

OIL ANALYSIS REPORT

Sample Rating Trend ISO

VIKING 505 PALLET MACHINE MACHINE 2 Component

Hydraulic System Fluid CONOCO MEGAFLOW AW 32 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of particulates (2 to 100 microns in size) present in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		RH0001983	RH0001990	
Sample Date		Client Info		17 Mar 2024	14 Mar 2024	
Machine Age	wks	Client Info		0	1	
Oil Age	wks	Client Info		1	0	
Oil Changed		Client Info		Not Changd	N/A	
Sample Status				ABNORMAL	ABNORMAL	
CONTAMINATION	١	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184		13	14	
Iron	ppm	ASTM D5185m	>20	3	1	
Chromium	ppm	ASTM D5185m	>10	<1	0	
Nickel	ppm	ASTM D5185m	>10	<1	0	
Titanium	ppm	ASTM D5185m		<1	0	
Silver	ppm	ASTM D5185m		0	0	
Aluminum	ppm	ASTM D5185m	>10	2	0	
Lead	ppm	ASTM D5185m	>10	1	0	
Copper	ppm	ASTM D5185m	>75	2	1	
Tin	ppm	ASTM D5185m	>10	1	0	
Vanadium	ppm	ASTM D5185m		<1	<1	
Cadmium	ppm	ASTM D5185m		<1	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 7	<mark>history1</mark> 10	history2
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	7	10	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	7 0	10 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	7 0 8	10 0 7	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	7 0 8 <1	10 0 7 0	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0	7 0 8 <1 23	10 0 7 0 17	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 80	7 0 8 <1 23 120	10 0 7 0 17 152	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 80 365	7 0 8 <1 23 120 360	10 0 7 0 17 152 308	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 80 365 500	7 0 8 <1 23 120 360 432	10 0 7 0 17 152 308 383	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 80 365 500 1000	7 0 8 <1 23 120 360 432 1022	10 0 7 0 17 152 308 383 1054	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 80 365 500 1000	7 0 8 <1 23 120 360 432 1022 current	10 0 7 0 17 152 308 383 1054 history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 0 80 365 500 1000 limit/base	7 0 8 <1 23 120 360 432 1022 current 4	10 0 7 0 17 152 308 383 1054 history1 3	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 0 0 80 365 500 1000 limit/base	7 0 8 <1 23 120 360 432 1022 current 4 0	10 0 7 0 17 152 308 383 1054 history1 3 2	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 0 0 80 365 500 1000 limit/base >20	7 0 8 <1 23 120 360 432 1022 current 4 0 2	10 0 7 0 17 152 308 383 1054 history1 3 2 0	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN	ppm	ASTM D5185m ASTM D5185m	0 0 0 80 365 500 1000 limit/base >20 limit/base	7 0 8 <1 23 120 360 432 1022 current 4 0 2 2 current	10 0 7 0 17 152 308 383 1054 history1 3 2 0 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm	ASTM D5185m ASTM D5185m	0 0 0 80 365 500 1000 limit/base >20 limit/base >20	7 0 8 <1 23 120 360 432 1022 current 4 0 2 2 current 4 0 2	10 0 7 0 17 152 308 383 1054 history1 3 2 0 history1 6739	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm	ppm	ASTM D5185m ASTM D5185m	0 0 0 3 3 5 5 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 0	7 0 8 3 120 360 432 1022 current 4 0 2 2 current 4 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	10 0 7 0 17 152 308 383 1054 history1 3 2 0 history1 6739 1087	history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm	ppm	ASTM D5185m ASTM D5185m	0 0 0 3 3 5 5 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 0	7 0 8 3 120 360 432 1022 current 4 0 2 2 current 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	10 0 7 0 17 152 308 383 1054 history1 3 2 0 history1 6739 1087 39	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm	ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 80 365 500 1000 Imit/base >20 Imit/base >20 S000 >1300 >160 >40 >10	7 0 8 3 3 120 360 432 1022 current 4 0 2 2 current 2 2 current 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	10 0 7 0 17 152 308 383 1054 history1 3 2 0 history1 6739 1087 39 10	history2 history2 history2

ISO 4406 (c) >19/17/14 **22/20/17**

Oil Cleanliness

0 20/17/12



OIL ANALYSIS REPORT

4µm	FLUID DEGRAD		method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045	0.38	0.33	0.56	
	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE	NONE	
Abnormal	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
INTERNET CONTRACTOR DE LA CONTRACTOR DE L	Precipitate	scalar	*Visual	NONE	NONE	NONE	
1,24	Silt	scalar	*Visual	NONE	NONE	NONE	
Mar14/24	Silt Debris	scalar	*Visual	NONE	LIGHT	A MODER	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
PQ	Appearance	scalar	*Visual	NORML	NORML	NORML	
Severe	Odor	scalar	*Visual	NORML	NORML	NORML	
Severe d	Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	
Abnormal	FLUID PROPER			limit/base	ourropt	history1	history
			method		current	history1	history2
	Visc @ 40°C	cSt	ASTM D445	31.0	31.7	31.9	
Mar14/24	SAMPLE IMAGE	S	method	limit/base	current	history1	history2
≥ Acid Number	≥ Color						no image
Base	Bottom						no image
	GRAPHS						
4/24	Ferrous Alloys				Particle Coun	t	
Mar14/24	10 I I I I I I I I I I I I I I I I I I I			491,520			T ²
Viscosity @ 400C	iron chromium			122,880	ļ		-2
Viscosity @ 40°C	E. 5- mickel			30,720	Severe		-2
Abnormal				30,720			
	4 0			42 (m 7,680	Abnormal		-2
Base				Mar17/24- 17661 [per 1 m]) 800			-2/
		1-		≥ <u>sa</u> po iti 480			1
Abnormal	Non-ferrous Meta	IS		of part			
	copper			120 ag	1	/	1
24	E 5-			E 30	1		
Mar14/24				,	1		
~				4			
PQ	ar14/2			Mar17/2	1		V ⁸
-	War			ž (4μ 6μ	14µ 21µ	38µ 71µ
Severe	Viscosity @ 40°C			_	Acid Number	- K K.	
	36 34 Abnormal			0.60 HQ)T		
Abnormal	32 - Base 330 - A			🖁 0.40	Base		
	30 Abnormal			Urmber Number			
	28 - Abnormal			Acid Nu			
47	4/24			Ac Ac	4/24		
u14/2.	Mar14			Mar17/24	Mar14		
TESTING LABORATIONY Unique Num	-	Recei Teste Diagr	ived : 02 ed : 03 nosed : 03	r, NC 27513 2 Apr 2024 3 Apr 2024 3 Apr 2024 4 Apr 2024 - W	'es Davis	11364	D PRODUCT AIR PARK F ASHLAND, V US 2300 Itact: C SLAD

Contact/Location: C SLADE - BCWASH