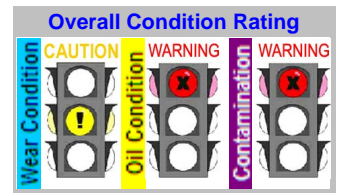


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 Test code : 882

Unit ID : A 6306
 Unit Type : Gearbox General
 Unit Make : FALK
 Unit Model : 50QLW20
 Oil type / Viscosity : SHELL OMALA 320
 Oil System Capacity : 71.9 Liters



Notes (Finding, Evaluation, Interpretation, Suggestion and Recommendation)

Visual (appearance) examination, the color of oil is dark/black.
 Sediment particles found in bottom of sample bottle.
 Oxidation properties indicate oil is near end of useful service life.
 Recommend change oil and flush system with clean oil to remove contamination, if the oil from this sample is still in use in this component.

Wasan C / Andy Siltton

			Current Sample			Previous Sample			Baseline and Alarm Limit								
Condition History			Wear	Oil	Cont.	Wear	Oil	Cont.	Wear	Oil	Cont.	Alarm Limit					
Lab ID	Test Method	Result										B A S E L I N E	Alarm Limit				
Bottle ID			150242	925446	147203	924689	142912	921303	Alarm Limit Matrix -Set Name (Equipment type / oil type)								
Date Sampled			14-Dec-10	26-Oct-10	27-Aug-10	Gearbox Falk Omala 320 (BST)											
Oil Hours (Kms)			Not Given	Not Given	Not Given												
Unit Hours (Kms)			Not Given	Not Given	Not Given												
Oil Added (Liters)			Not Given	Not Given	Not Given												
Filters Hours (Kms)																	
Wear Condition												The New Oil (TNO)	RDE fine		RFS coarse		
Wear Element	Method	Unit	RDE fine	RFS coarse	RDE fine	RFS coarse	RDE fine	RFS coarse									
Iron	D-6595	PPM	46.6 C	54.6	36.5 C	91.3 C	32.8 C	95.4 C	0	>30	>60	>75	>100				
Chromium	D-6595	PPM	0.2	1.2	0.2	0.8	0.3	0.3	0	>1	>2	>2	>3				
Lead	D-6595	PPM	1.1 C	0.8	0.2	1.6	0.0	1.0	0	>1	>2	>3	>5				
Copper	D-6595	PPM	0.0	0.6	0.0	0.2	0.0	1.2 C	0	>1	>2	>1	>2				
Tin	D-6595	PPM	0.0	0.0	0.0	0.0	0.5	0.3	0	>1	>2	>3	>5				
Aluminum	D-6595	PPM	0.0	0.7	0.0	0.8	0.0	0.2	0	>1	>2	>7	>13				
Nickel	D-6595	PPM	0.6	2.1 W	0.0	1.2 C	0.0	0.7	0	>1	>2	>1	>2				
Silver	D-6595	PPM	0.0	0.0	0.0	0.0	0.0	0.0	0								
Molybdenum	D-6595	PPM	0.0	0.0	0.0	0.3	0.0	1.2	0								
Titanium	D-6595	PPM	0.0	0.0	0.0	0.0	0.0	0.2	0								
Oil Condition												TNO	L-Warning	L-Caution	U-Caution	U-Warning	
Viscosity @ 40 °C	D-445	cSt	320.8		318.3		319.9		312.0	<280.8	<296.4	>327.6	>343.2				
Viscosity @ 100 °C	D-445	cSt															
Oxidation	FTIR	Abs	6.5 W		6.1 W		4.3		3.0			>4.5	>6				
Nitration	FTIR	Abs	4.3		4.4		4.0		3.6			>5.4	>7.2				
TAN	D-974	mg KOH/g.							0.50			>1	>1.5				
TBN	D-4739	mg KOH/g.															
Contamination												TNO			U-Caution	U-Warning	
Water	T-H2O Checktm	% (Wt.)	0.029		0.031 C		0.035 C		0.010			>0.03	>0.05				
												RDE fine		RFS coarse			
Sodium	D-6595	PPM	0		0		0		0								
Silicon	D-6595	PPM	6.0 C	3.0	7.4 C	6.6	7.8 C	9.5	0	>6	>9	>13	>23				
Additive Element												TNO					
Boron	D-6595	PPM	1		1		1		0								
Magnesium	D-6595	PPM	0		0		0		0								
Calcium	D-6595	PPM	1		1		1		0								
Barium	D-6595	PPM	0		0		0		0								
Phosphorus	D-6595	PPM	94		87		68		115								
Zinc	D-6595	PPM	2	10	2	6	2	26	1								
Additional Test												TNO	U-Caution	U-Warning	U-Caution	U-Warning	
Flash Point	D-3828	°C															
Viscosity Index	D-2270																


