WATER SUPPLY ASSESSMENT

Lake Dolores Project
APN 0539-031-02

SAN BERNARDINO COUNTY, CALIFORNIA
(USGS Harvard Hill, CA Quad., Township 10 North, Range 3 East, Sections 20)

Owner/Applicant

G & GF Enterprise, LLC

Prepared by:

RCA Associates, Inc.
15555 Main Street, #D4-235
Hesperia, California 92345
Principal Investigators
Randall C. Arnold, Jr. & Parker Smith
(760) 596-0017
Report prepared by: Parker Smith

Project No: RCA# 2016-72WSA

March 2017
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EXECUTIVE SUMMARY

This Water Supply Assessment (WSA) has been prepared to assist the County of San Bernardino Land Use Services Department in satisfying the requirements of Senate Bill 610 (SB 610) (California Department of Water Resources) for the applicant, G & GF Enterprise, LLC for the project in Newberry Springs, unincorporated San Bernardino County, California. The intent of SB 610 is to strengthen the process by which local agencies determine the adequacy, sufficiency and quality of current and future water supplies in order to meet current and future demands.

SB 610 amended Water Code sections 10910 and 10912 to create a direct relationship between water supply and land use. SB 610 requires a Water Supply Assessment to be completed if; (A) if the proposed project contains at least 500 residential units, OR (B) if the project would increase the number of the public water system's existing service connections by 10%. In these cases, SB 610 requires showing that there is an adequate 20-year water supply for the project. The County of San Bernardino has determined the proposed project meets with the intent of Water Code Sections 10910 and 10912. Under SB 610, when groundwater is a source of supply, specific information relating to the groundwater basin must be incorporated in the WSA. The proposed Lake Dolores project is located within the Mojave Groundwater Basin.

San Bernardino County, as lead agency, must include the WSA in the project’s CEQA document and may also include an evaluation of the WSA. Finally, as the CEQA lead agency, the County must independently determine, “based on the entire record,” whether adequate water supplies exist to supply the project. The purpose of WSA is to be an informational document relied on by the CEQA lead agency in deciding whether to approve projects. In this way, a WSA is similar to other informational documents used to support the analysis of impacts in CEQA documents, such as traffic or biological resource studies. Like such studies, other than its role in the CEQA process and the ultimate project approval, a WSA effects no change.
This Water Supply Assessment:

1. Provides information on the proposed Lake Dolores project water supply consistent with Water Code Sections 10620 et seq. (the Urban Water Management Act) and Sections 10910 et seq. (Water Supply Planning to support Existing and Planned Future Uses)

2. Provides data to make sufficiency findings required by CEQA.
1.1 PROJECT DEMAND
The proposed Lake Dolores Project will consist of enhancing and renovating an existing water park located in Newberry Springs, San Bernardino County, California. Along with restoring the existing infrastructure, new development is also being proposed and would consist of constructing a recreational vehicle (RV) campground, parking lots, various administrative and commercial buildings, as well as the necessary infrastructure to support the development such as roads, walkways, etc. The project will not be directly connected to a public water supply nor will it drill any wells to provide water for the project. The project site is approximately 262-acres and contain three (3) existing wells on the property. The project footprint would cover an approximately 147-acre area of the 262-acre property.

