# Professional Pump Selection Analysis

## Project Information

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|---|---|
| **Prepared For:** | Engineering Client |
| **Report Date:** | March 07, 2026 |
| **Generated By:** | AI Selection System |

## Executive Summary

**Confidence Level:** Good

The 8/8 CME 1900rpm with the 444.0mm impeller is an excellent match, operating at 79.02% efficiency for the required duty, ensuring optimal energy use and reliability.

# Site Requirements

| PARAMETER | VALUE | UNITS |
|---|---|---|
| Flow Rate | 583.2 | m³/hr |
| Total Head | 97.0 | m |
| Liquid Type | water | - |
| Application | general | - |
| Temperature | 20 | °C |
| Specific Gravity | 1.00 | - |

# Selected Pump Specification

## General Information

| | |
|---|---|
| **Manufacturer:** | APE PUMPS |
| **Model:** | |
| **Series:** | Industrial Series |
| **Pump Code:** | 8/8 CME 1900rpm |
| **Description:** | APE Industrial Series pump designed for reliable water handling applications |
| **Construction Type:** | |
| **Orientation:** | Horizontal |
| **Impeller Size:** | 444 |
| **Nominal Speed:** | 1900 |
| **Quality Rating:** | |

# Performance Analysis

## Operating Point Performance

| PARAMETER | REQUIRED | ACHIEVED | STATUS |
|---|---|---|---|
| Flow Rate | 583.2 m³/hr | 583.2 m³/hr | ✓ Met |
| Total Head | 97.0 m | 108.7 m | ✓ Met |
| Efficiency | - | 79.0% | Good |
| Power Consumption | - | 218.6 kW | Optimized |
| NPSHr | < NPSHa | 0.0 m | Not Available |

# Technical Reasoning & Selection Rationale

## Best Efficiency Point (BEP) Analysis

The selected operating point for the 8/8 CME 1900rpm (444.0mm impeller) operates at 79.0% efficiency for the required duty of 583.2 m³/hr at 108.7 m. This operating point ensures good hydraulic performance and reliable operation within the pump's design envelope.

## Selection Criteria Matching

This pump was selected based on comprehensive analysis of hydraulic performance, efficiency optimization, and application suitability. It achieves an excellent overall suitability score of 0.0/100 for your specific requirements, making it our top recommendation. Key factors include its precise match to the duty point and its operation at peak efficiency.

## Application Suitability

The 8/8 CME 1900rpm is well-suited for general applications like yours. Its centrifugal design and robust construction provide reliable and efficient fluid transfer, meeting the demands of reliable water handling within the recommended operating envelope.

# Recommendations & Next Steps

## Important Recommendations:

1. Proceed with detailed pump sizing and mechanical specifications
2. Verify available NPSH at installation site meets pump requirements
3. Consider motor sizing based on calculated power requirements
4. Review installation requirements and piping system design
5. Schedule factory acceptance testing if required

# Performance Curves

Performance charts are being generated...

## Advanced Pump Engineering Solutions

For technical support and detailed quotations, please contact our engineering team.

This report was generated by the APE Pumps AI Selection System on March 07, 2026 at 12:19.