



## EQUIPMENT DATA SHEET (INCL PREDICTED PERFORMANCE CURVE)

|                    |   |                                |
|--------------------|---|--------------------------------|
| CLIENT             | : | Air Products Manufacturing LLC |
| PROJECT NAME/NO.   | : | WEP Renewables                 |
| CLIENT PO NO       | : | 4505605360                     |
| HMD DOCUMENT NO    | : | HMD-4505605360-C04-02          |
| CLIENT DOCUMENT NO | : |                                |
| HMD PUMP NO        | : | 839917 A/B                     |
| EQUIPMENT TAG NO   | : | 18-P-252 A/B                   |

|     |            |                  |             |            |             |
|-----|------------|------------------|-------------|------------|-------------|
|     |            |                  |             |            |             |
|     |            |                  |             |            |             |
|     |            |                  |             |            |             |
| 2   | 06/09/2022 | ISSUE FOR REVIEW | ARM         | AFS        | NW          |
| 1   | 30/05/2022 | ISSUE FOR REVIEW | JLW         | AFS        | NW          |
| 0   | 04/03/2022 | ISSUE FOR REVIEW | AFS         | AFS        | NW          |
| REV | DATE       | DESCRIPTION      | PREPARED BY | CHECKED BY | APPROVED BY |

**NOTE:**

| <div><div></div><div>RESOLUTION SHEET</div></div> |                                                                                                                                                                                                                                                                                                |                                             |                                            |                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------|----------------------------------------------------|
| Comment Number                                                                                                                    | Document Name: EQUIPMENT DATA SHEET<br>(INCL PREDICTED PERFORMANCE CURVE)                                                                                                                                                                                                                      |                                             | Revision from which comment first appeared | Comment Status:<br>Open\Closed -<br>(Date Closed:) |
|                                                                                                                                   | CLIENT COMMENT                                                                                                                                                                                                                                                                                 | HMD RESPONSE                                | Current Rev:                               |                                                    |
| 1                                                                                                                                 | Vendor to confirm that the Magnetic Material is in compliance to Table I.1 of API 685                                                                                                                                                                                                          | Confirm. <div>Noted, closed</div>           | 1                                          | Closed<br>(06/09/2022)                             |
| 2                                                                                                                                 | <div>TORQUE REQ'D FOR FULL CURVE (120% BEP), (9.1.3.7c) 17.33</div> <div>REQUIRED/ACTUAL SERVICE FACTOR (9.1.3.8) 6.6</div>                                                                                                                                                                    | Noted and updated. <div>Noted, closed</div> | 1                                          | Closed<br>(06/09/2022)                             |
| 3                                                                                                                                 | <div>53 HERTZ</div> <div>54 MINIMUM STARTING VOLTAGE</div> <div>55 INSULATION CLASS</div> <div>56 FULL LOAD AMPS</div> <div>57 LOCKED MOTOR AMPS</div> <div>58 START CONDITION</div> <div>Specify Details</div> <div>60</div> <div>80%</div> <div>F</div> <div>OPEN VALVE (FULLY-LOADED)</div> | Noted and updated. <div>Noted, closed</div> | 1                                          | Closed<br>(06/09/2022)                             |



WORLD ENERGY PARAMOUNT

World Energy Renewables Project

Paramount, California

MECHANICAL EQUIPMENT DATASHEET

Document Number: A8KM-18-088-540095-A

Rev. 2, 06-Sep-2022

EN203076-FLUOR-LD1-00224



WORLD ENERGY RENEWABLES PROJECT

MECHANICAL EQUIPMENT DATA SHEET FOR 18-P-252A/B

AMMONIA STRIPPER REFLUX PUMPS

Document No. HMD-4505605360-C04-02

Fluor Project No: A8KM

|     |             |                  |       |      |       |        |        |
|-----|-------------|------------------|-------|------|-------|--------|--------|
|     |             |                  |       |      |       |        |        |
|     |             |                  |       |      |       |        |        |
| 2   | 6-Sep-2022  | Issue for Review | 7     | ARM  | AFS   | NW     |        |
| 1   | 30-May-2022 | Issue for Review | 7     | JLW  | AFS   | NW     |        |
| 0   | 4-Mar-2022  | Issue for Review | 8     | AFS  | AFS   | NW     |        |
| REV | DATE        | DESCRIPTION      | PAGES | ORIG | CHK'D | APPV'D | CLIENT |

