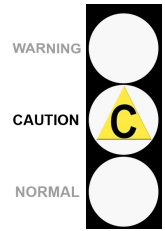


C Code :
U Name :
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E R

Unit ID : **Steam Turbine 2**
Unit Type : Engine Turbine Steam
Unit Make : SIEMENS
Unit Model : SST 300-CE
Oil type/ Viscosity : ISO 46
Oil System Capacity : 8000 Liters



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

All WEAR CONDITIONS and WEAR TESTS appear in NORMAL working range.
RPVOT value appears to be acceptable and within ASTM 4378 guidelines.
Note viscosity is slightly higher than normal limits.
Particle count indicates that oil cleanliness level is above Alarm Limits range. (Cleanliness Target)
Suggest using a portable off-line filtration system to clean up the oil system.
No oil change recommended at this time, oil appears suitable for further use. Continue routine sampling interval.

Wasan C.

Condition History			Current Sample			Previous Sample			Baseline and Alarm Limit							
Lab ID	Bottle ID	Test Method	Wear	Oil	Cont.	Wear	Oil	Cont.	Wear	Oil	Cont.	Alarm Limit				
			N	C	C	N	C	C	N	W	W	ETS ASTM D4378 General Mobil DTE 846				
24035581	705308					23122328	215686		23091577	706520						
Date Sampled	25-Mar-24					12-Dec-23			06-Sep-23							
Oil Hours	28776					26280			23928							
Unit Hours	119044					116548			114196							
Oil Change																
Oil Added (Liters)																
Filters Hours	28776					26280			23928							
Wear Condition												Reference Oil (RO)	Fine Wear (ICP-AES)		Coarse Wear (RFS-AES)	
Wear Element	Method	Unit	Fine Wear (ICP-AES)	Coarse Wear (RFS-AES)	Fine Wear (ICP-AES)	Coarse Wear (RFS-AES)	Fine Wear (ICP-AES)	Coarse Wear (RFS-AES)	Fine Wear (ICP-AES)	Coarse Wear (RFS-AES)	Reference Oil (RO)	U-Caution	U-Warning	U-Caution	U-Warning	
Iron	D-5185	PPM	0.0	0.0	0.1	0.6	0.0	0.9	0	0	0	>1	>2	>2	>4	
Chromium	D-5185	PPM	0.0	0.0	0.0	0.0	0.0	0.2	0	0	0	>1	>2	>1	>2	
Lead	D-5185	PPM	0.0	0.6	0.0	0.0	0.0	0.6	0	0	0	>1	>2	>3	>5	
Copper	D-5185	PPM	0.0	0.0	0.6	0.8	0.0	0.1	0	0	0	>1	>2	>1	>2	
Tin	D-5185	PPM	0.0	0.0	0.3	0.0	0.0	0.9	0	0	0	>2	>3	>2	>4	
Aluminum	D-5185	PPM	0.0	0.0	0.0	0.0	0.3	0.0	0	0	0	>1	>2	>1	>2	
Nickel	D-5185	PPM	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	>1	>2	>1	>2	
Silver	D-5185	PPM	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0					
Molybdenum	D-5185	PPM	0.0	0.0	0.0	0.0	0.1	0.0	0	0	0					
Titanium	D-5185	PPM	0.0	0.0	0.0	0.9	0.0	0.0	0	0	0					
PQ Index	D-8184	Index		2		7		1			0	>15	>25			
Oil Condition												RO	L-Warning	L-Caution	U-Caution	U-Warning
Viscosity @ 40 °C	D-445	cSt	46.2	C	45.8	C	46.4	C	43.0		43.0	<38.7	<40.9	>45.2	>47.3	
Viscosity @ 100 °C	D-445	cSt														
Oxidation	D-7414	Abs	10.1		10.0		10.0		12.0		12.0			>24.0	>30.0	
Nitration	D-7624	Abs/cm	6.8		6.6		6.5		11.0		11.0			>22.0	>27.5	
Acid Number	D-974	mg KOH/g	0.10		0.21	C	0.21	C	0.08		0.08			>0.19	>0.25	
Contamination												RO	U-Caution		U-Warning	
Water	D-6304	%(Wt.)	0.016		0.013		0.019		0.010		0.010			>0.030	>0.050	
Sodium	D-5185	PPM	0		1		0		0		0					
Silicon	D-5185	PPM	0.0	0.6	0.0	0.6	0.0	0.9	0		0	>3	>5	>3	>5	
Potassium	D-5185	PPM	0.0		0.6		0.0		0		0					
Additive Element												RO				
Boron	D-5185	PPM	0		0		0		0		0					
Magnesium	D-5185	PPM	0		1		0		0		0					
Calcium	D-5185	PPM	0		0		0		0		0					
Barium	D-5185	PPM	0		0		0		0		0					
Phosphorus	D-5185	PPM	54		65		41		1300		1300					
Zinc	D-5185	PPM	0	0	2	0	0	3	7		7					
Additional Test												RO	L-Warning	L-Caution	U-Caution	U-Warning
Flash Point	D-3828	°C														
Viscosity Index	D-2270															
Flash Point	D-92	°C	218				236									

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)

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

No warranty is expressed or implied for this report.

