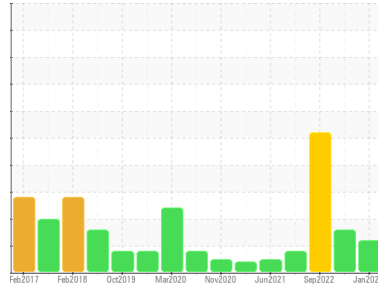


Machine Id
IMM #27 (S/N H43A0400020)

Component
Hydraulic System

Fluid
PETRO CANADA HYDREX AW 46 (1000 LTR)



DIAGNOSIS

Recommendation

We recommend you service the filters on this component. We recommend that you use electrostatic filtration to remove insolubles from the oil and to reduce the levels of varnish in the system. Alternatively draining a percentage of the oil and topping up with fresh oil (sweetening the oil) may provide a reduction in the varnish potential level. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a light amount of silt (particulates < 14 microns in size) present in the oil. MPC (Membrane Patch Colorimetry) test indicates a moderate concentration of varnish present.

Fluid Condition

The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PC0080865	PC0076978	PC0062149
Sample Date	Client Info			15 Jan 2024	11 Jul 2023	21 Sep 2022
Machine Age	mths	Client Info		0	0	0
Oil Age	mths	Client Info		0	0	72
Oil Changed	Client Info			N/A	N/A	Not Changd
Sample Status				ABNORMAL	SEVERE	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method		>0.05	NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	1	<1	2
Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Nickel	ppm	ASTM D5185(m)	>20	0	<1	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	<1	0	0
Lead	ppm	ASTM D5185(m)	>20	0	0	<1
Copper	ppm	ASTM D5185(m)	>20	<1	1	<1
Tin	ppm	ASTM D5185(m)	>20	0	0	0
Antimony	ppm	ASTM D5185(m)		0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

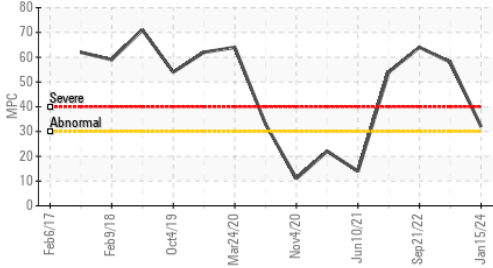
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	0	0	<1
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	0	0
Magnesium	ppm	ASTM D5185(m)	0	<1	1	0
Calcium	ppm	ASTM D5185(m)	50	33	19	22
Phosphorus	ppm	ASTM D5185(m)	330	328	334	333
Zinc	ppm	ASTM D5185(m)	430	316	259	269
Sulfur	ppm	ASTM D5185(m)	760	742	612	645
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	0	<1	0
Sodium	ppm	ASTM D5185(m)		0	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	<1	<1	<1

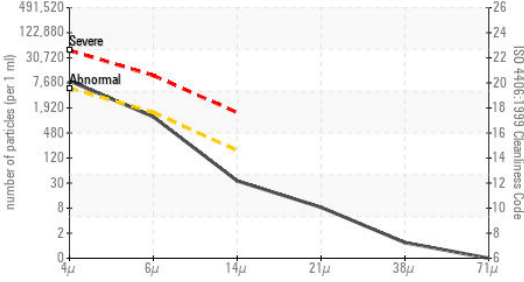
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	▲ 7440	▲ 6714	● 55795	
Particles >6µm	ASTM D7647	>1300	1031	1070	● 17141	
Particles >14µm	ASTM D7647	>160	30	57	▲ 1232	
Particles >21µm	ASTM D7647	>40	7	12	▲ 296	
Particles >38µm	ASTM D7647	>10	1	1	4	
Particles >71µm	ASTM D7647	>3	0	0	0	
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 20/17/12	▲ 20/17/13	● 23/21/17	

