




EQUIPMENT DATA SHEET (INCL. PREDICTED PERFORMANCE CURVE)

CLIENT	:	Air Products Manufacturing LLC
PROJECT NAME/NO.	:	WEP Renewables
CLIENT PO NO	:	4505608736
HMD DOCUMENT NO	:	HMD-4505608737-C04-01
CLIENT DOCUMENT NO	:	FI01/LF01
HMD PUMP NO	:	839915
EQUIPMENT TAG NO	:	19-P-780

5	20/04/2023	ISSUE FOR REVIEW	AFS	AFS	NW
4	23/03/2023	ISSUE FOR REVIEW	GC	AFS	NW
3	24/01/2023	ISSUE FOR REVIEW	KW	AFS	NW
2	12/12/2022	ISSUE FOR REVIEW	KW	AFS	NW
1	29/09/2022	ISSUE FOR REVIEW	KW	AFS	NW
0	17/02/2022	ISSUE FOR REVIEW	AFS	AFS	NW
REV	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY

NOTE:

 <h1>RESOLUTION SHEET</h1>				
Comment Number	Document Name: Equipment Data Sheet		Revision from which comment first appeared	Comment Status: Open\Closed - (Date Closed:)
	CLIENT COMMENT	HMD RESPONSE	Current Rev:	
1	Correct Rev No. and Date on all Pages.	Noted and updated	4	Closed - (20/04/2023)



WORLD ENERGY PARAMOUNT
World Energy Renewables Project
Paramount, California

MECHANICAL EQUIPMENT DATASHEET
Document Number: A8KM-19-074-540205-A
Rev. 5 20/04/2023
HMD-4505608737-C04-01



WORLD ENERGY RENEWABLES PROJECT

MECHANICAL EQUIPMENT DATA SHEET FOR 19-P-780


VENT GAS KO DRUM PUMP


Document No. HMD-4505608737-C04-01

Fluor Project No: A8KM

5	20-Apr-23	ISSUE FOR REVIEW	5	AFS	AFS	NW	
4	23-Mar-23	ISSUE FOR REVIEW	5	KCM	AFS	NW	
3	24-Jan-23	ISSUE FOR REVIEW	5	KW	AFS	NW	
2	12-Dec-22	ISSUE FOR REVIEW	5	KW	AFS	NW	
1	29-Sep-22	ISSUE FOR REVIEW	5	KW	AFS	NW	
0	17-Feb-22	ISSUE FOR REVIEW	5	AFS	AFS	NW	
REV	DATE	DESCRIPTION	PAGES	ORIG	CHK'D	APPV'D	CLIENT

