

**Exhibit No. CRM-3
Dockets UE-150204/UG-150205
Witness: Chris R. McGuire**

**BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

**AVISTA CORPORATION dba AVISTA
UTILITIES,**

Respondent.

**DOCKETS UE-150204 and
UG-150205
(Consolidated)**

**EXHIBIT TO
TESTIMONY OF**

Chris R. McGuire

**STAFF OF
WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION**

Staff Natural Gas Attrition Study

July 27, 2015

Revised October 13, 2015

REVISED

**COMMISSION STAFF
2016 NATURAL GAS ATTRITION STUDY**

Washington - Natural Gas System
Twelve Months Ended December 31, 2014
(000's of Dollars)

Line No.	Description	(a) Attrition Balances	(b) Revenue Growth Factor	(c) Attrition Study Results
1	2016 Rate Base	\$299,015	1.011566	\$295,596
2	Settlement Rate of Return			7.29%
3	Net Operating Income Requirement			\$21,549
4	2016 Net Operating Income (at 2015 rates)	\$ 16,127	1.01157	45942 15,155
5	2016 Rate of Return (at 2015 rates)			5.39% 5.13%
6	2016 Net Operating Income Deficiency (Surplus)			5667 6,394 [Line 3 - Line 4]
7	Gross-up Conversion Factor			0.62032
8	2016 Attrition Revenue Deficiency (Surplus)			9040 10,309
9	2016 Total General Business Revenues (at 2015 rates)		\$ 170,914	[CRM-3, pg. 4, col. H, Lines 1-2, plus col. I, Line 12]
10	Attrition-based 2016 revenue requirement			179954 181,223 [Line 8 + Line 9]
11	Percent Revenue Requirement Change (vs. 2015)			5.29% 6.03%
12	Staff Pro Forma 2016 Revenue Requirement			\$174,519 [CHS-3]
13	Attrition Allowance			5435 6,704 [Line 10 - Line 12]

Multiparty Settlement - Cost of Capital
Washington - Natural Gas System

Proposed Cap Structure			
<u>Component</u>	<u>Capital Structure</u>	<u>Cost</u>	<u>Weighted Cost</u>
Total Debt	51.50%	5.20%	2.68%
Common	48.50%	9.50%	4.61%
Total	<u>100.00%</u>		<u>7.29%</u>

**Revenue Conversion Factor
Washington -Natural Gas System
Twelve Months Ended December 31, 2014**

<u>Line No.</u>	<u>Description</u>	<u>Factor</u>
1	Revenues	1.000000
	Expense:	
2	Uncollectibles	0.005354
3	Commission Fees	0.002000
4	Washington Excise Tax	0.038314
5	Total Expense	<u>0.045668</u>
6	Net Operating Income Before FIT	0.954332
7	Federal Income Tax @ 35%	<u>0.334016</u>
8	REVENUE CONVERSION FACTOR	<u><u>0.62032</u></u>

