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# Visual Resources - Appendix 5.13 A

*Landscape Photographs and Simulations*

Submitted to:

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Submitted by:

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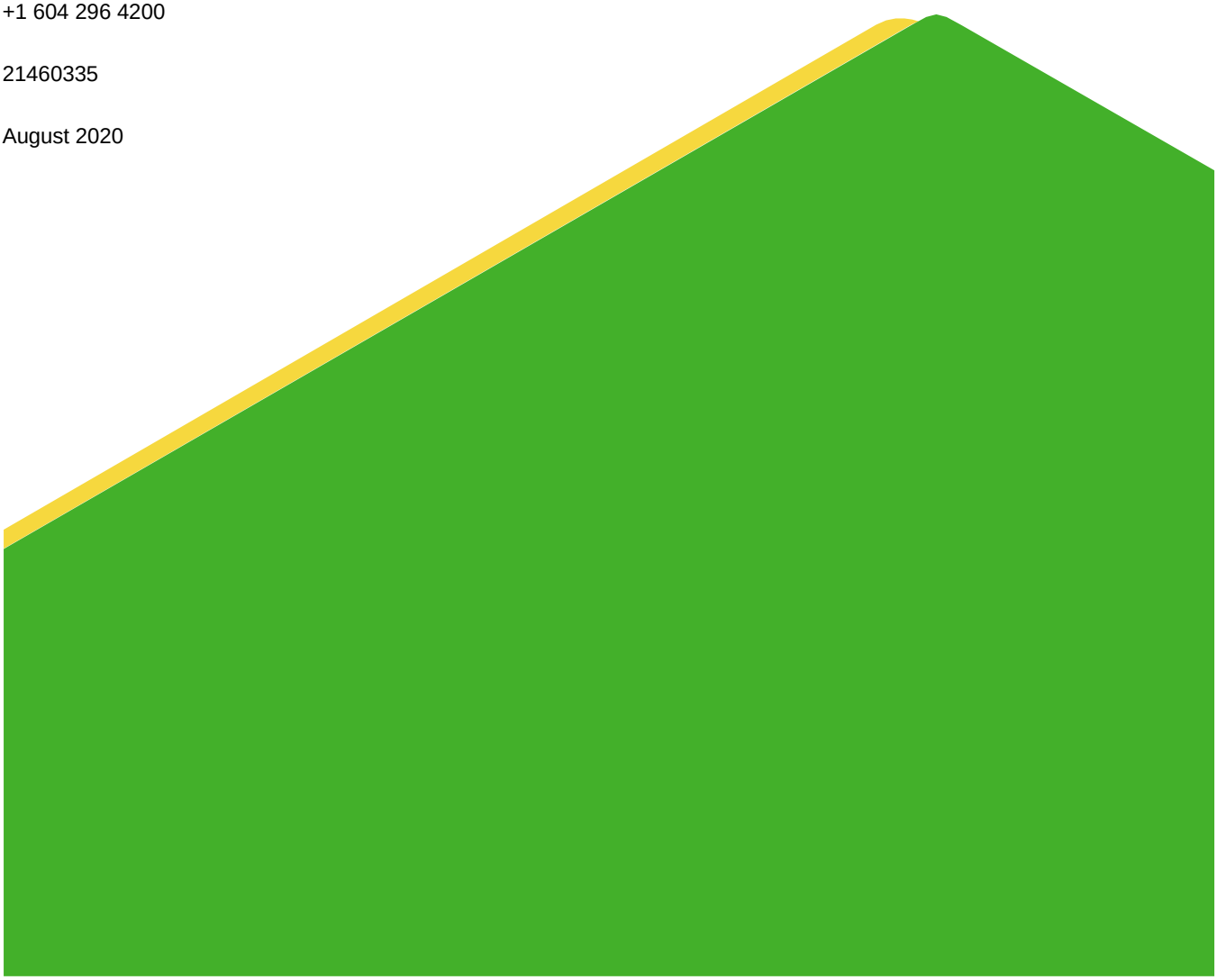

# Table of Contents

# 1.0 INTRODUCTION

This report is included as Appendix 5.13A of the Applicant's (Hydrostor Inc.) Application for Certification (AFC) for a proposed Advanced Compressed Air Energy Storage (A-CAES) facility in unincorporated Kern County, California (the Project).

