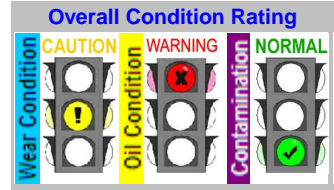


C Code : 32001
 U Name :
 S
 T
 O Address : 100/58 Sathorn Nakorn Tower
 M 28th Fl., North Sathorn Rd.
 E Khwaeng Silom, Khet Bangrak
 R
 Site :
 Location :
 Test code : 894

Unit ID : **SWD 35148E**
 Unit Type : Engine Nat Gas
 Unit Make : CATERPILLAR
 Unit Model : G3516 NA
 Oil type / Viscosity : CASTROL DURATEC L SAE 40
 Oil System Capacity : 350 Liters



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

Oil condition tests indicate that the oil is near the end of its useful service life.
 Note abnormal wear metals.
 Recommend check for other abnormal operating parameters, i.e., vibration, noise, heat etc. If abnormal condition exists, please inform laboratory with next sample.
 Recommend immediately 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 Siltan

			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)					
			150594			144131			141802			Engine Nat Gas Cat G3516 NA Duratec L 40(Exterran)					
Lab ID												B A S E L I N E					
Bottle ID																	
Date Sampled																	
Oil Hours (Kms)																	
Unit Hours (Kms)																	
Oil Added (Liters)																	
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	RDE fine	RFS coarse	RDE fine	RFS coarse	U-Caution	U-Warning	U-Caution	U-Warning	
Iron	D-6595	PPM	8.2 W	6.4	7.7 C	7.7 C	13.8 W	7.0	0	>6	>8	>7	>10				
Chromium	D-6595	PPM	0.2	0.0	0.3	0.5	0.6	0.2	0	>1	>2	>1	>2				
Lead	D-6595	PPM	0.1	1.5	0.6	2.4 C	4.6 C	2.1 C	0	>4	>6	>2	>3				
Copper	D-6595	PPM	12.5	4.0 C	12.3	4.6 W	21.6 W	6.0 W	0	>13	>18	>3	>4				
Tin	D-6595	PPM	0.0	0.0	0.0	0.0	0.0	0.0	0	>1	>2	>1	>2				
Aluminum	D-6595	PPM	1.6	2.8	0.7	0.9	1.0	1.0	0	>2	>3	>5	>7				
Nickel	D-6595	PPM	0.0	0.0	0.0	0.4	0.0	0.0	0	>1	>2	>1	>2				
Silver	D-6595	PPM	0.0	0.0	0.0	0.0	0.1	0.1	0								
Molybdenum	D-6595	PPM	0.0	0.1	0.0	1.1 C	0.0	0.9	0	>1	>2	>1	>2				
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										110.3					
Viscosity @ 100° C	D-445	cSt	14.5 C		14.3 C		17.8 W		13.1	<11.8	<12.4	>14.1	>14.5				
Oxidation	FTIR	Abs	26.3 W		19.6 W		41.9 W		5.9		>15.2	>17.7					
Nitration	FTIR	Abs	14.2 W		11.6 C		16.3 W		6.1		>10.9	>12.3					
TAN	D-974	mg KOH/g	3.38 W		2.43 C		5.19 W		0.95		>1.95	>3					
TBN	D-4739	mg KOH/g										4.1	<2	<3			
Contamination												TNO					
Water	FTIR	% (Wt.)	0.079		0.060		0.119 C		0.040			>0.1	>0.2				
Fuel	SAW	% (Wt.)	0.00		0.00		0.00										
Glycol	FTIR	Abs	0		0		0										
Soot	FTIR	% (Wt.)	0.62		0.43		0.43					>0.7	>0.8				
												RDE fine		RFS coarse			
Sodium	D-6595	PPM	8		7		13		10								
Silicon	D-6595	PPM	0.0	1.4	0.8	1.2	2.6	1.7	2	>4	>6	>4	>6				
Additive Element												TNO					
Boron	D-6595	PPM	125		116		113		100								
Magnesium	D-6595	PPM	10		11		9		7								
Calcium	D-6595	PPM	1291		1273		1357		1056								
Barium	D-6595	PPM	0		0		0		0								
Phosphorus	D-6595	PPM	255		282		236		174								
Zinc	D-6595	PPM	359	147	324	158	345	143	301								
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.