2016 NATURAL GAS ATTRITION REVENUE REQUIREMENT

CBR Line No.	DESCRIPTION	Determine Base Cost and Revenue to Escalate				Escalate Non-Energy Cost				Other Cost & Revenue Adjustments				2016 Revenue and Cost [H]-[I]-[J]-[K] [PCOMP]=[K]
		12.2014 Commission Basis Report	Pro Forma Revenue Normalization Adjustment	Exclude Normalized Gas Costs and Escalation Base	December 2014 Escalation Base	Escalation Amount [E]*[F]=[G]	Escalation Factor [F]	Trended 2016 Non-Energy Cost [E]+[G]=[H]	(plus) Pro-Formed Gas Cost/Revenue	(plus) Revenue Growth	After Attrition Adj - Project Compass	After Attrition Adj - Atmos Testing		
[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]	[M]		
1	Total General Business	\$ 154,546	\$ -	\$ 12,185	\$ (92,072)	\$ 74,659	1.19%	\$ 74,659	\$ 92,072	\$ 1,983	\$ -	\$ 168,714		
2	Total Transportation	\$ 3,960	\$ -	\$ 223	\$ -	\$ 4,183	-0.14%	\$ 4,183	\$ -	\$ (6)	\$ -	\$ 4,177		
3	Other Revenues	\$ 332	\$ -	\$ -	\$ 332	\$ 332	0.00%	\$ 332	\$ -	\$ -	\$ -	\$ 332		
4	Total Gas Revenues	\$ 158,838	\$ -	\$ 12,408	\$ (92,072)	\$ 79,174		\$ 79,174	\$ 92,072	\$ 1,977	\$ -	\$ 173,223		
EXPENSES														
Production Expenses														
5	City Gate Purchases	\$ 84,187	\$ -	\$ 3,680	\$ (87,867)	\$ -		\$ -	\$ 87,867	\$ -	\$ -	\$ 87,867		
6	Purchased Gas Expense	\$ 779	\$ -	\$ 3	\$ -	\$ 782	4.34%	\$ 816	\$ -	\$ -	\$ -	\$ 816		
7	Net Nat Gas Storage Trans	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -		
8	Total Production	\$ 84,966	\$ -	\$ 3,683	\$ (87,867)	\$ 782		\$ 816	\$ -	\$ -	\$ -	\$ 816		
Underground Storage														
9	Operating Expenses	\$ 893	\$ -	\$ -	\$ -	\$ 893	4.34%	\$ 932	\$ -	\$ -	\$ -	\$ 932		
10	Depreciation/Amortization	\$ 402	\$ -	\$ -	\$ -	\$ 402	22.27%	\$ 492	\$ -	\$ -	\$ -	\$ 492		
11	Taxes	\$ 184	\$ -	\$ -	\$ -	\$ 184	18.94%	\$ 219	\$ -	\$ -	\$ -	\$ 219		
12	Total Underground Storage	\$ 1,479	\$ -	\$ -	\$ -	\$ 1,479		\$ 1,642	\$ -	\$ -	\$ -	\$ 1,642		
Distribution														
13	Operating Expenses	\$ 10,704	\$ -	\$ -	\$ -	\$ 10,704	4.34%	\$ 11,168	\$ -	\$ -	\$ -	\$ 11,168		
14	Depreciation/Amortization	\$ 8,513	\$ -	\$ -	\$ -	\$ 8,513	22.27%	\$ 10,409	\$ -	\$ -	\$ -	\$ 10,409		
15	Taxes	\$ 8,719	\$ -	\$ 475	\$ (3,528)	\$ 5,666	18.94%	\$ 6,740	\$ 3,528	\$ 76	\$ -	\$ 10,344		
16	Total Distribution	\$ 27,936	\$ -	\$ 475	\$ (3,528)	\$ 24,883		\$ 28,317	\$ 3,528	\$ 76	\$ -	\$ 31,921		
Customer Accounting														
17	Customer Accounting	\$ 6,108	\$ -	\$ 66	\$ (493)	\$ 5,681	4.34%	\$ 5,928	\$ 493	\$ 11	\$ -	\$ 6,432		
18	Customer Service & Information	\$ 865	\$ -	\$ -	\$ -	\$ 865	4.34%	\$ 903	\$ -	\$ -	\$ -	\$ 903		
19	Sales Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	4.34%	\$ -	\$ -	\$ -	\$ -	\$ -		
Administrative & General														
20	Operating Expenses	\$ 12,777	\$ -	\$ 25	\$ (184)	\$ 12,618	4.34%	\$ 13,165	\$ 184	\$ 4	\$ -	\$ 13,353		
21	Depreciation/Amortization	\$ 4,389	\$ -	\$ -	\$ -	\$ 4,389	22.27%	\$ 5,367	\$ -	\$ 903	\$ -	\$ 6,270		
22	Regulatory Amortizations	\$ (91)	\$ 1,143	\$ 91	\$ -	\$ 1,143	0.00%	\$ 1,143	\$ -	\$ -	\$ -	\$ 1,143		
23	Taxes	\$ -	\$ -	\$ -	\$ -	\$ -	18.94%	\$ -	\$ -	\$ -	\$ -	\$ -		
24	Total Admin. & General	\$ 17,075	\$ 1,143	\$ 116	\$ (184)	\$ 18,150		\$ 19,675	\$ 184	\$ 4	\$ 903	\$ 20,766		
25	Total Gas Expense	\$ 138,429	\$ 1,143	\$ 4,341	\$ (92,072)	\$ 51,841		\$ 57,280	\$ 92,072	\$ 1,041	\$ 903	\$ 149,917		
26	OPERATING INCOME BEFORE FTI	\$ 20,409	\$ (1,143)	\$ 8,067	\$ -	\$ 27,333		\$ 21,894	\$ -	\$ 2,315	\$ (903)	\$ 23,306		

