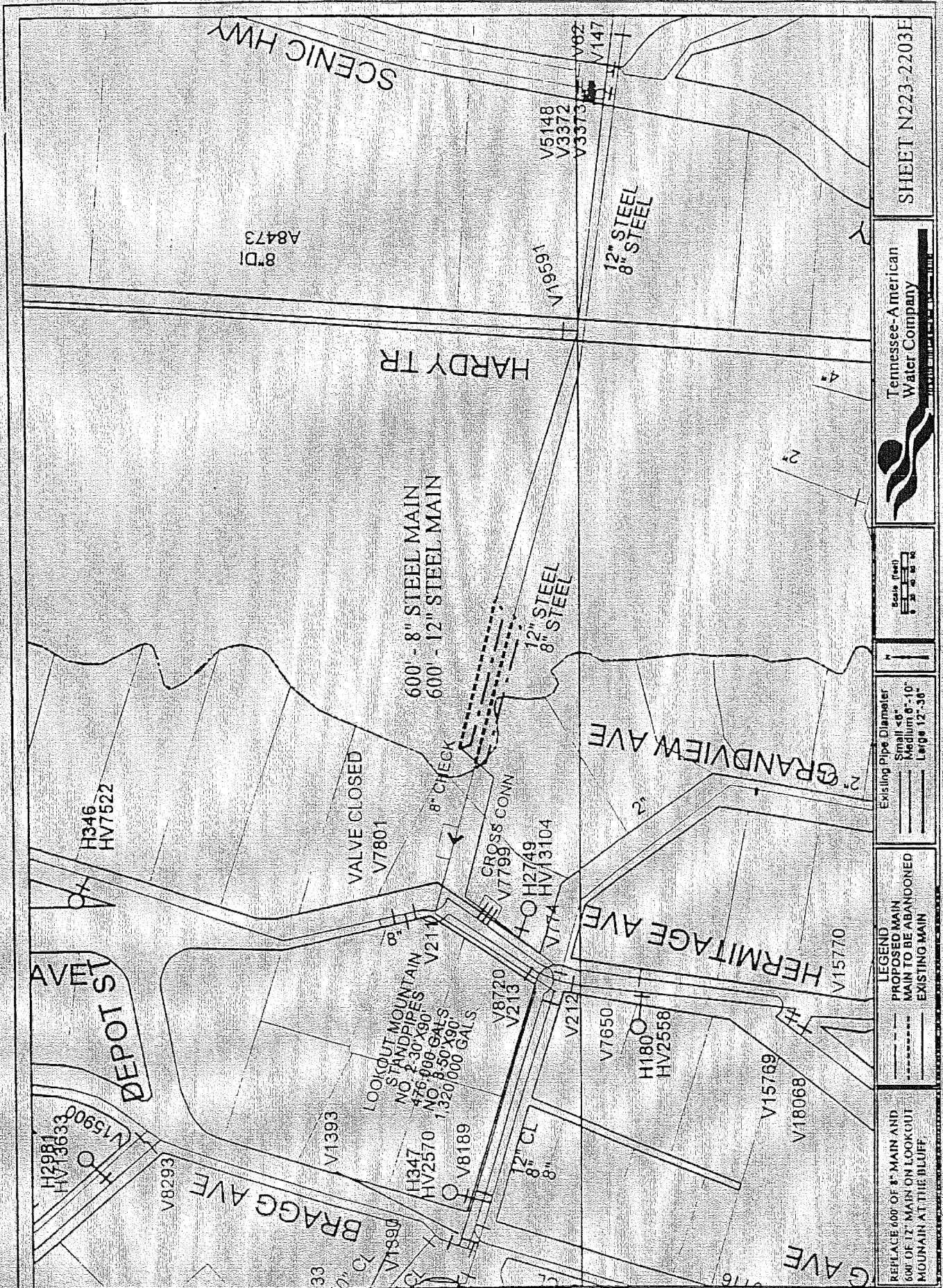
Total Pre-Tax Cost of Capital	11.63%
-------------------------------	--------

Total Estimated Cost of Project	\$428,400
Investment by Others	0
Net Investment Financed by Company	428,400
New Common Equity	\$171,360
New Long Term Debt	257,040

Total Revenue Requirement

		<u>Amount</u>	<u>Rate</u>
Required Pre-Tax Operating Income		\$49,823	11.63%
Depreciation Rate	0.6800%	2,913	0.68%
Property Tax Rate	1.7117%	7,333	1.71%
Change in Operation & Maint. Expense		0	0.00%
Revenue from New Customers		0	0.00%
Total Net Revenue Requirement		\$60,069	14.02%
Revenue Tax Rate	2.8035%	1,733	0.40%
Total Revenue Requirement		\$61,802	14.42%

Latest 12 Months Revenue	\$29,549,286
Required Price Increase	0.21%



SHEET N223-2203E



Existing Pipe Diameter
Small 48"
Medium 6"-10"
Large 12"-30"

LEGEND
REPLACE 600' OF 8" MAIN AND 600' OF 12" MAIN ON LOOKOUT MOUNTAIN AT THE BLUFF
PROPOSED MAIN
MAIN TO BE ABANDONED
EXISTING MAIN

TENNESSEE-AMERICAN WATER COMPANY
Replace Lookout Mountain Supply Mains
BP NO. 98-
1998

[illegible]



CAPITAL INVESTMENT MANAGEMENT PROJECT APPROVAL

Approved Stage: PNR1 **Date:** 12/05/2006
In Progress Stage: **Date:**
In Progress Status: Approved: Awaiting incorporation of comments

REGION: Southeast
COMPANY: Tennessee American Water
JDE BUSINESS UNIT: Chattanooga

PROJECT TITLE: Replace Lookout Mountain Supply Mains
BUSINESS UNIT NO: 26029804

1. Accountability

PNI Document Prepared By Randy Taylor
Project Manager Randy Taylor
Asset Owner or Project Sponsor John Watson

PNR1 No changes from the previous stage

2. Prior Documentation

PNI See attached IP approvals



Lkt Mtn Supply Mains-BP98.pdf

PNR1 No changes from the previous stage

3. Need for the Project

PNI The project is needed to greatly increase reliability by reducing the leakage problems that have been encountered over the years. There are two steel pipes which originate from the Lookout Mountain Pumping Station to Lookout Mountain, Tennessee, and extend up the face of the mountain to provide service to the homes on top of the mountain. The lines are buried for most part of their run, but lay directly on top of the rock when they reach the bluff at the top of the mountain. Remains of supports intended to keep the pipe off the face of the rock have corroded or failed and the pipe rests directly on the rock.

Visual inspection of the piping above grade, revealed a considerable amount of corrosion which is critical to effectively supplying water up Lookout Mountain should there be a major leak or break. In total there have been three pinhole leaks on these mains (8-inch and 12-inch) in 5+ years and our contractors who have to rappel off the bluff to repair these breaks have commented that, if the last break had been 1 inch further into the rock face, there would have been no way to fix it.

PNR1 No changes from the previous stage

4. Recommended Solution

PNI Replacement of the existing mains with 600 feet of two 12-inch steel pipes (for a total of 1200 feet), and provide a protective coating resistant to corrosion is the recommended solution.

Does this project require the acquisition of land and/or buildings via either purchase or **No**

lease?	
Does this project require the acquisition of easements or right-of-ways?	Yes
Does this project include any additional funding which is specifically for the purpose of providing an environmental benefit outside the scope of the project itself (i.e. related to Corporate Social Responsibility)?	No

PNR1 No changes from the previous stage

5. Outputs and Benefits

PN1 This project will reduce or eliminate main breaks on this critical section of pipe and increase reliability of the water supply to Lookout Mountain.

PNR1 No changes from the previous stage

6. Options

PN1 The "Do Nothing" option would result in further corrosion of the pipes and an eventual break in the pipe which could put approximately 1,753 customers out of water for an extended period of time.

Wrapping the corroded pipes with a corrosion resistant material to prevent further corrosion was considered but is not recommended because this would not provide a long term solution.
Pipe replacement with a corrosion resistant material such as PVC was considered, but is not recommended because the pressures would exceed the pressure rating of this type pipe.

PNR1 No changes from the previous stage

7. Schedule

ACTIVITY	DATE
Project Start	October 27, 1997
Project Implementation Proposal Submission	July 2, 2007
Substantial Project Completion (in-service)	October 30, 2007
Final Project Completion	November 30, 2007
Post-Project Review	December 15, 2007

PNR1 No changes from the previous stage

8. Project Cost and Cash Flow

U.S. Dollars

COMPONENT	TOTAL	PRIOR YRS	2005	2006	2007	2008	2009	2010
Preliminary Cost (PNI)	\$100,000		\$100,000					
Implementation Cost (PIP)	\$328,400		\$328,400					
Total Project Cost	\$428,400	\$0	\$428,400	\$0	\$0	\$0	\$0	\$0
Current SCEP Approved Cost	\$428,400		\$428,400					
Difference	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Advances or Contributions	\$0	\$0	\$0					
Total Company Funded	\$428,400	\$0	\$428,400	\$0	\$0	\$0	\$0	\$0
Cost of Removals	\$0	\$0	\$0					

U.S. Dollars

COMPONENT	TOTAL	PRIOR YRS	2007	2008	2009	2010	2011	2012
Preliminary Cost (PNI)	\$275,000	\$184,000	\$91,000					
Implementation Cost (PIP)	\$834,000		\$600,000	\$234,000				
Total Project Cost	\$1,109,000	\$184,000	\$691,000	\$234,000	\$0	\$0	\$0	\$0
Current SCEP Approved Cost	\$480,076	\$180,076	\$300,000	\$0				

Difference	\$628,924	\$3,924	\$391,000	\$234,000	\$0	\$0	\$0	\$0
Advances or Contributions	\$0							
Total Company Funded	\$1,109,000	\$184,000	\$691,000	\$234,000	\$0	\$0	\$0	\$0
Cost of Removals	\$0							



Lookout Mtn Bluff 11-9-07.xls

9. Budget Discussion

PNI

PNR1 Current budget is based on actual contractor bid of \$506,029 in 2003 . Since the job is entirely steel pipe , the 2007 price is estimated to be \$834,000 , or 16 % per year higher than when bid in 2003 , due primarily to the rapid increase in steel pipe prices over the last few years .

10. Rate Impact

PNI

PNR1 0.4%

11. Risks

PNI

PNR1 Risks that may affect this project are: 1) that the property owners who we need an easement from might not be cooperative, 2) that the National Park Service who will have to permit the project may not be cooperative, 3) and that the actual construction cost for the work on the " Bluff of Lookout Mountain " might exceed the initial cost estimates

12. Project Delivery Method

PNI

Conventional Design-Bid-Build

PNR1

Conventional Design-Bid-Build

13. Resource Needs

PNI

PNR1 Resources needed are a consulting engineering firm , significant involvement by legal and real estate professionals , and a specialized contractor.

14. Deliverables

PNI

PNR1 An updated engineering report outlining the design concept , an updated cost estimate , all permits and easements , and a legal opinion from our attorneys that we have full legal authority to proceed with construction.

15. Drivers

PNI

ASSET TYPE	PURPOSE	CODE	%
Drinking Water - Networks (includes services & hydrants)	Water - Poor Physical Condition	WNNAPP01	100
		TOTAL	100

PNR1 No changes from the previous stage

16. Priority Ranking

PNI

Project No: 14
Out of: 26

Date of Ranking: March 10, 2005

PNR1

No changes from the previous stage

17. Project Manager Routing

Stage of Project: PNR1

Status of Project: Approved: Awaiting incorporation of comments

Approval Requested at Meetings of:

FOR ADMINISTRATIVE USE ONLY

A. Pre-CIMC Review

PNI Reviewed By: Bruce E Juergens

Comments:

Action: Forward to CIMC without Pre-CIMC review

PNR1 Reviewed By:

Comments:

Action:

B. CIMC Review and Approval

PNI Not Necessary

PNR1 Reviewed By: Bruce E Juergens

Approved By:

Title	Primary Approver	or	Delegated Authority
President	Daniel W Warnock		
VP - Service Delivery			Daniel W Warnock
Director, Engineering	David R Kaufman		
Director, Finance			Steve L Klick

Comments:

Action: Approve and forward to CIRC

C. CIRC Review and Approval

PNI Reviewed By:

Approved By:

Title	Primary Approver	or	Delegated Authority

Comments:

Action:

PNR1 Reviewed By: Douglas E Potts

Approved By:

Title	Primary Approver	or	Delegated Authority
VP - Operations Services	Stephen P Schmitt		
Director of Capital Program Management and Asset & Planning Strategy	Gary A Naumick		
Director of Planning & Reporting			
Capital Program Manager	David M Reves		

Comments:

Action: Approve pending incorporation of comments

D. Modification History

10/16/2006 Randy Taylor PNI (Submitted for technical review: Awaiting technical review)
 11/09/2006 Randy Taylor PNI (Submitted for technical review: Awaiting technical review)
 11/13/2006 Kate Nartey PNI (Submitted for technical review: Awaiting technical review)
 11/15/2006 Kate Nartey PNI (Submitted for technical review: Awaiting technical review)
 11/16/2006 Lisa M Bohenick PNR1 (Submitted to Pre-CIMC: Awaiting Pre-CIMC review)
 11/17/2006 Bruce E Juergens PNR1 (Forwarded to CIMC without Pre-CIMC review: Awaiting CIMC approval)
 11/27/2006 Lisa M Bohenick PNR1 (Approved and forwarded to CIRC: Awaiting CIRC approval)
 11/27/2006 Douglas E Potts PNR1 (Approved and forwarded to CIRC: Awaiting CIRC approval)

11/28/2006 Bruce E Juergens PNR1 (Approved and forwarded to CIRC: Awaiting CIRC approval)
11/28/2006 Randy Taylor PNR1 (Approved and forwarded to CIRC: Awaiting CIRC approval)
12/05/2006 Irene M Fisher PNR1 (Approved: Awaiting incorporation of comments)

E. Deletion Request





CAPITAL INVESTMENT MANAGEMENT PROJECT APPROVAL

Approved Stage: PNI **Date:** 12/05/2006
In Progress **Date:**
Stage:
In Progress Approved: Awaiting incorporation of comments
Status:

REGION: Southeast
COMPANY: Tennessee American Water
JDE BUSINESS UNIT: Chattanooga

PROJECT TITLE: NRW- Pressure Reduction
BUSINESS UNIT NO: 26020701

1. Accountability

PNI Document Prepared By Shannyn C Walker
 Project Manager Shannyn C Walker
 Asset Owner or Project Sponsor Monty Bishop

2. Prior Documentation

PNI Not applicable for this project at this stage

3. Need for the Project

PNI There has been an increased need to reduce non-revenue water (NRW) in the TAW system as NRW has been over 20% since 1999. The last two years, NRW has increased further approaching 25%. This project will look at specifically reducing pressure in the Lakeview Dr area which would reduce leaks, thereby reducing NRW in this area. In addition, there have been a number of customer complaints along Lakeview Drive due to pressures above 200 psi. Even with individual pressure reducing valves (PRVs) in place, customers have complained that their individual PRVs have failed or that pressures remain too high for their internal systems. As a result, the quality of customer service in this area has been reduced. The Tennessee Department of Environmental and Conservation states that the maximum pressure for a customer should be 100 psi. Although this has not been strictly regulated, it is seen necessary to begin addressing high pressure areas, beginning with the areas above 200 psi. Attached is a sketch showing field pressure data in the Lakeview Dr area. Also attached is a main break distribution map that shows approximately 121 breaks since 1984. Although much of the pipe in this area is CL and CI, no conclusions have been made at this point for the age and type of pipe being factors for the high main break occurrence. Even if age and type of pipe are contributing factors, leaks will still be reduced greatly with pressure reduction. Main breaks are likely to be reduced in number and any future main breaks will have much less volume loss with reduced pressure in the area. This area consists of approximately 1500 customers and 21 miles of main between 1 to 8-inch diameter.



Lakeview Drive Area PRVs.pdf TAW Main Breaks LakeviewDr.pdf

4. Recommended Solution

PNI The recommended solution is to install six (6) PRVs at the estimated six (6) feeds to Lakeview Dr, to reduce pressure in this area so that the highest experienced pressure is reduced from 220 psi to 120 psi.

Does this project require the acquisition of land and/or buildings via either purchase or lease? Possibly

Does this project require the acquisition of easements or right-of-ways? Possibly

Does this project include any additional funding which is specifically for the purpose of providing an environmental benefit outside the scope of the project itself (i.e. related to Corporate Social Responsibility)? No

5. Outputs and Benefits

PNI NRW losses will be reduced due to pressure reductions from 220 psi to 120 psi. In addition, customer complaints will be reduced.

6. Options

PNI The only option is to continue operating at excessively high pressures which will continue causing excessive leaks in the area and a low quality of customer service. This is not deemed an acceptable option.

7. Schedule

ACTIVITY	DATE
Project Start	January 1, 2007
Project Implementation Proposal Submission	June 1, 2007
Substantial Project Completion (in-service)	November 30, 2007
Final Project Completion	December 31, 2007
Post Project Review	January 14, 2008

8. Project Cost and Cash Flow

		U.S. Dollars						
COMPONENT	TOTAL	PRIOR YRS	2007	2008	2009	2010	2011	2012
Preliminary Cost (PNI)	\$120,000	\$46,000	\$74,000					
Implementation Cost (PIP)	\$560,000		\$560,000					
Total Project Cost	\$680,000	\$46,000	\$634,000	\$0	\$0	\$0	\$0	\$0
Current SCEP Approved Cost	\$680,000	\$0	\$680,000					
Difference	\$0	\$46,000	\$46,000	\$0	\$0	\$0	\$0	\$0
Advances or Contributions	\$0	\$0	\$0					
Total Company Funded	\$680,000	\$46,000	\$634,000	\$0	\$0	\$0	\$0	\$0
Cost of Removals	\$0	\$0	\$0					

NRW PRV'S Investment Project Analysis -TN revised 10.3.06.xls

9. Budget Discussion

PNI Cost estimates based on previous type jobs and also contractor's quote. Contractor's proposal of \$68,000/each for PRV install (includes 2-inch PRV and 6-inch PRV, Flow Meter and Strainer). SCADA work is also included and is based on previous type jobs of approximately \$10,000 per each PRV. Attached is the design and proposal for the PRV installation.

Preliminary PRV Station Layout on Lakeview Drive.pdf

10. Rate Impact

PNI The rate impact is a 0.333% required rate increase.

11. Risks

PNI Risks include possible resistance from property owners in getting easements or land acquisition for installation of the PRV stations.

12. Project Delivery Method

PNI Engineer-Procure-Construct

13. Resource Needs

PNI Engineering Consultant will be needed for study, design, bid, contract administration, and resident observation of the PRV stations. Contractor will be needed for construction and installation of PRV stations. In-house Project Manager will be needed for quality assurance and administration.

14. Deliverables

PNI Deliverables at the PNI stage are completed design and contractor bids in hand.