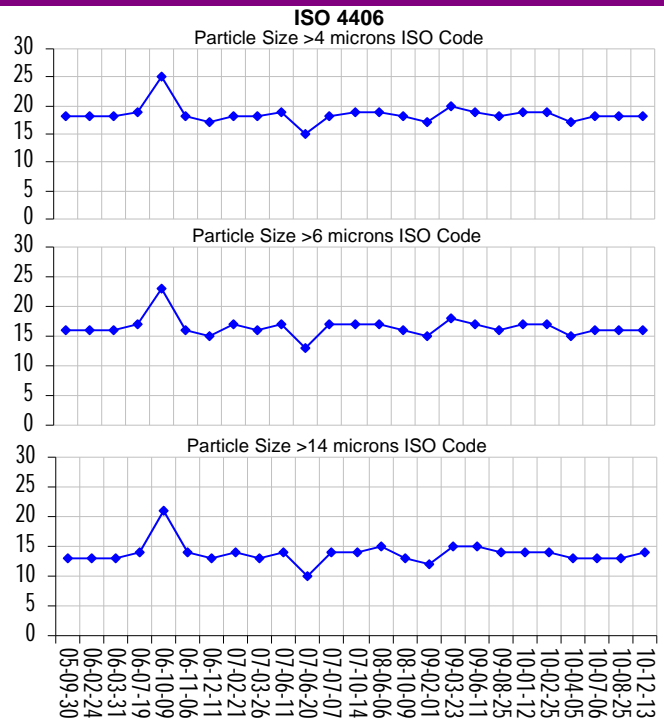
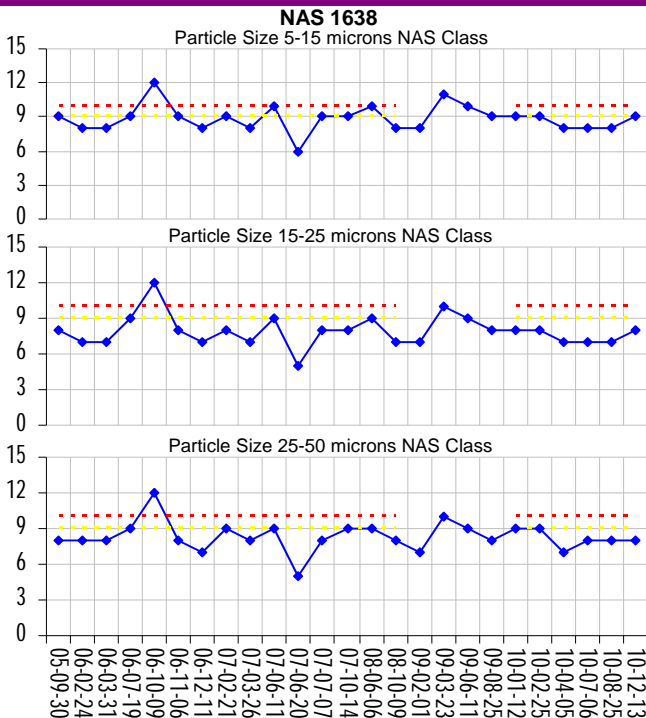
C Code : **32001**
 U Name :
 T
 O Address : 100/58 Sathorn Nakorn Tower
 M 28th Fl., North Sathorn Rd.
 E Khwaeng Silom, Khet Bangrak
 R
 Site :
 Location :
 Test code : 894

E Unit ID : **SWD 35148E**
 O Unit Type : Engine Nat Gas
 U Unit Make : CATERPILLAR
 I Unit Model : G3516 NA
 T
 o Oil type / : CASTROL DURATEC L SAE 40
 I Viscosity
 L
 Oil System Capacity : 350 Liters

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

Particle count indicates that oil cleanliness level is near to unacceptable range.

