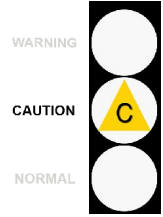


C Code : 28161  
 U Name :  
 S Address : 47/10 Soi Amornphan 4,  
 T Vibhavadirangsit Rd. Chatuchak,  
 O Bangkok Thailand 10900  
 M  
 E Site :  
 R Location :  
 Test code : E802

Unit ID : **OH Truck No 34 ENG No 20**  
 Unit Type : Engine Diesel  
 Unit Make : CUMMINS  
 Unit Model : QST-30-C-1200  
 Oil type / Viscosity : SHELL RIMULA X SAE 15W40  
 Oil System Capacity : 150 Liters



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

Dirt (silicon) is present and resulting in abrasive wear. Recommend check air filtration system for leaks, proper operation, and source of dirt entry. 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.

			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)				
												Engine Diesel Cummins RIMULA X SAE 15W40 (ITD)				
Lab ID	Test Method	Result														
Bottle ID			244455			238260			229548							
Date Sampled			1029535			1024433			1019643							
Oil Hours (Kms)			24-Jan-14			30-Nov-13			16-Sep-13							
Unit Hours (Kms)			500			500			500							
Oil Change			44083			43537			43063							
Oil Added (Liters)																
Filters Hours (Kms)																
Wear Condition			Fine(small) Wear	Coarse(large) Wear		Fine(small) Wear	Coarse(large) Wear		Fine(small) Wear	Coarse(large) Wear		The New Oil (TNO)	Fine Wear	Coarse wear		
Iron	D-6595	PPM	7.6	3.4		8.9	12.5		12.4	4.5		0	>12	>18	>8	>15
Chromium	D-6595	PPM	0.6	0.2		0.4	0.3		0.8	0.2		0	>1	>2	>1	>2
Lead	D-6595	PPM	1.3	1.6		0.4	0.0		4.1	2.0		0	>6	>8	>4	>7
Copper	D-6595	PPM	3.1	0.4		7.7	0.8		36.8	5.6		0	>10	>17	>1	>2
Tin	D-6595	PPM	0.0	1.9		0.0	1.4		0.0	2.8		0	>1	>2	>3	>5
Aluminum	D-6595	PPM	1.6	3.7		1.9	1.5		4.4	1.3		0	>2	>3	>1	>2
Nickel	D-6595	PPM	0.1	1.2		0.0	0.0		0.2	0.3		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	36.3	0.5		26.8	0.3		28.9	3.7		37				
Titanium	D-6595	PPM	0.0	0.4		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										166.4				
Viscosity @ 100°C	D-445	cSt	13.8						13.4		13.8	15.1	<12.8	<13.6	>16.6	>17.4
Oxidation	FTIR	Abs	12.3						12.0		11.5	9.3		>13.9	>16.3	
Nitration	FTIR	Abs	5.6						5.6		4.9	2.8		>5.6	>6.3	
TAN	D-974	mg KOH/g														
TBN	D-4739	mg KOH/g										8.8	<2.2	<4.4		
Contamination												TNO	U-Caution		U-Warning	
Water	FTIR	% (Wt.)	0.050						0.078		0.069	0.060		>0.13	>0.22	
Fuel	SAW	% (Wt.)	0.10						0.10		0.10			>3	>5	
Glycol	FTIR	Abs	0						0		0					
Soot	FTIR	% (Wt.)	0.52						0.71		0.69			>0.75	>1.5	
Vanadium	D-6595	PPM	0						0		1	0				
Sodium	D-6595	PPM	4						4		6	5	>50	>100		
Silicon	D-6595	PPM	10.8	3.6		8.9	7.1		13.4	4.7		16	>20	>25	>3	>5
Additive Element												TNO				
Boron	D-6595	PPM	379						311		283	338				
Magnesium	D-6595	PPM	14						12		12	16				
Calcium	D-6595	PPM	3044						2785		2286	2974	>3717	>4461	<1487	<2230
Barium	D-6595	PPM	0						0		0	0				
Phosphorus	D-6595	PPM	1105						1048		678	1099	>1373	>1648	<549	<824
Zinc	D-6595	PPM	1462	126		1255	100		1250	136		1190	>1487	>1785	<595	<892
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 : NORMAL, or : CAUTION (first level warning limit), or : Warning (second level warning limit)

: Upper CAUTION Level, : Lower CAUTION Level

: Upper WARNING Level, : Lower WARNING required Level

Baseline will be data of either "The new oil" or "Reference oil" or "Oil specification".

