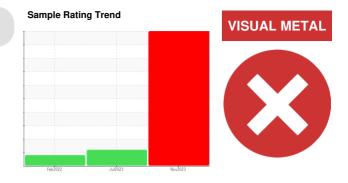


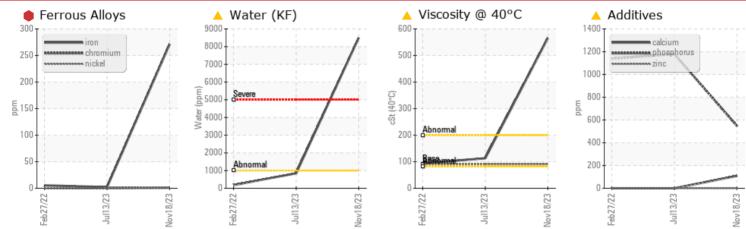
### **PROBLEM SUMMARY**



# TENDER MV PUMP (S/N 5590472)

Vacuum Pump Fluid USPI VAC 100 (--- GAL)

### COMPONENT CONDITION SUMMARY



### RECOMMENDATION

We advise that you inspect for the source(s) of wear. We advise an early resample to confirm this situation. We were unable to perform a particle count due to a high concentration of particles present in this sample.

### PROBLEMATIC TEST RESULTS

PROBLEIVIATIO I		50L15				
Sample Status				SEVERE	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>20	<b>e</b> 271	2	6
Calcium	ppm	ASTM D5185m	0	<b>人</b> 109	<1	0
Phosphorus	ppm	ASTM D5185m	1800	<u> </u>	1179	1139
Zinc	ppm	ASTM D5185m	0	<b>A</b> 0	0	0
Sulfur	ppm	ASTM D5185m	0	<u> </u>	4	0
Water	%	ASTM D6304	>.1	<b>6.850</b>	0.084	0.018
ppm Water	ppm	ASTM D6304	>1000	<u> </u>	848.2	182.1
White Metal	scalar	*Visual	NONE	🛑 HEAVY	NONE	NONE
Silt	scalar	*Visual	NONE	🔺 HEAVY	NONE	NONE
Debris	scalar	*Visual	NONE	🔺 HEAVY	LIGHT	NONE
Emulsified Water	scalar	*Visual	>.1	<b>6.2%</b>	NEG	NEG
Visc @ 40°C	cSt	ASTM D445	91	▲ 565.6	113	94.1

Customer Id: JBSBEA Sample No.: USPM31300 Lab Number: 06010906 Test Package: IND 2



To manage this report scan the QR code

*To discuss the diagnosis or test data:* Doug Bogart +1 (800)237-1369 x4016 <u>dougb@wearcheckusa.com</u>

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDED ACTIONS					
Action	Status	Date	Done By	Description	
Inspect Wear Source			?	We advise that you inspect for the source(s) of wear.	
Resample			?	We advise an early resample to confirm this situation.	
Alert			?	We were unable to perform a particle count due to a high concentration of particles present in this sample.	

### HISTORICAL DIAGNOSIS



### 13 Jul 2023 Diag: Doug Bogart

Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



### 27 Feb 2022 Diag: Doug Bogart



Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.





### **OIL ANALYSIS REPORT**

Sample Rating Trend

**VISUAL METAL** 

X

Machine Ic

### **TENDER MV PUMP (S/N 5590472)** Component

Vacuum Pump Fluid

**USPI VAC 100 (--- GAL)** 

### DIAGNOSIS

#### Recommendation

We advise that you inspect for the source(s) of wear. We advise an early resample to confirm this situation. We were unable to perform a particle count due to a high concentration of particles present in this sample.

### 🛡 Wear

The iron level is severe. High concentration of visible metal present.

#### Contamination

High concentration of visible dirt/debris present in the oil. There is a high amount of visible silt present in the sample. There is a moderate concentration of water present in the oil.

### Fluid Condition

The oil viscosity is higher than normal. This plus the additive levels indicates the addition of a different brand, or type of oil. Confirmed. The AN level is acceptable for this fluid.

