

Report Number	FSR 1234
Company Name	Example Ltd.
Sample Number	1
Sample Date	01.01.2018
Fluid Type	Generic Oil VG 100
Type of Machine	Misc. Equipment
Sample Reference	X / Y Investigation

	Critical
	Action
	Good

Remarks

Example figures.

Particle Distribution Measurement

According to ISO 11500

Particle Size	SAE AS 4059 Particles per 100ml	SAE Class	ISO 4406:1999 Particles per 100ml	ISO Class
>4µm	67327	8	124445	17
>6µm	45055	8	57118	16
>14µm	6415	8	12063	14
>21µm	5103	10		
>38µm	505	9		
>100µm	40	8		

Water Content

Direct Method According to ASTM D6304	124.5 PPM	
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Viscosity at 40°C

Method Based on IP 71	102.7 mm ² /s	
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Viscosity at 100°C

Method Based on IP 71	12.0 mm ² /s	
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Viscosity Index

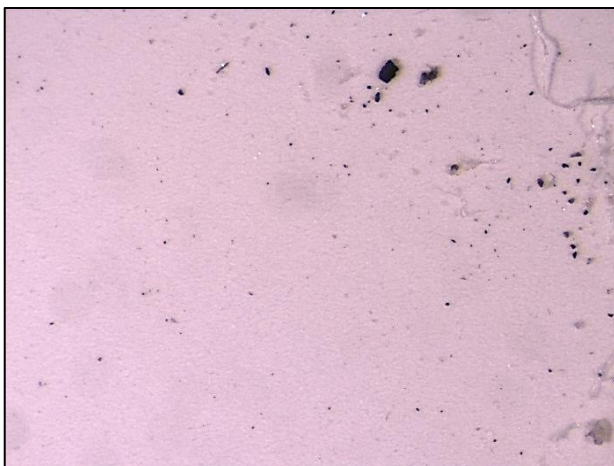
	107	
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Conductivity

According to ASTM D2624	231 pS/m	
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Microscopic Contamination Analysis

Optical Magnification 100-Times



Types of Particles

Silicate residue, black contamination, fibres, metal content.

100ml of Fluid Filtered

Comparison Photograph - Contamination Class According to ISO 4406:1999

ISO Code	SAE Class	10
17/16/14	NAS Class	9

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MPC Value appears ok. Please see diagnosis below.

Gravimetric Content

(Pore size: 0,45 µm) 714 mg/litre 714

MPC - Test

(According to ASTM E 308)

MPC	26.7	
Luminanz L	81.4	
Redness Index A	3.3	
Yellow Index B	-11.1	

Diagnosis:

0-15	MPC in the normal range.
16-30	No apparent varnish problem at the moment. However, varnish-formation can soon be
31-40	Condition of oil and filter elements should be monitored in shorter intervals. MPC value increased due to soft contaminants caused by oil degradation. The first signs of varnish deposition as well as reduced filter lifetimes (especially after system downtimes) are possible.
41-50	MPC value significantly increased due to soft contaminants cause by oil degradation. Varnish deposition on bearings, valves and gears as well as reduced filter lifetimes (especially after system downtimes) are to be expected.
>50	MPC value has drastically increased due to soft contaminants caused by advanced additive depletion and oil oxidation. Varnish has deposited on bearings, valves, tank and gears. Very short filter lifetimes are to be expected.



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History of Comments

07/08/2014		Iron, Lead and Copper are present in low concentrations, indicates general wear and tear of components. Magnesium, Zinc and Phosphorus appear to be the result of additives.
16/01/2015		Increase in Iron and Lead identified, suggests an increase wear of components over time. Magnesium, Zinc and Phosphorus values have decreased as additives have depleted with usage.

Elemental Analysis (PPM)

		07/08/2014	16/01/2015			
Additives	Zinc	763	623			
	Magnesium	990	763			
	Calcium	29	48			
	Phosphorus	743	630			
	Barium	2	3.7			
	Boron	5	4.5			
Contamination	Silicon	13	29			
	Sodium	12	51			
Wear Metals	Nickel	1.1	2.4			
	Vanadium	1.2	1			
	Silver	1.5	2			
	Titanium	0.8	0.7			
	Iron	48	112			
	Lead	12	129			
	Chromium	2.1	3.7			
	Aluminium	1.9	8.3			
	Copper	10	62			
	Tin	0.8	6.6			
	Molybdenum	2.1	2.7			
	Beryllium	<0.1	<0.1			
	Tungsten	2.1	<0.1			
	Cadmium	1.2	1.3			