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		ASME B73.3 SEALLESS PUMP DATA SHEET		<table><tr><td>Contract:</td><td>A8KM</td></tr><tr><td>Item No.:</td><td>19-P-780</td></tr><tr><td>Revision:</td><td>5</td></tr><tr><td>Date:</td><td>20-Apr-2023</td></tr><tr><td>P.O No.</td><td>4505608737</td></tr><tr><td>Inquiry No.</td><td>4-615</td></tr><tr><td>Sheet</td><td>2 of 5</td></tr></table>		Contract:	A8KM	Item No.:	19-P-780	Revision:	5	Date:	20-Apr-2023	P.O No.	4505608737	Inquiry No.	4-615	Sheet	2 of 5	Rev																																		
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Sheet	2 of 5																																																					
1 ISSUED FOR: <input type="checkbox"/> PROPOSAL <input checked="" type="checkbox"/> PURCHASE <input type="checkbox"/> AS BUILT																																																						
2 SITE World Energy Renewables Project / Paramount California																																																						
3 ITEM NAME: Vent Gas KO Drum Pump		CLIENT World Energy Paramount																																																				
4 ITEM TAG NO.: 19-P-780		PROJECT NO.: A8KM																																																				
5 SERVICE: Vent Gas KO Drum Pump		PURCHASER ORDER NO.: m																																																				
6 UNIT: Pretreat Unit		SUPPLIER/LOCATION: Sundyne, HMD Kontro / Eastbourne, UK																																																				
7 TYPE Magnetic Drive Pump		SUPPLIER ORDER/SERIAL NOS.: TBD / 839915																																																				
9 DATA PROVIDED BY: <input type="checkbox"/> PURCHASER <input type="checkbox"/> SUPPLIER <input checked="" type="checkbox"/> SUPPLIER IF NOT BY PURCHASER																																																						
10 GENERAL																																																						
11 NO. REQ.: 1 x 100% <input checked="" type="checkbox"/> PUMP SIZE: 1.5 x 1 x 8 <input checked="" type="checkbox"/> MODEL GSA Frame 1																																																						
12 NUMBER MOTOR DRIVEN: One (1) NUMBER TURBINE DRIVEN: N/A																																																						
13 MOTOR ITEM NUMBER: 19-P-780M TURBINE ITEM NUMBER: N/A GEARBOX ITEM NUMBER: N/A																																																						
14 MOTOR PROVIDED BY: Pump Supplier TURBINE PROVIDED BY: N/A GEARBOX PROVIDED BY: N/A																																																						
15 MOTOR MOUNTED BY: Pump Supplier TURBINE MOUNTED BY: N/A GEARBOX MOUNTED BY: N/A																																																						
17 OPERATING CONDITIONS				17 PERFORMANCE																																																		
18 <table><tr><td></td><td>RATED</td><td>MAX.</td><td>NORMAL</td><td>MIN.</td><td></td></tr><tr><td>19 NPSHa Datum</td><td colspan="4">C.L.Impeller</td><td></td></tr><tr><td>20 CAPACITY:</td><td>5.5</td><td></td><td>5.0</td><td></td><td>gpm</td></tr><tr><td>21 SUCTION PRESSURE:</td><td>-1.0</td><td>5.0</td><td></td><td></td><td>psig</td></tr><tr><td>22 DISCHARGE PRESSURE:</td><td>16.4</td><td></td><td></td><td></td><td>psig</td></tr><tr><td>23 DIFFERENTIAL PRESSURE:</td><td>17.4</td><td></td><td></td><td></td><td>psi</td></tr><tr><td>24 DIFFERENTIAL HEAD:</td><td>44.3</td><td></td><td></td><td></td><td>ft</td></tr><tr><td>25 HYDRAULIC POWER</td><td>0.06</td><td></td><td></td><td></td><td>HP</td></tr></table>					RATED	MAX.	NORMAL	MIN.		19 NPSHa Datum	C.L.Impeller					20 CAPACITY:	5.5		5.0		gpm	21 SUCTION PRESSURE:	-1.0	5.0			psig	22 DISCHARGE PRESSURE:	16.4				psig	23 DIFFERENTIAL PRESSURE:	17.4				psi	24 DIFFERENTIAL HEAD:	44.3				ft	25 HYDRAULIC POWER	0.06				HP	18 PERFORMANCE CURVE NO.: K6-13/60-4		
