Tom Brohard and Associates

February 16, 2017

W.A.T.E.R.
P.O. Box 873
Mt. Shasta, California 96067

SUBJECT: Review of Draft Environmental Impact Report for the Proposed Crystal Geyser Bottling Plant Project in Siskiyou County - Transportation and Traffic Comments

Dear Sir or Madam:

As authorized by We Advocate Thorough Environmental Review (W.A.T.E.R.), I have reviewed the January 2017 Draft Environmental Impact Report (DEIR) prepared by Analytical Environmental Services for the Proposed Crystal Geyser Bottling Plant Project (Project) in Siskiyou County. My review has focused on Section 4.11 of the DEIR, Transportation and Circulation. I have also reviewed various other sections of the DEIR including Section 3.0 (Project Description) and Appendix U, the November 5, 2016 Transportation Impact Analysis (Traffic Report) prepared by Abrams Associates.

Education and Experience

Since receiving a Bachelor of Science in Engineering from Duke University in Durham, North Carolina in 1969, I have gained over 45 years of professional engineering experience. I am licensed as a Professional Civil Engineer both in California and Hawaii and as a Professional Traffic Engineer in California. I formed Tom Brohard and Associates in 2000 and now serve as the City Traffic Engineer for the City of Indio and as Consulting Transportation Engineer for the Cities of Big Bear Lake and San Fernando. I have extensive experience in traffic engineering and transportation planning. During my career in both the public and private sectors, I have reviewed numerous environmental documents and traffic studies for various projects. Several recent assignments are highlighted in the enclosed resume.

P28-1

DEIR and Traffic Report Are Fatally Flawed

As detailed throughout this letter, the DEIR and the Traffic Report for the Crystal Geyser Bottling Plant Project are fatally flawed. Numerous conflicts and inconsistencies between the DEIR and the Traffic Report exist. Many errors in methodology must be corrected to provide proper bases for analyses of the Project. Comments and conclusions throughout the documents are not supported by facts or by proper analyses. After correcting the flaws, significant impacts must then be disclosed and addressed by the development of appropriate and enforceable mitigation measures. Each of the following items requires correction followed by subsequent recirculation of the DEIR for the Project.

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W.A.T.E.R.
Crystal Geyser Bottling Plant DEIR – Transportation/Circulation Comments
February 16, 2017

1) Truck Trip Generation - The 100 daily truck trips shown in Table 4.11-4 of the DEIR do not come from any forecasts of truck trips published by ITE. For General Light Industrial uses, Trip Generation Manual, 9th Edition provides vehicle trip rates based on the number of employees and the square footage of the building but it does not provide truck trip rates for the General Light Industrial category. The DEIR must provide source data to support the assumption of 100 daily truck trips as well as a breakdown into two-axle, three-axle, four-axle, and five-axle truck forecasts.

   Truck trips have not been properly converted to passenger car equivalent (PCE) trips in the analyses of traffic impacts. The source footnote to Table 4.11-4 indicating "Truck trips were converted to passenger car equivalents by multiplying them by a factor of 1.5 - ITE 2012" refers to the Trip Generation Manual, 9th Edition. This ITE publication does **NOT** contain passenger car equivalent factors for Land Use 110, General Light Industrial, or for any other land use. The DEIR must disclose the source for converting truck trips to passenger car equivalents and then properly analyze them.

   The PCE factor of 1.5 shown in Table 4.11-4 for all project truck trips only represents two-axle (single unit) trucks. Other typical factors include a PCE of 2.0 for a three-axle (single unit) truck, a PCE of 2.5 for a four-axle combination truck (cab and trailer), and a PCE of at least 3.0 for a five-axle truck (cab and trailer). The DEIR must forecast the number of trucks by axle and calculate the significantly higher number of passenger car equivalents to correctly analyze potentially significant traffic impacts of the Project. P28-2

2) Passenger Car Equivalents – Truck trips made by tractors pulling 53-foot long trailers loaded with water are heavy five-axle trucks and must be factored up using at least 3.0 passenger car equivalents to properly analyze the Project traffic impacts. Page 3-11 of the DEIR identifies 11 truck bays and 17 truck parking spaces for five-axle trucks, and none for two-axle light duty trucks. Pictures of trucks at the loading docks at the existing Crystal Geyser plant in Olancha disclose five-axle heavy duty trucks with each equivalent to at least 3.0 passenger cars, not two-axle single unit trucks equivalent to 1.5 passenger cars (see enclosure).

