
Exhibit No.:

Issue: Prudence of Environmental Retrofits

Witness: Rachel S. Wilson

Type of Exhibit: Surrebuttal Testimony

Sponsoring Party: Sierra Club

Case No.: ER-2014-0370

Date Testimony Prepared: June 5, 2015

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

IN THE MATTER OF KANSAS CITY POWER &)
LIGHT COMPANY'S REQUEST FOR AUTHORITY)
TO IMPLEMENT A GENERAL RATE INCREASE) Case No. ER-2014-0370
FOR ELECTRIC SERVICE)

**Surrebuttal Testimony of
Rachel S. Wilson**

**On Behalf of
Sierra Club**

June 5, 2015

**** Denotes Highly Confidential Information ****

PUBLIC

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1 **Q. Please state your name, business address, and position.**

2 A. My name is Rachel Wilson, and I am a Senior Associate with Synapse Energy
3 Economics, Incorporated (“Synapse”). My business address is 485 Massachusetts
4 Avenue, Suite 2, Cambridge, Massachusetts 02139.

5 **Q. Are you the same Rachel Wilson who presented prefiled Direct Testimony in**
6 **this matter?**

7 A. Yes, I am.

8 **Q. What is the purpose of your testimony in this proceeding?**

9 A. My testimony responds to the following from KCP&L witnesses: 1) the rebuttal
10 testimony of Mr. Wm. Edward Blunk regarding natural gas price forecasts; 2) the
11 rebuttal testimony of Mr. Burton Crawford regarding analyses of the La Cygne
12 retrofits; and 3) the rebuttal testimony of Mr. Forrest Archibald regarding
13 KCP&L’s contracts and associated cancellation costs.

14 **1. RESPONSE TO WM. EDWARD BLUNK – KCP&L**

15 **Q. Which portions of Mr. Blunk’s testimony will you address?**

16 A. I will respond to Mr. Blunk’s assertions that my use of EIA AEO natural gas price
17 forecasts are out of date and biased, as well as his statements about the ways in
18 which KCP&L’s use of a composite natural gas price forecast mitigates any issues
19 contained in individual forecasts of natural gas prices.

20 **Q. Mr. Blunk states that KCP&L’s use of a composite natural gas price forecast**
21 **mitigates concerns that one of the underlying forecasts used in the 2011**
22 **Kansas prudence determination docket was out of date.¹ Is that true?**

23 A. No. As noted by Mr. Blunk in the 2011 Kansas docket, both natural gas price
24 projections and spot prices were historically quite volatile.² Based on this fact

¹ Rebuttal Testimony of Wm. Edward Blunk. MPSC Case No. ER-2014-0370. May 7, 2015. Page 4, lines 2-6.