	RATED	MAX.	NORMAL	MIN.																																																		
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26 AT DESIGNATED CAPACITY:				26 MEASURED AT CAPY.: <table><tr><td></td><td>RATED</td><td>MAX.</td><td>NORMAL</td><td>MIN.</td></tr><tr><td>20 CAPACITY:</td><td>5.5</td><td></td><td>5.0</td><td></td></tr></table>				RATED	MAX.	NORMAL	MIN.	20 CAPACITY:	5.5		5.0																																							
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27 OPERATING TIME:				27 NPSH REQ'D.: <table><tr><td></td><td>0.84</td><td></td><td></td><td></td></tr></table>				0.84																																														
	0.84																																																					
28 NPSH AVAILABLE:				28 TOTAL DIFFERENTIAL HEAD @ RATED IMPELLER: 46.9 ft																																																		
29 SYSTEM DESIGN:				28 MAX. DIFFERENTIAL HEAD @ RATED IMPELLER: 51.4 ft																																																		
30 <input checked="" type="checkbox"/> STAND ALONE OPERATION <input type="checkbox"/> PARALLEL OPERATION				29 MINIMUM CONTINUOUS FLOW:																																																		
31 <input type="checkbox"/> SERIES OPERATION WITH ITEM NUMBER: _____				29 THERMAL: _____ GPM STABLE: 2.7 GPM																																																		
32 SUCTION PRESSURE MIN/MAX: _____ / _____ psig				29 ALLOWABLE OPERATING REGION: 2.686 TO: 17.1 GPM																																																		
33 SERVICE:				30 BEST EFFICIENCY POINT FOR RATED IMPELLER: 13 GPM																																																		
34 <input type="checkbox"/> CONTINUOUS <input checked="" type="checkbox"/> INTERMITTENT: _____ STARTS/DAY				30 SUCTION SPECIFIC SPEED: 5899																																																		
35 SYSTEM CONTROL METHOD:				30 IMPELLER DIA.: RATED: 7.25 MAX.: 8.15 MIN.: 5.51																																																		
36 <input type="checkbox"/> SPEED <input checked="" type="checkbox"/> FLOW <input type="checkbox"/> LEVEL <input type="checkbox"/> TEMPERATURE				30 PUMP RATED POWER: 1.39 BHP EFFICIENCY: 4.37																																																		
37 <input type="checkbox"/> PRESSURE <input checked="" type="checkbox"/> PIPE FRICTION RESISTANCE ONLY				30 MAXIMUM POWER @ RATED IMPELLER: 1.16 BHP																																																		
38 PUMPED FLUID				30 CASE PRESSURE RATING:																																																		
39 PUMPED FLUID: Oil/Water Mixture				31 <input checked="" type="checkbox"/> MAX. ALLOWABLE WORKING PRES.: 231 PSIG @ 228 °F																																																		
40 <table><tr><td></td><td>RATED</td><td>MAX.</td><td>NORMAL</td><td>MIN.</td><td></td></tr><tr><td>41 PUMPING TEMP.:</td><td>178</td><td></td><td></td><td></td><td>°F</td></tr></table>					RATED	MAX.	NORMAL	MIN.		41 PUMPING TEMP.:	178				°F	31 <input checked="" type="checkbox"/> HYDROSTATIC TEST PRESSURE: 346.5 PSIG																																						
	RATED	MAX.	NORMAL	MIN.																																																		
41 PUMPING TEMP.:	178				°F																																																	
42 AT DESIGNATED TEMP.:				31 CONTAINMENT SHELL PRESSURE RATING:																																																		
43 SPECIFIC GRAVITY: 0.904				32 <input checked="" type="checkbox"/> MAX. ALLOWABLE WORKING PRES.: 231 PSIG @ 228 °F																																																		