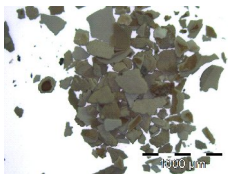
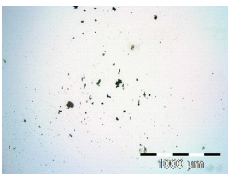
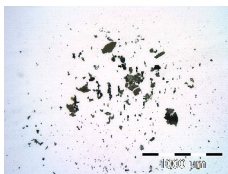
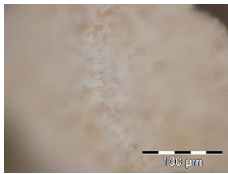
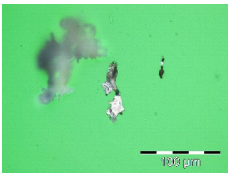

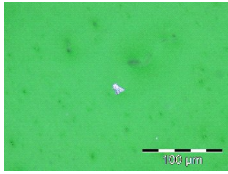
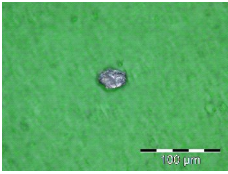
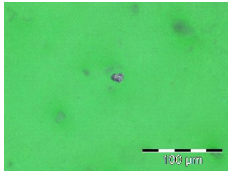
Note: Alarm Limits are variable and dependent upon dataset size and to be used as general guideline.
 No Sign or : NORMAL , C or : CAUTION (first level warning limit) , W or : Warning (second level warning limit)
 U-Caution : Upper CAUTION Level L-Caution : Lower CAUTION Level First Level Alarm _Alert Limit in Upper Level and/or Lower Level
 U-Warning : Upper WARNING Level L-Warning : Lower WARNING required Level Second Level Alarm _Alert Limit in Upper Level and/or Lower Level
 Baseline will be data of either "The new oil" or "Reference oil" or "Oil specification". TNO = The new oil , RO = Reference oil , OS = Oil Specification
 Accuracy of interpretation and recommendation are based on representatives sample and information supplied. No warranty is expressed or implied for this report.

C Code : **11012**
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Unit ID : **A 6306**
 Unit Type : Gearbox General
 Unit Make : FALK
 Unit Model : 50QLW20
 Oil type / Viscosity : SHELL OMALA 320
 Oil System Capacity : 71.9 Liters

Notes (Finding, Evaluation, Interpretation, Suggestion and Recommendation)

Sediment particles found in bottom of sample bottle.

	Current Sample		Previous Sample									
Lab ID	150242		147203									
Bottle ID	925446		924689									
Date Sampled	14-Dec-10		26-Oct-10									
Oil Hours (Kms)	Not Given		Not Given									
Unit Hours (Kms)	Not Given		Not Given									
Oil Added (Liters)												
Filters Hours (Kms)												
Wear Condition												
Ferrographic Analysis												
Volume of Sample Used	3.00 ml		3.00 ml		3.00 ml							
Image of Wear & Contaminants (Ferrogram) Magnification 50X												
Image of Wear & Contaminants (Ferrogram) Magnification 500X												
Image of Wear & Contaminants (Filtergram) Magnification 500X												
Wear & Contaminants Particles	%Rating	Size (Micron)	Particle Type	%Rating	Size (Micron)	Particle Type	%Rating	Size (Micron)	Particle Type	%Rating	Size (Micron)	Particle Type
Normal Rubbing Wear				85	2-3	F	80	2-3	F	95	2-3	F
Fatigue Wear				5	5-10	F	5	10-20	F			
Fatigue Sphere												
Severe Sliding Wear												
Cutting Wear												
Black Oxides				5	5-10	F	5	10-20	F			
Red Oxides							5	20-50	F			
Corrosive Wear												
Dirt and Dust				5	10-20	C	5	10-100	C	5	3-5	C
Sediment	100	>10	C									
Ferrographic Analysis Rating (FAR) rating in grade	D											

%Rating : Percent area covered by wear debris particles or contaminant particles.
Size : Size in micron unit (0.001 mm)
F : Ferrous wear particles
N : Non-ferrous wear particles
C : Contaminant particles

Ferrographic Analysis Rating (FAR), rating in grade
A : Excellent - normal rubbing wear condition
B : Good - normal rubbing wear condition
C : Fair or moderate - normal rubbing wear condition
D : Severe and/or critical - wear condition
F : Extreme severe and/or extreme critical - wear condition