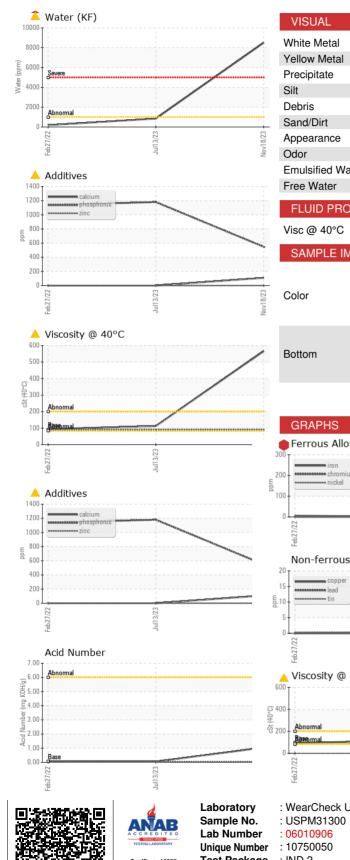
Sample Number       Client Info       USPM31300       USPM27399       USP         Sample Date       Client Info       18 Nov 2023       13 Jul 2023       27 F4         Machine Age       hrs       Client Info       0       0       0         Oil Age       hrs       Client Info       N/A       N/A       N/A         Sample Status       Client Info       N/A       N/A       N/A         Sample Status       method       Imit/base       current       History1       F         Iron       ppm       ASTM D5185m       >20       271       2       6         Chromium       ppm       ASTM D5185m       >20       1       0       0         Nickel       ppm       ASTM D5185m       >20       1       0       0         Sliver       ppm       ASTM D5185m       >20       2       1       <1       <1         Copper       ppm       ASTM D5185m       >20       17       0       0       <1       0       <1       0       <1       0       <1       0       <1       0       <1       0		Nov2023
Sample Date       Client Info       18 Nov 2023       13 Jul 2023       27 Fe         Machine Age       hrs       Client Info       0       0       0       0         Oil Age       hrs       Client Info       0	E INFORMATION	ent history1 history2
Machine Age       hrs       Client Info       0       0       0       0         Oil Age       hrs       Client Info       N/A       N/A       N/A       N/A         Sample Status       Imit/base       Current       history1       Imit/base       ABNORMAL       ABNORMAL         WEAR METALS       method       Imit/base       current       history1       Imit/base         Iron       ppm       ASTM D5185m       >20       271       2       6         Chromium       ppm       ASTM D5185m       >20       1       0       0         Nickel       ppm       ASTM D5185m       >20       1       0       0         Aluminum       ppm       ASTM D5185m       >20       2       1       <1	umber	300 USPM27399 USPM2103
Oil Age       hrs       Client Info       0       0       0         Oll Changed       Client Info       N/A       N/A       N/A       N/A         Sample Status       Imit/base       current       history1       H         WeAR METALS       method       Imit/base       current       history1       H         Iron       ppm       ASTM D5185m       >20       271       2       6         Chromium       ppm       ASTM D5185m       >20       1       0       0         Nickel       ppm       ASTM D5185m       >20       1       0       0         Silver       ppm       ASTM D5185m       >20       2       1       <1	ate	023 13 Jul 2023 27 Feb 2023
Dil Changed Sample Status       Client Info       N/A SEVERE       N/A ABNORMAL       N/A ABNORMAL       N/A ABNORMAL       N/A ABNORMAL         WEAR METALS       method       limit/base       current       history1       ABNORMAL         Vican       ppm       ASTM D5185m       >20       <1	Age hrs	0 0
Dil Changed   Client Info   N/A   N/A   N/A   N/A     Sample Status   Imit/Sample Status   Imit/Sample Status   ABNORMALL   ABNORMALL     WEAR METALS   method   limit/base   current   history1   ABNORMALL     Nickel   ppm   ASTM D5185m   >20   <1	hrs	0 0
WEAR METALS       method       limit/base       current       history1       f         Iron       ppm       ASTM D5185m       >20       271       2       6         Chromium       ppm       ASTM D5185m       >20       -1       0       0         Nickel       ppm       ASTM D5185m       >20       1       0       0         Silver       ppm       ASTM D5185m       >20       2       1       -1       0         Lead       ppm       ASTM D5185m       >20       2       1       -1       -1         Lead       ppm       ASTM D5185m       >20       2       1       0       -1         Copper       ppm       ASTM D5185m       >20       17       0       0       -1         Vanadium       ppm       ASTM D5185m       2       0       0       0         Cadmium       ppm       ASTM D5185m       0       3       0       0         Astm D5185m       0       3       0       0       0       0         Mandium       ppm       ASTM D5185m	ed	N/A N/A
Iron       ppm       ASTM D5185m       >20       271       2       6         Chromium       ppm       ASTM D5185m       >20       <1		ABNORMAL ABNORMA
Chromium       ppm       ASTM D5185m       >20       <1       0       0         Nickel       ppm       ASTM D5185m       >20       1       0       0         Silver       ppm       ASTM D5185m       0       0       0         Aluminum       ppm       ASTM D5185m       >20       2       1       <1	METALS	ent history1 history2
