



**RUN-ON AND RUN-OFF CONTROL PLAN**

**J.C. Weadock Generating Facility**  
*Solid Waste Disposal Area*

Submitted to:

**Consumers Energy Company**

1945 W. Parnall Road  
Jackson, Michigan USA 49201

Submitted by:

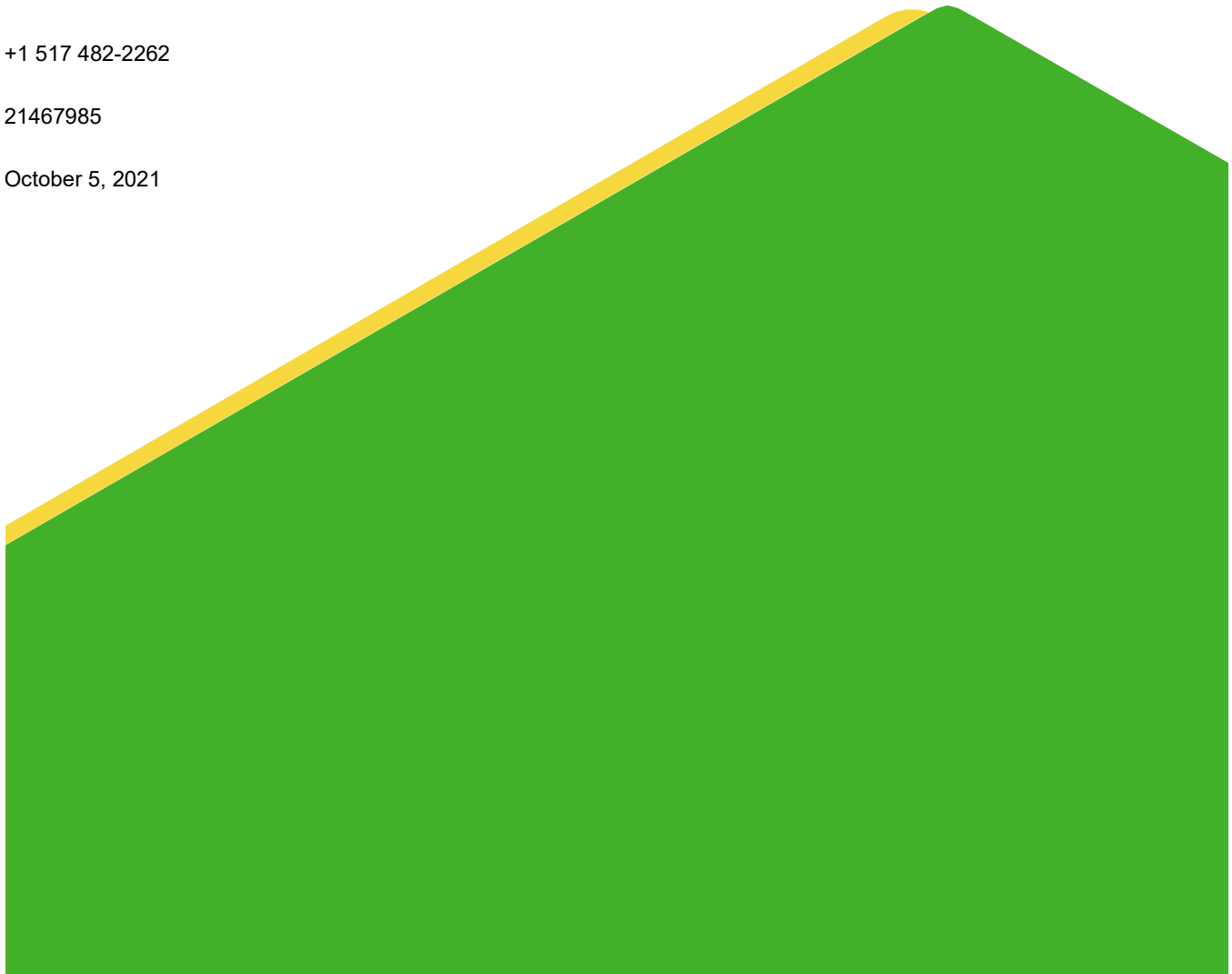
**Golder Associates Inc.**

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21467985

October 5, 2021



## Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Run-on and Run-off Control Plan and all attached documents and that, based on my inquiry of those individuals immediately responsible for obtaining the information; I believe that the submitted information is true and accurate and has been prepared in accordance with good engineering practices, including the consideration of applicable industry standards, and with the requirements of 40 CFR Part 257.81. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



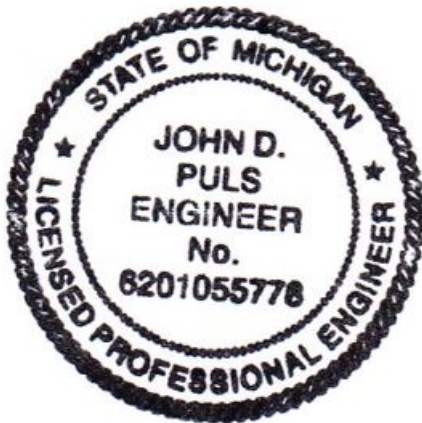
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John Puls, Michigan P.E #6201055778

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10/05/2021

Date



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Figure 1: Run-on, Run-off Map

## 1.0 INTRODUCTION

In accordance with 40 CFR § 257.81(c)(4), the purpose of this Run-on and Run-off Control Plan (2021 Plan) is to provide a five-year update to the 2016 Plan prepared by Geosyntec Consultants to document the run-on and run-off control system to be utilized during the landfill operation for the J.C. Weadock (JCW) Solid Disposal Area at the Consumers Energy Company (CEC) Weadock Complex located in Essexville, Michigan. The initial Plan was prepared by Geosyntec Consultants for CEC to place in the operating record in October 2016, with updates to the initial Plan prepared by Golder Associates Inc. This 2021 Plan was prepared to comply with the United States Environmental Protection Agency (USEPA) Coal Combustion Residual (CCR) Rule 40 CFR § 257.81 – Run-on and Run-off Controls for CCR Landfills.