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|                                                    |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|------------|
| <div><div>FLUOR®</div><div>worldenergy</div></div> |                                                                                                                                                                                                                                                                                                     | <div>SEALESS CENTRIFUGAL PUMP</div> <div>API 685, 2nd EDITION</div> <div>DATA SHEET</div> <div>Note: This Data Sheet has been modified from that in Annex R of API 685, Second Edition.</div> |                                      | <div>Contract: A8KM</div> <div>Item No: 18-P-252A/B</div> <div>Revision: 2Date: 6-Sep-22</div> <div>Unit: SWSPPlus Unit</div> <div>Doc. No.: HMD-4505605360-C04-02</div> <div>Inquiry No.: 4505605360</div> <div>Sheet 2 of 7</div> |                                                                  |            |
| 1                                                  | CLIENT: World Energy Paramount                                                                                                                                                                                                                                                                      |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 2                                                  | SERVICE: Ammonia Stripper Reflux Pumps                                                                                                                                                                                                                                                              |                                                                                                                                                                                               | PLANT: World Energy Renewables Plant | SITE: Paramount, CA                                                                                                                                                                                                                 |                                                                  |            |
| 3                                                  | NO. REQ'D : 2 x 100% (Note 2.1)                                                                                                                                                                                                                                                                     | PUMP SIZE : 1.5 x 1 x 8                                                                                                                                                                       | TYPE: MAGNETIC DRIVEN                | NO. STAGES : 1                                                                                                                                                                                                                      |                                                                  |            |
| 4                                                  | MANUFACTURER: Sundyne HMD Kontro                                                                                                                                                                                                                                                                    |                                                                                                                                                                                               | MODEL: GSP Frame 1                   | SERIAL NO.: 839917 A/B                                                                                                                                                                                                              |                                                                  |            |
| 5                                                  | APPLICABLE TO : <input checked="" type="radio"/> PURCHASE                                                                                                                                                                                                                                           |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 6                                                  | INFORMATION BELOW TO BE COMPLETED: <input type="radio"/> BY PURCHASER <input checked="" type="radio"/> BY SUPPLIER <input type="radio"/> BY EITHER                                                                                                                                                  |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 7                                                  | ● LIQUID CHARACTERISTICS                                                                                                                                                                                                                                                                            |                                                                                                                                                                                               |                                      | OPERATING CONDITIONS - CONTINUED                                                                                                                                                                                                    |                                                                  |            |
| 8                                                  | LIQUID TYPE OR NAME: Ammonia Stripper Reflux                                                                                                                                                                                                                                                        |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     | NOTE: Max, Min, & Rated values refer only to the property listed |            |
| 9                                                  |                                                                                                                                                                                                                                                                                                     | UNITS                                                                                                                                                                                         | MAXIMUM                              | NORMAL                                                                                                                                                                                                                              |                                                                  |            |
| 10                                                 | VAPOR PRESSURE:                                                                                                                                                                                                                                                                                     | psi (a)                                                                                                                                                                                       |                                      | 34.7                                                                                                                                                                                                                                |                                                                  |            |
| 11                                                 | SPECIFIC GRAVITY:                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                               |                                      | 0.84                                                                                                                                                                                                                                |                                                                  |            |
| 12                                                 | SPECIFIC HEAT:                                                                                                                                                                                                                                                                                      | BTU/lbm °F                                                                                                                                                                                    |                                      | 1.043                                                                                                                                                                                                                               |                                                                  |            |
| 13                                                 | VISCOSITY:                                                                                                                                                                                                                                                                                          | cP                                                                                                                                                                                            |                                      | 0.24                                                                                                                                                                                                                                |                                                                  |            |
| 14                                                 | ● OPERATING CONDITIONS (6.1.2)                                                                                                                                                                                                                                                                      |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 15                                                 |                                                                                                                                                                                                                                                                                                     | UNITS                                                                                                                                                                                         | MAXIMUM                              | RATED                                                                                                                                                                                                                               | NORMAL                                                           | MINIMUM    |
| 16                                                 | NPSHa Datum                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                               | C.L. IMPELLER - 3' Above Grade       |                                                                                                                                                                                                                                     |                                                                  |            |
| 17                                                 | PUMPING TEMP.:                                                                                                                                                                                                                                                                                      | °F                                                                                                                                                                                            | 170.0                                | 120.0                                                                                                                                                                                                                               | 120.0                                                            |            |
| 18                                                 | FLOW:                                                                                                                                                                                                                                                                                               | gpm                                                                                                                                                                                           |                                      | 46.0                                                                                                                                                                                                                                | 35.4                                                             | 14.2       |
| 19                                                 | DISCHARGE PRESS: (6.3.2)                                                                                                                                                                                                                                                                            | psig                                                                                                                                                                                          |                                      | 115.5                                                                                                                                                                                                                               |                                                                  |            |
| 20                                                 | SUCTION PRESSURE:                                                                                                                                                                                                                                                                                   | psig                                                                                                                                                                                          | 82.3                                 | 26.0                                                                                                                                                                                                                                |                                                                  |            |
| 21                                                 | DIFFERENTIAL PRESSURE:                                                                                                                                                                                                                                                                              | psi                                                                                                                                                                                           |                                      | 89.5                                                                                                                                                                                                                                |                                                                  |            |
| 22                                                 | DIFFERENTIAL HEAD:                                                                                                                                                                                                                                                                                  | ft                                                                                                                                                                                            |                                      | 246.9                                                                                                                                                                                                                               |                                                                  |            |
| 23                                                 | NPSH <sub>A</sub> :                                                                                                                                                                                                                                                                                 | ft                                                                                                                                                                                            |                                      | 16.4                                                                                                                                                                                                                                | Excludes required 3' margin                                      |            |
| 24                                                 | HYDRAULIC POWER:                                                                                                                                                                                                                                                                                    | HP                                                                                                                                                                                            |                                      | 2.4                                                                                                                                                                                                                                 |                                                                  |            |
| 25                                                 | SITE AND UTILITY DATA                                                                                                                                                                                                                                                                               |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 26                                                 | LOCATION:                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                               |                                      | COOLING WATER: IF APPLICABLE                                                                                                                                                                                                        |                                                                  |            |
| 27                                                 | <div>OUTDOORUNHEATED</div>                                                                                                                                                                                                                                                                          |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 28                                                 | MOUNTED AT: GRADE                                                                                                                                                                                                                                                                                   | <input type="radio"/> TROPICALIZATION REQ'D                                                                                                                                                   |                                      | TEMP °F                                                                                                                                                                                                                             | INLET 80                                                         | RETURN 120 |
| 29                                                 | ELECTRICAL AREA CLASSIFICATION:                                                                                                                                                                                                                                                                     | <input type="radio"/> NON CLASSIFIED                                                                                                                                                          |                                      | PRESSURE psig                                                                                                                                                                                                                       | 45                                                               | 35         |
| 30                                                 | CLASS: I                                                                                                                                                                                                                                                                                            | GROUP: B,C,D                                                                                                                                                                                  | DIVISION: 2                          | SOURCE                                                                                                                                                                                                                              | Cooling Tower                                                    |            |
| 31                                                 | ZONE:                                                                                                                                                                                                                                                                                               | GROUP:                                                                                                                                                                                        | TEMP. CLASS T3C                      | COOLING WATER CHLORIDE CONCENTRATION: <840 ppmw                                                                                                                                                                                     |                                                                  |            |
| 32                                                 | SITE DATA:                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 33                                                 | ELEVATION (MSL): 69 ft                                                                                                                                                                                                                                                                              | BAROMETER: 14.7 psia                                                                                                                                                                          |                                      | INSTRUMENT AIR: MAX: N/A psig MIN: N/A psig                                                                                                                                                                                         |                                                                  |            |
| 34                                                 | RANGE OF AMBIENT TEMPS: MIN / MAX                                                                                                                                                                                                                                                                   | 35 / 105 °F                                                                                                                                                                                   |                                      | NITROGEN: MAX: psig MIN: psig                                                                                                                                                                                                       |                                                                  |            |
| 35                                                 | RELATIVE HUMIDITY: MIN / MAX                                                                                                                                                                                                                                                                        | AVG / 54 %                                                                                                                                                                                    |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 36                                                 | UNUSUAL CONDITIONS:                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 37                                                 | UTILITY CONDITIONS:                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 38                                                 | ELECTRICITY:                                                                                                                                                                                                                                                                                        | DRIVERS                                                                                                                                                                                       | HEATING                              | CONTROL                                                                                                                                                                                                                             | Instruments                                                      |            |
| 39                                                 | VOLTAGE                                                                                                                                                                                                                                                                                             | 460                                                                                                                                                                                           | 120                                  | 120                                                                                                                                                                                                                                 | 24V                                                              |            |
| 40                                                 | PHASE                                                                                                                                                                                                                                                                                               | 3                                                                                                                                                                                             | 1                                    | 1                                                                                                                                                                                                                                   |                                                                  |            |
| 41                                                 | HERTZ                                                                                                                                                                                                                                                                                               | 60                                                                                                                                                                                            | 60                                   | 60                                                                                                                                                                                                                                  |                                                                  |            |
| 42                                                 |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 43                                                 | NOTES                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 44                                                 | 2.1 2 x 100% pumps. One (1) operating & one (1) spare.                                                                                                                                                                                                                                              |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 45                                                 | 2.2 Corrosive compositions dissolved in water (ppmw):                                                                                                                                                                                                                                               |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 46                                                 | H2S = 10.2 wt%                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 47                                                 | NH3 = 31.9 wt%                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 48                                                 | NH4SH = 14.2 wt%                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 49                                                 | CO2 = 91 ppmw                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 50                                                 | 2.3 Pump centerline is assumed to be 3'-0" above grade and 27" above top of foundation. Pump Supplier shall adjust the NPSHa based on the actual pump centerline elevation above the pump foundation. A minimum NPSH margin of 3 ft or 10%, whichever is higher, is required at 110% of Rated flow. |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 51                                                 |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 52                                                 | 2.4 Pump Control Method: Flow control valve.                                                                                                                                                                                                                                                        |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 53                                                 | 2.5 Motor shall be rated for Class 1, Div 2, Gr B,C,D and Temperature Code T3C.                                                                                                                                                                                                                     |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 54                                                 | 2.6 Pump supports shall meet design load requirements per Project Spec. A8KM-PP-000-40002-A, Structural Data for Mechanical Equipment, and A8KM-PP-000-20001-A, Plant Site Data Sheet.                                                                                                              |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 55                                                 |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 56                                                 |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 57                                                 |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 58                                                 |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 59                                                 |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |
| 60                                                 |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                     |                                                                  |            |

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SEALESS CENTRIFUGAL PUMP  
API 685, 2nd EDITION  
DATA SHEET

Note: This Data Sheet has been modified from that in  
Annex R of API 685, Second Edition.