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E Unit Model : 50QLW20
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O Oil type /
I Viscosity : SHELL OMALA 320
L
Oil System Capacity : 71.9 Liters

Lab ID : 150242 Date sampled : 14-Dec-10 Hours on Oil : Not Given Hours on Unit : Not Given Bottle ID : 925446

ส่วนที่ 1 : หน้าหลัก[Section 1 : Main Page](#)

การตรวจสอบขวดตัวอย่างด้วยตาเปล่าพบว่าสีน้ำมันมีสีดำ
พบเศษตะกอนที่ก้นขวดตัวอย่าง
คำวัดการเกิดออกซิเดชัน ชีวน้ำมันเกือบหมดอายุไขแล้ว
แนะนำให้ถ่ายน้ำมันและล้างระบบด้วยน้ำมันใหม่เพื่อขจัดสิ่งปนเปื้อน ถ้าน้ำมันหล่อลื่นนี้ยังคงใช้งานในขณะนี้

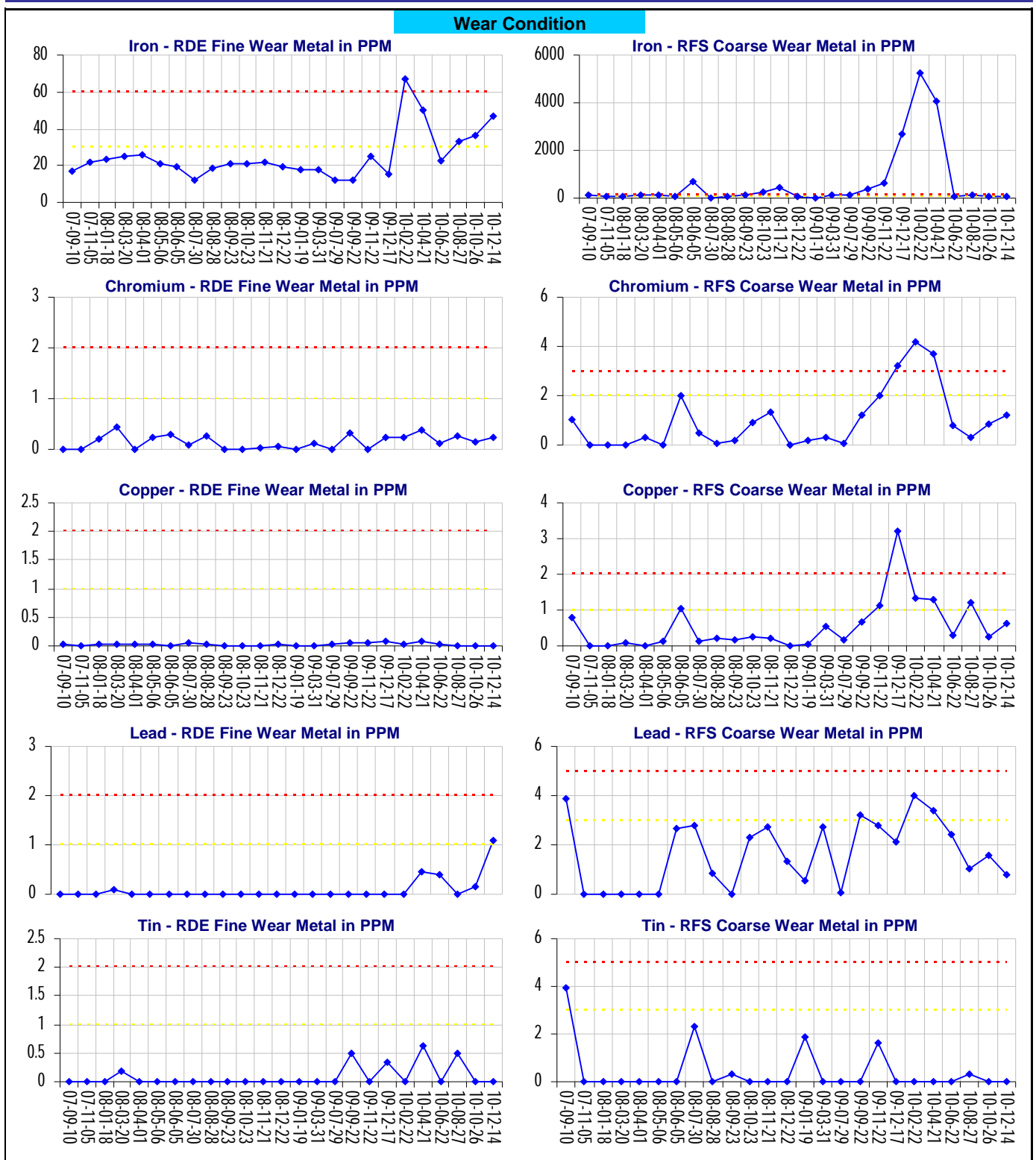
ส่วนที่ 2 : หน้าที่สอง[Section 2 : Second Page](#)**ส่วนที่ 3 : หน้าของ Analytical Ferrography**[Section 3 : Analytical Ferrography Page](#)