<p>C Code : U Name : S Address : T Site : O Location : M Test Code : T814 T817 E R</p>	<p>E Unit ID : Steam Turbine 2 Q U Unit Type : Engine Turbine Steam I Unit Make : SIEMENS P Unit Model : SST 300-CE M E N T</p> <p>O Oil type/ : ISO 46 I Viscosity : L</p> <p>Oil System Capacity : 8000 Liters</p>
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Notes (Finding, Evaluation, Interpretation, Suggestion and Recommendation)

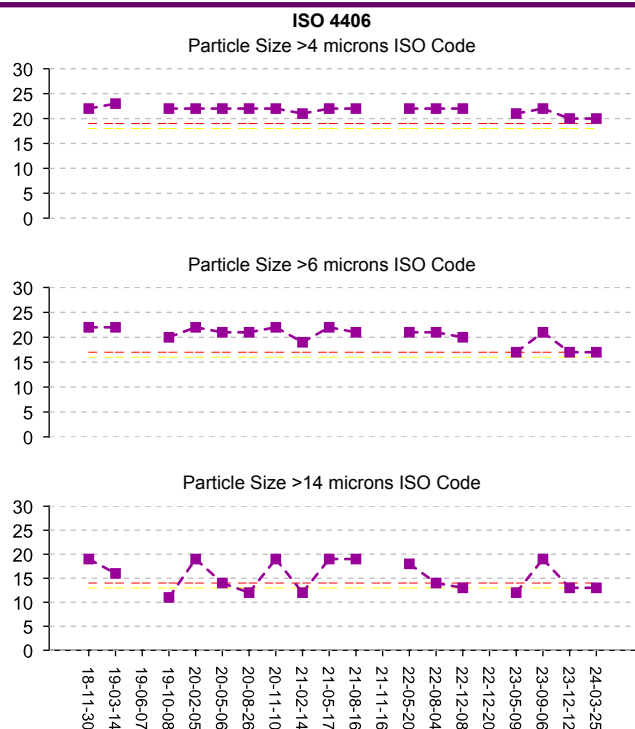
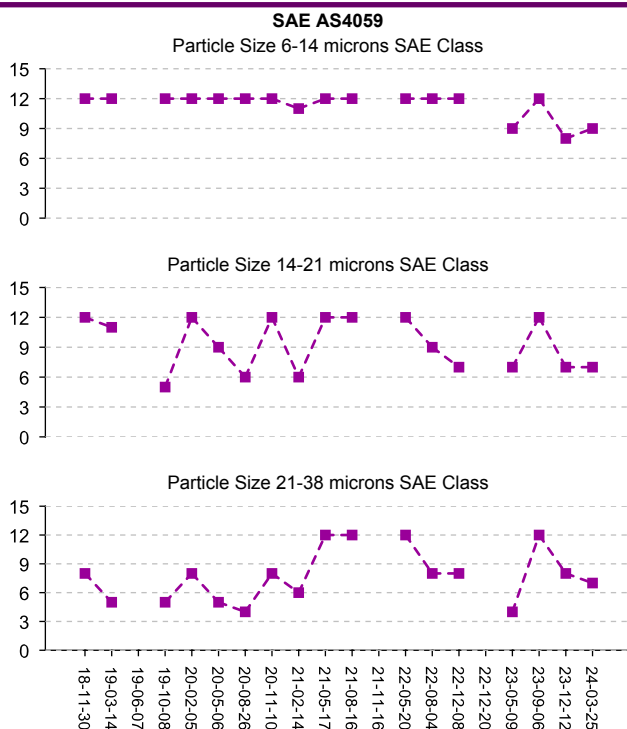
Particle count indicates that oil cleanliness level is above Alarm Limits range. (Cleanliness Target)

Lab ID	Current Sample	Previous Sample		Particle Count	SAE AS4059 ISO 4406
	Bottle ID	24035581	23122328	23091577	BASELINE
Date Sampled	705308	215686	706520		
Oil Hours (Kms)	25-Mar-24	12-Dec-23	06-Sep-23		
Unit Hours (Kms)	28776	26280	23928		
Oil Change	119044	116548	114196		
Oil Added (Liters)					
Filters Hours (Kms)	28776	26280	23928		
PC Method	ISO 11500	ISO 11500	ISO 11500		

