Waste oil/Cutting Oil/Waste liquid Reduction

Integrated Low-temperature with No Emission Evaporation

PT CYPRESS WATER TECHNOLOGY

2025 Indonesia

CONTENTS

01 Technology Comparison

High Temp. MVR

- Adv: Low Energy comsumption
- Disadv:
  - Steam water quality is poor
  - The heat exchange easily scale
  - The mechanical seal of steam compressor replaced every 3 years.
  - Equipment life time: Short
  - Noise: Loud

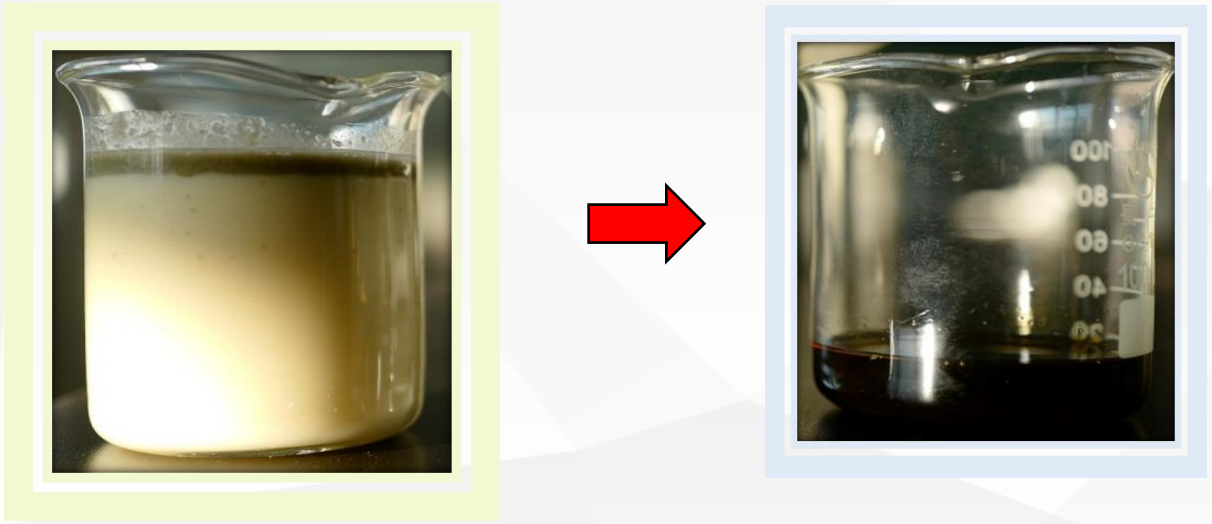
Triple-effect Evaporation

- Adv: Hight heat transfer rate
- Disadv:
  - Steam water quality is poor
  - 200~280KWH/ton-waste liquid

Low Temp. Evaporator

- Adv:
  - Steam water quality is good and reusable.
  - 90~160KWH/ton-waste liquid
  - Equipment life time: >3 years
  - Noise: Low
- Disadv:
  - The max. capacity is 10 tons per day.