Contract: A8KM  
Item No: 18-P-252A/B  
Revision: 2 Date: 6-Sep-22  
Unit: SWSPlus Unit  
Doc. No.: HMD-4505605360-C04-02  
Inquiry No.: 4505605360  
Sheet 3 of 7

REV

PERFORMANCE

|                                                  |            |           |                    |
|--------------------------------------------------|------------|-----------|--------------------|
| PROPOSAL CURVE NO.:                              | K5-19/50-2 | RPM       | 3500               |
| As Tested Curve No.:                             |            |           |                    |
| IMPELLER DIA.: RATED:                            | 7.87       | MAX: 7.99 | MIN: 5.90 in       |
| HYDRAULIC EFFICIENCY AT RATED POINT:             |            | 29        | %                  |
| HYSTRERESIS & MECHANICAL LOSSES:                 |            |           | HP                 |
| RATED POWER:                                     | 9.39       | HP        | EFFICIENCY: 25.5 % |
| RATED CURVE BEP FLOW (at rated impeller dia.)    |            | 84.3      | gpm                |
| MIN. FLOW THERMAL :                              | 6.60       | gpm       | STABLE : 10.74 gpm |
| PREFERRED OPERATING REGION: (6.1.11)             | 59.01      | to        | 101.16 gpm         |
| ALLOWABLE OPERATING REGION:                      | 10.74      | to        | 102 gpm            |
| MAX. HEAD @ RATED IMPELLER:                      |            | 264       | ft                 |
| MAX. POWER @ RATED IMPELLER:                     |            | 11.5      | HP                 |
| PERCENT RISE TO SHUTOFF:                         |            | 6.92      | %                  |
| ORIFICE USED TO STEEPEN CURVE OR GIVE CONT. RISE |            | NO        |                    |
| NPSH3 at RATED FLOW :                            |            | 6.56      | ft                 |
| CL PUMP TO U/S BASEPLATE:                        |            | 1.39      | ft                 |
| NPSH MARGIN at RATED FLOW :                      |            | 9.84      | ft                 |
| SPECIFIC SPEED: (6.1.16)                         |            | 593       | gpm,rpm,ft         |
| SUCTION SPECIFIC SPEED LIMIT:                    |            | 9,000     |                    |
| SUCTION SPECIFIC SPEED:                          |            | 5187      | gpm,rpm,ft         |

|                                      |    |     |
|--------------------------------------|----|-----|
| ROTOR CHAMBER TEMP RISE OPERATING:   |    |     |
| AT RATED CONDITIONS                  |    | °F  |
| AT MAXIMUM PUMP FLOW                 |    | °F  |
| ROTOR CHAMBER TEMP RISE ON SHUTDOWN: |    | °F  |
| SOUND LEVELS (AT 3 FT)               |    |     |
| MAX ALLOWABLE SOUND PRESSURE LEVEL   | 85 | dBA |
| ESTIMATED MAX SOUND PRESSURE LEVEL   | 71 | dBA |

SYSTEM DESCRIPTION

|                                                          |                    |
|----------------------------------------------------------|--------------------|
| SUCTION VESSEL:                                          | CLOSED             |
| PUMP LOCATION:                                           | BELOW LIQUID LEVEL |
| SUCTION VESSEL ON LEVEL CONTROL?                         | YES                |
| PRESSURE SENSOR ON SUCTION VESSEL?                       | YES                |
| SUCTION VESSEL PRESSURE MAINTAINED BY LIQUID LEVEL PLUS: |                    |
| FLUID VAPOR PRESSURE                                     |                    |
| IF FLUID LEVEL OR TANK PRESSURE DROPS TOO LOW, WILL      |                    |
| SYSTEM AUTOMATICALLY STOP THE PUMP?                      | YES                |
| WILL THE PUMP RUN DRY IN NORMAL OPERATION?               | NO                 |
| REMARKS:                                                 |                    |

CONSTRUCTION

|                                                |      |                                |        |          |           |          |
|------------------------------------------------|------|--------------------------------|--------|----------|-----------|----------|
| API PUMP TYPE:                                 | OH2  | [Based on API 610 Definitions] |        |          |           |          |
| NOZZLE CONNECTIONS: (6.4.5)                    |      |                                |        |          |           |          |
|                                                | SIZE | FACING                         | RATING | POSITION |           |          |
| SUCTION                                        | 1.5  | RF                             | 300    | END      |           |          |
| DISCHARGE                                      | 1    | RF                             | 300    | TOP      |           |          |
| FLANGE THICKNESS REQ'S NON-STD BOLT LENGTH     |      |                                |        |          |           |          |
| PRESSURE CASING AUXILIARY CONNECTIONS: (6.3.3) |      |                                |        |          |           |          |
|                                                | NO.  | SIZE                           | TYPE   | FACING   | RATING    | POSITION |
| PURGE/FLUSH OUT                                | -    | -                              | -      | -        | -         | -        |
| DRAIN                                          | 1    | 3/4                            | BW     | RF       | 300:B     | SIDE     |
| VENT                                           | -    | -                              | -      | -        | -         | -        |
| PRESSURE SENSOR                                | 1    | 1                              | BW     | RF       | 300LB     | SIDE     |
| TEMP SENSOR                                    | -    | -                              | -      | -        | -         | -        |
| WARM-UP LINE                                   | -    | -                              | -      | -        | -         | -        |
| EXTERNAL                                       | -    | -                              | -      | -        | -         | -        |
| 2ND DRAIN                                      | 1    | 3/4                            | BW     | RF       | 300LB     | SIDE     |
| GUSSET SUPPORT REQUIRED (6.3.3.5):             |      |                                |        |          | YES       |          |
| DRAIN CONNECTION FOR SECONDARY CASING          |      |                                |        |          | NO        |          |
| ROTOR CAVITY DRAINABLE THROUGH 2ND DRAIN:      |      |                                |        |          | N/A       |          |
| DRAIN VALVE SUPPLIED BY:                       |      |                                |        |          | PURCHASER |          |
| VENT VALVE SUPPLIED BY:                        |      |                                |        |          | N/A       |          |
| NO THREAD CONS TO SECONDARY CASING:            |      |                                |        |          | NO        |          |
| SPECIAL FITTINGS FOR TRANSITIONING (6.3.3.2):  |      |                                |        |          | NO        |          |
| CYLINDRICAL THREADS REQUIRED (6.3.3.11.3):     |      |                                |        |          | NO        |          |
| MACHINED AND STUDDED CONNECTIONS (6.3.3.7):    |      |                                |        |          | NO        |          |

|                                        |                         |
|----------------------------------------|-------------------------|
| CASING MOUNTING:                       | CENTERLINE              |
| CASING TYPE: (6.3.10)                  | SINGLE VOLUTE           |
| ROTATION: (VIEWED FROM COUPLING END)   |                         |
| CASE PRESSURE RATING:                  |                         |
| MAWP: (6.2.2)                          | 580.151 psig @ 170 °F   |
| HYDROTEST:                             | 870.226 psig @ 100.4 °F |
| TYPE BOLTING USED ON PUMP (6.1.31.1):  |                         |
| AUXILIARY CIRCULATION PIPING PLAN      |                         |
| PIPING FORM:                           |                         |
| PIPING MATERIAL:                       |                         |
| PIPING ASSEMBLY:                       |                         |
| IF FLANGED:                            |                         |
| COOLING WATER REQUIREMENTS:            | NOT APPLICABLE          |
| COOLING WATER PIPING PLAN              |                         |
| PIPING FORM:                           |                         |
| PIPING MATERIAL:                       |                         |
| PIPING ASSEMBLY:                       |                         |
| IF FLANGED:                            |                         |
| FOR: JACKET                            | gpm                     |
| HEAT EXCHANGER                         | gpm                     |
| TOTAL COOLING WATER                    | gpm                     |
| HEATING REQUIREMENTS:                  | NOT APPLICABLE          |
| HEATING MEDIUM                         | gpm                     |
| HEATING PIPING MATERIAL:               |                         |
| ROTOR:                                 |                         |
| IMPELLER TYPE                          | CLOSED                  |
| RENEWABLE IMPELLER WEAR RINGS REQUIRED | YES                     |
| RENEWABLE CASE WEAR RINGS REQUIRED     | YES                     |
| COMPONENT BALANCE TO ISO 1940 G1.0     | YES                     |

