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*In the Community to Serve®*

April 17, 2014

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RECEIVED  
APR 17 2014  
State of Washington  
UTC  
Pipeline Safety Program

Subject: Cascade Natural Gas – Maximum Allowable Operating Pressure (MAOP)

David:

Transmitted herewith is the data requested in the October 10, 2013 data request from the WUTC. TABLE 1 – PIPELINES WITH MISSING MAOP INFORMATION addresses DR #1 and TABLE 3 – PIPELINES ASSUMING YIELD STRENGTH OF 24,000 PSI addresses DR #2. Cascade has contracted with irth Solutions to perform a class location study on all of the high pressure (HP) pipelines and it is anticipated that the results will be available in late spring 2014. Additionally, the information requested in DR #3 is too large to be transmitted by email and will be posted in the UTC online portal, as instructed by Dennis Ritter.

As a response to DR #4, the schedule shown in TABLE 2 - SCHEDULE is based on a matrix that Cascade created to prioritize pipeline segments. This matrix took into account % SMYS of pipe and fittings, pressure rating of fittings, population density near pipeline, length of pipeline segment, and documentation available. The schedule was then prepared to address the pipelines, with higher priorities first and minor exceptions as deemed necessary.

If you have any questions or would like to discuss anything further, please feel free to contact me to discuss.