   In other parts of the DEIR, Page 4.10-26 in the Noise and Vibration Section of the DEIR states "The Proposed Project would generate 100 daily heavy duty truck trips." Page 4.10-27 then states "The Proposed Project is expected to generate 50 heavy truck loads per day (100 trips), with approximately 15 semi-trailer truck movements during the peak hour..." These statements, together with those in the Traffic Report and those in Chapter 4.11 regarding Transportation and Circulation, indicate that the Project will generate 100 heavy truck trips (five-axle trucks) per day.

Many agencies in California require the use of higher PCE factors. For example, enclosed Appendix C to the San Bernardino County CMP, 2005 Update ("Guidelines for CMP Traffic Impact Analysis Reports in San Bernardino County") which is used by all agencies in San Bernardino County requires a PCE of 3.0 for all heavy-duty trucks that have 4 axles or more.

By using a PCE of only 1.5, the passenger car equivalent volumes of the large trucks associated with the Project have been underestimated by at least 100 percent. Increasing the PCE to 3.0 is required to properly analyze the equivalent passenger car traffic volume forecasts for the Project so that all significant traffic impacts can be properly identified and analyzed, enabling feasible mitigation measures to then be developed.

P28-2 (Cont.)

3) Trip Distribution – Employee trips are forecast to arrive and depart from all directions but truck trips are forecast to only arrive from and depart to the north. While the DEIR indicates that signing will be provided to direct truck traffic accordingly, some trucks will likely end up on the streets through downtown and in residential neighborhoods unless other measures such as weight limits and truck routes are implemented, together with dedicated enforcement against trucks found off the designated routes. If a truck gets lost, there are no readily available areas to turn around.

P28-3

Figures must be provided to show the percentages and corresponding number of project trips associated with employees, with trucks, and with passenger car equivalents. Volumes must flow from intersection to intersection. Graphics illustrating the traffic volumes for daily and peak hour trips are required by the December 2002 Guide to the Preparation of Traffic Impact Studies published by Caltrans. The DEIR must provide figures demonstrating and documenting these volumes in the traffic analysis.

4) Traffic Impacts in Winter – The DEIR and the Traffic Report do not consider or properly evaluate project traffic impacts caused by snow and ice on roadway segments and intersections. As the Contract City Traffic Engineer for the City of Big Bear Lake in Southern California and in accordance with City Policy, all traffic impact studies for proposed development projects must analyze both summer and winter roadway conditions. To account for winter conditions, the background traffic volumes are typically increased by 15% and the traffic flow rates are decreased by 10%. To properly analyze the proposed Crystal Geyser Bottling Plant Project during winter conditions, these or similar adjustments must be made, evaluated, and mitigated in a separate scenario in the Traffic Report and the DEIR.

P28-4

5) Truck Traffic Access Driveway – Page 4.11-17 of the DEIR indicates that all truck traffic will be required to use the Mt. Shasta Boulevard driveway

P28-5

according to the Traffic Report. Installation of a guide sign alone will not insure that this will actually occur.

The DEIR states the Traffic Report has evaluated conditions along the truck access driveway and there will be no issues or problems. However, the Traffic Report does not contain any analysis whatsoever of the Project truck driveway, CGWC Drive. The roadway has several horizontal curves as well as an incline. Empty trucks have difficulty gaining traction in snow and ice conditions without the weight of their loads, causing these trucks to get stuck. The suitability of this driveway to provide a suitable, accessible secondary emergency access has not been evaluated.

Critical information including stopping sight distance for vehicles entering and exiting the driveway has not been provided, verified, or analyzed for the prevailing speeds on Mt. Shasta Boulevard. With all truck traffic to and from the north, there is a need for the widening of the Mt. Shasta Boulevard roadway to install a southbound left turn lane so that trucks do not block the single southbound through traffic lane while waiting for northbound traffic to pass before entering the driveway. The truck traffic impacts on the existing Class 2 Bicycle Lanes must also be evaluated.

P28-5 (Cont.)