15. Drivers

ASSET TYPE	PURPOSE	CODE	%
Drinking Water - Networks (includes services & hydrants)	Water - Customer Satisfaction, Pressure	WNRQCS02	50
Drinking Water - Networks (includes services & hydrants)	Water - Company Goals: Partnership, Secondary Standards	WNRCCG01	50
TOTAL			100

16. Priority Ranking

PNI Not applicable for this project at this stage

17. Project Manager Routing

Stage of Project: PNI

Status of Project: Approved: Awaiting incorporation of comments

Approval Requested at Meetings of: November, 2006

FOR ADMINISTRATIVE USE ONLY

A. Pre-CIMC Review

PNI Reviewed By: Bruce E Juergens
Comments:
Action: Forward to CIMC without Pre-CIMC review

B. CIMC Review and Approval

PNI Reviewed By: Bruce E Juergens
Approved By:

Title	Primary Approver or Delegated Authority
President	Daniel W Warnock
VP - Service Delivery	Daniel W Warnock
Director, Engineering	David R Kaufman
Director, Finance	Steve L Klick

Comments:
Action: Approve and forward to CIRC

C. CIRC Review and Approval

PNI Reviewed By: Douglas E Potts
Approved By:

Title	Primary Approver or Delegated Authority
VP - Operations Services	Stephen P Schmitt
Director of Capital Program Management and Asset & Planning Strategy	Gary A Naumick
Director of Planning & Reporting	
Capital Program Manager	David M Reves

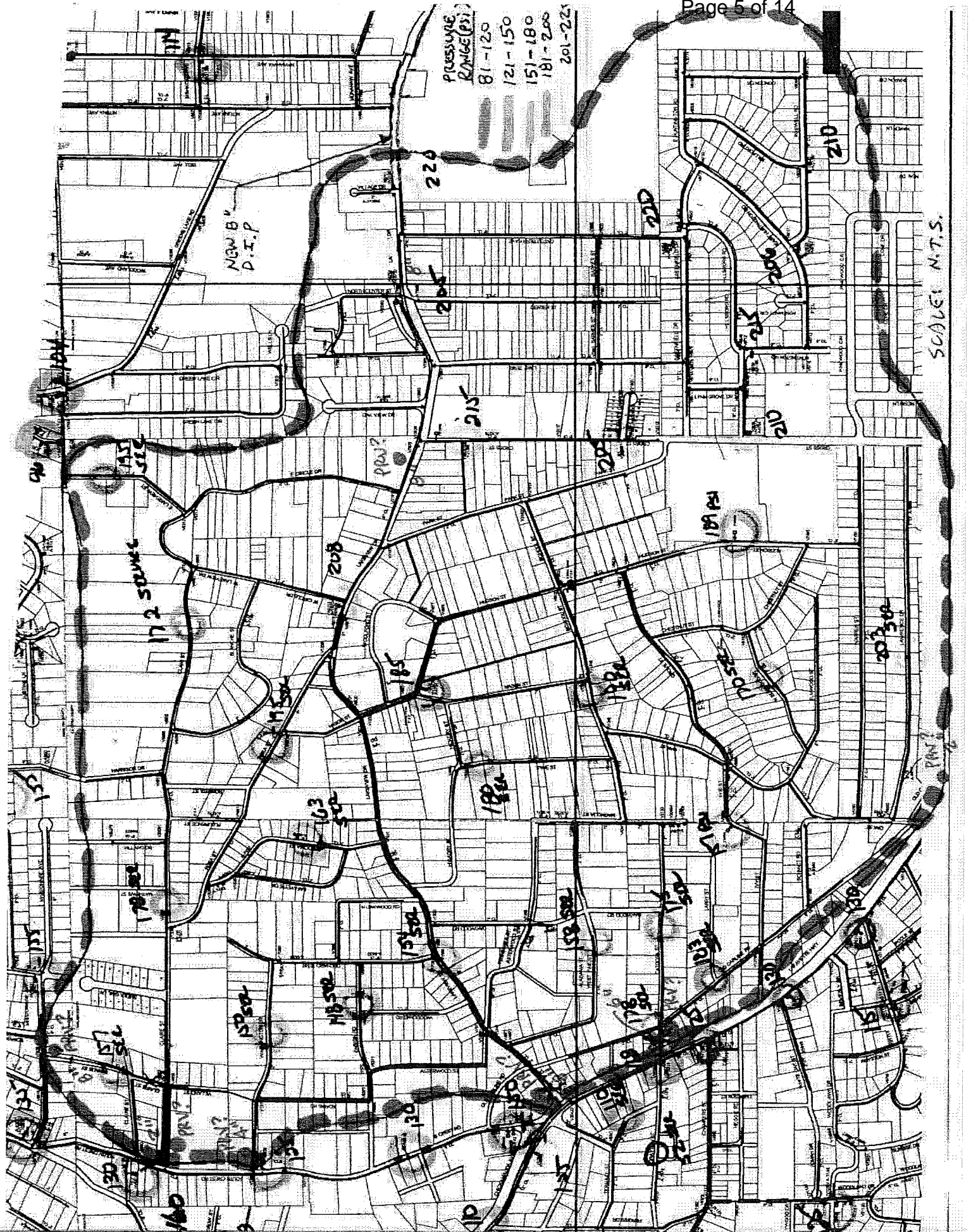
Comments:
Action: Approve pending incorporation of comments

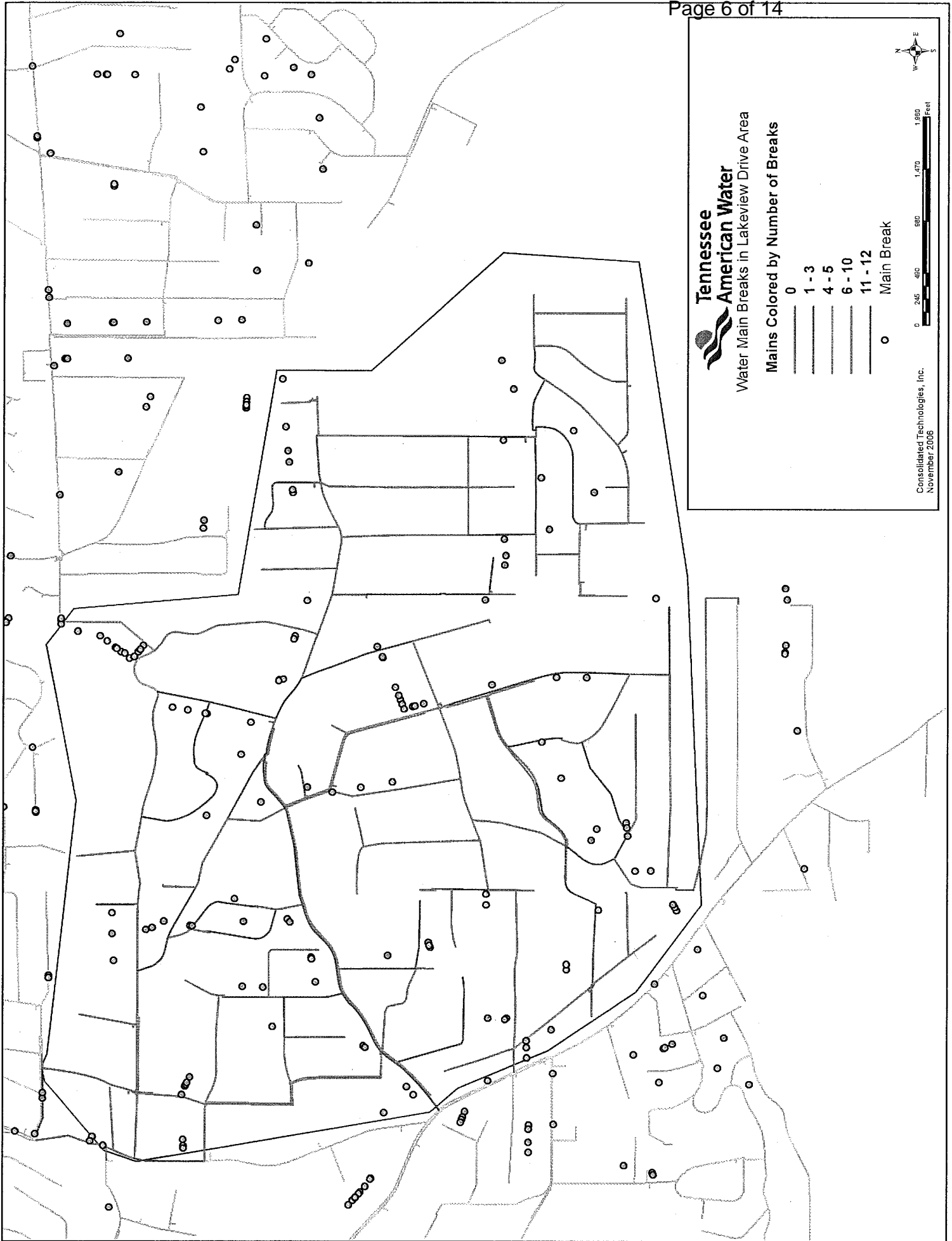
D. Modification History

02/08/2006 Randy Taylor (Saved as draft)
02/08/2006 Randy Taylor PNI (Submitted to Pre-CIMC: Awaiting Pre-CIMC review)
02/10/2006 Lisa M Bohenick PNI (Saved as draft)
10/13/2006 Bruce E Juergens PNI (Submitted for technical review: Awaiting technical review)
10/23/2006 Shannyn C Walker PNI (Submitted for technical review: Awaiting technical review)
11/03/2006 Lisa M Bohenick PNI (Submitted for technical review: Awaiting technical review)
11/08/2006 Lisa M Bohenick PNI (Submitted for technical review: Awaiting technical review)
11/09/2006 Lisa M Bohenick PNI (Submitted for technical review: Awaiting technical review)
11/13/2006 Shannyn C Walker PNI (Submitted for technical review: Awaiting technical review)
11/16/2006 Lisa M Bohenick PNI (Submitted to Pre-CIMC: Awaiting Pre-CIMC review)
11/17/2006 Bruce E Juergens PNI (Forwarded to CIMC without Pre-CIMC review: Awaiting CIMC approval)
11/27/2006 Lisa M Bohenick PNI (Approved and forwarded to CIRC: Awaiting CIRC approval)
12/05/2006 Irene M Fisher PNI (Approved: Awaiting incorporation of comments)
01/15/2007 Bruce E Juergens PNI (Approved: Awaiting incorporation of comments)
04/04/2007 Lisa M Bohenick PNI (Approved: Awaiting incorporation of comments)