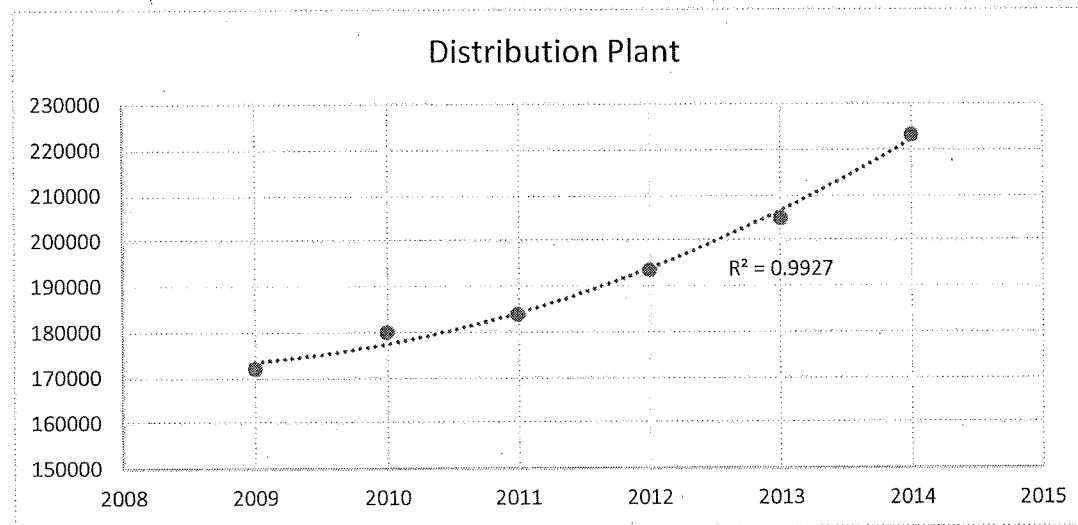
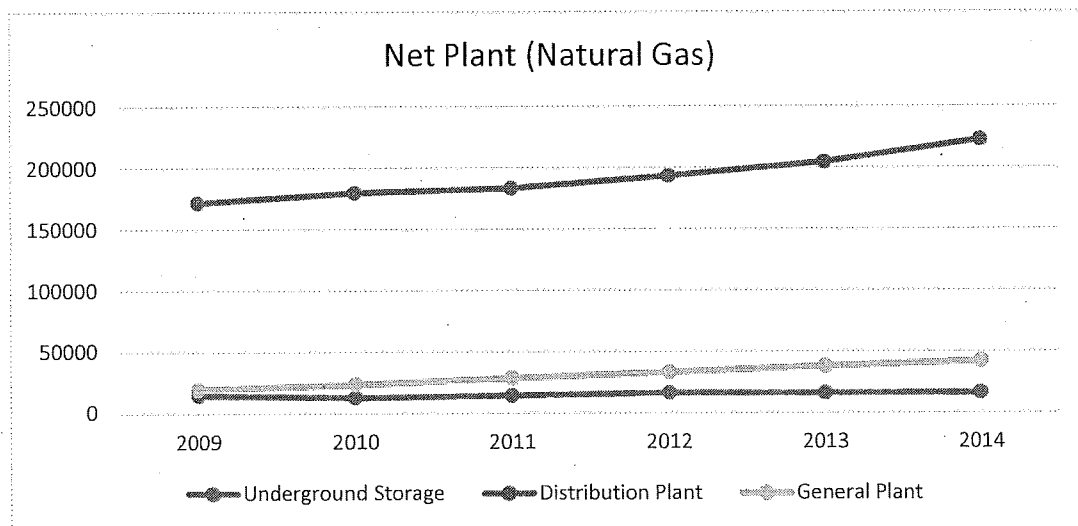
2016 NATURAL GAS ATTRITION REVENUE REQUIREMENT

S000s	Determine Base Cost and Revenue to Escalate				Escalate Non-Energy Cost				After Cost & Revenue Adjustment				
	12.2014	Pro Forma	Exclude	December	Escalation	Trended 2016	(plus) 12.2014	After Attrition	After Attrition	Revenue	After Attrition	After Attrition	2016 Revenue
CBR	Commission	Regulatory	Normalized	2014	Amount	Non-Energy	Pro-Formed Gas	Adj - Project	Compas	Growth	Testing	Cost	and Cost
Line	Basis Report	Amortis Adjs	Gas Costs and	Escalation	*[F]=[G]	[E]+[G]=[H]	Cost/Revenue	Compass	Testing	[H]+[I]+[J]+	[K]	[L]	[M]
No.	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]	[M]
	FEDERAL INCOME TAX												
27	\$ (6,945)	\$ (400)	2,824	- \$ (4,521)	(1,904)	(6,425)	810					(694)	6,414
28	\$ (137)	\$ -	\$ -	\$ (137)	(298)	(435)						(44)	(535)
29	\$ 13,105	\$ -	\$ -	\$ 13,105		13,105							13,105
30	\$ (20)	\$ -	\$ -	\$ (20)		(20)							(20)
31	\$ 14,406	\$ (743)	\$ 5,244	\$ -	\$ 18,907	\$ (3,238)	\$ 15,669	\$ -	\$ 1,505	\$ (587)	\$ (460)	\$ 14,127	\$ 15,330
	RATE BASE												
	PLANT IN SERVICE												
32	\$ 25,235	\$ -	\$ -	\$ 25,235	16.86%	\$ 4,255	29,490					\$	29,490
33	\$ 337,894	\$ -	\$ -	\$ 337,894	16.86%	56,968	394,862					\$	394,862
34	\$ 59,169	\$ -	\$ -	\$ 59,169	16.86%	9,976	69,145				\$11,668	\$	80,813
35	\$ 422,298	\$ -	\$ -	\$ 422,298		71,198	493,496					\$	505,164
	ACCUMULATED DEPR/AMORT												
36	\$ (9,521)	\$ -	\$ -	\$ (9,521)	16.86%	(1,605)	(11,126)						(11,126)
37	\$ (114,795)	\$ -	\$ -	\$ (114,795)	16.86%	(19,354)	(134,149)						(134,149)
38	\$ (17,429)	\$ -	\$ -	\$ (17,429)	16.86%	(2,938)	(20,367)				(452)		(20,819)
39	\$ (141,745)	\$ -	\$ -	\$ (141,745)		(23,898)	(165,643)						(166,095)
40	\$ 280,553	\$ -	\$ -	\$ 280,553		\$ 47,300	\$ 327,853						339,069
41	\$ (54,652)	\$ -	\$ -	\$ (54,652)	16.86%	(9,214)	(63,866)				(544)		(64,410)
42	\$ 225,901	\$ -	\$ -	\$ 225,901		38,086	263,987						274,659
43	\$ 14,762	\$ -	\$ -	\$ 14,762	0.00%	-	14,762						14,762
44	\$ -	\$ -	\$ -	\$ -	0.00%	-	-						-
45	\$ (479)	\$ -	\$ -	\$ (479)	0.00%	-	(479)						(479)
46	\$ 10,073	\$ -	\$ -	\$ 10,073	0.00%	-	10,073						10,073
47	\$ 250,257	\$ -	\$ -	\$ 250,257		\$ 38,086	\$ 288,343						\$ 299,015
48	RATE OF RETURN				5.76%								5.99%
	ATTRITION ADJUSTED REVENUE REQUIREMENT												
49	Proposed Rate of Return				7.29%								7.29%
50	Net Operating Income Requirement	\$ 18,244											\$ 21,798
51	Net Operating Income per Above	\$ 14,406											\$ 14,406
52	Net Operating Income Deficiency	\$ 3,838											\$ 7,392
53	Conversion Factor	\$ 0.62032											\$ 0.62032
54	Revenue Requirement	\$ 6,187											\$ 10,427
55	Revenue Growth Factor												\$ 1.01157
56	Attrition Adjusted Revenue Requirement												\$ 10,308