Accuracy of interpretation and recommendation are based on representives sample and information supplied.

First Level Alarm ,Alert Limit in Upper Level and/or Lower Level

Second Level Alarm ,Alert Limit in Upper Level and/or Lower Level

TNO = The new oil, RO = Reference oil, OS = Oil Specification

No warranty is expressed or implied for this report.

C U S T O M E R	Code : <b>28161</b>	E U I P M E N T	Unit ID : <b>OH Truck No 34 ENG No 20</b>
	Name :		
	Address : 47/10 Soi Amornphan 4, Vibhavadirangsit Rd. Chatuchak, Bangkok Thailand 10900		Unit Type : Engine Diesel
	Site :		Unit Make : CUMMINS
	Location :		Unit Model : QST-30-C-1200
	Test code : E802		Oil type / Viscosity : SHELL RIMULA X SAE 15W40
			Oil System Capacity : 150 Liters

Lab ID : 244455 Date sampled : 24-Jan-14 Hours on Oil : 500 Hours on Unit : 44083 Bottle ID : 1029535

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

พบฝุ่นละออง (ขี้ลิกอน) ส่งผลให้เกิดการสึกหรอแบบจุดขีด แนะนำให้ตรวจสอบระบบกรองอากาศและอุปกรณ์ต่างๆ สภาวะการทำงานที่เหมาะสม และ  
แหล่งที่มาของสิ่งสกปรก  
แนะนำให้ถ่ายน้ำมันและล้างระบบด้วยน้ำมันใหม่เพื่อขจัดสิ่งปนเปื้อน ถ้าน้ำมันหล่อลื่นนี้ยังคงใช้งานในขณะนี้

**ส่วนที่ 2 : หน้าของ Particle Count**[Section 2 : Particle Count](#)**ส่วนที่ 3 : หน้าของ Ferrographic Analysis**[Section 3 : Ferrographic Analysis](#)**ส่วนที่ 4 : หน้าของ Varnish and Sludge Potential**[Section 4 : Varnish and Sludge Potential](#)**ส่วนที่ 5 : หน้าของ Gravimetric Analysis**[Section 5 : Gravimetric Analysis](#)

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Unit ID : OH Truck No 34 ENG No 20