Sincerely,

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TABLE 1 - PIPELINES WITH MISSING MAOP INFORMATION

Aberdeen District										
Line #	Description	Year Installed	Critical Information	Plan of Action	Pipe Grade	Wall Thickness (in.)	Test Pressure (psig)	% SMYS	Pipe Segment Length (ft)	Transmission (Y/N)
1	8" Kitsap Line	1972	Pressure rating on Sav-A-Valves (2)	Expose and inspect Sav-A-Valves. Replace caps if necessary.	42,000	0.188	750	19.99	908	N
		2000	158 ft of pipe assumed to be Grade B	Test to verify pipe grade as X42 or greater.	52,000	0.312	1080	29.13	1,035	N
		1963	Under rated Sav-A-Valves (2) and transition fittings (2)	Expose and inspect to verify pressure rating and grade.	46,000	0.188	750	24.88	35,770	Y
3	4" McCleary HP Line	1963	Pressure test documentation	MAOP based on operating history.	35,000	0.188	None	5.13	225	N
8	4" Montesano HP Distribution System	1964	Pressure test documentation	MAOP based on operating history.	35,000	0.188	None	3.66	1,645	N
		1964	Pressure test documentation	MAOP based on operating history.	35,000	0.154	None	3.30	5,280	N
9	2" Elma Rendering Plant HP Line	1964	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade and wall thickness values.	24,000	0.156	None	9.01	252	N
15	12" Kitsap HP Line	1995	Under rated Sav-A-Valve	Expose and inspect Sav-A-Valve. Replace if necessary.	52,000	0.312	1080	19.61	34,782	N
Bellingham District										
Line #	Description	Year Installed	Critical Information	Plan of Action	Pipe Grade	Wall Thickness (in.)	Test Pressure (psig)	% SMYS	Pipe Segment Length (ft)	Transmission (Y/N)
1	8" Bellingham HP Line	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Remove sections of retired in place pipe and test for pipe grade and wall thickness.	24,000	0.188	None	36.32	15,094	N
2	Bellingham HP Distribution System	1956	Pressure test documentation and pipe grade	MAOP based on operating history. Pipelines will be removed/downtared as part of future project to remove pipelines from bridges which will be replaced.	24,000	0.188	None	14.81	16,475	N
		1956	Pressure test documentation and pipe grade		24,000	0.188	None	18.46	19,400	N
		1960	Pressure test documentation, pipe grade and wall thickness		24,000	0.156	None	9.31	1,508	N
		1964	Pressure test documentation	MAOP based on operating history.	35,000	0.188	None	5.30	2,356	N
		1965	Pressure test documentation	MAOP based on operating history.	35,000	0.188	None	7.80	983	N
		1966	Pressure test documentation	MAOP based on operating history.	35,000	0.188	None	7.80	1,577	N
		1966	Pressure test documentation	MAOP based on operating history.	35,000	0.188	None	10.16	396	N
		1967	Pressure test documentation	MAOP based on operating history.	35,000	0.154	None	3.41	2,025	N
3	8" Central Whatcom HP Line	1957	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Test samples from James Street and Lampman Road, and any other points that are available, for pipe grade and wall thickness.	24,000	0.188	None	36.32	57,437	N
		1993	Pipe grade on transition fittings	Expose and inspect fittings for pipe grade, either by stamp identification or in-situ testing.	46,000	0.188	680	24.91	10,579	N
4	4" South Lynden HP Line	1961	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade and wall thickness values.	24,000	0.156	None	15.02	35,441	N
6	4" Ferndale HP Line	1962	Under rated flange tee at V-47	Inspect during V-47 project in 2014.	25,000	0.188	500	18.19	8,120	N
8	2" Nooksack HP Distribution System	1963	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade and wall thickness values.	24,000	0.154	None	8.03	732	N