Low Temp. Evaporator with heat pump



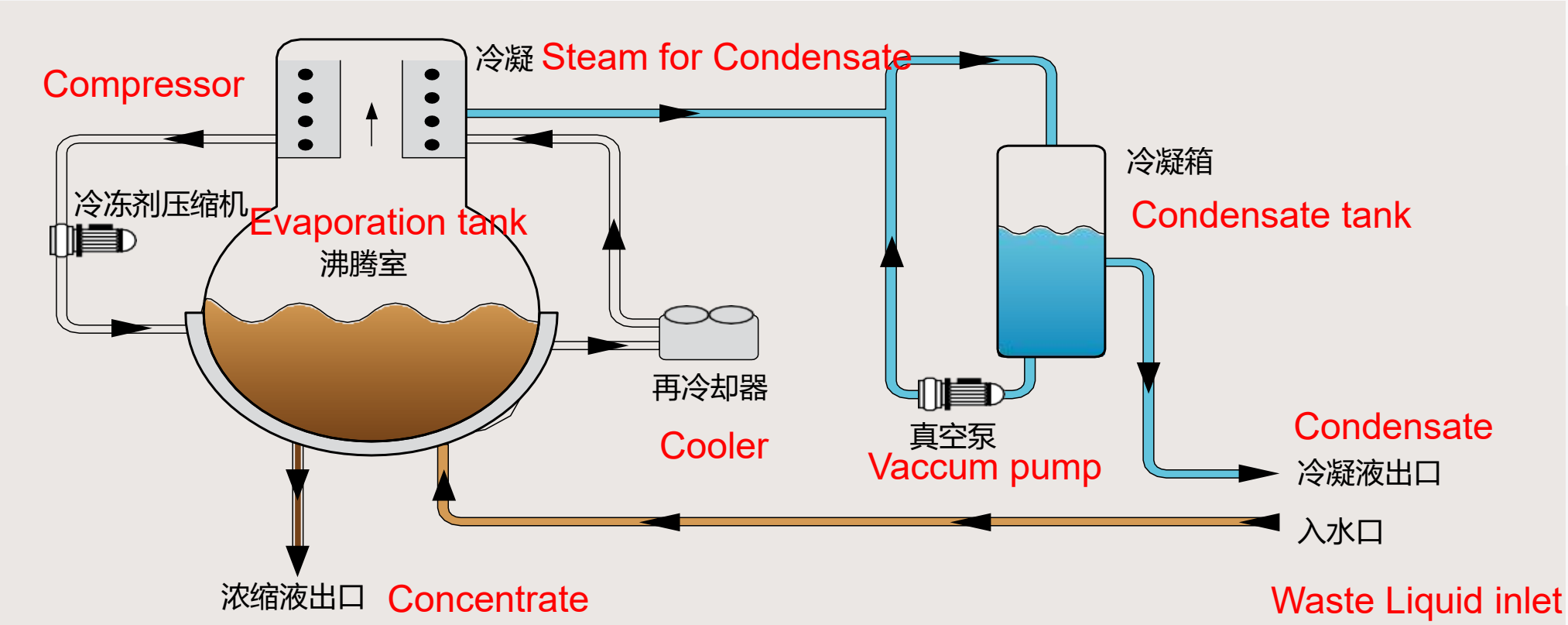
Advantage

- No chemical required。
- 35~40℃ Evaporation temp.
- Energy recycling of wastewater heating and steam condensation(90~160KWH/ton-waste liquid) 。
- Noise: <75dB。
- Low Maintenance cost， No Consumable。
- Fully Automatically operation 。