OIL ANALYSIS REPORT

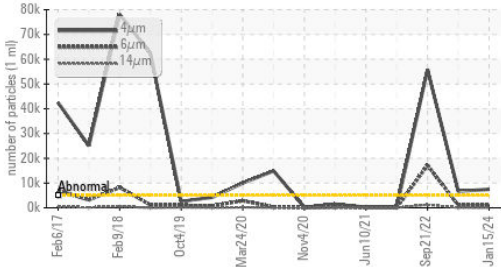
▲ Varnish Potential



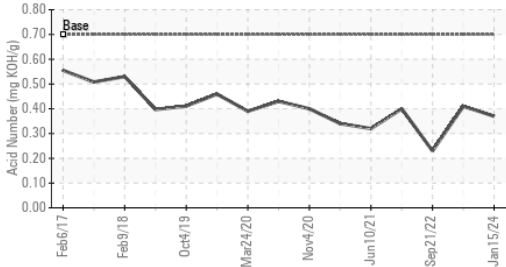
▲ Particle Count



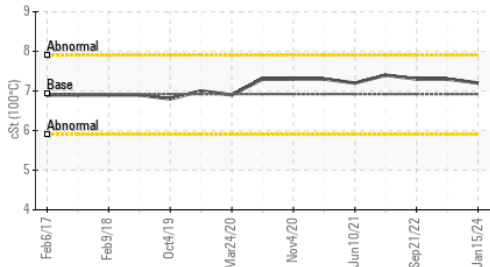
▲ Particle Trend



Acid Number



Viscosity @ 100°C



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.70	0.37	0.41	0.23
MPC Varnish Potential	Scale	ASTM D7843(m)*	>15	▲ 32	● 58	● 64

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	VLITE
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*	>0.05	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	46.4	45.3	45.1	45.6
Visc @ 100°C	cSt	ASTM D7279(m)	6.92	7.2	7.3	7.3
Viscosity Index (VI)	Scale	ASTM D2270*	104	119	124	122

SAMPLE IMAGES

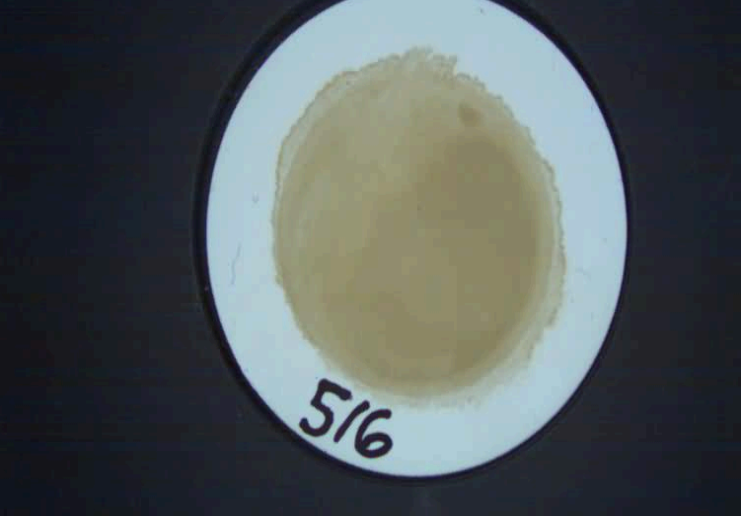
	method	limit/base	current	history1	history2
Color					
Bottom					
MPC					



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0080865 **Received** : 26 Jan 2024
Lab Number : **02611516** **Diagnosed** : 29 Jan 2024
Unique Number : 5720611 **Diagnostician** : Bill Quesnel
Test Package : IND 2 (Additional Tests: KV100, MPC, VI)

ROPAK PACKAGING CANADA
 2240 WYECROFT RD
 OAKVILLE, ON
 CA L6L 6M1
 Contact: Frank Maio
 Frank.Maio@mauserpackaging.com
 T: (905)465-9019
 F:

MPC (Varnish Test)



Sample Color & Clarity



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