9	8" Lake Terrell Road Transmission Line	1965	Pipe grade and wall thickness	Test samples in-situ in 2015.	24,000	0.188	569	36.32	10,314	Y
10	16" N. Whatcom Transmission Line	1971	Under rated plugs at valves	Replace plugs in 5 valves beginning in 2014.	52,000	0.25	926	36.92	143,907	Y
12	4" North Lynden HP Line	1978	Under rated Sav-A-Valve	Expose and inspect to verify pressure rating.	35,000	0.188	600	13.68	8,161	N
21	16" Squalicum HP Line	1993	Pipe grade	In situ testing in 3 locations minimum.	24,000	0.281	620	29.66	2,600	N
Bremerton District										
Line #	Description	Year Installed	Critical Information	Plan of Action	Pipe Grade	Wall Thickness (in.)	Test Pressure (psig)	% SMYS	Pipe Segment Length (ft)	Transmission (Y/N)
1	8" Kitsap Line	1972	Pressure rating on Sav-A-Valves (2)	Expose and inspect Sav-A-Valves. Replace caps if necessary.	42,000	0.188	750	19.99	908	N
		2000	158 ft of pipe assumed to be Grade B	Test to verify pipe grade as X42 or greater.	52,000	0.312	1080	29.13	1,035	N
		1963	Under rated Sav-A-Valves (2) and transition fittings (2)	Expose and inspect to verify pressure rating and grade.	46,000	0.188	750	24.88	35,770	Y
2	8" Bremerton Transmission Line	1963	Pipe grade and wall thickness	Test abandoned sections to verify pipe grade and wall thickness.	24,000	0.188	750	47.69	2,843	Y
6	4" Olympic View HP Line	1973	Under rated plugs (2) in a valve	Replace plugs.	42,000	0.188	500	14.22	14,540	N
11	8" Bremerton HP Line	1964	Pressure test documentation	MAOP based on operating history.	46,000	0.188	None	7.18	5,780	N
		1971	Pressure test documentation	Validate operating pressure.	35,000	0.188	None	9.44	3,269	N
15	12" Kitsap HP Line	1995	Under rated Sav-A-Valve	Expose and inspect Sav-A-Valve. Replace if necessary.	52,000	0.312	1080	19.61	34,782	N
Kennewick District										
Line #	Description	Year Installed	Critical Information	Plan of Action	Pipe Grade	Wall Thickness (in.)	Test Pressure (psig)	% SMYS	Pipe Segment Length (ft)	Transmission (Y/N)
1	Attalia HP Line	1958	Pipe Grade	Test previously removed and abandoned sections to verify pipe grade.	24,000	0.188	337	28.67	78,449	N
		1968	Pressure test documentation	MAOP based on operating history.	35,000	0.188	None	19.66	49	N
		1968	Pressure test documentation	MAOP based on operating history.	35,000	0.25	None	21.86	183	N
		1968	Pressure test documentation	MAOP based on operating history.	35,000	0.375	None	14.57	42	N
		1968	Pressure test documentation	MAOP based on operating history.	35,000	0.33	None	16.56	25	N
		1968	Pressure test documentation	MAOP based on operating history.	52,000	0.25	None	14.71	111	N
3	4" East Finley HP Line	1967	Pressure test documentation	MAOP based on operating history.	35,000	0.188	None	8.55	2,498	N
4	Racco HP Distribution System	1960	Pipe grade and wall thickness	Assume minimum pipe grade and wall thickness values.	24,000	0.156	450	18.03	10,125	N
5	4" Northwest Pasco HP Line	1966	Pressure test documentation	MAOP based on operating history.	35,000	0.188	None	10.26	2,847	N
6	4" Glade Road HP Line	1966	Pressure test documentation	MAOP based on operating history.	35,000	0.188	None	5.13	2,052	N
7	2" Burbank HP Line	1967	Pressure test documentation	MAOP based on operating history.	35,000	0.154	None	3.48	3,520	N
8	4" Finley HP Line	1959	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade and wall thickness values.	24,000	0.156	None	12.02	12,391	N
11	4" Plymouth HP Line	1980	Under rated Sav-A-Valve	Expose and inspect Sav-A-Valve. Replace if necessary.	35,000	0.188	600	13.68	4,112	N