1.2 PROJECT SUPPLY
The proposed project will procure water for construction and operations from the existing wells on the property. The project proponent has a current free production allowance (FPA) of 266 acre feet (af); however this amount is subject to change each year. The proposed project is located in the Baja Subarea portion of the Mojave Groundwater Basin (MGB), one of the 19 adjudicated groundwater basins within California. All water extracted from this basin is closely accounted for by the annual Mojave Basin Area Watermaster (Watermaster) report as prepared by the Mojave Water Agency (MWA) in its role as the court-ordered Watermaster. This water is protected by a ruling from the courts and water pumped from each specific subarea which exceeds a specified volume per year is subject to recharge costs. MWA has produced the Draft 23rd annual Watermaster report on the basin; however, the most recent is the Twenty-second Annual Report of the Mojave Basin Area Watermaster, Water Year 2014-2015; information from the Watermaster report was incorporated into the MWA Final 2015 Urban Water Management Plan (UWMP).
The 2015 Watermaster report and the 2015 UWMP indicate that groundwater levels in the Baja water levels continue to decline due to over pumping and limited recharge opportunities. Wells near the river in the Daggett area respond to recharge when it is available but continue to fall immediately following storm events. Water levels in the area near the river at Camp Cady indicate relative stability due to water perched in the shallow aquifer, limited pumping and geologic factors such as narrowing of the basin sediments near Camp Cady and downstream. Water levels elsewhere in Baja show declines without indicating recovery after storms. Since 1996, Baja has lost about 354,200 acre feet of groundwater storage.

According to the MWA Final 2015 Urban Water Management Plan (UWMP), additional Rampdown in Baja is warranted. FPA exceeds the PSY by more than 5% of BAP and current water production and consumptive use exceeds the average net long-term supply in Baja. Water levels continue to decline. Baja remains in overdraft and the current conditions are unsustainable. In 2015, Watermaster considered extensive public comment from recreational lake owners, agricultural producers, minimal producers and the California Department of Fish and Wildlife regarding Rampdown, hydrologic conditions and various alternative recommendations to the Court for future management in Baja. Watermaster evaluated the alternatives, considered the comments of the producers and the community at large and presented to the Court a recommendation (reduce FPA by 5% and continue for each of the next four years) consistent with the Judgment as well as asking the Court to consider a Rampdown alternative in lieu of a strict interpretation of the Judgment. The Court heard arguments and considered the alternatives of the producers and the Watermaster and ultimately imposed the 5% FPA reduction.
1.3 CONCLUSION

Water supplies for the construction and operation of the proposed Lake Dolores Project are available; however is limited and under the regulation of the Watermaster (Mojave Water Agency). Appendix B of the 2015 Watermaster report indicates that in 2014-2015 (the most recent year for which data are available) water producers in the Baja Subarea pumped a total of 6,773 acre feet (af) more than their Free Production Allowance (FPA). Water producers in the Baja Subarea pumped 32.7 percent over the Production Safe Yield (PSY). Although water supplies in the Baja Subarea have been depleting since 1996 due to water producers in the Baja Subarea exceeding their PSY, the project proponent has only pumped on average 2.3 percent of the allowed 483 af (BPA) and therefore has not pumped beyond the PSY. Construction and renovation of the waterpark will take a significant amount of water; however, the proposed Lake Dolores Project is not expected to have a significant adverse effect on water levels in the region, nor is the project expected to exceed the PSY at any time.
SECTION 2.0
INTRODUCTION
The County of San Bernardino Land Use Services Department requested the preparation of this WSA in its role as lead agency under the CEQA for the proposed development of the G & GF Enterprise, LLC Lake Dolores Project (proposed project) in the unincorporated area of San Bernardino County referred to as Newberry Springs, California.

2.1 BACKGROUND INFORMATION
The proposed Lake Dolores Project will consist of enhancing and renovating an existing waterpark. Along with restoring the existing infrastructure, new development is also being proposed and would consist of constructing a recreational vehicle (RV) campground, parking lots, various administrative and commercial buildings, as well as the necessary infrastructure to support the development such as roads, walkways, etc. The project will not be directly connected to a public water supply nor will it drill any wells to provide water for the project. The project site is approximately 262-acres and contain three (3) existing wells on the property. The project footprint would cover an approximately 147-acre area of the 262-acre property. This WSA incorporates updated information from records, documents and data of water use, water quality and local water conditions, including review of the twenty-second Annual Report of the Mojave Basin Area Watermaster, Water Year 2014-2015 and the MWA Final 2015 Urban Water Management Plan. The intent of this WSA is to provide the County of San Bernardino Land Use Services Department with a thorough understanding of the quality and quantity of water available for use by the proposed project.
SECTION 3.0
PROPERTY DESCRIPTION