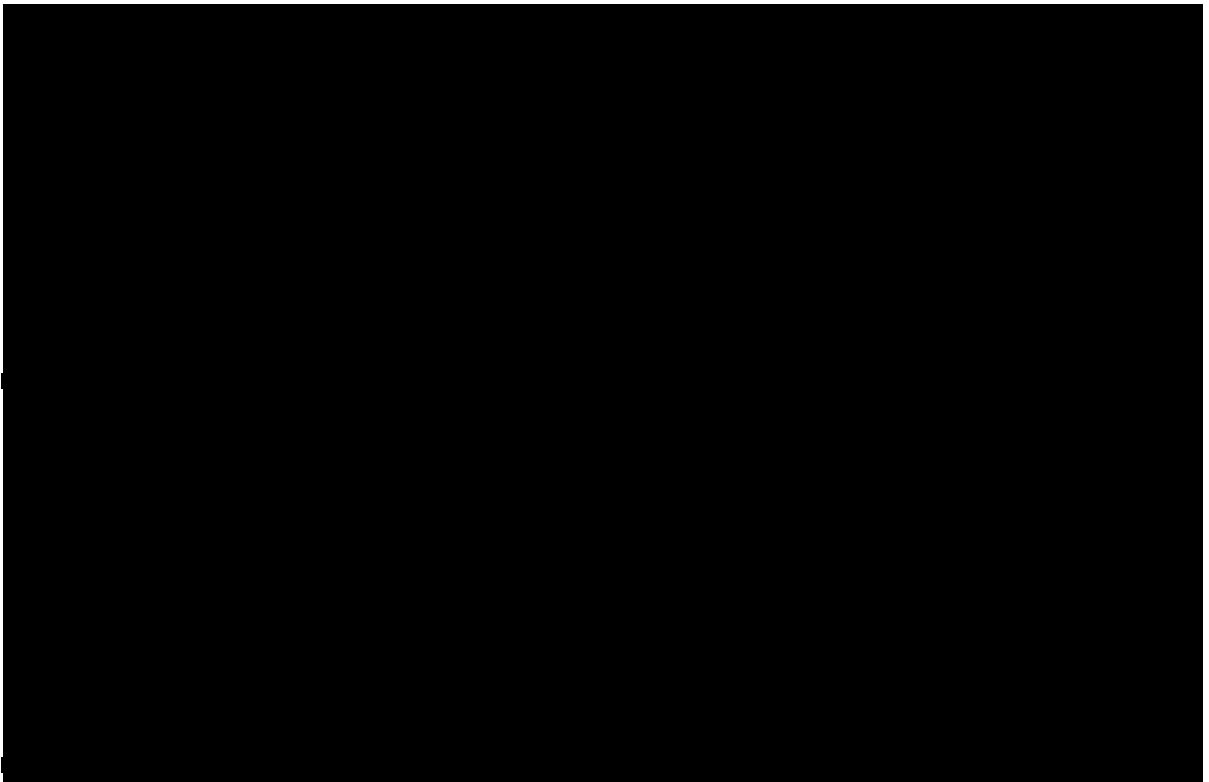
² Direct Testimony of Wm. Edward Blunk. KCC Docket No. 11-KCPE-581-PRE. Pages 6-12.

1 alone, it would be in KCP&L's best interest to utilize the most up to date forecasts
2 of natural gas price.

3 Also, expectations about the price of natural gas, and all of the factors that
4 underlie a price forecast, differ at different dates and by different forecasting
5 entities. The averaging of forecasts, while a perfectly acceptable methodology in
6 theory, only works in practice if the forecasts that are being averaged were
7 developed during a similar time period and thus reflect similar expectations about
8 the future. During 2011 in particular, the United States natural gas market was
9 undergoing a significant structural change due to the development of hydraulic
10 fracturing ("fracking") technologies that allowed gas producers to extract supplies
11 that were previously thought to be unavailable. This boom in natural gas caused
12 price forecasts to get progressively lower during 2011 and 2012. Thus, inclusion
13 of the EVA natural gas price forecast, which Mr. Blunk states was released one
14 month before the composite forecast was prepared, does not in fact mitigate the
15 issue that the AEO forecast used in the composite was 13 months out of date. In
16 fact, in light of the growing awareness that fracking was causing a structural shift
17 in the natural gas industry, the use of underlying forecasts in KCP&L's composite
18 that did not reflect this gas boom was imprudent.

19 **Q. Do you have any evidence to support your opinion?**

20 A. Yes. KCP&L provided the four underlying natural gas price forecasts that
21 compose the composite forecast used in its analysis of the La Cygne retrofits. I
22 have modified a graph of the individual forecasts that was provided in KCP&L's
23 response to data request SC-36 to include the date of the forecast. That graph is
24 shown in Confidential Figure 1.



Confidential Figure 1. Individual Natural Gas Price Forecasts Composing KCP&L's Composite Forecast.

Confidential Figure 1 shows that **

_____.³ If KCP&L had included more up to date forecasts when creating the composite used in its 2011 Advance Determination of Prudence filing, the resulting composite gas price forecast would have been lower than the one that was used in the analysis of the La Cygne retrofits, and the outcome of that analysis would likely have been different.

