PG-220648

CASCADE NATURAL GAS CORPORATION
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Date: 08/29/2022

Subject: Proximity Request – Toppenish HP Replacement Proximity Request

Sender: Colby Lundstrom, Manager of Compliance and Operations Programs Cascade Natural Gas Co.

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Email Address: Colby.lundstrom@mdu.com

Identification of Proceeding: N/A

Identification of Documents: CNG – Toppenish HP Replacement – PROXIMITY REQUEST 8/29/2022

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8113 WEST GRANDRIDGE BOULEVARD, KENNEWICK, WASHINGTON 99336-7166

August 29, 2022

Sean Mayo
Director, Pipeline Safety
Utilities & Transportation Commission
PO Box 47250
Olympia, WA 98504-7250

Subject: WAC 480-93-020 South Toppenish HP Replacement Proximity Request

Dear Mr. Mayo:

Pursuant to the requirements of WAC 480-93-020 Proximity Considerations, Cascade Natural Gas Corporation (CNGC) requests to operate the proposed pipeline at a pressure of 400 psig within 100 feet of existing buildings or those that are under construction. CNGC is performing this work to satisfy Settlement Agreement Docket PG-150120, maintain core customer needs, and have the ability to supply necessary capacities for future growth in Toppenish, WA.

Proposed Scope of Work:
The proposed pipeline consists of installing approximately 6,770-feet of new 4-inch steel main. This will connect to the existing 4" East Toppenish HP pipeline that operates at an MAOP of 400 psig and the existing regulator station 032-R-059 which feeds the Toppenish distribution system at an MAOP of 56 psig. The complete route of this line is depicted on the attached aerial maps located in Appendix A. This Proximity Request is for approval to operate the new pipeline and existing regulator station at an MAOP of 400 psig.

At the proposed MAOP of 400 psig the stress level of the new pipe and fittings will be a maximum of 7.30% of the specified minimum yield strength and the stress level of the existing regulator station will be 13.68% of the specified minimum yield strength. The South Toppenish HP replacement and 032-R-059 inlet will be classified as high-pressure distribution, not Transmission. One-hundred percent (100%) NDT will be performed on all newly installed pipe.

Specifications of the new 4-inch pipeline are as follows:

- All components (valves, line stoppers, etc.) will be ANSI Class 300 with a maximum working pressure rating of 720 psig.
- All pipe and associated fittings will consist of API 5L specification and of a X52 grade.

Proximity & Alternatives:
South Toppenish replacement pipeline will be within 100 feet of 151 structures as shown in Appendix A. Route analysis and protective measures were taken into consideration when deciding the location of the new pipeline and its proximity to the public and associated facilities.

Alternative routes were explored as detailed in Appendix B. These routes were not chosen because of lack of existing easements, difficulty in obtaining new easements, and restrictions in place on crossing BNSF Railway tracks.

Closing:
CNGC respectfully requests your approval to operate the new 4" South Toppenish high-pressure pipeline with an MAOP of 400 psig. Construction for the South Toppenish Replacement project is scheduled to begin in October of 2022 upon approval of this request and other permitting with the City of Toppenish and BNSF Railway. If you have any questions or require additional information, feel free to contact me at (509) 734-4587 or via email at Colby.Lundstrom@mdu.com.

Sincerely,

CASCADE NATURAL GAS

Colby Lundstrom

Digitally signed by Colby Lundstrom
Date: 2022.08.29 10:35:12 -07'00'

Colby Lundstrom
Manager of Compliance Ops. Programs

CC: Pat Darras
Mike Schoepp
Ryan Privratsky

Enclosures

Appendix A - Buildings within 100-foot proximity to the pipeline and facilities.
Appendix B - Route Alternatives

Appendix A

Figure 1: Overall view of the proposed South Toppenish HP Replacement (Green) pipeline alignment.

Figure 2: Section of the proposed pipeline from N. Meyers Rd to S. G St showing buildings within the 100-foot proximity boundary.