Contamination

Particle Count SAE AS4059-F 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 6-14 microns	65,290	9	60,820	8	1,167,680	12					
Particle Size 14-21 microns	3,910	7	3,730	7	288,140	12					
Particle Size 21-38 microns	1,010	7	1,240	8	50,670	12					
Particle Size 38-70 microns	100	7	280	8	920	10					
Particle Size >70 microns	20	7	20	7	40	8					
AS4059 Class Rating	9		8		12						

Particle Count ISO 4406:1999 System Standard							U-Caution		U-Warning		
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	5,642	20 W	5,836	20 W	22,230	22 W		1,300	18	2,500	19
Particle Size > 6 microns	703	17 W	661	17 W	15,074	21 W		320	16	640	17
Particle Size > 14 microns	50	13 C	53	13 C	3,398	19 W		40	13	80	14
ISO 4406 Class Rating	20/17/13		20/17/13		22/21/19			18/16/13		19/17/14	



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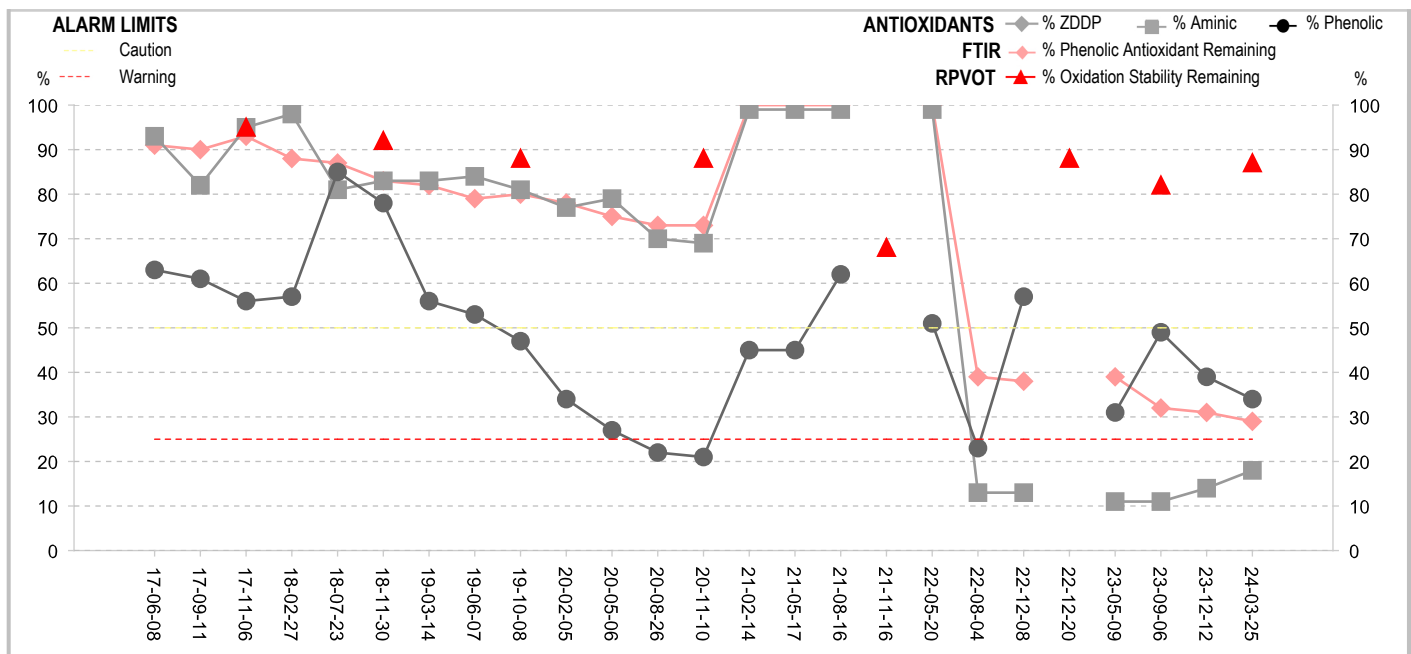
Unit ID : **Steam Turbine 2**
Unit Type : Engine Turbine Steam
Unit Make : SIEMENS
Unit Model : SST 300-CE
Oil type/ Viscosity : ISO 46
Oil System Capacity : 8000 Liters

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

Note that AO (anti-oxidant) additive depletion is below 50% remaining.
RPVOT value appears to be acceptable and within ASTM 4378 guidelines.