The D.E. Karn (DEK)/JCW Generating Complex consists of two power generating plants (DEK and JCW) and is owned and operated by CEC. The CEC Weadock Complex consists of two burning units designated as Units 7&8, which became operational in 1955 and 1958, respectively, and were retired on April 15, 2016. CCR from the DEK power plant units are transported to the CEC Weadock Complex Solid Waste Disposal Area (Landfill).

The original Landfill consisted of a perimeter containment dike reportedly designed with a minimum top crest elevation of 588 feet (NAVD 88). In 1971, a new perimeter dike was constructed along the eastern portion of the facility to elevations matching the original perimeter containment dikes of approximately 588 feet (NAVD88). A former bottom ash pond is located to the west of the Landfill and was certified for Closure by Removal on November 30, 2020 by the State of Michigan Department of Environment, Great Lakes and Energy (EGLE). The extent of the Landfill, the perimeter berm, and the closed bottom ash pond are presented in Figure 1.

The Landfill has an operating license issued by EGLE as a low-hazard industrial waste (Type III) landfill. The Landfill is regulated under Construction Permit No. 0260, dated April 21, 1992 and Solid Waste Landfill Operating License No. 9640, dated March 11, 2021.

## 2.0 RUN-ON CONTROL

A run-on control system to prevent flow onto the active portion of the Landfill must be maintained during the peak discharge from a 24-hour, 25-year storm in accordance with 40 CFR § 257.81(a)(1).

The JCW Landfill is contained with a perimeter berm with a minimum crest elevation of 588 feet (NAVD 88). As shown in Figure 1, the only source for run-on flow is from the perimeter of the landfill. Run-on from the perimeter of the landfill is controlled with the perimeter berm five feet above the 100-year floodwater elevation of 585.0 (NAVD88).