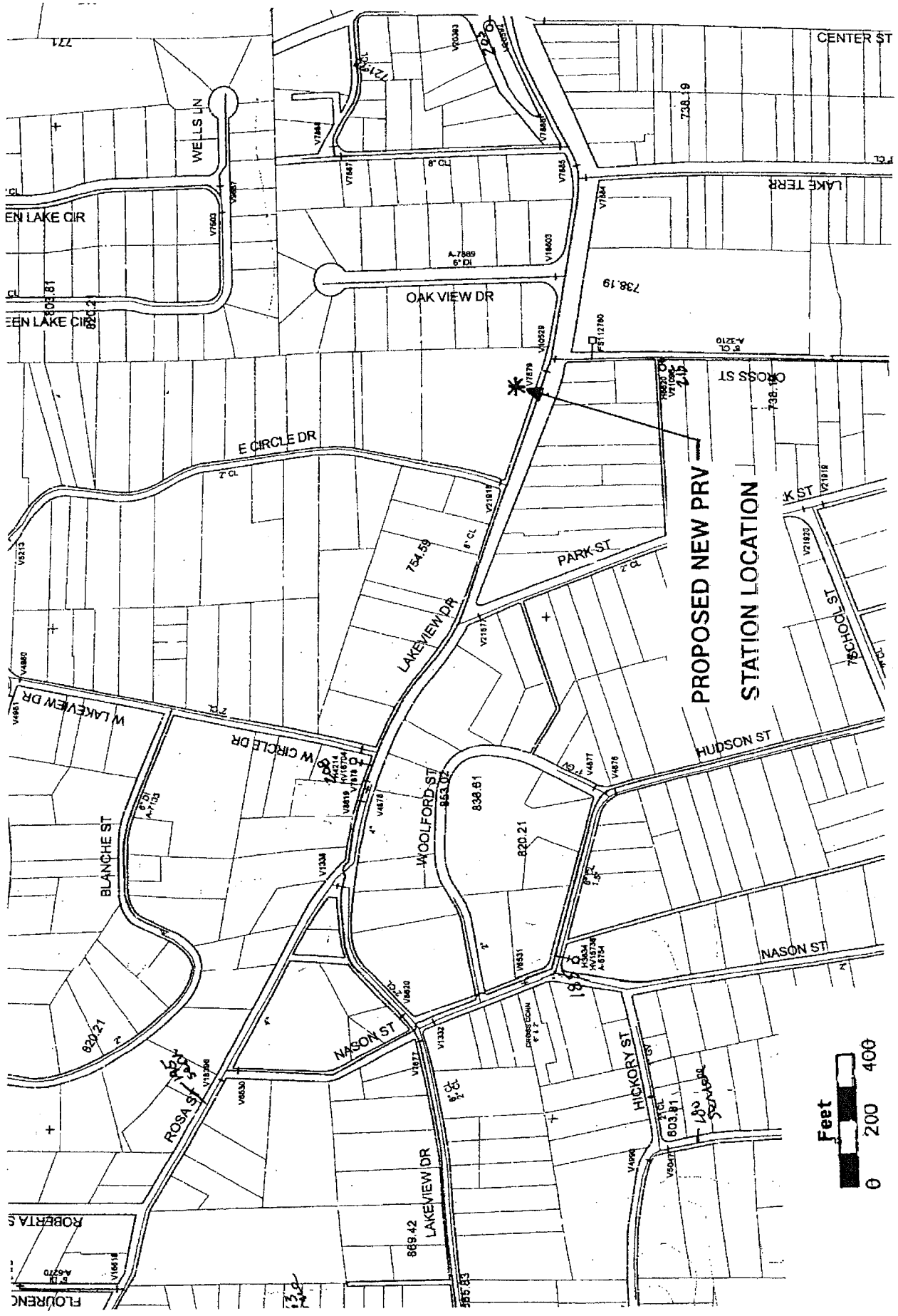
E. Deletion Request

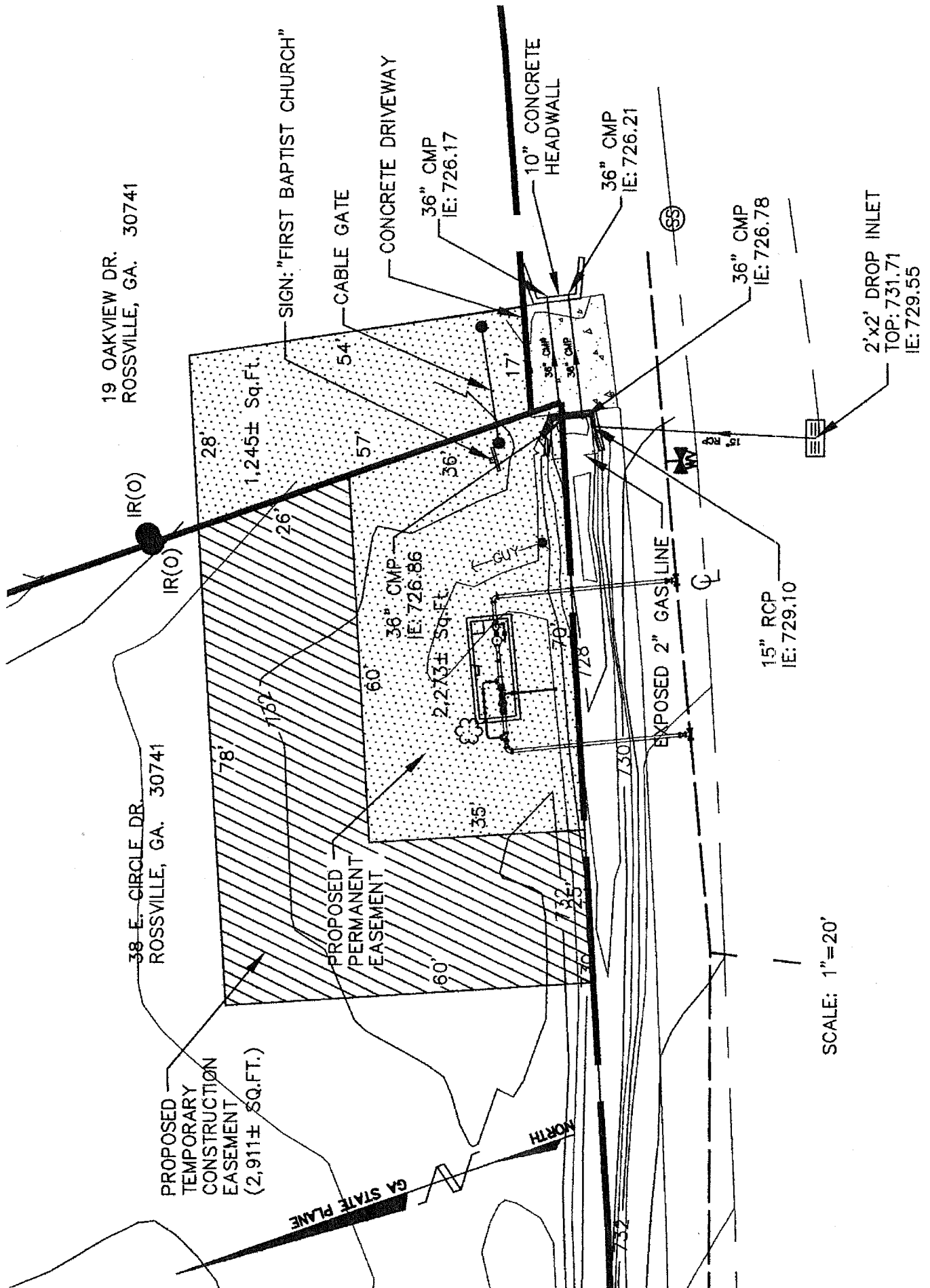






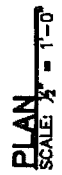
Tennessee American Water Company

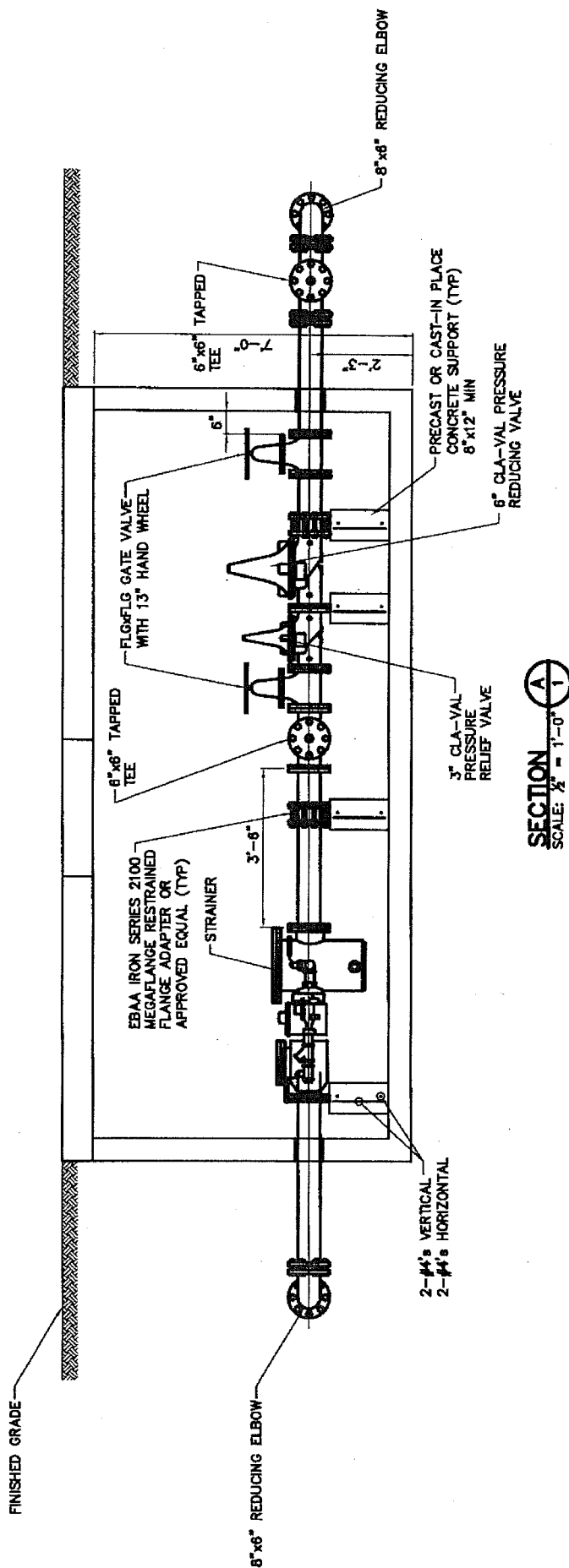


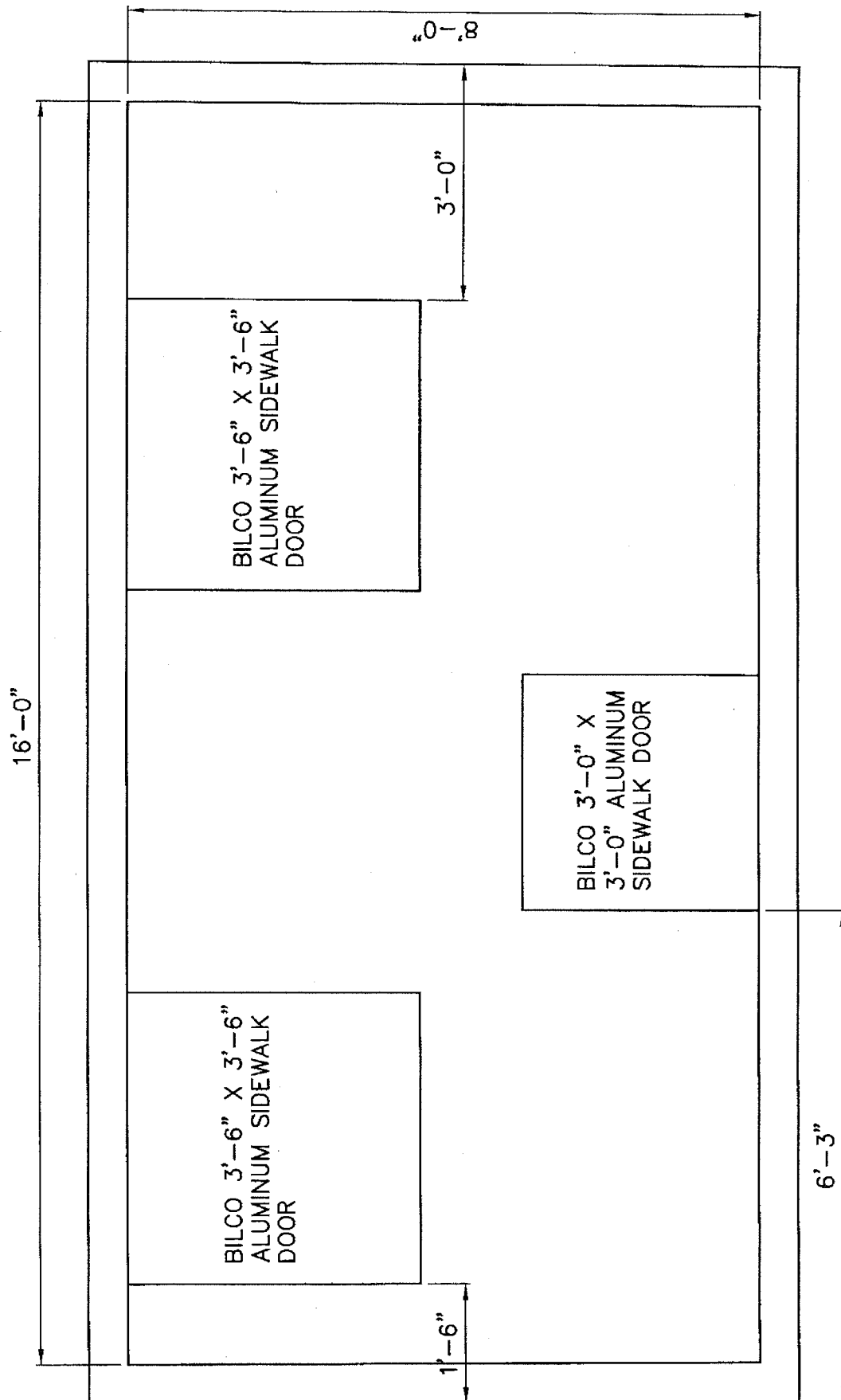


SCALE: 1"=20'

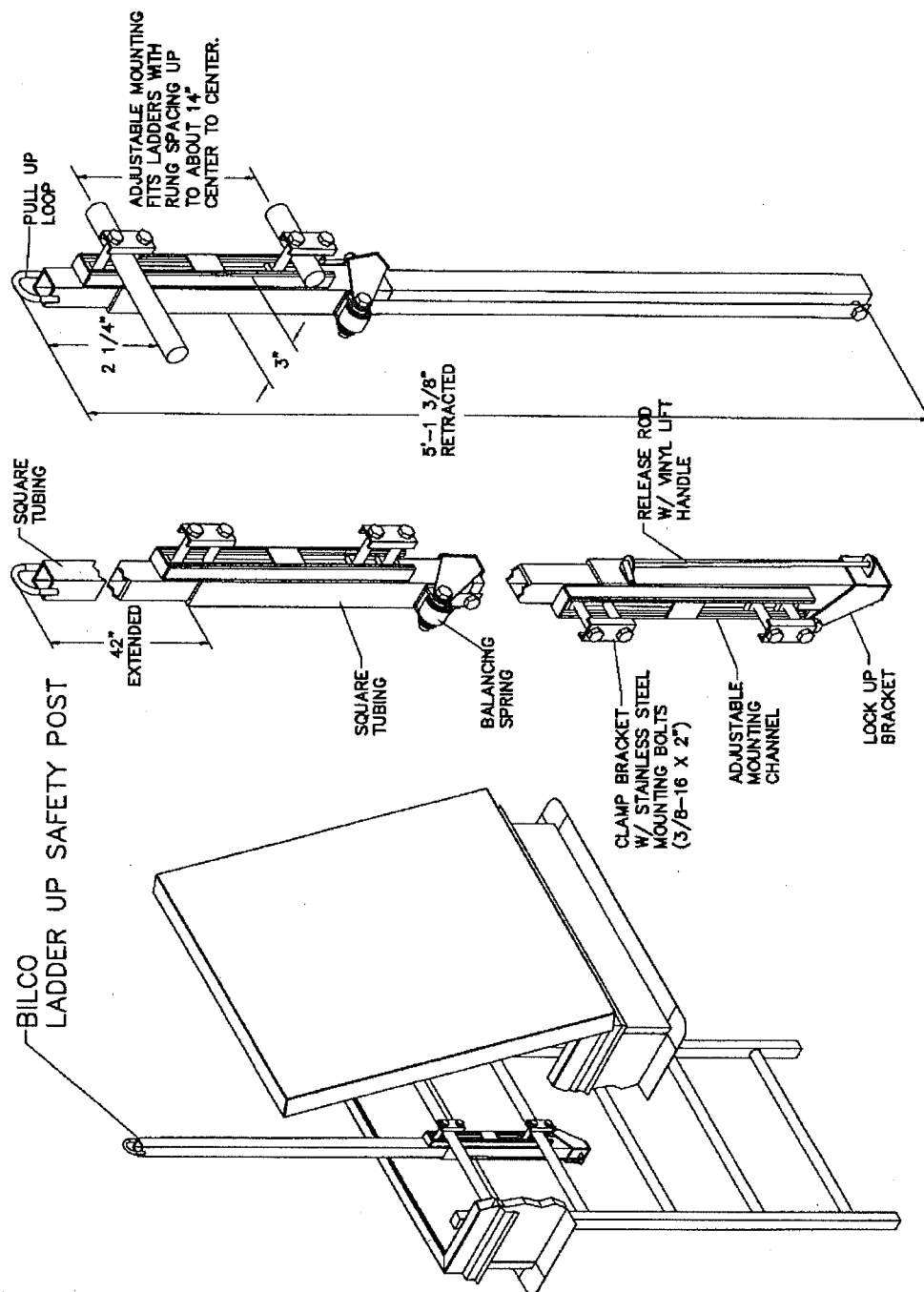
CT I







PRV VAULT TOP SLAB PLAN
SCALE: $\frac{1}{2}" = 1'-0"$



CLAMP BRACKET MAY BE REVERSED TO ACCOMMODATE RUNG SIZES OF 3/4\" TO 1 1/4\" WITH STANDARD 2\" BOLTS FURNISHED. LARGER RUNGS WILL REQUIRE LONGER BOLTS.

BILCO LADDER UP SAFETY POST DETAIL
NTS

NOTES:

1. THE 2-INCH PRESSURE REDUCING VALVES SHALL BE GLOBE, SCREWED-TYPE VALVES. THE 6-INCH PRESSURE REDUCING VALVE SHALL BE GLOBE, FLANGED VALVES. THE 3-INCH PRESSURE RELIEF VALVE SHALL BE A FLANGED ANGLE VALVE. PRESSURE REDUCING VALVES SHALL BE CLA-VAL MODEL NO. 90G-01YBSKCKO (EQUIPPED WITH ANTI-CAVITATION COMPONENTS) OR APPROVED EQUAL. THE 3-INCH PRESSURE RELIEF VALVE SHALL BE CLA-VAL MODEL NO. 50A-01BKCKD OR APPROVED EQUAL.
2. THE 8-INCH MJ TAPPING SLEEVE SHALL BE A MUELLER MODEL H-615 OR APPROVED EQUAL. THE 8-INCH FLGxMJ TAPPING VALVE SHALL BE A MUELLER MODEL T-2360 OR APPROVED EQUAL.
3. THE 2-INCH GATE VALVES SHALL BE MUELLER SERIES A-2360-8 THDxTHD OR APPROVED EQUAL. THE 6-INCH GATE VALVES SHALL BE MUELLER SERIES A-2360-3 FLGxFLG OR APPROVED EQUAL.

PROPOSAL

Page No. of Pages

B & B PLUMBING & HEATING, INC.

501 National Avenue
CHATTANOOGA, TENNESSEE 37404
(423) 622-0405
FAX (423) 622-8815

Attn: DON TABOR

PROPOSAL SUBMITTED TO

CTI

STREET

CITY, STATE and ZIP CODE

ARCHITECT

DATE OF PLANS

PHONE

DATE

7/24/06

JOB NAME

Vaults

JOB LOCATION

JOB PHONE

We hereby submit specifications and estimates for:

Budget Price per drawing 1.0 dated 7/05

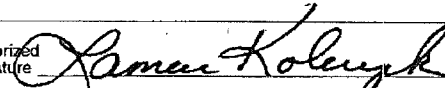
Vault & Associated piping

We Propose hereby to furnish material and labor — complete in accordance with above specifications, for the sum of:

Payment to be made as follows:

dollars (\$ 68,000.⁰⁰).

All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Workman's Compensation Insurance.

Authorized
Signature


Note: This proposal may be withdrawn by us if not accepted within _____ days.

Acceptance of Proposal — The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Date of Acceptance: _____

Signature _____

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: Sheila A. Miller/Michael A. Miller

RATE BASE (EXCLUDING WORKING CAPITAL)

Question:

54. Identify by account the salvage and cost of removal for retirements provided in response to the first rate base question above for the last (4) fiscal years to include the test period.

Response:

See attached schedule labeled as TRA-01-Q054-ATTACHMENT.

Tennessee American Water Company
DR 1 Question 54
Removal and Salvage by Account 2006 to March 2010

<u>Account</u>	<u>Account Description</u>		<u>2006</u>		<u>2007</u>		<u>2008</u>		<u>2009</u>		<u>YTD March 2010</u>	
			<u>Removal</u>	<u>Salvage</u>	<u>Removal</u>	<u>Salvage</u>	<u>Removal</u>	<u>Salvage</u>	<u>Removal</u>	<u>Salvage</u>	<u>Removal</u>	<u>Salvage</u>
303	Land		59,100.00									
304	Structures			(1,920.00)								
330	Distribution Reservoirs & Standpipes											
331	Mains		132,415.00		27,461.00		107,784.00		50,400.00	(11,016.00)	9,015.00	
333	Services						171,765.00					
334	Meter & Meter Installs						1,460.00					
335	Hydrants		122,984.00	(29,888.00)	87,913.00	(35,623.00)	98,730.00	(18,282.00)	58,787.00		2,995.00	
340	Office Furniture & Equipment		17,002.00		693.00		5,712.00	(2,985.00)	29,949.00		819.00	
341	Transportation Equipment					(16,684.00)	(18,189.00)			(11,470.00)	38.00	(10,711.00)
343	Tools, Shop & Garage Equipment							(443.00)				(3,473.00)
344	Laboratory Equipment							(3,772.00)				
345	Power Operated Equipment											
346	Communication Equipment			(1,318.00)								(2,000.00)
<u>Total</u>			331,501.00	(33,126.00)	116,067.00	(52,307.00)	367,262.00	(25,482.00)	139,136.00	(22,486.00)	12,867.00	(16,184.00)

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: Michael A. Miller

RATE BASE (EXCLUDING WORKING CAPITAL)

Question:

58. Provide the investment, accumulated depreciation, and deferred FIT on all property that is owned by an affiliate of TAWC, its Parent, Multi-State Utility, or Affiliated Utility Service Company, where applicable, and leased or allocated to TAWC or Multi-State Utility. An operating division of a Multi-State Utility is not an affiliate.

Response:

As an affiliate, American Water Works Service Company allocates charges to TAWC. Following is the requested data from the books of the Service Company at March 31, 2010:

UPIS	\$168,254,167
Accum depr	90,753,379
Def taxes	5,932,812

American Water Resources is also an affiliate of TAWC. AWR owns assets that are leased to the Service Company which, in turn, leases them to the operating companies. Data for AWR at March 31, 2010 is as follows:

UPIS	\$18,683,549
Accum depr	8,871,646
Def taxes	7,890,861

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: Michael A. Miller

COST OF CAPITAL

Question:

71. Provide the computer file showing items below for the Parent, Multi-State Utility, or Affiliated Utility Service Company, for each of the last fifteen (15) fiscal years:
- a. Earnings, annual dividends declared, annual dividends paid, book value of common equity, and price of common equity (each item should be shown per average actual common share outstanding, adjusted for stock splits and stock dividends)
 - b. Rate of return to average common equity
 - c. Common stock earnings retention ratio
 - d. For common stock not issued to the public, but issued pursuant to a) tax reduction act stock ownership plans, b) employee stock option plans, and c) dividend reinvestment plans, provide net proceeds per common share beginning of the year. Provide the information separately for each of the three (3) types of plans and report each plan's information as annual aggregate or as an average and indicate whether you are providing an average or aggregate figure.
 - e. For those issues of common stock sold to the public and not falling under d. above, provide:
 - 1) Date of issue
 - 2) Number of shares issued and previously outstanding for each issue and in the aggregate
 - 3) Number of shares sold to the public

- 4) Gross proceeds per share from the public
- 5) Net proceeds per share from the public
- 6) Price per share to the public

Response:

See the schedule included on the enclosed CD and refer to the folder named TRA-01-Q071.

Supplemental Response:

See the revised schedule included on the enclosed CD and refer to the folder named TRA-01-Q071-SUPPLEMENTAL.

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-000189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: Michael A. Miller

COST OF CAPITAL

Question:

79. If applicable, provide the amount of return on investment billed to TAWC by any affiliate of TAWC for the latest fiscal year and for the attrition period. Include in your response a calculation of the return on equity percent and the account charged for the return amount. As used in this Item 86, "affiliate" means any entity that controls, is controlled by, or is under common control with TAWC, its Parent, Multi-State Utility, or Affiliated Utility Service Company.

Response:

Please refer to the Company's response to TRA-01-14 for the cost of the services provided to TAWC from its Affiliates.

All services provided to TAWC from American Water Works Service Company and American Water Capital Corporation are provided at cost.

The cost to TAWC for the leasing of carbon from American Anglian Environmental Technologies for water treatment was priced at a markup approximately 10% above cost.

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: Michael A. Miller

COST OF CAPITAL

Question:

81. Provide copies of TAWC's projected annual equity ratio for the next five (5) fiscal years.

Response:

2010 – 43.8%

Avg. for Attrition Year ended 44.0%

2011 – 42.9% - (Based on attrition year forecast)

2012 - 43.7%

Current Planning Horizon is only complete through 2012 at this time.

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: Michael A. Miller

Question:

82. Provide copies of TAWC's projected new stock and debt issues for the next five (5) fiscal years.

Response:

	<u>Equity</u>	<u>Debt Issues</u>
2010	\$0	\$9.000 million
2011	\$.622 million	\$8.000 million
2012	\$2.000 million	\$1.500 million

Current planning horizon is only complete through 2012.

TENNESSEE AMERICAN WATER COMPANY
Docket No. 10-00189
Tennessee Regulatory Authority Staff Data Request No. 1

Responsible Witness: James H. Vander Weide

COST OF CAPITAL

Question:

87. For each comparable company utilized in your cost of capital study, provide the same data requested in Item Nos. 66 and 69.

Response:

As discussed with the TRA Staff, the attached document labeled as TRA-01-Q087-ATTACHMENT is the Value Line information which was relied on by Dr. Vander Weide.