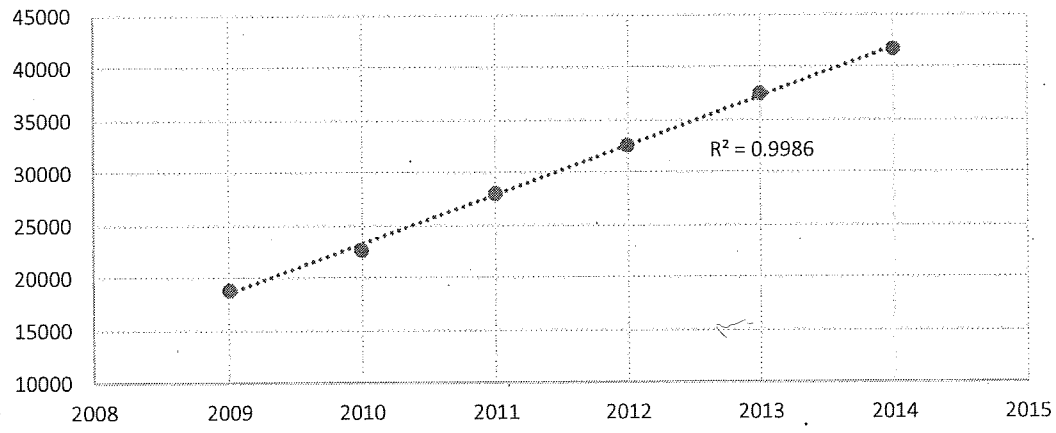
*Note: Adjustment in Column [B] includes the Regulatory Amortization associated with the deferral of the Natural Gas portion of the Project Compass Customer Information System (CIS) project as this amount is not included in the 12.2014 Commission Basis. This amount is not escalated as shown in column [F].

NET PLANT	2009	2010	2011	2012	2013	2014
Underground Storage	13991	12135	13722	15688	15623	15714
Distribution Plant	171955	179849	183790	193474	204807	223099
General Plant	18865	22679	28045	32623	37499	41740

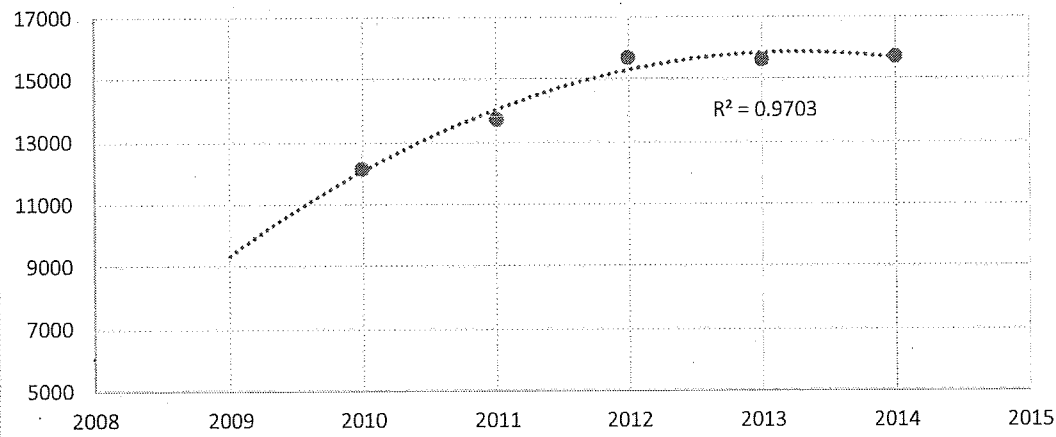
NET PLANT	2009	2010	2011	2012	2013	2014
Distribution Plant	171955	179849	183790	193474	204807	223099
General Plant	18865	22679	28045	32623	37499	41740
Underground Storage		12135	13722	15688	15623	15714