Process

Evaporation Temp 37.6 ℃

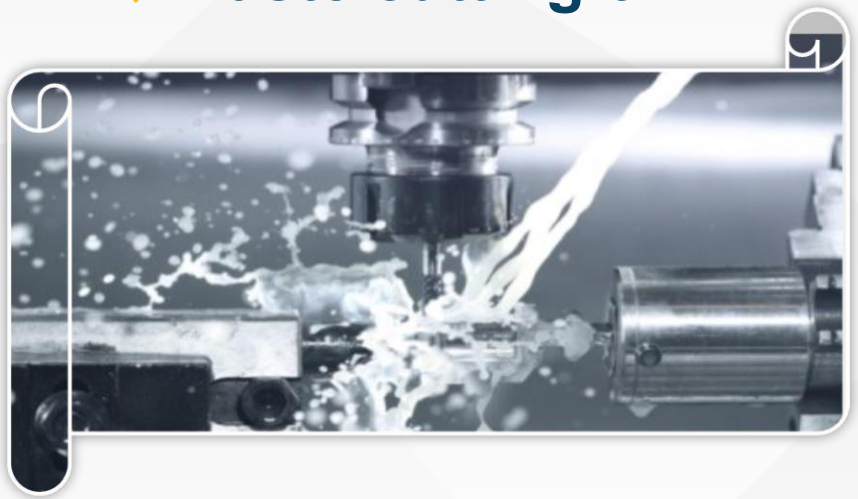
Vaccum Pressure -97.052 Kpa



03 Target Markets

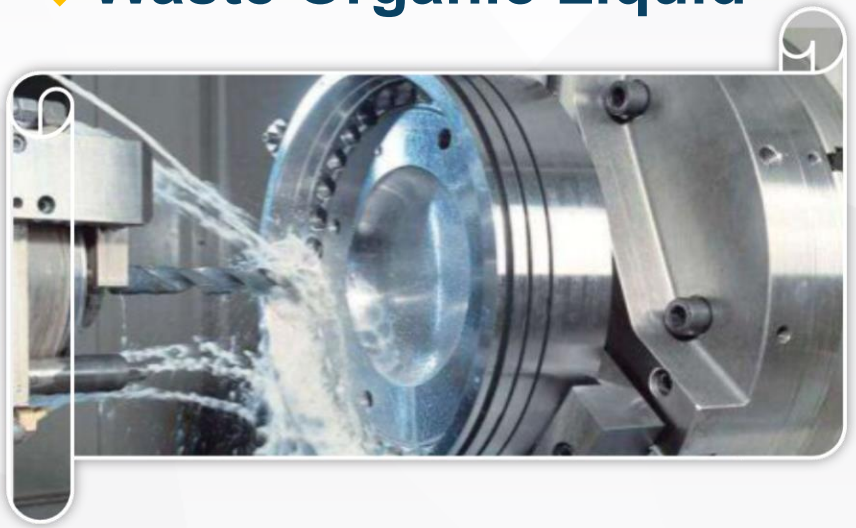
Spent electroplating liquid

Waste cutting oil



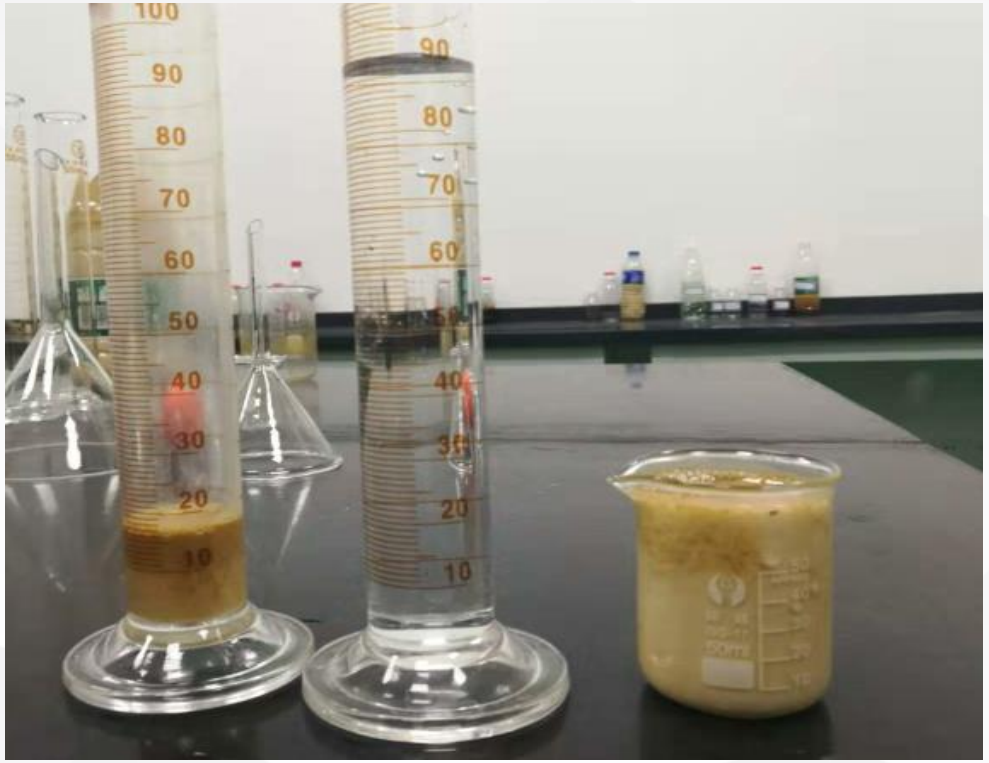
Waste emulsion oil

Waste Organic Liquid



04 Case Study: Lab test for Reducing Cable industry waste liquid

- 100mL Lab test unit



Test result:

- Right: waste liquid, Left: Concentrated
- Middle: Condensate
- Waste Liquid Reduction Rate: >90%

Waste liquid Source	Cable Industry
Existing treatment	Outsource Treatment
New process	>90% Reduction rate; Condensate water reuseable, <10%Concentrated Outsource Treatment

04 Case Study: Site pilot test results with other equipment:

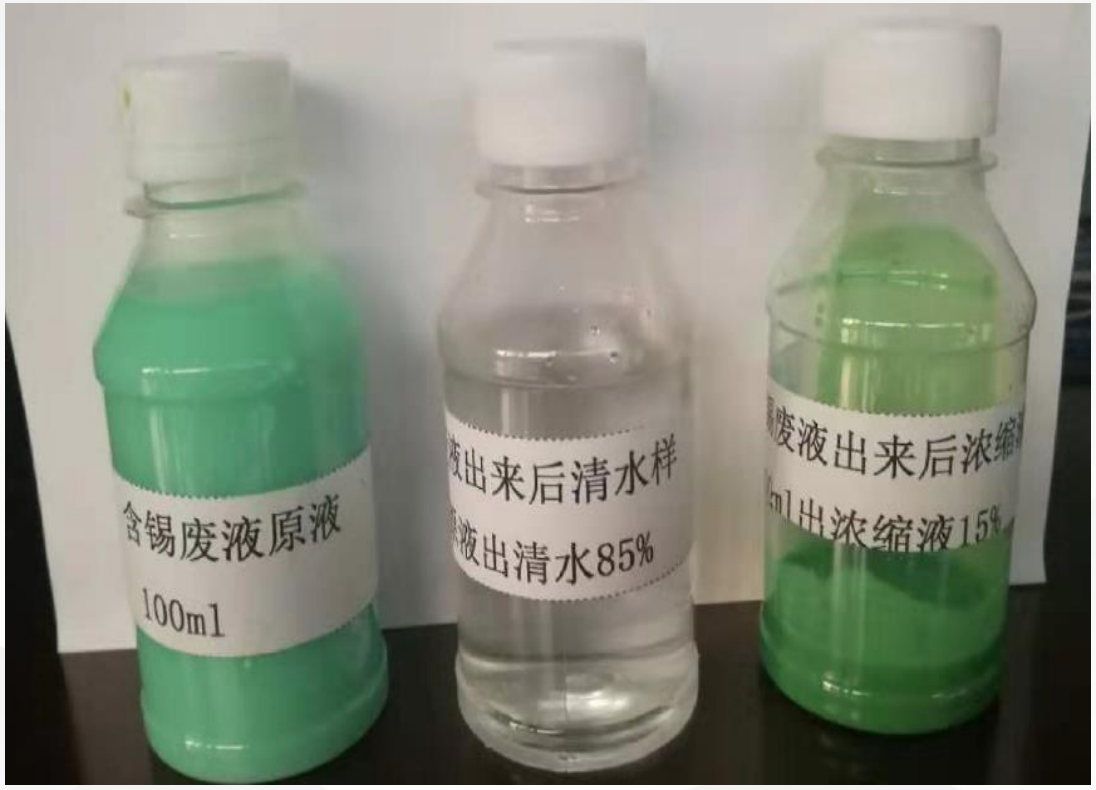
Reducing Cable Industry Waste Liquid Test Results