A photographic field survey was conducted by Golder Associates Inc. (Golder) field staff during a field survey conducted between July 8th and 9th, 2021 to capture landscape photographs and observation information from viewpoint locations near the Project. Simulations of Project-related components were rendered in advanced 3D landscape modelling software (Autodesk 3D StudioMAX) from key observation points (KOPs) and composited with photographic images gathered during the photographic field survey. Photographic and simulation images are presented in Figure to Figure . Photographic inventory information for surveyed KOPs is presented in Table 1.

Following California Energy Commission (CEC) guidelines for preparing simulations, panoramic images presented in this report are provided as full page colour images of the existing site and the proposed Project from each KOP sized so that when held 10 inches from the viewers eye it is in scale with the actual viewing experience. Based on standards for scaled panoramic simulations that have a cylindrical projection, the images presented are 4.5 inches high by 15.5 inches wide and represent an approximately 90-degree horizontal field of view (New Zealand Institute of Landscape Architects 2010, Palmer 2019). Panoramic images presented in this report were prepared for presentation on A3 paper size (i.e., 11 by 17) while minimizing edge distortion. The horizontal extent of these panoramic images represents a sufficiently wide field of view to depict the landscape context which an observer can view in a single viewing direction.

These images do not account for effects presented by seasonal atmospheric conditions (e.g., fog and haze) beyond those presented in the photographs and simulations. Due to variations in the calibration of different monitors, printers, and other media that may be used to display these images, consistent reproduction is not guaranteed.

There are two options for the 230 kV transmission line route that would extent from the Project illustrated in these simulations. The preferred option for the transmission line route is the the Southern California Edison's (SCE) Whirlwind Substation Option (Preferred Route 1). Alternatively, the interconnection may tie into a future Los Angeles Department of Water and Power (LADWP) Rosamond Substation (Alternate Route 2A). The transmission line routes used in the Application are preliminary and subject to change pending conclusion of interconnection agreements for the chosen point of interconnection. The transmission line route options simulated here were prepared for the purposes of supporting the visual assessment.