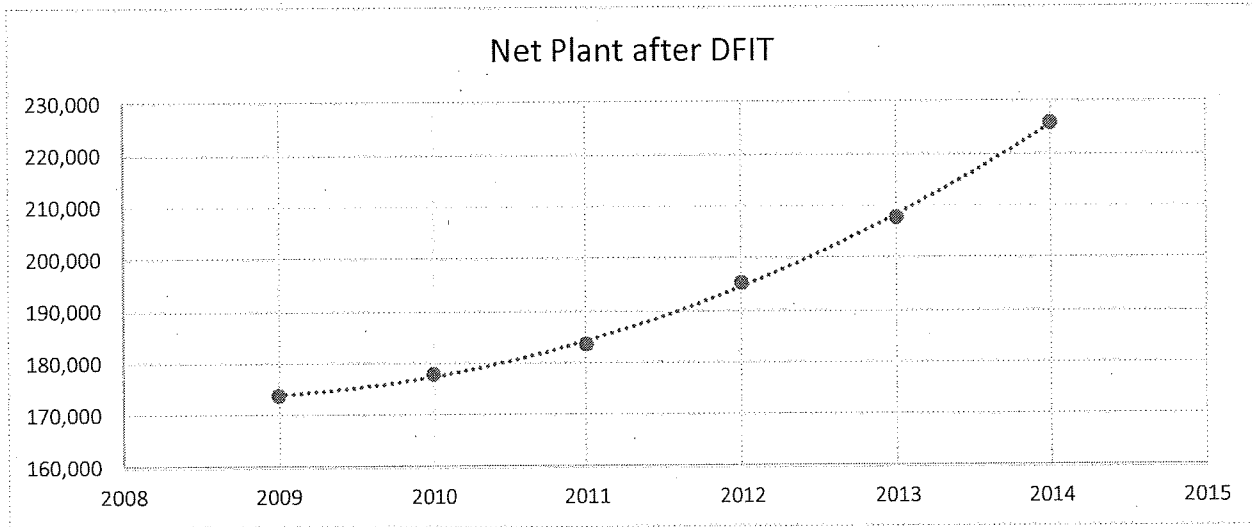
General Plant



Underground Storage

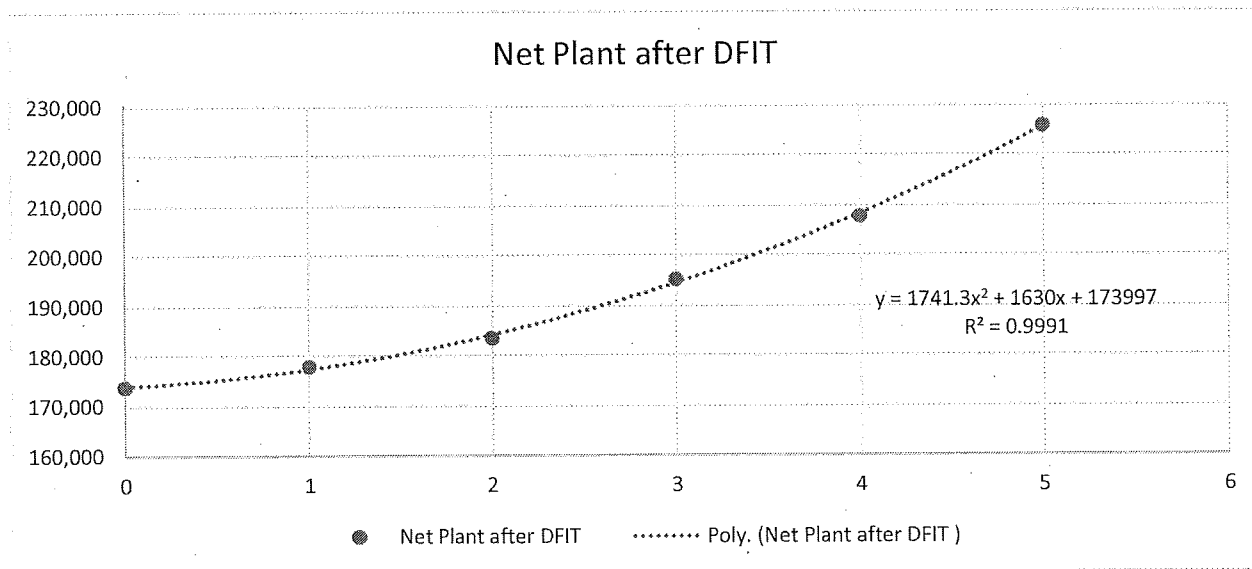


	2009	2010	2011	2012	2013	2014
Net Plant after DFIT	173,806	177,901	183,553	195,287	207,759	225,901
	0	1	2	3	4	5
Net Plant after DFIT	173,806	177,901	183,553	195,287	207,759	225,901



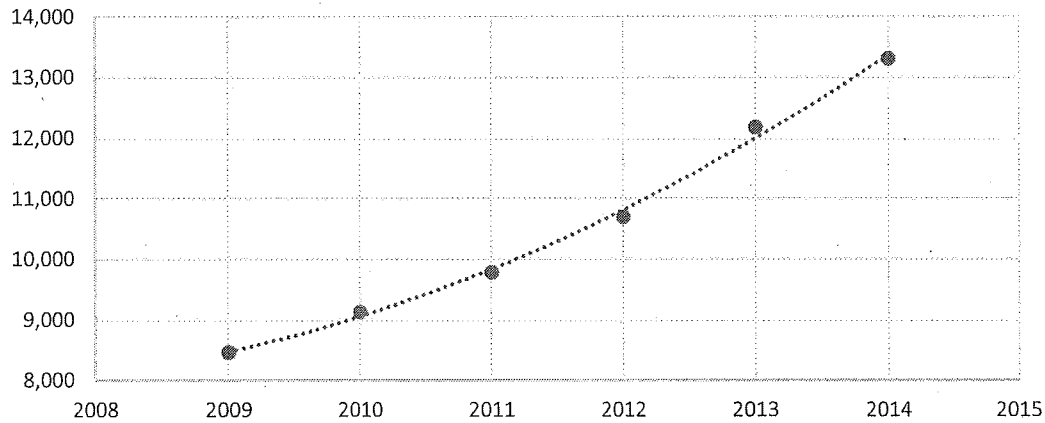
	x	C
Derivative of Quadratic (below)	3482.6	1630
x = 5 (2014 is year 5)	17413	
Sum (x and C)		19043
rate (1-year)		8.43%
rate (2-year)		16.86%

Escalation factor (to 2016)



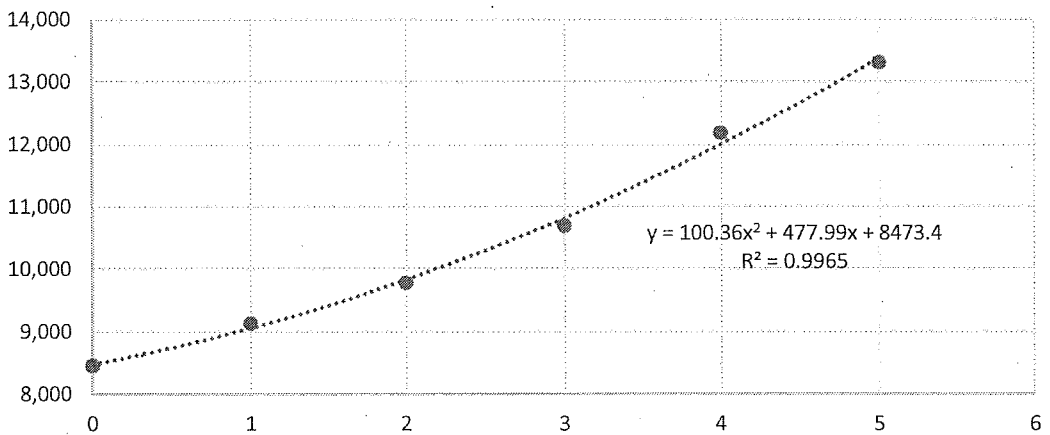
	2009	2010	2011	2012	2013	2014
Depreciation/Amortization	8,456	9,127	9,778	10,692	12,173	13,304
	0	1	2	3	4	5
Depreciation/Amortization	8,456	9,127	9,778	10,692	12,173	13,304

Depreciation/Amortization (Natural Gas)

