

**BEFORE THE WASHINGTON
UTILITIES & TRANSPORTATION COMMISSION**

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION,

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

DOCKET PG-160924

DIRECT TESTIMONY OF SEBASTIAN COPPOLA (SC-1T)

ON BEHALF OF

PUBLIC COUNSEL

April 24, 2017

DIRECT TESTIMONY OF SEBASTIAN COPPOLA (SC-1T)

DOCKET PG-160924

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| Exhibit No. SC-2 | Sebastian Coppola Summary of Qualifications |
| Exhibit No. SC-3 | Photographs of the Explosion Site |
| Exhibit No. SC-4 | Puget Sound Energy Response to Public Counsel Data Request No. 29 on Operating Standard 2525.3600 |
| Exhibit No. SC-5 | Puget Sound Energy Response to WUTC Staff Data Request No. 06 on Corrosion Survey |
| Exhibit No. SC-6 | Puget Sound Energy Response to Public Counsel Data Request No. 25(j) on Inspection Reports |
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| Exhibit No. SC-10 | Puget Sound Energy Responses to Public Counsel Data Request No. 007 Supplemental on Valve Shut-off Sequence |
| Exhibit No. SC-11 | Puget Sound Energy Responses to Public Counsel and WUTC Staff Data Requests on PSE Affirmative Defenses |
| Exhibit No. SC-12 | PHMSA Advisory Bulletin – 81 FR 54512, 54514 (August 16, 2016) |

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I. INTRODUCTION

Q: Please state your name and business address.

A: My name is Sebastian Coppola. My business address is 5928 Southgate Rd.,
Rochester, Michigan 48306.

Q: By whom are you employed and in what capacity?

A: I am President of Corporate Analytics, Inc., a consulting firm that provides expert
witness services on regulated energy issues.

Q: On whose behalf are you testifying?

A: I am testifying on behalf of the Public Counsel Unit of the Washington Attorney
General’s Office (“Public Counsel”).

Q: Please describe your educational background and professional experience.

A: I am a business consultant specializing in financial and strategic business issues in
the fields of energy and utility regulation. I have more than 30 years of
experience in public utility and related energy work, both as a consultant and
utility company executive. I have testified in several regulatory proceedings
before State Public Service Commissions.

I have prepared and filed testimony in pipeline and infrastructure
replacement programs, electric and gas rate cases, power supply and gas cost
recovery proceedings, revenue and cost tracking mechanisms/riders and other
regulatory proceedings. As manager and later financial executive for two
regulated gas utilities with operations in Michigan and Alaska, I have been
intricately involved in both financial and operating areas of gas utilities and
energy companies.

Q: What experience do you have with gas utilities?

1 A: I spent the first 26 years of my professional career working for two gas utilities
2 with customer bases ranging from 430,000 to 1.2 million customers in residential
3 commercial and industrial sectors located in both rural and urban areas. During
4 this lengthy career, I worked in both financial and operating areas of the gas
5 utilities, such as customer service and billing, material warehousing and inventory
6 control procuring pipe and fittings for construction projects, and interacting with
7 field services and gas distribution operations.

8 As a consultant and expert witnesses in regulatory proceedings, I have
9 testified extensively on gas utility pipelines, service lines and inside meters
10 replacement programs related to at-risk pipes that provide safety issues to
11 customers and the general public. I have also performed rate case analyses and
12 filed testimony in several gas general rate cases addressing issues on revenue
13 requirement, sales level determination, capital expenditure programs, operation
14 and maintenance expenses, cost allocations, cost of capital, cost of service and
15 rate design, and various cost tracking mechanisms. In addition, I have performed
16 analysis of gas supply programs and filed testimony in gas supply cost recovery
17 mechanisms, including reconciliation of annual gas supply costs.

18 **Q: Have you previously filed testimony before the Washington Utilities and**
19 **Transportation Commission?**

20 A: Yes. In September 2012, I filed testimony on behalf of Public Counsel in
21 Avista's general rate case, Dockets UE-120436 and UG-120437. In March 2013,
22 I prepared reports on behalf of Public Counsel analyzing the natural gas price
23 hedging programs and gas procurements practices of gas utilities in the state of
24 Washington. The reports were filed in Dockets UG-121501, UG-121592,

1 UG-121434 and UG-121569. In June 2013, I filed testimony on behalf of
2 Public Counsel in PacifiCorp's general rate case, Docket UE-130043. In 2014, I
3 assisted Public Counsel in the restructuring of Puget Sound Energy's (PSE)
4 Power Cost Adjustment mechanism, which resulted in the filing of a settlement
5 agreement in Docket UE-130617 on March 27, 2015.

6 I have also submitted written testimony before the Michigan Public
7 Service Commission, the Public Utilities Commission of Ohio, and the
8 Regulatory Commission of Alaska.

9 Please see Exhibit No. SC-2 for more information regarding my
10 credentials in the regulated energy field, professional experience, educational
11 background, and a list of testimony filed in other cases.

12 **Q: What is the purpose of your testimony?**

13 A: I have been requested by Public Counsel to perform a review and analysis of the
14 Settlement Agreement and the Narrative Supporting the Settlement Agreement
15 filed on March 28, 2017, in this docket by the Staff of the Washington Utilities
16 and Transportation Commission ("Staff") and Puget Sound Energy ("PSE" or
17 "Company"). Public Counsel also requested that I provide recommendations
18 regarding the appropriate level of penalties to be imposed on PSE and
19 improvements to the Deactivated Gas Line Inspection and Remediation Program
20 filed as Appendix A to the Settlement Agreement.

21 **Q: What documents did you review in preparation of this testimony?**

22 A: I reviewed several documents, including:

- 23 a. The Commission Complaint filed September 19, 2016 ("Complaint").

- 1 b. The Staff Investigation Report filed on September 20, 2016 (“Staff
2 Investigation Report”).
- 3 c. The UTC Incident Investigation Form prepared by Staff on July 20, 2016
4 (“Staff Incident Investigation-Supplement”).
- 5 d. PSE’s Answer to Complaint and Affirmative Defenses filed
6 October 3, 2016.
- 7 e. The Company’s responses to several data requests issued by Public
8 Counsel and Staff.
- 9 f. Various PSE’s operating standards and procedures regarding the
10 installation, abandonment, and inspection of completed work.
- 11 g. Federal and state of Washington rules, regulations and safety standards
12 regarding gas pipeline installation, abandonment, and maintenance.
- 13 h. The Settlement Agreement and Narrative Supporting the Settlement
14 Agreement (“Settlement Agreement”).