= ASSUMED VALUE



Longview District										
Line #	Description	Year Installed	Critical Information	Plan of Action	Pipe Grade	Wall Thickness (in.)	Test Pressure (psig)	% SMYS	Pipe Segment Length (ft)	Transmission (Y/N)
1	Longview-Kelso HP Distribution Line	1957	Pipe grade and wall thickness	Test retired in place sections and sections which have previously been removed.	24,000	0.25	400	26.56	27,350	N
		1957	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade and wall thickness values.	24,000	0.156	None	15.02	4,964	N
2	4" Kalama HP Line	1976	Pressure test documentation	Validate operating pressure.	35,000	0.188	None	10.26	18,075	N
3	4" Dike Road HP Line (Longview)	1965	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade and wall thickness values.	24,000	0.156	None	4.81	6,463	N
7	12" South Longview HP Line	1995	Assumed Grade B transition	Expose and test fittings for grade.	52,000	0.312	1080	19.61	18,373	N
8	8" Kalama HP Line	1996	Pressure test documentation	Validate operating pressure.	46,000	0.332	None	8.47	2,049	N
		1997	Pressure test documentation, pipe grade, and wall thickness	Test retired in place pipe and samples removed during replacements. Validate operating pressure on applicable sections.	24,000	0.188	None	28.67	7,132	N
		1997	Pressure test documentation and pipe grade		24,000	0.25	None	21.56	550	N
		1997	Pressure test documentation	Validate operating pressure.	46,000	0.25	None	11.25	550	N
Mt. Vernon District										
Line #	Description	Year Installed	Critical Information	Plan of Action	Pipe Grade	Wall Thickness (in.)	Test Pressure (psig)	% SMYS	Pipe Segment Length (ft)	Transmission (Y/N)
1	8" Anacortes HP Line	1957	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating pressure. Test samples from abandoned sections and those removed during replacements.	24,000	0.188	None	34.41	103,743	N
		1972	Pressure test documentation	Replace section of pipeline.	35,000	0.188	None	23.59	80	N
2	8" March Point HP Line	1957	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Test samples in-situ at 4 locations minimum.	24,000	0.188	None	34.41	9,233	N
3	Anacortes HP Distribution System	1956	Pressure test documentation and pipe grade	MAOP based on operating history. Assume minimum pipe grade value.	24,000	0.188	None	7.71	7,352	N
		1956	Pressure test documentation and pipe grade	MAOP based on operating history. Assume minimum pipe grade value.	24,000	0.188	None	10.04	4,675	N
		1957	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade and wall thickness values.	24,000	0.156	None	6.31	349	N
4	4" Mt. Vernon HP Line	1957	Pipe grade and wall thickness	Assume minimum pipe grade and wall thickness values.	24,000	0.156	None	15.02	29,922	N
5	3" Burlington HP Line	1957	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade and wall thickness values.	24,000	0.156	None	11.64	5,769	N
7	4" North Texas Road HP Line	1960	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade and wall thickness values.	24,000	0.154	None	8.03	914	N
8	4" Arlington HP Line	1961	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade and wall thickness values.	24,000	0.156	None	14.96	10,177	N
10	4" Sedro-Woolley HP Line	1968	Pressure test documentation	MAOP based on operating history.	35,000	0.188	None	3.42	3,633	N
11	6" Whidbey Island HP Line	1969	Pipe and valve assembly	Replace 45 ft of pipe and valve assembly.	52,000	0.188	750	13.55	27,590	N
12	6" North Oak Harbor HP Line	1972	Under rated stopper fitting	Expose and inspect stopper fitting. Replace if necessary.	42,000	0.188	675	16.78	19,048	N
14	16" Fredonia Transmission Line	1983	Unknown grade and wall thickness on fittings	Expose and perform in-situ testing.	52,000	0.281	750	27.37	64,426	Y
		1983	Unknown grade and wall thickness on fittings	Expose and perform in-situ testing.	49,000	0.312	750	26.16	563	Y
		2001	Unknown grade and wall thickness on fittings	Expose and perform in-situ testing.	52,000	0.312	800	23.89	323	Y
16	16" March Point Transmission Line	1992	Unknown grade and wall thickness on fittings	Expose and perform in-situ testing.	52,000	0.281	750	27.37	43,344	Y
Walla Walla District										
Line #	Description	Year Installed	Critical Information	Plan of Action	Pipe Grade	Wall Thickness (in.)	Test Pressure (psig)	% SMYS	Pipe Segment Length (ft)	Transmission (Y/N)
1	8" Walla Walla HP Line	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade and wall thickness values.	24,000	0.188	None	14.34	4,595	N
2	3" College Place HP Line	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade and wall thickness values.	24,000	0.156	None	7.01	2,474	N
Wenatchee District										
Line #	Description	Year Installed	Critical Information	Plan of Action	Pipe Grade	Wall Thickness (in.)	Test Pressure (psig)	% SMYS	Pipe Segment Length (ft)	Transmission (Y/N)
1	6" & 8" Moses Lake HP Line	1957	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Test samples in-situ.	24,000	0.188	None	18.35	509	N
		1957	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Test samples in-situ.	24,000	0.188	None	23.89	12,956	N
		1981	Pipe grade and wall thickness	Test samples in-situ.	24,000	0.156	375	15.02	2,041	N
2	2" Wheeler HP Line	1962	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade and wall thickness values.	24,000	0.154	None	8.03	2,375	N
3	4" Obello Transmission Line	1971	Wall thickness	Validate wall thickness or replace 191 ft section of pipeline.	35,000	0.188	465	20.14	191	Y
6	4" South Moses Lake HP Line	1968	Pressure test documentation	MAOP based on operating history.	35,000	0.188	None	8.55	3,087	N
10	6" West Wheeler HP Line	1997	Pipe grade and wall thickness	Assume minimum pipe grade and wall thickness values.	24,000	0.188	755	18.35	205	N
12	6" Wenatchee HP Line	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade and wall thickness values.	24,000	0.188	None	16.52	31,812	N
Yakima District										
Line #	Description	Year Installed	Critical Information	Plan of Action	Pipe Grade	Wall Thickness (in.)	Test Pressure (psig)	% SMYS	Pipe Segment Length (ft)	Transmission (Y/N)
1	8" Yakima HP Line	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Test samples from abandoned sections and in-situ.	24,000	0.188	None	19.12	3,032	N
		1956	Pressure test documentation and pipe grade	MAOP based on operating history. Assume minimum pipe grade value.	24,000	0.5	None	7.19	695	N
		1961	Pipe grade and wall thickness	Test samples from abandoned sections and in-situ.	24,000	0.188	360	19.12	4,891	N
		1978	Pressure test documentation	Validate operating pressure.	35,000	0.188	None	13.11	42	N
		1978	Pressure test documentation	Validate operating pressure.	46,000	0.25	None	7.50	1,585	N