## 3.0 RUN-OFF CONTROL

A run-off control system for the active portion of the Landfill must be maintained to collect and control at least the stormwater volume resulting from a 24-hour, 25-year storm in accordance with 40 CFR § 257.81(a)(2).

The JCW Landfill is contained with a perimeter berm with a minimum crest elevation of 588 feet (NAVD88). The perimeter berm prevents uncontrolled run-off outside the permitted CCR landfill. The design storm is predicted to generate 3.56 inches of rainfall<sup>1</sup>. The drainage ditch inside the perimeter berm is maintained to divert the run-off

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<sup>1</sup> Rainfall Frequency Atlas of the Midwest, Bulletin 71, By Floyd A. Huff and James R. Angel

flow to the permitted National Pollutant Discharge Elimination System (NPDES) discharge outfall, as shown in Figure 1.

Based on site history and according to operation personnel, the Landfill has not experienced run-off other than through the permitted discharge outfall in over 40 years of operation, during which time the 24-hour, 25-year storm has occurred or was exceeded during two events (6.0 inches of daily rainfall was recorded on June 21, 1996 and 3.03 inches of daily rainfall was recorded on August 11, 2012<sup>2</sup>). This demonstrates it has adequate capacity to retain and convey the stormwater to the permitted NPDES discharge outfall.

The handling of the surface water flow to the NPDES permitted discharge outfall meets the surface water requirements under the CCR Rule (40 CFR § 257.3-3), as required by the CCR Rule [40 CFR § 257.81(b)].

## 4.0 PLAN UPDATES

The initial Plan and any subsequent updates will be amended during the Landfill operation period, as required by 40 CFR § 257.81(c)(2). In addition, the initial Plan and any subsequent updates will be updated every five years in accordance with 40 CFR § 257.81(c)(4).

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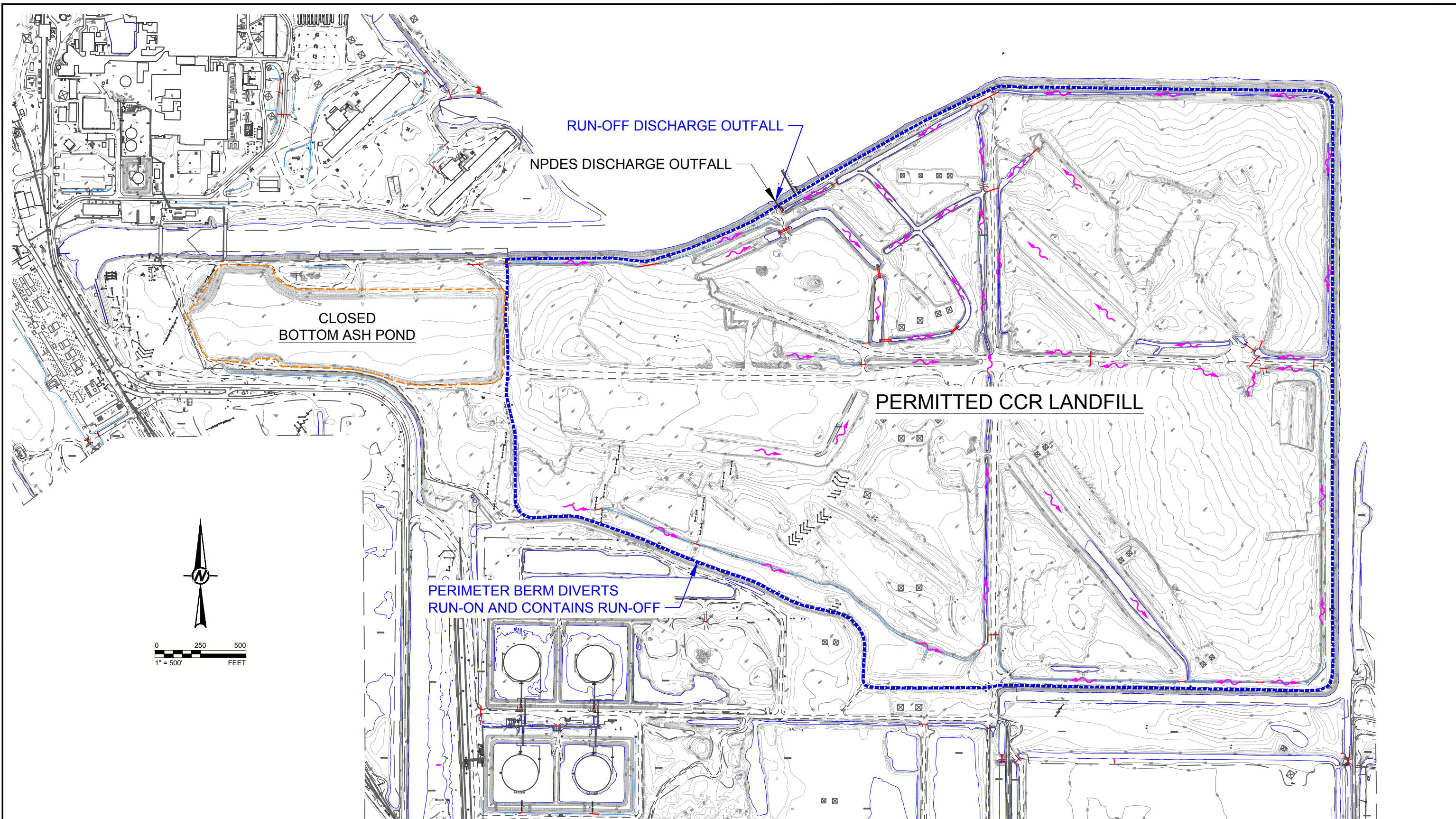
<sup>2</sup> National Weather Service Forecast Office (<https://www.weather.gov>)