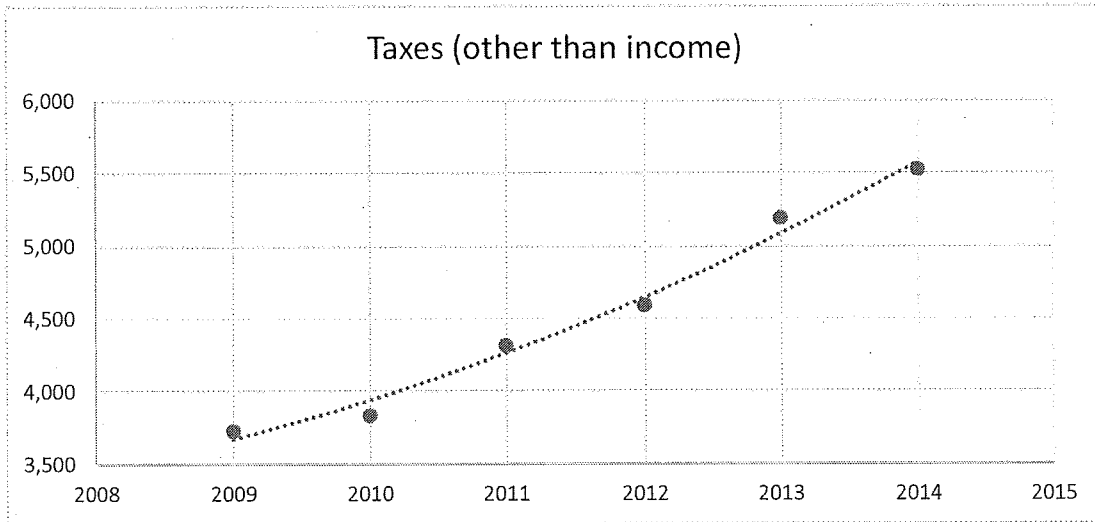


	x	C
Derivative of Quadratic (below)	200.72	477.99
x = 5 (2014 is year 5)	1003.6	
Sum (x and C)		1481.59
rate (1-year)		0.111364
rate (2-year)		22.27% Escalation factor (to 2016)

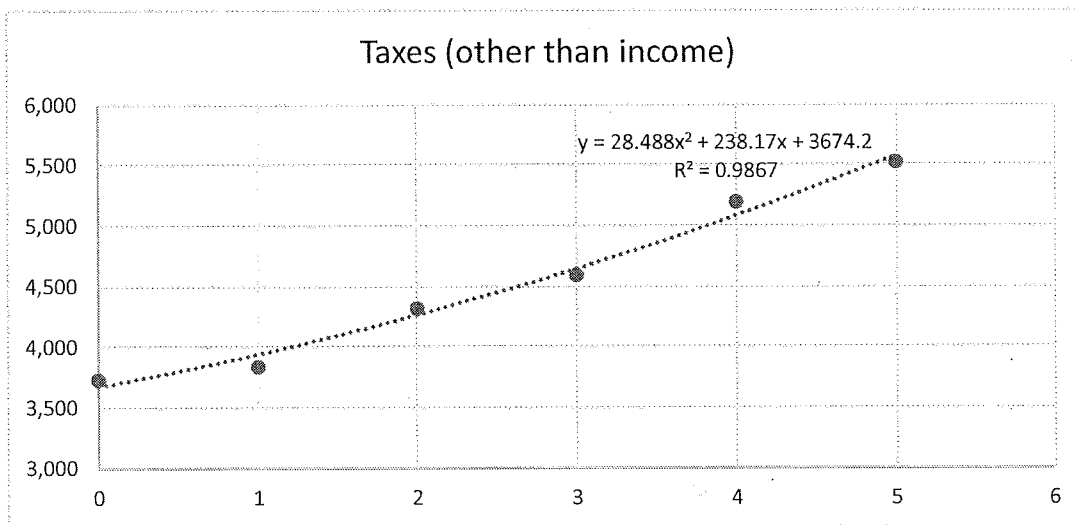
Depreciation/Amortization (Natural Gas, 2009 at year 0)



	2009	2010	2011	2012	2013	2014
Taxes (other than income)	3,728	3,834	4,317	4,592	5,191	5,523
	0	1	2	3	4	5
Taxes (other than income)	3,728	3,834	4,317	4,592	5,191	5,523

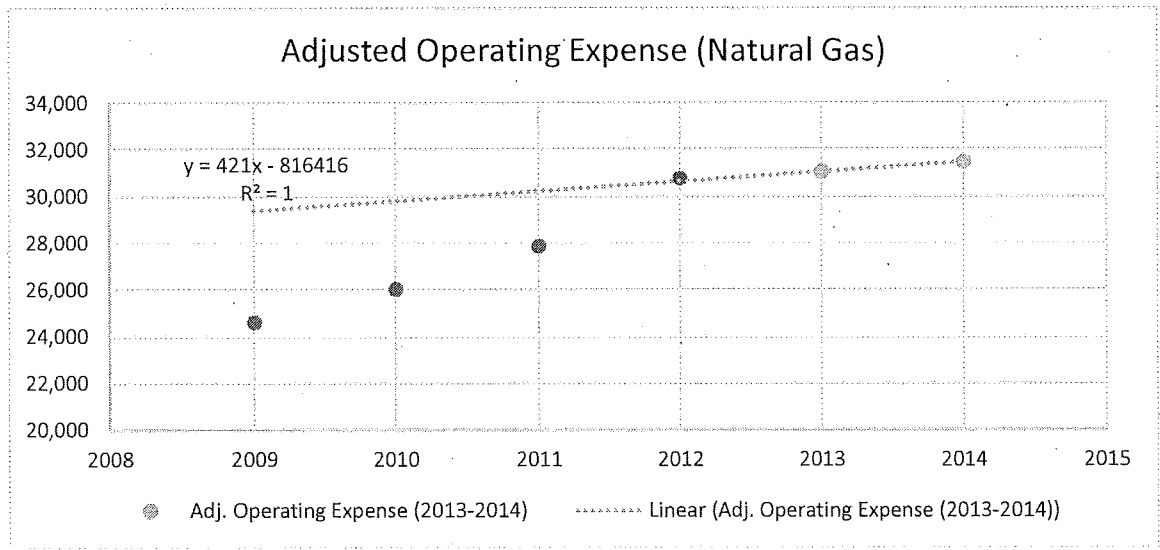


	x	C
Derivative of Quadratic (below)	56.976	238.17
x = 5 (2014 is year 5)	284.88	
Sum (x and C)		523.05
rate (1-year)		0.094704
rate (2-year)		18.94% Escalation factor (to 2016)