AMER. STATES WATER NYSE-AWR						RECENT PRICE	34.75	P/E RATIO	18.5	Trailing: 18.6 Median: 22.0	RELATIVE P/E RATIO	1.07	DIV'D YLD	3.0%	VALUE LINE					
TIMELINESS	3	Lowered 6/5/09	High: 19.5	26.5	25.3	26.4	29.0	29.0	26.8	34.6	43.8	46.1	42.0	38.8	29.8	Target Price	Range			
SAFETY	3	New 2/4/00	Low: 14.1	14.8	16.7	19.0	20.3	21.6	20.8	24.3	30.3	33.6	27.0			2012	2013	2014		
TECHNICAL	3	Raised 12/4/09	LEGENDS 1.25 x Dividends p sh divided by Interest Rate Relative Price Strength 3-for-2 split 6/02 Options: No Shaded area: prior recession Latest recession began 12/07																	
BETA	.80	(1.00 = Market)																		
2012-14 PROJECTIONS			Price	Gain	Ann'l Total															
			High	Low	Return															
			60	40	(+75%)															
					(+15%)															
Insider Decisions			F M A M J J A S O																	
			to Buy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			Options	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			to Sell	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0		
Institutional Decisions			1Q2009	2Q2009	3Q2009															
			to Buy	55	66	54														
			to Sell	66	53	53														
			Hld's(000)	9283	10578	10847														
1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	© VALUE LINE PUB., INC.	12-14	
9.27	10.43	11.03	11.37	11.44	11.02	12.91	12.17	13.06	13.78	13.98	13.61	14.06	15.76	17.49	18.42	19.60	20.55	Revenues per sh	21.75	
1.67	1.68	1.75	1.75	1.85	2.04	2.26	2.20	2.53	2.54	2.08	2.23	2.64	2.89	3.31	3.37	3.65	3.90	"Cash Flow" per sh	4.60	
1.11	.95	1.03	1.13	1.04	1.08	1.19	1.28	1.35	1.34	.78	1.05	1.32	1.33	1.62	1.55	1.85	2.00	Earnings per sh ^A	2.60	
.79	.80	.81	.82	.83	.84	.85	.86	.87	.87	.88	.89	.90	.91	.96	1.00	1.01	1.05	Div'd Decl'd per sh ^B	1.22	
1.90	2.43	2.19	2.40	2.58	3.11	4.30	3.03	3.18	2.68	3.76	5.03	4.24	3.91	2.89	4.45	4.05	4.25	Cap'l Spending per sh	5.00	
9.95	10.07	10.29	11.01	11.24	11.48	11.82	12.74	13.22	14.05	13.97	15.01	15.72	16.64	17.53	17.95	19.60	20.00	Book Value per sh	22.00	
11.71	11.77	11.77	13.33	13.44	13.44	13.44	15.12	15.12	15.18	15.21	16.75	16.80	17.05	17.23	17.30	18.60	19.00	Common Shs Outst'g ^C	20.00	
13.4	12.8	11.6	12.6	14.5	15.5	17.1	15.9	16.7	18.3	31.9	23.2	21.9	27.7	24.0	22.6	18.54		Avg Ann'l P/E Ratio	19.0	
.79	.84	.78	.79	.84	.81	.97	1.03	.86	1.00	1.82	1.23	1.17	1.50	1.27	1.37	1.22		Relative P/E Ratio	1.25	
5.3%	6.6%	6.7%	5.8%	5.5%	5.0%	4.2%	4.2%	3.9%	3.6%	3.5%	3.6%	3.1%	2.5%	2.5%	2.9%	2.9%		Avg Ann'l Div'd Yield	2.4%	
CAPITAL STRUCTURE as of 9/30/09						173.4	184.0	197.5	209.2	212.7	228.0	236.2	268.6	301.4	318.7	365	390	Revenues (\$mill)	450	
Total Debt \$327.5 mill. Due in 5 Yrs \$25.0 mill.						16.1	18.0	20.4	20.3	11.9	16.5	22.5	23.1	28.0	26.8	35.0	39.0	Net Profit (\$mill)	52.0	
LT Debt \$306.3 mill. LT Interest \$23.5 mill.						46.0%	45.7%	43.0%	38.9%	43.5%	37.4%	47.0%	40.5%	42.6%	37.8%	38.5%	38.5%	Income Tax Rate	40.0%	
(LT interest earned: 3.8x: total interest coverage: 3.5x)						--	--	--	--	--	--	--	12.2%	8.5%	6.9%	5.0%	5.0%	AFUDC % to Net Profit	5.0%	
Leases, Uncapitalized: Annual rentals \$2.9 mill.						51.0%	47.5%	54.9%	52.0%	52.0%	47.7%	50.4%	48.6%	46.9%	46.2%	46.0%	44.5%	Long-Term Debt Ratio	46.5%	
Pension Assets-12/08 \$54.2 mill. Oblig. \$94.5 mill.						48.4%	51.9%	44.7%	48.0%	48.0%	52.3%	49.6%	51.4%	53.1%	53.8%	54.0%	55.5%	Common Equity Ratio	53.5%	
Pfd Stock None.						328.2	371.1	447.6	444.4	442.3	480.4	532.5	551.6	569.4	577.0	675	705	Total Capital (\$mill)	825	
Common Stock 18,512,032 shs. as of 11/3/09						449.6	509.1	539.8	563.3	602.3	664.2	713.2	750.6	776.4	825.3	870	920	Net Plant (\$mill)	1025	
MARKET CAP: \$650 million (Small Cap)						6.6%	6.4%	6.1%	6.5%	4.6%	5.2%	5.4%	6.0%	6.7%	6.4%	7.0%	7.5%	Return on Total Cap'l	8.5%	
CURRENT POSITION						10.0%	9.2%	10.1%	9.5%	5.6%	6.6%	8.5%	8.1%	9.3%	8.6%	9.5%	10.5%	Return on Shr. Equity	12.0%	
(\$MILL.)						10.1%	9.3%	10.1%	9.5%	5.6%	6.6%	8.5%	8.1%	9.3%	8.6%	9.5%	10.5%	Return on Com Equity	12.0%	
Cash Assets						2.9%	3.0%	3.6%	3.3%	NMF	1.0%	2.8%	2.7%	3.9%	3.1%	4.5%	5.0%	Retained to Com Eq	6.5%	
Other						72%	68%	65%	65%	113%	84%	67%	67%	58%	64%	54%	53%	All Div'ds to Net Prof	47%	
Current Assets						BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Company, it supplies water to more than 250,000 customers in 75 communities in 10 counties. Service areas include the greater metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to nearly 23,250 customers in the city of Big Bear Lake and in areas of San Bernardino County. Acquired Chaparral City Water of Arizona (10/00). Has roughly 675 employees. Officers & directors own 2.5% of common stock (4/09 Proxy). Chairman: Lloyd Ross, President & CEO: Floyd Wicks, Inc. CA. Addr.: 630 East Foothill Boulevard, San Dimas, CA 91773. Tele.: 909-394-3600. Internet: www.aswater.com.														
Accts Payable																				
Debt Due																				
Other																				
Current Liab.																				
Fix. Chg. Cov.																				
ANNUAL RATES																				
of change (per sh)																				
Revenues																				
"Cash Flow"																				
Earnings																				
Dividends																				
Book Value																				
QUARTERLY REVENUES (\$ mill.)																				
Cal-endar																				
Mar.31 Jun.30 Sep.30 Dec.31																				
2006																				
2007																				
2008																				
2009																				
2010																				
EARNINGS PER SHARE ^A																				
Cal-endar																				
Mar.31 Jun.30 Sep.30 Dec.31																				
2006																				
2007																				
2008																				
2009																				
2010																				
QUARTERLY DIVIDENDS PAID ^B																				
Cal-endar																				
Mar.31 Jun.30 Sep.30 Dec.31																				
2006																				
2007																				
2008																				
2009																				
2010																				

[illegible]

(B) Dividends to be paid in January, April, July, and October.
(C) In millions.

Company's Financial Strength	B
Stock's Price Stability	NMF
Price Growth Persistence	NMF
Earnings Predictability	NMF

To subscribe call 1-800-833-0046

To subscribe call 1-800-833-0046

AQUA AMERICA NYSE-WTR					RECENT PRICE	17.57	P/E RATIO	20.9	(Trailing: 23.7 Median: 25.0)	RELATIVE P/E RATIO	1.21	DIV'D YLD	3.4%	VALUE LINE	Target Price Range					
TIMELINESS 3 Lowered 6/26/09					High: 11.5	11.5	12.0	14.8	15.0	16.8	18.5	29.2	29.8	26.6	22.0	21.5		2012	2013	2014
SAFETY 3 Lowered 8/1/03					Low: 7.2	7.6	6.3	9.4	9.6	11.8	14.2	17.5	20.1	18.9	12.2	15.4				
TECHNICAL 3 Lowered 1/1/10																				64
BETA .65 (1.00 = Market)																				48
																				40
2012-14 PROJECTIONS																				32
Price																				24
Gain																				20
Ann'l Total																				16
Return																				12
High																				8
Low																				6
Insider Decisions																				
F M A M J J A S O																				
to Buy																				
Options																				
to Sell																				
Institutional Decisions																				
102009 202009 302009																				
to Buy																				
to Sell																				
Hld's(000)																				
63551 61341 60196																				
Percent																				
shares																				
traded																				
15																				
10																				
5																				
1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010					© VALUE LINE PUB., INC. 12-14															
1.70	1.82	1.84	1.86	2.02	2.09	2.41	2.46	2.70	2.85	2.97	3.48	3.85	4.03	4.52	4.63	4.95	5.35	Revenues per sh	6.45	
.42	.42	.47	.50	.56	.61	.72	.76	.86	.94	.96	1.09	1.21	1.26	1.37	1.42	1.70	1.85	"Cash Flow" per sh	2.40	
.24	.26	.29	.30	.34	.40	.42	.47	.51	.54	.57	.64	.71	.70	.71	.73	.80	.90	Earnings per sh ^A	1.25	
.21	.21	.22	.23	.24	.26	.27	.28	.30	.32	.35	.37	.40	.44	.48	.51	.55	.59	Div'd Decl'd per sh ^B	.70	
.47	.46	.52	.48	.58	.82	.90	1.16	1.09	1.20	1.32	1.54	1.84	2.05	1.79	1.98	1.90	1.95	Cap'l Spending per sh	2.15	
2.29	2.41	2.46	2.69	2.84	3.21	3.42	3.85	4.15	4.36	5.34	5.89	6.30	6.96	7.32	7.82	7.90	8.35	Book Value per sh	10.35	
59.40	59.77	63.74	65.75	67.47	72.20	106.80	111.82	113.97	113.19	123.45	127.18	128.97	132.33	133.40	135.37	136.30	137.00	Common Shs Outst'g ^C	139.00	
14.4	13.5	12.0	15.6	17.8	22.5	21.2	18.2	23.6	23.6	24.5	25.1	31.8	34.7	32.0	24.9	22.2		Avg Ann'l P/E Ratio	21.0	
.85	.89	.80	.98	1.03	1.17	1.21	1.18	1.21	1.29	1.40	1.33	1.69	1.87	1.70	1.50	1.48		Relative P/E Ratio	1.40	
5.9%	6.0%	6.2%	4.9%	3.9%	2.9%	3.0%	3.3%	2.5%	2.5%	2.5%	2.3%	1.8%	1.8%	2.1%	2.8%	3.0%		Avg Ann'l Div'd Yield	2.0%	
CAPITAL STRUCTURE as of 9/30/09																			900	
Total Debt \$1320.2 mill. Due in 5 Yrs \$245.0 mill.																			175	
LT Debt \$1265.4 mill. LT Interest \$65.0 mill.																				
(LT interest earned: 3.4x; total interest coverage: 3.4x)																				
(54% of Cap'l)																				
Pension Assets-12/08 \$112.2 mill.																				
Oblig. \$204.7 mill.																				
Pfd Stock None																				
Common Stock 136,270,613 shares as of 10/20/09																				
MARKET CAP: \$2.4 billion (Mid Cap)																				
CURRENT POSITION (\$MILL.)																				
2007 2008 9/30/09																				
Cash Assets																				
Receivables																				
Inventory (AvgCst)																				
Other																				
Current Assets																				
Accts Payable																				
Debt Due																				
Other																				
Current Liab.																				
Fix. Chg. Cov.																				
ANNUAL RATES																				
Past Past Est'd '06-'08																				
of change (per sh) 10 Yrs. 5 Yrs. to '12-'14																				
Revenues																				
"Cash Flow"																				
Earnings																				
Dividends																				
Book Value																				
BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately three million residents in Pennsylvania, Ohio, North Carolina, Illinois, Texas, New Jersey, Florida, Indiana, and five other states. Divested three of four non-water businesses in '91; telemarketing group in '93; and others. Acquired AquaSource, 7/03; Consumers Water, 4/99; and others. Water supply revenues '08: residential, 60%; commercial, 14%; industrial & other, 26%. Officers and directors own 1.3% of the common stock (4/09 Proxy). Chairman & Chief Executive Officer: Nicholas DeBenedictis. Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Telephone: 610-525-1400. Internet: www.aquaamerica.com.																				
During the September interim, Aqua America lost some ground on a year-over-year basis. Although revenues were up slightly from the prior year, earnings dropped a penny, as unfavorable weather conditions and higher operating costs hurt profits during the third quarter. Looking ahead, though, the company probably ended the year on a good note. A number of rate-relief cases were set to be decided in the fourth quarter which, if approved, should provide a slight last-minute boost to the top and bottom lines. Also, management has been actively working to reduce operating costs, and the benefits of these efforts should help widen margins. For the year, we expect a total increase in revenues and earnings of \$48 million and \$0.07 a share, respectively, but it should be noted that last year included a gain from the sale of its underperforming Woodhaven system. Aqua America should continue to expand its reach through acquisitions and rate-relief cases over the next few years. The company has acquired a wastewater treatment plant in Lumpkin County, Georgia, and this new subsidiary																				
others. Water supply revenues '08: residential, 60%; commercial, 14%; industrial & other, 26%. Officers and directors own 1.3% of the common stock (4/09 Proxy). Chairman & Chief Executive Officer: Nicholas DeBenedictis. Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Telephone: 610-525-1400. Internet: www.aquaamerica.com.																				
(Aqua Georgia Inc.) may be bolstered by further purchases in this region. Also, WTR expanded its Aqua Pennsylvania division in December, purchasing the assets of Athens Township Authority, and subsequently signed a 20-year contract to provide water services. Additionally, the \$75 million in rate cases filed in 2009 should, if judged in Aqua's favor, boost revenues and earnings over the next few years.																				
These shares are a neutral choice for the coming six to 12 month period, but hold some appeal for the long haul. One attractive trait is the steady dividend yield, which was raised 7.4% during the fourth quarter of 2008. The company has historically raised its payout every year, and this will most likely continue over the coming 3- to 5-year stretch. Also, the top- and bottom-line gains we project over the 2012-2014 horizon give this equity good recovery potential. Conservative investors should also take note of the high scores for Stock Price Stability and Earnings Predictability, as well as the below-the-market average Beta coefficient.																				
John D. Burke January 22, 2010																				

CALIFORNIA WATER NYSE-CWT										RECENT PRICE	36.83	P/RATIO	18.4	(Trailing: 18.5) (Median: 22.0)	RELATIVE P/E RATIO	1.06	DIV'D YLD	3.2%	VALUE LINE
TIMELINESS	4	Lowered 11/6/09	High: 33.8 32.0 31.4 28.6 26.9 31.4 37.9 42.1 45.8 45.4 46.6 48.3 Low: 20.8 22.6 21.5 22.9 20.5 23.7 26.1 31.2 32.8 34.2 27.7 33.5										Target Price Range 2012 2013 2014						
SAFETY	3	Lowered 7/27/07	LEGENDS --- 1.33 x Dividends p sh divided by Interest Rate Relative Price Strength 2-for-1 split 1/98 Options: Yes Shaded area: prior recession Latest recession began 12/07																
TECHNICAL	3	Lowered 12/25/09	2012-14 PROJECTIONS Price Gain Ann'l Total High 60 (+65%) 15% Low 40 (+10%) 5%																
BETA	.75	(1.00 = Market)	Insider Decisions F M A M J J A S O to Buy 0 0 0 0 0 0 0 0 0 0 Options 0 0 0 0 0 0 0 0 0 0 to Sell 0 0 0 0 0 0 0 0 0 0																
Institutional Decisions 10/20/09 20/20/09 30/20/09 to Buy 83 76 56 to Sell 81 85 75 Hld's(000) 10000 10018 9635										Percent shares traded 9 6 3									
1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010										© VALUE LINE PUB., INC. 12-14									
13.34 12.59 13.17 14.48 15.48 14.76 15.96 16.16 16.26 17.33 16.37 17.18 17.44 16.20 17.76 19.80 21.35 22.10										Revenues per sh 23.90									
2.25 2.02 2.07 2.50 2.92 2.60 2.75 2.52 2.20 2.65 2.51 2.83 3.03 2.71 3.12 3.72 4.05 4.25										"Cash Flow" per sh 4.80									
1.35 1.22 1.17 1.51 1.83 1.45 1.53 1.31 .94 1.25 1.21 1.46 1.47 1.34 1.50 1.90 1.99 2.10										Earnings per sh A 2.60									
.96 .99 1.02 1.04 1.06 1.07 1.09 1.10 1.12 1.12 1.12 1.13 1.14 1.15 1.16 1.17 1.18 1.19										Div'd Decl'd per sh B 1.25									
2.53 2.26 2.17 2.83 2.61 2.74 3.44 2.45 4.09 5.82 4.39 3.73 4.01 4.28 3.68 4.82 5.20 5.25										Cap'l Spending per sh 5.25									
10.90 11.56 11.72 12.22 13.00 13.38 13.43 12.90 12.95 13.12 14.44 15.66 15.79 18.15 18.50 19.44 20.00 19.75										Book Value per sh C 21.30									
11.38 12.49 12.54 12.62 12.62 12.62 12.94 15.15 15.18 15.18 16.93 18.37 18.39 20.66 20.67 20.72 21.00 21.25										Common Shs Outs'tg D 23.00									
13.6 14.1 13.7 11.9 12.6 17.8 17.8 19.6 27.1 19.8 22.1 20.1 24.9 29.2 26.1 19.8 19.3										Avg Ann'l P/E Ratio 19.0									
.80 .92 .92 .75 .73 .93 1.01 1.27 1.39 1.08 1.26 1.06 1.33 1.58 1.39 1.20 1.26										Relative P/E Ratio 1.25									
5.2% 5.8% 6.4% 5.8% 4.6% 4.2% 4.0% 4.3% 4.4% 4.5% 4.2% 3.9% 3.1% 2.9% 3.0% 3.1% 3.1%										Avg Ann'l Div'd Yield 2.5%									
CAPITAL STRUCTURE as of 9/30/09 Total Debt \$397.9 mill. Due in 5 Yrs \$40.0 mill. LT Debt \$373.5 mill. LT Interest \$25.0 mill. (LT Interest earned: 7.8x; total int. cov.: 6.6x)										206.4 244.8 246.8 263.2 277.1 315.6 320.7 334.7 367.1 410.3 448 470 19.9 20.0 14.4 19.1 19.4 26.0 27.2 25.6 31.2 39.8 42.0 45.0									
Pension Assets-12/08 \$66.9 mill. Oblig. \$192.9 mill.										37.9% 42.3% 39.4% 39.7% 39.9% 39.6% 42.4% 37.4% 39.9% 37.7% 40.0% 39.0% -- -- -- -- 10.3% 3.2% 3.3% 10.6% 8.3% 8.6% 8.5% 10.0%									
Pfd Stock None										46.9% 48.9% 50.3% 55.3% 50.2% 48.6% 48.3% 43.5% 42.9% 41.6% 47.0% 46.5% 52.0% 50.2% 48.8% 44.0% 49.1% 50.8% 51.1% 55.9% 56.6% 58.4% 53.0% 53.5%									
Common Stock 20,744,952 shs. as of 11/2/09										333.8 388.8 402.7 453.1 498.4 565.9 568.1 670.1 674.9 690.4 795 805 515.4 582.0 624.3 697.0 759.5 800.3 862.7 941.5 1010.2 1112.4 1175 1240									
MARKET CAP: \$775 million (Small Cap)										7.8% 6.8% 5.3% 5.9% 5.6% 6.1% 6.3% 5.2% 5.9% 7.1% 7.0% 11.2% 10.0% 7.2% 9.4% 7.8% 8.9% 9.3% 6.8% 8.1% 9.9% 10.0% 11.4% 10.1% 7.2% 9.5% 7.9% 9.0% 9.3% 6.8% 8.1% 9.9% 10.0% 3.5% 1.8% NMF 1.0% .7% 2.1% 2.1% 1.0% 1.8% 3.8% 4.0% 70% 82% 119% 90% 91% 77% 78% 86% 77% 61% 59% 56%									
CURRENT POSITION (SMILL.)										BUSINESS: California Water Service Group provides regulated and nonregulated water service to roughly 463,600 customers in 83 communities in California, Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp; West Hawaii Utilities (9/08). Revenue breakdown, '08: residential, 69%; business, 18%; public authorities, 5%; industrial, 5%; other, 3%. '08 reported depreciation rate: 2.4%. Has roughly 929 employees. Chairman: Robert W. Foy. President & CEO: Peter C. Nelson (4/09 Proxy). Inc.: Delaware. Address: 1720 North First Street, San Jose, California 95112-4598. Telephone: 408-367-8200. Internet: www.calwatergroup.com.									
CASH ASSETS										6.7 13.9 47.6									
OTHER										53.3 65.9 92.8									
CURRENT ASSETS										60.0 79.8 140.4									
ACCTS PAYABLE										36.7 45.1 54.4									
DEBT DUE										2.7 42.8 24.4									
OTHER										30.3 35.3 52.0									
CURRENT LIAB.										69.7 123.2 130.8									
FIX. CHG. COV.										333% 398% 430%									
ANNUAL RATES of change (per sh)										Past 10 Yrs. Past 5 Yrs. Est'd '06-'08 to '12-'14									
REVENUES										2.0% 1.5% 5.0%									
"CASH FLOW"										2.0% 5.5% 7.0%									
EARNINGS										-- 7.0% 8.5%									
DIVIDENDS										1.0% 0.5% 1.5%									
BOOK VALUE										4.0% 6.5% 2.0%									
QUARTERLY REVENUES (\$ mill.)										Full Year									
Mar.31 Jun.30 Sep.30 Dec.31																			
2006										65.2 81.1 107.8 80.6 334.7									
2007										71.6 95.8 113.8 85.9 367.1									
2008										72.9 105.6 131.7 100.1 410.3									
2009										86.7 116.7 139.2 105.4 448									
2010										91.0 122 146 111 470									
EARNINGS PER SHARE A										Full Year									
Mar.31 Jun.30 Sep.30 Dec.31																			
2006										.04 .31 .68 .31 1.34									
2007										.07 .37 .67 .39 1.50									
2008										.01 .48 1.06 .35 1.90									
2009										.12 .58 .94 .35 1.99									
2010										.11 .60 1.00 .39 2.10									
QUARTERLY DIVIDENDS PAID B										Full Year									
Mar.31 Jun.30 Sep.30 Dec.31																			
2006										.2875 .2875 .2875 .2875 1.15									
2007										.290 .290 .290 .290 1.16									
2008										.293 .293 .293 .293 1.17									
2009										.295 .295 .295 .295 1.18									
2010																			