Unit Type : Engine Diesel

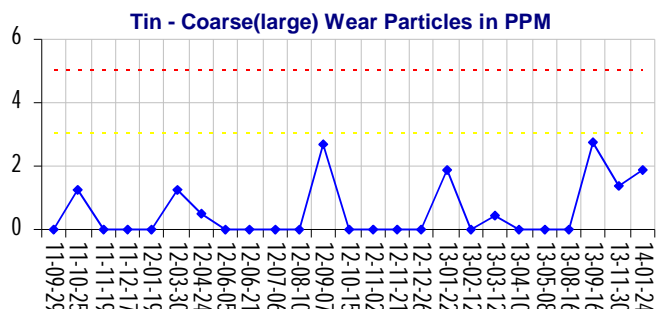
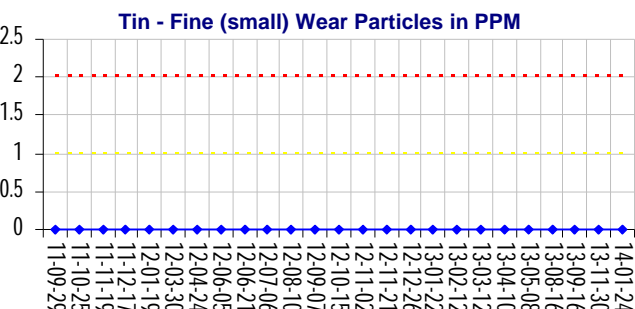
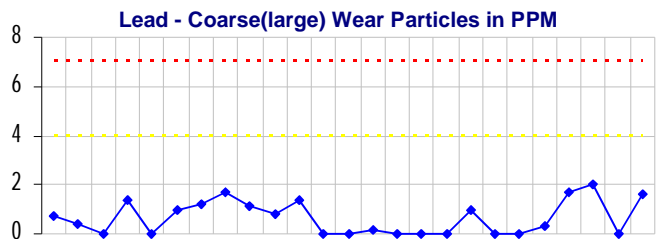
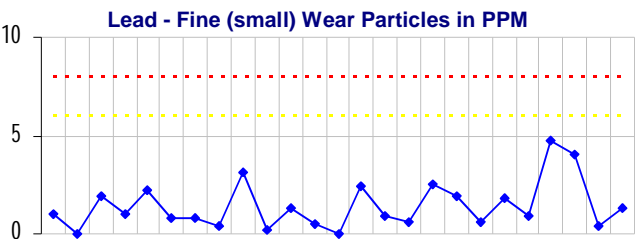
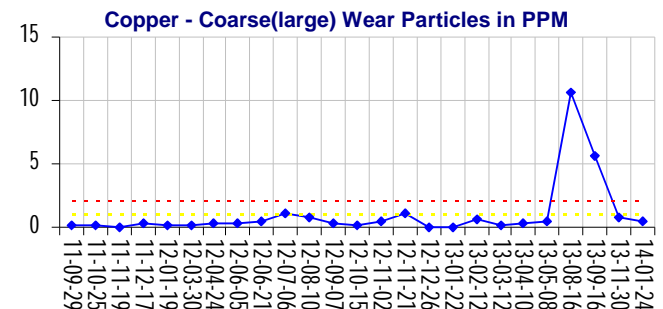
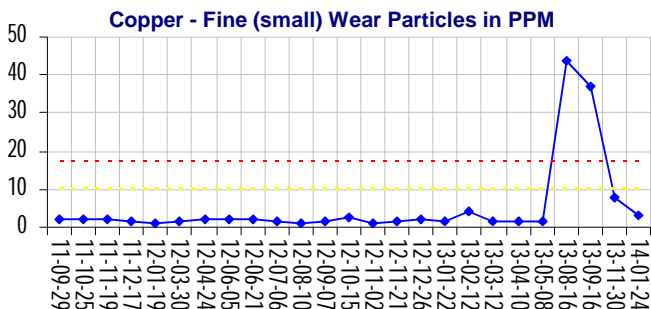
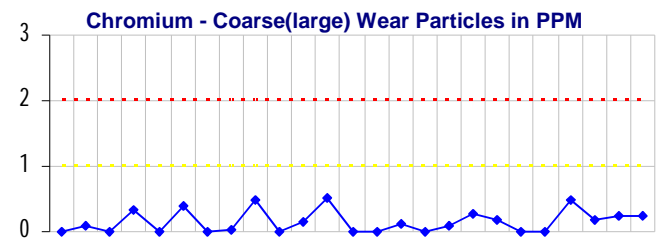
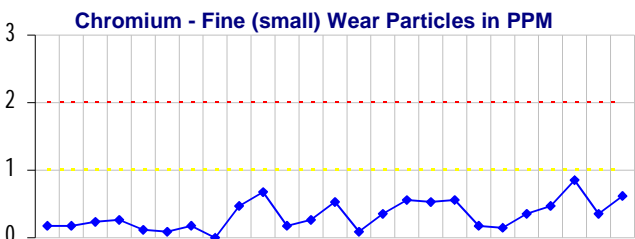
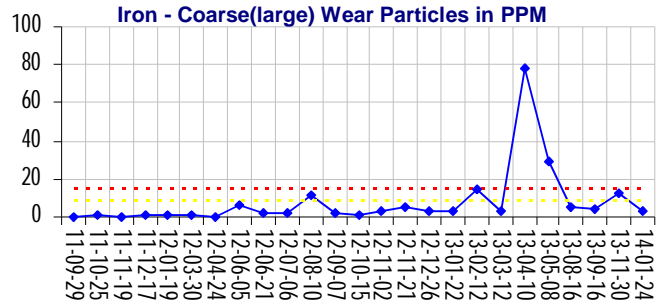
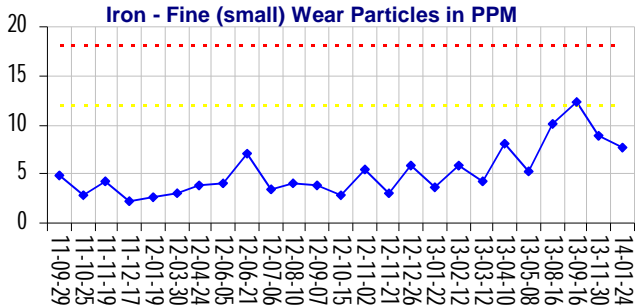
Unit Make : CUMMINS

