

C Code : 32001
 U Name :
 S Name :
 T Name :
 O Name :
 M Name :
 E Name :
 R Name :
 Address : 100/58 Sathorn Nakorn Tower 28th Fl.,
 North Sathorn Rd., Khwaeng Silom,
 Khet Bangrak, Bangkok 10500
 Site :
 Location :
 Test code : 894

Unit ID : **JKWE E0984E**
 Unit Type : Engine Nat Gas
 Unit Make : CATERPILLAR
 Unit Model : G3516 NA
 Oil type / Viscosity : CASTROL DURATEC L SAE 40
 Oil System Capacity : 400 Liters



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

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

Condition History			Current Sample			Previous Sample			Baseline and Alarm Limit								
			Wear	Oil	Cont.	Wear	Oil	Cont.	Wear	Oil	Cont.	Alarm Limit					
Lab ID Bottle ID Date Sampled Oil Hours (Kms) Unit Hours (Kms) Oil Added (Liters) Filters Hours (Kms)	Test Method	Result	N	W	N	C	W	C	C	W	C	Alarm Limit Alarm Limit Matrix -Set Name (Equipment type / oil type) Engine Nat Gas Cat G3516 NA Duratec L 40(Exterran)					
			222934	216751	213279												
			26-Jun-13	03-Apr-13	27-Feb-13												
			1011757	1000922	1001050												
			942	1976	1157												
			31587	29724	28905												
			Auto														
942	1976	1157															
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	U-Caution	U-Warning	U-Caution	U-Warning			
Iron	D-6595	PPM	5.0	4.3	5.2	9.9 C	4.5	2.1	0	>6	>8	>7	>10				
Chromium	D-6595	PPM	0.4	0.4	0.5	0.4	0.4	0.0	0	>1	>2	>1	>2				
Lead	D-6595	PPM	3.2	0.0	3.3	0.7	1.7	0.0	0	>4	>6	>2	>3				
Copper	D-6595	PPM	6.4	2.0	6.2	0.9	4.5	0.8	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	0.7	0.1	1.4	0.0	1.2	0.5	0	>2	>3	>5	>7				
Nickel	D-6595	PPM	0.1	0.0	0.8	0.0	0.0	0.0	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	0.8	0.0	1.4 C	1.6 C	2.4 W	0.7	0	>1	>2	>1	>2				
Titanium	D-6595	PPM	0.0	1.8	0.0	1.0	0.0	0.5	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	15.0 W		16.3 W		15.1 W		13.1	<11.8	<12.4	>14.1	>14.5				
Oxidation	FTIR	Abs	30.1 W		35.6 W		33.4 W		5.9		>15.2	>17.7					
Nitration	FTIR	Abs	15.4 W		17.3 W		18.5 W		6.1		>10.9	>12.3					
Sulfation	FTIR	Abs	29.28		30.28		31.23										
TAN	D-974	mg KOH/g.	4.25 W		4.95 W		4.46 W		0.95		>1.95	>3					
TBN	D-4739	mg KOH/g.							4.1	<2	<3						
i-pH	GE																
Contamination												TNO			U-Caution	U-Warning	
Water	FTIR	% (Wt.)	0.100		0.114 C		0.129 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.)	0.57		0.40		0.47					>0.7	>0.8				
Vanadium	D-6595	PPM	0		1		0		0								
Sodium	D-6595	PPM	3		4		3		10								
Silicon	D-6595	PPM	2.0	0.0	2.3	3.1	0.2	0.0	2	>4	>6	>4	>6				
Additive Element												TNO					
Boron	D-6595	PPM	110		101		123		100								
Magnesium	D-6595	PPM	12		9		10		7								
Calcium	D-6595	PPM	1258		1377		1197		1056								
Barium	D-6595	PPM	0		0		0		0								
Phosphorus	D-6595	PPM	271		214		288		174								
Zinc	D-6595	PPM	350	148	381	50	388	71	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 C : CAUTION (first level warning limit), W or W : Warning (second level warning limit)
 U-Caution : Upper CAUTION Level, L-Caution : Lower CAUTION Level
 U-Warning : Upper WARNING Level, L-Warning : 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 representatives 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.