= ASSUMED VALUE

Sunnyside District (Merged with Yakima District)											
Line #	Description	Year Installed	Critical Information	Plan of Action	Pipe Grade	Wall Thickness (in.)	Test Pressure (psig)	% SMYS	Pipe Segment Length (ft)	Transmission (Y/N)	
1	3" Sunnyside HP Line	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade value.	24,000	0.156	None	9.35	4,536	N	
2	2" South Sunnyside HP Line	1959	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade value.	24,000	0.154	None	6.43	4,018	N	
3	4" Grandview HP Line	1956	Pressure test documentation, pipe grade and wall thickness	Replace pipeline in 2015.	24,000	0.156	None	15.02	4,736	N	
4	3" Prosser HP Line	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade value.	24,000	0.156	None	11.69	5,832	N	
5	6" Toppenish-Zillah HP Line	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Sample sections removed in 2014 and abandoned sections to validate pipe grade and wall thickness.	24,000	0.188	None	29.37	32,566	N	
6	3" Zillah HP Line	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade value.	24,000	0.156	None	18.70	873	N	
7	4" Wapato HP Line	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade value.	24,000	0.156	None	9.13	33,284	N	
8	3" South Toppenish HP Line	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade value.	24,000	0.156	None	8.18	6,161	N	
9	3" Granger HP Line	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Assume minimum pipe grade value.	24,000	0.156	None	8.18	31,347	N	