Unit Model : QST-30-C-1200

Oil type / Viscosity : SHELL RIMULA X SAE 15W40

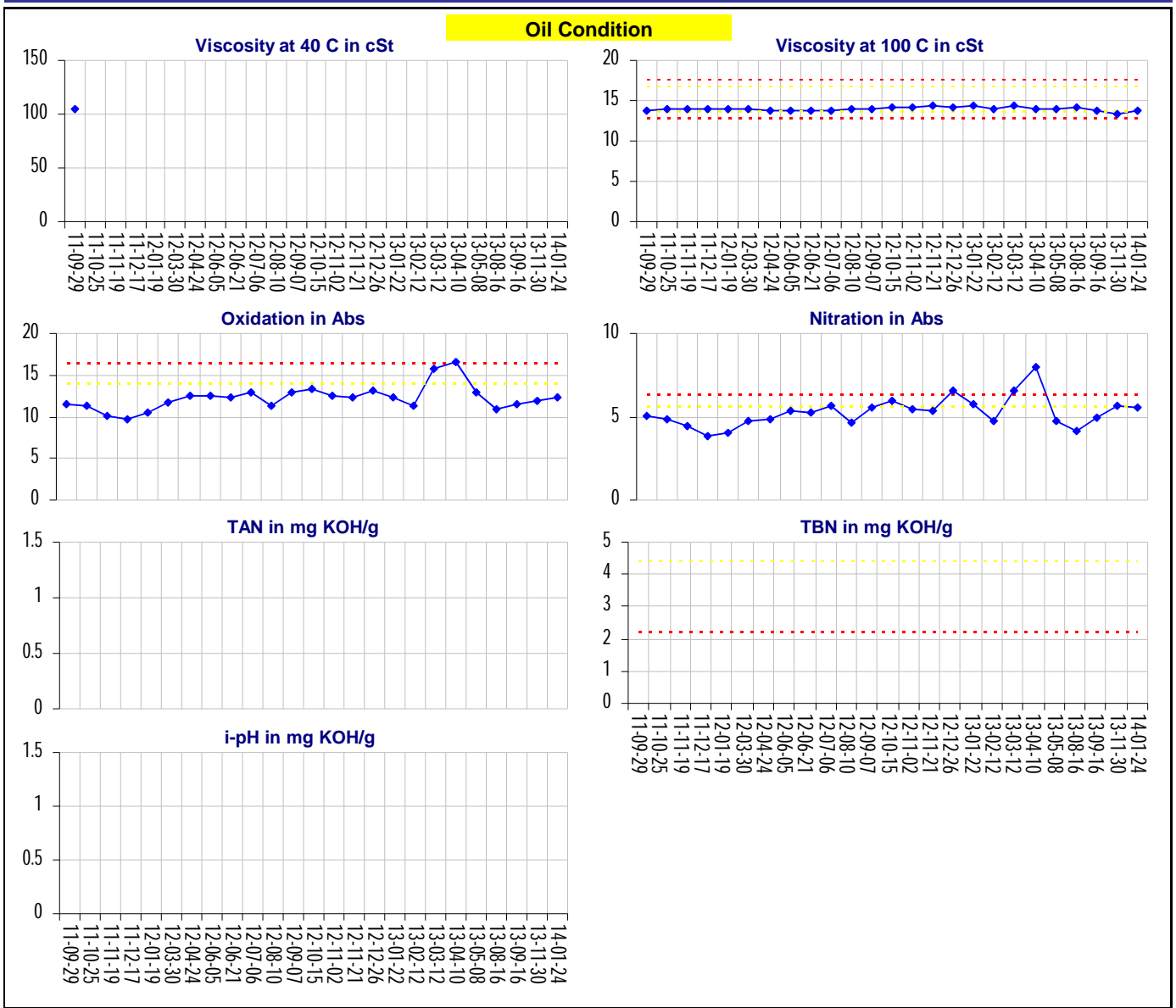
Oil System Capacity : 150 Liters

**Wear Condition**



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Unit ID : OH Truck No 34 ENG No 20  
 Unit Type : Engine Diesel  
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 Oil type / Viscosity : SHELL RIMULA X SAE 15W40  
 Oil System Capacity : 150 Liters



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