15 **Q: What exhibits are you sponsoring in this proceeding?**

16 A: I am sponsoring the following exhibits:

- 17 1. Exhibit No. SC-2, Sebastian Coppola Summary of Qualifications;
- 18 2. Exhibit No. SC-3, Photographs of the Explosion Site;
- 19 3. Exhibit No. SC-4, PSE Response to Public Counsel Data Request No. 29
20 on Operating Standard 2525.3600;
- 21 4. Exhibit No. SC-5, PSE Response to WUTC Staff Data Request No. 06 on
22 Corrosion Survey;
- 23 5. Exhibit No. SC-6, PSE Response to Public Counsel Data Request No.
24 25(j) on Inspection Reports;

1 amount of \$3.2 million to be imposed on PSE based on the 17 violations.

2 However, if the additional violations of procedures and standards are included,
3 the maximum penalty amount should have been \$4.0 million, as I will describe
4 later in my testimony.

5 I find that the Settlement Agreement is significantly flawed and should not
6 be approved by the Commission without revisions. I find that the firm penalty
7 amount of \$1.5 million is too low relative to the violations and PSE's recurring
8 failures to follow internal procedures and safety rules. The contingent portion of
9 the penalty amount is unnecessary and contrary to sound regulatory policy. The
10 Deactivated Gas Line Inspection and Remediation Program, although generally
11 acceptable, should include certain improvements.

12 Therefore, I recommend that the Commission take the following actions:

- 13 1. The Commission reject the \$1.5 million firm penalty amount and the
14 \$1.25 million contingent penalty, and instead impose at least the entire
15 \$3.2 million maximum penalty stated in the Complaint, or alternatively the
16 Commission could amend the Complaint and impose penalties in the
17 amount of \$4.0 million, with no contingent amount.
- 18 2. The Commission inform the Company that all costs that it incurs in
19 implementing the Deactivated Gas Line Inspection and Remediation
20 Program would not be recoverable in the current and future general rate
21 cases.
- 22 3. The Commission could approve the Deactivated Gas Line Inspection and
23 Remediation Program with the following conditions:
 - 24 a. Strike the words "by Pilchuck" on the first line of the Population 2

- 1 paragraph on page 2 of Appendix A.
- 2 b. Clarify in the definition on page 1 of Appendix A that High
- 3 Occupancy Structures includes businesses.
- 4 c. Set the confidence level at one percent for Population 3 and 4 to be
- 5 consistent with Population 2.
- 6 d. Require that, as part of PSE's Quality Management program, the
- 7 Company maintain a record of each individual who performs the
- 8 inspection of a deactivated service line or main (cut-and-cap and/or
- 9 removal) along with a checklist of the verification steps
- 10 undertaken.
- 11 e. Encourage or direct the Company to remove above ground services
- 12 that have been inactive for at least 12 months unless there is an
- 13 agreement with the property owner that service will resume
- 14 relatively soon.

15 The remainder of my testimony provides further details to support these summary
16 findings and recommendations.

17 III. BACKGROUND

18 **Q: Please briefly describe the reason for the Complaint issued by the**
19 **Commission on September 19, 2016.**

20 **A:** On March 9, 2016, at approximately 1:43 a.m., a natural gas explosion occurred
21 in the vicinity of 8411 Greenwood Avenue North in the city of Seattle,
22 Washington.¹ The explosion caused significant property damage and personal

¹ PSE's records show one service line from the gas main to service locations 8409 through 8415 Greenwood North. In various records, reports and responses to data requests, the address number may be different but generally refers to the same location and service line.

1 injuries to nine first responders. The gas that ignited leaked from a ruptured
2 above-ground service line suspended from the wall of the building at 8411
3 Greenwood Avenue North (commonly known as “Mr. Gyros”). The rupture
4 allowed natural gas to migrate into or under the Mr. Gyros structure, where it
5 subsequently ignited.

6 According to records provided by PSE, the Company considered the
7 service line abandoned and inactive, subsequent to a cut-and-cap order scheduled
8 to be completed on or about September 1, 2004. However, the cut-and-cap work
9 was not properly completed and the line remained active retaining pressurized
10 natural gas for nearly 12 years, until the explosion in March 2016. PSE or its
11 agent failed to perform several procedures during the cut-and-cap work. PSE also
12 failed to monitor and maintain the supposedly abandoned line. These failures and
13 the resulting effect will be discussed in further detail in the remainder of my
14 testimony.

15 PSE’s improper abandonment of the service line was the primary cause of
16 the March 9, 2016, leak and explosion. Photos of the devastating results of the
17 explosion are shown in Exhibit No. SC-3. Additional photos and building
18 schematics of the neighborhood are included in the Staff Investigation Report. It
19 is noteworthy to point out that the fire caused by the explosion lasted nearly six
20 hours as a result of the Company’s inability to quickly and effectively locate and
21 shut-off the correct gas main feeding the broken service line.

22 IV. VIOLATION OF RULES & REGULATIONS

23 **Q: Please describe the violations of state and federal rules included in the**
24 **Complaint issued by the Commission and the basis for each violation.**

1 A: The Complaint contains 17 violations. With the description below of each rule or
2 regulation where the violations occurred, I have included information and
3 findings presented in the Staff Investigation Report and the Staff Incident
4 Investigation-Supplement. This additional information provides a more complete
5 definition than shown in the Complaint about the standards and requirements with
6 which PSE, or its agent, should have complied. It also explains PSE's, or its
7 agent's failure, to comply with those requirements.

8 **A. 49 C.F.R. § 192.727(b) – Improper Deactivation of a Pipeline.**

9 PSE's attempted service line abandonment did not conform to 49 C.F.R.
10 § 192.727(b), which is enforceable by the Commission under WAC 480-93-999.
11 The version of 49 C.F.R. § 192.727(b) in effect on September 1, 2004, provided
12 in relevant part:

13 Each pipeline abandoned in place must be disconnected from all
14 sources and supplies of gas; purged of gas; in the case of offshore
15 pipelines, filled with water or inert materials; and sealed at the
16 ends. However, the pipeline need not be purged when the volume
17 of gas is so small that there is no potential hazard.²

18 The 3/4" service line installed to 8409, 8411 and 8413/8415 Greenwood
19 Avenue North was not properly abandoned or deactivated as scheduled on
20 September 1, 2004. PSE or its agent failed to disconnect the line from all sources
21 of gas. They failed to purge the line, inject inert material, and seal the ends of the
22 line. There was also a lack of situational awareness among the construction crew
23 performing the cut-and-cap. Typically, when cutting an active line, there would
24 be a distinct odor of Mercaptan from the gas still present in the line.³ The odor

² 49 C.F.R. § 192.727(b) (2004).

³ Mercaptan is a harmless but pungent-smelling, sulfur-based gas which is added to natural gas, which is colorless and odorless, to make it easier to detect.

1 could not have been present in this situation because the active line was not cut.
2 The lack of an odor should have been a strong indication to the service crew that
3 the correct line had not been cut. Therefore, the service line remained
4 operationally active for more than 12 years until the March 2016 explosion.

5 Based on Staff's recommendation, the Commission considered this failure
6 one violation of 49 C.F.R. § 192.727(b).

7 **B. WAC 480-93-180 – Failure to Follow Internal Procedures.**

8 PSE's service line abandonment of September 1, 2004, did not conform to the
9 Company's Gas Operating Standard 2525.3600, effective March 1, 2004.⁴ Under
10 WAC 480-93-180, PSE was required to follow internal written procedures. The
11 version of WAC 480-93-180 in effect on September 1, 2004, provided in relevant
12 part: "[E]very gas company shall develop appropriate operating, maintenance,
13 safety, and inspection plans and procedures and an emergency policy."⁵

14 Each gas pipeline company must have and follow a gas pipeline plan and
15 procedure manual for operation, maintenance, inspection, and emergency
16 response activities that is specific to the gas pipeline company's system. The
17 manual must include plans and procedures for meeting all applicable requirements
18 of 49 C.F.R. §§ 191, 192 and chapter 480-93 WAC, and any plans or procedures
19 used by a gas pipeline company's associated contractors. PSE has adopted a Gas
20 Operating Standards manual in accordance with WAC 480-93-180(1). Effective
21 March 1, 2004, Gas Operating Standard 2525.3600, section 3.1, provided in
22 relevant part: "Each facility abandoned in place or each line not subject to gas
23 pressure, shall be disconnected from all sources and supplies of gas, purged of gas

⁴ See Exhibit No. SC-4.

⁵ WAC 480-93-180 (2004).

1 in accordance with Operating Standard 2525.3400, “Purging,” and sealed at the
2 ends with expansive foam.”

3 PSE’s contractor did not correctly follow procedure 2525.3600, Section
4 3.1 to properly deactivate a service line. Section 3.1 states that the ends of the
5 deactivated line will be sealed with expansive foam. Job records show that on
6 September 1, 2004, the service line was deactivated serving 8409, 8411, and 8415
7 Greenwood Avenue North. However, the foreign line recovered at the location
8 where the construction records said the work was performed did not have the ends
9 sealed.

10 PSE’s attempted service line abandonment did not conform to Gas
11 Operating Standard 2525.3600. The service line remained operationally active,
12 un-purged, and unsealed until shortly after the March 2016 explosion.

13 Based on Staff’s recommendation, the Commission considered this failure
14 one violation of WAC 480-93-180.

15 **C. WAC 480-93-188 – Failure to Perform Gas Leak Surveys.**

16 PSE performed no annual gas leak surveys with respect to the improperly
17 abandoned (active) service line from September 1, 2004, at the latest, until March
18 9, 2016. PSE failed to perform a minimum of 11 surveys.⁶ Under WAC 480-93-
19 188, PSE was required to perform such tests at least once annually, as follows:

- 20 (1) Each gas pipeline company must perform gas leak surveys
21 using a gas detection instrument covering the following areas and
22 circumstances:
23 (a) Over all mains, services, and transmission lines including the
24 testing of the atmosphere near other utility (gas, electric, telephone,

⁶ At a minimum, PSE should have performed gas leak surveys in 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, and 2015. Investigation Report dated September 20, 2016 at 7.

1 sewer, or water) boxes or manholes, and other underground
2 structures;⁷
3

4 (3) Each gas pipeline company must conduct gas leak surveys
5 according to the following minimum frequencies:

6 (a) Business districts - At least once annually, but not to exceed
7 fifteen months between surveys. All mains in the right of way
8 adjoining a business district must be included in the survey[.]⁸

9 PSE did not perform the leakage surveys of this service line in this
10 business district since 2004. When PSE conducted the leakage surveys, the
11 person performing the task did not note this idle service riser. If the surveys had
12 been conducted, it is likely that the surveyor would have noticed and reported the
13 condition of the idle service riser and the presence of a safety issue with transient
14 individuals congregating nearby.

15 Based on Staff's recommendation, the Commission considered this failure
16 to be 11 violations of WAC 480-93-188.

17 **D. 49 C.F.R. § 192.481(a) – Failure to Perform Atmospheric Corrosion Tests.**

18 PSE performed no atmospheric corrosion tests with respect to the improperly
19 abandoned (active) service line from July 22, 2004, until March 9, 2016. Under
20 49 C.F.R. § 192.481(a), PSE was required to perform such tests at least once
21 every three years. PSE failed to perform a minimum of three tests.⁹

22 The version of 49 C.F.R. § 192.481(a) in effect on September 1, 2004,
23 provided in relevant part: “Each operator must inspect each pipeline or portion of
24 pipeline that is exposed to the atmosphere for evidence of atmospheric corrosion,
25 as follows: [For onshore pipelines:] At least once every 3 calendar years, but with
26 intervals not exceeding 39 months.”

⁷ WAC 480-93-188(1)(a).

⁸ WAC 480-93-188(3)(a).

⁹ At a minimum, PSE should have performed atmospheric corrosion tests in 2007, 2010, and 2013. *Id.*

1 PSE's response to WUTC Staff Informal Data Request No. 6 indicates that
2 the last atmospheric corrosion reading the 8409/8411 dual (twin) service was on
3 July 22, 2004.¹⁰ According to Staff's conclusion, this was before the service was
4 changed to be fed from the 2" MPE main in the alley on August 8, 2004, and
5 before the date PSE thought they had deactivated the line.¹¹ Staff concluded that
6 the 8411 Greenwood Ave North meter that was being checked for atmospheric
7 corrosion was obviously the new meter that was set on the two meter manifold
8 because there was no longer a meter on the non-deactivated service line that
9 caused the release of gas and resulting explosion on March 9, 2016.

10 Based on Staff's recommendation, the Commission considered this failure
11 to be three violations of 49 C.F.R. § 192.481(a).

12 **E. 49 C.F.R. § 192.465(a) – Failure to Perform External Corrosion Tests.**

13 PSE performed no external corrosion tests with respect to the improperly
14 abandoned (active) service line from September 1, 2004, at the latest, until
15 March 9, 2016. Under 49 C.F.R. § 192.465(a), PSE was required to perform such
16 tests at least once every 10 years, since the improperly abandoned service line was
17 a "separately protected service line." PSE failed to perform a minimum of one
18 test.¹²

19 The version of 49 C.F.R. § 192.465(a) in effect on September 1, 2004,
20 provided in relevant part:

21 Each pipeline that is under cathodic protection must be tested at
22 least once each calendar year, but with intervals not exceeding 15
23 months, to determine whether the cathodic protection meets the

¹⁰ See Exhibit No. SC-5.

¹¹ UTC Incident Investigation Form dated July 20, 2016, at 13.

¹² At a minimum, PSE should have performed an external corrosion test in 2014. Investigation Report dated September 20, 2016, at 8.

1 requirements of § 192.463. However, if tests at those intervals are
2 impractical for separately protected short sections of mains or
3 transmission lines, not in excess of 100 feet (30 meters), or
4 separately protected service lines, these pipelines may be surveyed
5 on a sampling basis. At least 10 percent of these protected
6 structures, distributed over the entire system must be surveyed
7 each calendar year, with a different 10 percent checked each
8 subsequent year, so that the entire system is tested in each 10-year
9 period.¹³

10 Based on Staff's recommendation, the Commission considered this failure
11 to be one violation of 49 C.F.R. § 192.465(a).

12 V. OTHER FAILURES

13 **Q: Please describe other problems you have discovered which were not included**
14 **in the Complaint.**

15 A: In reviewing the information provided by the Company in response to data
16 requests from Public Counsel and Staff, as well as information gathered from
17 reviewing the Staff Investigation Report and the Staff Incident Investigation-
18 Supplement, I have discovered the following additional failures:

- 19 1. **Improperly Completed Form D-4** - The D-4 Form capturing the
20 improperly completed cut-and-cap work for 8409 Greenwood Avenue
21 North was not signed by the Pilchuck crew member who completed the
22 work but instead by the crew foreman. This is a violation of Section
23 3.12.2.7 of the Company's Gas Operating Standard 2500.1800, which
24 requires that the name of the fitter performing the work be shown in the
25 back of the D-4 Form. The crew foreman should be performing the on-
26 site inspection of the work completed by the Fitter. By allowing the crew
27 foreman to sign the D-4 card, PSE or its agent undermines the separation

¹³ 49 C.F.R. § 192.465(a) (2004).

1 of duties and the quality assurance program, to the extent that one existed
2 at that time. The Commission previously found PSE to have committed a
3 similar violation with incorrect records completed by Pilchuck.¹⁴

4 This is a violation of WAC 480-93-018 for not maintaining
5 accurate records.

6 2. **Unreliable Quality Control Program** - There is no evidence that a
7 thorough on-site inspection and quality assurance program existed in
8 September 2004. PSE was requested to provide a copy of the inspection
9 report showing that the contractor or a PSE employee had inspected and
10 verified that the cut & cap and purging of the service line to 8409
11 Greenwood Avenue North had taken place. In response to Public Counsel
12 Data Request No. 025(j), the Company stated that there were no such
13 records. Exhibit No. SC-6 includes a copy of the response to the data
14 request. In response to other data requests, PSE stated that it requires its
15 construction contractors to have a written quality control program.
16 However, no evidence that such a program was in place in September
17 2004, or is in place now, was provided. According to PSE's response to
18 Public Counsel Data Request No. 028(d), the quality control program
19 requires the crew foreman to inspect 100 percent of the work performed.
20 Apparently, in September 2004 for the 8409 Greenwood Avenue North
21 cut-and-cap, and perhaps for other jobs, the 100 percent inspection did not
22 occur. Furthermore, the Company's own quality assurance program did
23 not include an inspection of the 8409 Greenwood Avenue North cut-and-

¹⁴ *Wash. Utils. & Transp. Comm'n v. Puget Sound Energy*, Docket PG-060215.

1 cap work. Exhibit No. SC-7 includes the pertinent PSE responses on its
2 quality assurance program.

3 The Company's inspection program consists of audits of a sample
4 of in-progress (crew on-site) and post-construction work. This sampling
5 approach seems designed to determine general compliance with methods
6 and procedures by the contractor, and is not sufficiently comprehensive to
7 ensure that each job is completed correctly. For this, the Company relies
8 on its contractors with apparent shortfalls. A more robust procedure,
9 which includes written evidence that an inspection of the work was
10 performed by the crew foreman, would be appropriate, either as part of the
11 D-4 Form or as a separate checklist retained by the Company. To date,
12 PSE has not implemented such a robust and verifiable inspection
13 procedure.

14 This is a violation of WAC 480-93-180 for not following plans and
15 procedures.

- 16 3. **Incorrect Record of Deactivated Service** – In data request Public
17 Counsel No. 006, the Company was requested to provide a list of all the
18 service lines abandoned between January 1, 2004, and the date of the data
19 request. The list of approximately 20,700 service lines that were cut-and-
20 capped identifies the status of the service lines as either Active or
21 Deactivated. The 8410 Greenwood North service line is categorized as
22 Deactivated.¹⁵ Asked to explain the difference between an Active and

¹⁵ In Public Counsel Data Request No. 026, PSE explains that its address algorithm assigned the address 8410 Greenwood to include also 8409, 8411 and 8413/8415 Greenwood North.

1 Deactivated Status, PSE stated that an Active designation is assigned if the
2 gas main from which the service line was disconnected is still active and a
3 Deactivated status is assigned if the main has been subsequently retired.
4 Exhibit No. SC-8 includes the pertinent responses to the data requests.
5 With regard to the service line for 8410 Greenwood Avenue North, the
6 Deactivated designation was incorrect because the main feeding the line
7 was still active. This failure to properly designate the status of the service
8 as Active versus Deactivated has significant safety implications to the
9 Company's employees and the general public. The expectation of a
10 Deactivated service line is that the gas main also had been retired and was
11 inactive. Instead, this was not the case. The gas leak and the explosion
12 show that both the service line and gas main were both active and fully
13 pressurized with natural gas. It is likely that this incorrect designation
14 contributed to the six-hour lapsed time between when the explosion
15 occurred and when the gas was ultimately shut-off to the explosion site.
16 PSE field personnel on site were likely operating on the assumption that
17 the gas main feeding the service line was inactive when in fact it was not.
18 This failure to properly designate the status of the service line is another
19 indication of PSE's poor record keeping and procedural failures
20 compromising safety.

21 This is a violation of WAC 480-93-018 for not maintaining
22 accurate records.

- 23 4. **Abandoned Above Ground Service Line Not Removed** – According to
24 the Company's records, the service line serving the buildings at 8409-

1 8415 Greenwood Avenue North was 92 feet in length from the property
2 line to the meter location. Of this total length, 62 feet was above ground
3 and apparently running along the side of the building at a height of
4 approximately two feet from the ground. In response to Public Counsel
5 Data Request No. 30, subpart (a)(iv), the Company stated that PSE
6 Operating Standard 2525.2100, Section 6 – Service Deactivation requires
7 that exposed service piping be removed at the building when the service is
8 abandoned.¹⁶

9 This did not occur and failure to comply with its own operating
10 standard had catastrophic results. If the Company had fully implemented
11 its own procedure, the entire incident would have been avoided. Instead,
12 the compounding of multiple failures to properly cut-and-cap the service
13 line, not purging and sealing it, and not removing the portion aboveground
14 created an unsafe and dangerous situation.

15 This is a violation of WAC 480-93-180 for not following plans and
16 procedures.

- 17 5. **Delay In Shutting-Off Gas Flow To The Explosion Site** – According to
18 the timeline of events following the explosion at 1:43 a.m. on March 9,
19 2016, the Company attempted to shut-off the gas flow to the explosion site
20 by closing various service line and gas main valves in the streets
21 surrounding the explosion site. The first attempt was made at 2:48 a.m. by
22 closing service line valves at various locations around the Greenwood
23 area. This step proved unsuccessful and the fire continued to burn. The

¹⁶ See Exhibit No. SC-9.

1 next attempt was to excavate the plastic main near the Greenwood area
2 and squeeze it shut. This step was completed at 5:11 a.m. and still proved
3 unsuccessful. Subsequently, the Company proceeded to shut-off six gas
4 main valves in sequence in the gas line grid located in the roads
5 surrounding the Greenwood explosion site. Ultimately, at 7:28 a.m. the
6 gas flow was stopped and the fire was extinguished at 7:55 a.m.,
7 approximately six hours after the explosion. Exhibit No. SC-10 provides
8 the PSE data request response with the specific sequence of valve closure
9 and timeline.

10 The lengthy process to stop the flow of gas to the explosion site
11 and the sequence of valve closures raise several questions about the
12 preparedness and approach that PSE takes in such situations such as:

- 13 a. Was the incorrect designation of the abandoned service line at
14 8410 Greenwood North as Deactivated a contributing factor;
- 15 b. Why was main Valve A closed last when it was the closest valve to
16 the explosion site relative to the other main valves closed before it;
17 and
- 18 c. Why were the valve closing performed sequentially and not
19 simultaneously when the fire was raging for multiple hours?

20 This failure to timely shut-off gas flow to the explosion site is another
21 indication of systemic problems with PSE's procedures and processes.
22 Such systemic problems justify more severe penalties to strongly signal to
23 the Company the necessity to remedy the problems.

1 **VI. PENALTIES**

2 **Q: Please describe the monetary penalties included in the Complaint issued by**
3 **the Commission and the basis for each penalty.**

4 A: According to the Complaint, Staff requested that the Commission impose the
5 maximum penalty amount of \$3.2 million. Staff arrived at this amount, as
6 follows:¹⁷

1. **49 C.F.R. § 192.727.** PSE failed to abandon the service line in accordance with federal standards (one violation, maximum \$200,000 penalty).
2. **WAC 480-93-180 and 49 C.F.R. § 192.13(c).** PSE failed to follow its internal pipeline deactivation plan (one violation, maximum \$200,000 penalty).
3. **WAC 480-93-188.** PSE failed to perform annual leak surveys of the active service line (11 violations, maximum \$2,000,000 penalty).
4. **49 C.F.R. § 192.481.** PSE failed to perform atmospheric corrosion tests of the active service line at least once every three years (three violations, maximum \$600,000 penalty).
5. **49 C.F.R. § 192.** PSE failed to perform external corrosion tests of the active service line at least once every 10 years (one violation, maximum \$200,000 penalty).

7
8 The total of the amounts for items 1 through 5 above is \$3.2 million. In addition,
9 in the Complaint Staff requested that the Commission order PSE to implement a
10 compliance program.

11 **Q: Do the Additional Failures You Discussed Earlier Violate Existing Rules or**
12 **Regulations.**

13 A: Yes. The Commission could find that PSE committed two violations of
14 WAC 480-93-018 due to the Improperly Completed Form D-4 and Incorrect
15 Record of Deactivated Service. The Commission also could find that PSE
16 committed two violations of WAC 480-93-180 for the Unreliable Quality Control
17 Program and for the Abandoned Aboveground Service Line Not Removed. Each
18 of these violations would entail a \$200,000 penalty. Therefore, the Commission

¹⁷ Staff Investigation Report at 2.

1 could impose an additional \$800,000 in penalties, which would increase the total
2 maximum penalties to \$4.0 million.

3 **VII. STAFF AND PSE PROPOSED SETTLEMENT**

4 **Q: Please briefly describe the terms of the Settlement Agreement that Staff and**
5 **PSE have reached.**

6 A: The Settlement Agreement specifies that PSE will pay \$1.5 million in penalties to
7 the Commission and also a suspended penalty of \$1.25 million if PSE fails to
8 implement the Deactivated Gas Line Inspection and Remediation Program.

9 In the Settlement Agreement, PSE agrees not to contest, but does not
10 affirmatively admit the violations listed in the Complaint issued by the
11 Commission. PSE further agrees to implement the Deactivated Gas Line
12 Inspection and Remediation Program shown in Appendix A to the agreement.

13 The Narrative Supporting the Settlement Agreement provides additional
14 details and arguments in support of the Settlement Agreement.

15 **VIII. ASSESSMENT OF THE PROPOSED SETTLEMENT**

16 **Q: Please provide your assessment of the Settlement Agreement proposed by**
17 **Staff and PSE.**

18 A: The Settlement Agreement is significantly flawed and should not be approved by
19 the Commission without modifications. Primarily, the amount of \$1.5 million in
20 firm penalties is wholly insufficient for the violations listed in the Complaint and
21 the additional procedural and safety failures I have discussed above in my
22 testimony. The \$1.5 million firm penalty represents less than 50 percent of the
23 \$3.2 million alleged in the Complaint. The \$1.25 million contingent penalty
24 amount is a ruse. It is likely that PSE will never pay this amount because it has

1 agreed to implement the compliance program in Appendix A and knows that it is
2 in the Company's self-interest to follow through with its commitment. Therefore,
3 the \$1.25 million will never be paid and the only realistic penalty amount that
4 PSE will pay is \$1.5 million.

5 The \$1.5 million in penalties also is unreasonable and wholly inadequate
6 for the following reasons:

- 7 1. In its Answer to Complaint and Affirmative Defenses filed on
8 October 3, 2016, PSE admitted to several factual allegations, denied
9 certain allegations and stated that it was not able to admit or deny other
10 allegations in the Complaint because it had insufficient information. In
11 response to several data requests made by Public Counsel and Staff, the
12 Company was not able to explain what information it was lacking and
13 when it would obtain that information. Exhibit No. SC-11 includes some
14 of these responses. In other words, PSE has not adequately rebutted the
15 veracity of the violations included in the Complaint.
- 16 2. Staff has not proposed in either the Settlement or the Narrative supporting
17 the settlement to withdraw any of the violations or allegations made in the
18 Complaint or the Staff Investigation Report. Therefore, a settlement that
19 brings the firm penalty amount down to less than half of the \$3.2 million
20 proposed in the Complaint would seem to be an abdication of its positions
21 and claims. In fact, there is no basis or justification to reduce the firm
22 penalty amount to \$1.5 million, because Staff still holds firm to violations
23 included in the Complaint and repeated on pages 2 through 4 of the
24 Settlement Agreement.

- 1 3. The Settlement Agreement did not consider the additional failures by PSE
2 to follow procedures, and the weaknesses in its quality assurance program
3 and other processes I discussed in Section V of my testimony. These
4 failures became clearer after the Complaint was issued and do not seem to
5 have been adequately considered by Staff in reaching a decision on the
6 penalty amount. The compounding of multiple failures makes it
7 abundantly clear that there are systemic problems with the Company's
8 processes and its ability to follow procedures that ensure the safe
9 operation of its gas system. This multitude of failures warrants imposing
10 at least the maximum \$3.2 million of penalties alleged in the Complaint
11 and possibly up to the \$4.0 million.
- 12 4. The implementation of the Deactivated Gas Line Inspection and
13 Remediation Program will likely result in substantial costs over the time
14 period it will be implemented. It is likely that PSE will request recovery
15 in rates of the increase in operations and maintenance expense and/or
16 capital costs to implement the program and to remedy any problems. The
17 Settlement Agreement currently does not prevent recovery of the
18 implementation costs of the program. Therefore, PSE's customers could
19 end up paying for a compliance program of procedures that the Company
20 should have followed all along. Customers could in effect pay twice for
21 work poorly completed when the service lines were first cut-and-capped
22 and abandoned, and again when re-inspected and remediated.

1 5. PSE has a long history of failures in implementing procedures and
2 violating safety rules for which the Commission has imposed penalties.

3 Some of these violations and penalties are listed below:

4 a. In July 2002, the Commission imposed \$50,000 in penalties on
5 PSE for failing to actively implement its **anti-drug and alcohol**
6 **misuse prevention** program from 1997 through 2000. It is unclear
7 how many violations were found.¹⁸ The required Compliance Plan
8 appears to have expired in August 2006.

9 b. In 2004, the Commission ordered remedies and a financial penalty
10 of \$90,000 based on **two pipeline safety violations** for PSE's
11 failure to correctly configure a **corrosion prevention** device which
12 caused a **gas leak** and **explosion** at a residential building in
13 Bellevue, WA.¹⁹ The required Compliance Plan appears to still be
14 active.

15 c. In 2005, the Commission cited PSE for **three violations** of
16 **improper cathodic testing** and imposed a \$15,000 penalty for an
17 **improper purging of a gas line** which caused an **injury to a crew**
18 **member** of PSE's contractor, Pilchuck, during installation of a
19 2-inch tie-in to a 6-inch main.²⁰ There does not appear to have
20 been a compliance plan for this case.

21 d. In 2005, the Commission imposed a firm penalty on PSE of
22 \$500,000 for **not maintaining adequate records** and other

¹⁸ *Wash. Utils. & Transp. Comm'n v. Puget Sound Energy*, Docket PG-001116.

¹⁹ *Wash. Utils. & Transp. Comm'n v. Puget Sound Energy*, Docket PG-041624.

²⁰ *Wash. Utils. & Transp. Comm'n v. Puget Sound Energy*, Docket PG-041209.

1 compounding violations related to **corrosion** and **gas leaks**. At
2 settlement, PSE admitted to **67 violations**.²¹ The required
3 Compliance Plan appears to have expired in March 2015.

4 e. In 2006, the Commission found that PSE was **improperly**
5 **monitoring cathodically protected gas mains, not inspecting**
6 **idle risers, not tracking where gas mains crossed railroad**
7 **tracks, and not performing annual leak surveys**. It is unclear
8 how many violations were found.²² The required Compliance Plan
9 appears to have expired in January 2008.

10 f. In 2008, the Commission found **209 violations** by the Company's
11 contractor, Pilchuck, of **intentionally falsifying inspection**
12 **records** related to gas leaks and imposed a penalty of \$1.25
13 million on PSE.²³ The required Compliance Plan appears to have
14 expired in January 2013.

15 g. In 2013, the Commission imposed a penalty of \$275,000 based on
16 **eight violations** of the Company failing to perform an appropriate
17 **gas leak survey** and repair which led to an **explosion**.²⁴ The
18 required Compliance Plan appears to have expired in
19 November 2014.