³ Direct Testimony of Rachel Wilson. MPSC Case No. ER-2014-0370. April 2, 2015. Page 23, Confidential Figure 2.

1 Mr. Blunk states in his rebuttal testimony that “[t]he composite forecast is
2 updated whenever one of the panel forecasts is updated,”⁴ which means that while
3 the prudence determination docket in Kansas was underway, the Company’s
4 composite forecast should have been updated to include the latest EIA forecast,
5 which was AEO 2011, released in April 2011. KCP&L filed its predetermination
6 case in Kansas on February 23, 2011, and the Company did not update its
7 composite natural gas price forecast before a decision was issued by the KCC on
8 August 19, 2011. Given the circumstances, the fact that KCP&L failed to update
9 its forecast while the Kansas docket was ongoing was imprudent.

10 **Q. Mr. Blunk states that the AEO 2014 natural gas price forecast that appears**
11 **in your testimony was out of date at the time of filing.⁵ Do you agree with his**
12 **assessment?**

13 A. No. First, Mr. Blunk’s assertion is misleading, as the timing of the AEO 2014
14 forecast is irrelevant to the point I made in my direct testimony. I presented the
15 subsequent AEO forecasts and recent gas prices as evidence that gas prices and
16 forward prices have been falling steadily, well below what KCP&L’s 2011 Mid
17 gas price forecast projected. This is particularly significant because KCP&L’s net
18 present value of revenue requirements (NPVRR) analysis in the 2011 Kansas
19 docket heavily relied on the Company’s Mid gas price forecast, incorporating it
20 into more than **_____** of the scenarios making up the weighted average
21 NPVRR value calculated for each resource plan.^{6,7}

⁴ Rebuttal Testimony of Wm. Edward Blunk. MPSC Case No. ER-2014-0370. May 7, 2015. Page 3, lines 19-20.

⁵ Rebuttal Testimony of Wm. Edward Blunk. MPSC Case No. ER-2014-0370. May 7, 2015. Page 7, lines 1-4.

⁶ Derived from QSC-9 – HC – Decision Tree Filed Case.xls.

⁷ For each of its resource plans, KCP&L analyzed 64 risk scenarios, which were developed to weigh the risk associated with specific uncertain variables. These variables included natural gas prices, coal prices, load growth, construction costs, financing costs, and carbon dioxide (“CO₂”) emission allowance prices. Direct Testimony of Burton L. Crawford. KCC Docket No. 11-KCPE-581-PRE. February 1, 2011. Page 5, lines 10-11. KCP&L applied a weighting to each of the 64 risk scenarios, and then calculated a single weighted average NPVRR value for each of its 18 resource plans.

1 Secondly, as acknowledged by Mr. Blunk,⁸ my direct testimony was filed on
2 April 2, 2015. AEO 2015 was released on April 14, 2015, which was twelve days
3 after my testimony was filed. AEO 2014 therefore represented the most up-to-date
4 forecast from the EIA at the time my direct testimony was filed, and it was also
5 the only forecast used by KCP&L that is available to the public.