Lab ID Bottle ID Date Sampled Oil Hours (Kms) Unit Hours (Kms) Oil Added (Liters) Filters Hours (Kms)	Current Sample		Previous Sample				Particle Count				
	150594 918906 13-Dec-10 1222 92906	144131 915867 25-Aug-10 911 90798	141802 904183 06-Jul-10 1034 89887	NAS 1638 ISO 4406		BASELINE		Alarm Limit			
Contamination							Engine Nat Gas Cat G3516 NA Duratec L 40(Exterran)				
Particle Count NAS 1638 System Standard							U- Caution		U-Warning		
Particle Size Range	No. of Particles / 100ml.	Class	No. of Particles / 100ml.	Class	No. of Particles / 100ml.	Class	Class	No. of Particles / 100ml.	Class	No. of Particles / 100ml.	Class
Particle Size 5-15 microns	72,600	9 C	58,400	8	48,400	8	8	>64000	9	>128000	10
Particle Size 15-25 microns	6,700	8	5,400	7	4,500	7	8	>11400	9	>22800	10
Particle Size 25-50 microns	1,800	8	1,500	8	1,200	8		>2025	9	>4050	10
Particle Size 50-100 microns	200	8	100	7	100	7					
Particle Size >100 microns	<100	6	<100	6	<100	5					
Particle Count ISO 4406:1999 System Standard											
Particle Size Range	No. of Particles / ml.	Class	No. of Particles / ml.	Class	No. of Particles / ml.	Class	Class	No. of Particles / ml.	Class	No. of Particles / ml.	Class
Particle Size > 4 microns	2,180	18	1,754	18	1,454	18					
Particle Size > 6 microns	610	16	491	16	407	16					
Particle Size > 14 microns	86	14	69	13	57	13					
ISO 4406 Class Rating	18/16/14		18/16/13		18/16/13						