20 Since July 2002, the above cases total 289 documented violations in the
21 past 177 months. These and other incidents show a pattern of recurring

²¹ *Wash. Utils. & Transp. Comm'n v. Puget Sound Energy*, Dockets PG-030080 & PG-030128.

²² *Wash. Utils. & Transp. Comm'n v. Puget Sound Energy*, Dockets PG-050331 & PG-050516.

²³ *Wash. Utils. & Transp. Comm'n v. Puget Sound Energy*, Docket PG-060215.

²⁴ *Wash. Utils. & Transp. Comm'n v. Puget Sound Energy*, Docket PG-111723.

1 and systemic failures to maintain accurate records and comply with
2 internal procedures and gas safety rules.

3 6. In the May 4, 2016, Incident Report that PSE filed with the Department of
4 Transportation (“DOT”) on Form PHMSA F7100.1 relating to the
5 explosion at 8411 Greenwood North, the Company estimated the damage
6 from the explosion at approximately \$3 million. In response to Public
7 Counsel Data Request No. 43, PSE refused to provide further details as to
8 how it arrived at this number and what assumptions were made. Given the
9 extensive damage to multiple buildings, the loss of business income, and
10 the impact on the livelihood and income of those who worked and lived in
11 the impact area, it is likely that the financial impact of the explosion is
12 considerably more than \$3 million. This was a significant incident,
13 perhaps unprecedented in the history of the Company as to its scale.

14 Clearly, the \$1.5 million firm penalty amount is insufficient in the context
15 of the scale of this incident and the number of violations discussed above.

16 **Q: Should the Commission apply its prior practice of imposing contingent**
17 **penalties in this case?**

18 A: No. As previously described in my testimony, this is a major incident that
19 involves multiple failures to follow procedures and safety rules and regulations.
20 There is no reasonable justification to assign \$1.25 million as a contingent penalty
21 for the Company to implement an inspection program of abandoned service lines
22 that should have been completed correctly the first time. If the Company had
23 retained more complete records with regard to the quality control and inspections
24 performed by its contractors when cutting and capping service lines, the necessity

1 of a costly inspection program could have been avoided or the scope significantly
2 reduced.

3 If the \$1.25 million contingent penalty is meant as an incentive for PSE to
4 complete the inspection program, this objective is misguided. Of the previous
5 violation dockets listed above, only Docket UG-001116 imposed the maximum
6 penalty and required a compliance plan. All the other dockets reduced the penalty
7 amount by 28 to 89 percent. Reducing the penalty amount does not appear to
8 incentivize PSE to comply with federal and state of Washington rules and
9 regulations, or the Company's own internal policies and procedures. Reducing
10 the penalty amount, in fact, removes the incentive of utilities to comply with
11 procedures and safety regulations if they conclude that they can avoid penalties by
12 agreeing to comply with procedures and programs they should have done in the
13 first place. The Commission should not agree to reduce the penalty amount in
14 this case.

15 **Q: Do you have any observations with regard to the statements and analysis**
16 **presented by Staff in the Narrative Supporting the Settlement Agreement**
17 **that the Settlement is consistent with the principles expressed in the**
18 **Commission's Enforcement Policy?**

19 **A:** Yes. Beginning on page 9 of the Narrative Supporting the Settlement Agreement,
20 Staff describes how the Settlement aligns with the 11 principles in the
21 Commission's Enforcement Policy. Although I agree with the some of the factual
22 statements made by Staff, the justifications provided in certain areas are
23 incomplete and diminish the severity of the incident and PSE's faulty practices in
24 an attempt to justify a lower penalty amount than the maximum amount initially

1 proposed in the Complaint. Therefore, I will state my observations with regard to
2 the following principles:

- 3 • **Whether the Violation is Intentional** – Although the Company did not
4 intentionally fail to deactivate the service line at 8409 Greenwood Avenue
5 North, the failure of not having a robust inspection program that would
6 ensure the line was actually deactivated and also not removing the inactive
7 gas line, rise to a level of irresponsibility and imprudence that
8 approximates an intentional act. An August 16, 2016, Advisory Bulletin
9 by the Pipeline and Hazardous Materials Safety Administration
10 (“PHMSA”) within DOT reinforces this point. In the Advisory Bulletin,
11 PHMSA stated that: “Pipeline owners and operators are fully responsible
12 for the safety of their pipeline facilities at all times and during all
13 operational statuses.”²⁵ PHMSA includes abandoned pipelines in its
14 definition of operational statuses. The Advisory Bulletin highlights a case
15 study from Wilmington, California, where the pipeline company was cited
16 and fined by the state regulator because it did not properly abandon the
17 pipeline facility. The pipeline company was aware of the pipeline and
18 believed it had been properly abandoned by its previous owner/operator.
19 Exhibit SC-12 includes the pertinent section of the PHMSA Advisory
20 Bulletin.
- 21 • **The Number of Violations** – Staff states: “[T]he number of violations is
22 small [T]he Agreement properly imposes a severe monetary penalty

²⁵ See Exhibit SC-12 at 2.

1 [and] requires acknowledgment of past mistakes.”²⁶ I disagree. As
2 discussed earlier in my testimony, the evidence shows that there were
3 several compounding failures to follow procedures and safety rules.
4 These were not just a few minor violations. Also, the Company has not
5 affirmatively acknowledged its past mistakes. It has only agreed not to
6 contest the violations. The monetary penalties are less than half of the
7 maximum amount that could have been imposed under the Complaint.
8 Lastly, PSE has been involved in numerous incidents in prior years where
9 the Company failed to follow procedures and safety rules. Therefore,
10 Staff’s attempt to diminish the severity of the Number of Violations is
11 disturbing.

- 12 • **The Number of Customers Affected** – Staff does not adequately address
13 the impact on customers affected by the explosion. The explosion affected
14 multiple businesses and individuals who lived in the area or made their
15 living from those businesses. This incident and the relative impact on the
16 customers of the Company may be unprecedented.
- 17 • **The Likelihood of Recurrence** – Although the inspection program
18 outlined in Appendix A to the Settlement Agreement will provide some
19 assurance that any analogous situations may be remediated, the
20 Company’s quality control program is still deficient as I have previously
21 discussed. This deficiency makes the likelihood of a recurrence a real
22 possibility, which Staff has failed to recognize.