Nickel       ppm       ASTM D5185m       >20       1       0       0         Titanium       ppm       ASTM D5185m       <1	ppm	2 6
Titanium       ppm       ASTM D5185m       <1       <1       <1       0         Silver       ppm       ASTM D5185m       0       0       0       0         Aluminum       ppm       ASTM D5185m       >20       2       1       <1	n ppm	0 0
Silver       ppm       ASTM D5185m       0       0       0       0         Aluminum       ppm       ASTM D5185m       >20       2       1       <1         Lead       ppm       ASTM D5185m       >20       <1       0       <1         Copper       ppm       ASTM D5185m       >20       <1       0       <1         Antimony       ppm       ASTM D5185m       >20       <1       0       <1       0         Vanadium       ppm       ASTM D5185m       0       <1       0       <1       0         Cadmium       ppm       ASTM D5185m       0       3       0       0       0         Barium       ppm       ASTM D5185m       0       <1       0       0         Barium       ppm       ASTM D5185m       0       <1       0       0         Barium       ppm       ASTM D5185m       0       <1       0       0         Magnese       ppm       ASTM D5185m       0       <109       <1       0         Phosphorus       ppm       ASTM D5185m <t< td=""><td>ppm</td><td>0 0</td></t<>	ppm	0 0
Silver       ppm       ASTM D5185m       0       0       0       0         Aluminum       ppm       ASTM D5185m       >20       2       1       <1	ppm	<1 0
Aluminum       ppm       ASTM D5185m       >20       2       1       <1         Lead       ppm       ASTM D5185m       >20       <1		0 0
Lead       ppm       ASTM D5185m       >20       <1       0       <1         Copper       ppm       ASTM D5185m       >20       17       0       0         Tin       ppm       ASTM D5185m       >20       <1		1 <1
Copper       ppm       ASTM D5185m       >20       17       0       0         Tin       ppm       ASTM D5185m       >20       <1		
Tin       ppm       ASTM D5185m       >20       <1       0       <1         Antimony       ppm       ASTM D5185m       0         <1		
Antimony       ppm       ASTM D5185m         <1       0       <1       0         Vanadium       ppm       ASTM D5185m       0       2       0       0       0         Cadmium       ppm       ASTM D5185m       0       3       0       0       0         Boron       ppm       ASTM D5185m       0       3       0       0       0         Barium       ppm       ASTM D5185m       0       3       0       0       0         Magnese       ppm       ASTM D5185m       0       <1		
Wanadium       ppm       ASTM D5185m       0       <1       0         Cadmium       ppm       ASTM D5185m       2       0       0         ADDITIVES       method       limit/base       current       history1       F         Boron       ppm       ASTM D5185m       0       3       0       0         Barium       ppm       ASTM D5185m       0       0       0       0       0         Barium       ppm       ASTM D5185m       0       <1		
Cadmium       ppm       ASTM D5185m       2       0       0         ADDITIVES       method       limit/base       current       history1       f         Boron       ppm       ASTM D5185m       0       3       0       0         Barium       ppm       ASTM D5185m       0       3       0       0         Magnesium       ppm       ASTM D5185m       0       <1		
ADDITIVES       method       limit/base       current       history1       history1         Boron       ppm       ASTM D5185m       0       3       0       0         Barium       ppm       ASTM D5185m       0       -1       0       0         Manganese       ppm       ASTM D5185m       2       <1	1-1-	
Boron       ppm       ASTM D5185m       0       3       0       0         Barium       ppm       ASTM D5185m       0       0       0       0       0         Molybdenum       ppm       ASTM D5185m       0       <1	PP	
Barium       ppm       ASTM D5185m       0       0       0       0       0       0         Molybdenum       ppm       ASTM D5185m       0       <1		
Molybdenum       ppm       ASTM D5185m       0       <1       0       0         Manganese       ppm       ASTM D5185m       0       8       3       0         Magnesium       ppm       ASTM D5185m       0       8       3       0         Calcium       ppm       ASTM D5185m       0       8       3       0         Calcium       ppm       ASTM D5185m       0       4       109       <1		
Agganese     ppm     ASTM D5185m     2     <1     0       Magnesium     ppm     ASTM D5185m     0     &     3     0       Calcium     ppm     ASTM D5185m     0     ▲     109     <1		
