

# WELSH HAGEN ASSOCIATES

November 4, 2019  
File No.: Tahoe South Event Center

**Mr. Rob Brueck**  
**Hauge Brueck Associates**  
**901 Merced Avenue**  
**South Lake Tahoe, California 96150**

**Subject: Construction Dewatering Plan**  
**Tahoe South Event Center**  
**Douglas County, Nevada**

**References: Revised Technical Memorandum Regarding Groundwater Interception**  
**Tahoe South Event Center**  
**Douglas County, Nevada**  
**Welsh Hagen Associates**  
**September 30, 2019**

Dear Rob:

Per your request, this Construction Dewatering Plan presents the methodology for dewatering during construction activities. The Project will entail excavations of up to 25.5 feet across a distance of up to 250 feet as shown in Exhibit 1, Temporary Dewatering Plan.

It is proposed to initially construct four construction dewatering wells, Dewatering Well 1 through Dewatering Well 4 by excavating a test pit to depths of 15 to 23 feet to the following elevations:

<b>Construction Dewatering Well</b>	<b>Ground Elevation</b>	<b>Depth</b>	<b>Well Base Elevation</b>
Dewatering Well 1	6316	23	6293
Dewatering Well 2	6324	15	6309
Dewatering Well 3	6328	23	6305
Dewatering Well 4	6325	22	6303

Construction dewatering wells will be constructed as shown in Exhibit 1 by wrapping 12-inch diameter, Schedule 80 well screen with 0.010 inch perforations and end caps in Mirafi filter fabric, and placing to the base of each test pit. Drain rock consisting of  $\frac{3}{4}$  inch gravel will then be placed in each test pit to within 18 inches of ground surface. Top soil will then be placed to ground surface. The well casing will stick up two feet.

Each construction dewatering well will be tested by placing a 1 horsepower, 8-inch diameter sump pump in each well and pumping at a rate of up to 100 gallons per minute (gpm) for approximately one hour. Water levels will be monitored in the pumping well and adjacent non-pumping dewatering wells. This testing will allow evaluation of the dewatering rate necessary to dewater the excavation area.

The sump pump will be connected to a 2-inch diameter flex camlock force main which will discharge into a 4-inch diameter HDPE temporary dewatering line. This 4-inch diameter line will cross Lake Parkway and discharge into a 21,000 gallon Baker sedimentation tank with baffles for temporary storage.

Groundwater samples will be collected from each well, placed in laboratory-supplied bottles, stored on ice, submitted under chain of custody documentation to a Nevada-certified laboratory, and analyzed for Nevada Division of Environmental Protection (NDEP) Profile 1 water quality parameters. After groundwater sample results have been received, a temporary discharge permit application will be submitted to the NDEP for approval to discharge to the property north of Lake Parkway through a system of sprinklers and a dewatering waiver application will be prepared for submittal to the Nevada Division of Water Resources (NDWR).

The construction dewatering system will then be designed after testing to consist of cut-off trenches around the perimeter of the cut slope that are sloped to the north and northeast at inclinations of 2% from the area of Dewatering Well 2 to Dewatering Well 3 and then to Dewatering Well 4 as shown in Exhibit 1. Dewatering Well 1 will be utilized for construction dewatering of the loading dock area and Dewatering Well 4 will be utilized for dewatering of the cut slope as the cut-off trenches will transmit groundwater towards Dewatering Well 4.

Water will be pumped through the 4-inch discharge line to the Baker tank. After settlement in the Baker tank, water will be discharged using a transfer pump capable of pumping 200 gpm to a sprinkler system as shown in Exhibit 1. The sprinkler system was designed for a maximum flow rate of 200 gpm and an infiltration rate of 1 inch per hour. The sprinkler system will consist of 24 sprinkler heads each capable of discharging 8.3 gpm. Each sprinkler will cover a diameter of 30 feet. Straw wattles will be installed around the perimeter of the sprinkler system for BMP's.

Thank you for reviewing this Construction Dewatering Plan. If you have any questions, please call me at (775) 229-5011.

Respectfully Submitted,

#### **WELSH HAGEN ASSOCIATES**



David J. Herzog, C.E.G., C.E.M.  
Senior Engineering Geologist



David Hagen, P.E.  
Project Engineer

#### **Figures**

Exhibit 1, Temporary Dewatering Plan

## FIGURES