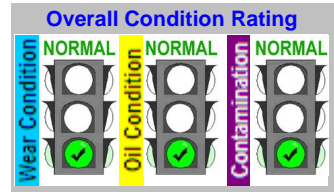


C Code : 16009  
 U Name :  
 T  
 O Address : Plant : Eastern Industrial Estate  
 M No 10 Soi G2, Pakornsongkrawhrat Rd.  
 E Huaypong, Muang, Rayong 21150  
 R Site :  
 Location : DRAINLINE  
 Test code : 814 603.1

Unit ID : 11 11 11MBA30AN001 DRAINLINE  
 Unit Type : Engine Turbine Gas  
 Unit Make : ALSTOM  
 Unit Model : GT8C  
 Oil type / Viscosity : CALTEX REGAL EP 46  
 Oil System Capacity :



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

All wear conditions and wear tests appear in normal working range.  
 All oil conditions and oil tests appear in normal working range.  
 All contaminant conditions and contaminant levels appear in normal ranges.  
 Continue routine sampling interval.

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					
			N	N	N	N	N	N	N	N	N	B A S E L I N E	Alarm Limit Matrix -Set Name (Equipment type / oil type)				
													Engine Turbine Gas Alsthom Regal EP 46 (Glow SPP1)				
Lab ID	Test Method	Result	149924			149048			148103								
Bottle ID			923213			922502			922492								
Date Sampled			15-Dec-10			30-Nov-10			15-Nov-10								
Oil Hours (Kms)			2390			2052			1692								
Unit Hours (Kms)			102598			102260			101900								
Oil Added (Liters)																	
Filters Hours (Kms)																	
			RDE fine		RFS coarse	RDE fine		RFS coarse	RDE fine		RFS coarse		The New Oil (TNO)	RDE fine		RFS coarse	
Wear Element	Method	Unit	RDE fine		RFS coarse	RDE fine		RFS coarse	RDE fine		RFS coarse		U-Caution	U-Warning	U-Caution	U-Warning	
Iron	D-6595	PPM	0.0	0.5		0.2	0.8		0.0	0.1		0	>2	>3	>3	>4	
Chromium	D-6595	PPM	0.0	0.0		0.0	0.0		0.2	0.2		0	>1	>2	>1	>2	
Lead	D-6595	PPM	0.0	1.4		0.0	0.0		0.0	1.0		0	>1	>2	>4	>8	
Copper	D-6595	PPM	0.1	0.1		0.1	0.1		0.1	0.2		0	>2	>3	>1	>5	
Tin	D-6595	PPM	0.0	0.0		0.1	0.0		0.7	3.3 C		0	>3	>5	>3	>5	
Aluminum	D-6595	PPM	0.3	0.7		0.0	0.0		0.0	1.1		0	>1	>2	>2	>3	
Nickel	D-6595	PPM	0.0	0.0		0.0	0.0		0.0	0.6		0	>1	>2	>1	>2	
Silver	D-6595	PPM	0.0	0.1		0.0	0.0		0.0	0.0		0					
Molybdenum	D-6595	PPM	0.0	0.0		0.0	0.0		0.0	0.0		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	46.1			46.1		46.0	44.9	<40.4	<42.7	>47.1	>49.4				
Viscosity @ 100°C	D-445	cSt							8.3			>12.3	>16.3				
Oxidation	FTIR	Abs	9.5			9.4		9.6	7.2			>10.8	>14.3				
Nitration	FTIR	Abs	7.7			7.6		7.7	0.20			>0.22	>0.25				
TAN	D-974	mg KOH/g.	0.15			0.14		0.14									
TBN	D-4739	mg KOH/g.															
Contamination			TNO		U-Caution	U-Warning											
Water	T-H2O Checktm	% (Wt.)	0.010			0.014		0.011	0.010			>0.03	>0.05				
Sodium	D-6595	PPM	0			0		0									
Silicon	D-6595	PPM	0.0	1.0		0.0	0.8		0	0.5		0	>6	>10	>7	>12	
Additive Element			TNO		U-Caution	U-Warning											
Boron	D-6595	PPM	0			0		0									
Magnesium	D-6595	PPM	0			0		0									
Calcium	D-6595	PPM	0			0		0									
Barium	D-6595	PPM	0			0		0									
Phosphorus	D-6595	PPM	23			18		21	8								
Zinc	D-6595	PPM	0	1		0	0		1	1		0					
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 **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 : **16009**