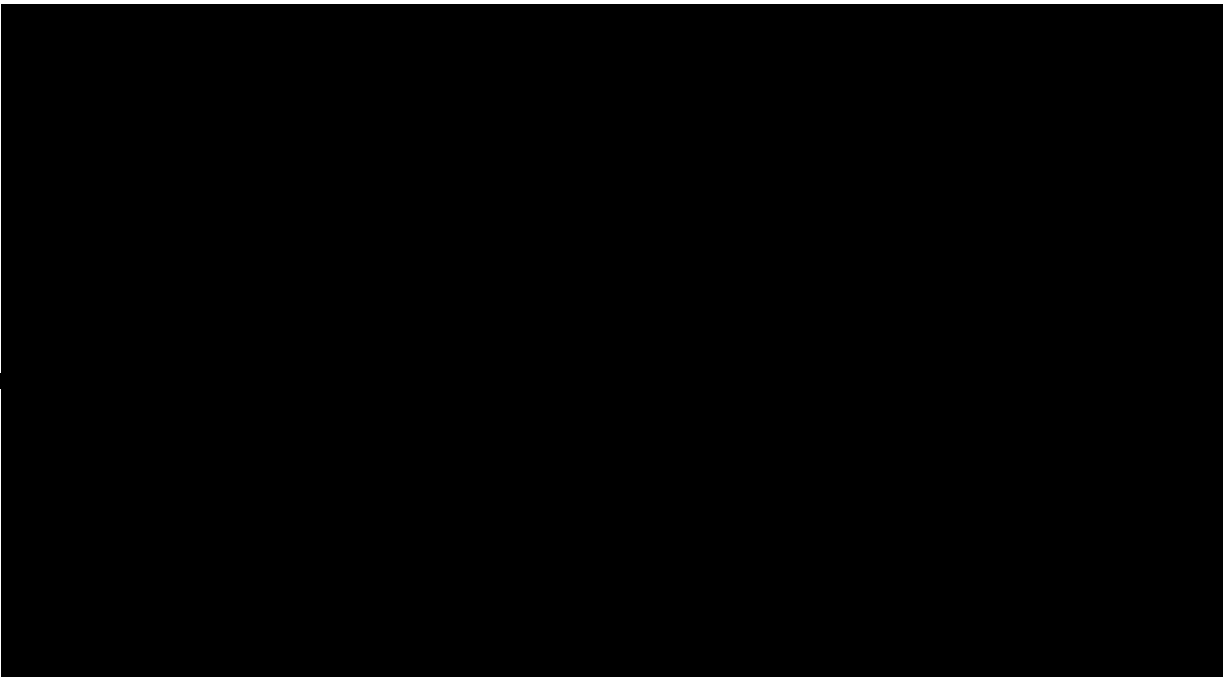
6 Now that AEO 2015 has been released, I am able to update Confidential Figure 5
7 from page 30 of my direct testimony, as KCP&L should have done for its own
8 analysis once new data was made available.

9 Confidential Figure 2, below, shows KCP&L's Mid and Low natural gas price
10 forecasts along with forecasts from AEO 2012, 2013, 2014 and 2015.

11 Confidential Figure 2 shows that **
12 _____
13 _____
14 _____ **.

15

⁸ Rebuttal Testimony of Wm. Edward Blunk. MPSC Case No. ER-2014-0370. May 7, 2015. Page 7, lines 2-4.



Confidential Figure 2. KCP&L Natural Gas Price Forecast Used in Kansas Docket 11-KCPE-581-PRE Compared to AEO 2012, 2013, 2014 and 2015.

Q. Mr. Blunk states that your exclusive use of the EIA’s AEO for natural gas price forecasts was biased.⁹ Do you agree with his assessment?

A. No, I do not. First, my testimony points exclusively to EIA’s forecasts of natural gas prices contained in the annual AEO documents because this is the only forecast forming part of KCP&L’s composite forecast that is publicly available. The other natural gas price forecasts used by KCP&L require an expensive one-time purchase or subscription service.

Second, Mr. Blunk states that my use of the AEO was biased because the AEO 2014 forecast does not include the implementation of the Clean Power Plan.¹⁰

This is irrelevant. My direct testimony discusses those facts that KCP&L should have been aware of in 2011, in the months leading up to the Company’s request

⁹ Rebuttal Testimony of Wm. Edward Blunk. MPSC Case No. ER-2014-0370. May 7, 2015. Page 8, lines 1-12.

¹⁰ Rebuttal Testimony of Wm. Edward Blunk. MPSC Case No. ER-2014-0370. May 7, 2015. Page 8, lines 1-12.