NOTES

|                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.1 Flanges for spiral wound gaskets shall have flange surface finish of 125 µin Ra to 250 µin Ra maximum. Finishes shall be judged by visual comparison with surface roughness standards conforming to ASME B46.1 |
| 3.2 Reduced hardness materials are required in accordance with API 685, 2nd Edition, Section 6.10.1.11                                                                                                             |
|                                                                                                                                                                                                                    |
|                                                                                                                                                                                                                    |
|                                                                                                                                                                                                                    |
|                                                                                                                                                                                                                    |

|                                                               |                                                           |        |          |                                                                                                                                                                                               |                                          |                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
|---------------------------------------------------------------|-----------------------------------------------------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-------|-------|-------------------------------------------|--|--------|---------------|-----|-----|----|-----|-------------|-------------|--|
| <div><div><div>FLUOR®</div><div>worldenergy</div></div></div> |                                                           |        |          | <div>SEALESS CENTRIFUGAL PUMP</div> <div>API 685, 2nd EDITION</div> <div>DATA SHEET</div> <div>Note: This Data Sheet has been modified from that in Annex R of API 685, Second Edition.</div> |                                          |                                                                                                                                                                                                                                                                                             |  | <div>Contract: A8KM</div> <div>Item No: 18-P-252A/B</div> <div>Revision: 2Date: 6-Sep-22</div> <div>Unit: SWSPlus Unit</div> <div>Doc. No.: HMD-4505605360-C04-02</div> <div>Inquiry No.: 4505605360</div> <div>Sheet 4 of 7</div> |  |  |       | REV   |                                           |  |        |               |     |     |    |     |             |             |  |
| 1                                                             | CONSTRUCTION (CONT'D)                                     |        |          |                                                                                                                                                                                               |                                          |                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 2                                                             | MATERIAL (6.10.1.1)                                       |        |          |                                                                                                                                                                                               |                                          | MAGNETIC DRIVEN PUMP SPECIFIC (9.1)                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 3                                                             | APPENDIX H CLASS: D-2: SuperDuplex / SuperDuplex          |        |          |                                                                                                                                                                                               |                                          | DRIVER TYPE MOTOR GEAR NO                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 4                                                             | MINIMUM DESIGN METAL TEMP (6.10.4.1)      psig @ 32 °F    |        |          |                                                                                                                                                                                               |                                          | CLOSE COUPLED DESIGN APPROVED (9.1.1.2):                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 5                                                             | IMPACT TEST SPECIFICATION                                 |        |          |                                                                                                                                                                                               |                                          | DESIGN FOR REMOVAL OF DRIVE END WITHOUT DISTURBING THE                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 6                                                             | REDUCED HARDNESS MATERIALS REQ'D (6.10.1.11) YES          |        |          |                                                                                                                                                                                               |                                          | PRESSURE CASING OR DRIVER (9.1.1.4): YES                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 7                                                             | APPLICABLE HARDNESS STANDARD (6.10.1.11) MR0103           |        |          |                                                                                                                                                                                               |                                          | DESIGN CONTAINMENT SHELL FOR VACUUM (6.2.4):                                                                                                                                                                                                                                                |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 8                                                             | COPPER IN CONTACT W/ PROCESS FLUIDS NOT ALLOWED           |        |          |                                                                                                                                                                                               |                                          | CONTAINMENT SHELL VACUUM DESIGN: psig                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 9                                                             | CASING & COVER: 25% Chr Duplex St St (ASTM A995 Gr.5A)    |        |          |                                                                                                                                                                                               |                                          | MAGNETIC COUPLING TYPE: SYNCHRONOUS                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 10                                                            | IMPELLER: 25% Chr Duplex St St (ASTM A890 Gr.3A, or 5A)   |        |          |                                                                                                                                                                                               |                                          | <table><tr><td>OUTER</td><td>INNER</td></tr><tr><td colspan="2">Neodymium Iron Boron (fully encapsulated)</td></tr><tr><td>Bonded</td><td>Bonded/Potted</td></tr><tr><td>248</td><td>248</td></tr><tr><td>No</td><td>Yes</td></tr><tr><td>Proprietary</td><td>Proprietary</td></tr></table> |  |                                                                                                                                                                                                                                    |  |  | OUTER | INNER | Neodymium Iron Boron (fully encapsulated) |  | Bonded | Bonded/Potted | 248 | 248 | No | Yes | Proprietary | Proprietary |  |
| OUTER                                                         | INNER                                                     |        |          |                                                                                                                                                                                               |                                          |                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| Neodymium Iron Boron (fully encapsulated)                     |                                                           |        |          |                                                                                                                                                                                               |                                          |                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| Bonded                                                        | Bonded/Potted                                             |        |          |                                                                                                                                                                                               |                                          |                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 248                                                           | 248                                                       |        |          |                                                                                                                                                                                               |                                          |                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| No                                                            | Yes                                                       |        |          |                                                                                                                                                                                               |                                          |                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| Proprietary                                                   | Proprietary                                               |        |          |                                                                                                                                                                                               |                                          |                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 11                                                            | SHAFT: 22% Chr Duplex                                     |        |          |                                                                                                                                                                                               |                                          | MAGNETIC MATERIAL                                                                                                                                                                                                                                                                           |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 12                                                            | WEAR RINGS: ASTM A276 UNS S31803                          |        |          |                                                                                                                                                                                               |                                          | MOUNTING METHOD                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 13                                                            | CONTAINMENT SHELL/STATOR LINER: PEEK Composite            |        |          |                                                                                                                                                                                               |                                          | TEMP. LIMIT °F                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 14                                                            | INNER MAG SHEATH/ROTOR LINER: Alloy C 276 - Resin Potted  |        |          |                                                                                                                                                                                               |                                          | HERMETIC. SEALED                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 15                                                            | BEARING SLEEVE: Silicon Carbide                           |        |          |                                                                                                                                                                                               |                                          | NO. OF MAGNETS                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 16                                                            | BEARING BRUSHING: Silicon Carbide                         |        |          |                                                                                                                                                                                               |                                          | PROTECTION OF OUTER MAG RING (9.1.3.5):                                                                                                                                                                                                                                                     |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 17                                                            | STATOR HOUSING/FRAME:                                     |        |          |                                                                                                                                                                                               |                                          | STARTING REQUIREMENT: ACROSS-THE-LINE                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 18                                                            | INSPECTION CLASS LEVEL 2                                  |        |          |                                                                                                                                                                                               |                                          | TORQUE RATING (DECOUPLING) 92.93 ft-lb                                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 19                                                            | PRESSURE VESSEL DESIGN CODE REFERENCES                    |        |          |                                                                                                                                                                                               |                                          | MAX TORQUE REQ'D ON STARTING (9.1.3.7a) 2.8 ft-lb                                                                                                                                                                                                                                           |  |                                                                                                                                                                                                                                    |  |  | 1     |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 20                                                            | THESE REFERENCES MUST BE LISTED BY THE MANUFACTURER:      |        |          |                                                                                                                                                                                               |                                          | PUMP TORQUE AT RATED (+5%), (9.1.3.7b) 14.09 ft-lb                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                    |  |  | 1     |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 21                                                            | SOURCE OF MATERIAL PROPERTIES ASTM                        |        |          |                                                                                                                                                                                               |                                          | DESIGN FOR FULL CURVE TORQUE REQUIREMENTS (9.1.3.7c) YES                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                                                    |  |  | 1     |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 22                                                            |                                                           |        |          |                                                                                                                                                                                               |                                          | TORQUE REQ'D FOR FULL CURVE (120% BEP), (9.1.3.7c) 17.33 ft-lb                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                    |  |  | 1     |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 23                                                            | CASTING FACTORS USED IN DESIGN (TABLE 3)                  |        |          |                                                                                                                                                                                               |                                          | REQUIRED/ACTUAL SERVICE FACTOR (9.1.3.8) 1.25 / 6.6                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                    |  |  | 2     |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 24                                                            | WELDING AND REPAIRS                                       |        |          |                                                                                                                                                                                               |                                          | SUBMIT MAG-COUPLING TORQUE VS TEMP. CURVE YES                                                                                                                                                                                                                                               |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 25                                                            | ALTERNATE WELDING CODES AND STANDARDS                     |        |          |                                                                                                                                                                                               |                                          | SUBMIT SPEED VS TORQUE CURVE (9.1.3.10) YES                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 26                                                            | WELDER QUALIFICATION                                      |        |          |                                                                                                                                                                                               |                                          | BEARINGS AND LUBRICATION (9.1.4)                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 27                                                            | WELD PROCEDURE QUALIFICATION                              |        |          |                                                                                                                                                                                               |                                          | DRIVE MAGNET BEARING (TYPE / NUMBER): See Note 6.7 for additional requirements                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 28                                                            | MP OR LP EXAM OF PLATE EDGE                               |        |          |                                                                                                                                                                                               |                                          | RADIAL BALL / 6209                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 29                                                            | POST WELD HEAT TREAT                                      |        |          |                                                                                                                                                                                               |                                          | THRUST BALL / 6209                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 30                                                            | POST WELD HEAT TREAT OF CASING                            |        |          |                                                                                                                                                                                               |                                          | LUBRICATION METHOD: OIL BATH                                                                                                                                                                                                                                                                |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 31                                                            | ALTERNATE STD/ACCEPT CRITERIA APPLIES                     |        |          |                                                                                                                                                                                               |                                          | OIL VISC. ISO GRADE VG 68                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 32                                                            |                                                           |        |          |                                                                                                                                                                                               |                                          | CONSTANT LEVEL OILER (9.1.4.2.1)                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 33                                                            | INSPECTION                                                | METHOD | CASTINGS | FABRICATIONS                                                                                                                                                                                  | PREFERENCE Note 5.2                      |                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 34                                                            | RADIOGRAPH                                                |        |          |                                                                                                                                                                                               | HOUSING VENT Required                    |                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 35                                                            | ULTRASONIC                                                |        |          |                                                                                                                                                                                               | SUMP COLLECTOR REQUIRED (9.1.4.2.2)      |                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 36                                                            | MAG PARTICLE                                              |        |          |                                                                                                                                                                                               | BEARING HOUSING END SEALS Inpro vs Equal |                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 37                                                            | LIQ PENETRATE                                             |        |          |                                                                                                                                                                                               | SHAFT COUPLING & GUARD: (9.1.5.2)        |                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 38                                                            | VISUAL                                                    |        |          |                                                                                                                                                                                               | COUPLING MANUFACTURER: John Crane        |                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 39                                                            | MOTOR REQUIREMENTS APPLICABLE TO ALL (7.1.2), See Sheet 8 |        |          |                                                                                                                                                                                               |                                          | MODEL Metastream TSKS 13 SPACER LENGTH 5.512 in                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 40                                                            | MANUFACTURER: BALDOR                                      |        |          |                                                                                                                                                                                               |                                          | RATING (POWER / 100 RPM) SERVICE FACTOR min. 1.5                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 41                                                            | FRAME OR MODEL: 256T                                      |        |          |                                                                                                                                                                                               |                                          | COUPLING BALANCED TO ISO 1940-1G6.3 (9.1.5.2.3) G2.5                                                                                                                                                                                                                                        |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 42                                                            | ORIENTATION: HORIZONTAL                                   |        |          |                                                                                                                                                                                               |                                          | COUPLING TO ISO 14691 (9.1.5.2.9)                                                                                                                                                                                                                                                           |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 43                                                            |                                                           |        |          |                                                                                                                                                                                               |                                          | COUPLING GUARD STANDARD (9.1.5.2.11) ANSI B15.1                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 44                                                            | NAMEPLATE POWER HP 15                                     |        |          |                                                                                                                                                                                               |                                          | IGNITION HAZARD ASSESSMENT REQUIRED (9.1.5.2.11.5) N/A                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 45                                                            | SERVICE FACTOR 1.15                                       |        |          |                                                                                                                                                                                               |                                          | SPARK RESISTANT MATERIAL (9.1.5.2.11.6) YES                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 46                                                            | NOMINAL RPM 3500                                          |        |          |                                                                                                                                                                                               |                                          | BASEPLATE (9.1.5.3)                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 47                                                            | RATED LOAD RPM                                            |        |          |                                                                                                                                                                                               |                                          | API BASEPLATE NUMBER (9.1.5.3.3):                                                                                                                                                                                                                                                           |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 48                                                            | VARIABLE SPEED REQUIRED NO                                |        |          |                                                                                                                                                                                               |                                          | BASEPLATE CONSTRUCTION (9.1.5.3.1.1): FULL TOP DECKING                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 49                                                            | SOURCE OF VARIABLE SPEED                                  |        |          |                                                                                                                                                                                               |                                          | BASEPLATE DRAINAGE (7.3.1) DRAIN RIM                                                                                                                                                                                                                                                        |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 50                                                            |                                                           |        |          |                                                                                                                                                                                               |                                          | MOUNTING: EPOXY GROUTED                                                                                                                                                                                                                                                                     |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 51                                                            | VOLTAGE 460                                               |        |          |                                                                                                                                                                                               |                                          | NON-GROUT CONSTRUCTION (9.1.5.3.13) NOT REQUIRED                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 52                                                            | PHASE 3                                                   |        |          |                                                                                                                                                                                               |                                          | OPEN DECK DESIGN (9.1.5.3.14):                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 53                                                            | HERTZ 60                                                  |        |          |                                                                                                                                                                                               |                                          | PROVIDE STAINLESS SPACER PLATE UNDER ALL EQUIP. FEET (9.1.5.3.6):                                                                                                                                                                                                                           |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 54                                                            | MINIMUM STARTING VOLTAGE 80%                              |        |          |                                                                                                                                                                                               |                                          | OTHER Furnish two (2) diagonally opposed grounding provisions, Note 6.3                                                                                                                                                                                                                     |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 55                                                            | INSULATION CLASS F                                        |        |          |                                                                                                                                                                                               |                                          | SEPARATE MOTOR DRIVER, See Sheet 8                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                    |  |  | 2     |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 56                                                            | FULL LOAD AMPS 17                                         |        |          |                                                                                                                                                                                               |                                          | APPLICABLE SPEC: ENCLOSURE:                                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                                                    |  |  | 2     |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 57                                                            | LOCKED MOTOR AMPS 114                                     |        |          |                                                                                                                                                                                               |                                          | INCLUDE: SPACE HEATER VIB. SENSOR                                                                                                                                                                                                                                                           |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 58                                                            | START CONDITION OPEN VALVE (FULLY-LOADED)                 |        |          |                                                                                                                                                                                               |                                          | LUBRICATION:                                                                                                                                                                                                                                                                                |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 59                                                            |                                                           |        |          |                                                                                                                                                                                               |                                          | DRIVER MOTOR BEARING (TYPE / NUMBER):                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 60                                                            |                                                           |        |          |                                                                                                                                                                                               |                                          | RADIAL /                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 61                                                            |                                                           |        |          |                                                                                                                                                                                               |                                          | THRUST /                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |
| 62                                                            |                                                           |        |          |                                                                                                                                                                                               |                                          |                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                    |  |  |       |       |                                           |  |        |               |     |     |    |     |             |             |  |

|                                                                                  |                                                          |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
|----------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----|------|--------|------|------|-------|---|
|  |                                                          | <div>SEALESS CENTRIFUGAL PUMP<br/>API 685, 2nd EDITION<br/>DATA SHEET</div> <div>Note: This Data Sheet has been modified from that in<br/>Annex R of API 685, Second Edition.</div> |  | <div>Contract: A8KM</div> <div>Item No: 18-P-252A/B</div> <div>Revision: 2      Date: 6-Sep-22</div> <div>Unit: SWSPlus Unit</div> <div>Doc. No.: HMD-4505605360-C04-02</div> <div>Inquiry No.: 4505605360</div> <div>Sheet 5 of 7</div> |  | REV |      |        |      |      |       |   |
| 1                                                                                | <b>CANNED MOTOR PUMP SPECIFIC (9.2)</b>                  |                                                                                                                                                                                     |  | <b>PREPARATION FOR SHIPMENT (8.4.1)</b>                                                                                                                                                                                                  |  |     |      |        |      |      |       |   |
| 2                                                                                | MOTOR WINDING INSULATION CLASS (9.2.2.8)                 |                                                                                                                                                                                     |  | TYPE OF SHIPMENT (8.4.1):                                                                                                                                                                                                                |  |     |      |        |      |      |       |   |
| 3                                                                                | SOLID OR LIQUID HEAT TRANS. MEDIA ALLOWED IN STATOR?     |                                                                                                                                                                                     |  | EXPORT                                                                                                                                                                                                                                   |  |     |      |        |      |      |       |   |
| 4                                                                                | DESIGN MOTOR FOR FREQUENT STARTS (9.2.2.9)               |                                                                                                                                                                                     |  | EXPORT BOXING                                                                                                                                                                                                                            |  |     | 1    |        |      |      |       |   |
| 5                                                                                | STARTS PER                                               |                                                                                                                                                                                     |  | Timber Box (Certified Wood)                                                                                                                                                                                                              |  |     |      |        |      |      |       |   |
| 6                                                                                | IMPACT ON LIFE:                                          |                                                                                                                                                                                     |  | N2 PURGE DURING SHIPPING (9.2.8.4)                                                                                                                                                                                                       |  |     |      |        |      |      |       |   |
| 7                                                                                | DESIGN MOTOR FOR (9.2.2.9):                              |                                                                                                                                                                                     |  | OUTDOOR STORAGE MORE THAN 6 MONTHS                                                                                                                                                                                                       |  |     | YES  |        |      |      |       |   |
| 8                                                                                | UL, FM, ATEX OR EQUIVALENT REQUIRED (9.2.2.10)           |                                                                                                                                                                                     |  | PURGE DURING STORAGE (9.2.8.4)                                                                                                                                                                                                           |  |     | NO   |        |      |      |       |   |
| 9                                                                                | CERTIFICATION OF IEEE 252 TEST REQUIRED (5.2.7.1)        |                                                                                                                                                                                     |  | DETAILS OF LIFTING DEVICES                                                                                                                                                                                                               |  |     |      |        |      |      |       |   |
| 10                                                                               | DESIGN STATOR LINE FOR VACUUM (6.2.4)                    |                                                                                                                                                                                     |  | <b>SPARE PARTS (include cost &amp; details w/ proposal)</b>                                                                                                                                                                              |  |     |      |        |      |      |       |   |
| 11                                                                               | STATOR LINER VACUUM DESIGN:      psig                    |                                                                                                                                                                                     |  | START - UP                                                                                                                                                                                                                               |  |     | YES  |        |      |      |       |   |
| 12                                                                               | DECONTAMINATION CONNECTION ON STATOR (9.2.2.11)          |                                                                                                                                                                                     |  | NORMAL MAINTANANCE                                                                                                                                                                                                                       |  |     | YES  |        |      |      |       |   |
| 13                                                                               | <b>SECONDARY CONTROL / CONTAINMENT</b>                   |                                                                                                                                                                                     |  | SPARE ASSEMBLY:                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 14                                                                               | NFPA RATING:                                             |                                                                                                                                                                                     |  | OTHER:                                                                                                                                                                                                                                   |  |     |      |        |      |      |       |   |
| 15                                                                               | HEALTH:      FLAMMABILITY:      INSTABILITY:             |                                                                                                                                                                                     |  | <b>WEIGHTS</b> lb                                                                                                                                                                                                                        |  |     |      |        |      |      |       |   |
| 16                                                                               |                                                          |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 17                                                                               | USE ANNEX B HAZARD BASED PROCEDURE                       |                                                                                                                                                                                     |  | ITEM NO.                                                                                                                                                                                                                                 |  |     | PUMP | DRIVER | GEAR | BASE | TOTAL |   |
| 18                                                                               | HAZARD STATEMENT                                         |                                                                                                                                                                                     |  | 18-P-252A                                                                                                                                                                                                                                |  |     | 265  | 677    | 44   | 820  | 1806  | 1 |
| 19                                                                               | RISK PHRASE                                              |                                                                                                                                                                                     |  | 18-P-252B                                                                                                                                                                                                                                |  |     | 265  | 677    | 44   | 820  | 1806  | 1 |
| 20                                                                               |                                                          |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 21                                                                               | REQUIRED MEASURE:                                        |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 22                                                                               |                                                          |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 23                                                                               | <b>SECONDARY CONTROL (3.67)</b>                          |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 24                                                                               | MAX LEAKAGE ON PRIMARY FAILURE:      gpm                 |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 25                                                                               | FLOW RESTRICTION:      DRY-RUN MECHANICAL SEAL           |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 26                                                                               | DEVICE MANUFACTURER:      Proprietary information        |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 27                                                                               | MATERIAL:      Proprietary information                   |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 28                                                                               | ELASTOMERS:      Proprietary information                 |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 29                                                                               | MANUFACTURER CODE:      Proprietary information          |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 30                                                                               |                                                          |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 31                                                                               | <b>SECONDARY CONTAINMENT (3.65)</b>                      |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 32                                                                               | SECONDARY SEAL:                                          |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 33                                                                               | DESIGN PRESSURE:      psig                               |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 34                                                                               | <b>INSTRUMENTATION (7.4.2)</b>                           |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 35                                                                               | DETECT OPER. OUTSIDE ACCEPT. RANGE OR DECOUPLE (7.4.2.1) |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 36                                                                               | METHOD:                                                  |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 37                                                                               | LOCATION:                                                |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 38                                                                               | IF LOCAL PROVIDED BY:                                    |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 39                                                                               | USE FOR:                                                 |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 40                                                                               | MONITOR LEAKAGE INTO SECOND CASING:      YES             |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 41                                                                               | METHOD:      PRESSURE                                    |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 42                                                                               | SENSOR BY:      SUPPLIER                                 |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 43                                                                               | TYPE:      TRANSMITTER                                   |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 44                                                                               | USE FOR:      ALARM                                      |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 45                                                                               | MONITOR VIBRATION:      NOT REQUIRED                     |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 46                                                                               | METHOD:                                                  |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 47                                                                               | PROVISION REQUIRED:                                      |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 48                                                                               | SENSOR BY:                                               |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 49                                                                               | IF FULL TIME, USE FOR:                                   |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 50                                                                               | MONITOR TEMPERATURE OF:      NOT REQUIRED                |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 51                                                                               | METHOD:                                                  |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 52                                                                               | SENSOR BY:                                               |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 53                                                                               | TYPE:                                                    |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 54                                                                               | USE FOR:                                                 |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 55                                                                               |                                                          |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 56                                                                               |                                                          |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 57                                                                               |                                                          |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 58                                                                               |                                                          |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 59                                                                               |                                                          |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |
| 60                                                                               |                                                          |                                                                                                                                                                                     |  |                                                                                                                                                                                                                                          |  |     |      |        |      |      |       |   |