Table 5 on Page 13 of the Traffic Report indicates the Existing and the Existing plus Project analyses at Intersection #4, Mt. Shasta Boulevard at the Project Truck Access also known as CGWC Drive, have the same delay values at the Project Truck driveway. In the AM peak hour, the LOS is shown as "B" and the LOS is "A" when project traffic is added. Adding project trips cannot improve the LOS. Table 7 on Page 18 of the Traffic Report contains the same types of errors.

6) Employee Access – Vehicle access for employees is planned to occur through the driveway on Ski Village Drive at the Project. No analysis has been provided of this location where stopping sight distance of only about 300 feet to the west exists or of the possible need for left and right turn lanes. In addition, the stopping sight distance for southbound traffic on Mt. Shasta Boulevard at Ski Village Drive, about 400 feet, must also be evaluated for stopping sight distance and the possible need for left and right turn lanes since a number of Project employees will use this intersection as well.

P28-6

7) Traffic Signal Warrant Sheets – Page 4.11-17 of the DEIR indicates no traffic signal warrants are met at any of the five study intersections. However, the Traffic Report does not provide any of the required analysis (warrant sheets) or evidence to support these conclusions. Without a complete analysis including the completion of traffic signal warrant sheets, the DEIR and the Traffic Report cannot conclude that none of the traffic signal criteria are met.

P28-7

8) Spring Hill Drive/Mt. Shasta Boulevard/I-5 Ramps – Page 4.11-17 of the DEIR indicates that the intersection meets requirements for minimum stopping sight distance and is "not considered hazardous" for speeds of 45 or 55 MPH. The Traffic Report did not measure or document prevailing traffic speeds at this location. Without actual speed measurements, the DEIR incorrectly assumes that speeds of 45 or 55 MPH are the appropriate speeds to be evaluated.

Mt. Shasta Boulevard is an extension of the southbound I-5 Freeway which has a posted 65 MPH speed limit. The I-5 off-ramp has a posted 50 MPH advisory speed when the ramp leaves the I-5 Freeway mainline about 2,000 feet north of Spring Hill Drive. On both sides of Spring Hill Drive, the Mt. Shasta Boulevard roadway also has a slight downgrade from north to south which increases the distance required for stopping even further. Speeds on Mt. Shasta Drive near Spring Hill Drive of at least 60 MPH must be evaluated since design speeds are at least 10 MPH higher than posted speeds.

According to A Policy on Geometric Design of Highways and Streets published by the American Association of State Highway and Transportation Officials (AASHTO), Table 9-8 on Page 9-41 indicates that intersection sight distance of 575 feet must be used for a design speed of 60 MPH. By assuming design speeds of only 45 or 55 MPH, the DEIR has incorrectly assumed that only 430 or 530 feet of stopping sight distance is required, less than the requirements of AASHTO for an appropriate design speed. P28-8

For a proper evaluation of traffic safety at the intersection of Spring Hill Drive/Mt. Shasta Boulevard/I-5 Ramps, the prior collision history of the intersection must be evaluated. The Traffic Report did not review reported traffic collisions but it concluded, without any data or analysis, that the intersection is safe. To the contrary, Google Earth driver's eye photography shows lengthy dual tire locked wheel skids approaching the intersection (see enclose photo).

Recommendations are made in the Traffic Report to trim landscaping and to relocate a guide sign for better stopping sight distance, but those are not carried forward into the DEIR. Trimming landscaping is only temporary in nature and must be periodically repeated to maintain appropriate stopping sight distance. Instead, it would be much more effective to physically remove the interfering landscaping.

The Traffic Report and the DEIR have not properly evaluated traffic safety at the intersection of Spring Hill Drive/Mt. Shasta Boulevard/I-5 Ramps and have failed to consider the impacts of Project truck traffic at this intersection. The City of Mt. Shasta also has indicated in their February 13, 2017 letter that the safety assessment in the DEIR of this intersection "... is insufficient and does not properly consider the safety hazard of southbound vehicles exiting

Interstate 5." Additional study and the development of necessary mitigation measures at this location are required. P28-8 (Cont.)