- ASSUMED VALUE



TABLE 2 - SCHEDULE

2014					
District	Line #	Description	Year Installed	Critical Information	Plan of Action
Bellingham	1	8" Bellingham HP Line	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Remove sections of retired in place pipe and test for pipe grade and wall thickness.
Yakima (Sunnyside)	5	6" Toppenish-Zillah HP Line	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Sample sections removed in 2014 and abandoned sections to validate pipe grade and wall thickness.
Bellingham	6	4" Ferndale HP Line	1962	Under rated flange tee at V-47	Inspect during V-47 project in 2014.
Bellingham	10	16" N. Whatcom Transmission Line	1971	Under rated plugs at valves	Replace plugs in 5 valves beginning in 2014.
2015					
District	Line #	Description	Year Installed	Critical Information	Plan of Action
Bellingham	2	Bellingham HP Distribution System	1956	Pressure test documentation and pipe grade	MAOP based on operating history. Pipelines will be removed/downrated as part of future project to remove pipelines from bridges which will be replaced.
Mt. Vernon	14	16" Fredonia Transmission Line	1983	Unknown grade and wall thickness on fittings	Expose and perform in-situ testing.
			1983	Unknown grade and wall thickness on fittings	Expose and perform in-situ testing.
			2001	Unknown grade and wall thickness on fittings	Expose and perform in-situ testing.
Bellingham	16	16" March Point Transmission Line	1992	Unknown grade and wall thickness on fittings	Expose and perform in-situ testing.
Bellingham	9	8" Lake Terrell Road Transmission Line	1965	Pipe grade and wall thickness	Test samples in-situ in 2015.
Mt. Vernon	2	8" March Point HP Line	1957	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Test samples in-situ at 4 locations minimum.
Yakima (Sunnyside)	3	4" Grandview HP Line	1956	Pressure test documentation, pipe grade and wall thickness	Replace pipeline in 2015.
Bellingham	10	16" N. Whatcom Transmission Line	1971	Under rated plugs at valves	Replace plugs in 5 valves beginning in 2014.
2016					
District	Line #	Description	Year Installed	Critical Information	Plan of Action
Mt. Vernon	1	8" Anacortes HP Line	1957	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating pressure. Test samples from abandoned sections and those removed during replacements.
Bellingham	3	8" Central Whatcom HP Line	1957	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Test samples from James Street and Lampman Road, and any other points that are available, for pipe grade and wall thickness.
Kennewick	1	Attalia HP Line	1958	Pipe Grade	Test previously removed and abandoned sections to verify pipe grade.
			1968	Pressure test documentation	MAOP based on operating history.
2017					
District	Line #	Description	Year Installed	Critical Information	Plan of Action
Bremerton	2	8" Bremerton Transmission Line	1963	Pipe grade and wall thickness	Test abandoned sections to verify pipe grade and wall thickness.
Longview	1	Longview-Kelso HP Distribution Line	1957	Pipe grade and wall thickness	Test retired in place sections and sections which have previously been removed.
Bremerton	6	4" Olympic View HP Line	1973	Under rated plugs (2) in a valve	Replace plugs.
2018					
District	Line #	Description	Year Installed	Critical Information	Plan of Action
Longview	8	8" Kalama HP Line	1996	Pressure test documentation	Validate operating pressure.
			1997	Pressure test documentation, pipe grade, and wall thickness	Test retired in place pipe and samples removed during replacements.
			1997	Pressure test documentation and pipe grade	Validate operating pressure on applicable sections.
			1997	Pressure test documentation	Validate operating pressure.
2019					
District	Line #	Description	Year Installed	Critical Information	Plan of Action