3.1 LEGAL DESCRIPTION
The Project site is located in the Newberry Springs region of the Colorado River Hydrologic Region of the Mojave Desert. It is in the Baja Subarea of the Mojave Groundwater Basin and is located about 8 miles north of the Newberry Springs community and approximately 18 miles northeast of Barstow. The primary facility access point is from Hacienda Road, which runs along the southern project boundary. Hacienda Road intersects Harvard Road and Interstate 15 (I-15) approximately 2.5 miles northeast of the project site. The project site includes the following County of San Bernardino Assessor Parcel Number (APN):

- 0539-031-02 (262 acres, NW/2, Section 20, Township 10N, Range 3E)

3.2 PROJECT OVERVIEW
The project footprint would cover an approximately 147-acre area of the 262-acre property. The proposed Lake Dolores Project includes the construction of new developments as well as the renovation of existing developments and infrastructure. The project will be comprised of five (5) phases which will be broken down as follows:

- Phase 1: Restoration of 22.6 acre recreational lake and 2.4 acre recreational pond.
- Phase 2: Construction of RV Park.
- Phase 3: Restoration and renovation of existing waterpark infrastructure.
- Phase 4: New construction of retail and commercial development.
- Phase 5: New construction of office and administrative buildings.
3.3 DEMAND

As previously stated the proposed facility would get all its needed water from onsite wells, and no water or sewer connections from off the property would be needed. As part of the review process, past Watermaster reports from 1997-1998 to 2008-2009 were reviewed to see the verified production of each year when the waterpark was fully and/or partially operational. Over a 12 year period, the average verified production was 144.5 afy. Based on this data, it is believed that the long-term operational demand for the proposed Lake Dolores Project would require approximately 150 to 200 afy.
SECTION 4.0
WATER SOURCES
The proposed project would obtain groundwater from the Baja Subarea in the Mojave Groundwater Basin. The project site has three (3) wells currently on the property and these will be utilized during construction phases as well as throughout the life of the project. According to the 2014-2015 Watermaster report, the project proponent had a FPA of 266 af with a carryover of 278 af from the previous year for a total of 544 af of usable water; however the property has not required nor pumped a significant amount of water over the last 8 years due to its inoperable state. From 2008 to 2012 the verified production (water usage) was 0 af and in more recent years, from 2013-2016 only 30 af have been pumped. This shows that the project proponent has not pumped a significant amount of water in recent years.

4.1 MOJAVE GROUNDWATER BASIN
Rights to produce groundwater from the Mojave Groundwater Basin (MGB) have been adjudicated by the courts and, as per the Judgment, groundwater supplies in the MGB are rigorously managed in accordance with the Judgment by the Mojave Water Agency in its role as Watermaster. The main responsibilities of a Watermaster are to monitor and verify water use, collect assessments, conduct studies and prepare an annual report of its findings and activities to the Court as outlined in the Judgment. Additionally, the Watermaster acts as the clearinghouse for recording water transfers and reports changes in ownership of Base Annual Production rights to the Court. The adjudicated boundary of the MGB encompasses about 3,400 square miles of San Bernardino County, California (See Figure 1). The adjudicated area is bounded by the San Bernardino and San Gabriel Mountains to the south, Afton Canyon to the northeast, just beyond Lucerne Valley in the east, and the Antelope Valley to the west at the San Bernardino Los Angeles County line. For purposes of administering of the Judgment, the basin is divided into five separate hydrologic subareas. The five subareas are: Baja (East Basin); Oeste (West Basin); Alto (Upper Basin); Centro (Middle Basin); and Este (Lower Basin). The proposed project is located in the Baja Subarea.
4.2 BAJA SUBAREA

The Baja Subarea is located east of Barstow, north of Lucerne Valley, west of the Soda Mountains and south of Fort Irwin. The principal water bearing deposits are Quaternary age alluvium and dune sand. These deposits are unconsolidated and semi-consolidated alluvium comprised of gravel, sand, silt, clay and boulders. The average specific yield of the deposits is about 11 percent. Wells in the basin yield as much as 1,000 gallons per minute. Thickness of the deposits average about 600 feet thick but go as high as 1,800 feet in along the Manix fault. Depth to water in the vicinity of the project is about 400-500 feet.