(A) Basic EPS. Excl. nonrecurring gain (loss): '00, (7¢); '01, 4¢; '02, 8¢. Next earnings report due early February.

(B) Dividends historically paid in mid-Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available.

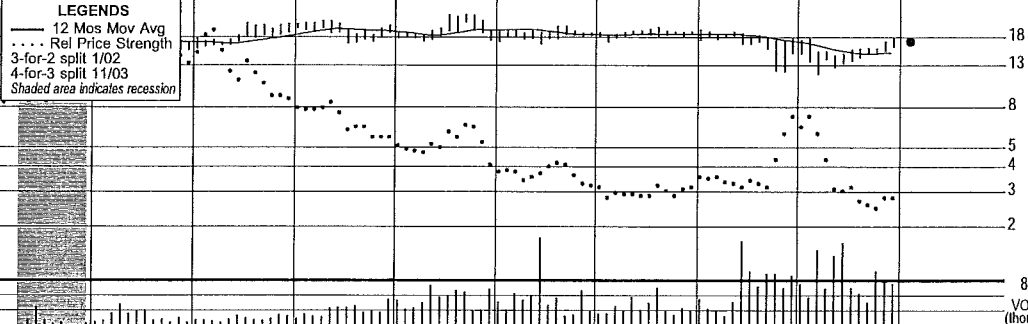
(C) Incl. deferred charges. In '08: \$3.9 mill., \$.19/sh.
(D) In millions, adjusted for split.
(E) Excludes non-reg. rev.

Company's Financial Strength	B++
Stock's Price Stability	80
Price Growth Persistence	75
Earnings Predictability	80

© 2010, Value Line Publishing, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.

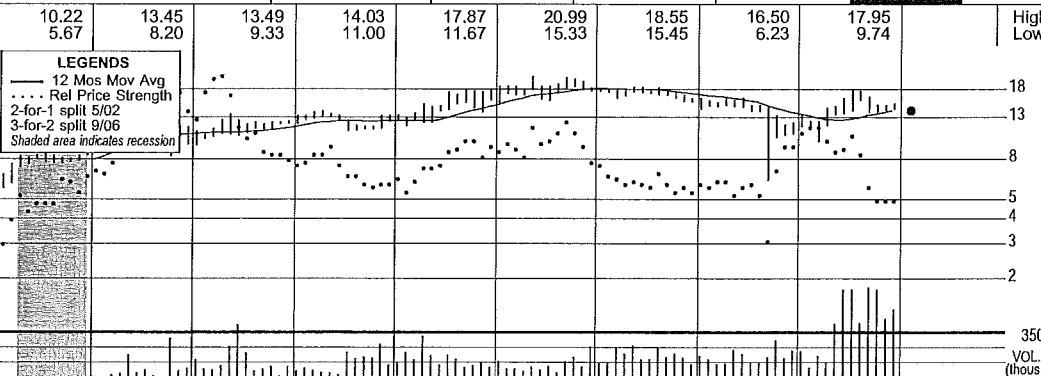
To subscribe call 1-800-833-0046.

CONN. WATER SERVICES				NDQ--CTWS		RECENT PRICE	23.77	TRAILING P/E RATIO	20.0	RELATIVE P/E RATIO	1.11	DIV'D YLD	3.8%	VALUE LINE								
RANKS				32.21 19.50	31.09 20.35	30.41 24.00	29.76 23.83	28.17 21.91	27.71 20.29	25.61 22.40	28.95 19.26	26.44 17.31			High Low							
PERFORMANCE	3	Average	<div>LEGENDS</div> <div>— 12 Mos Mov Avg</div> <div>.... Rel Price Strength</div> <div>3-for-2 split 9/01</div> <div>Shaded area indicates recession</div>																			
Technical	3	Average																				
SAFETY	2	Average																				
BETA	.80	(1.00 = Market)																				
Financial Strength	B+														45							
Price Stability	90														30							
Price Growth Persistence	35														22.5							
Earnings Predictability	80														13							
© VALUE LINE PUBLISHING, INC.				2001	2002	2003	2004	2005	2006	2007	2008	2009	2010/2011		9							
SALES PER SH				5.93	5.77	5.91	6.04	5.81	5.68	7.05	7.24	--	--		6							
"CASH FLOW" PER SH				1.78	1.78	1.89	1.91	1.62	1.52	1.90	1.95	--	--		4							
EARNINGS PER SH				1.13	1.12	1.15	1.16	.88	.81	1.05	1.11	1.19 ^{A,B}	1.08 ^C /NA		3							
DIV'DS DECL'D PER SH				.80	.81	.83	.84	.85	.86	.87	.88	--	--		450							
CAP'L SPENDING PER SH				1.86	1.98	1.49	1.58	1.96	1.96	2.24	2.44	--	--		VOL (thous.)							
BOOK VALUE PER SH				9.25	10.06	10.46	10.94	11.52	11.60	11.95	12.23	--	--									
COMMON SHS OUTST'G (MILL)				7.65	7.94	7.97	8.04	8.17	8.27	8.38	8.46	--	--									
AVG ANN'L P/E RATIO				21.5	24.3	23.5	22.9	28.6	29.0	23.0	22.2	20.0	22.0/NA									
RELATIVE P/E RATIO				1.10	1.33	1.34	1.21	1.51	1.57	1.22	1.34	--	--									
AVG ANN'L DIV'D YIELD				3.3%	3.0%	3.0%	3.1%	3.4%	3.6%	3.6%	3.6%	--	--									
SALES (\$MILL)				45.4	45.8	47.1	48.5	47.5	46.9	59.0	61.3	--	--	Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.								
OPERATING MARGIN				56.1%	57.7%	52.1%	51.0%	48.3%	43.7%	40.8%	49.0%	--	--									
DEPRECIATION (\$MILL)				5.0	5.4	5.9	6.0	6.1	5.9	7.2	7.1	--	--									
NET PROFIT (\$MILL)				8.7	8.8	9.2	9.4	7.2	6.7	8.8	9.4	--	--									
INCOME TAX RATE				36.1%	33.8%	17.9%	22.9%	--	23.5%	32.4%	27.2%	--	--									
NET PROFIT MARGIN				19.1%	19.2%	19.5%	19.4%	15.1%	14.3%	14.9%	15.4%	--	--									
WORKING CAP'L (\$MILL)				d3.3	d5.1	d3.9	d.7	13.0	1.2	8.1	d3.3	--	--									
LONG-TERM DEBT (\$MILL)				64.0	64.8	64.8	66.4	77.4	77.3	92.3	92.2	--	--									
SHR. EQUITY (\$MILL)				71.6	80.7	84.2	88.7	94.9	96.7	100.9	104.2	--	--									
RETURN ON TOTAL CAP'L				7.9%	7.4%	7.5%	7.0%	5.0%	4.9%	5.5%	5.9%	--	--									
RETURN ON SHR. EQUITY				12.1%	10.9%	10.9%	10.6%	7.5%	6.9%	8.7%	9.0%	--	--									
RETAINED TO COM EQ				3.6%	3.1%	3.2%	3.1%	.3%	NMF	1.6%	1.9%	--	--									
ALL DIV'DS TO NET PROF				71%	72%	71%	71%	95%	105%	82%	79%	--	--									
^No. of analysts changing earn. est. in last 9 days: 0 up, 0 down, consensus 5-year earnings growth 9.0% per year. ^Based upon 2 analysts' estimates. ^Based upon 2 analysts' estimates.																						
ANNUAL RATES				ASSETS (\$mill.)				INDUSTRY: Water Utility														
of change (per share)				5 Yrs.	1 Yr.	2007				2008	9/30/09	BUSINESS: Connecticut Water Service, Inc. primarily operates as a water utility company in Connecticut. It operates through three segments: Water Activities, Real Estate Transactions, and Services and Rentals. The Water Activities segment supplies public drinking water to its customers. The Real Estate Transactions segment involves in the sale of its limited excess real estate holdings. The Services and Rentals segment provides contracted services to water and wastewater utilities and other clients, as well as leases certain of its properties to third parties. This segment's services include contract operations of water and wastewater facilities; Linebacker, its service line protection plan for public drinking water customers; and provision of bulk deliveries of emergency drinking water to businesses and residences via tanker truck. As of July 8, it provided water to more than 88,000 customers, or about 300,000 people, in 54 towns throughout Connecticut. Has 226 employees. Chairman, C.E.O. & President: Eric W. Thornburg, Inc.: CT. Address: 93 West Main Street, Clinton, CT 06413. Tel.: (860) 669-8636. Internet: http://www.ctwater.com . <i>W.T.</i>										
Sales				2.5%	2.5%	8.6				.7	8.1											
"Cash Flow"				-0.5%	2.5%	11.1				12.0	13.6											
Earnings				-2.5%	5.5%	1.0				1.1	1.2											
Dividends				1.5%	1.0%	2.3				2.0	3.0											
Book Value				3.5%	2.5%	23.0				15.8	25.9											
Fiscal Year				QUARTERLY SALES (\$mill.)				LIABILITIES (\$mill.)														
				1Q	2Q	3Q	4Q	Full Year	Accts Payable							6.0				5.7	6.8	
12/31/07				13.2	14.4	17.0	14.4	59.0	Debt Due							6.5				12.1	31.6	
12/31/08				13.6	16.0	17.0	14.7	61.3	Other							2.4				1.3	2.8	
12/31/09				13.4	15.1	16.6			Current Liab							14.9				19.1	41.2	
12/31/10									LONG-TERM DEBT AND EQUITY as of 9/30/09													
Fiscal Year				EARNINGS PER SHARE				Full Year				Total Debt \$123.6 mill.				Due in 5 Yrs. NA						
				1Q	2Q	3Q	4Q	Full Year	LT Debt \$92.0 mill.													
12/31/06				.21	.12	.45	.03	.81	Including Cap. Leases NA													
12/31/07				.18	.22	.46	.19	1.05	Leases, Uncapitalized Annual rentals NA													
12/31/08				.20	.35	.34	.22	1.11	Pension Liability \$16.7 mill. in '08 vs. None in '07													
12/31/09				.13	.27	.57	.12		Pfd Stock \$.8 mill.				Pfd Div'd Paid NMF									
12/31/10				.13	.28				Common Stock 8,541,346 shares				(54% of Cap'l)									
Cal-endar				QUARTERLY DIVIDENDS PAID				Full Year				TOTAL SHAREHOLDER RETURN				Dividends plus appreciation as of 12/31/2009						
				1Q	2Q	3Q	4Q	Full Year					3 Mos.				6 Mos.	1 Yr.	3 Yrs.	5 Yrs.		
2007				.215	.215	.218	.218	.87					11.75%				16.53%	9.40%	21.84%	12.17%		
2008				.218	.218	.222	.222	.88														
2009				.222	.222	.228	.228	.90														
2010																						
INSTITUTIONAL DECISIONS																						
				1Q'09	2Q'09	3Q'09																
to Buy				31	29	26																
to Sell				24	23	19																
Hld's(000)				2678	2776	2860																

MIDDLESEX WATER NDQ-MSEX				RECENT PRICE	17.21	TRAILING P/E RATIO	23.6	RELATIVE P/E RATIO	1.31	DIV'D YLD	4.2%	VALUE LINE	
RANKS				18.73	20.04	21.23	21.81	23.47	20.50	20.24	19.83	17.91	High
				14.69	13.73	15.77	16.65	17.07	16.50	16.93	12.05	11.64	Low
PERFORMANCE 3 Average													
Technical 3 Average													
SAFETY 2 Above Average													
BETA .80 (1.00 = Market)													
Financial Strength B+													
Price Stability 95													
Price Growth Persistence 40													
Earnings Predictability 90													
© VALUE LINE PUBLISHING, INC.				2001	2002	2003	2004	2005	2006	2007	2008	2009	2010/2011
SALES PER SH				5.87	5.98	6.12	6.25	6.44	6.16	6.50	6.79	--	
"CASH FLOW" PER SH				1.18	1.20	1.15	1.28	1.33	1.33	1.49	1.53	--	
EARNINGS PER SH				.66	.73	.61	.73	.71	.82	.87	.89	.70 ^{A,B}	.80 ^C /NA
DIV'DS DECL'D PER SH				.62	.63	.65	.66	.67	.68	.69	.70	--	
CAP'L SPENDING PER SH				1.25	1.59	1.87	2.54	2.18	2.31	1.66	2.12	--	
BOOK VALUE PER SH				7.11	7.39	7.60	8.38	8.60	9.82	10.05	10.28	--	
COMMON SHS OUTST'G (MILL)				10.17	10.36	10.48	11.36	11.58	13.17	13.25	13.40	--	
AVG ANN'L P/E RATIO				24.6	23.5	30.0	26.4	27.4	22.7	21.6	19.8	24.6	21.5/NA
RELATIVE P/E RATIO				1.26	1.28	1.71	1.39	1.45	1.23	1.15	1.19	--	
AVG ANN'L DIV'D YIELD				3.8%	3.7%	3.5%	3.4%	3.5%	3.7%	3.7%	4.0%	--	
SALES (\$MILL)				59.6	61.9	64.1	71.0	74.6	81.1	86.1	91.0	--	Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.
OPERATING MARGIN				47.2%	47.1%	44.0%	44.4%	44.4%	47.4%	47.0%	46.9%	--	
DEPRECIATION (\$MILL)				5.3	5.0	5.6	6.4	7.2	7.8	8.2	8.5	--	
NET PROFIT (\$MILL)				7.0	7.8	6.6	8.4	8.5	10.0	11.8	12.2	--	
INCOME TAX RATE				34.8%	33.3%	32.8%	31.1%	27.6%	33.4%	32.6%	33.2%	--	
NET PROFIT MARGIN				11.7%	12.5%	10.3%	11.9%	11.4%	12.4%	13.8%	13.4%	--	
WORKING CAP'L (\$MILL)				d.9	d9.3	d13.3	d11.8	d4.5	2.8	d9.6	d40.9	--	
LONG-TERM DEBT (\$MILL)				88.1	87.5	97.4	115.3	128.2	130.7	131.6	118.2	--	
SHR. EQUITY (\$MILL)				76.4	80.6	83.7	99.2	103.6	133.3	137.1	141.2	--	
RETURN ON TOTAL CAP'L				5.6%	6.0%	5.0%	5.1%	5.0%	5.1%	5.6%	5.8%	--	
RETURN ON SHR. EQUITY				9.1%	9.6%	7.9%	8.5%	8.2%	7.5%	8.6%	8.6%	--	
RETAINED TO COM EQ				.5%	1.3%	NMF	.9%	.5%	1.2%	1.8%	1.9%	--	
ALL DIV'DS TO NET PROF				94%	87%	106%	90%	94%	84%	79%	78%	--	
^A No. of analysts changing earn. est. in last 9 days: 0 up, 0 down, consensus 5-year earnings growth 9.0% per year. ^B Based upon 3 analysts' estimates. ^C Based upon 3 analysts' estimates.													
ANNUAL RATES				INDUSTRY: Water Utility									
of change (per share)				5 Yrs.	1 Yr.	ASSETS (\$mill.)		2007	2008	9/30/09	BUSINESS: Middlesex Water Company engages in the ownership and operation of regulated water utility systems in New Jersey (NJ) and Delaware, and a regulated wastewater utility in NJ. It offers contract operations services and a service line maintenance program through its nonregulated subsidiary, Utility Service Associates, Inc. Its water utility system treats, stores, and distributes water for residential, commercial, industrial, and fire prevention purposes. It also provides water treatment and pumping services to the Township of East Brunswick. Its other NJ subsidiaries offer water and wastewater services to residents in Southampton Township. Its Delaware subsidiaries provide water services to retail customers in New Castle, Kent, and Sussex counties. In November, the company announced the acquisition of the assets of Twin Lakes Water Services, Inc., which serves approximately 330 people in Shohola, Pennsylvania. Has 269 employees. Chairman: J. Richard Tompkins. Address: 1500 Ronson Rd, P.O. BOX 1500, Iselin, NJ 08830. Tel.: 732-634-1500. Internet: http://www.middlesexwater.com . W.T.		
Sales				1.5%	4.5%	Cash Assets		2.0	3.3	3.1			
"Cash Flow"				4.5%	2.5%	Receivables		12.8	14.3	18.2			
Earnings				5.5%	2.5%	Inventory (Avg cost)		1.2	1.5	1.6			
Dividends				2.0%	1.5%	Other		1.4	1.5	1.7			
Book Value				6.5%	2.5%	Current Assets		17.4	20.6	24.6			
Fiscal Year		QUARTERLY SALES (\$mill.)				Property, Plant & Equip, at cost		398.6	436.8	--			
		1Q	2Q	3Q	4Q	Full Year	Accum Depreciation		64.7	70.5	--		
12/31/07		19.0	21.8	24.1	21.2	86.1	Net Property		333.9	366.3	380.0		
12/31/08		20.8	23.0	25.7	21.5	91.0	Other		41.4	53.1	52.2		
12/31/09		20.6	23.1	25.5			Total Assets		392.7	440.0	456.8		
12/31/10							LIABILITIES (\$mill.)						
Fiscal Year		EARNINGS PER SHARE				Accts Payable		6.5	5.7	4.5			
		1Q	2Q	3Q	4Q	Full Year	Debt Due		9.0	43.9	47.4		
12/31/06		.15	.25	.28	.14	.82	Other		11.5	11.9	11.0		
12/31/07		.13	.24	.31	.19	.87	Current Liab		27.0	61.5	62.9		
12/31/08		.15	.26	.35	.13	.89	LONG-TERM DEBT AND EQUITY as of 9/30/09						
12/31/09		.10	.21	.29	.10		Total Debt \$174.1 mill.		Due in 5 Yrs. NA				
12/31/10		.08	.22				LT Debt \$126.7 mill.		(47% of Cap'l)				
Cal-endar		QUARTERLY DIVIDENDS PAID				Including Cap. Leases NA		Leases, Uncapitalized Annual rentals NA					
		1Q	2Q	3Q	4Q	Full Year	Pension Liability \$25.5 mill. in '08 vs. \$13.3 mill. in '07						
2007		.173	.173	.173	.175	.69	Pfd Stock None		Pfd Div'd Paid None				
2008		.175	.175	.175	.178	.70	Common Stock 13,469,000 shares		(53% of Cap'l)				
2009		.178	.178	.178	.18	.71	INSTITUTIONAL DECISIONS						
2010							1Q'09		2Q'09	3Q'09			
to Buy		41		41		30							
to Sell		27		33		28							
Hld's(000)		4505		4902		4958							
TOTAL SHAREHOLDER RETURN Dividends plus appreciation as of 12/31/2009													
3 Mos.		6 Mos.		1 Yr.		3 Yrs.		5 Yrs.					
18.15%		24.79%		7.19%		5.45%		11.94%					

