

DECLARATION OF MARK SCHAAF

I, Mark Schaaf declare:

1. I am a Principal at Air Sciences Inc., a consultant hired by the City of Los Angeles acting by and through its Department of Water and Power ("LADWP"), to assist with air quality issues on Owens Lake. The following facts are of my own personal knowledge and, except as stated otherwise, if called as a witness, I could and would testify competently thereto

2. I have been a consultant with Air Sciences Inc., since 1999, and have over 30 years of combined environmental and air quality experience, including experience in dispersion modeling, visibility modeling, emission inventories, monitoring, permitting, engineering services, and air quality impact assessment. I have worked on air quality issues at Owens Lake since 1997.

3. Attached hereto as Exhibit 1 is a satellite image depicting the Keeler Dunes and surrounding area following the flash-flooding event that occurred on September 12, 2012. A larger poster-sized copy of Exhibit 1 will be exhibited and submitted to the Great Basin Unified Air Pollution Control District ("District") at the December 13, 2012, hearing on staff's proposed resolution regarding the Origins and Development of the Keeler Dunes.

4. The underlying satellite image reflected in Exhibit 1 was originally captured on September 14, 2012, by the Pleiades-1A satellite sensor operated by the GEO-Information division of Astrium Services. Pleiades-1A is a high-resolution imaging system that collects (4) 2.0m multispectral bands (blue, green, red, near-infrared) and (1) 0.5m panchromatic band. This image was purchased from the National Agriculture Imagery Program ("NAIP"), which is a program administered by the United States Department of Agriculture's Farm Service Agency that acquires aerial imagery during the agricultural growing seasons in the continental United States for use by governmental agencies and the public.

5. Once obtained from NAIP, the original underlying satellite image shown in Exhibit 1 underwent a detailed flash-flood imagery analysis. First, the satellite image was orthorectified. Orthorectification is a process that corrects imagery geometrically to specifically remove geometric distortions introduced by terrain variation. The ortho-corrected image was then subjected to a conversion process whereby the standard digital number value of the image

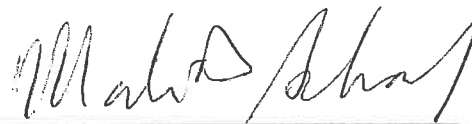
1 was converted from a "raw digital number" to a reflectance value using vendor/sensor-specific
2 conversion formulas that are based on sensor radiance characteristics as well as seasonality (*i.e.*,
3 the time of year the data was collected).

4 6. Following the completion of this conversion process, the reflectance imagery was
5 segmented into a hierarchy of object-based polygons levels. Pixel to object conversion is
6 performed using a seed-growing segmentation algorithm which delineates geographic areas based
7 on contiguous homogeneous regions. Object-based analysis considers the spectral, textural,
8 geometric, and contextual characteristics of the objects, or homogeneous areas. In this step of the
9 analysis, the flash-flood affected areas were identified and extracted based on a combination of
10 spectral (crust surface indices), geometric (shape index and linearity), and textural (GLCM)
11 calculations. The object-based segmentation levels were statistically compared to pre-flood
12 imagery throughout the analysis process, including the July 7, 2012, GeoEye1 high-resolution
13 imagery which contains nearly identical specifications as the Pleiades 1-A sensor, to identify any
14 significant changes.

15 7. The resulting image was then overlaid on the NAIP2010 photography using the
16 same projection, namely UTM Zone 11, NAD83 Meters.

17 8. The results of this extensive flash-flood imagery analysis are reflected on the
18 overlays shown on Exhibit 1.

19 I declare under penalty of perjury under the laws of the United States of America and the
20 State of California that the foregoing is true and correct. Executed this 12th day of December,
21 2012, in Irvine, California.

22 

23 _____
24 Mark Schaaf

EXHIBIT 1