Magnesium     ppm     ASTM D5185m     0     8     3     0       Calcium     ppm     ASTM D5185m     0     109     <1     0       Phosphorus     ppm     ASTM D5185m     1800     548     1179     11       Zinc     ppm     ASTM D5185m     0     △     0     0     0     0       Sulfur     ppm     ASTM D5185m     0     △     11180     4     0       CONTAMINANTS     method     limit/base     current     history1     H       Silicon     ppm     ASTM D5185m     >15     5     2     14       Sodium     ppm     ASTM D5185m     >12     <1     0       Potassium     ppm     ASTM D5185m     >20     20     20     2     <1       Vater     %     ASTM D6304     >.1     ▲     0.850     0.084     0.0       Particles >4µm     ASTM D7647     >5000      ▲     65462     ▲     11       Particles >6µm     ASTM D7647     >1300      ▲     12134     ▲     15 <td></td> <td></td>		
Calcium     ppm     ASTM D5185m     0     ▲ 109     <1		
Phosphorus       ppm       ASTM D5185m       1800       ▲ 548       1179       11         Zinc       ppm       ASTM D5185m       0       ▲ 0         Solition       ppm       ASTM D5185m       >15       5       2       14       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0 <td></td> <td></td>		
Zinc       ppm       ASTM D5185m       0       ▲ 0       0       0       0         Sulfur       ppm       ASTM D5185m       0       ▲ 11180       4       0         CONTAMINANTS       method       limit/base       current       history1       ft         Silicon       ppm       ASTM D5185m       >15       5       2       14         Sodium       ppm       ASTM D5185m       >15       5       2       14         Sodium       ppm       ASTM D5185m       >12       <1	ppm	
Sulfur       ppm       ASTM D5185m       0       ▲ 11180       4       0         CONTAMINANTS       method       limit/base       current       history1       h         Silicon       ppm       ASTM D5185m       >15       5       2       14         Sodium       ppm       ASTM D5185m       >15       5       2       14         Sodium       ppm       ASTM D5185m       >20       20       2       <1         Potassium       ppm       ASTM D5185m       >20       20       2       <1         Water       %       ASTM D5185m       >20       20       2       <1         oppm       ASTM D5185m       >20       20       2       <1       0.0850       0.084       0.0         Water       %       ASTM D6304       >.1       ▲       0.8500       848.2       18         FLUID CLEANLINESS       method       limit/base       current       history1       H         Particles >4µm       ASTM D7647       >5000        ▲       65462       ▲       11         Particles >21µm </td <td>us ppm</td> <td></td>	us ppm	
CONTAMINANTS       method       limit/base       current       history1       h         Silicon       ppm       ASTM D5185m       >15       5       2       14         Sodium       ppm       ASTM D5185m       >15       5       2       14         Potassium       ppm       ASTM D5185m       >20       20       2       <1	ppm	
Silicon     ppm     ASTM D5185m     >15     5     2     14       Sodium     ppm     ASTM D5185m     >12     <1     0       Potassium     ppm     ASTM D5185m     >20     20     2     <1     0       Potassium     ppm     ASTM D5185m     >20     20     2     <1     0       Water     %     ASTM D6304     >.1     ▲     0.850     0.084     0.0       opm Water     ppm     ASTM D6304     >.1     ▲     0.850     0.084     0.0       Particles >4µm     ASTM D6304     >.1000     ▲     8500     848.2     18       Particles >4µm     ASTM D7647     >5000      ▲     65462     ▲     11       Particles >4µm     ASTM D7647     >1300      ▲     65462     ▲     11       Particles >14µm     ASTM D7647     >160      149     14       Particles >21µm     ASTM D7647     >40      20     30       Particles >71µm     ASTM D7647     >3      0     7	ppm	4 0
Sodium       ppm       ASTM D5185m       12       <1       0         Potassium       ppm       ASTM D5185m       >20       20       2       <1	MINANTS	ent history1 history2
Potassium       ppm       ASTM D5185m       >20       20       2       <1         Water       %       ASTM D6304       >.1       ▲ 0.850       0.084       0.0         opm Water       ppm       ASTM D6304       >.1       ▲ 0.850       848.2       18         FLUID CLEANLINESS       method       limit/base       current       history1       M         Particles >4µm       ASTM D7647       >5000        ▲ 65462       ▲ 11         Particles >6µm       ASTM D7647       >1300        ▲ 12134       ▲ 155         Particles >14µm       ASTM D7647       >160        149       14         Particles >21µm       ASTM D7647       >10        0       7         Particles >38µm       ASTM D7647       >3        0       0	ppm	2 14
Water       %       ASTM D6304       >.1       ▲       0.850       0.084       0.0         opm Water       ppm       ASTM D6304       >.1000       ▲       8500       848.2       18         FLUID CLEANLINESS       method       limit/base       current       history1       h         Particles >4µm       ASTM D7647       >5000        ▲       65462       ▲       11         Particles >6µm       ASTM D7647       >1300        ▲       65462       ▲       11         Particles >6µm       ASTM D7647       >1300        ▲       65462       ▲       11         Particles >14µm       ASTM D7647       >160        149       14         Particles >21µm       ASTM D7647       >40        20       30         Particles >38µm       ASTM D7647       >10        0       7         Particles >71µm       ASTM D7647       >3        0       0	ppm	<1 0
ppm       ASTM D6304       >1000       ▲ 8500       848.2       18         FLUID CLEANLINESS       method       limit/base       current       history1       h         Particles >4µm       ASTM D7647       >5000        ▲ 65462       ▲ 11         Particles >6µm       ASTM D7647       >1300        ▲ 65462       ▲ 11         Particles >6µm       ASTM D7647       >160        ▲ 12134       ▲ 15         Particles >14µm       ASTM D7647       >160        149       14         Particles >21µm       ASTM D7647       >40        0       7         Particles >38µm       ASTM D7647       >10        0       7         Particles >71µm       ASTM D7647       >3        0       0	ו ppm	2 <1
FLUID CLEANLINESS       method       limit/base       current       history1       h         Particles >4μm       ASTM D7647       >5000        ▲ 65462       ▲ 11         Particles >6μm       ASTM D7647       >1300        ▲ 12134       ▲ 15         Particles >6μm       ASTM D7647       >160        149       14         Particles >14μm       ASTM D7647       >40        20       30         Particles >21μm       ASTM D7647       >10        0       7         Particles >38μm       ASTM D7647       >3        0       0	%	0.084 0.018
Particles >4μm       ASTM D7647       >5000        ▲ 65462       ▲ 11         Particles >6μm       ASTM D7647       >1300        ▲ 12134       ▲ 15         Particles >14μm       ASTM D7647       >160        149       14         Particles >14μm       ASTM D7647       >40        20       30         Particles >21μm       ASTM D7647       >40        0       7         Particles >38μm       ASTM D7647       >10        0       7         Particles >71μm       ASTM D7647       >3        0       0	r ppm	848.2 182.1
Particles >6μm       ASTM D7647       >1300        ▲ 12134       ▲ 15         Particles >14μm       ASTM D7647       >160        149       14         Particles >21μm       ASTM D7647       >40        20       30         Particles >38μm       ASTM D7647       >10        0       7         Particles >71μm       ASTM D7647       >3        0       0	CLEANLINESS	ent history1 history2
Particles >14μm       ASTM D7647       >160        149       14         Particles >21μm       ASTM D7647       >40        20       30         Particles >38μm       ASTM D7647       >10        0       7         Particles >71μm       ASTM D7647       >3        0       0	>4µm	
Particles >21μm       ASTM D7647       >40        20       30         Particles >38μm       ASTM D7647       >10        0       7         Particles >71μm       ASTM D7647       >3        0       0	>6µm	▲ 12134 ▲ 15760
Particles >38μm       ASTM D7647       >10        0       7         Particles >71μm       ASTM D7647       >3        0       0       0	>14µm	149 142
Particles >71μm       ASTM D7647       >3        0       0	>21µm	20 30
	>38µm	0 7
	>71µm	0 0
		▲ 23/21/14 ▲ 24/21/14
FLUID DEGRADATION method limit/base current history1 h	DEGRADATION	ent history1 history2
	ber (AN) mg KOH/g	

Report Id: JBSBEA [WUSCAR] 06010906 (Generated: 11/22/2023 16:07:43) Rev: 2

Contact/Location: ? ? - JBSBEA



## OIL



L ANALYS	SIS F	REPOF	<b>?T</b>			
_ / /		•.				
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	🛑 HEAVY	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	🔺 HEAVY	NONE	NONE
Debris	scalar	*Visual	NONE	A HEAVY	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>.1	<b>0.2%</b>	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	91	▲ 565.6	113	94.1
SAMPLE IMAGES	\$	method	limit/base	current	history1	history2
Color						
Bottom						

