



Rates & Regulatory Affairs
UG-181053
2018 WA General Rate Revision
Response to Bench Request No. 2

Date of Request: July 8, 2019

Date of Response: July 18, 2019

Responder: Kevin McVay (on behalf of Parties to the All-Party Joint Settlement Agreement)

Telephone: (503) 226-4211 ext. 3585

Email: kevin.mcvay@nwnatural.com

Witness: Kevin McVay (on behalf of Parties to the All-Party Joint Settlement Agreement)

Request: Bench Request No. 2

A. Please file electronic worksheets, in the format provided for Kevin S. McVay's Exh. KSM-2 in response to Bench Request No. 1, updated to reflect the All-Party Joint Settlement Agreement, along with all supporting calculations contained therein, to reflect proposed adjustments based on the settlement, beginning with actual per-book amounts and the Company's original testimony. All cells changed or modified to reflect the settlement should be readily identifiable. Please provide these files in electronic spreadsheet format with all formulas and links intact. *See* WAC 480-07-510(3)(h).

Response:

The attached file (UG-181053-NWN-AllParty-BRR-2-KSM-WP31-7-18-19) is submitted in response to Bench Request No. 2 issued on July 8, 2019. The tab labeled "Settlement Issues" provides a reference and tabulation of each settled issue in the Joint Settlement Agreement, and the file produces the agreed upon increase to revenue requirement of \$5,138,531. As a foundational issue, the file includes an adjustment for corrected Washington allocation factors that was previously included in response to Bench Request No. 1 in this docket. The cover letter to that response includes the following text:

"Additionally, the parties to this docket have requested that NW Natural file with the Commission updated workpapers that were provided to the parties during the discovery process. Specifically, NW Natural is filing its supplemental response to UTC Staff Data Request No. 43, in the format provided to the parties including specified dates. That supplemental response contains all of Mr. McVay's workpapers, *including updated workpapers that reflect corrected Washington allocation factors*. In anticipation that the parties will be using these workpapers in their reply testimony, the Company is providing this information to ensure that the Commission and its advisory staff also have this information" (*emphasis added*).

The net result of the correction of allocation factors was a reduction to revenue requirement of \$123,042, which was subsequently agreed to in paragraph 12 in the Joint Settlement

Agreement. In the attached file to Bench Request No. 2 we have included this revision in line 3 of the "Settlement Issues" tab, which shows the revenue requirement including the revision for allocation factors. The remaining settlement issues are itemized on lines 4 through 13. Each issue includes a tab reference and settlement action that describes the modification of the file to reflect the settlement provisions.

	Issue	Tab	Settlement Action	Revenue Requirement Impact
1	Original Filing			\$8,312,044
2	Allocation Factor Revision - Submitted with Bench Request 1	see files submitted with Bench Request 1 Response		<u>(\$123,042)</u>
3	Revenue Requirement after Revision			\$8,189,002
4	Cost of Capital	KSM-3 p8 - Cost of Cap	Adjusted ROE and Cap Structure %'s	(\$1,166,217)
5	Revenue and Gas Cost - UPC added Revenue	KSM-4 p2 &p3 - Adjust Issues	Added Column u	(\$113,035)
6	Bonus/LTIP reduction	KSM-4 p2 &p3 - Adjust Issues	Added Column r	
7		KSM-4 p8 - Bonuses	Changed Bonus calc to 5-yr average	(\$271,144)
8	Payroll/Payroll Overhead reduction	KSM-4 p2 &p3 - Adjust Issues	Added Column s	(\$87,414)
9	Miscellaneous O&M Reduction	KSM-4 p2 &p3 - Adjust Issues	Added Column t	(\$260,844)
10	Working Capital	KSM-4 p2 &p3 - Adjust Issues	Revised Working Capital - column f	(\$1,027,567)
11	Removal of Post Test Year Projects	KSM-4 p20 - Post TY Capital	Adjusted supporting tab	(\$107,326)
12	Non-Plant Excess Deferred Tax	KSM-4 p21 - EDIT Amort	Removed Non-Plant Amount	
13		WP - Deferred Tax	Removed Non-Plant Amount	<u>(\$16,924)</u>
14	Settlement - Revenue Requirement			<u><u>\$5,138,531</u></u>

NW Natural
Washington Rate Case
Test Year Based on Twelve Months Ended September 30, 2018

Line No.	Washington Allocated Results					
	Test Year Results	Adjustments	Test Year Adjusted	Proposed Rate Increase	Test Year at 9.40% Equity Return	
	(a)	(b)	(c)	(d)	(e)	
Operating Revenues						
1	Sale of Gas	\$67,314,413	(\$3,389,642)	\$63,924,771	\$5,138,531	\$69,063,302
2	Transportation	2,370,981	(9,877)	2,361,104	0	2,361,104
3	Miscellaneous Revenues	(2,048,364)	2,287,568	239,204	0	239,204
4	Total Operating Revenues	67,637,030	(1,111,951)	66,525,079	5,138,531	71,663,610
Operating Revenue Deductions						
5	Gas Purchased	25,772,083	(1,240,143)	24,531,940	0	24,531,940
6	Uncollectible Accrual for Gas Sales	58,166	17,692	75,858	5,424	81,282
7	Other Operating & Maintenance Expenses	17,640,139	(166,730)	17,473,408	0	17,473,408
8	Total Operating & Maintenance Expense	43,470,387	(1,389,181)	42,081,206	5,424	42,086,630
9	Federal Income Tax	1,370,297	(64,376)	1,305,921	1,034,228	2,340,149
10	Property Taxes	1,268,490	228,144	1,496,634	0	1,496,634
11	Other Taxes	3,688,228	(3,790)	3,684,438	208,213	3,892,651
12	Depreciation & Amortization	9,325,935	79,408	9,405,344	0	9,405,344
13	Total Operating Revenue Deductions	59,123,338	(1,149,794)	57,973,543	1,247,865	59,221,408
14	Net Operating Revenues	\$8,513,692	\$37,843	\$8,551,535	\$3,890,666	\$12,442,202
15	Total Rate Base	\$162,789,768	\$10,959,853	\$173,749,621	\$0	\$173,749,621
16	Rate of Return	5.23%		4.92%		7.16%
17	Return on Common Equity	5.46%		4.83%		9.40%

NW Natural
Washington Rate Case
Test Year Based on Twelve Months Ended September 30, 2018

<u>Line No.</u>	<u>System Test Year Results</u> (a)	<u>Washington Test Year Results</u> (b)
Operating Revenues		
1	\$665,326,649	\$67,314,413
2	19,869,300	2,370,981
3	2,191,735	(2,048,364)
4	687,387,683	67,637,030
Operating Revenue Deductions		
5	277,028,949	25,772,083
6	525,404	58,166
7	166,944,399	17,640,139
8	444,498,752	43,470,387
9	16,396,260	1,370,297
10	6,457,861	0
11	21,280,809	1,268,490
12	27,628,043	3,688,228
13	82,584,431	9,325,935
14	598,846,155	59,123,338
15	\$88,541,528	\$8,513,692
16	\$1,300,658,040	\$162,789,768
17	6.81%	5.23%
18	8.68%	5.46%

NW Natural
Washington Quarterly Results of Operations Report
Operations and Maintenance Expense: Allocation of System Amounts
Twelve Months Ended September 30, 2018

	System	Washington	Oregon
Natural Gas Storage			
Underground Storage Expense			
Operation			
816 Wells Expense	291,774	30,403	261,371
818 Compressor Station Expense	73,078	7,615	65,463
820 Measuring and Regulator Station Expense	2,626,828	272,282	2,354,546
821 Purification Expense	20,987	2,138	18,849
Maintenance			
832 Wells Expense	237,434	24,741	212,693
834 Storage Maint. Expense of Compressor Equip	232,439	24,220	208,219
Total Underground Storage Expense	3,482,540	361,399	3,121,141
Other Storage Expense			
Operation			
840 Supervision and Engineering	172,057	17,928	154,129
Total Other Storage Expense	172,057	17,928	154,129
Liquified Natural Gas Expense			
Operation			
844 Supervision and Engineering	1,892,077	197,154	1,694,922
845 LNG Fuel Expense - Credit Liquef Costs	(100,562)	(10,479)	(90,083)
Maintenance			
847 Supervision and Engineering	1,117,824	116,477	1,001,347
Total Liquified Natural Gas Expense	2,909,339	303,153	2,606,186
Total Natural Gas Storage	6,563,936	682,480	5,881,456
Transmission Expense			
Operation			
856 Mains Expense	1,998,785	136,823	1,861,962
Maintenance			
863 Maintenance of Mains	166,376	18,635	147,741
Total Transmission Expense	2,165,161	155,458	2,009,703
Distribution Expense			
Operation			
870 Supervision and Engineering	3,497,212	302,733	3,194,479
874 Mains and Services Expense	12,875,979	1,505,881	11,370,098
875 Measuring and Regulator Station Expense - General	199,446	20,982	178,464
877 Measuring and Regulator Station Expense - City Gate	504,447	43,950	460,497
878 Meter and House Regulator Expense	6,022,667	670,319	5,352,348
879 Customer Installation Expense	11,036,726	1,229,188	9,807,538
880 Other Expense	1,778,614	182,701	1,595,912
881 Rents	224,751	31,096	193,654
Maintenance			
885 Supervision and Engineering	7,357,254	345,761	7,011,493
887 Mains	3,229,685	167,524	3,062,161
889 Measuring and Regulator Station Expense - General	1,499,234	136,355	1,362,879
891 Measuring and Regulator Station Expense - City Gate	201,538	14,445	187,093
892 Services	689,871	51,311	638,561
893 Meters and House Regulators	2,834,505	282,506	2,551,998

NW Natural
Washington Quarterly Results of Operations Report
Operations and Maintenance Expense: Allocation of System Amounts
Twelve Months Ended September 30, 2018

	System	Washington	Oregon
894 Other Equipment	70,468	2,289	68,179
Total Distribution Expense	52,022,395	4,987,042	47,035,353
Customer Accounts Expense			
Operation			
901 Supervision	1,718,146	191,745	1,526,401
902 Meter Reading Expenses	890,734	99,320	791,413
903 Customer Records and Collection Expense	18,222,749	2,023,144	16,199,605
904 Uncollectible Accounts	525,404	58,166	467,238
Total Customer Accounts Expense	21,357,033	2,372,375	18,984,658
Customer Service and Informational			
Operation			
907 Supervision	2,697	304	2,393
908 Customer Assistance Expense	2,330,246	278,562	2,051,684
909 Customer Information Expense	3,040,743	339,347	2,701,396
910 Miscellaneous Customer Service Expense	247,276	27,867	219,409
Total Customer Service and Informational	5,620,961	646,080	4,974,881
Sales Expense			
Operation			
911 Supervision	162,705	18,158	144,547
912 Demonstration and Selling Expense	3,675,850	407,174	3,268,676
913 Advertising	452,073	50,451	401,622
916 Miscellaneous Sales Expense	0	0	0
Total Sales Expense	4,290,629	475,783	3,814,845
Administrative and General Expense			
Operation			
921 Office Supplies and Expense	62,735,083	7,368,438	55,366,644
922 Administrative Expenses Transferred - Credit	(20,271,976)	(2,526,442)	(17,745,534)
924 Property Insurance Premium	3,182,476	356,756	2,825,721
925 Injuries and Damages	267,745	30,014	237,731
926 Employee Pensions and Benefits	4,898,086	1,826,251	3,071,835
928 Regulatory Commission Expense	0	0	0
930 Miscellaneous General Expense	3,226,983	361,745	2,865,238
931 Rents	4,775,372	529,184	4,246,188
Maintenance			
935 Maintenance of General Plant	3,990,022	433,140	3,556,882
Total Administrative and General Expense	62,803,791	8,379,086	54,424,705
Total Operations and Maintenance Expense	154,823,906	17,698,305	137,125,602
Percent of Total		11.43%	88.57%

Note: O&M above excludes amounts that are not intended to be recoverable in ratemaking.
O&M based on Regulatory application of Pension related costs in O&M (costs map to Non-Operating for GAAP).
O&M above varies from Test Year Result for System due to exclusions above and SRRM environmental offset.

Allocation Factors - All in Washington %'s	Oregon	Washington
Customers-all	88.840%	11.160%
Customers-Residential	88.730%	11.270%
Customers-Commercial	89.880%	10.120%
Customers-Industrial	91.610%	8.390%
Customers-The Dalles	74.850%	25.150%
3-factor	88.790%	11.210%
firm volumes	89.580%	10.420%
sales volumes	90.120%	9.880%
sendout volumes	91.640%	8.360%
sales/sendout volumes	90.880%	9.120%
Customers Portland/Vancouver	84.710%	15.290%
Customers Portland/Vancouver 80%	87.770%	12.230%
Customers Portland/Vancouver Commercial	84.990%	15.010%
Payroll	89.243%	10.758%
Admin Transfer	86.974%	13.026%
Employee Cost	88.792%	11.208%
Regulatory	70.000%	30.000%
Telemetering	87.234%	12.766%
Direct-Wa	0.000%	100.000%
Direct-Or	100.000%	0.000%
Gross plant direct assign	88.420%	11.580%
Transmission	98.860%	1.200%
Depreciation	88.707%	11.293%
Rate Base	87.988%	12.012%

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Test Period Actuals Tax Adjustment

Washington

<u>Line No.</u>	<u>Amount (a)</u>
1 Utility Income before Interest and Taxes	\$9,883,990
2 Interest on Historic Average Rate Base	<u>4,159,279</u>
3 Pre-Tax Net Income	5,724,711
4 Permanent Differences	849,455
5 Pre Tax Income Adjusted for Permanents	6,574,166
6 Tax Rate	<u>21.00%</u>
7 Federal Income Tax Before Credits	\$1,380,575
8 Federal Tax Credits	(10,277)
9 Federal Income Tax	<u><u>\$1,370,297</u></u>

NW Natural
 Washington Rate Case
 Test Year Based on Twelve Months Ended September 30, 2018
 Rate Base - System & Washington

System	September 2017	October 2017	November 2017	December 2017	January 2018	February 2018	March 2018	April 2018	May 2018	June 2018	July 2018	August 2018	September 2018	13 Month AMA
Gross Plant														
Intangible Software	102,343,776	102,795,439	103,900,996	105,175,574	105,211,287	105,976,732	105,934,961	105,959,178	105,958,907	106,339,619	106,349,582	106,337,338	110,918,040	105,547,543
Intangible Other	84,795	84,795	84,795	84,795	84,795	84,795	84,795	84,795	84,795	84,795	84,795	84,795	84,795	84,795
Production	675,198	675,198	675,198	675,198	675,198	675,198	675,198	675,198	675,198	675,198	675,198	675,198	675,198	675,198
Transmission	165,102,348	165,326,950	165,348,542	166,587,143	166,646,960	166,671,736	167,823,514	167,860,782	168,195,225	168,592,916	168,666,086	168,694,327	169,634,549	167,315,219
Distribution	2,132,874,662	2,140,000,757	2,148,386,972	2,161,775,493	2,168,079,145	2,171,328,431	2,183,114,102	2,187,035,912	2,194,049,822	2,203,962,401	2,209,442,463	2,217,186,171	2,226,387,112	2,180,332,713
General	130,867,940	127,364,704	130,898,990	132,305,812	133,613,204	133,598,610	133,842,412	133,918,068	134,888,661	140,035,829	141,966,472	142,119,016	142,319,755	135,095,469
Land	10,767,907	10,767,907	10,767,907	10,767,907	10,767,907	10,767,907	10,767,907	10,767,907	10,767,907	10,767,907	10,767,907	10,767,907	10,767,907	10,767,907
Structures	60,074,932	60,079,512	60,090,509	60,375,857	60,383,178	60,385,021	60,386,850	60,388,633	60,379,001	60,437,191	60,438,125	60,450,494	60,497,322	60,340,042
Storage and storage transmission	312,776,312	316,309,651	316,695,313	314,220,159	314,242,931	318,058,925	318,088,443	318,113,158	318,098,137	320,408,990	320,417,502	320,416,360	321,048,969	317,665,184
CNG and LNG Refueling	3,790,768	3,790,768	3,790,768	3,790,768	3,790,768	3,790,768	3,790,768	3,790,768	3,790,768	3,790,768	3,790,768	3,790,768	3,790,768	3,790,768
Total Gross Plant	2,919,358,638	2,927,195,682	2,940,639,990	2,955,758,707	2,963,495,374	2,971,338,124	2,984,508,953	2,988,594,399	2,996,888,423	3,015,095,615	3,022,598,900	3,030,522,375	3,046,124,415	2,981,614,839
Reserve														
Intangible Software	(62,524,338)	(62,759,202)	(62,996,864)	(63,238,775)	(63,483,064)	(63,728,791)	(63,975,818)	(64,222,814)	(64,469,852)	(64,717,574)	(64,965,998)	(65,214,417)	(65,471,040)	(63,980,905)
Intangible Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Production	(691,036)	(691,036)	(691,036)	(691,036)	(691,036)	(691,036)	(691,036)	(691,036)	(691,036)	(691,036)	(691,036)	(691,036)	(691,036)	(691,036)
Transmission	(35,198,591)	(35,611,864)	(36,025,882)	(36,441,032)	(36,857,901)	(37,276,169)	(37,694,607)	(38,115,049)	(38,535,522)	(38,957,364)	(39,379,388)	(39,801,543)	(40,224,172)	(37,700,642)
Distribution	(990,378,350)	(994,028,245)	(997,877,669)	(1,001,460,546)	(1,004,738,482)	(1,008,257,483)	(1,011,729,124)	(1,015,259,308)	(1,019,060,727)	(1,022,176,197)	(1,025,018,669)	(1,028,199,175)	(1,032,025,125)	(1,011,583,947)
General	(54,185,255)	(50,853,849)	(51,621,897)	(52,414,707)	(53,254,300)	(53,744,783)	(54,350,554)	(55,166,223)	(55,624,931)	(56,459,606)	(57,355,537)	(58,254,319)	(59,042,689)	(54,642,890)
Land	(437,351)	(437,351)	(437,351)	(437,351)	(437,351)	(437,351)	(437,351)	(437,351)	(437,351)	(437,351)	(437,351)	(437,351)	(437,351)	(437,351)
Structures	(10,343,507)	(10,441,221)	(10,538,947)	(10,636,914)	(10,735,124)	(10,833,342)	(10,931,563)	(11,029,786)	(11,128,004)	(11,226,261)	(11,324,566)	(11,422,883)	(11,521,248)	(10,931,749)
Storage and storage transmission	(136,434,080)	(137,060,613)	(137,688,204)	(135,042,844)	(135,668,643)	(136,299,148)	(136,931,900)	(137,565,119)	(138,197,975)	(138,833,128)	(139,469,792)	(140,106,458)	(140,744,215)	(137,621,081)
CNG and LNG Refueling	(2,123,804)	(2,126,448)	(2,129,093)	(2,131,737)	(2,134,382)	(2,137,026)	(2,139,671)	(2,142,315)	(2,144,959)	(2,147,604)	(2,150,248)	(2,152,893)	(2,155,537)	(2,139,671)
Total Reserve	(1,292,316,311)	(1,294,009,829)	(1,300,006,941)	(1,302,494,942)	(1,308,000,282)	(1,313,405,130)	(1,318,881,623)	(1,324,629,001)	(1,330,290,357)	(1,335,646,120)	(1,340,792,586)	(1,346,280,073)	(1,352,312,413)	(1,319,729,271)
Storage Gas	14,141,902	14,139,824	14,137,732	18,488,587	18,486,971	18,484,666	18,482,827	18,480,562	18,478,826	18,478,349	18,501,807	18,500,225	18,498,669	17,581,722
Customer Advances	(4,053,177)	(4,111,811)	(3,901,898)	(3,965,149)	(4,041,490)	(4,107,884)	(4,087,078)	(4,163,334)	(4,268,622)	(4,367,025)	(4,494,194)	(4,608,550)	(4,686,796)	(4,207,252)
Leasehold Improvements	311,030	289,990	273,289	280,355	257,040	233,207	209,374	201,172	177,426	156,587	134,747	112,135	89,428	210,462
Gas Reserves	64,227,541	63,343,617	62,401,478	61,474,178	60,379,281	59,429,948	58,399,198	57,435,595	56,459,266	55,566,517	54,392,699	53,257,966	52,190,434	58,395,728
Deferred Taxes	(430,947,126)	(431,135,548)	(431,323,970)	(431,512,392)	(431,700,814)	(431,889,236)	(432,077,658)	(432,266,079)	(432,454,501)	(432,642,923)	(432,831,345)	(433,019,767)	(433,208,189)	(432,077,658)
Subtotal Rate Base	1,270,722,497	1,275,711,926	1,282,219,679	1,298,029,344	1,298,876,079	1,300,083,694	1,306,553,993	1,303,653,312	1,304,990,460	1,316,641,000	1,317,510,030	1,318,484,311	1,326,695,548	1,301,788,571
Average Rate Base														1,301,788,571
Average Deferred Taxes														432,077,658
Ending Deferred Taxes														(433,208,189)
Total Rate Base														<u>\$1,300,658,040</u>

NW Natural
 Washington Rate Case
 Test Year Based on Twelve Months Ended September 30, 2018
 Rate Base - System & Washington

	September 2017	October 2017	November 2017	December 2017	January 2018	February 2018	March 2018	April 2018	May 2018	June 2018	July 2018	August 2018	September 2018	13 Month AMA
Washington	0.103748884													
Gross Plant														
Intangible Software	11,421,565	11,471,971	11,595,351	11,737,594	11,741,580	11,827,003	11,822,342	11,825,044	11,825,014	11,867,501	11,868,613	11,867,247	12,378,453	11,779,106
Intangible Other	447	447	447	447	447	447	447	447	447	447	447	447	447	447
Production	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transmission	1,114,674	1,114,674	1,114,674	1,114,674	1,115,001	1,115,001	1,115,001	1,115,001	1,115,001	1,115,001	1,115,001	1,115,001	1,115,001	1,114,906
Distribution	260,330,717	261,778,867	264,513,478	267,685,383	268,646,497	269,005,469	271,664,674	272,703,899	274,534,759	277,930,132	277,960,738	279,877,160	281,297,949	271,426,282
General	14,670,296	14,277,583	14,673,777	14,831,481	14,978,040	14,976,404	15,003,734	15,012,215	15,121,019	15,698,016	15,914,442	15,931,542	15,954,044	15,144,202
Land	1,994,682	1,994,682	1,994,682	1,994,682	1,994,682	1,994,682	1,994,682	1,994,682	1,994,682	1,994,682	1,994,682	1,994,682	1,994,682	1,994,682
Structures	5,570,215	5,570,639	5,571,659	5,598,117	5,598,795	5,598,966	5,599,136	5,599,301	5,598,408	5,603,804	5,603,890	5,605,037	5,609,379	5,594,796
Storage and storage transmission	29,152,692	29,520,866	29,561,052	29,303,141	29,305,513	29,703,140	29,706,216	29,708,791	29,707,226	29,948,017	29,948,904	29,948,785	30,014,703	29,662,112
CNG and LNG Refueling	424,945	424,945	424,945	424,945	424,945	424,945	424,945	424,945	424,945	424,945	424,945	424,945	424,945	424,945
Total Gross Plant	324,680,232	326,154,674	329,450,064	332,690,464	333,805,501	334,646,057	337,331,176	338,384,325	340,321,501	344,582,545	344,831,662	346,764,845	348,789,603	337,141,478
Reserve														
Intangible Software	(6,977,716)	(7,003,927)	(7,030,450)	(7,057,447)	(7,084,710)	(7,112,133)	(7,139,701)	(7,167,266)	(7,194,836)	(7,222,481)	(7,250,205)	(7,277,929)	(7,306,568)	(7,140,269)
Intangible Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Production	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transmission	(142,343)	(144,247)	(146,152)	(148,056)	(149,960)	(151,865)	(153,770)	(155,675)	(157,580)	(159,484)	(161,389)	(163,294)	(165,199)	(153,770)
Distribution	(105,955,041)	(106,374,361)	(106,868,265)	(107,403,156)	(107,922,696)	(108,475,865)	(109,032,956)	(109,570,211)	(110,067,678)	(110,578,630)	(110,734,782)	(111,277,218)	(111,862,300)	(108,934,541)
General	(6,074,167)	(5,700,716)	(5,786,815)	(5,875,689)	(5,969,807)	(6,024,790)	(6,092,697)	(6,184,134)	(6,235,555)	(6,329,122)	(6,429,556)	(6,530,309)	(6,618,685)	(6,125,468)
Land	(81,016)	(81,016)	(81,016)	(81,016)	(81,016)	(81,016)	(81,016)	(81,016)	(81,016)	(81,016)	(81,016)	(81,016)	(81,016)	(81,016)
Structures	(959,061)	(968,122)	(977,183)	(986,267)	(995,373)	(1,004,480)	(1,013,587)	(1,022,694)	(1,031,801)	(1,040,911)	(1,050,026)	(1,059,142)	(1,068,263)	(1,013,604)
Storage and storage transmission	(13,152,931)	(13,210,765)	(13,268,710)	(12,985,613)	(13,043,371)	(13,101,619)	(13,160,102)	(13,218,633)	(13,277,126)	(13,335,859)	(13,394,749)	(13,453,639)	(13,512,643)	(13,231,914)
CNG and LNG Refueling	(238,078)	(238,375)	(238,671)	(238,968)	(239,264)	(239,561)	(239,857)	(240,154)	(240,450)	(240,746)	(241,043)	(241,339)	(241,636)	(239,857)
Total Reserve	(133,580,354)	(133,721,530)	(134,397,261)	(134,776,211)	(135,486,197)	(136,191,329)	(136,913,686)	(137,639,782)	(138,286,041)	(138,988,251)	(139,342,766)	(140,083,887)	(140,856,310)	(136,920,439)
Storage Gas	1,473,586	1,473,370	1,473,152	1,926,511	1,926,342	1,926,102	1,925,911	1,925,675	1,925,494	1,925,444	1,927,888	1,927,723	1,927,561	1,832,015
Customer Advances	(621,337)	(653,473)	(657,716)	(668,837)	(683,153)	(696,246)	(698,518)	(713,866)	(735,487)	(765,624)	(795,604)	(818,449)	(847,226)	(718,437)
Leasehold Improvements	34,866	32,508	30,636	31,428	28,814	26,142	23,471	22,551	19,889	17,553	15,105	12,570	10,025	23,593
Gas Reserves	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.21%														
Deferred Taxes	(39,563,413)	(39,480,498)	(39,397,584)	(39,314,670)	(39,231,756)	(39,148,841)	(39,065,927)	(38,983,013)	(38,900,098)	(38,817,184)	(38,734,270)	(38,651,355)	(38,568,441)	(39,065,927)
Subtotal Rate Base	152,423,581	153,805,051	156,501,290	159,888,684	160,359,552	160,561,886	162,602,428	162,995,891	164,345,258	167,954,485	167,902,016	169,151,448	170,455,212	162,292,282
Average Rate Base														162,292,282
Average Deferred Taxes														39,065,927
Ending Deferred Taxes														(38,568,441)
Total Rate Base														\$162,789,768

NW Natural
 Test Year Based on Twelve Months Ended September 30, 2018
 Cost of Capital and Revenue Sensitive Calculations

Line No.		Percent of Total Capital (a)	Average Cost (b)	Weighted Cost (c)
<u>Cost of Capital</u>				
1	Long Term Debt	50.00%	5.07%	2.533%
2	Short Term Debt	1.00%	2.19%	0.022%
3	Common Stock	49.00%	9.40%	4.606%
4	Total	<u>100.00%</u>		<u>7.161%</u>
<u>Revenue Sensitive Costs</u>				
5	Gas Sales	96.091%		0.0400214
6	Transportation	3.549%		
7	Other	<u>0.360%</u>		
8	Subtotal	100.000%		
9	O & M - Uncollectible	0.106%		
10	WA Utility Tax	3.852%		
11	WUTC Fee	<u>0.200%</u>		
12	Total Rev Sensitive Costs Incl Tax	4.158%		
13	Federal Taxable Income	95.842%		
14	Federal Income Tax	<u>20.127%</u>		
15	Total Income Taxes	20.127%		
16	Total Rev Sensitive Costs Incl Tax	<u>24.284%</u>		
17	Utility Operating Income	<u>75.716%</u>		
18	Net-to-gross factor	<u>132.073%</u>		
19	Interest Coordination Factor	2.555%		
20	Federal tax rate	21.000%		
21	Uncollectible Accounts	0.106%		

NW Natural
Washington Rate Case
Test Year Based on Twelve Months Ended September 30, 2018

Line No.	Washington Allocated Results					
	Test Year Results	Adjustments	Test Year Adjusted	Proposed Rate Increase	Test Year at 9.40% Equity Return	
	(a)	(b)	(c)	(d)	(e)	
Operating Revenues						
1	Sale of Gas	\$67,314,413	(\$3,389,642)	\$63,924,771	\$5,138,531	\$69,063,302
2	Transportation	2,370,981	(9,877)	2,361,104	0	2,361,104
3	Miscellaneous Revenues	(2,048,364)	2,287,568	239,204	0	239,204
4	Total Operating Revenues	67,637,030	(1,111,951)	66,525,079	5,138,531	71,663,610
Operating Revenue Deductions						
5	Gas Purchased	25,772,083	(1,240,143)	24,531,940	0	24,531,940
6	Uncollectible Accrual for Gas Sales	58,166	17,692	75,858	5,424	81,282
7	Other Operating & Maintenance Expenses	17,640,139	(166,730)	17,473,408	0	17,473,408
8	Total Operating & Maintenance Expense	43,470,387	(1,389,181)	42,081,206	5,424	42,086,630
9	Federal Income Tax	1,370,297	(64,376)	1,305,921	1,034,228	2,340,149
10	Property Taxes	1,268,490	228,144	1,496,634	0	1,496,634
11	Other Taxes	3,688,228	(3,790)	3,684,438	208,213	3,892,651
12	Depreciation & Amortization	9,325,935	79,408	9,405,344	0	9,405,344
13	Total Operating Revenue Deductions	59,123,338	(1,149,794)	57,973,543	1,247,865	59,221,408
14	Net Operating Revenues	\$8,513,692	\$37,843	\$8,551,535	\$3,890,666	\$12,442,202
15	Total Rate Base	\$162,789,768	\$10,959,853	\$173,749,621	\$0	\$173,749,621
16	Rate of Return	<u>5.23%</u>		<u>4.92%</u>		<u>7.16%</u>
17	Return on Common Equity	<u>5.46%</u>		<u>4.83%</u>		<u>9.40%</u>

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NW Natural
 Adjustments to Test Period
 Test Year Based on Twelve Months Ended September 30, 2018

Line No.	Restating	Restating	Restating	Restating	Restating	Settled	Restating	Restating	Restating	Restating	Restating	Total	Pro Forma	Pro Forma	Pro Forma
	Weather Normalized Gas Sales & Purchases (a)	Misc Revenues Adjustment (b)	Bonus Adjustment (c)	Property Tax Adjustment (d)	Uncollectible Accounts Adjustment (e)	Working Capital Adjustment (f)	Marketing and Cust. Comm. Adjustment (g)	Claims Adjustment (h)	Rate Case Adjustment (i)	Clearing Adjustment (j)	Total Restating Adjustments (k)	Payroll Adjustment (l)	Payroll Overhead Adjustment (m)	Depreciation Adjustment (n)	
Operating Revenues															
1	(3,593,725)											(3,593,725)			
2	(9,877)											(9,877)			
3		2,287,568										2,287,568			
4	Total Operating Revenues	(3,603,602)	2,287,568	0	0	0	0	0	0	0	0	(1,316,034)	0	0	0
Operating Revenue Deductions															
5	(1,327,405)											(1,327,405)			
6	(3,804)				21,280							17,476			
7			(288,191)				(287,523)	35,323	137,833	16,385		(386,174)	539,431	159,872	
8	Total Operating & Maintenance Expense	(1,331,208)	0	(288,191)	0	21,280	(287,523)	35,323	137,833	16,385		(1,696,102)	539,431	159,872	0
9	Federal Income Tax	(446,539)	460,924	61,640	(47,910)	(4,469)	(5,219)	60,380	(7,402)	(28,945)	(4,795)	37,665	(113,280)	(42,239)	39,293
10	Property Taxes				228,144							228,144			
11	Other Taxes	(146,018)	92,692									(53,326)		41,266	
12	Depreciation & Amortization											0			(187,110)
13	Total Operating Revenue Deductions	(1,923,765)	553,616	(226,551)	180,234	16,811	(5,219)	(227,143)	27,921	108,888	11,590	(1,483,618)	426,151	158,899	(147,817)
14	Net Operating Revenues	(1,679,837)	1,733,952	226,551	(180,234)	(16,811)	5,219	227,143	(27,921)	(108,888)	(11,590)	167,584	(426,151)	(158,899)	147,817
Average Rate Base															
15	Utility Plant in Service			(208,765)			972,715		(2,895)		252,310	1,013,364			
16	Accumulated Depreciation											0			
17	Net Utility Plant	0	0	(208,765)	0	0	972,715	0	(2,895)	0	252,310	1,013,364	0	0	0
18	Storage Gas											0			
19	Aid in Advance of Construction											0			
20	Leasehold Improvements											0			
21	Accumulated Deferred Income Taxes											0			
22	Total Rate Base	0	0	(208,765)	0	0	972,715	0	(2,895)	0	252,310	1,013,364	0	0	0
23	Interest Coordination	0	0	(5,334)	0	0	24,853	0	(74)	0	6,447	25,891	0	0	0

NW Natural
 Adjustments to Test Period
 Test Year Based on Twelve Months Ended September 30,

Line No.	Settlement Issues									
	Pro Forma	Pro Forma	Pro Forma	Settlement	Settlement	Settlement	Settlement	Pro Forma	Total Pro Forma	
	Post Test Year Capital Adjustment (o)	EDIT Amortization Adjustment (p)	Holdco Adjustment (q)	Bonus Adjustment (r)	Payroll Adjustment (s)	Misc Expense Adjustment (t)	UPC Adjustment (u)	Director Adjustment (v)	Total Pro Forma Adjustments (w)	Total Adjustments (x)
Operating Revenues										
1							204,083		204,083	(3,389,642)
2									0	(9,877)
3									0	2,287,568
4	0	0	0	0	0	0	204,083	0	204,083	(1,111,951)
Operating Revenue Deductions										
5							87,262		87,262	(1,240,143)
6							215		215	17,692
7			(37,467)	(127,772)	(83,780)	(250,000)	0	19,160	219,443	(166,730)
8	0	0	(37,467)	(127,772)	(83,780)	(250,000)	87,477	19,160	306,921	(1,389,181)
9	(106,117)	(3,219)	7,868	26,832	17,594	52,500	22,751	(4,024)	(102,041)	(64,376)
10									0	228,144
11							8,269		49,536	(3,790)
12	266,518	0							79,408	79,408
13	160,401	(3,219)	(29,599)	(100,940)	(66,186)	(197,500)	118,498	15,136	333,824	(1,149,794)
14	(160,401)	3,219	29,599	100,940	66,186	197,500	85,585	(15,136)	(129,741)	37,843
Average Rate Base										
15	9,346,489	0							9,346,489	10,359,853
16									0	0
17	9,346,489	0	0	0	0	0	0	0	9,346,489	10,359,853
18									0	0
19									0	0
20									0	0
21		600,000							600,000	600,000
22	9,346,489	600,000	0	0	0	0	0	0	9,946,489	10,959,853
23	238,803	15,330	0	0	0	0	0	0	254,133	19,445

Northwest Natural Gas Company
 Adjustments to Test Period
 Test Year Based on Twelve Months Ended September 30, 2018
 (\$000)

Line No.	Income Tax Calculations	Weather Normalized Gas Sales & Purchases	Misc Revenues Adjustment	Bonus Adjustment	Property Tax Adjustment	Uncollectible Accounts Adjustment	Working Capital Adjustment	Marketing and Cust. Comm. Adjustment	Claims Adjustment	Rate Case Adjustment	Clearing Adjustment	Total Restating Adjustments	Payroll Adjustment	Payroll Overhead Adjustment	Depreciation Adjustment
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
1	Book Revenues	(3,603,602)	2,287,568	0	0	0	0	0	0	0	0		0	0	0
2	Book Expenses before Deprec. & Interest	(1,477,226)	92,692	(288,191)	228,144	21,280	0	(287,523)	35,323	137,833	16,385		539,431	201,138	0
3	State Tax Depreciation	0	0	0	0	0	0	0	0	0	0		0	0	(187,110)
4	Interest Expense (Income)	0	0	(5,334)	0	0	24,853	0	(74)	0	6,447		0	0	0
5	Book/Tax Differences (Sched. M)	0	0	0	0	0	0	0	0	0	0		0	0	0
6	Federal Taxable Income	(2,126,376)	2,194,876	293,525	(228,144)	(21,280)	(24,853)	287,523	(35,249)	(137,833)	(22,832)		(539,431)	(201,138)	187,110
7	Federal Income Tax [1]	(446,539)	460,924	61,640	(47,910)	(4,469)	(5,219)	60,380	(7,402)	(28,945)	(4,795)		(113,280)	(42,239)	39,293
8	ITC	0	0	0	0	0	0	0	0	0	0		0	0	0
9	Current Federal Tax	(446,539)	460,924	61,640	(47,910)	(4,469)	(5,219)	60,380	(7,402)	(28,945)	(4,795)		(113,280)	(42,239)	39,293
10	Deferred Income Tax - Federal	0	0	0	0	0	0	0	0	0	0		0	0	0
11	Deferred Income Tax - State	0	0	0	0	0	0	0	0	0	0		0	0	0
12	ITC Restored (Deferred)	0	0	0	0	0	0	0	0	0	0		0	0	0
13	Total Federal Tax	(446,539)	460,924	61,640	(47,910)	(4,469)	(5,219)	60,380	(7,402)	(28,945)	(4,795)		(113,280)	(42,239)	39,293

Northwest Natural Gas Company
Adjustments to Test Period
Test Year Based on Twelve Months Ended September 30, 2018
(\$000)

Line No.	Income Tax Calculations	Post Test Year Capital Adjustment	EDIT Amortization Adjustment	Holdco Adjustment	Bonus Adjustment	Payroll Adjustment	Misc Expense Adjustment	UPC Adjustment	Director Adjustment	Total Pro Forma Adjustments	Total Adjustments
		(o)	(p)	(q)	(r)	(s)	(t)	(u)	(v)	(w)	(x)
1	Book Revenues	0	0	0	0	0	0	204,083	0		
2	Book Expenses before Deprec. & Interest	0	0	(37,467)	(127,772)	(83,780)	(250,000)	95,747	19,160		
3	State Tax Depreciation	266,518	0	0	0	0	0	0	0		
4	Interest Expense (Income)	238,803	15,330	0	0	0	0	0	0		
5	Book/Tax Differences (Sched. M)	0	0	0	0	0	0	0	0		
6	Federal Taxable Income	(505,321)	(15,330)	37,467	127,772	83,780	250,000	108,336	(19,160)		
7	Federal Income Tax [1]	(106,117)	(3,219)	7,868	26,832	17,594	52,500	22,751	(4,024)		
8	ITC	0	0	0	0	0	0	0	0		
9	Current Federal Tax	(106,117)	(3,219)	7,868	26,832	17,594	52,500	22,751	(4,024)		
10	Deferred Income Tax - Federal	0	0	0	0	0	0	0	0		
11	Deferred Income Tax - State	0	0	0	0	0	0	0	0		
12	ITC Restored (Deferred)	0	0	0	0	0	0	0	0		
13	Total Federal Tax	(106,117)	(3,219)	7,868	26,832	17,594	52,500	22,751	(4,024)		

NW Natural
 Test Year Based on Twelve Months Ended September 30, 2018
 Weather Normalized Gas Sales and Purchases Adjustment

Revenues	Actual			Normalized			Adjustment
	Therm Deliveries	Average Class Price Per Therm	Revenues and Margin	Therm Deliveries	Average Class Price Per Therm	Revenues and Margin	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
Sales Volumes and Revenues							
1 Residential	50,068,986	0.93166	\$46,647,052	50,368,669	0.87489	\$44,067,223	
2 Commercial	21,738,480	0.83207	\$18,087,986	21,869,677	0.78588	\$17,187,046	
3 Industrial Firm	3,052,386	0.64441	\$1,966,975	3,064,902	0.62388	\$1,912,138	
4 Interruptible	1,319,198	0.41212	\$543,668	1,319,198	0.42016	\$554,280	
5 Total Sales of Gas Revenues	76,179,050		\$67,245,682	76,622,447		\$63,720,688	(\$3,524,994)
6 Unbilled amounts	117,158		\$68,731				(\$68,731)
7 Unaccounted For Gas	228,702						
Transportation Volumes and Revenues							
8 Firm	7,065,720	0.16811	\$1,187,790	7,065,720	0.16734	\$1,182,353	
9 Interruptible	10,909,907	0.08649	\$943,569	10,908,382	0.08609	\$939,123	
10 Special Contracts - Firm	2,813,155	0.08518	\$239,621	2,813,155	0.08518	\$239,628	
11 Total Transportation	20,788,782		\$2,370,981	20,787,257		\$2,361,104	(\$9,877)
12 Total Deliveries and Revenues	97,313,692		\$69,685,394	97,409,704		\$66,081,791	(\$3,603,602)
Gas Costs							
13 Demand Charges (Net of Deferral)			\$8,770,697			\$8,063,564	
14 Commodity Charges (Net of Deferral)			19,856,051			16,381,114	
15 Commodity and Demand Amortizations			(2,854,665)			0	
16 Total Cost of Gas			\$25,772,083			\$24,444,678	(\$1,327,405)
17 Total Margin			\$43,913,311			\$41,637,113	

NW Natural
Washington Rate Case
Test Year Based on Twelve Months Ended September 30, 2018
Adjustments to Miscellaneous Revenues

Worksheet b

Line No.		Actual (a)	Normalized (b)	Adjustment (c)
	Revenue & Technical Adjustments			
1	DSM - Amortization	(\$2,032,720)	\$0	\$2,032,720
2	WA GREAT, WA-LIEE	(\$304,443)	\$0	\$304,443
3	Subtotal	(\$2,337,162)	\$0	\$2,337,162
	Other Miscellaneous Revenues			
4	FORFEITED DISCOUNTS-LATE PAYMENT CHARGE	\$89,244	\$90,177	\$933
5	MISC SERVICE REVENUES-AUTOMATED PAYMENT	\$5,723	\$5,951	\$228
6	MISC SERVICE REVENUES-DELINQ RECONN FEE	\$1,500	\$1,500	\$0
7	MISC SERVICE REVENUES-FIELD COLLECTION C	\$33,220	\$33,220	\$0
8	MISC SERVICE REVENUES-GAS DIVERSIONS	\$1,383	\$1,383	\$0
9	MISC SERVICE REVENUES-RECONN CHG-CR-AFTE	\$34,700	\$34,433	(\$267)
10	MISC SERVICE REVENUES-RECONN CHG-CR-DURI	\$15,900	\$15,900	\$0
11	MISC SERVICE REVENUES-RECONN CHG-SEAS-AF	\$1,200	\$1,717	\$517
12	MISC SERVICE REVENUES-RECONN CHG-SEAS-DU	\$550	\$550	\$0
13	MISC SERVICE REVENUES-RETURNED CHECK CHA	\$11,658	\$11,658	\$0
14	MISC SERVICE REVENUES-SEAS RECONN FEE	\$300	\$300	\$0
15	MISC SERVICE REVENUES-SUMMARY BILL SVCS	\$0	(\$8)	(\$8)
16	OTHER GAS REVENUES-METER RENTALS	\$18,356	\$19,365	\$1,008
17	OTHER GAS REV-LNG SALES & OTHER MISC REV	\$600	\$1,370	\$770
18	RENT FROM GAS PROPERTY-RENT - UTILITY PR	\$74,465	\$21,689	(\$52,776)
13	Subtotal	\$288,798	\$239,204	(\$49,594)
14	Total	(\$2,048,364)	\$239,204	\$2,287,568

Northwest Natural Gas Company
 Test Year Based on Twelve Months Ended September 30, 2018
 Bonus Adjustment

Worksheet c

Line No.		2013 paid in 2014	2014 paid in 2015	2015 paid in 2016 1/ (a)	2016 paid in 2017 1/ (b)	2017 paid in 2018 (c)	Three Year Average (d)	Test Year Accrual (e)	Adjustment (f)=(d)-(e)
<u>Officers/Exempt</u>									
1	Performance Bonus - O & M	\$4,330,699	\$2,986,058	\$6,213,593	\$5,597,391	\$6,107,412	\$5,047,031	\$6,572,483	(\$1,525,453)
2	Performance Bonus - Construction	2,187,716	1,502,230	2,580,181	2,594,415	2,952,686	\$2,363,446	3,587,548	(1,224,102)
<u>Clerical/Hourly</u>									
3	Key Goals Bonus - O & M	0	69,528	0	597,200	1,105,922	\$354,530	1,400,378	(1,045,848)
4	Key Goals Bonus - Construction	0	34,842	0	358,883	534,668	\$185,679	764,387	(578,709)
5	Total	6,518,415	4,592,658	8,793,774	9,147,889	10,700,688	7,950,685	12,324,796	(4,374,111)
6	Total Adjusted O & M (line 3 + line 9)								(\$2,571,301)
7	Washington Allocation Factor						Employee Cost		11.21%
8	Adjustment to Washington - O&M								<u>(\$288,191)</u>
9	Total Adjusted Construction (line 6 + line 12)								(\$1,802,811)
10	Washington Allocation Factor						Gross Plant		11.58%
11	Adjustment to Washington - Rate Base								<u>(\$208,765)</u>

Adjustment takes expense from test period accrual to 3 year paid average - Settlement uses 5 year average

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Property Tax Adjustment

Worksheet d

<u>Line No.</u>	<u>Expense (a)</u>	<u>Source</u>
1 Property Taxes - Test Period Expense	\$1,268,490	'WP - Other Rev & Tax'!E21
2 Property Taxes - Paid During 2018	1,509,613	per Tax Dept
3 Property Taxes - Capitalized	<u>12,979</u>	Uses 2017 Calendar as proxy
4 Adjustment	<u><u>\$228,144</u></u>	

NW Natural

Worksheet e

Test Year Based on Twelve Months Ended September 30, 2018

Uncollectible Accounts Adjustments

Line No.		12 Months Ended September			
		2016 - 2018	2018	2017	2016
		Total	Actual	Actual	Actual
		(a)	(b)	(c)	(d)
Gas Revenues					
1	Residential	\$1,279,892,130	\$422,699,759	\$454,168,194	\$403,024,176
2	Commercial	636,944,211	208,617,626	227,807,903	200,518,682
3	Industrial	65,643,595	21,527,710	22,807,945	21,307,940
4	Interruptible	62,809,074	20,395,258	22,239,876	20,173,941
5	Total	2,045,289,010	673,240,352	727,023,918	645,024,739
Net Write-Offs					
6	Residential	1,732,214	430,995	694,701	606,517
7	Commercial	275,086	86,089	95,298	93,699
8	Industrial	151,544	2,307	27,123	122,114
9	Interruptible	0	0	0	0
10	Total	2,158,844	519,392	817,122	822,330
Write-Off % - 3-Year Average					
11	Residential	0.135%	0.102%	0.153%	0.150%
12	Commercial	0.043%	0.041%	0.042%	0.047%
13	Industrial	0.231%	0.011%	0.119%	0.573%
14	Interruptible	0.000%	0.000%	0.000%	0.000%
15	Weighted Total [1]	0.106%	0.077%	0.112%	0.127%
Normalized Uncollectible					
16	Residential	\$572,084			
17	Commercial	90,099			
18	Industrial	49,699			
19	Interruptible	0			
20	Total	\$711,882			
21	Allocation Factor (Customers - All)	11.16%			
22	Washington Normalized Amount	\$79,446			
23	Washington Allocation of Accrued Amount	\$58,166			
24	Adjustment (Normalized less Accrued)	\$21,280			

[1] Weighted uncollectible rate of

0.106% is used on page 1, column (b)

NW Natural
 Washington Rate Case
 Working Capital Calculation

Worksheet f

This tab superceded by settlement amount on adjustments tab

		<u>AMA</u>
	Average Invested Capital	
1	Common Equity	776,767,236
2	Preferred Stock	-
3	Miscellaneous Debt	813,733,020
4	Deferred ITC	322
5	Deferred Liabilities	<u>16,505,113</u>
6	Total Invested Capital	<u>1,607,005,690</u>
	Average Investments	
	Utility Operating Investments	
7	Plant in Service	2,981,614,839
8	Accumulated Depreciation	(1,327,857,300)
9	Deferred Income Taxes	(362,148,977)
10	Gas Stored Underground - Cushion Gas	18,056,545
11	Property Held for Future Use	960,295
12	Customer Advances	(5,072,451)
13	Contributions in Aid of Construction	(4,207,252)
14	Investment in Gas Reserves	<u>114,848,596</u>
15	Total Operating Investments	<u>1,416,194,296</u>
	Other Investments	
16	Construction Work In Process	186,480,461
17	Non-Utility Property	52,659,384
18	Accumulated Depreciation - non utility	(19,054,381)
19	Deferred Income Tax - non-utility & Oregon	(130,058,467)
20	Investments in Subsidiary Companies	58,304,491
21	Temporary Cash Investments	3,298,275
22	Deferred Gas Costs	(21,270,245)
23	Other Deferred Debits	<u>113,293,024</u>
24	Total Other Investments	<u>243,652,542</u>
25	Total Average Investments (In 15 + In 24)	1,659,846,838
26	Less CWIP (In 16)	(186,480,461)
27	Less Deferred Gas Costs (In 22)	<u>21,270,245</u>
28	Total Base Investment - System	<u>1,494,636,622</u>
29	Investor Supplied Working Capital (In 6 - In 28)	\$ 112,369,069
30	Less Working Gas Inventory	<u>34,231,890</u>
31	Allowable Working Capital - System	\$ 78,137,179
32	Working Capital Percentage Allowable (In 31 / In 28)	5.27%
33	Washington Rate Base (excludes WC - includes adjustments)	\$173,761,403
34	Allowable Investor Supplied Working Capital (In 33 X In 32)	\$ 9,150,577
35	Working Gas Inventory	\$ 34,231,890
36	Inventory allocation % - firm delivered	10.42%
37	Washington Gas Inventory (In 35 X In 36)	<u>\$ 3,566,963</u>
38	Total Working Capital Allowance (In 37 + In 34)	<u>\$ 12,717,540</u>
	Washington Rate Base (excludes WC - includes adjustments)	\$172,776,906

NW Natural
 Test Year Based on Twelve Months Ended September 30, 2018
 Marketing and Customer Communications Adjustment

Worksheet g

Line No.	Marketing	Washington Allocated Amount (a)	Disallowance Percent (b)	Disallowed Amount (c)	Source
1	Marketing Expenses - Account 912	<u>\$236,575</u>	100%	<u>(\$236,575)</u>	181053-NWN-KSM-xlsx-WP15-1-4-2019
	Advertising				
		<u>System Expensed Amount (a)</u>	<u>Allocation Factor (Residential Customers) (b)</u>	<u>Disallowed Washington Allocated Amount (c)</u>	
2	Expenses not qualifying under 480-90-223	<u>\$452,073</u>	11.27%	<u>(\$50,949)</u>	181053-NWN-KSM-xlsx-WP15-1-4-2019
<u>Total Marketing and Advertising</u>					
3	Total Adjustment for Marketing & Communications			<u>(\$287,523)</u>	

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Claims Expense Adjustment

Worksheet h

<u>Line No.</u>	<u>O&M Expense</u>	<u>Construction</u>
	(a)	(b)
1 Expensed during Test period	\$112,509	\$145,967
Normalized Expenses		
2 Actual Claims - Ordinary (Paid)	186,612	120,967
3 3-Year Average Claims - Extraordinary 1/	240,998	0
4 Subtotal	<u>427,610</u>	<u>120,967</u>
5 Adjustment - System (line 4 - line 1)	315,101	(25,000)
6 Allocation to Washington (O&M on 3-factor, const on gross plant)	<u>11.21%</u>	<u>11.58%</u>
7 Adjustment	<u><u>\$35,323</u></u>	<u><u>(\$2,895)</u></u>

1/ Extraordinary Claims	<u>TME December</u>
TME 9/30/16	298,383
TME 9/30/17	358,715
TME 9/30/18	<u>65,897</u>
3-Year Average	240,998

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Rate Case Expense Adjustment

Worksheet i

<u>Line No.</u>	<u>O&M Expense (a)</u>
1 Outside Services - Washington Rate Case	<u>\$413,500</u>
2 3-Year Average for rate case frequency	<u>\$137,833</u>
Return on Equity Consultant	83,500
Cost of Service / Rate Design Consultant	130,000
Outside Legal	<u>200,000</u>
Total	<u>413,500</u>

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Elimination of Clearing Account Balances

Worksheet j

<u>Line No.</u>		<u>Amount</u>
1	Adjustment to O&M	\$16,385
2	Adjustment to Construction	\$252,310

Northwest Natural Gas Company
 Test Year Based on Twelve Months Ended September 30, 2018
 Payroll Adjustment - Excluding Bonuses

Worksheet I (1)

Line No.	Total 1/ (a)	Officers 2/ (b)	NBU (c)	BU (d)
1 12 Months Payroll - 9/30/2018	103,089,048	3,681,313	51,335,877	48,071,858
2 Payroll - Annualized 3/	104,449,105	3,620,846	51,757,006	49,071,253
3 Annualized 2018 Wage Increases (5 months) NBU	791,392		791,392	
4 Annualized 2019 Wage Increases (12 months) NBU	2,101,936		2,101,936	
5 Annualized 2017 Wage Increases (2 months) BU	278,137			278,137
6 Adjust 2018 Wage Increases (12 months) BU	1,727,229			1,727,229
7 Adjust 2019 Wage Increases (12 months) BU	1,787,682			1,787,682
8 Payroll - Normalized	111,135,479	3,620,846	54,650,334	52,864,300
9 O&M Payroll Factor	63.1%	72.5%	64.7%	60.8%
10 O&M Payroll - Normalized	70,125,373	2,625,113	35,358,766	32,141,494
11 O&M Payroll - Actual	65,110,954	2,668,952	33,214,312	29,227,690
12 Adjustment to O & M Payroll - System	5,014,419	(43,839)	2,144,454	2,913,804
13 Washington Allocation for O&M Payroll	10.76%			
14 Adjustment to O & M Payroll - Washington	\$539,431			

Notes:

2017 BU Salary Adjustment December 1, 2017	3.50%
2018 NBU Adjustment March 1, 2018	3.75%
2018 BU Salary Adjustment December 1, 2018	3.50%
2019 NBU Adjustment March 1, 2019	4.00%
2019 BU Salary Adjustment December 1, 2019	3.50%

- 1/ Total and Officer columns included to determine company O&M % for some adjustments
 2/ Normalized to test year average pay per executive times ending 12 Officers
 3/ Amounts reflect average salaries at end of period count.

Northwest Natural Gas Company
 Test Year Based on Twelve Months Ended September 30, 2018
 Payroll Adjustment - Excluding Bonuses
 Annualized Wages and Salaries

Worksheet I (2)

<u>Line No.</u>	<u>Officers</u>	<u>NBU</u>	<u>BU</u>
	(a)	(b)	(c)
1 Adjusted Employee Count - Year-end 1/	12.0	508.3	630.2
2 Average Employee Count - Test Period	12.2	504.2	617.4
3 Test Year Payroll	\$3,681,313	\$51,335,877	\$48,071,858
4 Average Payroll per Employee (line 3 / line 2)	\$301,737	\$101,816	\$77,865
5 Payroll Based on Year-end Employees (line 4 * line 1)	<u>\$3,620,846</u>	<u>\$51,757,006</u>	<u>\$49,071,253</u>
	<u>Officers</u>	<u>NBU</u>	<u>BU</u>
2017 October	12.0	489.5	596.4
2017 November	12.0	494.6	604.4
2017 December	11.9	499.7	612.3
2018 January	12.0	501.3	617.6
2018 February	12.0	505.5	611.8
2018 March	12.5	506.0	619.2
2018 April	12.0	507.5	620.5
2018 May	12.0	510.0	619.4
2018 June	12.0	510.2	622.2
2018 July	12.0	508.7	621.4
2018 August	13.0	509.1	633.0
2018 September	13.0	508.3	630.2
Average	<u>12.2</u>	<u>504.2</u>	<u>617.4</u>

