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TECHNICAL MEMORANDUM

To: Terramor Outdoor Resorts
From: C.T. Male Associates
Subject: Water Supply, Treatment and Distribution
Date: June 30, 2022
Project: Terramor Outdoor Resort – Saugerties, NY

SUMMARY

This technical memorandum provides the preliminary basis of design for the water system at the proposed Terramor Outdoor Resort in Saugerties, Ulster County, New York.

DESCRIPTION OF FACILITIES WITH WATER DEMAND

The campground has 4 facility types with a need for water services.

1. Glamping Sites
 - a. The proposed project consists of 75 campsites with water and wastewater utilities. There are two types of sites: the '35' and the '45' with 45 sites and 30 sites each, respectively.
2. Guest Amenities
 - a. The proposed project consists of a Lodge with a lounge area, bar seating and restaurant seating.
 - b. The proposed project includes a pool with a cabana including bathrooms and a pavilion.
3. Operational Structures
 - a. The proposed development consists of a Welcome Center and Maintenance Building
4. Employee Housing

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DESIGN WATER DEMANDS

The calculations for the average daily water demands are shown in the table below:

Water Demands and Wastewater Flows - Terramor Outdoor Resorts Saugerties				
	Unit	Quantity	Unit Water Use	GPD
Campsites - The '35'	Guests at Max Occupancy	90	50	4500
Campsites - The '45'	Guests at Max Occupancy	150	50	7500
Gen Manager House	# Bedrooms	2	110	220
2 Studio Units	# Bedrooms	4	110	440
6 Dorm Units	# Workers	30	50	1500
Welcome Center	# Employees	4	15	60
Maintenance Building		1	10	10
Lodge - Tabletop	# Seats	40	35	1400
Lodge - Bartop	# Seats	28	20	560
Lodge - Lounge	# Seats	50	20	1000
Total				17190

WATER SOURCE

The proposed water sources for the proposed development will be from two or more of the 6 existing wells onsite which were originally installed for a development which was never constructed. Well characteristics from these onsite wells was obtained and used for the purposed of this preliminary basis of design. Preliminary information suggests that 3 of the 6 wells have capacities of 20 GPM (28,800 GPD), 10 GPM (14,400 GPD), and 6 GPM (8,640 GPM). The 10 GPM well was estimated only during the original installation of the well. Well yield testing is currently being scheduled on these three wells. Based on the preliminary information available, these three wells have the capacity to serve the proposed development according to the calculated average daily design flows. The locations of the three proposed well sources can be found on the Water and Wastewater Utility Plans submitted for Site Plan Approval.

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WELL WATER CONVEYANCE AND TREATMENT

The wells will be equipped with submersible well pumps which will pump the groundwater from the wells to the maintenance building which will house the treatment, disinfection, storage, and pressure maintenance equipment. The well water lines will be HDPE pipeline.

Well water will be collected and sampled per the Ulster County DOH/NYSDOH requirements during the well yield testing to determine the raw water quality. Results of the sampling and water quality testing per NYSDOH requirements will determine the final treatment requirements. Minimum treatment will include disinfection. As an example, other treatment methods required could include filtration or contaminant removal by adsorption with granular activated carbon.

POTABLE WATER DISTRIBUTION

Potable water will be distributed throughout the proposed development through small diameter HDPE waterlines. Adequate pressure will be maintained in the distribution system using booster pumps and pressure tanks at the maintenance building.

PERMITTING

The design for the source, treatment and distribution systems will be submitted to the UCDOH for review and approval.