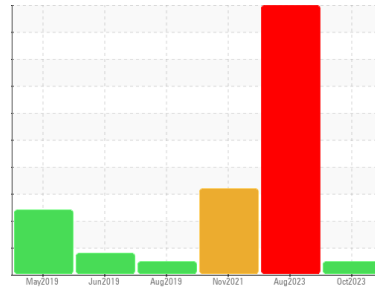




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
LES ENTREPRISES FBDL [02592299]
 Machine Id
HITACHI ZX470LC-5 17HI28245 (S/N HCMJAA60T00031281)
 Component
Hydraulic System
 Fluid
PANOLIN HLP SYNTH 46 (510 LTR)

DIAGNOSIS

Recommendation

Échantillonner de nouveau l'équipement au prochain intervalle de vidange afin d'en surveiller la condition.

Wear

Les taux d'usure de tous les composants sont normaux.

Contamination

Il y a une faible concentration (<5.0%) d'huile minérale présente dans le fluide. La propreté du système est acceptable pour votre objectif de propreté ISO 4406. La propreté du système et du fluide est acceptable.

Fluid Condition

Le AN est acceptable pour ce fluide. L'état de l'huile permet d'en prolonger l'utilisation.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	WC	WC	WC
Sample Date	Client Info	20 Oct 2023	28 Aug 2023	02 Nov 2021
Machine Age	hrs	6535	6532	3959
Oil Age	hrs	0	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		NORMAL	SEVERE	ABNORMAL

WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m) >20	2	36	14
Chromium	ppm	ASTM D5185(m) >10	0	<1	<1
Nickel	ppm	ASTM D5185(m) >10	0	<1	<1
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	<1	0	<1
Aluminum	ppm	ASTM D5185(m) >10	0	1	<1
Lead	ppm	ASTM D5185(m) >10	<1	3	<1
Copper	ppm	ASTM D5185(m) >75	<1	2	2
Tin	ppm	ASTM D5185(m) >10	0	0	<1
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

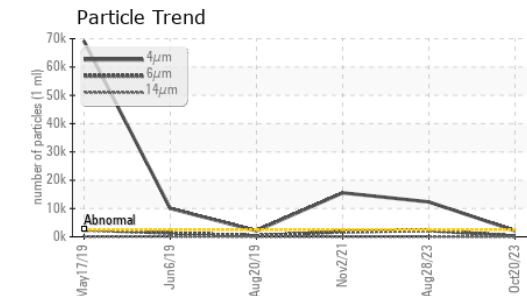
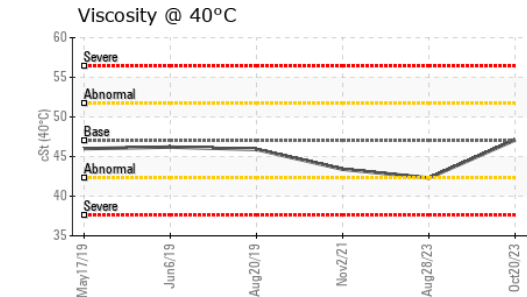
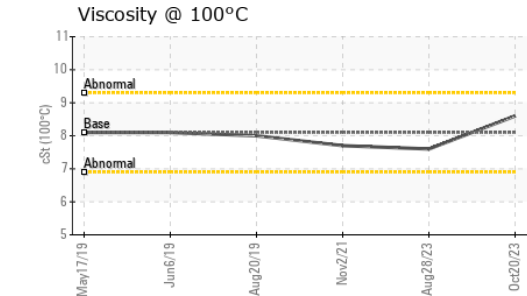
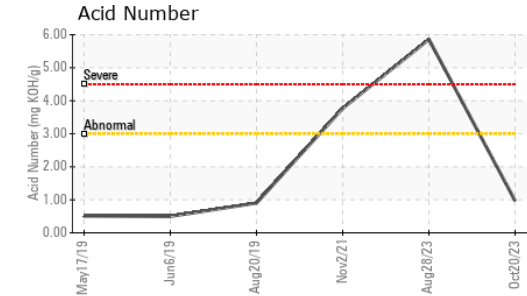
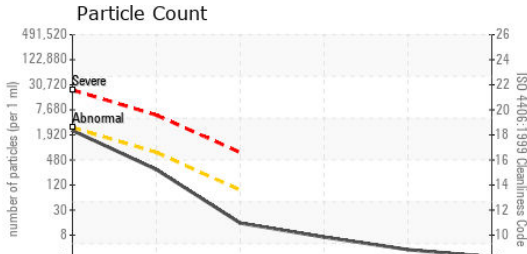
method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m) 0	<1	1	2
Barium	ppm	ASTM D5185(m) 0	<1	0	0
Molybdenum	ppm	ASTM D5185(m) 0	0	<1	<1
Manganese	ppm	ASTM D5185(m) 0	0	<1	<1
Magnesium	ppm	ASTM D5185(m) 0	0	2	2
Calcium	ppm	ASTM D5185(m) 0	4	80	64
Phosphorus	ppm	ASTM D5185(m) 1700	1554	1068	1065
Zinc	ppm	ASTM D5185(m) 0	18	297	175
Sulfur	ppm	ASTM D5185(m) 1350	1327	1589	1578
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m) >20	3	3	3
Sodium	ppm	ASTM D5185(m)	<1	2	<1
Potassium	ppm	ASTM D5185(m) >20	<1	<1	<1
Water	%	ASTM D6304* >0.05	0.052	0.070	---
ppm Water	ppm	ASTM D6304* >500	523.8	700.4	---