พบเศษตะกอนที่ก้นขวดตัวอย่าง

ส่วนที่ 4 : หน้าของ Gravimetric Page[Section 4 : Gravimetric Page](#)

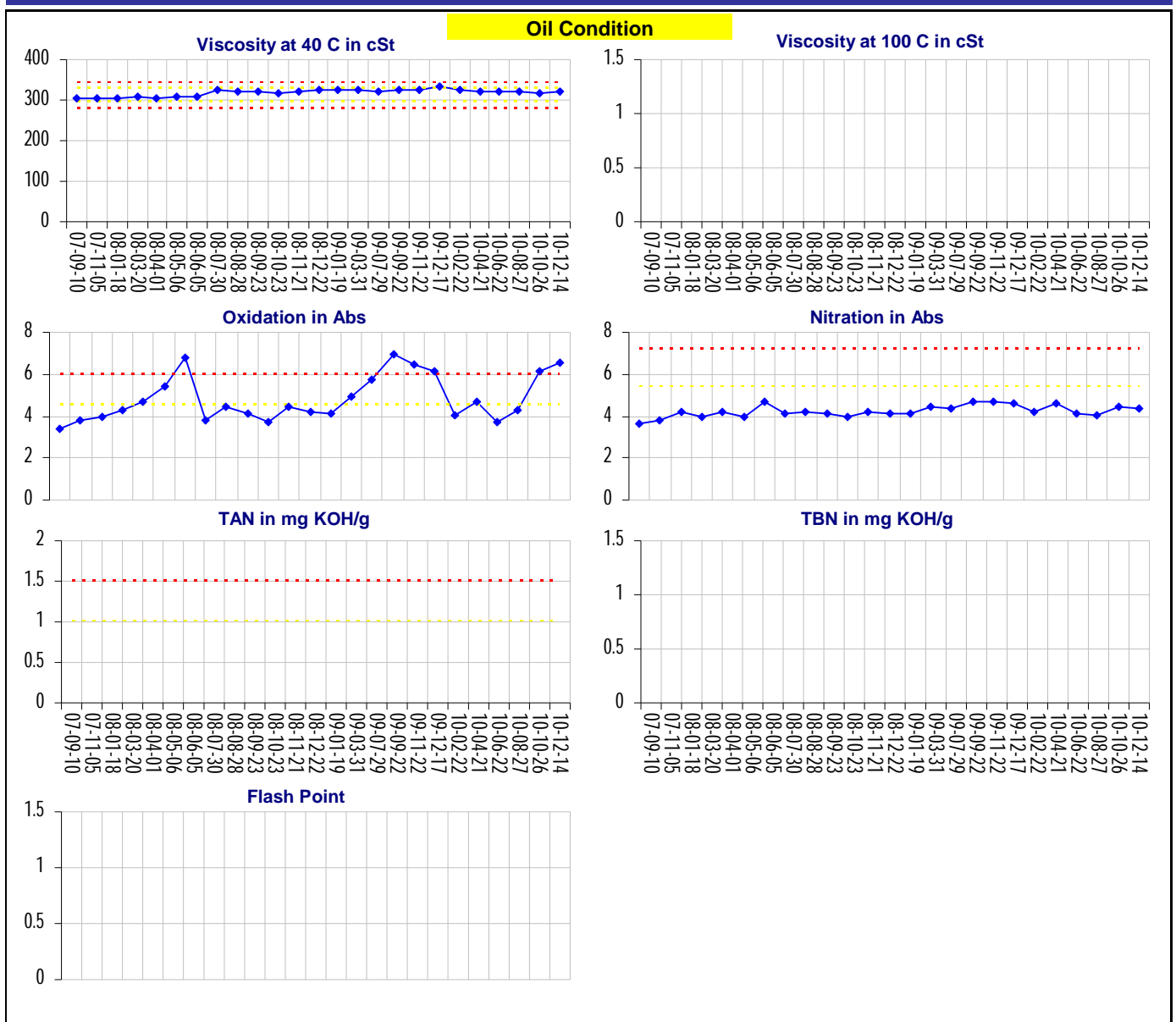
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