	2009	2010	2011	2012	2013	2014
Adj. Operating Expense (2009-2014, excl. 2012)	24,600	26,009	27,852		31,057	31,478
Adj. Operating Expense (2012)				30,759		
Adj. Operating Expense (2013-2014)					31,057	31,478

	Slope	Rate (1yr)	Escalation
Rate (2013-2014, linear)	421.0	1.34%	2.67%
Company-proposed (2007-2014, linear)	944.3	3.00%	6.00%
Average		2.17%	4.34%



BILLING DETERMINANT INDEX
09.2014 TO 2016 WEIGHTED REVENUE GROWTH

Line No.	Description A	Schedule B	Billing Determinant C	Revenue Model Sept 2014 D	Forecast 2016 E	Billing Determinant Growth F=(E-D)/D	Revenue Sept 2014 G	Weight H=G/SUM G	Weighted Growth I=FxH	Net of Gas Costs
1	General Svc	101	Basic/Min	1,787,943	1,828,182	2.25%	\$16,091,487	9.65%	0.22%	\$362,147
2	Lrg Gen Svc	111/112	Basic/Min	30,697	31,374	2.20%	\$2,671,867	1.60%	0.04%	\$58,902
3	Ex Lrg Gen Svc	121/122	Basic/Min	336	339	0.83%	\$72,321	0.04%	0.00%	\$598
4	Interruptible Svc	131/132	Basic/Min	24	24	0.00%	\$0	0.00%	0.00%	\$0
5	General Svc	101	Volumes	120,721,607	119,462,331		\$107,498,749	64.47%	0.57%	\$945,989
6	Lrg Gen Svc	111/112	Volumes	47,537,282	47,624,382		\$35,598,366	21.35%	0.22%	\$366,663
7	Ex Lrg Gen Svc	121/122	Volumes	5,735,037	5,939,604		\$4,064,021	2.44%	0.09%	\$158,294
8	Interruptible Svc	131/132	Volumes	1,115,704	1,252,783	12.29%	\$733,819	0.44%	0.05%	\$90,159
9	Total			175,109,630	174,279,099		\$166,730,631	100.00%	1.19%	\$1,982,752
10	Transportation Svc	146	Basic/Min	456	516	13.12%	\$255,207	6.10%	0.80%	\$33,473
11	Special Contract	148	Basic/Min	60	66	9.50%	\$325,584	7.78%	0.74%	\$30,941
12	Transportation Svc	146	Volumes	30,580,202	30,484,401	-0.31%	\$2,321,589	55.50%	-0.17%	-\$7,273
13	Special Contract	148	Volumes	49,497,099	47,057,044	-4.93%	\$1,280,992	30.62%	-1.51%	-\$63,149
14	Total			80,077,301	77,541,445		\$4,183,371	100.00%	-0.14%	-\$6,008
15	General Svc	101	Total Revenue				\$123,590,236			
16	Lrg Gen Svc	111/112	Total Revenue				\$38,270,233			
17	Ex Lrg Gen Svc	121/122	Total Revenue				\$4,136,342			
18	Interruptible Svc	131/132	Total Revenue				\$733,819			
19	Transportation Svc	146	Total Revenue				\$2,576,796			
20	Special Contract	148	Total Revenue				\$1,606,576			
21	Total						\$170,914,002			

Line No.	Description	Schedule	Billing Determinant	Revenue Model Sept 2014	Forecast 2016	Billing Determinant Growth	Revenue Sept 2014	Weight	Weighted Growth	Net of Gas Costs
22	General Svc	101	Volumes	120,721,607	119,462,331		\$0.50327	(633756)	\$534,649	
23	Lrg Gen Svc	111/112	Volumes	47,537,282	47,624,382		\$0.50104	43641	\$245,326	
24	Ex Lrg Gen Svc	121/122	Volumes	5,735,037	5,939,604		\$0.48280	98765	\$107,848	
25	Interruptible Svc	131/132	Volumes	1,115,704	1,252,783		\$0.45493		\$62,361	
26	Total			175,109,630	174,279,099					
27	Transp	146	Volumes	30,580,202	30,484,401		\$0.00054		-\$52	
28	Spec Cont Trans	148	Volumes	49,497,099	47,057,044		\$0.00000			
29	Total			80,077,301	77,541,445				(429041)	\$950,132