U S Name :

Address : Plant : Eastern Industrial Estate  
No 10 Soi G2, Pakomsongkrawhrat Rd.  
Huaypong, Muang, Rayong 21150

Site :

Location : DRAINLINE

Test code : 814 603.1

Unit ID : **11 11 11MBA30AN001 DRAINLINE**

Unit Type : Engine Turbine Gas

Unit Make : ALSTOM

Unit Model : GT8C

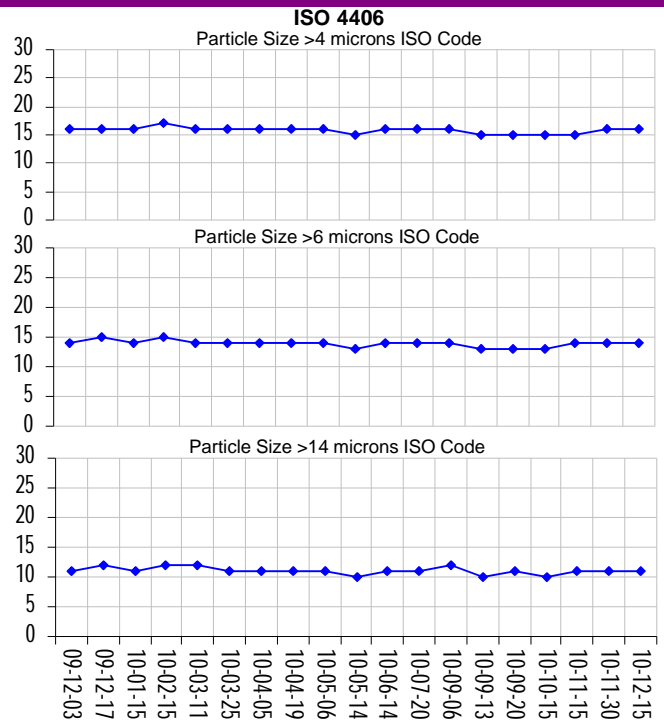
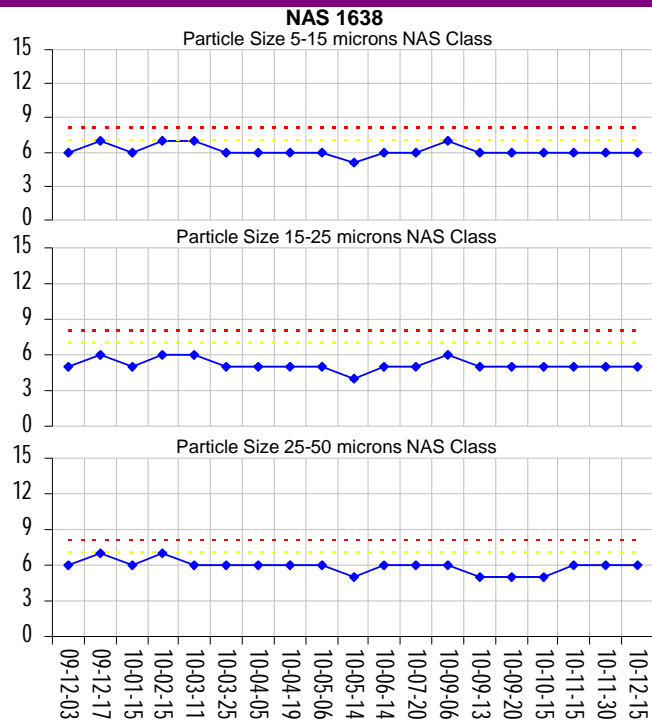
Oil type/ Viscosity : CALTEX REGAL EP 46

Oil System Capacity :

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

Particle count indicates oil cleanliness level is clean.

Lab ID	Current Sample		Previous Sample			Particle Count		NAS 1638		ISO 4406	
	Bottle ID	Date Sampled	149924	149048	148103	923213	922502	922492	BASELINE	Alarm Limit	
Date Sampled	15-Dec-10	30-Nov-10	15-Nov-10	Oil Hours (Kms)	2390	2052	1692	Unit Hours (Kms)	102598	102260	101900
Oil Added (Liters)				Filters Hours (Kms)				Engine Turbine Gas Alsthom Regal EP 46 (Glow SPP1)			
<b>Contamination</b>											
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	12,800	6	10,900	6	10,600	6		>16000	7	>32000	8
Particle Size 15-25 microns	1,200	5	1,000	5	900	5		>2850	7	>5700	8
Particle Size 25-50 microns	300	6	300	6	300	6		>506	7	>1012	8
Particle Size 50-100 microns	<100	5	<100	5	<100	5					
Particle Size >100 microns	<100	3	<100	2	<100	2					
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	385	16	327	16	317	15					
Particle Size > 6 microns	107	14	92	14	89	14					
Particle Size > 14 microns	15	11	13	11	12	11					
ISO 4406 Class Rating	16/14/11		16/14/11		15/14/11						



C U S T O M E R  
Code : **16009**  
Name :  
Address : Plant : Eastern Industrial Estate  
No 10 Soi G2, Pakomsongkrawhrat Rd.  
Huaypong, Muang, Rayong 21150  
Site :  
Location : DRAINLINE  
Test code : 814 603.1

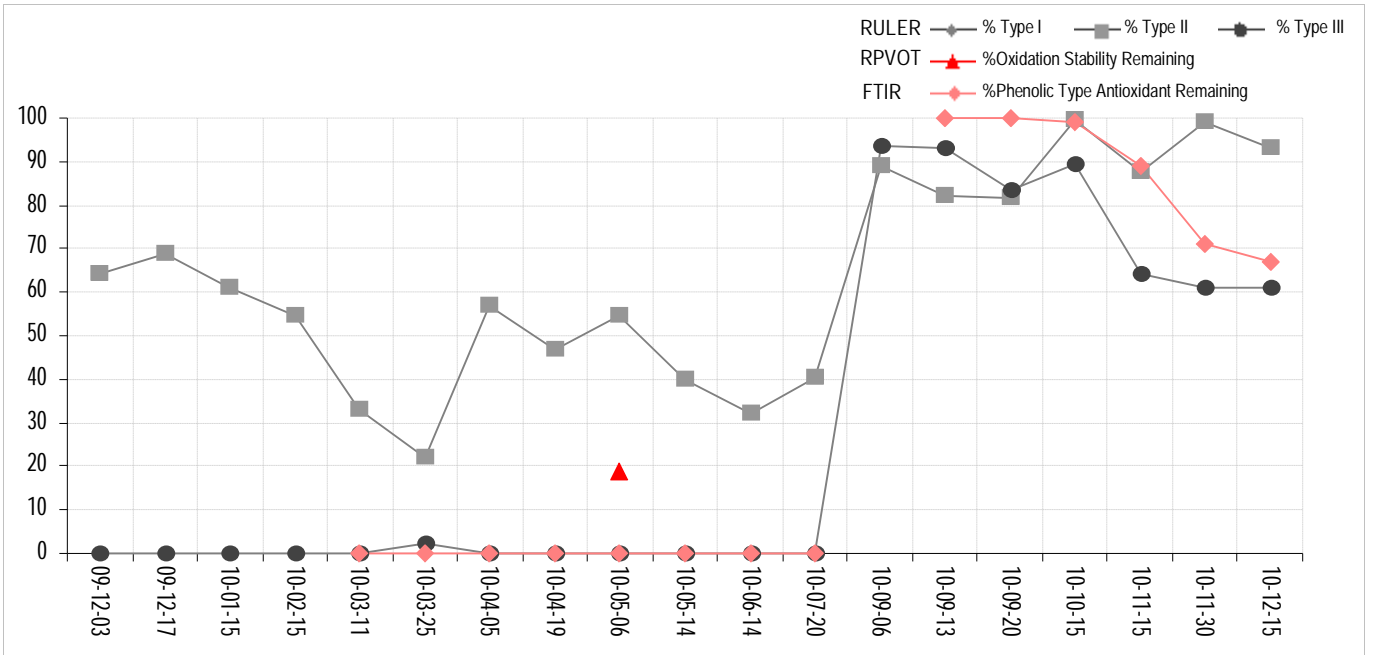
E Q U I P M E N T  
Unit ID : **11 11 11MBA30AN001 DRAINLINE**  
Unit Type : Engine Turbine Gas  
Unit Make : ALSTOM  
Unit Model : GT8C  
Oil type / Viscosity : CALTEX REGAL EP 46  
Oil System Capacity :

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

Anti-Oxidant Additive test (ASTM D6971) indicates the AO additive strength is still within ASTM D4378 guidelines.

Wasan C / Andy Sitton

Lab ID Bottle ID Date Sampled Oil Hours (Kms) Unit Hours (Kms) Oil Added (Liters) Filters Hours (Kms)	Test Method	Result	Current Sample		Previous Sample		RULER™ RPVOT (RBOT) FTIR		
			149924 923213 15-Dec-10 2390 102598	149048 922502 30-Nov-10 2052 102260	148103 922492 15-Nov-10 1692 101900	Based on and referred to ASTM D-4378-0 Alarm Limit based on ASTM D-4378-08			
<b>Oil Condition</b>									
<b>RULER™(Remaining Useful Life Evaluation Routine)</b>							The New Oil	Caution	Warning
% Type I Antioxidant Remaining		%	n/p	n/p	n/p				
% Type II Antioxidant Remaining	D-6971-04	%	93.2	99.1	87.7	100	<50	<25	
% Type III Antioxidant Remaining	D-6810-02	%	61.2	60.8	64.2	100	<50	<25	
RULER Test Solution		Color	G & Y	G & Y	G & Y				
<b>RPVOT (Rotating Pressure Vessel Oxidation Test) or previously known as RBOT</b>								Caution	Warning
Oxidation Stability	D-2272	Minutes				916	<458	<229	
%Oxidation Stability Remaining		%				100	<50	<25	
<b>FTIR (Fourier Transform Infrared)</b>								Caution	Warning
%Phenolic Type Antioxidant Remaining	D-2668	%	67	71.15	89	100	<50	<25	



C Code : 16009

U S Name :

Address : Plant : Eastern Industrial Estate  
No 10 Soi G2, Pakornsongkrawhrat Rd.  
Huaypong, Muang, Rayong 21150

Site :

Location : DRAINLINE

Test code : 814 603.1

Unit ID : 11 11 11MBA30AN001 DRAINLINE

Unit Type : Engine Turbine Gas

Unit Make : ALSTOM


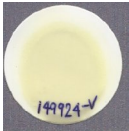
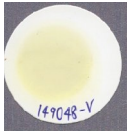
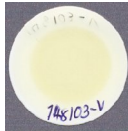



Unit Model : GT8C

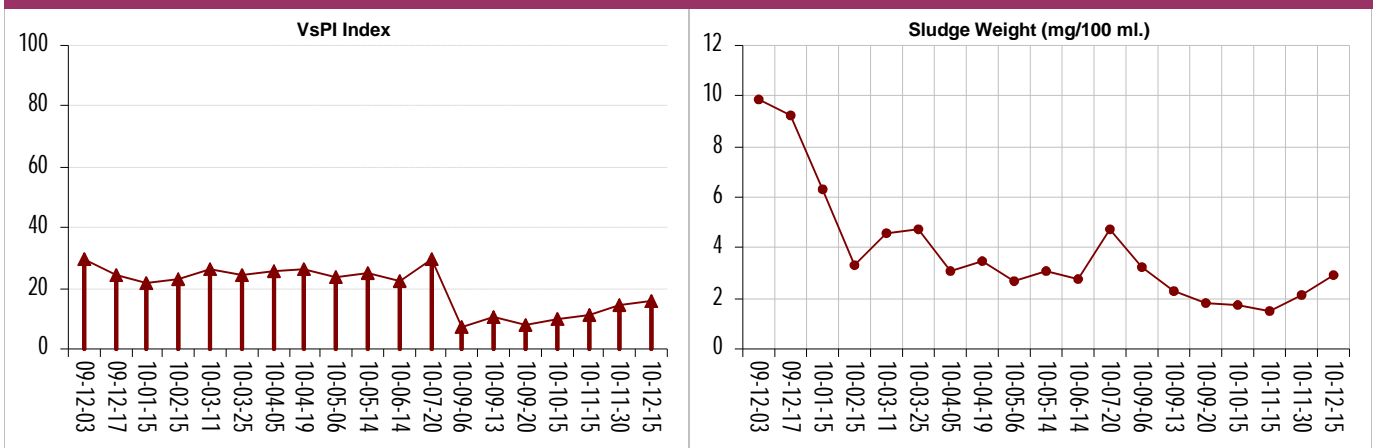
Oil type / Viscosity : CALTEX REGAL EP 46

Oil System Capacity :

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

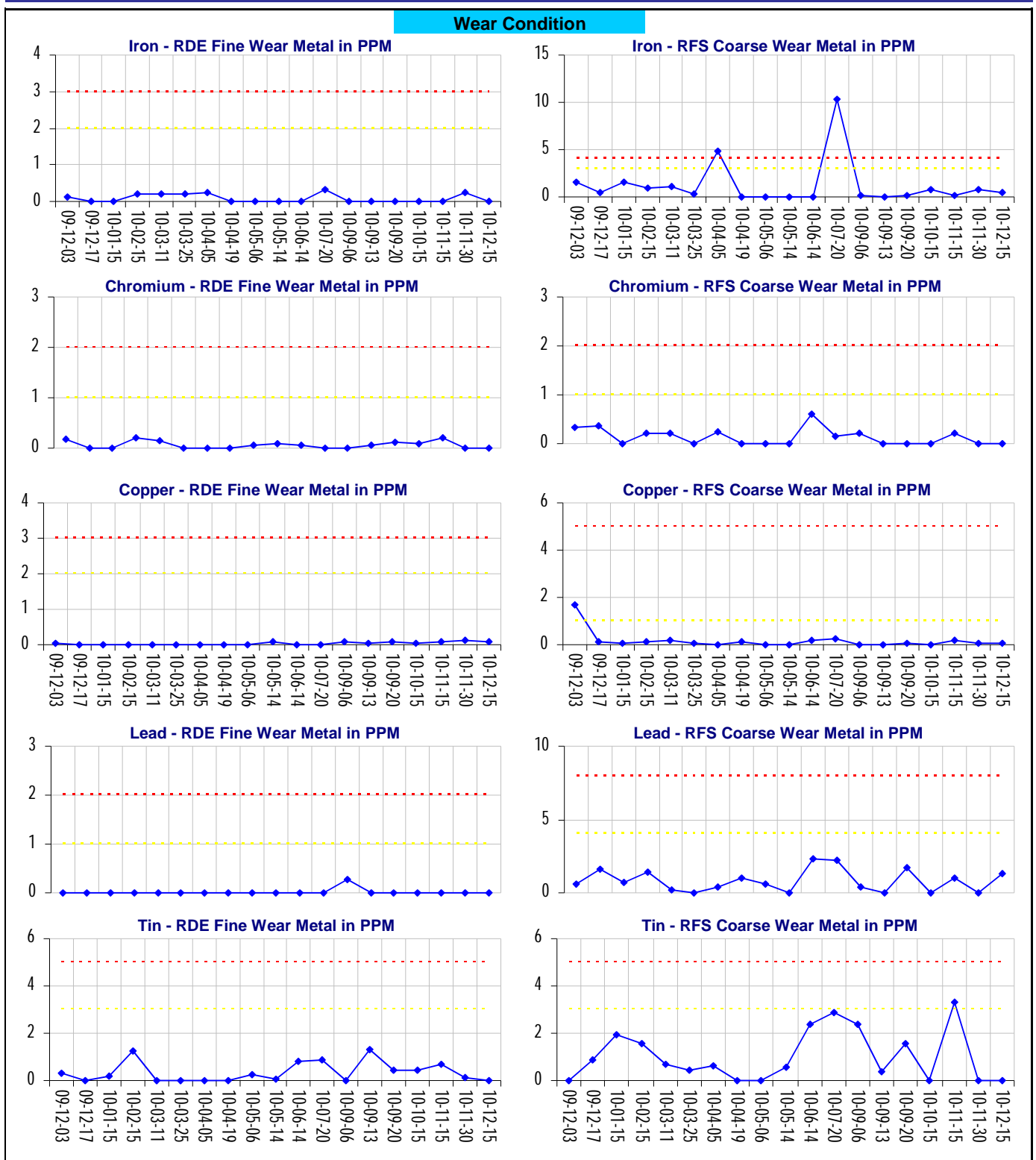
Varnish & Sludge Potential Index (VsPI) indicates some varnish & sludge products are present in the oil, but the level is ACCEPTABLE at this time.

	Current Sample	Previous Sample		
<b>Lab ID</b>	149924	149048	148103	
<b>Bottle ID</b>	923213	922502	922492	
<b>Date Sampled</b>	15-Dec-10	30-Nov-10	15-Nov-10	
<b>Oil Hours (Kms)</b>	2390	2052	1692	
<b>Unit Hours (Kms)</b>	102598	102260	101900	
<b>Oil Added (Liters)</b>				
<b>Filters Hours (Kms)</b>				
<b>Contamination</b>				
<b>Varnish and Sludge Potential Index™ (VsPI™)</b>				
VPI (Varnish Potential Index) : Soluble Varnish Contamination in Oil				
	VPI View	VPI View	VPI View	<b>The New Oil</b>
VPI (Varnish Potential Index) Soluble Varnish Contaminant				VPI View
VPI Rating	23.9	23.0	18.4	
SPI (Sludge Potential Index) : or MPC test (Membrane Patch Colorimetric Test) : Insoluble Varnish Contamination in Oil				
	SPI View	SPI View	SPI View	<b>The New Oil</b>
SPI (Sludge Potential Index) Insoluble Varnish Contaminant				SPI View
SPI Rating	7.1	6.0	4.1	
Sludge Weight	2.9 mg/100 ml	2.1 mg/100 ml	1.5 mg/100 ml	
<b>Alarm Limit Name</b>				
Engine Turbine Gas Alstom Regal EP 46 (Glow SPP1)				
	Caution	Warning		
VsPI VsPI = (VPI + SPI) / 2	15.5	14.5	11.2	>28      >33



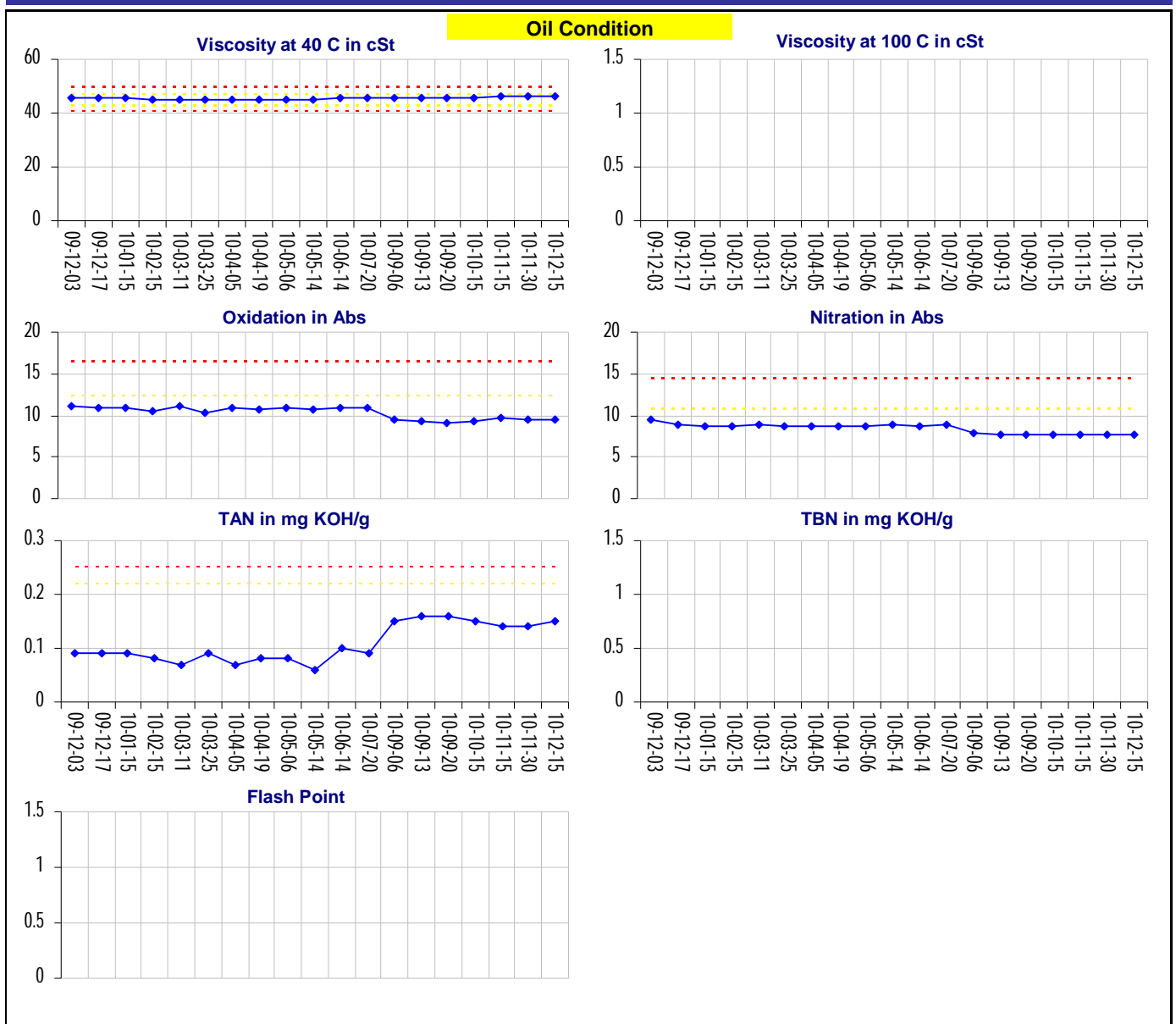
C Code : **16009**  
 U Name :  
 T Address : Plant : Eastern Industrial Estate  
 O No 10 Soi G2, Pakornsongkrawhrat Rd.  
 M Huaypong, Muang, Rayong 21150  
 E Site :  
 R Location : DRAINLINE  
 Test code : 814 603.1

E Unit ID : **11 11 11MBA30AN001 DRAINLINE**  
 O Unit Type : Engine Turbine Gas  
 I Unit Make : ALSTOM  
 P Unit Model : GT8C  
 M Oil type / Viscosity : CALTEX REGAL EP 46  
 E  
 N  
 T  
 Oil System Capacity :



C Code : **16009**  
 U Name :  
 S Address : Plant : Eastern Industrial Estate  
 T No 10 Soi G2, Pakornsongkrawhrat Rd.  
 O Huaypong, Muang, Rayong 21150  
 M Site :  
 E Location : DRAINLINE  
 R Test code : 814 603.1

E Unit ID : **11 11 11MBA30AN001 DRAINLINE**  
 O Unit Type : Engine Turbine Gas  
 U Unit Make : ALSTOM  
 I Unit Model : GT8C  
 L Oil type / Viscosity : CALTEX REGAL EP 46  
 Oil System Capacity :



C Code : 16009  
 U Name :  
 S Address : Plant : Eastern Industrial Estate  
 T No 10 Soi G2, Pakornsongkrawhrat Rd.  
 O Huaypong, Muang, Rayong 21150  
 M Site :  
 E Location : DRAINLINE  
 R Test code : 814 603.1

E Unit ID : 11 11 11MBA30AN001 DRAINLINE  
 O Unit Type : Engine Turbine Gas  
 U Unit Make : ALSTOM  
 I Unit Model : GT8C  
 P Oil type / Viscosity : CALTEX REGAL EP 46  
 M  
 E  
 N  
 T  
 Oil System Capacity :