4.2.1 Groundwater Levels

The twenty-second Annual Report of the Mojave Basin Area Watermaster, Water Year 2014–2015 states for the Baja Subarea that “Baja water levels continue to decline due to over pumping and limited recharge opportunities. Wells near the river in the Daggett area respond to recharge when it is available but continue to fall immediately following storm events. Water levels in the area near the river at Camp Cady indicate relative stability due to water perched in the shallow aquifer, limited pumping and geologic factors such as narrowing of the basin sediments near Camp Cady and downstream. Water levels elsewhere in Baja show declines without indicating recovery after storms.” (Watermaster pg. 25), however; water production in Baja last year (27,452 acre-feet) was about 2.2% less than the average for the previous 10 years. Hydrographs for the Baja Subarea illustrate that conditions have yet to stabilize since 1996, and therefore, optimal operating parameters have not yet been established. Since 1996, Baja has lost about 354,200 acre feet of groundwater storage. Water supply for Baja for 2014-2015 is approximately 1,681 acre feet, assuming annual average change in storage is approximately zero.
4.2.2 Available Groundwater Supplies

The following is excerpted with only minor editing from the Final MWA Urban Water Management Plan, which incorporates information from the most recent Watermaster report. In the Mojave Basin Area, Base Annual Production (BAP) rights were assigned by the Mojave Basin Area Judgment to each producer using 10 afy or more, based on historical production. BAP is defined as the producer’s highest annual use verified for the five-year base period from 1986–1990. Parties to the Judgment are assigned a variable FPA by the Watermaster, which is a percentage of BAP set for each subarea for each year.

The allocated FPA represents each producer’s share of the water supply available for that subarea. This FPA is reduced or “ramped-down” over time until total FPA comes into balance with available supplies. Production Safe Yield (PSY) is also determined for each subarea for each year. The PSY in each subarea is assumed to equal the average net natural water supply plus the expected return flow from the previous year’s water production. Exhibit H of the Judgment requires that in the event the FPA exceeds the estimated PSY by five percent or more of BAP, Watermaster recommends a reduction in FPA equal to, but not more than, a full five percent of the aggregate subarea BAP. Any water user that pumps more than their FPA in any year is required to buy “Replacement Water” equal to the amount of production in excess of the FPA. Replacement Obligations can be satisfied either by paying the Mojave Basin Area Watermaster to purchase imported water from MWA or by temporarily transferring unused FPA within that subarea from another party to the Judgment. Table 3-1 shows the base annual production values and the FPA for water year 2014-2015 for each subarea and the estimated PSY. Also shown in Table 3-1 is the verified production for water year 2014-2015 for comparison. Free Production Allowance is greater than PSY by more than 5 percent in four of the five subareas; water levels remain in decline in most areas currently because verified production is greater than the available supply. In regards to the Baja Subarea, local producers produced 27,452 af in 2014-2015, 20.5 percent greater than the PSY for that subarea.
### TABLE 3-1
MOJAVE BASIN AREA PRODUCTION SAFE YIELD AND CURRENT FREE PRODUCTION ALLOWANCE (afy)

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Source: Twenty-second Annual Report of the Mojave Basin Area Watermaster, Water Year 2014-15/Table 3-8 2015 Urban Water Management plan. (1) This value represents the percent of BAP that PSY departs from FPA. Red indicates the subarea in which the project is located.