Bellingham	21	16" Squalicum HP Line	1993	Pipe grade	In situ testing in 3 locations minimum.
Wenatchee	1	6" & 8" Moses Lake HP Line	1957	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Test samples in-situ.
			1957	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Test samples in-situ.
			1981	Pipe grade and wall thickness	Test samples in-situ.
2020					
District	Line #	Description	Year Installed	Critical Information	Plan of Action
Yakima	1	8" Yakima HP Line	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Test samples from abandoned sections and in-situ.
Bellingham	2	Bellingham HP Distribution System	1956	Pipe grade and wall thickness	Test samples from abandoned sections and in-situ.
Bellingham	2	Bellingham HP Distribution System	1956	Pressure test documentation, pipe grade and wall thickness	MAOP based on operating history. Remove sections of retired in place pipe and test for pipe grade and wall thickness. Prepare sampling plan for further testing if necessary.
2021					
District	Line #	Description	Year Installed	Critical Information	Plan of Action
Mt. Vernon	12	6" North Oak Harbor HP Line	1972	Under rated stopper fitting	Expose and inspect stopper fitting. Replace if necessary.
Bellingham	3	8" Central Whatcom HP Line	1993	Pipe grade on transition fittings	Expose and inspect fittings for pipe grade, either by stamp identification or in-situ testing.
Bellingham	12	4" North Lynden HP Line	1978	Under rated Sav-A-Valve	Expose and inspect to verify pressure rating.
2022					
District	Line #	Description	Year Installed	Critical Information	Plan of Action
Yakima	1	8" Yakima HP Line	1978	Pressure test documentation	Validate operating pressure.
Aberdeen	1	8" Kitsap Line	1978	Pressure test documentation	Validate operating pressure.
Bremerton	1	8" Kitsap Line	1963	Under rated Sav-A-Valves (2) and transition fittings (2)	Expose and inspect to verify pressure rating and grade.
2023					
District	Line #	Description	Year Installed	Critical Information	Plan of Action
Bremerton	11	8" Bremerton HP Line	1971	Pressure test documentation	Validate operating pressure.
Longview	7	12" South Longview HP Line	1995	Assumed Grade B transition fittings on X52 pipeline	Expose and test fittings for grade.
2024					
District	Line #	Description	Year Installed	Critical Information	Plan of Action
Longview	2	4" Kalama HP Line	1976	Pressure test documentation	Validate operating pressure.
Mt. Vernon	1	8" Anacortes HP Line	1972	Pressure test documentation	Replace section of pipeline.
2025					
District	Line #	Description	Year Installed	Critical Information	Plan of Action
Aberdeen	1	8" Kitsap Line	2000	158 ft of pipe assumed to be Grade B	Test to verify pipe grade as X42 or greater.
Bremerton	1	8" Kitsap Line	2000	158 ft of pipe assumed to be Grade B	Test to verify pipe grade as X42 or greater.
Mt. Vernon	11	6" Whidbey Island HP Line	1969	Pipe and valve assembly	Replace 45 ft of pipe and valve assembly.
2026					
District	Line #	Description	Year Installed	Critical Information	Plan of Action
Aberdeen	1	8" Kitsap Line	1972	Pressure rating on Sav-A-Valves (2)	Expose and inspect Sav-A-Valves. Replace cups if necessary.
Bremerton	1	8" Kitsap Line	1972	Pressure rating on Sav-A-Valves (2)	Expose and inspect Sav-A-Valves. Replace cups if necessary.
Aberdeen	15	12" Kitsap HP Line	1995	Under rated Sav-A-Valve	Expose and inspect Sav-A-Valve. Replace if necessary.
2027					
District	Line #	Description	Year Installed	Critical Information	Plan of Action
Wenatchee	3	4" Ohello Transmission Line	1971	Wall thickness	Validate wall thickness or replace 191 ft section of pipeline.
Kennewick	11	4" Plymouth HP Line	1980	Under rated Sav-A-Valve	Expose and inspect Sav-A-Valve. Replace if necessary.

