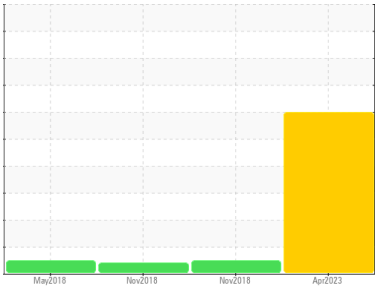
OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
METRO VANCOUVER [02544184]
Machine Id
2017 REXROTH R987377946 W-CER-HPU-003G (S/N 1150825)
Component
Hydraulic System
Fluid
PANOLIN HLP SYNTH 32 (300 LTR)

DIAGNOSIS

Recommendation

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the oil. There is a light concentration (<5.0%) of mineral oil present in the fluid. There is a moderate concentration of water present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

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 INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC**	WC	WC
Sample Date		Client Info		**09 Apr 2023**	28 Nov 2018	15 Nov 2018
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**SEVERE**	NORMAL	ATTENTION

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Chromium	ppm	ASTM D5185(m)	>10	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>10	**0**	0	0
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>10	**<1**	0	0
Lead	ppm	ASTM D5185(m)	>10	**<1**	0	0
Copper	ppm	ASTM D5185(m)	>75	**<1**	1	<1
Tin	ppm	ASTM D5185(m)	>10	**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**	<1	0

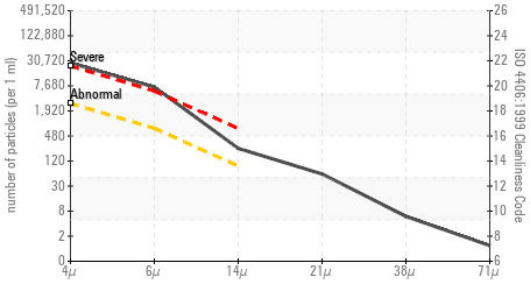
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**11**	1	<1
Barium	ppm	ASTM D5185(m)		**0**	0	0
Molybdenum	ppm	ASTM D5185(m)		**0**	<1	<1
Manganese	ppm	ASTM D5185(m)		**0**	<1	<1
Magnesium	ppm	ASTM D5185(m)		**0**	<1	<1
Calcium	ppm	ASTM D5185(m)		**0**	2	1
Phosphorus	ppm	ASTM D5185(m)		**1605**	1487	1503
Zinc	ppm	ASTM D5185(m)		**2**	13	13
Sulfur	ppm	ASTM D5185(m)		**1378**	1568	1574
Lithium	ppm	ASTM D5185(m)		**<1**	0	0

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	**12**	<1	<1
Sodium	ppm	ASTM D5185(m)		**<1**	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Water	%	ASTM D6304*	>0.05	▲ **0.080**	---	---
ppm Water	ppm	ASTM D6304*	>500	▲ **801.3**	---	---

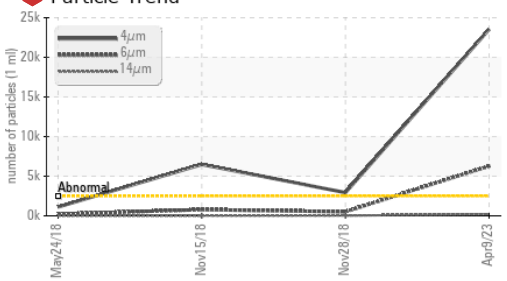
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*		**0**	0	0
Nitration	Abs/cm	ASTM D7624*		**4.6**	1.7	1.7
Sulfation	Abs/.1mm	ASTM D7415*		**162.5**	23.2	22.9
Mineral Oil Content	%	ASTM D7418*	<5.0%	**<5.0**	1.5	3.0

OIL ANALYSIS REPORT

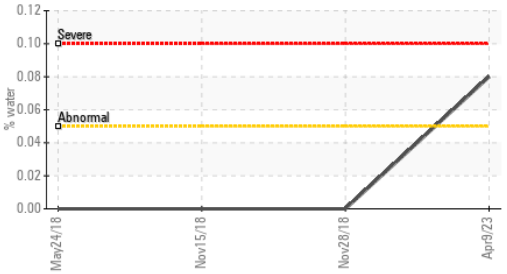
Particle Count



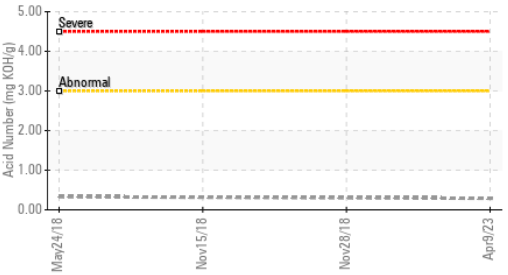
Particle Trend



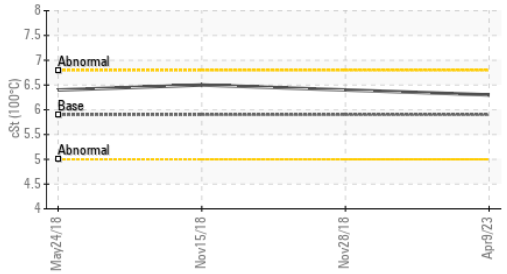
Water



Acid Number



Viscosity @ 100°C

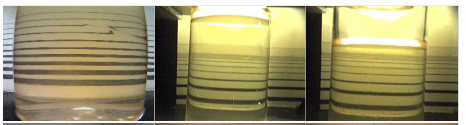
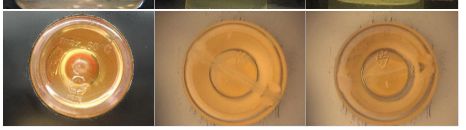


FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>2500	**23534**	2930	6487
Particles >6µm		ASTM D7647	>640	**6277**	515	784
Particles >14µm		ASTM D7647	>80	**213**	27	19
Particles >21µm		ASTM D7647	>20	**52**	8	3
Particles >38µm		ASTM D7647	>4	**5**	0	0
Particles >71µm		ASTM D7647	>3	**1**	0	0
Oil Cleanliness		ISO 4406 (c)	>18/16/13	**22/20/15**	19/16/12	20/17/11

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*		**165.7**	20.1	19.7
Acid Number (AN)	mg KOH/g	ASTM D974*		**0.29**	---	---

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
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)	30.6	**33.0**	30.4	34.1
Visc @ 100°C	cSt	ASTM D7279(m)	5.9	**6.3**	6.4	6.5
Viscosity Index (VI)	Scale	ASTM D2270*	140	**144**	169	147

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC **Received** : 10 Apr 2023
Lab Number : 02550518 **Diagnosed** : 14 Apr 2023
Unique Number : 5555528 **Diagnostician** : Bill Quesnel
Test Package : MOB 2 (Additional Tests: TAN Man)

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

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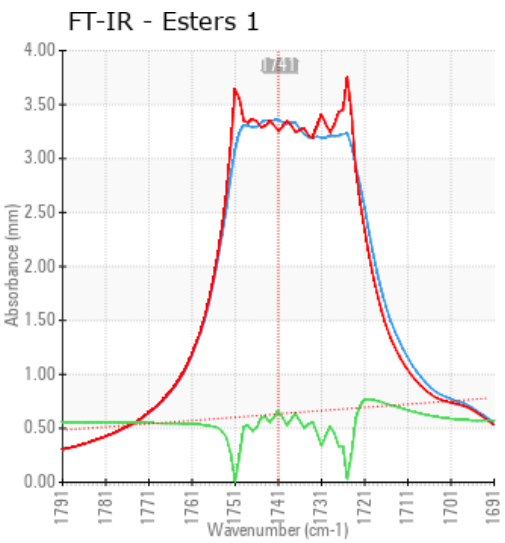
MINERAL OIL CONTENT REPORT

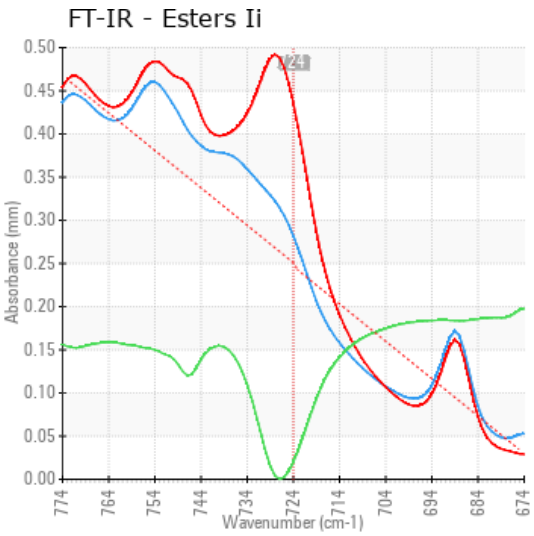
PASS

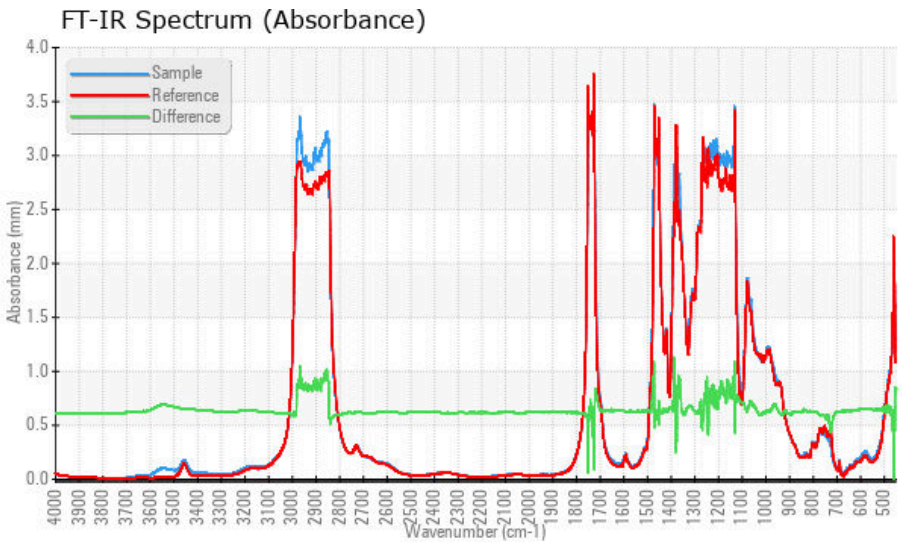
Area
METRO VANCOUVER [02544184]
Machine Id
2017 REXROTH R987377946 W-CER-HPU-003G (S/N 1150825)
Component
Hydraulic System
Fluid
PANOLIN HLP SYNTH 32 (300 LTR)

SPECTRAL ANALYSIS

		method	limit/base	current	history1	history2
Zinc	ppm	ASTM D5185(m)		**2**	13	13
Mineral Oil Content	%	ASTM D7418*	<5.0%	**<5.0**	1.5	3.0







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