INFRA-RED

method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	0	0	---
Nitration	Abs/cm	ASTM D7624*	4.2	5.5	---
Sulfation	Abs/.1mm	ASTM D7415*	156.5	155.6	---
Mineral Oil Content	%	ASTM D7418* <5.0%	<5.0	<5.0	0.0



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	2151	▲ 12320	▲ 15550	
Particles >6µm	ASTM D7647	>640	249	▲ 2214	▲ 1783	
Particles >14µm	ASTM D7647	>80	13	62	33	
Particles >21µm	ASTM D7647	>20	6	12	7	
Particles >38µm	ASTM D7647	>4	3	1	0	
Particles >71µm	ASTM D7647	>3	2	0	0	
Oil Cleanliness	ISO 4406 (c)	>18/16/13	18/15/11	▲ 21/18/13	▲ 21/18/12	

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*		154.5	177.1	---
Acid Number (AN)	mg KOH/g	ASTM D974*		0.97	5.86	3.77

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)	47.0	47.1	42.3	43.4
Visc @ 100°C	cSt	ASTM D7279(m)	8.1	8.6	7.6	7.7
Viscosity Index (VI)	Scale	ASTM D2270*	146	162	149	147

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						
Bottom						



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC
Lab Number : **02592300**
Unique Number : 5669379
Test Package : MOB 2 (Additional Tests: TAN Man)

Envirolin Canada
 520 rue Adanac
 Quebec, QC
 CA G1C 7B7
 Contact: Patrick Levesque
 patrick.levesque@envirolin.com
 T: (418)623-1216
 F: (418)660-8889

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.



MINERAL OIL CONTENT REPORT

PASS

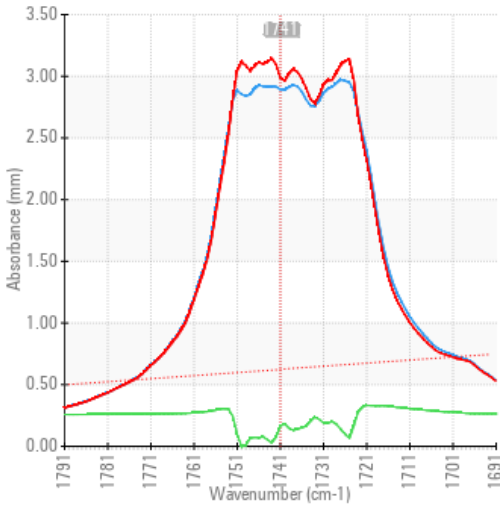


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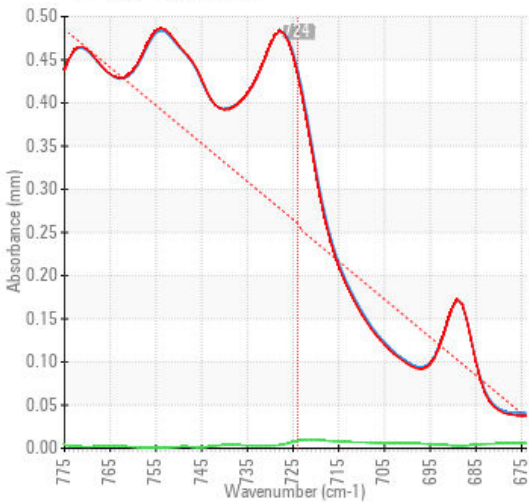
SPECTRAL ANALYSIS

		method	limit/base	current	history1	history2
Zinc	ppm	ASTM D5185(m)	0	18	▲ 297	▲ 175
Mineral Oil Content	%	ASTM D7418*	<5.0%	<5.0	<5.0	0.0

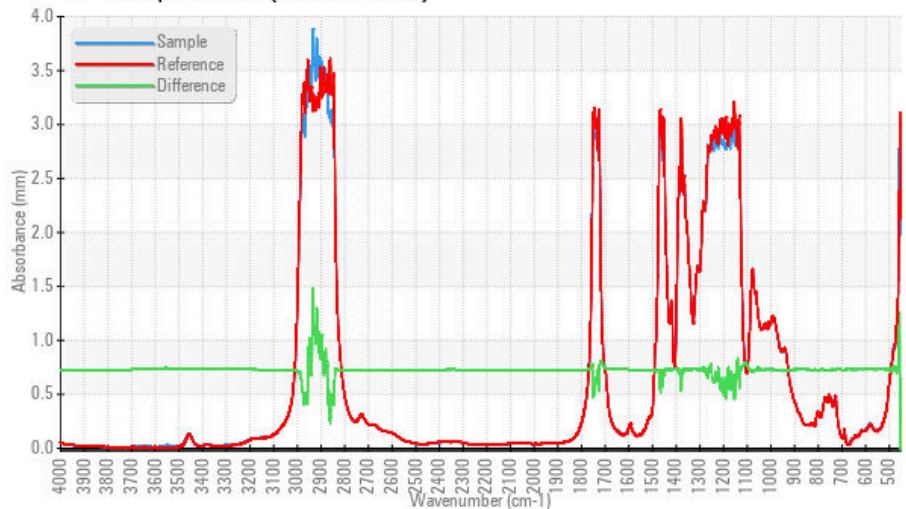
FT-IR - Esters I



FT-IR - Esters II



FT-IR Spectrum (Absorbance)



ISO 17025:2017
 Accredited
 Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC
Lab Number : 02592300
Unique Number : 5669379
Test Package : MOB 2 (Additional Tests: TAN Man)

Received : 26 Oct 2023
Diagnosed : 30 Oct 2023
Diagnostician : Bill Quesnel

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