TABLE 3 - PIPELINES ASSUMING YIELD STRENGTH OF 24,000 PSI

Aberdeen District							
Line #	Description	Segment Description	Pipe Segment Length (ft)	MAOP (psig)	Pipe Grade	Wall Thickness (in.)	% SMYS
9	2" Elma Rendering Plant HP Line	Route 8 King	252	150	24,000	0.156	9.01
Bellingham District							
Line #	Description	Segment Description	Pipe Segment Length (ft)	MAOP (psig)	Pipe Grade	Wall Thickness (in.)	% SMYS
1	8" Bellingham HP Line	From O-8 to R-18	15,091	380	24,000	0.188	36.32
2	Bellingham HP Distribution System	Original Line	16,475	155	24,000	0.188	14.81
		Original Line	19,400	155	24,000	0.188	18.46
		4" off of High St	1,508	155	24,000	0.156	9.31
		4" off of High St	219	155	24,000	0.156	9.31
3	8" Central Whatcom HP Line	Original Line	57,437	380	24,000	0.188	36.32
4	4" South Lynden HP Line	Original Line	35,441	250	24,000	0.156	15.02
8	2" Nooksack HP Distribution System	Tap line 4 south	732	250	24,000	0.154	8.03
9	8" Lake Terrell Road Transmission Line	Original Line	10,314	380	24,000	0.188	36.32
21	16" Squalicum HP Line	Original Line	2,600	250	24,000	0.281	29.66
Bremerton District							
Line #	Description	Segment Description	Pipe Segment Length (ft)	MAOP (psig)	Pipe Grade	Wall Thickness (in.)	% SMYS
2	8" Bremerton Transmission Line	Original Line	2,843	499	24,000	0.188	47.69
Kennewick District							
Line #	Description	Segment Description	Pipe Segment Length (ft)	MAOP (psig)	Pipe Grade	Wall Thickness (in.)	% SMYS
1	Attalia HP Line	8" Attalia HP Line	78,449	300	24,000	0.188	28.67
4	Pasco HP Distribution System	Original Line	10,125	300	24,000	0.156	18.03
8	4" Finley HP Line	Original Line	12,391	200	24,000	0.156	12.02
Longview District							
Line #	Description	Segment Description	Pipe Segment Length (ft)	MAOP (psig)	Pipe Grade	Wall Thickness (in.)	% SMYS
1	Longview-Kelso HP Distribution Line	Original Line	27,350	250	24,000	0.25	26.56
		Original Line	4,964	250	24,000	0.156	15.02
3	4" Dike Road HP Line (Longview)	Original Line	6,463	80	24,000	0.156	4.81
8	8" Kalama HP Line	Industrial Addition	7,132	300	24,000	0.188	28.67
		Industrial Addition	550	300	24,000	0.25	21.56
Mt. Vernon District							
Line #	Description	Segment Description	Pipe Segment Length (ft)	MAOP (psig)	Pipe Grade	Wall Thickness (in.)	% SMYS
1	8" Anacortes HP Line	Original Line	103,743	360	24,000	0.188	34.41
2	8" March Point HP Line	Original Line	9,233	360	24,000	0.188	34.41
3	Anacortes HP Distribution System	518 Hillcrest Dr. to R-32	7,352	105	24,000	0.188	7.71
		R-31 to 518 Hillcrest Dr.	4,675	105	24,000	0.188	10.04
		20th St HP stub	349	105	24,000	0.156	6.31
4	4" Mt. Vernon HP Line	Original Line	29,922	250	24,000	0.156	15.02
5	3" Burlington HP Line	R-18 to R-19	5,769	249	24,000	0.156	11.64
7	4" North Texas Road HP Line	North Texas Rd near R-85	914	250	24,000	0.154	8.03
8	4" Arlington HP Line	Gate to R-86	10,177	249	24,000	0.156	14.96
Walla Walla District							
Line #	Description	Segment Description	Pipe Segment Length (ft)	MAOP (psig)	Pipe Grade	Wall Thickness (in.)	% SMYS
1	8" Walla Walla HP Line	Original Line	4,595	150	24,000	0.188	14.34
2	3" College Place HP Line	Original Line	2,474	150	24,000	0.156	7.01
Wenatchee District							
Line #	Description	Segment Description	Pipe Segment Length (ft)	MAOP (psig)	Pipe Grade	Wall Thickness (in.)	% SMYS
1	6" & 8" Moses Lake HP Line	Original Line	509	250	24,000	0.188	18.35
		Original Line	12,956	250	24,000	0.188	23.89
		Sempra Main Conversion	2,011	250	24,000	0.156	15.02
2	2" Wheeler HP Line	Original Line	2,375	250	24,000	0.154	8.03
10	6" West Wheeler HP Line	1997 Addition	205	250	24,000	0.188	18.35
12	6" Wenatchee HP Line	Original Line	31,812	225	24,000	0.188	16.52
Yakima District							
Line #	Description	Segment Description	Pipe Segment Length (ft)	MAOP (psig)	Pipe Grade	Wall Thickness (in.)	% SMYS
1	8" Yakima HP Line	Original Line	3,032	200	24,000	0.188	19.12
		Fish 8" Yakima River Crossing	695	200	24,000	0.5	7.19
		8" Terrace Hights to R-5	4,891	200	24,000	0.188	19.12
Sunnyside District (Merged with Yakima District)							
Line #	Description	Segment Description	Pipe Segment Length (ft)	MAOP (psig)	Pipe Grade	Wall Thickness (in.)	% SMYS
1	3" Sunnyside HP Line	Original Line	4,536	200	24,000	0.156	9.35
2	2" South Sunnyside HP Line	North section of line	4,018	200	24,000	0.154	6.43
3	4" Grandview HP Line	Original Line	4,736	250	24,000	0.156	15.02
4	3" Prosser HP Line	O-01 to R-1	5,832	250	24,000	0.156	11.69
5	6" Toppenish-Zillah HP Line	Original Line	32,566	400	24,000	0.188	29.37
6	3" Zillah HP Line	Original Line	873	400	24,000	0.156	18.70
7	4" Wapato HP Line	Original Line	33,284	152	24,000	0.156	9.13
8	3" South Toppenish HP Line	Original Line	6,161	175	24,000	0.156	8.18
9	3" Granger HP Line	Original Line	31,347	175	24,000	0.156	8.18

= ASSUMED VALUE