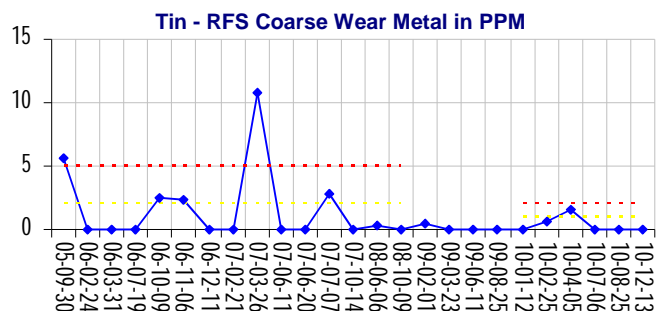
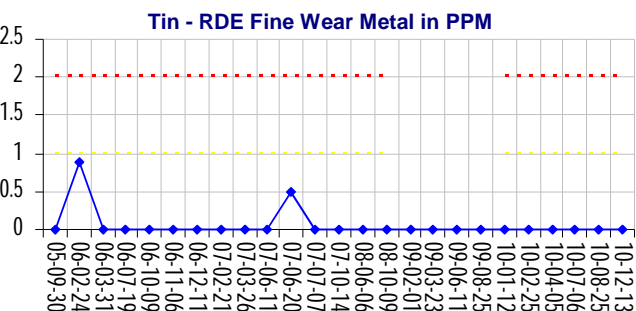
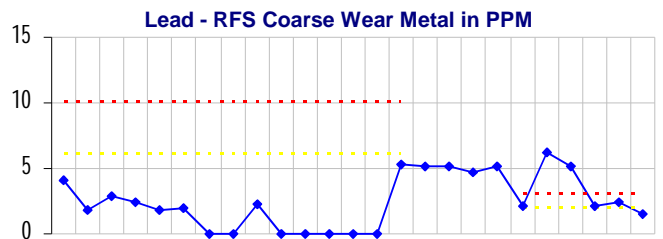
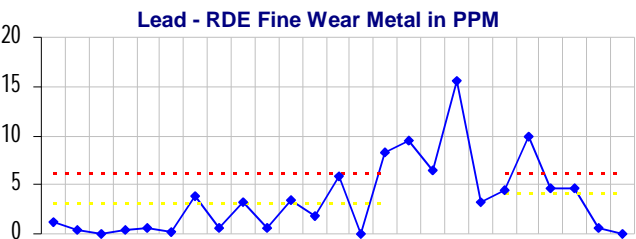
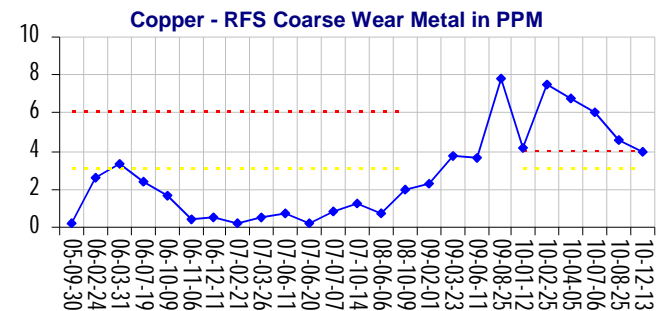
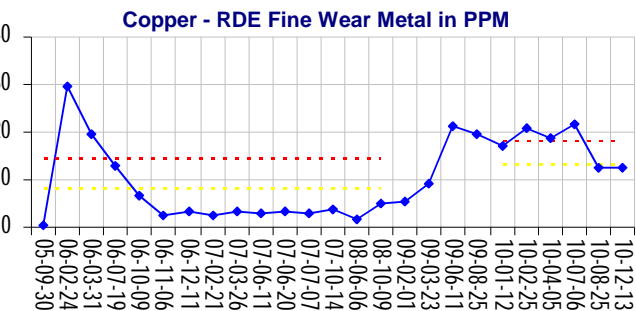
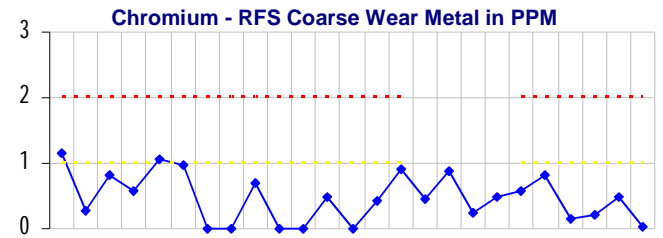
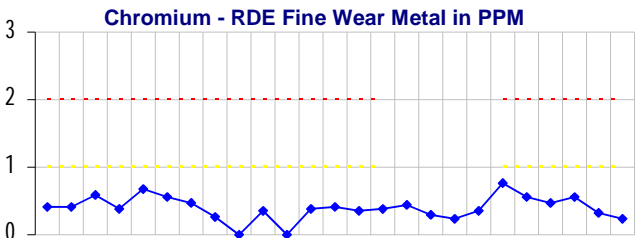
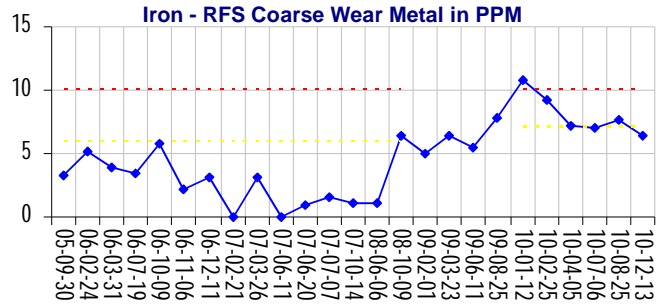
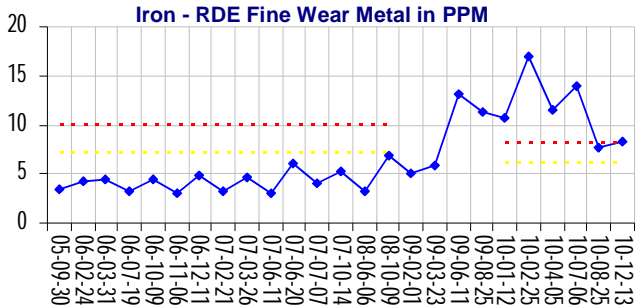
C Code : **32001**
 U Name :
 T Address : 100/58 Sathorn Nakorn Tower
 O 28th Fl., North Sathorn Rd.
 M Khwaeng Silom, Khet Bangrak
 E Site :
 R Location :
 Test code : 894

E Unit ID : **SWD 35148E**
 O Unit Type : Engine Nat Gas
 U Unit Make : CATERPILLAR
 I Unit Model : G3516 NA
 T