## 2.0 LANDSCAPE PHOTOGRAPHS AND SIMULATIONS

**Figure 5.13A-1: KOP1 (Sweetser Road) – Existing Conditions**

**Figure 5.13A-2: KOP1 (Sweetser Road) – Project Site with Preferred Route 1 Simulation**

**Figure 5.13A-3: KOP2 (Favorite Avenue) – Existing Conditions**

**Figure 5.13A-4: KOP2 (Favorite Avenue) – Project with Preferred Route 1 Simulation**

**Figure 5.13A-5: KOP3 (Hamilton Road) – Existing Conditions**

**Figure 5.13A-1: KOP3 (Hamilton Road) – Project Site with Preferred Route 1 Simulation**

**Figure 5.13A-2: KOP4 (Tehachapi Willow Springs Road) – Existing Conditions**

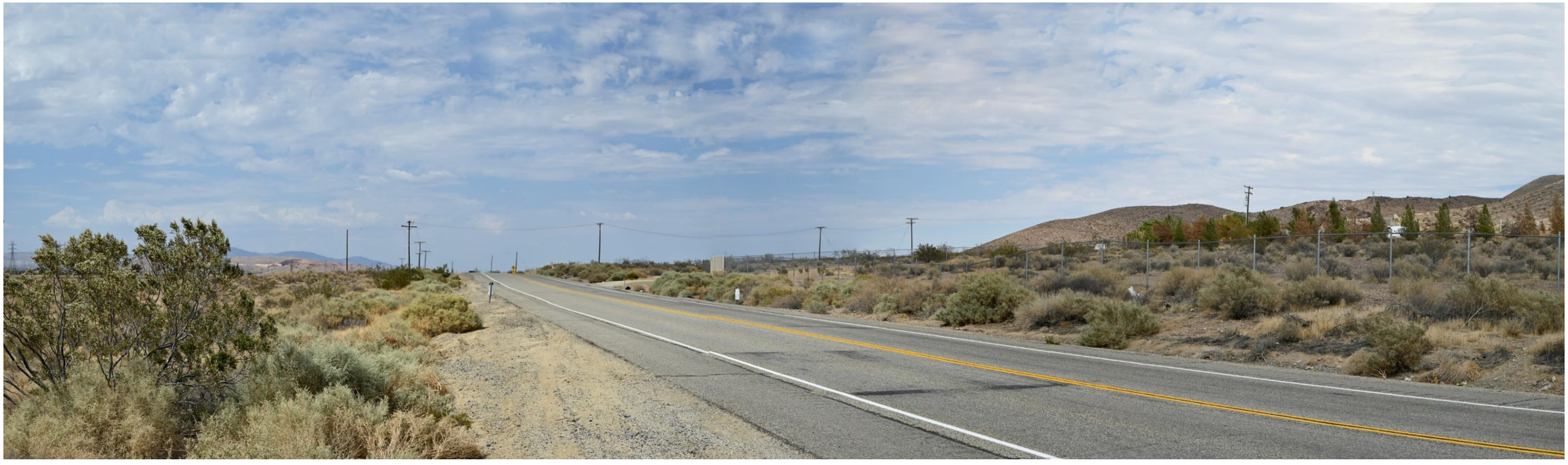

**Figure 5.13A-8: KOP4 (Tehachapi Willow Springs Road) – Project Site with Preferred Route 1 Simulation**

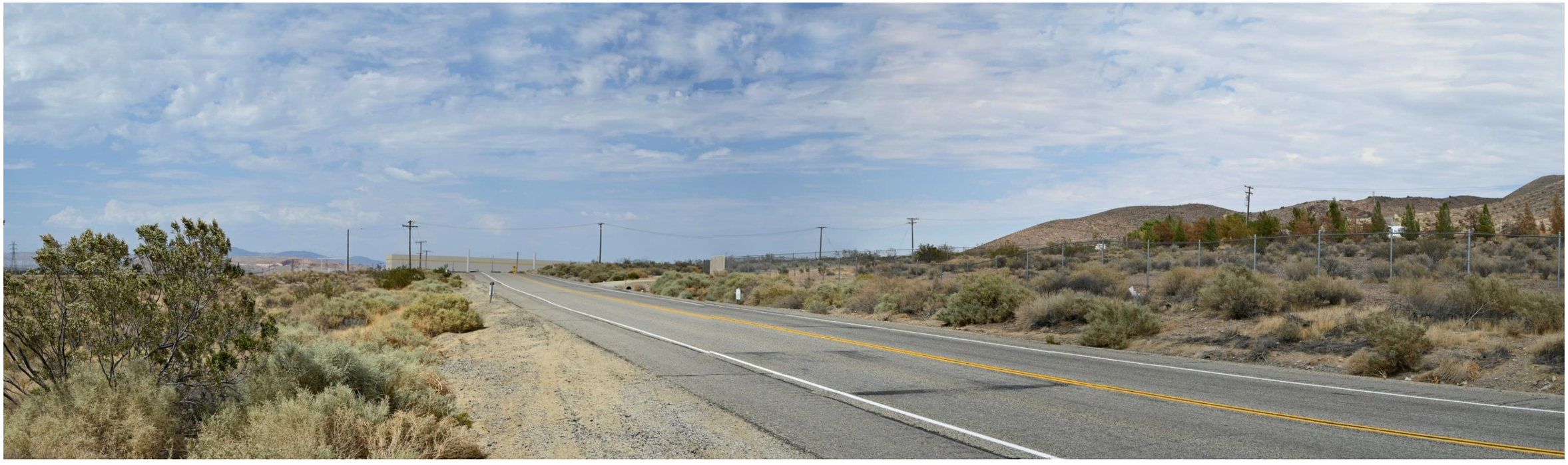

**Figure 5.13A-9: KOP4 (Tehachapi Willow Springs Road) – Project Site with Alternate Route 2A Simulation**

**Figure 5.13A-10: KOP5a (West Rosamond Boulevard) – Existing Conditions**

**Figure 5.13A-11: KOP5a (West Rosamond Boulevard) – Project Site with Preferred Route 1 Simulation**

**Figure 5.13A-12: KOP5a (West Rosamond Boulevard) – Project Site with Alternate Route 2A Simulation**

**Figure 5.13A-13: KOP5b (West Rosamond Boulevard) – Existing Conditions**

**Figure 5.13A-14: KOP5b (West Rosamond Boulevard) - Preferred Route 1 Simulation**

## 3.0 PHOTOGRAPHIC INVENTORY OBSERVATION LOG

Date Started: 07/08/2021 Date Completed: 07/09/2021

Photographer: Maria Sheen (Golder)