Item	HAA0.3	A Equipment	B Equipment
Evaporation temp	37℃	65℃	37℃
Power (KWH/ton-waste liquid)	<150	236.7	Failed
pH of Condensate	7.23	6.65	
COD of Condensate, mg/L	78	230	
Copper of Condensate, mg/L	0.24	3.86	
Petroleum of Condensate, mg/L	0.08	1.17	
Ammonia of Condensate, mg/L	1.22	7.1	
Total Phosphorus of Condensate, mg/L	0.06	0.4	

- **Pilot test on site: 30days**

04 Case Study: Lab Test for Reducing PCB Industry Chemical Tin Waste

- 100mL Lab test unit



Test result:

- **Right: Concentrated , Left: Waste liquid**
- **Middle: Condensate**
- **Waste Liquid Reduction Rate: >85%**

Waste liquid Source	Chemical Tin Waste Liquid from PCB Industry
Existing treatment	Outsource Treatment
New process	>85% Reduction rate; Condensate water reuseable <15%Concentrated might be sold based on high Tin %.

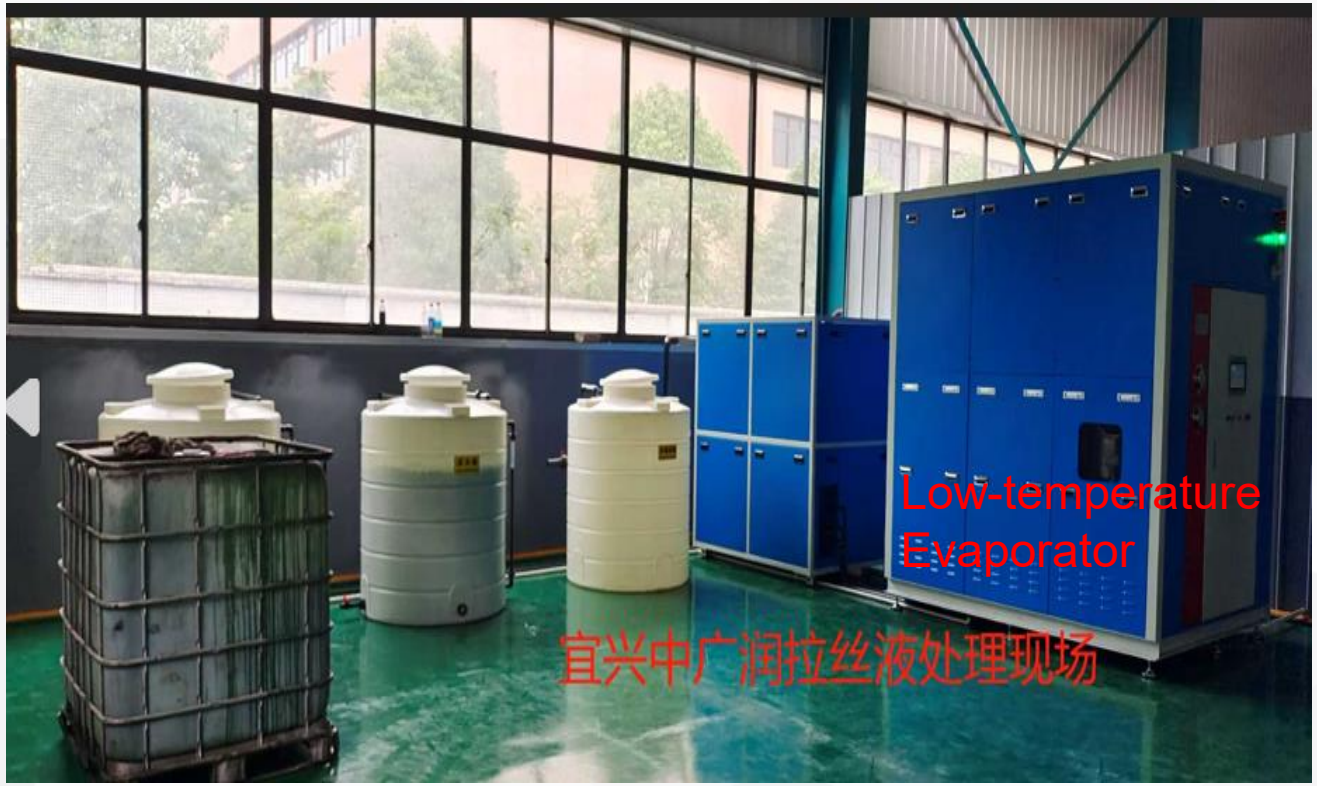
05 Case Study：Lab Test for Reducing Waste Oil from Reclaimed Industry