1 for predetermination in Kansas, while that proceeding was pending, and in the
2 months following the Kansas predetermination, at a time when the Clean Power
3 Plan had not yet been contemplated. My use of the AEO natural gas price
4 forecasts from 2013 and 2014 was intended to illustrate the point that forecasts of
5 natural gas prices continued to remain lower than KCP&L's Mid Price forecast
6 from the 2011 Kansas docket well into the future.

7 As I stated in my direct testimony, the Company began to spend money on the
8 retrofits in **_____**. ¹¹ In response to discovery, KCP&L provided fuel
9 price forecasts from October 18, 2011 in which the gas price forecast was already,
10 on average, **_____** lower than the gas price forecast used in the
11 February 2011 analysis. ¹² Regardless of the Company's compositing
12 methodology, or Mr. Blunk's *post-hoc* explanations of why it was acceptable that
13 component forecasts within the Company's composite were out of date, an up-to-
14 date version of the Company's composite forecast would have been markedly
15 lower by the time construction started, and the composite forecast would have
16 fallen even further had it been updated in January 2012 with the Early Release of
17 AEO 2012.

18 **2. RESPONSE TO BURTON CRAWFORD – KCP&L**

19 **Q. Mr. Crawford states that KCP&L re-evaluated its analysis of the La Cygne**
20 **retrofits in 2012, 2013, 2014 and 2015 as part of its IRP process. ¹³ Do you**
21 **believe that is sufficient?**

22 No, I do not. Among other things, KCP&L was subject to similar criticisms in the
23 IRP dockets that I make here: the Company's natural gas price forecasts were out
24 of date and the resource options included in its portfolio were unduly limited. ¹⁴

¹¹ Direct Testimony of Rachel Wilson. MPSC Case No. ER-2014-0370. April 2, 2015. Page 27, lines 24-26.

¹² QSC-10 – HC – 2012 LT Fuel Price Forecast 20111018_Base.

¹³ Rebuttal Testimony of Burton L. Crawford. MPSC Case No. ER-2014-0370. May 7, 2015. Page 7, lines 11-16.

1 **Q. Mr. Crawford argues that many of the coal units across the country with**
2 **plans to retire are small units, and that there are few units with plans to**
3 **retire that are similar in size to La Cygne.¹⁵ Does this indicate that larger**
4 **units are more economic?**

5 A. No, it does not. Mr. Crawford is correct that many of the coal-fired units that will
6 be retired are 250 MW or less. Many of these units are much older and lack the
7 pollution controls required to comply with new emission regulations. The cost of
8 installing these controls to bring these units into compliance is often more costly
9 than retiring the units outright. Many of the larger coal units in the United States
10 were constructed more recently, and were built with certain pollution controls or
11 were retrofit with these controls in order to comply with the Clean Air Act
12 Amendments of 1990. The larger units that have announced retirement are those
13 that would require significant investment to retrofit in order to comply with
14 EPA's latest emission regulations. The La Cygne retrofits, at a cost of \$1.23
15 billion, fall into this latter category.

16 **Q. Mr. Crawford states that the break-even point for the La Cygne retrofits is**
17 **\$400 million, meaning that the costs of the retrofits would have had to**
18 **increase by that amount for the total NPVRR of the plan that retires both**
19 **units to break-even with the plan that retrofits La Cygne.¹⁶ Please respond.**

20 Mr. Crawford's \$400M figure, albeit seemingly compelling, is a distraction—the
21 metric that matters is the difference in the NPVRR values under the correct set of
22 input assumptions. Because KCP&L failed to use reasonable natural gas price
23 assumptions, the break-even analysis was fundamentally flawed.

24 The calculation of NPVRR takes into account both the capital costs of any new
25 technologies to be installed as well as the costs of operating the power plants in
26 the analysis over a given number of years. These costs of operation include fixed

¹⁴ Comments of Sierra Club. MSPC Case No. EO-2012-0323. Pages 7-10 and 13.