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**Note: This Data Sheet has been modified from that in Annex R of API 685, Second Edition.**

|              |                       |       |          |
|--------------|-----------------------|-------|----------|
| Contract:    | A8KM                  |       |          |
| Item No:     | 18-P-252A/B           |       |          |
| Revision:    | 2                     | Date: | 6-Sep-22 |
| Unit:        | SWSPPlus Unit         |       |          |
| Doc. No.:    | HMD-4505605360-C04-02 |       |          |
| Inquiry No.: | 4505605360            |       |          |
| Sheet        | 6                     | of    | 7        |

|    |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|-----|-------------------------------------------------|--|--|--|--------------|
| 1  | INSPECTION AND TESTING                                                                                                                                   |  |      |     | TESTING (8.3)                                   |  |  |  | 1            |
| 2  | GENERAL (8.1)                                                                                                                                            |  |      |     | HARDNESS TEST REQUIRED (8.2.3.2)                |  |  |  | NON-WITNESS  |
| 3  | DAYS IN ADVANCE NOTIFICATION OF WITNESSED OR OBSERVED                                                                                                    |  |      |     | FOR                                             |  |  |  |              |
| 4  | TESTS AND INSPECTIONS                                                                                                                                    |  |      |     | METHOD                                          |  |  |  |              |
| 5  | NOTIFICATION OF SUCCESSFUL PRELIMINARY SHOP                                                                                                              |  |      |     | COMPONENTS TO BE TESTED                         |  |  |  |              |
| 6  | PERFORMANCE TEST (8.1.1.3)                                                                                                                               |  |      |     | IMPACT TEST - TO                                |  |  |  | NOT REQUIRED |
| 7  | SUBMIT INSPECTION CHECKLIST (8.1.6)                                                                                                                      |  |      |     | HYDROSTATIC TEST (8.3.2)                        |  |  |  | NON-WITNESS  |
| 8  |                                                                                                                                                          |  |      |     | WETTING AGENT INCLUDED (8.3.2.7)                |  |  |  |              |
| 9  | SHOP INSPECTION (8.2)                                                                                                                                    |  |      |     | PERFORMANCE TEST (8.3.3)                        |  |  |  | NON-WITNESS  |
| 10 | ADDITIONAL SUBSURFACE EXAMINATION (6.10.1.5) (8.2.1.3)                                                                                                   |  |      |     | TEST DATA POINTS                                |  |  |  | PER 8.3.3.3  |
| 11 | PART                                                                                                                                                     |  | EXAM |     | PERFORMANCE CURVE & DATA APPROVAL PRIOR         |  |  |  |              |
| 12 | PART                                                                                                                                                     |  | EXAM |     | TO SHIPMENT (8.3.3.3.5)                         |  |  |  | REQUIRED     |
| 13 | PART                                                                                                                                                     |  | EXAM |     | TEST W/ NPSHA LIMITED TO 110% SITE NPSHA        |  |  |  | NO           |
| 14 | PART                                                                                                                                                     |  | EXAM |     | RUN UNTIL TEMP STABILIZATION ACHIEVED           |  |  |  | YES          |
| 15 |                                                                                                                                                          |  |      |     | 1 HR. MECH RUN TEST (8.3.4.2.2)                 |  |  |  | NON-WITNESS  |
| 16 | PMI TESTING REQUIRED (8.2.1.4)                                                                                                                           |  |      |     | THRUST BEARING LOAD TEST (8.3.4.3)              |  |  |  |              |
| 17 | PARTS TO BE TESTED: Please refer to Inspection Test Plan                                                                                                 |  |      |     | NPSH3 TEST (8.3.4.4.1)                          |  |  |  | NO           |
| 18 | INSPECTION REQUIRED FOR CASTINGS (8.2.2.1)                                                                                                               |  |      |     | COMPLETE UNIT TEST (8.3.4.5)                    |  |  |  |              |
| 19 | MAG PARTICLE                                                                                                                                             |  |      | NO  | SOUND LEVEL TEST (8.3.4.6) FOR INFORMATION ONLY |  |  |  | NON-WITNESS  |
| 20 | LIQUID PENTRANT                                                                                                                                          |  |      | YES | AUXILIARY EQUIPMENT TEST (8.3.4.7)              |  |  |  |              |
| 21 | RADIOGRAPHY                                                                                                                                              |  |      | NO  | SECONDARY CONTROL SYSTEM HYDRO                  |  |  |  | NON-WITNESS  |
| 22 | ULTRASONIC                                                                                                                                               |  |      | NO  | SECONDARY CONTAINMENT / CONTROL SYSTEM          |  |  |  |              |
| 23 | INSPECTION REQUIRED FOR CONNECTION WELDS (6.10.3.4.5)                                                                                                    |  |      |     | INSTRUMENT TEST (8.3.4.9)                       |  |  |  |              |
| 24 | MAG PARTICLE                                                                                                                                             |  |      | NO  | STATIC TORQUE TEST (9.1.6.1)                    |  |  |  |              |
| 25 | LIQUID PENTRANT                                                                                                                                          |  |      | YES | RUN UNTIL OIL TEMPERATURE STABILIZED (9.1.6.3)  |  |  |  |              |
| 26 | RADIOGRAPHY                                                                                                                                              |  |      | NO  | RESIDUAL UNBALANCE TEST (J.4.1.2)               |  |  |  |              |
| 27 | ULTRASONIC                                                                                                                                               |  |      | NO  | OTHER:                                          |  |  |  |              |
| 28 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 29 | CLEANLINESS PRIOR TO FINAL ASSEMBLY (8.2.3.1)                                                                                                            |  |      |     | NON-WIT                                         |  |  |  |              |
| 30 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 31 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 32 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 33 | NOTES                                                                                                                                                    |  |      |     |                                                 |  |  |  |              |
| 34 | 6.1 PMI of alloy pressure containment parts, including pipes & valves, is required per Project Specification A8KM-PP-000-500512-A Positive Material      |  |      |     |                                                 |  |  |  |              |
| 35 | Identification (PMI).                                                                                                                                    |  |      |     |                                                 |  |  |  |              |
| 36 | 6.2 Pressure containing parts (including auxiliaries shall be tested hydrostatically with liquid at a minimum 1.5 times the maximum allowable working    |  |      |     |                                                 |  |  |  |              |
| 37 | pressure.                                                                                                                                                |  |      |     |                                                 |  |  |  |              |
| 38 | 6.3 Baseplate grounding tabs shall be 1/4" thick steel with at least (1) 9/16" diameter hole provided. If two (2) are provided, they shall be 9/16" dia. |  |      |     |                                                 |  |  |  |              |
| 39 | spaced 1-3/4" on center. Where stainless steel grounding tabs are required, they shall be threaded with one (1) 1/2" - 13 hole, or                       |  |      |     |                                                 |  |  |  |              |
| 40 | either two (2), or four (4), 1/2" - 13 holes all spaced 1-3/4" on center.                                                                                |  |      |     |                                                 |  |  |  |              |
| 41 | 6.4 Baseplate shall be constructed with top plate decking and a drain rim. The baseplate shall be epoxy grouted.                                         |  |      |     |                                                 |  |  |  |              |
| 42 | Baseplate shall be rigid constructed to accommodate 2 X Allowable Nozzle Loads & Moments in API 685, 2nd Edition.                                        |  |      |     |                                                 |  |  |  |              |
| 43 | 6.5 Motor requires oversized terminal box.                                                                                                               |  |      |     |                                                 |  |  |  |              |
| 44 | 6.6 Deleted                                                                                                                                              |  |      |     |                                                 |  |  |  |              |
| 45 | 6.7 An ESCO single piece sight glass is required for the oil drain. A magnetic drain plug in housing is also required.                                   |  |      |     |                                                 |  |  |  |              |
| 46 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 47 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 48 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 49 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 50 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 51 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 52 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 53 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 54 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 55 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 56 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 57 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 58 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 59 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |
| 60 |                                                                                                                                                          |  |      |     |                                                 |  |  |  |              |