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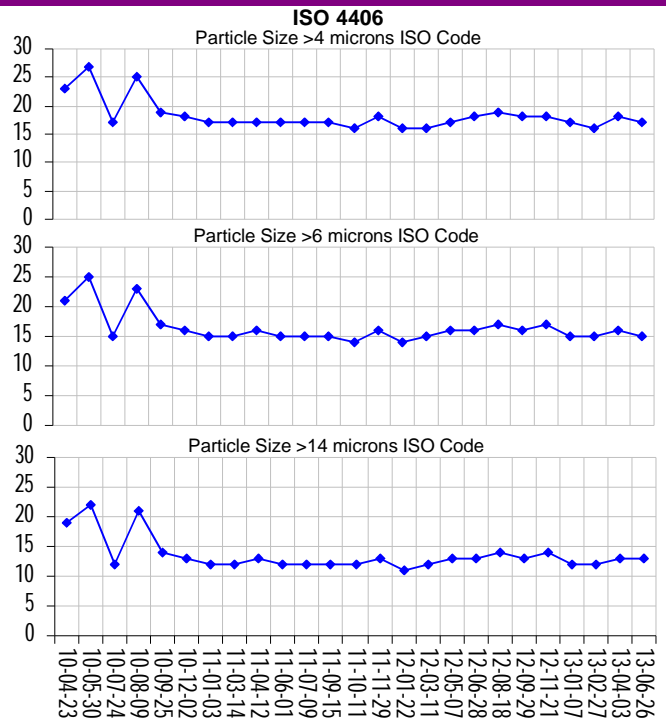
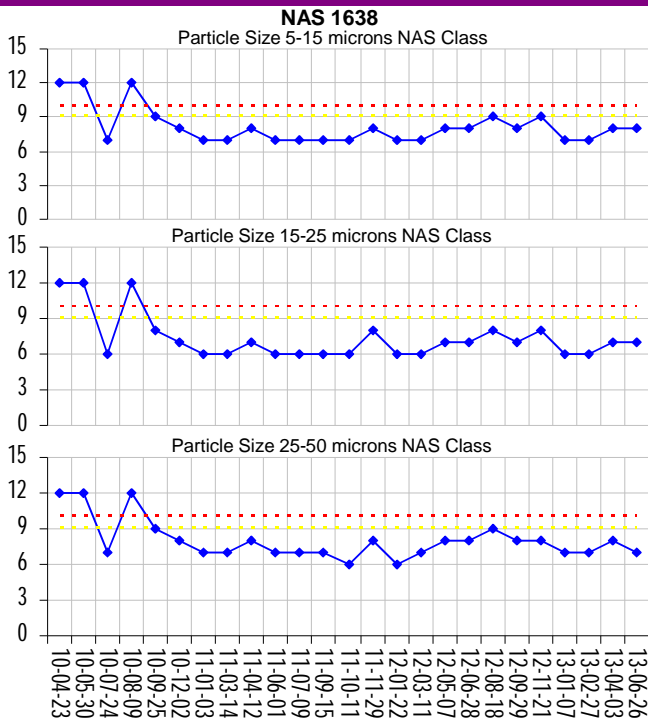
Notes (Finding, Evaluation, Interpretation, Suggestion and Recommendation)

Particle count shows oil cleanliness level acceptable.

Lab ID	Current Sample	Previous Sample		Particle Count	
	Bottle ID	222934	216751	213279	NAS 1638
Date Sampled	1011757	1000922	1001050	BASELINE	Alarm Limit
Oil Hours (Kms)	26-Jun-13	03-Apr-13	27-Feb-13	Engine Nat Gas Cat G3516 NA	
Unit Hours (Kms)	942	1976	1157	Duratec L 40(Exterran)	
Oil Added (Liters)	31587	29724	28905		
Filters Hours (Kms)	Auto	1976	1157		

Contamination							Particle Count NAS 1638 System Standard				
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	35,900	8	48,400	8	20,000	7	8	>64000	9	>128000	10
Particle Size 15-25 microns	3,300	7	4,500	7	1,900	6	8	>11400	9	>22800	10
Particle Size 25-50 microns	900	7	1,200	8	500	7	9	>2025	9	>4050	10
Particle Size 50-100 microns	100	7	100	7	<100	6					
Particle Size >100 microns	<100	5	<100	5	<100	4					

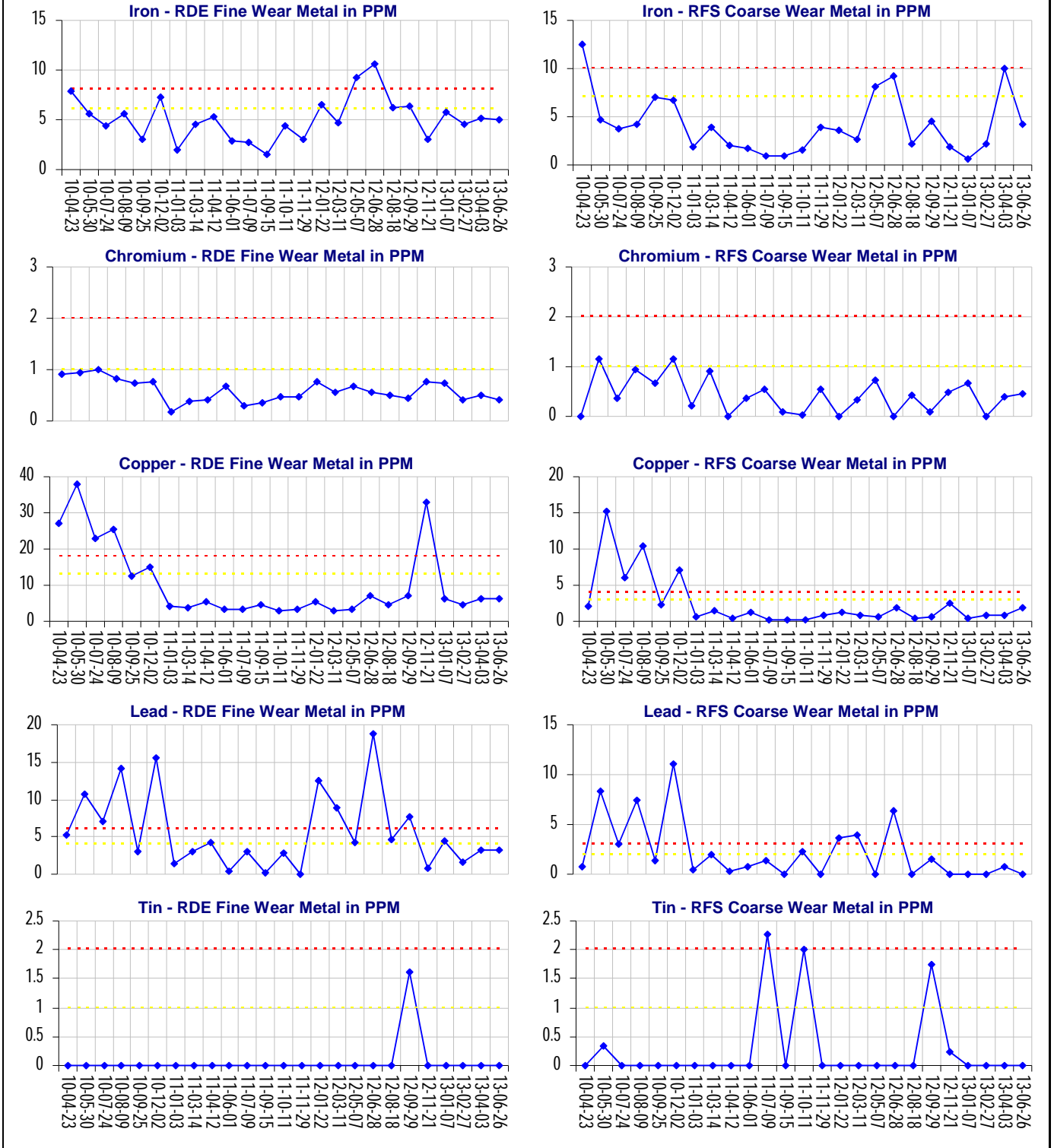
Particle Count ISO 4406:1999 System Standard											
Particle Size Range	No. of Particles / ml.	Class	No. of Particles / ml.	Class	No. of Particles / ml.	Class	Class	No. of Particles / ml.	Class	No. of Particles / ml.	Class
Particle Size > 4 microns	1,077	17	1,454	18	602	16					
Particle Size > 6 microns	302	15	407	16	168	15					
Particle Size > 14 microns	42	13	57	13	24	12					
ISO 4406 Class Rating	17 / 15 / 13		18 / 16 / 13		16 / 15 / 12						



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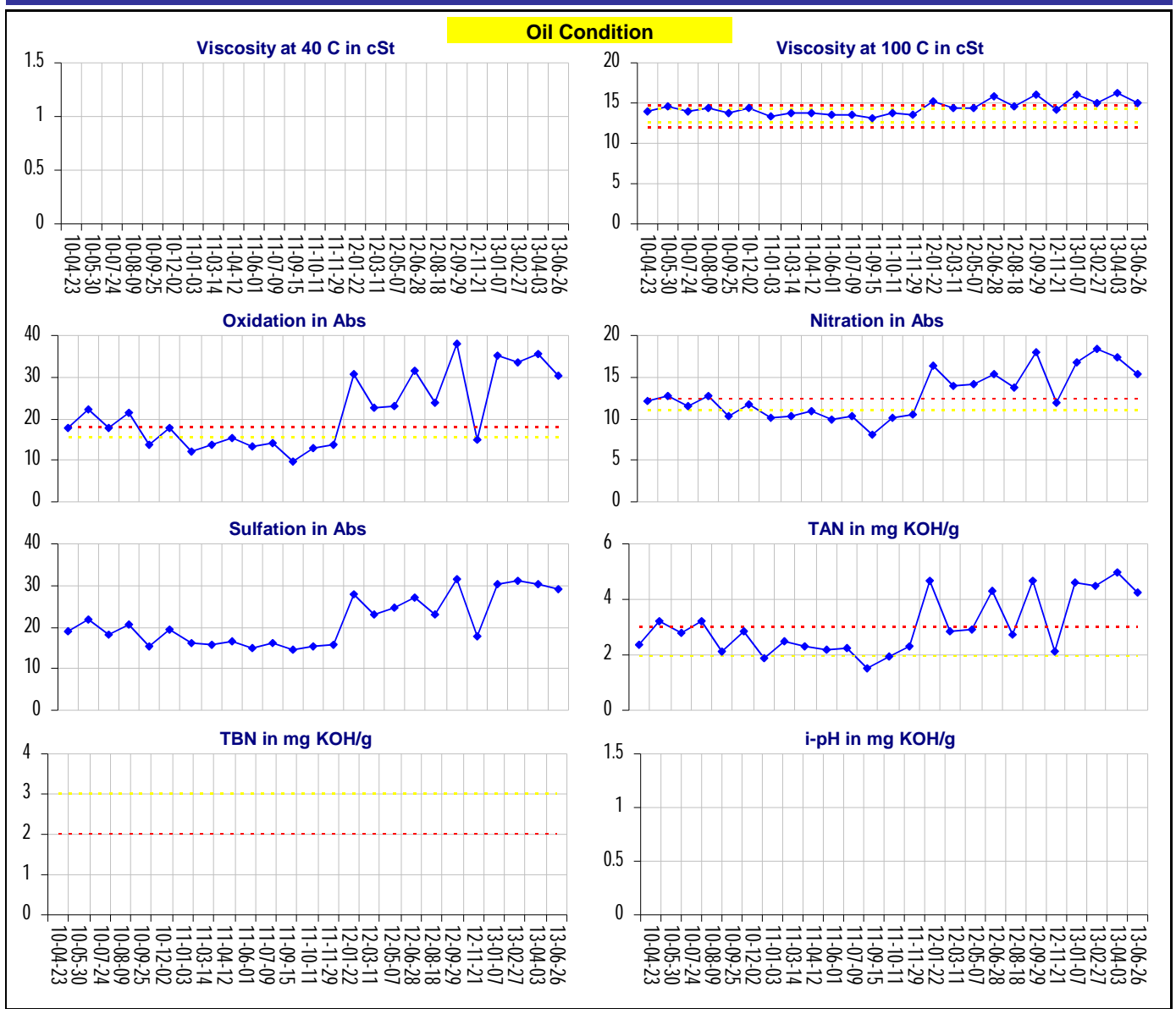
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Wear Condition



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