44 VAPOR PRESSURE: 7.2 psia				32 <input checked="" type="checkbox"/> HYDROSTATIC TEST PRESSURE: 346.5 PSIG																																																		
45 VISCOSITY: 25.14 cP																																																						
46 SPECIFIC HEAT: 0.48 btu/lb°F																																																						
47 <input type="checkbox"/> VAPOR PRESSURE VS TEMPERATURE CURVE PROVIDED																																																						
48 LIQUID: <input type="checkbox"/> HAZARDOUS <input type="checkbox"/> FLAMMABLE																																																						
49 CORROSIVE / EROSION AGENT: _____																																																						
50 CHLORIDE CONCENTRATION: _____ ppm																																																						
51 H ₂ S CONCENTRATION: _____ ppm																																																						
52 OTHER: _____																																																						
53 % SOLIDS: _____ MAX. PARTICLE SIZE: _____ in																																																						
54																																																						
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<div><div> FLUOR</div><div>ASME B73.3 SEALLESS PUMP DATA SHEET</div></div>		<div>Contract: A8KM</div> <div>Item No.: 19-P-780</div> <div>Revision: 5</div> <div>Date: 20-Apr-2023</div> <div>P.O No. 4505608737</div> <div>Inquiry No. 4-615</div> <div>Sheet 4 of 6</div>	Rev
1	◆ COOLING OR HEATING PIPING (N/A)		INSTRUMENTATION
2	NAME OF FLUID: _____		LEAK DETECTOR – SECONDARY CONTAINMENT BY:
3	SUPPLY TEMP. NORM: _____ °F		<input type="checkbox"/> PURCHASER <input type="checkbox"/> SUPPLIER (Note 4.1)
4	ALLOWABLE TEMP. RISE: _____ °F		<input checked="" type="checkbox"/> MAKE / MODEL: MAGNETROL
5	Cl ₂ _____ ppmw		VIBRATION MONITORING BY:
6	SUPPLY PRESSURE: _____ psig		<input type="checkbox"/> PURCHASER <input type="checkbox"/> SUPPLIER
7	MAX. ALLOWABLE ΔP: _____ psi		MAKE / MODEL: _____
8	<input type="checkbox"/> GALVANIZED PIPE <input type="checkbox"/> STAINLESS STEEL TUBING		MOTOR LOAD PROTECTION BY:
9	<input type="checkbox"/> SIGHT FLOW INDICATOR		<input checked="" type="checkbox"/> PURCHASER <input type="checkbox"/> SUPPLIER
10	<input type="checkbox"/> OUTLET SHUT-OFF VALVE		<input type="checkbox"/> MAKE / MODEL: _____
11	REMARKS: _____		<input type="checkbox"/> MINIMUM FLOW BYPASS PROVIDED BY PURCHASER
12	_____		◆ TEMPERATURE & PRESSURE:
13	_____		<input type="checkbox"/> TEMPERATURE GAUGES
14	◆ PIPING PLANS: ASME B73.3		<input type="checkbox"/> THERMOWELLS
15	HEATING AND COOLING PIPING PLAN: _____		<input type="checkbox"/> PRESSURE GAUGES
16	PUMP FLUID CIRCULATION PLAN: 101 or 111		<input type="checkbox"/> CONTAINMENT SHELL TEMPERATURE PROBES -MDP, CMP
17	_____		<input type="checkbox"/> CANNED MOTOR WINDING THERMOSTATS
18	◆ MATERIALS		<input type="checkbox"/> BEARING WEAR INDICATOR - CMP
19	MATERIAL CLASS CODE: 316LSS		NOTES:- 4.1. Magnetrol liquid level probe to be included for
20	CASING: 316LSS		leak detection.
21	IMPELLER: 316LSS		_____
22	CASE / IMPELLER WEAR RINGS: 316LSS		_____
23	SHAFT: 316LSS		
24	CONTAINMENT SHELL: 316LSS / Alloy C 276		
25	STATOR LINER: N/A		
26	MAGNET (OUTER DRIVE RING): Samarium Cobalt (Fully Encapsulated)		
27	INNER ROTOR: N/A		
28	SLEEVE BEARING: Silicon Carbide		
29	THRUST BEARING: Silicon Carbide		
30	DRIVER BEARING HOUSING: Carbon Steel		
31	WETTED FASTENERS: 316LSS		
32	BASEPLATE: Carbon Steel		
33	COUPLING GUARD: Non-Spark Brass		
34	ELECTRICAL PENETRATION SEALANT: _____		
35	REMARKS: _____		
36	_____		
37	_____		
38	_____		
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ASME B73.3
SEALLESS PUMP
DATA SHEET