#### 4.2.3 Water Producers and Availability in the Baja Subarea

Appendix B of the 2015 Watermaster report identifies 148 water producers that have an FPA in the Baja Subarea. Pages 1 and 2 of that appendix (included herein as Exhibit A) indicate that at the end of 2014-2015, water producers in the Baja Subarea had 27,576 af of available water that had not been used (see column titled “Unused FPA”). As previously stated, the proposed Lake Dolores Project will pump its own water from the three (3) existing wells located on the property. For the 2014-2015 year, the water producer has an unused FPA of 266 af which is 84.4 percent higher than the average verified production during the waterparks years of operation. As noted, these producers pumped only about 81.4 percent of the PSY in 2014-2015. This data indicate that there is more than sufficient and available water supplies to provide the proposed project with its 150-200 af of water during construction and operation of the proposed Lake Dolores Project.
4.2.4 Water Quality of Local Groundwater

The Final 2015 UWMP indicates that MWA water supplies meet all Environmental Protection Agency (EPA) and State water quality requirements. Based on water quality analyses in the Baja subarea, local groundwater has total dissolved solids (TDS) average concentrations levels of 617 milligrams per liter and an average Nitrate-N\textsubscript{O\textsubscript{3}} of 1.4 milligrams per liter. These waters are within the Maximum Contaminant Level (MCL) limits for drinking water supplies.
SECTION 5.0
WATER RESOURCES QUANTIFICATION

5.1 DEMAND
On-site groundwater extraction or production will be used for the proposed project. It is estimated that the project will require an annual water consumption of approximately 150 to 200 afy on average during construction activity and operation of the project. The maximum volume of water needed (200 afy) is only about 0.76 percent of the PSY of the Baja Subarea.

Water usage in this subarea have yet to stabilize over the past few years, and overdraft continues to be a problem. Water producers in the Baja Subarea have continued to exceed the PSY by 20-30 percent. During 2014-2015, local water producers in the Baja Subarea had more than 27,000 af of unused Free Production Allowance; however, pumped 32.7 percent over the PSY. As previously stated, the project would require less than one percent (0.76%) of the PSY for the Baja Subarea. Although conditions are unstable in the Baja Subarea, the proposed Lake Dolores Project is not expected to have a significant adverse effect on overall water resources in the Subarea.

5.2 WATER QUALITY REPORT
Based on water quality analyses in the Baja subarea, any locally produced groundwater purchased for project construction and/or operations is expected to have average TDS concentrations around 617 milligrams per liter. These waters are within the MCL limits for drinking water supplies.
Sources:

Mojave Water Agency; *Twenty-second annual report of the Mojave Basin Area Watermaster*


URS, 2011
*Water Supply Assessment for the Agincourt Solar Project Lucerne Valley, California*

California Statewide Groundwater Elevation Monitoring (CASGEM)
[www.water.ca.gov/groundwater/casgem/](http://www.water.ca.gov/groundwater/casgem/)

Intergraded Resource Management, 2009
*Water Supply Assessment for Nursery Products LLC Hawes Composting Facility Hinkley, California*

California State Senate Bill 610 and 221, and Water Code sections 10910 and 10912
EXHIBIT A
UNUSED FREE PRODUCTION ALLOWANCE
OF WATER PRODUCERS IN THE BAJA SUBAREA

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**Table Note:**

- **Assessment:** FFY 2016
- **Property:** All property shown below (details not shown)

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**Reference:**

- **Section:** Property Evaluation
- **Subsection:** FFY 2016

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**APPENDIX A**

- **Table Name:**
- **Columns:**
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  - Column B
  - Column C
  - Column D
  - Column E

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**APPENDIX B**

- **Table Name:**
- **Columns:**
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  - Column B
  - Column C
  - Column D
  - Column E

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**APPENDIX C**

- **Table Name:**
- **Columns:**
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  - Column B
  - Column C
  - Column D
  - Column E

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**APPENDIX D**

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**Notes:**

- Bolded items indicate significant changes.
- Underlined items indicate new additions.
- Strikethrough indicates removed or deprecated elements.
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TOTAL

BASE FEE + OPEX + ALLOCA

ASSUMPTIONS:

AND

MARIT 2016