©2010 Value Line Publishing, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.

To subscribe call 1-800-833-0046.

YORK WATER CO		NDQ-YORW		RECENT PRICE	14.08	TRAILING P/E RATIO	21.3	RELATIVE P/E RATIO	1.19	DIV'D YLD	3.6%	VALUE LINE
RANKS		10.22	13.45	13.49	14.03	17.87	20.99	18.55	16.50	17.95		High
PERFORMANCE 3 Average		5.67	8.20	9.33	11.00	11.67	15.33	15.45	6.23	9.74		Low
Technical 3 Average		<div>LEGENDS</div> <div>— 12 Mos Mov Avg</div> <div>.... Rel Price Strength</div> <div>2-for-1 split 5/02</div> <div>3-for-2 split 9/06</div> <div>Shaded area indicates recession</div> 										
SAFETY 3 Average												
BETA .65 (1.00 = Market)												
Financial Strength B+												
Price Stability 85												
Price Growth Persistence 55												
Earnings Predictability 95												
© VALUE LINE PUBLISHING, INC.		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010/2011	
REVENUES PER SH		2.05	2.05	2.17	2.18	2.58	2.56	2.79	2.89	--		
"CASH FLOW" PER SH		.59	.57	.65	.65	.79	.77	.86	.88	--		
EARNINGS PER SH		.43	.40	.47	.49	.56	.58	.57	.57	.66 ^{A,B}	.66 ^C /NA	
DIV'D DECL'D PER SH		.34	.35	.37	.39	.42	.45	.48	.49	--		
CAP'L SPENDING PER SH		.75	.66	1.07	2.50	1.69	1.85	1.69	2.17	--		
BOOK VALUE PER SH		3.79	3.90	4.06	4.65	4.85	5.84	5.97	6.14	--		
COMMON SHS OUTST'G (MILL)		9.46	9.55	9.63	10.33	10.40	11.20	11.27	11.37	--		
AVG ANN'L P/E RATIO		17.9	26.9	24.5	25.7	26.3	31.2	30.3	24.6	21.3	21.3/NA	
RELATIVE P/E RATIO		.92	1.47	1.40	1.36	1.39	1.68	1.61	1.48	--		
AVG ANN'L DIV'D YIELD		4.3%	3.3%	3.2%	3.1%	2.9%	2.5%	2.8%	3.5%	--		
REVENUES (\$MILL)		19.4	19.6	20.9	22.5	26.8	28.7	31.4	32.8	--	Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.	
NET PROFIT (\$MILL)		4.0	3.8	4.4	4.8	5.8	6.1	6.4	6.4	--		
INCOME TAX RATE		35.8%	34.9%	34.8%	36.7%	36.7%	34.4%	36.5%	36.1%	--		
AFUDC % TO NET PROFIT		2.2%	3.7%	--	--	--	7.2%	3.6%	10.1%	--		
LONG-TERM DEBT RATIO		47.7%	46.7%	43.4%	42.5%	44.1%	48.3%	46.5%	54.5%	--		
COMMON EQUITY RATIO		52.3%	53.3%	56.6%	57.5%	55.9%	51.7%	53.5%	45.5%	--		
TOTAL CAPITAL (\$MILL)		68.6	69.9	69.0	83.6	90.3	126.5	125.7	153.4	--		
NET PLANT (\$MILL)		102.3	106.7	116.5	140.0	155.3	174.4	191.6	211.4	--		
RETURN ON TOTAL CAP'L		7.9%	7.4%	8.5%	7.6%	8.4%	6.2%	6.7%	5.7%	--		
RETURN ON SHR. EQUITY		11.2%	10.2%	11.4%	10.0%	11.6%	9.3%	9.5%	9.2%	--		
RETURN ON COM EQUITY		11.2%	10.2%	11.4%	10.0%	11.6%	9.3%	9.5%	9.2%	--		
RETAINED TO COM EQ		2.5%	1.3%	2.6%	2.1%	3.0%	2.2%	1.7%	1.4%	--		
ALL DIV'DS TO NET PROF		78%	88%	77%	79%	74%	77%	82%	85%	--		
^No. of analysts changing earn. est. in last 9 days: 0 up, 0 down, consensus 5-year earnings growth 7.5% per year. ^Based upon 4 analysts' estimates. ^Based upon 4 analysts' estimates.												
ANNUAL RATES						INDUSTRY: Water Utility						
of change (per share)		5 Yrs.	1 Yr.	ASSETS (\$mill.)		2007	2008	9/30/09	BUSINESS: The York Water Company engages in the impounding, purification, and distribution of water in York County and Adams County, Pennsylvania. The company supplies water for residential, commercial, industrial, and other customers. It has two reservoirs, Lake Williams, which is 700 feet long and 58 feet high, and creates a reservoir covering approximately 165 acres containing about 870 million gallons of water; and Lake Redman, which is 1,000 feet long and 52 feet high and creates a reservoir covering approximately 290 acres containing about 1.3 billion gallons of water. It also has a 15-mile pipeline from the Susquehanna River to Lake Redman that provides access to an additional supply of water. As of December 31, 2008, the company served approximately 176,000 residential, commercial, industrial, and other customers. In November, the company completed the Beaver Creek Village water system acquisition. Has 110 employees. C.E.O. & President: Jeffrey R. Hines, Inc.: PA. Address: 130 East Market Street, York, PA 17401. Tel.: (717) 845-3601. Internet: http://www.yorkwater.com.			
Revenues		5.5%	3.5%	Cash Assets		.0	.0	.1				
"Cash Flow"		7.0%	3.5%	Receivables		5.2	5.9	5.7				
Earnings		6.0%	--	Inventory (Avg cost)		.8	.7	.8				
Dividends		6.0%	3.0%	Other		.8	.7	1.1				
Book Value		9.0%	3.0%	Current Assets		6.8	7.3	7.7				
Fiscal Year		1Q	2Q	3Q	4Q	Full Year	Property, Plant & Equip, at cost		223.1	246.0	--	
12/31/07		7.4	7.9	8.3	7.8	31.4	Accum Depreciation		31.5	34.6	--	
12/31/08		7.5	7.8	8.6	8.9	32.8	Net Property		191.6	211.4	220.9	
12/31/09		8.8	9.2	9.8			Other		12.6	21.7	21.3	
12/31/10							Total Assets		211.0	240.4	249.9	
Fiscal Year		1Q	2Q	3Q	4Q	Full Year	LIABILITIES (\$mill.)					
12/31/06		.12	.14	.17	.15	.58	Accts Payable		3.2	2.0	2.6	
12/31/07		.12	.15	.15	.15	.57	Debt Due		15.0	8.7	9.3	
12/31/08		.11	.13	.15	.18	.57	Other		3.2	3.5	4.3	
12/31/09		.13	.17	.18	.17		Current Liab		21.4	14.2	16.2	
12/31/10		.14	.17				LONG-TERM DEBT AND EQUITY as of 9/30/09					
Cal-endar		1Q	2Q	3Q	4Q	Full Year	Total Debt \$83.3 mill.		Due in 5 Yrs. NA			
2007		.118	.118	.118	.118	.47	LT Debt \$74.0 mill.		(47% of Cap'l)			
2008		.121	.121	.121	.121	.48	Including Cap. Leases NA		(53% of Cap'l)			
2009		.126	.126	.126	.126	.50	Leases, Uncapitalized Annual rentals NA					
2010		.128					Pension Liability \$9.8 mill. in '08 vs. \$4.0 mill. in '07					
INSTITUTIONAL DECISIONS		1Q'09	2Q'09	3Q'09			Pfd Stock None		Pfd Div'd Paid None			
to Buy		17	30	35			Common Stock 12,411,181 shares					
to Sell		10	12	16								
Hld's(000)		1958	2477	2941					TOTAL SHAREHOLDER RETURN			
Dividends plus appreciation as of 12/31/2009												
3 Mos.		5.61%	6 Mos.	-3.72%	1 Yr.	24.34%	3 Yrs.	-10.37%	5 Yrs.	30.61%		

AGL RESOURCES NYSE-AGL				RECENT PRICE	37.00	P/E RATIO	12.5	(Trailing: 12.8) (Median: 14.0)	RELATIVE P/E RATIO	0.74	DIVID YLD	4.8%	VALUE LINE
TIMELINESS 3	Raised 2/12/10	High: 23.4	23.2	24.5	25.0	29.3	33.7	39.3	40.1	44.7	39.1	37.5	37.2
SAFETY 2	New 7/27/90	Low: 15.6	15.5	19.0	17.3	21.9	26.5	32.0	34.4	35.2	24.0	24.0	34.3
TECHNICAL 3	Lowered 2/12/10	LEGENDS 1.10 x Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area: prior recession Latest recession began 12/07											
BETA .75	(1.00 = Market)	2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%											
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Institutional Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60 (+60%) 13% Low 45 (+20%) 5%									
Insider Decisions				2013-15 PROJECTIONS Price Gain Ann'l Return High 60									

(A) Fiscal year ends December 31st. Ended September 30th prior to 2002.

(B) Diluted earnings per share. Excl. nonrecurring gains (losses): '95, (\$0.83); '99, \$0.39; '00, \$0.39.

© 2010, Value Line Publishing, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.

\$0.13; '01, \$0.13; '03, (\$0.07); '08, \$0.13. Next earnings report due late April. (C) Dividends historically paid early March, June, Sept., and Dec. ■ Div'd reinvest. plan available. (D) In-

cludes intangibles. In 2009: \$418 million, \$5.44/share.
(E) In millions.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	75
Earnings Predictability	95

To subscribe call 1-800-833-0046.

To subscribe call 1-800-833-0046.

ATMOS ENERGY CORP. NYSE-ATO										RECENT PRICE	28.05	P/E RATIO	12.5 (Trailing: 13.1 Median: 15.0)	RELATIVE P/E RATIO	0.74	DIV YLD	4.8%	VALUE LINE	
TIMELINESS	3	Lowered 9/11/09	High: 33.0	26.3	25.8	24.5	25.5	27.6	30.0	33.1	33.5	29.3	30.3	30.0				Target Price	Range
SAFETY	2	Raised 12/16/05	Low: 19.6	14.3	19.5	17.6	20.8	23.4	25.0	25.5	23.9	19.7	20.1	26.3				2013	2014
TECHNICAL	3	Raised 10/16/09	LEGENDS																
BETA	.65	(1.00 = Market)	1.00 x Dividends p sh divided by Interest Rate																
2013-15 PROJECTIONS		 Relative Price Strength																
			Options: Yes																
			Shaded area: prior recession																
			Latest recession began 12/07																
Price	40	Ann'l Total																	
Gain	(+45%)	Return																	
Low	30	6%																	
Insider Decisions																			

(A) Fiscal year ends Sept. 30th. (B) Diluted shrs. Excl. nonrec. items: '00, 12¢; '03, 117¢; '06, 118¢; '07, 12¢; '09, 12¢. Next egs. rpt. due early May. (C) Dividends historically paid in early March, June, Sept., and Dec. ■ Div. reinvestment plan. Direct stock purchase plan avail. (D) In millions. (E) Qtrs may not add due to change in shrs outstanding.

© 2010, Value Line Publishing, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.

Company's Financial Strength	B+
Stock's Price Stability	100
Price Growth Persistence	50
Earnings Predictability	90

To subscribe call 1-800-833-0046.

[illegible]

NISOURCE INC. NYSE:NI

RECENT PRICE15.14

P/E RATIO14.4

(Trailing: 17.2 Median: 16.0)

RELATIVE P/E RATIO0.85

DIV'D YLD6.1%

VALUE LINE

TIMELINESS3

Raised 1/1/10

SAFETY3

Lowered 1/4/02

TECHNICAL3

Lowered 1/8/10

BETA.85

(1.00 = Market)

2013-15 PROJECTIONS

Price

Gain

Ann'l Total Return

High

25

(+65%)

18%

Low

18

(+20%)

10%

Insider Decisions

A

M

J

J

A

S

O

N

D

to Buy

0

1

0

0

0

0

0

0

Options

0

0

0

0

0

0

0

0

to Sell

0

1

0

0

1

0

0

0

Institutional Decisions

1Q2009

2Q2009

3Q2009

to Buy

151

147

124

to Sell

154

131

155

Hld's(000)

207947

217730

215279

Percent shares traded

12

6

4

2000

2001

2002

2003

2004

2005

2006

2007

2008

2009

2010

2011

© VALUE LINE PUB., INC.

13-15

29.34

45.59

26.09

23.78

24.63

28.97

27.37

28.96

32.36

22.30

22.80

23.70

Revenues per sh

33.15

2.74

4.23

3.94

3.47

3.47

3.14

3.18

3.20

3.32

2.25

2.45

2.60

"Cash Flow" per sh

3.60

1.39

1.13

1.91

1.59

1.62

1.08

1.14

1.14

1.34

.88

1.10

1.20

Earnings per sh A

1.60

.81

1.16

1.16

1.10

.92

.92

.92

.92

.92

.92

.92

.92

Div'd Decl'd per sh B

.92

1.80

3.22

2.50

2.19

1.91

2.17

2.33

2.88

3.54

2.80

3.25

3.35

Cap'l Spending per sh

4.70

16.61

16.72

16.78

16.81

17.69

18.09

18.32

18.52

17.24

17.60

17.85

18.00

Book Value per sh C

19.45

205.55

207.49

248.86

262.63

270.63

272.62

273.65

274.18

274.26

275.50

275.5

275.5

Common Shs Outst'g D

279.0

14.9

23.4

10.8

12.2

13.0

21.4

19.2

18.8

12.1

13.7

18.8

Avg Ann'l P/E Ratio

14.0

.97

1.20

.59

.70

.69

1.14

1.04

1.00

.73

.90

Relative P/E Ratio

.95

3.9%

4.4%

5.6%

5.7%

4.4%

4.0%

4.2%

4.3%

5.7%

7.6%

Avg Ann'l Div'd Yield

5.1%

6030.7

9458.7

6492.3

6246.6

6666.2

7899.1

7490.0

7939.0

8872.0

6147.2

6275

6525

Revenues (\$mill)

9250

196.9

243.5

412.5

419.4

434.6

298.7

314.6

312.0

369.8

231.2

305

330

Net Profit (\$mill)

560

33.3%

44.7%

35.5%

35.3%

35.7%

33.3%

35.2%

35.6%

33.4%

36.5%

36.5%

36.5%

Income Tax Rate

36.5%

2.0%

1.8%

.6%

.6%

1.1%

2.1%

4.2%

6.6%

6.6%

2.0%

2.0%

2.0%

AFUDC % to Net Profit

2.0%

63.4%

63.3%

55.7%

57.1%

49.8%

51.2%

50.7%

52.4%

55.7%

56.0%

56.0%

57.0%

Long-Term Debt Ratio

56.0%

35.2%

35.8%

43.4%

42.1%

49.3%

48.0%

49.3%

47.6%

44.3%

44.0%

44.0%

43.0%

Common Equity Ratio

44.0%

9695.6

9683.8

9622.8

10490

9704.1

10285

10160

10671

10673

10950

11150

11750

Total Capital (\$mill)

12425

9546.7

9554.7

10068

9304.9

9384.7

9554.3

9694.5

10032

10276

10900

11350

11800

Net Plant (\$mill)

13400

2.7%

4.7%

6.7%

6.0%

6.4%

4.8%

4.8%

4.6%

5.2%

4.0%

4.0%

4.0%

Return on Total Cap'l

5.0%

5.5%

6.8%

9.7%

9.3%

8.9%

6.0%

6.3%

6.1%

7.8%

5.0%

6.0%

7.0%

Return on Shr. Equity

7.5%

5.5%

6.8%

9.7%

9.4%

9.0%

6.0%

6.3%

6.1%

7.8%

5.0%

6.0%

6.5%

Return on Com Equity E

8.5%

1.7%

NMF

3.9%

3.0%

3.9%

.9%

1.2%

1.2%

2.5%

NMF

.5%

1.5%

79%

Retained to Com Eq

2.5%

71%

101%

60%

69%

57%

85%

80%

81%

68%

NMF

91%

79%

All Div'ds to Net Prof

67%

Cash Assets

36.0

20.6

83.8

Other

2418.9

3390.2

2479.4

Current Assets

2454.9

3410.8

2563.2

Accs Payable

719.9

693.3

214.0

Debt Due

1094.9

1632.8

833.8

Other

1577.8

2257.3

2061.9

Current Liab.