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SEALESS CENTRIFUGAL PUMP  
API 685, 2nd EDITION  
DATA SHEET

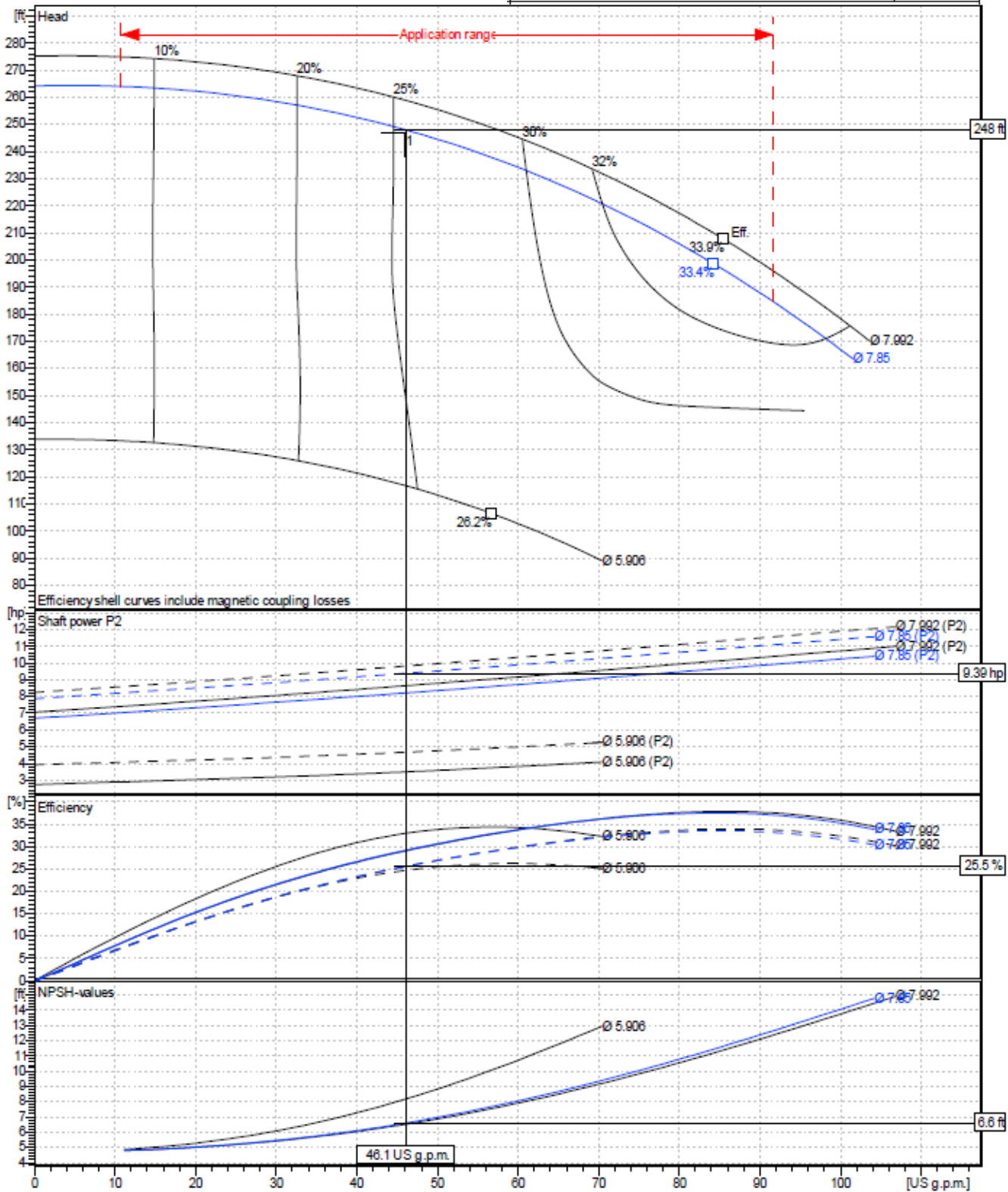
Note: This Data Sheet has been modified from that in  
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|              |                       |
|--------------|-----------------------|
| Contract:    | A8KM                  |
| Item No:     | 18-P-252A/B           |
| Revision:    | 2                     |
| Date:        | 6-Sep-22              |
| Unit:        | SWSPPlus Unit         |
| Doc. No.:    | HMD-4505605360-C04-02 |
| Inquiry No.: | 4505605360            |
| Sheet        | 7 of 8                |
| REV          |                       |

Quoted Pump Curve:  
Sundyne HMD Kontro:

|                       |                              |
|-----------------------|------------------------------|
| Performance curve     | K5-19/50-2                   |
| Impeller type         | Radial Vane                  |
| Direction of rotation | Clockwise from the drive end |
| Impeller construction | Closed                       |
| Impeller Eye Area     | 3.0427 sq in                 |
| NSS (US unit)         | 5187                         |
| Frequency             | 60 Hz                        |
| Hz                    |                              |
| Speed                 | 3500 rpm                     |

|                                |                        |
|--------------------------------|------------------------|
| Impeller type                  | Radial Vane            |
| Impeller construction          | Closed                 |
| Impeller Ø                     | Max. inch 7.99         |
|                                | Designed inch 7.85     |
|                                | Min. inch 5.91         |
| Flow                           | Nominal US g.p.m. 46.1 |
|                                | Max. US g.p.m. 102     |
|                                | Min. US g.p.m. 10.7    |
| Head                           | Nominal ft 248         |
|                                | at Max Flow- ft 163    |
|                                | at Min Flow- ft 264    |
| Head H(Q=0)                    | ft 264                 |
| NPSH 3%                        | ft 6.6                 |
| Shaft power                    | hp 9.39                |
| Max. shaft power sel. Impeller | hp 11.5                |
| Efficiency                     | % 25.5                 |



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