Wasan C.

Lab ID	Bottle ID	Date Sampled	Oil Hours	Unit Hours	Oil Added (Liters)	Oilchange	Filters Hours	Current Sample	Previous Sample		OXIDATION STABILITY Antioxidants FTIR RPVOT			
								24035581	23122328	23091577				
								705308	215686	706520	Based on and referred to ASTM D-4378-20 Alarm Limit based on ASTM D-4378-20			
							25-Mar-24	12-Dec-23	06-Sep-23					
							28776	26280	23928					
							119044	116548	114196					
							28776	26280	23928					
Oil Condition - Oxidation Stability														
Antioxidant Additives Remaining in Oil, ASTM D6810, ASTM D6971											The new oil	Caution	Warning	
% ZDDP Antioxidant Remaining								n/p	n/p	n/p				
%Aminic Antioxidant Remaining	D-6971	D-6810	%					18.4 W	13.6 W	10.5 W	100	<50	<25	
%Phenolic Antioxidant Remaining			%					34.1 C	38.8 C	49.2 C	100	<50	<25	
Antioxidant Additive Remaining in Oil by FTIR (Fourier Transform Infrared), ASTM D2668													Caution	Warning
%Phenolic Antioxidant Remaining	D-2668		%					29 C	31 C	32 C	100	<50	<25	
Oxidation Stability - RPVOT (Rotating Pressure Vessel Oxidation Test), ASTM D2272													Caution	Warning
Oxidation Stability			Minutes					1053		986	1200	<600	<300	
%Oxidation Stability Remaining	D-2272		%					87		82	100	<50	<25	


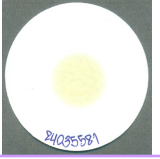
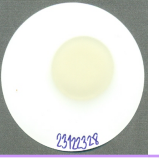
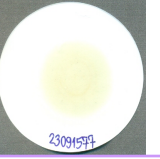

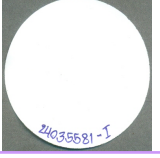

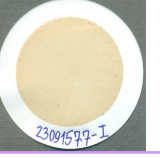
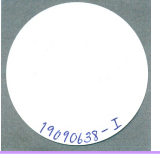


C Code :
U Name :
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M Test Code : T814 T817
E R

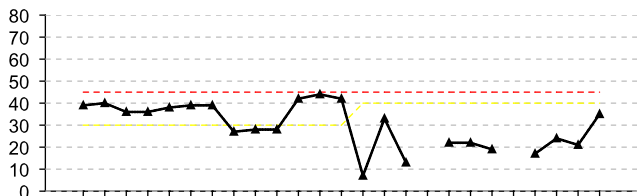
Unit ID : **Steam Turbine 2**
Unit Type : Engine Turbine Steam
Unit Make : SIEMENS
Unit Model : SST 300-CE
Oil type/ Viscosity : ISO 46
Oil System Capacity : 8000 Liters

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

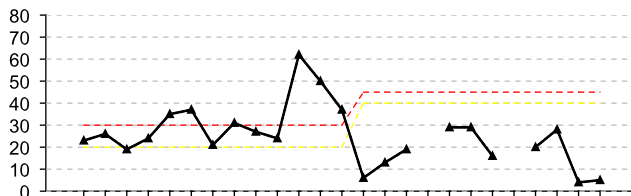
Soluble and insoluble - Membrane Patch Colorimetry (SI-MPC) indicates only a minor amount of varnish & sludge products are present in the oil.

	Current Sample	Previous Sample		
Lab ID	24035581	23122328	23091577	 <p>Alarm Limit Name ETS ASTM D4378 General Mobil DTE 846</p>
Bottle ID	705308	215686	706520	
Date Sampled	25-Mar-24	12-Dec-23	06-Sep-23	
Oil Hours	28776	26280	23928	
Unit Hours	119044	116548	114196	
Oil Change				
Oil Added (Liters)				
Filters Hours	28776	26280	23928	
SI-MPC (soluble and insoluble - Membrane Patch Colorimetry)				
S-MPC (soluble - Membrane Patch Colorimetry) : FI616	: Soluble Varnish Type Contamination in Oil			New Oil Caution Warning
S-MPC Soluble-MPC				
S-MPC Rating	35.2	20.6	24.2	<1 >40 >45
I-MPC (Insoluble - Membrane Patch Colorimetry) : ASTM D7843	: Soluble Varnish Type Contamination in Oil			New Oil Caution Warning
I-MPC(a) Insoluble-MPC ASTM D7843				
I-MPC Rating	4.6	4.4	27.7	<1 >40 >45
SI-MPC™	19.9	12.5	26.0	<1 >40 >45
I-MPC Weight	1.8 mg/100 ml	2.2 mg/100 ml	1.9 mg/100 ml	<1 >10 >15