3392.6

4583.4

2909.7

Fix. Chg. Cov.

221%

245%

95%

ANNUAL RATES

Past 10 Yrs.

Past 5 Yrs.

Est'd '06-'08 to '13-'15

Revenues

4.0%

-1.5%

1.5%

"Cash Flow"

-1.0%

-3.5%

1.5%

Earnings

-2.5%

-5.0%

4.0%

Dividends

--

-4.0%

Nil

Book Value

6.5%

1.5%

1.0%

QUARTERLY REVENUES (\$ mill.)

Mar.31

Jun.30

Sep.30

Dec.31

Full Year

2007

2893

1577

1241

2228

7939

2008

3288

1790

1409

2385

8872

2009

2722

1014

909

1502

6147

2010

2750

1050

925

1550

6275

2011

2850

1100

950

1625

6525

QUARTERLY EARNINGS PER SHARE A

Mar.31

Jun.30

Sep.30

Dec.31

Full Year

2007

.76

.11

.03

.24

1.14

2008

.69

.08

.12

.45

1.34

2009

.62

d.03

d.03

.32

.88

2010

.65

.03

.05

.37

1.10

2011

.67

.05

.08

.40

1.20

QUARTERLY DIVIDENDS PAID B

Mar.31

Jun.30

Sep.30

Dec.31

Full Year

2006

.23

.23

.23

.23

.92

2007

.23

.23

.23

.23

.92

2008

.23

.23

.23

.23

.92

2009

.23

.23

.23

.23

.92

2010

.23

.23

.23

.23

.92

NiSource acquired Columbia Energy on November 1, 2000, paying approximately \$6 billion in cash and stock. Columbia shareholders who chose cash received \$70 a share, plus a security with a face value of \$2.60. Those who chose stock received \$74 a share in NiSource common stock. Shareholders' selections were prorated to reflect a 30% stock portion of the transaction. In 2003, NiSource sold Columbia's exploration and production business.

CAPITAL STRUCTURE as of 9/30/09

Total Debt \$7194.5 mill. Due in 5 Yrs \$3598.0 mill. LT Debt \$6560.7 mill. LT Interest \$380 mill. (LT interest earned: 2.5x)

Leases, Uncapitalized Annual rentals \$45.3 mill. Pension Assets-12/08 \$1.44 bill. Oblig. \$2.15 bill.

Pfd Stock None

Common Stock 275,754,599 shs. as of 9/30/09

MARKET CAP: \$4.2 billion (Mid Cap)

CURRENT POSITION

2007

2008

9/30/09

Cash Assets

36.0

20.6

83.8

Other

2418.9

3390.2

2479.4

Current Assets

2454.9

3410.8

2563.2

Accs Payable

719.9

693.3

214.0

Debt Due

1094.9

1632.8

833.8

Other

1577.8

2257.3

2061.9

Current Liab.

3392.6

4583.4

2909.7

Fix. Chg. Cov.

221%

245%

95%

BUSINESS:

NiSource Inc. is a holding company for Northern Indiana Public Service Company (NIPSCO), which supplies electricity and gas to the northern third of Indiana. Customers: 457,000 electric in Indiana, 3.3 million gas in IN, OH, PA, KY, VA, MD, MA. Acquired IWC Resources 3/97; Bay State Gas 2/99; Columbia Energy 11/00. Electric revenue breakdown, '08: residential, 27%; commercial, 27%; industrial, 39%; other, 7%. Generating sources, '08: coal, 82%; purchased & other, 18%. '08 reported deprec. rates: 2.9% electric, 2.8% gas. Has 7,981 employees. Chairman: Ian M. Roland. President & CEO: Robert C. Skaggs, Jr. Inc.: Indiana. Address: 801 East 86th Ave., Merrillville, Indiana 46410. Tel.: 877-647-5990. Internet: www.nisource.com.

NiSource finished 2009 on a weak note.

Revenues of \$1.5 billion and earnings of \$0.32 a share both fell short of our estimates. Management cited difficult market conditions, most notably in Northern Indiana, as the reason for the disappointing showing. In response, this utility has worked to weather these challenges by strengthening its finances and focusing on its core business.

The company awaits a decision on a key rate case. Management filed an electric rate case in response to rising expenses in its Northern Indiana Public Service Company business. The decision is expected to come in June. Note that this utility will probably remain active on this front due to higher costs, which will increase NI's need for relief.

NiSource will likely continue to face a tough operating environment in the months ahead. Indeed, the industrial market continues to be weak. In the meantime, the company will probably focus on expanding its infrastructure over the coming months in an effort to better position itself for when its end markets rebound.

We have scaled back our estimates for 2010.

We cut our top-line estimate by 15% to \$6.275 billion and our bottom-line number by a nickel to \$1.10 a share. The restructuring efforts, coupled with the economic uncertainty, will likely hurt results. These pressures should start to ease over the course of the year, though. On point, we believe the worst is behind NiSource.

The company will probably continue to strengthen its balance sheet. NiSource recently secured \$500 million in debt financing to pay back its obligations this year and in 2011. Also, management has cut costs and divested non-core operations. As a result, the company's credit rating was raised by Moody's.

This stock is an unexciting selection for the year ahead. We suggest investors look elsewhere. NiSource will likely struggle in the months ahead due to the aforementioned challenges. Longer term, the turnaround effort and the pending rate case add uncertainty to this issue's performance beyond 2010. However, income-oriented accounts may want to note this equity's above-average yield (6.1%).

Richard Gallagher

March 12, 2010

(A) Dil. EPS. Excl. nonrec. gains (losses): '00, 24¢; '01, (10¢); '02, 9¢; '03, 1¢; '05, (4¢); gains (losses) on disc. ops. '04, 7¢; '02, (25¢); '03, (1.27); '04, 2¢; '05, 10¢; '06, (11¢); '07, 3¢; '08, (\$1.14). Next eggs. due late April. (B) Div/ds historically paid in mid-Feb., May, Aug., Nov. There were only 3 declarations in '00. ■ Div/d reinv. avail. (C) Incl. intang. In '08: \$14.63/sh. (D) In mill., adj. for split. (E) Rate base: Fair val. Rate all'd on com. eq. in '87: 13.5%; earned on avg. com. eq., '08: 7.8%.

© 2010, Value Line Publishing, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.

Company's Financial Strength	B
Stock's Price Stability	95
Price Growth Persistence	10
Earnings Predictability	75

To subscribe call 1-800-833-0046.

N.W. NAT'L GAS				NYSE-NWN		RECENT PRICE		45.85		P/E RATIO		17.0		(Trailing: 16.0 Median: 16.0)		RELATIVE P/E RATIO		1.00		DIV'D YLD		3.7%		VALUE LINE					
TIMELINESS 4 Lowered 3/12/10				High: 27.9 Low: 19.5		27.5 17.8		26.8 21.7		30.7 23.5		31.3 24.0		34.1 27.5		39.6 32.4		43.7 32.8		52.8 39.8		55.2 37.7		46.5 37.7		46.1 41.1		Target Price Range 2013 2014 2015	
SAFETY 1 Raised 3/18/05				LEGENDS 1.10 x Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area: prior recession Latest recession began 12/07																									
TECHNICAL 2 Raised 2/12/10																													
BETA .60 (1.00 = Market)																													
2013-15 PROJECTIONS																													
Price 65 Gain (+40%) Ann'l Total Return 12% High 55 Low 55																													
Insider Decisions																													
to Buy 0 Options 0 to Sell 0																													
Institutional Decisions																													
1Q2009 2Q2009 3Q2009																													
to Buy 67 78 64																													
to Sell 93 69 82																													
Hld's(000) 15126 15387 15134																													
Percent shares traded 15 10 5																													
1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011																													
18.30 16.02 16.86 15.82 16.77 18.17 21.09 25.78 25.07 23.57 25.69 33.01 37.20 39.13 39.16 38.18 35.85 35.55																													
3.50 3.41 3.86 3.72 3.24 3.72 3.68 3.86 3.65 3.85 3.92 4.34 4.76 5.41 5.31 5.12 5.25 5.45																													
1.63 1.61 1.97 1.76 1.02 1.70 1.79 1.88 1.62 1.76 1.86 2.11 2.35 2.76 2.57 2.77 2.80 2.95																													
1.17 1.18 1.20 1.21 1.22 1.23 1.24 1.25 1.26 1.27 1.30 1.32 1.39 1.44 1.52 1.60 1.68 1.78																													
4.23 3.02 3.70 5.07 4.02 4.78 3.46 3.23 3.11 4.90 5.52 3.48 3.56 4.48 3.92 5.09 7.70 6.20																													
13.63 14.55 15.37 16.02 16.59 17.12 17.93 18.56 18.88 19.52 20.64 21.28 22.01 22.52 23.71 24.88 26.10 27.45																													
20.13 22.24 22.56 22.86 24.85 25.09 25.23 25.23 25.59 25.94 27.55 27.58 27.24 26.41 26.50 26.53 26.60 26.60																													
13.0 12.9 11.7 14.4 26.7 14.5 12.4 12.9 17.2 15.8 16.7 17.0 15.9 16.7 18.1 15.0 16.7 18.1																													
.85 .86 .73 .83 1.39 .83 .81 .66 .94 .90 .88 .91 .86 .89 1.09 1.02 1.09 1.02																													
5.5% 5.7% 5.2% 4.8% 4.5% 5.0% 5.6% 5.1% 4.5% 4.6% 4.2% 3.7% 3.7% 3.1% 3.3% 3.7% 3.7% 3.7%																													
CAPITAL STRUCTURE as of 12/31/09																													
Total Debt \$738.7 mill. Due in 5 Yrs \$145 mill.																													
LT Debt \$601.7 mill. LT Interest \$34.0 mill.																													
(Total interest coverage: 3.9x)																													
Pension Assets-12/08 \$201 mill.																													
Oblig. \$308 mill.																													
Pfd Stock None																													
Common Stock 26,533,028 shares as of 2/23/10																													
MARKET CAP \$1.2 billion (Mid Cap)																													
CURRENT POSITION (\$MILL.)																													
2007 2008 2009																													
Cash Assets 6.1 6.9 8.4																													
Other 268.8 474.1 319.8																													
Current Assets 274.9 481.0 328.2																													
Accts Payable 119.7 94.4 123.7																													
Debt Due 148.1 248.0 137.0																													
Other 122.1 208.9 131.9																													
Current Liab. 389.9 551.3 392.6																													
Fx. Chg. Cov. 408% 393% 395%																													
ANNUAL RATES of change (per sh)																													
Past 10 Yrs. 5 Yrs. Est'd '06-'08 to '13-'15																													
Revenues 9.0% 9.0% 2.5%																													
"Cash Flow" 3.5% 6.5% 3.5%																													
Earnings 5.0% 8.0% 5.0%																													
Dividends 2.0% 3.0% 6.0%																													
Book Value 3.5% 3.5% 5.0%																													
BUSINESS: Northwest Natural Gas Co. distributes natural gas to 90 communities, 668,000 customers, in Oregon (90% of customers) and in southwest Washington state. Principal cities served: Portland and Eugene, OR; Vancouver, WA. Service area population: 2.5 mill. (77% in OR). Company buys gas supply from Canadian and U.S. producers; has transportation rights on Northwest Pipeline system.																													
Steady growth is likely next year. We expect the recovery in customer growth and industrial gas use to continue. Polls indicate that gas is favored over electricity for home heating by a three to one margin in Portland, and returning prosperity should increase conversions to gas from other fuels. Costs should remain moderate, as last year's new union contract provides for more workforce flexibility and caps payroll and healthcare costs at 3% annually depending on inflation. Finally, the Gill Ranch gas storage project in California is scheduled to open late this year and ought to contribute to results in 2011.																													
A new pipeline could boost earnings noticeably by 2013-2015. Northwest owns half of the proposed Palomar pipeline, which would provide Portland a needed second source of gas. If both halves are built, the company's investment would be around \$400 million. Though that would entail raising some equity, it would lift earnings beyond our forecast, which excludes the project for now.																													
These high-quality shares offer good risk adjusted total-return potential.																													
Sigourney B. Romaine March 12, 2010																													

(A) Diluted earnings per share. Excludes non-recurring items: '98, \$0.15; '00, \$0.11; '06, (\$0.06); '08, (\$0.03); '09, 6¢. Next earnings report due early May.

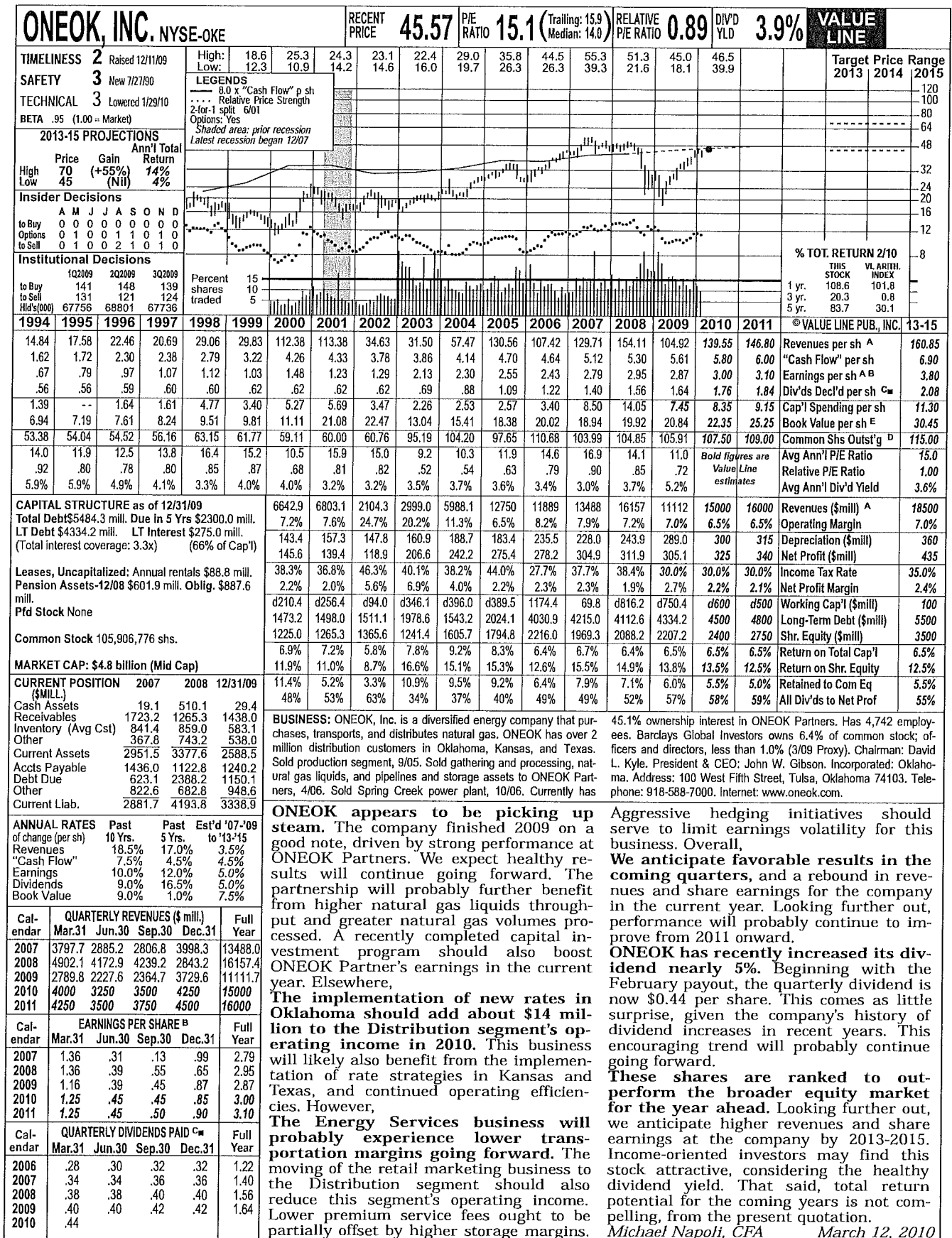
(B) Dividends historically paid in mid-February, May, August, and November.
■ Dividend reinvestment plan available.

(C) In millions, adjusted for split.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	70
Earnings Predictability	90

© 2010, Value Line Publishing, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.

To subscribe call 1-800-833-0046.



(A) Fiscal year ended August 31st through 1999, December 31st thereafter. (B) Diluted earnings. Excl. nonrecr. items: '02, '04, '03, '01; '05, \$2.51; '06, 25¢. Totals may not sum due to rounding. Next egs. report due late April.

(C) Dividends historically paid mid-Feb., May, Aug., and Nov. = Div'd reinvest. plan avail. (D) In mill., adj. for split.

(E) Includes intangibles. In 2009: \$1.03 bill., \$9.73/sh.

Company's Financial Strength B+
Stock's Price Stability 85
Price Growth Persistence 95
Earnings Predictability 85

To subscribe call 1-800-833-0046.

BUSINESS: ONEOK, Inc. is a diversified energy company that purchases, transports, and distributes natural gas. ONEOK has over 2 million distribution customers in Oklahoma, Kansas, and Texas. Sold production segment, 9/05. Sold gathering and processing, natural gas liquids, and pipelines and storage assets to ONEOK Partners, 4/06. Sold Spring Creek power plant, 10/06. Currently has

45.1% ownership interest in ONEOK Partners. Has 4,742 employees. Barclays Global Investors owns 6.4% of common stock; officers and directors, less than 1.0% (3/09 Proxy). Chairman: David L. Kyle. President & CEO: John W. Gibson. Incorporated: Oklahoma. Address: 100 West Fifth Street, Tulsa, Oklahoma 74103. Telephone: 918-588-7000. Internet: www.oneok.com.