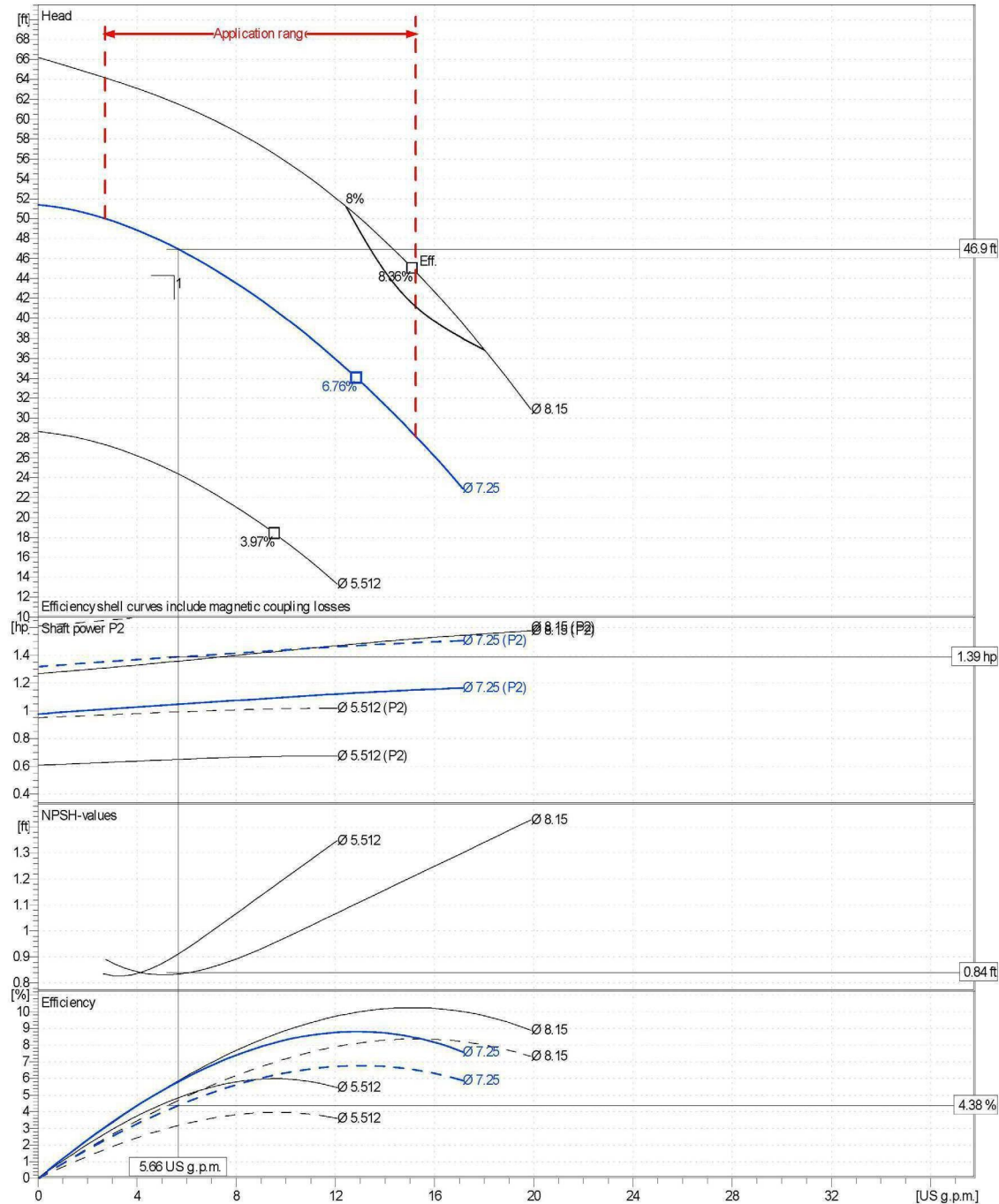
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Rev

Impeller

	Ø inch	Flow US g.p.m.			Head ft		Shaft power P2 hp			Performance curve	
		Operation Min.	Range Max.	η Max.	H(Q=0) Max.	η Max.	P2(Q=0) Max.	Max.	η Max.	Impeller type	K6-13/60-4
Actual	7.25	2.7	15.2	12.9	51.4	34	1.32	1.51	1.47	Impeller type	Radial Vane
Min.	5.51	/	/	9.55	28.7	18.4	0.95	1.02	1.02	Direction of rotation	Clockwise from the drive end
Max.	8.15	/	/	15.1	66.2	45	1.61	1.92	1.82	Impeller construction	Closed
										Impeller Eye Area	4.0951 sq in NSS (US unit) 5899
										Frequency	60 Hz Hz Speed 1750 rpm

Power data referred to: Oil/Water Mixture [100%] ; 178°F; 0.904kg/dm³; 27.8cSt



Note1: Solid lines represent without coupling losses

Note2: Dashed lines represent with coupling losses

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