¹⁵ Rebuttal Testimony of Burton L. Crawford. MPSC Case No. ER-2014-0370. May 7, 2015. Page 8, lines 13-18.

¹⁶ Rebuttal Testimony of Burton Crawford. MPSC Case No. ER-2014-0370. May 7, 2015. Page 5, lines 1-14.

1 and variable O&M costs, of which fuel makes up a significant portion. In an
2 NPVRR calculation, the capital and operating costs are calculated in each future
3 year and discounted back to present day dollars. Because it considers both the
4 capital and operating costs of KCP&L's entire fleet, as well as the different values
5 placed on dollars today and in the future, the NPVRR values are the ones that
6 should be considered.

7 Mr. Crawford's break-even calculation is not particularly useful in this context. In
8 my direct testimony, I argue that the natural gas price forecast used in KCP&L's
9 analysis in the 2011 Kansas docket was too high, and that the use of a lower
10 natural gas price forecast that reflected the conditions that were present at the time
11 would have changed the results. If Mr. Crawford's analysis had used an updated,
12 lower natural gas price forecast, the operating costs under the scenario in which
13 La Cygne is retired and replaced with a combined-cycle unit would have been
14 much lower, and resulting NPVRRs of the retrofit and retire plans would have
15 favored retirement of the La Cygne units. The proper way to evaluate the
16 prudence of KCP&L's decision to move forward with the retrofits is to examine
17 the resulting NPVRR values of the resource plans after the incorporation of a
18 natural gas price forecast that reflects the conditions that were present at the time.

19 **3. RESPONSE TO FORREST ARCHIBALD – KCP&L**

20 **Q. Mr. Archibald's rebuttal testimony describes the level of costs that were**
21 **already committed by KCP&L for the La Cygne retrofits as of January 2012.**
22 **Do you disagree with him?**

23 **A.** I have not yet seen any documentation that supports Mr. Archibald's calculations.
24 Mr. Archibald's rebuttal testimony presents a value of **_____** as the
25 value of the long-lead time engineered equipment that had been purchased
26 through subcontracts, which he asserts represents the bare minimum estimate of
27 cancellation costs had the contract for the retrofits been cancelled as of January

1 2012.¹⁷ The Company has not provided adequate support for this value, and thus I
2 cannot evaluate this value's accuracy. Moreover, and contrary to Mr. Archibald's
3 rebuttal testimony, KCP&L's response to discovery request SC-42 seems to
4 indicate that the ** _____ ** is the value—not of the “long-lead time
5 engineered equipment”—but of the items listed on page 5, line 13 through page 6,
6 line 7 of Mr. Archibald's rebuttal testimony.¹⁸ ** _____
7 _____
8 _____

9 _____ **. ¹⁹ These items do not seem
10 representative of items properly characterized as “long-lead time engineered
11 equipment.”

12 **Q. Is Mr. Archibald correct in his assessment of your testimony?**

13 A. No, I believe that Mr. Archibald misrepresents my direct testimony in his rebuttal
14 testimony, suggesting that the date at which KCP&L should have cancelled its
15 plans to retrofit the La Cygne units was January 2012. However, on page 5, I state
16 that KCP&L should have re-evaluated its decision to retrofit La Cygne 1 and 2 in
17 April 2011, before any money had been spent on the retrofits.

18 Given the conditions in the electric sector in 2011 and the Company's own
19 assertions that the La Cygne retrofits would be uneconomic under low natural gas
20 price scenarios, it would have been prudent for KCP&L to have watched price
21 forecasts and industry trends very carefully during that time. The Company's
22 apparent failure to do so and failure to re-evaluate its retrofit analysis during 2011
23 was imprudent. Finally, assuming the accuracy of the ** _____ ** value, it
24 was also imprudent of KCP&L to enter into a contract with La Cygne

¹⁷ Rebuttal Testimony of Forrest Archibald. MPSC Case No. ER-2014-0370. May 7, 2015. Page 6, lines 14-20.