**FIGURE 1**

## Run-on, Run-off Map



Path: \\golder-gds.com\projects\data\offices\Renewable\Complex\state\Consumers\Energy\21467985-5C Weadock Solid Waste Disposal Area\Map\Run-On, Run-Off Site Plan.dwg | Last Edited By: stranderson | Date: 2021-10-04 | Time: 2:24:41 PM



- REFERENCES**
1. HORIZONTAL DATUM BASED ON MICHIGAN STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD83), SOUTH ZONE, INTERNATIONAL FOOT.
  2. VERTICAL DATUM AND ELEVATIONS SHOWN BASED ON NORTH AMERICAN VERTICAL DATUM (NAVD) 1988, FEET.
  3. TOPOGRAPHIC SURVEY AND MAPPING PROVIDED BY ROWE AIR-LAND SURVEYS, 540 S. SAGINAW STREET, SUITE 200, FLINT, MI 48502. MAPPING BASED ON AERIAL IMAGERY, PHOTO DATE AUGUST 14, 2021.

- LEGEND**
- - - - - EXISTING PERIMETER BERM AND SLURRY WALL
  - EXISTING STORMWATER CULVERT
  - ~ ~ ~ SURFACE WATER FLOW DIRECTION

CLIENT  
 CONSUMERS ENERGY COMPANY  
 2555 NORTH WEADOCK HIGHWAY  
 ESSEXVILLE, MICHIGAN 48732

CONSULTANT	YYYY-MM-DD	2021-10-04
DESIGNED	JSH	
PREPARED	SDA	
REVIEWED	JDP	
APPROVED	DML	

PROJECT  
 J.C. WEADOCK SOLID WASTE DISPOSAL AREA  
 5-YEAR CLOSURE PLAN

TITLE  
 RUN-ON, RUN-OFF SITE PLAN

PROJECT NO.	PHASE	REV.	FIGURE
21467985	01	0	1

1" IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



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