Oil type / Viscosity : CASTROL DURATEC L SAE 40

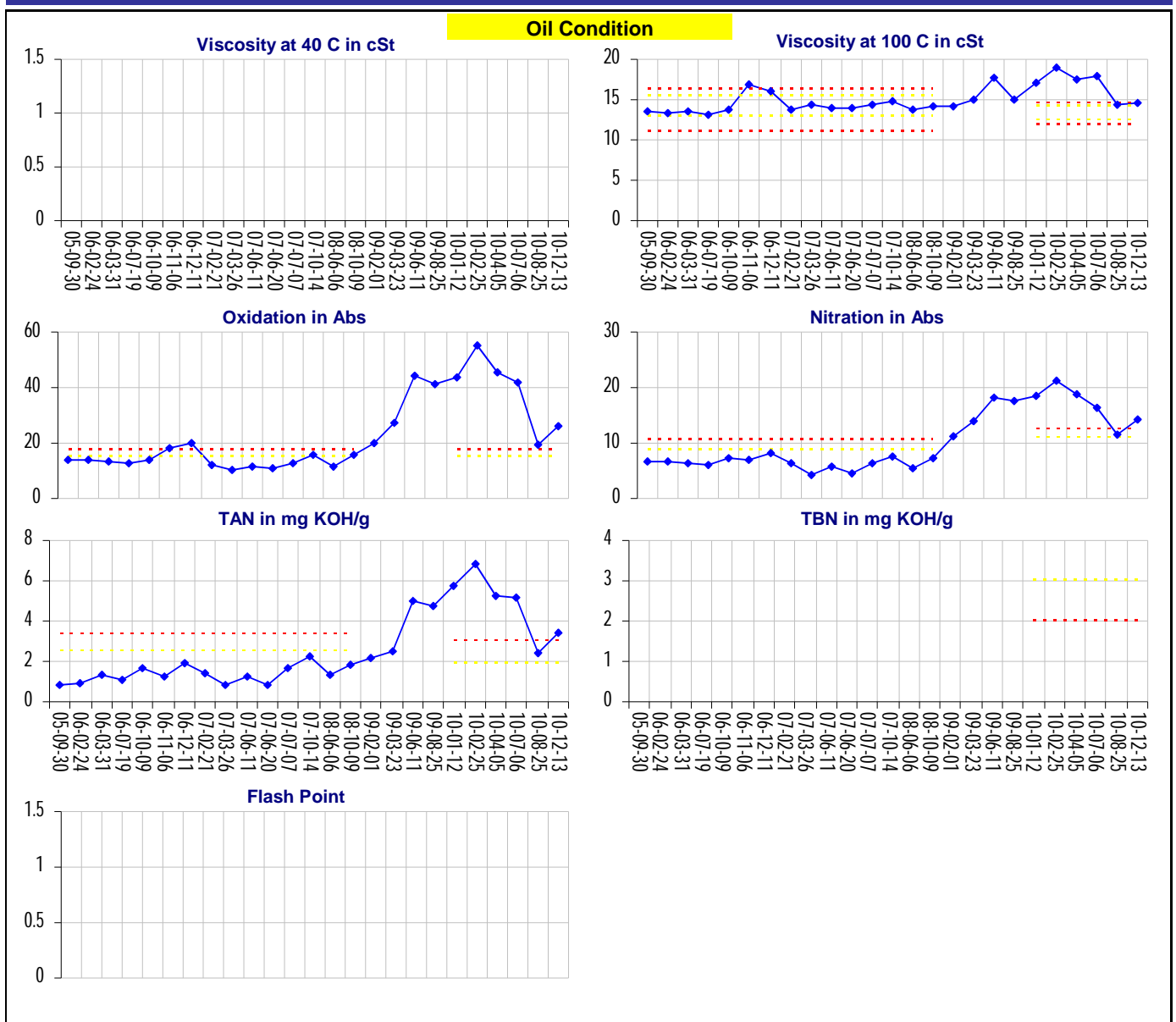
Oil System Capacity : 350 Liters

Wear Condition



C Code : 32001
 U Name :
 S Address : 100/58 Sathorn Nakorn Tower
 T 28th Fl., North Sathorn Rd.
 O Khwaeng Silom, Khet Bangrak
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 E
 N Oil System Capacity : 350 Liters



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