¹⁸ QSC-42 – HC – Contract Cancellation

¹⁹ Rebuttal Testimony of Forrest Archibald. MPSC Case No. ER-2014-0370. May 7, 2015. Page 5, line 13 through page 6, line 7.

1 Environmental Partners (LEP) and related subcontracts with such high apparent
2 cancellation penalties when the economics of the retrofit analysis were highly
3 questionable.

4 **4. CONCLUSIONS AND RECOMMENDATIONS**

5 **Q. Please summarize your conclusions.**

6 A. After review of KCP&L's rebuttal testimony in this proceeding, I maintain my
7 original conclusion that KCP&L's original analysis submitted in Kansas Docket
8 No. 11-KCPE-581-PRE in February 2011 was not prudent. KCP&L should have
9 revisited that analysis as early as April 2011 with the release of new gas price
10 forecast information contained in AEO 2011. If the Company had updated its
11 NPVRR analysis with a new natural gas forecast at that time, it would have found
12 that the environmental retrofits at La Cygne Units 1 and 2 were no longer the
13 least-cost plan.

14 It is therefore still my recommendation that this Commission should deny rate
15 recovery for some or all of the capital costs associated with the environmental
16 retrofit projects at La Cygne Units 1 and 2.

17 **Q. Does this conclude your surrebuttal testimony?**

18 A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Kansas City Power & Light)
Company's Request for Authority to Implement a) Case No. ER-2014-0370
General Rate Increase for Electric Service)

AFFIDAVIT OF RACHEL S. WILSON

County of Middlesex)
) ss
State of Massachusetts)

I, Rachel S. Wilson, of lawful age and being duly sworn, state and affirm the following: that the foregoing prepared testimony in question and answer format constitutes my Surrebuttal Testimony in the above-captioned proceeding; that the answers set forth therein were given by me and that I have knowledge of the matters set forth in such answers; and that the answers contained therein are true and correct to the best of my information, knowledge, and belief.


Rachel S. Wilson

SUBSCRIBED AND SWORN before me this ____ day of June, 2015.


Notary Public

My commission expires:

JURAT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

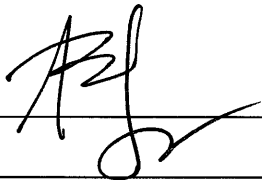
State of California

County of Los Angeles

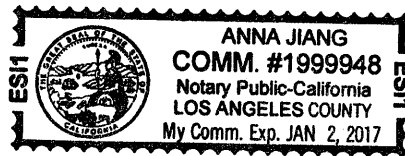
Subscribed and sworn to (or affirmed) before me on this 5 day of June,
2015 by Rachel S. Wilson

proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Signature



(Seal)



OPTIONAL INFORMATION

DESCRIPTION OF THE ATTACHED DOCUMENT

Affidavit of Rachel
(Title or description of attached document)

S. Wilson
(Title or description of attached document continued)

Number of Pages 1 Document Date NA

Additional information

INSTRUCTIONS

The wording of all Jurats completed in California after January 1, 2015 must be in the form as set forth within this Jurat. There are no exceptions. If a Jurat to be completed does not follow this form, the notary must correct the verbiage by using a jurat stamp containing the correct wording or attaching a separate jurat form such as this one which does contain the proper wording. In addition, the notary must require an oath or affirmation from the document signer regarding the truthfulness of the contents of the document. The document must be signed AFTER the oath or affirmation. If the document was previously signed, it must be re-signed in front of the notary public during the jurat process.

- State and county information must be the state and county where the document signer(s) personally appeared before the notary public.
- Date of notarization must be the date the signer(s) personally appeared which must also be the same date the jurat process is completed.
- Print the name(s) of the document signer(s) who personally appear at the time of notarization.
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 - ❖ Additional information is not required but could help to ensure this jurat is not misused or attached to a different document.
 - ❖ Indicate title or type of attached document, number of pages and date.
- Securely attach this document to the signed document with a staple.