Type of Camera: Nikon Z5

Lens: 50mm

Projection: UTM Zone 11 Datum: NAD 83

**Table 1: Key Observation Point Observations**

| Key Observation Point | Photo Date | Viewing Conditions | Viewpoint Type | Viewing Duration[a] | Purpose of Photo | F Stop[b] | ISO | Exposure (sec) | X Coordinate | Y Coordinate | Elevation (MASL) | Approx. Viewing Direction (°)[c] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KOP1 - Sweetser Road | 07/08/2021 | Partial cloud and sunny | residents and local motorists | Permanent / Brief | View of Project Site with SCE Whirlwind Substation Option (Preferred Route 1) | f/8 | 100 | 1/500 | 382924 | 3861879 | 811 | 235º |
| KOP2 - Favorite Avenue | 07/08/2021 | Partial cloud and sunny | residents and local motorists | Permanent / Brief | View of Project Site with SCE Whirlwind Substation Option (Preferred Route 1) | f/9 | 100 | 1/640 | 382005 | 3862643 | 807 | 150º |
| KOP3 - Hamilton Road | 07/08/2021 | Partial cloud and sunny | residents and local motorists | Permanent / Brief | View of Project Site with SCE Whirlwind Substation Option (Preferred Route 1) | f/9 | 100 | 1/640 | 380408 | 3861935 | 805 | 90º |
| KOP4 - Tehachapi Willow Springs Road | 07/08/2021 | Partial cloud and sunny | tourists, residents, local motorists | Sustained / Permanent / Brief | View of Project Site with SCE Whirlwind Substation Option (Preferred Route 1) or LADWP Rosamond Substation Option (Alternate Route 2A) | f/9 | 100 | 1/640 | 381832 | 3860705 | 794 | 30º |
| KOP5a - West Rosamond Boulevard | 07/09/2021 | Clear and sunny | residents and local motorists | Permanent / Brief | View of Project Site with SCE Whirlwind Substation Option (Preferred Route 1) or LADWP Rosamond Substation Option (Alternate Route 2A) | f/9 | 100 | 1/640 | 378729 | 3858676 | 765 | 50º |
| KOP5b - West Rosamond Boulevard | | | | | View of SCE Whirlwind Substation Option (Preferred Route 1) | f/8 | 100 | 1/500 | | | | 300º |

Notes:

a) Viewing duration ratings reflect the exposure of viewers related to types of activities typically available at each site and the opportunities they present for viewing: Brief = temporary and/or intermittent viewing opportunity (i.e., moving vehicle); Sustained = extended viewing opportunity (i.e., rest stop, viewpoint); Permanent = continual viewing opportunity (i.e., residence).

b) Aperture settings may vary for separate frames of a panoramic sequence to normalize exposure of each image.

c) Viewing direction provided for panorama presented in this report.

°= degrees; mm= millimetres; sec= seconds; MASL= metres above sea level; NAD= North American Datum; UTM= Universal Transverse Mercator; ISO = International Standards Organization is a numerical value used colloquially in the context of film to represent the sensitivity of a given film emulsion to light, often referred to as "film speed."; KOP = Key Observation Point; SCE = Southern California Edison's; LADWP = Los Angeles Department of Water and Power

# REFERENCES

Palmer, J.F. 2019. The Best Paper Format and Viewing Distance to Represent the Scope and Scale of Visual Impacts. Journal of Digital Landscape Architecture, 4-2019, pp. 142-151. Available at: https://gispoint.de/fileadmin/user_upload/paper_gis_open/DLA_2019/537663015.pdf. Accessed June 2021.

New Zealand Institute of Landscape Architects. 2010. Best Practice Guide - Visual Simulations BPG 10.2. Available at: https://nzila.co.nz/media/uploads/2017_01/vissim_bpg102_lowfinal.pdf. Accessed June 2021.