²⁶ Narrative Supporting Settlement Agreement ¶ 37.

- 1 • **The Company’s Past Performance Regarding Compliance, Violations,**
2 **and Penalties** – Although Staff lists some prior violations, it does not
3 seem to give sufficient weight or consideration to them in setting an
4 appropriate, firm penalty amount closer to the maximum level of \$3.2
5 million.
- 6 • **The Company’s Existing Compliance Program** – Again, Staff
7 acknowledges the lack of compliance as a result of the incident and
8 violations, but it does not seem to give sufficient weight or consideration
9 to them in setting an appropriate, firm penalty amount.
- 10 • **The Size of the Company** – Staff states that PSE is the largest natural gas
11 utility in the state of Washington, but does not mention that the
12 Company’s gas revenues were \$890 million in 2016, and its total revenues
13 including the electric operation exceeded \$3.1 billion. The \$1.5 million
14 penalty amount agreed to by Staff represents only approximately 1/10th of
15 one percent of gas revenues.

16 In summary, the analysis performed by Staff against the Enforcement Policy
17 Principles is incomplete and deficient in many respects and fails to justify the
18 recommended penalty amounts in the Settlement Agreement.

19 **Q: Are you proposing any improvements to the Deactivated Gas Line Inspection**
20 **and Remediation Program?**

21 A: Yes. Although I generally find most of the actions and requirements reflected in
22 the program acceptable, there are a few improvements that the Commission
23 should accept to make the program more robust. First, on page 2 of Appendix A,
24 the Population 2 sample should not be limited to only services retired by Pilchuck

1 between 2000 and 2010. It should be broadened to all services retired between
2 2000 and 2010, no matter who performed the work.

3 Although Population 1 correctly prioritizes the inspection of all services
4 retired by Pilchuck in the Business Districts between 2000 and 2010, once the
5 inspection program moves down to Population 2, it makes no sense to limit the
6 inspection to services retired only by Pilchuck. To do so would leave an
7 inspection gap where services retired between 2000 and 2010 by other
8 contractors, or by PSE employees, would not be inspected. This gap is evident in
9 reading the requirements of Population 3 and 4 for retirements performed before
10 the year 2000 and after the year 2010 where there is no limitation as to which
11 party performed the service retirement.

12 The Commission should correct this error by striking the words “by
13 Pilchuck” on the first line of the Population 2 paragraph, page 2 of Appendix A.

14 Second, the Commission should clarify in the definition on page 1 of
15 Appendix A that High Occupancy Structures includes businesses.

16 Third, while Population 2 sets a confidence level of one percent,
17 Population 3 and 4 require a confidence level of two percent or double the
18 percent. There is no valid reason to differentiate between the three population
19 groups. The services retired before the year 2000 or after the year 2010 are not
20 any less risky than those retired between 2000 and 2010. The Commission should
21 set the confidence level at one percent for Population 3 and 4 to be consistent with
22 Population 2.

23 Fourth, on page 4 of Appendix A, the document briefly addresses the
24 PSE’s Quality Management process. This section of the program fails to

1 specifically address the deficiencies in the quality control inspections performed
2 by construction contractors and Company employees. The Company needs to
3 include in its quality management systems a record of who performed each
4 inspection of the work performed when deactivating a service line, or main, along
5 with a check list of the verifications steps undertaken. Without such a
6 comprehensive quality inspection and record keeping program, there is a
7 significant risk of a repeat incident similar to what occurred at 8409 Greenwood
8 North.

9 Fifth, beginning on page 4 of Appendix A, the document describes the
10 actions that PSE needs to take to inspect and remediate Aboveground Service
11 Pipe installations. Specifically, in part b on page 5 of the Appendix, the program
12 leaves the removal of any aboveground unmetered services to the discretion of the
13 Company. PSE estimates that the number of active unmetered services is 4,381.
14 Although a large portion of these services are likely locations awaiting the
15 installation of a new meter, many of the locations likely include services where
16 the meter may have been removed for non-payment or other reasons with a long
17 period of inactivity of gas service. These unmetered aboveground services
18 provide a risk level similar to what occurred at 8411 Greenwood Avenue North
19 because they are likely to be active gas lines holding natural gas at pressure. The
20 Commission should encourage or direct the Company to remove aboveground
21 services that have been inactive for at least 12 months unless there is an
22 agreement with the property owner that service will resume relatively soon.

1 **IX. CONCLUSIONS AND RECOMMENDATIONS**

2 **Q: What are your conclusions and recommendations?**

3 A: The Settlement Agreement is not acceptable in its current form. The firm penalty
4 amount of \$1.5 million is too low relative to the violations and recurring failures
5 by PSE to follow internal procedures and safety rules. The contingent portion of
6 the penalty amount is unnecessary and contrary to good regulatory policy. The
7 Deactivated Gas Line Inspection and Remediation Program, although generally
8 acceptable, could be improved. Therefore, I recommend the following:

- 9 1. The Commission reject the \$1.5 million firm penalty amount and the
10 \$1.25 million contingent penalty, and instead impose at least the entire
11 \$3.2 million maximum penalty stated in the Complaint, or alternatively
12 amend the Complaint and impose penalties in the amount of \$4.0 million,
13 with no contingent amount.
- 14 2. The Commission inform the Company that any costs that it incurs in
15 implementing the Deactivated Gas Line Inspection and Remediation
16 Program would not be recoverable in the current and future general rate
17 cases.
- 18 3. The Commission could approve the Deactivated Gas Line Inspection and
19 Remediation Program with the following conditions:
- 20 a. Strike the words “by Pilchuck” on the first line of the Population 2
21 paragraph on page 2 of Appendix A.
- 22 b. Clarify in the definition on page 1 of Appendix A that High
23 Occupancy Structures includes businesses.
- 24 c. Set the confidence level at one percent for Population 3 and 4 to be

1 consistent with Population 2.

2 d. Require that, as part of PSE's Quality Management program, the
3 Company maintain a record of each individual performing
4 inspections when PSE or its agent deactivate a service line or main
5 (cut-and-cap and/or removal) along with a checklist of the
6 verifications steps undertaken.

7 e. Encourage or direct the Company to remove aboveground service
8 lines that have been inactive for at least 12 months, unless there is
9 an agreement with the property owner that service will resume
10 relatively soon.

11 **Q: Does this conclude your filed testimony?**

12 **A: Yes.**