

# **OIL ANALYSIS REPORT**



MOBIL Pegasus™ 605 Ultra 40





## DIAGNOSIS

#### ▲ Recommendation

Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. (Customer Sample Comment: Oil and filters changed )

#### Wear

All component wear rates are normal.

#### **▲** Contamination

Elemental level of silicon (Si) above normal.

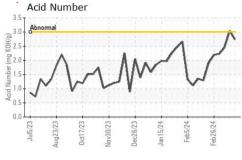
### Fluid Condition

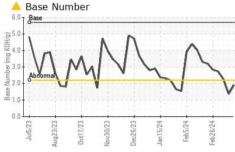
The BN level is low. The AN level is acceptable for this fluid.

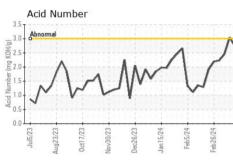
SAMPLE INFORM Sample Number Sample Date Machine Age Oil Age Oil Changed Sample Status  CONTAMINATION Fuel Water Glycol  WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium  ADDITIVES Boron	hrs hrs	method Client Info Method WC Method WC Method WC Method WC Method MSTM D5185m ASTM D5185m	limit/base >15 >4 >2 >5 >6 >9	current WC0895527 18 Mar 2024 114832 969 Changed SEVERE	history1 WC0895551 11 Mar 2024 114684 821 Not Changd SEVERE history1 <1.0 NEG NEG history1 9 <1 <1 <1 <1 <2 3 2	history2 WC0895546 05 Mar 2024 114540 677 Not Changd ABNORMAL history2 <1.0 NEG NEG 0 0 0 2 2
Sample Date Machine Age Oil Age Oil Changed Sample Status  CONTAMINATION Fuel Water Glycol  WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium  ADDITIVES	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	Client Info Client Info Client Info Client Info Client Info Mc Method WC Method WC Method WC Method MSTM D5185m ASTM D5185m	>4.0 >0.1 limit/base >15 >4 >2 >5 >6 >9 >6	18 Mar 2024 114832 969 Changed SEVERE	11 Mar 2024 114684 821 Not Changd SEVERE history1 <1.0 NEG NEG history1 9 <1 <1 <1 <1 <2 3 3	05 Mar 2024 114540 677 Not Changd ABNORMAL history2 <1.0 NEG NEG  history2  7 0 0 0 0 2 2
Machine Age Oil Age Oil Age Oil Changed Sample Status  CONTAMINATION Fuel Water Glycol  WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium  ADDITIVES	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	Client Info Client Info Client Info Client Info  method WC Method WC Method WC Method ASTM D5185m	>4.0 >0.1 limit/base >15 >4 >2 >5 >6 >9 >6	114832 969 Changed SEVERE current <1.0 NEG NEG current 11 0 0 0 0 0 2 2	114684 821 Not Changd SEVERE history1 <1.0 NEG NEG + history1 9 <1 <1 <1 <1 <1 <2 3 3	114540 677 Not Changd ABNORMAL history2 <1.0 NEG NEG 0 0 0 2 2
Oil Age Oil Age Oil Changed Sample Status  CONTAMINATION Fuel Water Glycol  WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	Client Info Client Info Client Info  method WC Method WC Method WC Method ASTM D5185m	>4.0 >0.1 limit/base >15 >4 >2 >5 >6 >9 >6	969 Changed SEVERE  current <1.0 NEG NEG  current  11 0 0 0 2 2	821 Not Changd SEVERE history1 <1.0 NEG NEG  history1 9 <1 <1 <1 0 2 3	677 Not Changd ABNORMAL history2 <1.0 NEG NEG 0 0 0 2 2
Oil Changed Sample Status  CONTAMINATION Fuel Water Glycol  WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm ppm ppm ppm ppm ppm ppm	method WC Method WC Method WC Method WC Method ASTM D5185m	>4.0 >0.1 limit/base >15 >4 >2 >5 >6 >9 >6	Changed SEVERE  current <1.0 NEG NEG 0 0 0 2 2	Not Changd SEVERE  history1 <1.0 NEG NEG  history1  9 <1 <1 <1 <1 0 2 3	Not Changd ABNORMAL  history2 <1.0 NEG NEG  history2  7 0 0 0 2 2 2
CONTAMINATION Fuel Water Glycol WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method WC Method WC Method WC Method WC Method ASTM D5185m	>4.0 >0.1 limit/base >15 >4 >2 >5 >6 >9 >6	Current	history1 <1.0 NEG NEG history1 9 <1 <1 <1 0 2 3	ABNORMAL  history2  <1.0  NEG  NEG  history2  7  0  0  0  2  2
CONTAMINATION Fuel Water Glycol WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm ppm ppm ppm ppm ppm ppm ppm	WC Method WC Method WC Method MSTM D5185m ASTM D5185m	>4.0 >0.1 limit/base >15 >4 >2 >5 >6 >9 >6	current <1.0 NEG NEG current 11 0 0 0 2 2	history1  <1.0  NEG  NEG  history1  9  <1  <1  <1  0  2  3	history2 <1.0 NEG NEG history2 7 0 0 0 2 2
Fuel Water Glycol WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm ppm ppm ppm ppm ppm ppm ppm	WC Method WC Method WC Method MSTM D5185m ASTM D5185m	>4.0 >0.1 limit/base >15 >4 >2 >5 >6 >9 >6	<1.0 NEG NEG Current 11 0 0 0 2 2	<1.0 NEG NEG NES history1 9 <1 <1 <1 0 2 3	<1.0 NEG NEG Nistory2 7 0 0 0 0 2 2
Water Glycol  WEAR METALS  Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm ppm ppm ppm ppm ppm ppm	WC Method WC Method  method  ASTM D5185m	>0.1  limit/base >15 >4 >2  >5 >6 >9 >6	NEG NEG current 11 0 0 0 0 2 2	NEG NEG history1 9 <1 <1 <1 0 2 3	NEG NEG history2 7 0 0 0 0 2
Glycol  WEAR METALS  Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185m	limit/base >15 >4 >2 >5 >6 >9 >6	NEG current 11 0 0 0 0 0 0 0 2 2 2 2	NEG  history1  9  <1 <1 <1 0 2 3	NEG history2 7 0 0 0 0 2 2
WEAR METALS  Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	>15 >4 >2 >5 >6 >9 >6	current  11  0  0  0  0  2 2	history1  9  <1 <1 <1 0 2 3	history2  7 0 0 0 0 2 2
Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>15 >4 >2 >5 >6 >9 >6	11 0 0 0 0 0 2 2	9 <1 <1 <1 0 2 3	7 0 0 0 0 0 2 2
Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>4 >2 >5 >6 >9 >6	0 0 0 0 2 2	<1 <1 <1 0 2 3	0 0 0 0 0 2 2
Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>2 >5 >6 >9 >6	0 0 0 2 2	<1 <1 0 2 3	0 0 0 2 2
Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>5 >6 >9 >6	0 0 2 2	<1 0 2 3	0 0 2 2 2
Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>6 >9 >6	0 2 2	0 2 3	0 2 2
Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>6 >9 >6	2 2	2	2
Lead Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	>9 >6	2	3	2
Copper Tin Vanadium Cadmium ADDITIVES	ppm ppm	ASTM D5185m ASTM D5185m	>6			
Tin Vanadium Cadmium ADDITIVES	ppm ppm	ASTM D5185m		1	2	
Vanadium Cadmium ADDITIVES	ppm		>4	-	_	1
Cadmium		ASTM D5185m		4	5	4
ADDITIVES	ppm			0	0	0
		ASTM D5185m		0	0	0
Boron		method	limit/base	current	history1	history2
	ppm	ASTM D5185m		48	44	44
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		2	4	3
Manganese	ppm	ASTM D5185m		0	0	0
Magnesium	ppm	ASTM D5185m		17	19	16
Calcium	ppm	ASTM D5185m		1857	1680	1745
Phosphorus	ppm	ASTM D5185m		424	389	384
Zinc	ppm	ASTM D5185m		643	617	582
Sulfur	ppm	ASTM D5185m		6141	5255	5089
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>181	<b>225</b>	<b>1</b> 240	<b>△</b> 196
Sodium	ppm	ASTM D5185m		11	13	16
Potassium	ppm	ASTM D5185m	>20	0	1	0
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		0.1	0.1	0
Nitration	Abs/cm	*ASTM D7624	>20	4.0	4.1	3.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	27.5	28.5	26.0
FLUID DEGRADA	TION	method	limit/base	current	history1	biotom.0
						history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.8	14.7	•
Oxidation Acid Number (AN)	Abs/.1mm mg KOH/g		>25	13.8 2.74	14.7 <b>^</b> 3.04	13.0 ^ 2.45