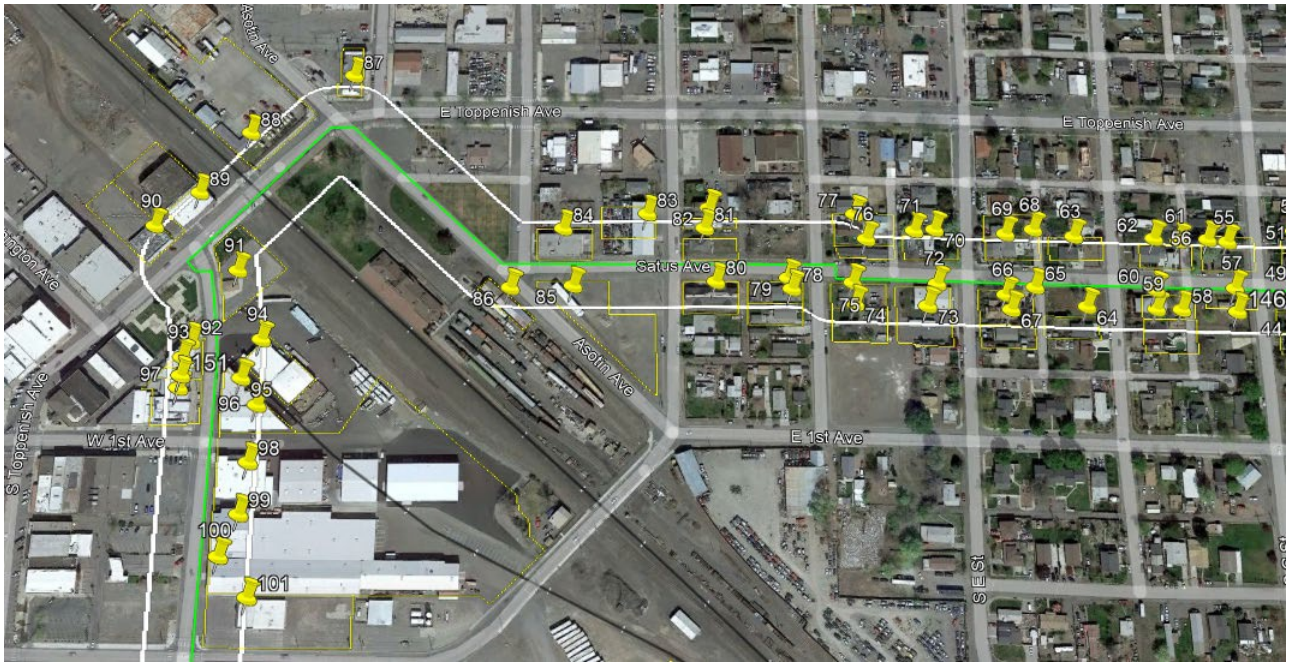

Figure 3: Section of the proposed pipeline from S. G St to W. 2nd Ave showing buildings within the 100-foot proximity boundary.

Figure 4: Section of the proposed pipeline from W. 2nd Ave to S. Beech St showing buildings within the 100-foot proximity boundary.

Proximity Buildings

Bldg. #	Distance to HP Line (feet)	Bldg. Description	Bldg. #	Distance to HP Line (feet)	Bldg. Description	Bldg. #	Distance to HP Line (feet)	Bldg. Description
1	83	Residence	47	73	Residence	97	85	Commercial
2	46	Residence	48	41	Shed	98	75	Commercial
3	38	Garage	49	28	Residence	99	64	Warehouse
4	42	Residence	50	75	Shed	100	29	Warehouse
5	54	Shed	51	66	Residence	101	95	Warehouse
6	66	Residence	52	98	Shed	102	56	Warehouse
7	61	Residence	53	95	Garage	103	97	Warehouse
8	90	Shed	54	100	Residence	104	94	Residence
9	99	Shed	55	72	Residence	105	98	Residence
10	100	Residence	56	77	Residence	106	93	Residence
11	100	Residence	57	35	Residence	107	96	Residence
12	71	Residence	146	86	Shed	108	57	Residence
13	56	Shed	58	89	Garage	109	45	Residence
14	57	Residence	59	89	Residence	110	77	Residence
15	87	Residence	60	46	Residence	111	70	Residence
16	89	Garage	61	71	Garage	147	83	Shed
17	61	Garage	62	75	Residence	112	24	Garage
18	95	Shed	63	75	Residence	113	43	Residence
19	71	Residence	64	87	Residence	148	17	Carport
20	64	Residence	65	45	Garage	114	78	Residence
141	77	Shed	66	66	Residence	115	85	Residence
21	75	Residence	67	100	Residence	116	69	Shed
22	29	Residence	68	89	Garage	117	69	Residence
23	29	Shed	69	76	Residence	118	77	Residence
24	91	Residence	70	82	Residence	149	63	Shed
142	63	Shed	71	78	Garage	119	77	Residence
143	47	Shed	72	43	Church	120	98	Shed
144	47	Shed	73	95	Church	121	41	Residence
25	90	Residence	74	95	Residence	122	65	Residence
26	45	Residence	75	46	Residence	123	88	Garage
145	16	Shed	76	55	Apartment Building	124	98	Residence
27	57	Garage	77	88	Residence	125	43	Garage
28	65	Residence	78	94	Residence	126	84	Residence
29	77	Residence	79	70	Residence	127	74	Residence
30	39	Residence	80	79	Residence	128	84	Residence
31	26	Shed	81	47	Residence	129	82	Apartment Building
32	88	Residence	82	94	Residence	130	29	Residence
33	91	Shed	83	81	Warehouse	131	21	Garage
34	29	Residence	84	45	Museum	150	24	Shed
35	38	Residence	85	88	Train Car	132	66	Residence
36	96	Shed	86	93	Train Depot	133	30	Garage
37	98	Residence	87	89	Commercial	134	100	Residence
38	86	Garage	88	100	Commercial	135	88	Garage
39	68	Residence	89	79	Commercial	136	67	Residence
40	69	Residence	90	97	Commercial	137	94	Apartment Building
41	29	Residence	91	44	Public Restrooms	138	88	Residence
42	72	Residence	92	67	Commercial	139	91	Residence
43	98	Shed	93	83	Commercial	140	97	Garage
44	100	Residence	94	83	Commercial	151	83	Commercial
45	65	Shed	95	47	Commercial			
46	86	Shed	96	85	Commercial			

The Hoop Stress and %SMYS for steel pipe is determined in accordance with the following formulas:

$$\sigma_{hoop} = \frac{P \times D}{2 \times t} \qquad \sigma_{hoop} / S = \%SMYS$$

P=Design pressure, psig.
S=Yield strength, psig determined in accordance with §192.107.
D=Outside pipe diameter, inches.
t=Nominal wall thickness of pipe, inches.

Design pressure of new pipeline at 400 MAOP:

4" Hoop Stress = $\frac{400 xx 4.500}{2 \; xx \; 0.237}$ = 3797.47 psig %SMYS = $\frac{3797.47}{52000}$ = 7.30 %

Design pressure of existing regulator station inlet at 400 MAOP:

4" Hoop Stress = $\frac{400 xx 4.500}{2 \; xx \; 0.188}$ = 4787.23 psig %SMYS = $\frac{4787.23}{35000}$ = 13.68 %

Figure 5: SMYS calculation

Appendix B

Figure 6: Route alternatives.