1/ Reflects expected retirement of HR executive

NW Natural
 Test Year Based on Twelve Months Ended September 30, 2018
 Payroll Overhead Adjustment

Worksheet m

Line No.	System Adjustment Amount (a)	Washington Allocation Factor 1/ (b)	Washington Adjustment Amount (c)
<u>Health and Life Insurance Adjustment</u>			
1	11,830,300		
2	12,199,939		
3	<u>\$369,639</u>	10.76%	39,764
<u>Pension Adjustment - Washington Allocated Costs</u>			
4	1,844,666		
5	<u>1,964,773</u>		
6	<u>\$120,108</u>	100.00%	<u>120,108</u>
7			<u>159,872</u>
Note: Pension administrative costs and Western States not normalized			
<u>Payroll Tax Adjustment</u>			
8	70,125,373		
9	<u>65,110,954</u>		
10	5,014,419		
11	<u>7.65%</u>		
12	<u>\$383,603</u>	10.76%	<u>41,266</u>

1/ Payroll Cost Allocation Factor

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Depreciation Adjustment

Worksheet n

<u>Line</u> <u>No.</u>		<u>Expense</u> <u>(a)</u>
1	Depreciation Expense - Test Year Actual	9,325,935
2	Depreciation Expense - New Rates	<u>9,138,825</u>
3	Depreciation Expense Adjustment	<u><u>(187,110)</u></u>

**NW Natural
 Test Year Based on Twelve Months Ended September 30, 2018
 Washington Post Test-Year Capital Projects**

Worksheet o

<u>Line No.</u>	<u>Amount (a)</u>	<u>Source</u>	<u>Filed</u>	<u>Settlement</u>
1 Addition to Rate Base	9,346,489	181053-NWN-KSM-xlsx-WP17-1-4-2019	10,189,608	9,346,489
2 Addition to Depreciation Expense	266,518	181053-NWN-KSM-xlsx-WP17-1-4-2021	298,684	266,518

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Excess Deferred Tax Amortization

Worksheet p

<u>Line No.</u>	<u>Expense (a)</u>	<u>Source</u>
1 Plant Related Excess Deferred Taxes	400,000	Tax Exh. SRB-5, Pg. 1
2 Non-Plant Related Excess Deferred Taxes	<u> </u>	Tax Exh. SRB-5, Pg. 1
3 Riders external to Rate Case Revenue Requirement	<u>400,000</u>	
4 Reduction of Deferred Taxes - Rate Base (3-Year Ave)	<u>600,000</u>	

NW Natural
 Test Year Based on Twelve Months Ended September 30, 2018
 Holdco Adjustment

Worksheet q

Washington

Source

Line No.	O&M Expense (a)
1 Washington Allocated amounts from Departments	425,738
2 Amount Allocable to Affiliates (3.4%) 1/	<u>(14,475)</u>
3 Washington Allocated amounts from Departments	229,915
4 Amount Allocable to Affiliates (10%) 1/	<u>(22,991)</u>
5 Total Adjustment	<u>(37,467)</u>

42014 SEC REPORTING	13
42014 SEC REPORTING	303
42014 SEC REPORTING	72,806
44010 FIN PLANNING & BUDGE	113,861
46010 CORP SECRETARY	-
46010 CORP SECRETARY	(433)
46010 CORP SECRETARY	42
46010 CORP SECRETARY	19,763
46020 SHAREHOLDER SVCS	1,276
46020 SHAREHOLDER SVCS	2,466
46020 SHAREHOLDER SVCS	16,594
46020 SHAREHOLDER SVCS	23,300
46030 CORP ETHICS & COMPL	18,380
48010 INVESTOR RELATIONS	45,293
72500 INTERNAL AUDITING	105,976
73600 VP & CORPORATE SECTY	6,100

181053-NWN-KSM-xlsx-WP14-1-4-2021
 select cost centers

Subject to Allocation (3.4) 425,738

46010 CORP SECRETARY 229,915

Subject to Allocation (10.0) 229,915

1/ Percentage allocations per Accounting study

**NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Director Adjustment**

Worksheet r

<u>Line No.</u>		<u>O&M Expense</u> (a)
1	Washington Allocated Director Expense	229,915
2	Cost per Director (12 Directors)	19,160
3	Adjustment for Additional Director	<u>19,160</u>

Deferred Tax- Washington Allocated

	Other	Depreciation	Total
September 2017	171,510	(39,734,923)	(39,563,413)
September 2018	220,909	(38,789,350)	(38,568,441)

Deferred Tax- System

	Other	Depreciation	Total
September 2017		(430,947,126)	(430,947,126)
September 2018		(433,208,189)	(433,208,189)

Accum Deprec Factor 10.37%

September 2017			
DEF INC TAX-UTIL-DEP	fed	283061	(357,168,974)
DEF INC TAX-UTIL-DEP	state	283062	(73,778,152)
			(430,947,126)
		Fed Grossed Up	(382,991,328)
		WA Alloc	(39,734,923)

2018 September Balances:

	Federal	State	SYS Total	Washington Allocation	
Accumulated Deferred Income Tax - Depreciation	(217,460,814)	(75,091,273)	(292,552,087)	(24,197,350)	10.37% < Allocation
Tax Reform Reg. Liability - Plant (254100)	(191,300,509)		(191,300,509)	(18,470,886)	< Actual
Tax Reform DTA - Plant (283012)	37,389,597		50,644,407	3,878,886.08	< Calc'd
Net Plant Related Balance	(371,371,726)	(61,836,462)	(433,208,189)	(38,789,350)	

NW Natural
Washington Rate Case
Test Year Based on Twelve Months Ended September 30, 2018
Detail of Other Revenues, Other Taxes and Depreciation

Line No.		Washington	Oregon	System	allocation
Other Operating Revenues					
1	Reconnect Charges	54,150	555,056	609,206	Direct
2	Late Payment Charges	89,244	1,952,953	2,042,198	Direct
3	Automated Payment Charge	5,723	34,640	40,363	Direct
4	Return Check	11,658	106,545	118,203	Direct
5	Field Collection	33,220	346,530	379,750	Direct
6	Meter Rentals	18,356	169,005	187,362	Direct
7	Utility Property Rental	74,465	715,230	789,695	Direct & Gross Plant
8	Miscellaneous	1,983	377,812	379,795	Direct
9	Rate Adjustments (Rev Def & Amort)	(2,337,162)	(17,673)	(2,354,835)	Direct
10	Total Other Op Revenues	(2,048,364)	4,240,099	2,191,735	
Other Taxes					
11	Property	1,268,490	20,012,319	21,280,809	Direct
12	Franchise	2,759,453	14,839,281	17,598,735	Direct
13	Payroll	667,912	5,540,837	6,208,749	Payroll
14	Regulatory Fee	147,230	1,790,395	1,937,625	Direct
15	Department of Energy	0	854,967	854,967	Direct
16	North Mist Property Tax	0	752,183	752,183	Direct
17	Other	113,633	162,151	275,784	Direct & 3-Factor
18	Other Taxes	4,956,718	43,952,133	48,908,851	
Depreciation Expense					
19	Intangible Software	328,852	2,617,851	2,946,703	Customers All
20	Intangible Other	0	0	0	Direct
21	Production	0	0	0	Direct
22	Transmission	22,856	5,002,726	5,025,581	Direct
23	Distribution	7,311,855	50,917,777	58,229,632	Direct
24	General	850,936	6,739,927	7,590,863	3-Factor
25	Land & Structures	107,220	1,070,521	1,177,741	Per Alloc History
26	Storage and storage transmission	700,659	6,881,518	7,582,177	Firm Volumes
27	CNG and LNG Refueling	3,557	28,176	31,733	3-Factor
28	Total Depreciation	9,325,935	73,258,496	82,584,431	
Cost of Gas					
29	WACOG Incurred	17,934,917	176,291,228	194,226,144	
30	WACOG Deferred	1,921,134	14,110,568	16,031,702	
31	Demand Incurred	8,258,452	70,495,465	78,753,917	
32	Demand Deferred	512,245	4,362,863	4,875,108	
33	Amortizations	(2,854,665)	(14,665,139)	(17,519,804)	
34	Mist ISS Fuel-in-kind			661,882	
35	Total Cost of Gas	25,772,083	250,594,985	277,028,949	