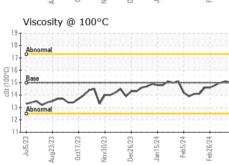


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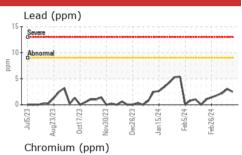


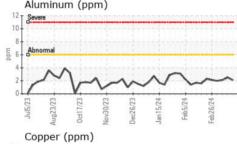
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

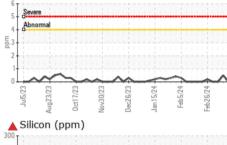
FLUID PROPER	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15	15.0	15.1	15.0

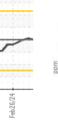
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Jul5/23	Aug23/23	17/23	30/23	Jec26/23	15/24	Feb5/24	Feb26/24
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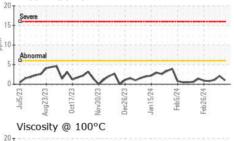
**GRAPHS** 

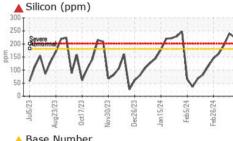


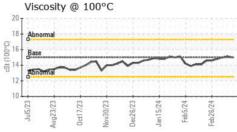


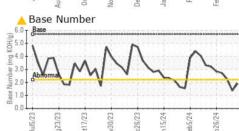
















Laboratory Sample No. Unique Number : 10938030

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0895527 Lab Number : 06123879

Received **Tested** 

Diagnosed

: 20 Mar 2024

: 21 Mar 2024 : 22 Mar 2024 - Don Baldridge

**EDL NA Recips-Watervliet** Watervliet Powerstation, 3563 Hennessey Road

Watervliet, MI US 49098 Contact: Scott Eastman

Test Package : MOB 2 Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369.

scott.eastman@edlenergy.com T:

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

F: