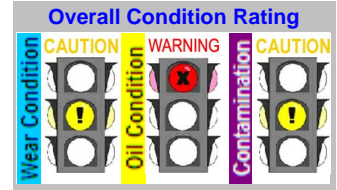


C Code : 18019
 U Name :
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 R
 Address : 2034/132-161 New Petchburi Rd.,
 Bangkok, Huaykwang, Bangkok 10320
 Site : Phase 6
 Location :
 Test code : 802

Unit ID : **Water Truck CAT 773B No 02 Eng**
 Unit Type : Engine Diesel
 Unit Make : CATERPILLAR
 Unit Model : 3412
 Oil type/
 I Viscosity : SHELL RIMULA R3 X SAE 15W40
 L
 Oil System Capacity : 80 Liters



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

Note abnormal copper detected.
 Note that Diesel Fuel dilution of the oil has been detected in this sample.
 Low viscosity probably due to the fuel dilution taking place.
 * Additive levels do not match the additive levels we have on file for this type of oil. Recommend investigate why this discrepancy exists and advise lab.
 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.

Somchai J / Andy Sitton

			Current Sample			Previous Sample			Baseline and Alarm Limit							
Condition History			Wear	Oil	Cont.	Wear	Oil	Cont.	Wear	Oil	Cont.	Alarm Limit				
			▲	■	▲	▲	▲	▲	▲	▲	▲	Alarm Limit Matrix -Set Name (Equipment type / oil type)				
Lab ID	Test Method	Result	150909			149238			148617			Engine Diesel Caterpillar Rimula X 15W40(JVNWR)				
Bottle ID			923640			923661			922880							
Date Sampled			27-Dec-10			02-Dec-10			21-Nov-10							
Oil Hours (Kms)			227			100			59							
Unit Hours (Kms)			15378			15251			15151							
Oil Added (Liters)																
Filters Hours (Kms)			227			100			59							
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	19.9	7.6	10.0	4.8	7.9	8.6	0	>93	>99	>93	>99			
Chromium	D-6595	PPM	0.6	0.7	0.1	0.0	0.3	0.3	0	>4	>6	>4	>6			
Lead	D-6595	PPM	1.9	2.3	0.0	0.0	0.7	0.4	0	>18	>20	>18	>20			
Copper	D-6595	PPM	29.9 W	3.3	21.0 W	1.9	35.8 W	10.7	0	>12	>14	>12	>14			
Tin	D-6595	PPM	0.0	2.1	0.0	0.0	0.0	0.0	0	>11	>13	>11	>13			
Aluminum	D-6595	PPM	2.6	1.5	2.4	1.0	1.4	2.1	0	>11	>13	>11	>13			
Nickel	D-6595	PPM	0.9	0.7	0.0	0.0	0.1	0.0	0							
Silver	D-6595	PPM	0.2	0.0	0.0	0.0	0.0	0.0	0							
Molybdenum	D-6595	PPM	22.5 *	4.1	25.2 *	2.6	20.4 *	8.2	0							
Titanium	D-6595	PPM	0.0	0.0	0.0	0.0	0.0	0.0	0							
Oil Condition												TNO	L-Warning	L-Caution	U-Caution	U-Warning
Viscosity @ 40°C	D-445	cSt	76.4		87.1		89.4		108.0							
Viscosity @ 100°C	D-445	cSt	11.3 W		12.3 C		12.6 C		14.3	<11.3	<12.8	>15.8	>17.3			
Oxidation	FTIR	Abs	13.2 C		11.0		10.7		9.3			>11.6	>13.9			
Nitration	FTIR	Abs	6.1 C		4.9		4.8		4.0			>6	>7			
TAN	D-974	mg KOH/g.							12.1	<3	<6					
TBN	D-4739	mg KOH/g.														
Contamination												TNO				
Water	FTIR	% (Wt.)	0.048		0.048		0.054		0.047			>0.15	>0.5			
Fuel	SAW	% (Wt.)	2.00 C		2.00 C		0.10					>2	>4			
Glycol	FTIR	Abs	0		0		0					>1.5	>3			
Soot	FTIR	% (Wt.)	1.01		0.75		0.72									
Sodium	D-6595	PPM	7		6		7		7							
Silicon	D-6595	PPM	8.5	4.2	10.7	6.4	8.1	5.4	6	>15	>21	>15	>21			
Additive Element												TNO				
Boron	D-6595	PPM	215 *		271 *		176 *		15							
Magnesium	D-6595	PPM	16		17		12		15							
Calcium	D-6595	PPM	3145		3239		3435		3860							
Barium	D-6595	PPM	0		0		0		0							
Phosphorus	D-6595	PPM	1078		1045		858		1214							
Zinc	D-6595	PPM	1175	201	1186	203	1374	436	1434							
Additional Test												TNO	L-Warning	L-Caution	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 **N** : 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 : 18019

U Name :

S

T Address : 2034/132-161 New Petchburi Rd.,
Bangkapi, Huaykwang, Bangkok 10320

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M Site : Phase 6

E Location :

R Test code : 802

E Unit ID : **Water Truck CAT 773B No 02 Eng**

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Unit Type : Engine Diesel

Unit Make : CATERPILLAR

Unit Model : 3412

Oil type/ Viscosity : SHELL RIMULA R3 X SAE 15W40

Oil System Capacity : 80 Liters

Lab ID : 150909 Date sampled : 27-Dec-10 Hours on Oil : 227 Hours on Unit : 15378 Bottle ID : 923640

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

สังเกต-อนุภาคทองแดงสีหรือที่ผิดปกติ

สังเกต พบน้ำมันเชื้อเพลิงดีเซลปนเบื่อนในน้ำมันตัวอย่างนี้

ค่าความหนืดที่ต่ำกว่าปกติ อาจเกิดจากการปนเบื่อนด้วยน้ำมันเชื้อเพลิง

* ระดับสารปรุงแต่งไม่เหมือนกับระดับสารปรุงแต่งของน้ำมันชนิดนี้ แนะนำตรวจสอบ

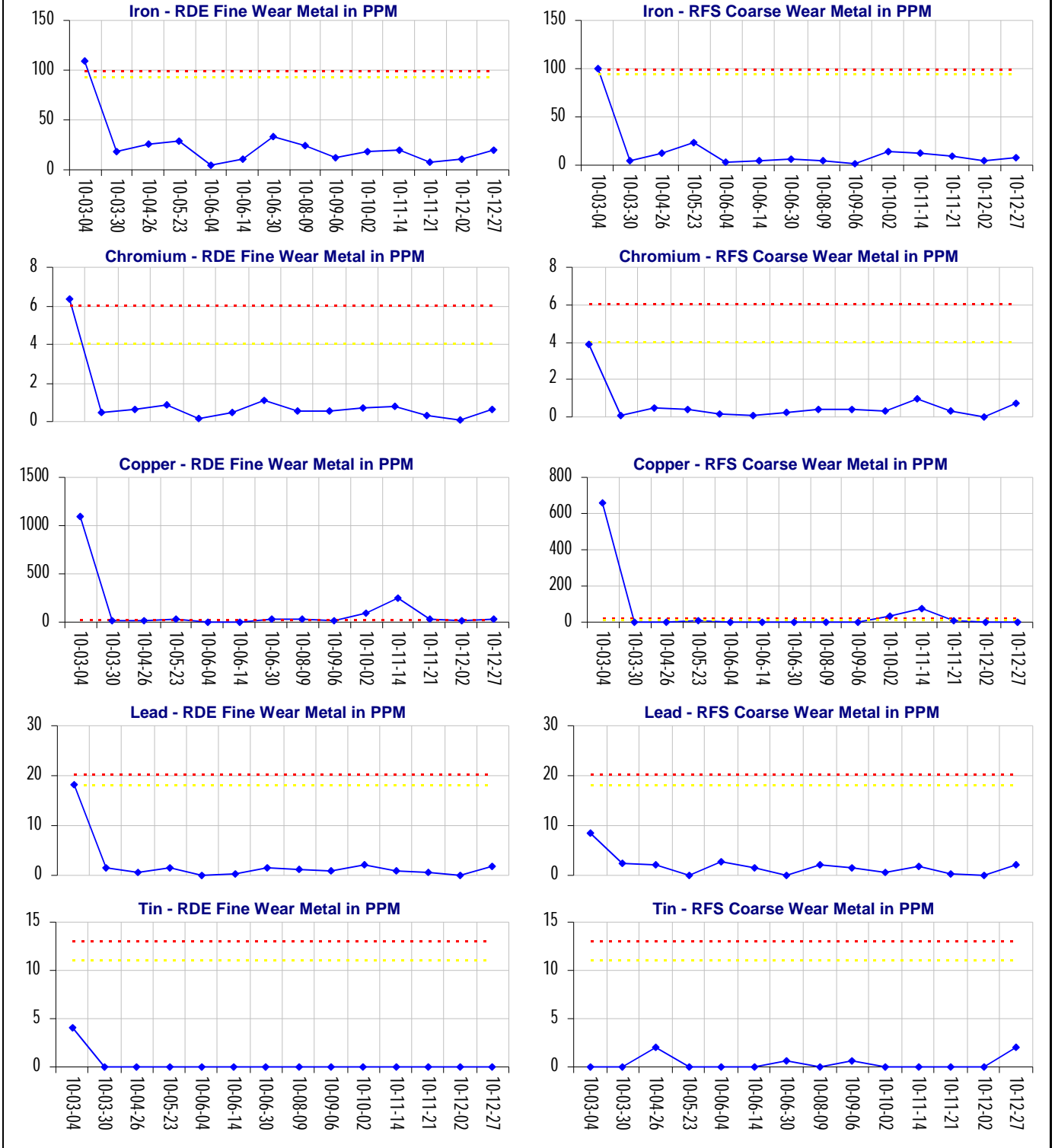
แนะนำให้ถ่ายน้ำมันและล้างระบบด้วยน้ำมันใหม่เพื่อขจัดสิ่งปนเบื่อน ถ้าน้ำมันหล่อลื่นนี้ยังคงใช้งานในขณะนี้

ส่วนที่ 2 : หน้าที่สอง[Section 2 : Second Page](#)**ส่วนที่ 3 : หน้าของ Analytical Ferrography**[Section 3 : Analytical Ferrography Page](#)**ส่วนที่ 4 : หน้าของ Gravimetric Page**[Section 4 : Gravimetric Page](#)

C Code : 18019
 Name :
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 Bangkapi, Huaykwang, Bangkok 10320
 Site : Phase 6
 Location :
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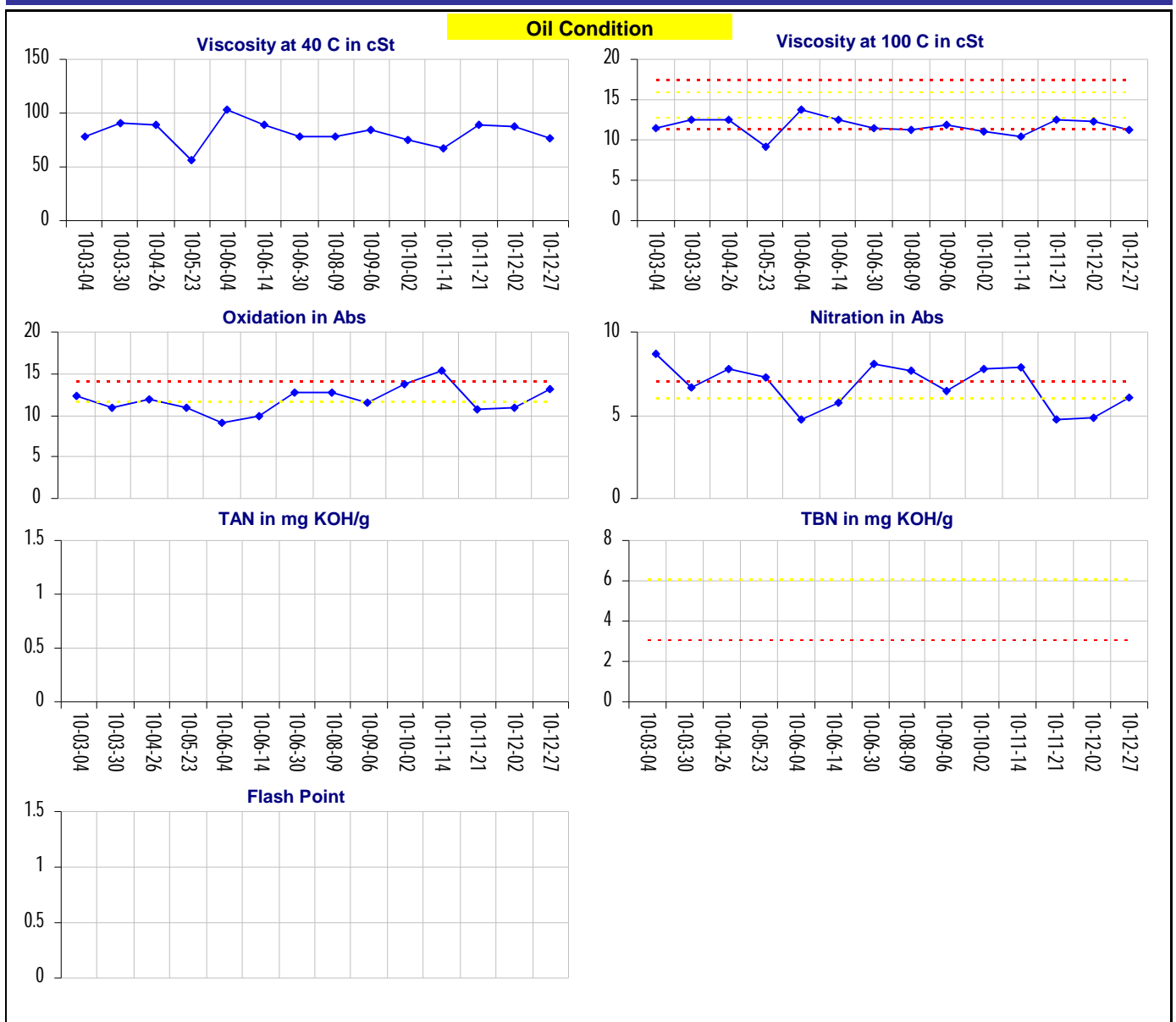
Unit ID : **Water Truck CAT 773B No 02 Eng**
 Unit Type : Engine Diesel
 Unit Make : CATERPILLAR
 Unit Model : 3412
 Oil type / Viscosity : SHELL RIMULA R3 X SAE 15W40
 Oil System Capacity : 80 Liters

Wear Condition



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