9) Errors in Calculations and in Tables – Various tables and calculations do not match up internally within the Traffic Report itself or between the Traffic Report and the DEIR as follows:

   a. No calculations appear in the Traffic Report Appendix for Intersection #5 (Everitt Memorial Highway and Ski Village Drive) for Existing conditions in the AM peak hour.

   b. Existing AM plus Project calculations in the Appendix for Intersection #4 (Mt. Shasta Boulevard at the Project truck access) do not match up with Table 5 in the Traffic Report.

   c. Existing PM plus Project calculations in the Appendix for Intersection #4 (Mt. Shasta Boulevard at the Project truck access) do not match up with Table 5 in the Traffic Report. P28-9

   d. Cumulative AM plus Project calculations in the Appendix for Intersection #4 (Mt. Shasta Boulevard at the Project truck access) do not match up with Table 7 in the Traffic Report.

   e. Cumulative PM plus Project calculations in the Appendix for Intersection #4 (Mt. Shasta Boulevard at the Project truck access) do not match up with Table 7 in the Traffic Report.

10) Traffic Control Plans – Page 4.11-13 of the DEIR notes that construction of pipelines could create temporary traffic impacts and that the preparation of work area traffic control plans would mitigate these impacts. Providing construction warning signs and other devices that are typically shown on Work Area Traffic Control Plans during pipeline construction cannot and do not mitigate traffic impacts. These impacts could likely be significant when traffic must be detoured off roadways that are under construction. Further, extreme care must be taken to avoid rerouting traffic through intersections and roadway segments that are not able to accommodate the diverted trips at LOS "C" or better in accordance with the City's requirements. P28-10

11) Impacts and Mitigation Measures – Page 23 of the Traffic Report lists several potential impacts that are not analyzed or mitigated as follows:

   a. TR-1 Bicycle and Pedestrian Impacts – While the Project could certainly create significant bicycle and pedestrian impacts, none are identified, analyzed, or mitigated. While there are pedestrian and bicycle crossings of Mt. Shasta Boulevard at Mt. Shasta City Park as P28-11

well as Class 2 bicycle lanes, no analyses of impacts on pedestrian and bicycle traffic has been conducted at this or any other locations.

b. TR-3 Construction Impacts – This measure discusses impacts of construction of the building housing the bottling plant which already exists. There is no discussion of impacts associated with pipelines which are a part of the Project that then appear in the Draft EIR with mitigation measures.

P28-11 (Cont.)

12) Forgotten Mitigation Measures – Important future intersection improvements identified in the Circulation Element of the City of Mt. Shasta General Plan as well as the need to mitigate damage caused by heavy Project truck trips have been omitted from discussion in the DEIR and the Traffic Report as follows:

a. Mt. Shasta Boulevard/Spring Hill Road/I5 Interchange – Page 4-10 states "There is need for improvement of this intersection and its relation to the North Mt. Shasta Boulevard interchange with Interstate 5. The current intersection will not be suitable to handle increased traffic related to the development of the Spring Hill Specific Plan Area."

b. Ski Village Drive/Mt. Shasta Boulevard Intersection – Page 4-10 states "Providing for a direct connection with Mt. Shasta Boulevard will improve the efficiency of this intersection."

Certainly, the Crystal Geyser Bottling Plant, with its traffic forecasts of trips through these locations, must be required to pay its "fair share" of traffic improvements at these locations.

P28-12

In addition, the heavy fully loaded five-axle truck trips to and from the Project will likely cause damage to City streets. An assessment of the streets and roads that will be used by Project truck trips must be made before the Crystal Geyser Bottling Plant begins operating. Periodic monitoring of these routes must then be made to identify and assess any damage caused by Crystal Geyser truck traffic, and the Project must be conditioned to repair damage caused by its trucks. Damage to City streets caused by large, heavy vehicles traveling to and from the Project as also requested by the City of Mt. Shasta in their February 13, 2017 letter must be analyzed further.

Numerous errors throughout the DEIR and in the Traffic Report for the Crystal Geyser Bottling Plant must be corrected to provide the bases for a proper analysis of the Project impacts and the development of enforceable mitigation measures. From my review of these documents, the Project will create significant traffic impacts that have not been properly disclosed, analyzed or mitigated through alternatives and/or traffic improvements. The errors identified in this

letter require that each of these issues be reanalyzed and reevaluated through additional study in a revised and recirculated DEIR and Traffic Report.

P28-12
(Cont.)

If you should have any questions regarding these findings, please contact me at your convenience.

Respectfully submitted,

Tom Brohard and Associates

Tom Brohard, PE
Principal

Enclosures