Item	Waste Liquid from Waste Oil Refinery Industry
Waste Liquid	Cond. :8.11ms/cm； PH: 5.7, COD 274 g/L; NH_3-N 2100mg/L
Concentrate	COD 1,080g/L; NH_3-N 9.3g/L
Condensate	>90%Reduction rate, Cond.:1140 **μs/cm**； PH 值5.57， COD 11g/L; NH_3-N 347 **mg/L**

04 Case Study：Suzhou 4m³/D Cutting Waste Oil Project

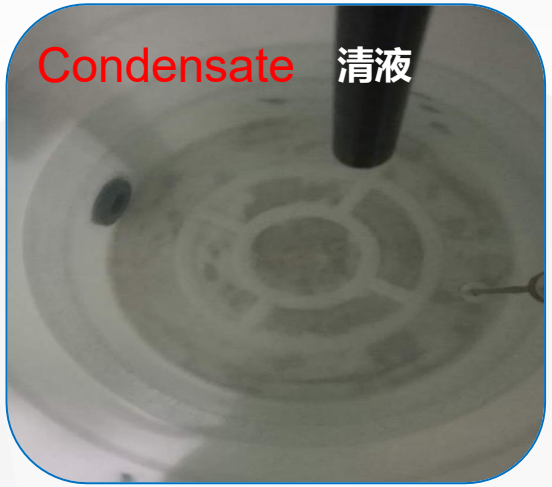
Waste type	Cutting Waste Oil
Discharge/Month	80~100T
Existing treatment	Outsourcing
New process	>90%Reduction rate，<10%Concentrate Outsourcing

04 Case Study：Wuxi Cable Industry 2m³/D銅拉絲廢液減量：



Waste type	Waste oil
Waste oil source	Waste oil from copper wire drawing processes in the cable industry
Discharge/Month	40~50T
Existing treatment	Outsourcing
New process	>95% Reduction rate, <5% Concentrate Outsourcing

04 Case Study: Ningbo 2m³/D Waste emulsion oil project



04 Case Study: Benefit Calculation

Example for emulsion oil reduction :

1. **Treatment capacity: 500kg per day**
2. **Outsource cost: 5,000 IDR per kg**
3. **Power cost: 500IDR per KWH**
4. **Reduction rate: 90%**
5. **Saving per day:**
   500x5.000 – 500x(1-90%)x5000 – 180x500
   =2.16 million

Yearly Saving: 330x2.16million=712.8 million IDR

ROI: 1,120 million/712.8= 1.6 year! --→ GOOD Investment

05 Eqipment Specification

ITEM	HAA-0.5	HAA-1.0	HAA-3.0	HAA-8.0	HAA-10
Capacity	0.6m³/day	1.0m³/day	3m³/day	8m³/day	10m³/day
Operation, hr	24hr/day	24hr/day	24hr/day	24hr/day	24hr/day
Total KW	4.5KW	10KW	21KW	43KW	48KW
Equipment Size	2.1×1.3×2.6m	2.2×1.8×2.6m	2.8×2.4×3m	4.5×2.4×3m	4.5×2.4×3m
Power Consumption	180KWH/m3	160KWH/m³	160KWH/m³	140KWH/m³	140KWH/m³

Client Supply compressed air: 50L/min@6kgf/cm²

Welcome to Discussion!

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