ONEOK appears to be picking up steam. The company finished 2009 on a good note, driven by strong performance at ONEOK Partners. We expect healthy results will continue going forward. The partnership will probably further benefit from higher natural gas liquids throughput and greater natural gas volumes processed. A recently completed capital investment program should also boost ONEOK Partner's earnings in the current year. Elsewhere, **The implementation of new rates in Oklahoma should add about \$14 million to the Distribution segment's operating income in 2010.** This business will likely also benefit from the implementation of rate strategies in Kansas and Texas, and continued operating efficiencies. However, **The Energy Services business will probably experience lower transportation margins going forward.** The moving of the retail marketing business to the Distribution segment should also reduce this segment's operating income. Lower premium service fees ought to be partially offset by higher storage margins.

Aggressive hedging initiatives should serve to limit earnings volatility for this business. Overall, **We anticipate favorable results in the coming quarters, and a rebound in revenues and share earnings for the company in the current year.** Looking further out, performance will probably continue to improve from 2011 onward. **ONEOK has recently increased its dividend nearly 5%.** Beginning with the February payout, the quarterly dividend is now \$0.44 per share. This comes as little surprise, given the company's history of dividend increases in recent years. This encouraging trend will probably continue going forward. **These shares are ranked to outperform the broader equity market for the year ahead.** Looking further out, we anticipate higher revenues and share earnings at the company by 2013-2015. Income-oriented investors may find this stock attractive, considering the healthy dividend yield. That said, total return potential for the coming years is not compelling, from the present quotation.

Michael Napoli, CFA March 12, 2010

PIEDMONT NAT'L GAS NYSE-PNY				RECENT PRICE	26.38	P/E RATIO	16.0	(Trailing: 15.8 Median: 17.0)	RELATIVE P/E RATIO	0.94	DIV'D YLD	4.2%	VALUE LINE	Target Price Range					
TIMELINESS	3	Raised 6/15/07	High: 18.3	19.0	19.0	22.0	24.3	25.8	28.4	28.0	35.3	32.0	27.4	2013 2014 2015					
SAFETY	2	New 7/27/90	Low: 14.3	14.6	13.7	16.6	19.2	21.3	23.2	21.7	20.7	23.9							
TECHNICAL	2	Raised 2/12/10	LEGENDS — 1.40 x Dividends p sh divided by Interest Rate Relative Price Strength 2-for-1 split 11/04 Options: Yes Shaded area: prior recession Latest recession began 12/07																
BETA	.65	(1.00 = Market)																	
2013-15 PROJECTIONS				Price	Gain	Ann'l Total													
				High	Low	Return													
				40	(+50%)	15%													
				30	(+15%)	8%													
Insider Decisions				A M J J A S O N D															
				to Buy	0 0 0 0 0 0 0 0 0 0 0 0														
				Options	0 0 0 0 0 0 0 0 0 0 0 0														
				to Sell	0 0 0 0 0 0 0 0 0 0 0 0														
Institutional Decisions				1Q2009	2Q2009	3Q2009													
				to Buy	75	78	78												
				to Sell	123	96	82												
				Hld's(000)	34611	33567	33498												
1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	© VALUE LINE PUB., INC. 13-15	
10.82	8.76	11.59	12.84	12.45	10.97	13.01	17.06	12.57	18.14	19.95	22.96	25.80	23.37	28.52	22.36	23.60	24.50	Revenues per sh ^A	27.75
1.13	1.25	1.49	1.62	1.72	1.70	1.77	1.81	1.81	2.04	2.31	2.43	2.51	2.64	2.77	3.01	2.90	2.95	"Cash Flow" per sh	3.25
.68	.73	.84	.93	.98	.93	1.01	1.01	.95	1.11	1.27	1.32	1.28	1.40	1.49	1.67	1.65	1.70	Earnings per sh ^{AB}	1.95
.51	.54	.57	.61	.64	.68	.72	.76	.80	.82	.85	.91	.95	.99	1.03	1.07	1.11	1.15	Div'ds Decl'd per sh ^C	1.27
1.95	1.72	1.64	1.52	1.48	1.58	1.65	1.29	1.21	1.16	1.85	2.50	2.74	1.85	2.47	1.76	.65	.55	Cap'l Spending per sh	1.45
5.68	6.16	6.53	6.95	7.45	7.86	8.26	8.63	8.91	9.36	11.15	11.53	11.83	11.99	12.11	12.67	12.95	13.40	Book Value per sh ^D	14.70
53.15	57.67	59.10	60.39	61.48	62.59	63.83	64.93	66.18	67.31	76.67	76.70	74.61	73.23	73.26	73.27	72.00	71.50	Common Shs Outst'g ^E	69.00
15.7	13.8	13.9	13.6	16.3	17.7	14.3	16.7	18.4	16.7	16.6	17.9	19.2	18.7	18.2	15.4	15.4	15.4	Avg Ann'l P/E Ratio	18.0
1.03	.92	.87	.78	.85	1.01	.93	.86	1.01	.95	.88	.95	1.04	.99	1.10	1.02	1.02	1.02	Relative P/E Ratio	1.50
4.8%	5.4%	4.9%	4.8%	4.0%	4.1%	5.0%	4.5%	4.6%	4.4%	4.1%	3.8%	3.9%	3.8%	3.8%	4.1%	4.1%	4.1%	Avg Ann'l Div'd Yield	3.3%
CAPITAL STRUCTURE as of 10/31/09				830.4	1107.9	832.0	1220.8	1529.7	1761.1	1924.6	1711.3	2089.1	1638.1	1700	1750	1750	1750	Revenues (\$mill) ^A	1915
Total Debt \$1098.5 mill. Due in 5 Yrs \$220.0 mill.				64.0	65.5	62.2	74.4	95.2	101.3	97.2	104.4	110.0	122.8	119	120	120	120	Net Profit (\$mill)	135
LT Debt \$732.5 mill. LT Interest \$55.1 mill.				34.7%	34.6%	33.1%	34.8%	35.1%	33.7%	34.2%	33.0%	36.3%	28.5%	35.0%	35.0%	35.0%	35.0%	Income Tax Rate	35.0%
(LT interest earned: 4.1x; total interest coverage: 3.5x)				7.7%	5.9%	7.5%	6.1%	6.2%	5.8%	5.0%	6.1%	5.3%	7.5%	7.0%	7.0%	7.0%	7.0%	Net Profit Margin	7.0%
Pension Assets-10/09 \$184.3 mill.				46.1%	47.6%	43.9%	42.2%	43.6%	41.4%	48.3%	48.4%	47.2%	44.1%	44.5%	45.5%	45.5%	45.5%	Long-Term Debt Ratio	47.0%
Oblig. \$195.3 mill.				53.9%	52.4%	56.1%	57.8%	56.4%	58.6%	51.7%	51.6%	52.8%	55.9%	55.5%	54.5%	54.5%	54.5%	Common Equity Ratio	53.0%
Pfd Stock None				978.4	1069.4	1051.6	1090.2	1514.9	1509.2	1707.9	1703.3	1681.5	1660.5	1680	1760	1760	1760	Total Capital (\$mill)	1915
Common Stock 73,295,803 shs.				1072.0	1114.7	1158.5	1812.3	1849.8	1939.1	2075.3	2141.5	2240.8	2304.4	2350	2375	2375	2375	Net Plant (\$mill)	2450
as of 12/11/09				8.3%	7.9%	7.8%	8.6%	7.8%	8.2%	7.2%	7.8%	8.2%	9.1%	8.5%	8.5%	8.5%	8.5%	Return on Total Cap'l	8.5%
MARKET CAP: \$1.9 billion (Mid Cap)				12.1%	11.7%	10.6%	11.8%	11.1%	11.5%	11.0%	11.9%	12.4%	13.2%	13.0%	12.5%	12.5%	12.5%	Return on Shr. Equity	13.0%
CURRENT POSITION				12.1%	11.7%	10.6%	11.8%	11.1%	11.5%	11.0%	11.9%	12.4%	13.2%	13.0%	12.5%	12.5%	12.5%	Return on Com Equity	13.0%
2007				3.5%	3.0%	1.7%	3.1%	3.7%	3.6%	2.8%	3.5%	3.9%	4.8%	4.0%	4.0%	4.0%	4.0%	Retained to Com Eq	5.0%
2008				71%	75%	83%	74%	66%	68%	74%	70%	69%	64%	67%	67%	67%	67%	All Div'ds to Net Prof	65%
2010/10/31/09																			
(\$mill)																			
Cash Assets				7.5	7.0	7.6													
Other				427.8	593.8	505.6													
Current Assets				435.3	600.8	513.2													
Accts Payable				143.6	132.3	115.4													
Debt Due				195.0	436.5	366.0													
Other				85.9	112.7	118.8													
Current Liab.				424.5	681.5	600.2													
Fix. Chg. Cov.				309%	341%	316%													
ANNUAL RATES				Past	Past	Past													
				10 Yrs.	5 Yrs.	to '13-'15													
				7.5%	8.0%	2.0%													
				Revenues	5.5%	6.5%													
				"Cash Flow"	5.0%	6.5%													
				Earnings	5.0%	6.5%													
				Dividends	5.0%	4.5%													
				Book Value	5.0%	4.5%													
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				677.2	531.5	224.4	278.2												
2008				788.5	634.2	354.7	311.7												
2009				779.6	455.4	180.3	222.8												
2010				795	470	195	240												
2011				805	480	210	255												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1.12	.66	d.10	d.18												
2009				1.10	.73	d.10	d.06												
2010				1.15	.75	d.10	d.15												
2011				1.16	.77	d.09	d.14												
Fiscal Year Ends				Jan.31	Apr.30	Jul.31	Oct.31												
2007				.94	.69	d.12	d.11												
2008				1															

SOUTH JERSEY INDS. NYSE-SJI						RECENT PRICE	40.49	P/E RATIO	15.7	(Trailing: 17.0 Median: 14.0)	RELATIVE P/E RATIO	0.92	DIV'D YLD	3.3%	VALUE LINE	Target Price Range						
TIMELINESS	3	Lowered 8/14/09	High: 15.4	15.1	17.0	18.3	20.3	26.5	32.4	34.3	41.3	40.6	40.8	40.6			2013	2014	2015			
SAFETY	2	Lowered 1/4/91	Low: 10.8	12.3	13.8	14.1	15.3	19.7	24.9	25.6	31.2	25.2	32.0	37.2								
TECHNICAL	2	Raised 2/19/10	LEGENDS 1.10 x Dividends p sh divided by Interest Rate Relative Price Strength 2-for-1 split 7/05 Options: Yes Shaded area: prior recession Latest recession began 12/07										80 60 50 40 30 25 20 15 10 7.5									
BETA	.60	(1.00 = Market)	2013-15 PROJECTIONS																			
	Price	Gain	Ann'l Total																			
High	55	(+35%)	Return																			
Low	40	(Nil)	4%																			
Insider Decisions																						
to Buy			A	M	J	J	A	S	O	N	D											
Options			0	0	0	0	0	0	0	0	0											
to Sell			0	1	2	0	2	0	0	0	3											
Institutional Decisions																						
to Buy			102009	202009	302009													% TOT. RETURN 2/10				
to Sell			73	70	63													THIS STOCK				
Hld's(000)			16545	15858	15611													VL ARITH.				
			Percent shares traded	15	10	5												1 yr. 14.5				
				78	72													3 yr. 26.7				
																		5 yr. 66.9				
1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	© VALUE LINE PUB., INC. 13-15				
17.45	16.50	16.52	16.18	20.89	17.60	22.43	35.30	20.69	26.34	29.51	31.78	31.76	32.30	32.36	28.37	31.45	32.80	Revenues per sh	37.15			
1.35	1.65	1.54	1.60	1.44	1.84	1.95	1.90	2.12	2.24	2.44	2.51	3.51	3.20	3.48	3.44	3.60	3.90	"Cash Flow" per sh	4.45			
.61	.83	.85	.86	.64	1.01	1.08	1.15	1.22	1.37	1.58	1.71	2.46	2.09	2.27	2.38	2.65	2.80	Earnings per sh A	3.30			
.72	.72	.72	.72	.72	.72	.73	.74	.75	.78	.82	.86	.92	1.01	1.11	1.22	1.34	1.40	Div'ds Decl'd per sh B	1.60			
1.93	2.08	2.01	2.30	3.06	2.19	2.21	2.82	3.47	2.36	2.67	3.21	2.51	1.88	2.08	3.65	2.40	2.50	Cap'l Spending per sh	2.85			
7.23	7.34	8.03	6.43	6.23	6.74	7.25	7.81	9.67	11.26	12.41	13.50	15.11	16.25	17.33	18.27	19.35	20.00	Book Value per sh C	22.85			
21.43	21.44	21.51	21.54	21.56	22.30	23.00	23.72	24.41	26.46	27.76	28.98	29.33	29.61	29.73	29.80	31.00	32.00	Common Shs Outst'g D	35.00			
16.1	12.2	13.3	13.8	12.1	13.3	13.0	13.6	13.5	13.3	14.1	16.6	11.9	17.2	15.9	15.0			Avg Ann'l P/E Ratio	14.0			
1.06	.82	.83	.80	1.10	.76	.85	.70	.74	.76	.74	.88	.64	.91	.96	.99			Relative P/E Ratio	.95			
7.4%	7.2%	6.4%	6.1%	5.3%	5.4%	5.2%	4.7%	4.6%	4.3%	3.7%	3.0%	3.2%	2.8%	3.1%	3.4%			Avg Ann'l Div'd Yield	3.5%			
CAPITAL STRUCTURE as of 12/31/09						515.9	837.3	505.1	696.8	819.1	921.0	931.4	956.4	962.0	845.4	975	1050	Revenues (\$mill)	1300			
Total Debt \$544.5 mill. Due in 5 Yrs \$113.2 mill.						24.7	26.8	29.4	34.6	43.0	48.6	72.0	61.8	67.7	71.1	80.0	90.0	Net Profit (\$mill)	115			
LT Debt \$312.8 mill. LT Interest \$18.0 mill.						43.1%	42.2%	41.4%	40.6%	40.9%	41.5%	41.3%	41.9%	47.7%	36.7%	40.0%	40.0%	Income Tax Rate	40.0%			
(Total interest coverage: 5.9x)						4.8%	3.2%	5.8%	5.0%	5.2%	5.3%	7.7%	6.5%	7.0%	8.4%	8.2%	8.6%	Net Profit Margin	8.8%			
Pension Assets-12/09 \$105.9 mill.						54.1%	57.0%	53.6%	50.8%	48.7%	44.9%	44.7%	42.7%	39.2%	36.5%	40.0%	40.0%	Long-Term Debt Ratio	38.5%			
Oblig. \$149.0 mill.						37.6%	35.9%	46.1%	49.0%	51.0%	55.1%	55.3%	57.3%	60.8%	63.5%	60.0%	60.0%	Common Equity Ratio	61.5%			
Pfd Stock none						443.5	516.2	512.5	608.4	675.0	710.3	801.1	839.0	848.0	857.4	1000	1065	Total Capital (\$mill)	1300			
Common Stock 29,812,932 common shs.						562.2	607.0	666.6	748.3	799.9	877.3	920.0	948.9	982.6	1073.1	1075	1110	Net Plant (\$mill)	1300			
as of 2/22/10						7.4%	6.9%	7.6%	7.3%	7.9%	8.3%	10.1%	8.6%	8.9%	9.2%	9.0%	9.5%	Return on Total Cap'l	9.5%			
MARKET CAP: \$1.2 billion (Mid Cap)						12.1%	12.1%	12.4%	11.5%	12.4%	12.4%	16.3%	12.8%	13.1%	13.1%	13.5%	14.0%	Return on Shr. Equity	14.5%			
CURRENT POSITION (MILL)						14.8%	12.8%	12.5%	11.6%	12.5%	12.4%	16.3%	12.8%	13.1%	13.1%	13.5%	14.0%	Return on Com Equity	14.5%			
2007						4.8%	3.5%	4.7%	5.0%	5.9%	6.2%	10.2%	6.7%	6.7%	6.4%	6.5%	7.0%	Retained to Com Eq	7.5%			
2008						67%	76%	62%	57%	52%	50%	37%	48%	49%	51%	52%	50%	All Div'ds to Net Prof	49%			
2009						BUSINESS: South Jersey Industries, Inc. is a holding company. Its subsidiary, South Jersey Gas Co., distributes natural gas to 340,136 customers in New Jersey's southern counties, which covers about 2,500 square miles and includes Atlantic City. Gas revenue mix '08: residential, 46%; commercial, 23%; cogeneration and electric generation, 6%; industrial, 25%. Non-utility operations include: South Jersey Energy, South Jersey Resources Group, Marina Energy, and South Jersey Energy Service Plus. Has 602 employees. Off./dir. control 1.0% of com. shares; Barclays, 7.5%; Keeley Asset Management, 5.6% (3/09 proxy). Chrmn. & CEO: Edward Graham. Incorp.: N.J. Address: 1 South Jersey Plaza, Folsom, NJ 08037. Tel.: 609-561-9000. Internet: www.sjindustries.com.														ket pricing. In addition, this unit ought to benefit from its position in the Marcellus Shale acreage. Leaseholder St. Mary Land & Exploration Company has already drilled two wells on SJI's property, and expects to drill two more in 2010. The company expects to begin recognizing a royalty and working interest revenue stream from these wells in the current year.		
2010						South Jersey Industries should continue to report healthy results going forward. The company appears well-positioned in the markets that it serves. Revenues and share earnings should advance at a good clip for 2010 and 2011.												South Jersey Gas is seeking higher rates. The utility petitioned the New Jersey Board of Public Utilities for a \$35 million increase (roughly 7%) in operating revenues. This marks SJI's first base rate filing in seven years. The company cited the need to recover infrastructure investments of \$466 million made over the past six years. Any increase would not become effective until late 2010.				
2011						Utility South Jersey Gas continues to experience modest growth in its customer base, despite softness in the housing construction market. Natural gas remains very popular in its service territory. Much of the recent growth can be attributed to conversions to natural gas from other fuel sources. SJI's recent gas main extension project in Cape May County, as well as aggressive marketing efforts in other parts of its service territory without natural gas service, have been well received. As a result, the utility expects to add over 3,000 customers from conversions this year. Elsewhere, Performance from the company's Wholesale Energy business should also remain solid. It currently has significant gas storage capacity and pipeline capacity under management, both of which afford opportunities to lock in attractive margins resulting from volatility in mar-												These neutrally ranked shares don't stand out at present. The issue earns high marks for Safety, Price Stability, and Earnings Predictability. But it offers below average, though fairly well-defined, total-return potential for the coming years, based on the modest bottom-line growth we envision to 2013-2015.				
QUARTERLY REVENUES (\$mill.)						Michael Napoli, CFA												March 12, 2010				
2007						Company's Financial Strength B++												Stock's Price Stability 100				
2008						Price Growth Persistence 90												Earnings Predictability 85				
2009						To subscribe call 1-800-833-0046.																
2010																						
2011																						
EARNINGS PER SHARE A																						
2007																						
2008																						
2009																						
2010																						
2011																						
QUARTERLY DIVIDENDS PAID B																						
2006																						
2007																						
2008																						
2009																						
2010																						