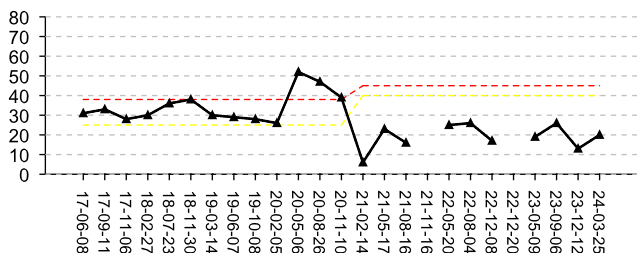
S-MPC (MPC ΔE)



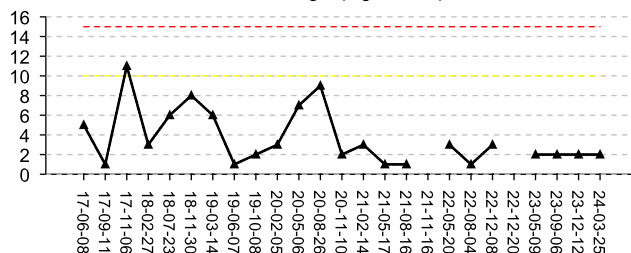
I-MPC (MPC ΔE)



SI-MPC



I-MPC Weight (mg/100 ml.)



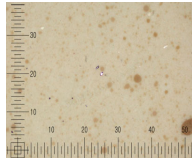
Note : (a) I-MPC test is the same as MPC test ASTM D7843

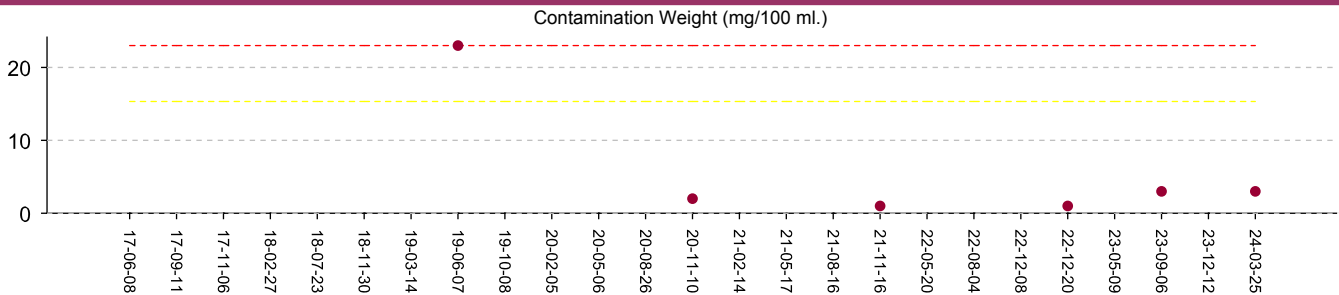
C Code :
U Name :
S Address :
T Site :
O Location :
M Test Code : T814 T817
E R

Unit ID : **Steam Turbine 2**
Unit Type : Engine Turbine Steam
Unit Make : SIEMENS
Unit Model : SST 300-CE
Oil type/ Viscosity : ISO 46
Oil System Capacity : 8000 Liters

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

Gravimetric analysis (photos shown) indicate the oil is moderately contaminated with what appears to be insoluble particle.

Lab ID	Current Sample		Previous Sample		ASTM D-4898 M						
	24035581	23122328	23091577								
Bottle ID	705308	215686	706520		 ASTM D-4898 M						
Date Sampled	25-Mar-24	12-Dec-23	06-Sep-23								
Oil Hours	28776	26280	23928								
Unit Hours	119044	116548	114196								
Oil Change											
Oil Added (Liters)											
Filter Hours	28776	26280	23928								
Filter Type	0.45 micron	0.45 micron	0.45 micron								
Contamination					The New Oil(TNO)						
Gravimetric Analysis : Test Method for Insoluble Contamination of Fluid											
Fluid Volume	10 ml	10 ml	10 ml	10 ml							
Filter Type	0.45 micron	0.45 micron	0.45 micron	0.8 micron							
Photo of Insoluble Contamination Retained on Filter Membrane Disc											
Photo of Insoluble Contamination Retained on Filter Membrane Disc Magnification 100x 1 Division = 0.1 cm											
Photo of Insoluble Contamination Retained on Filter Membrane Disc - Magnification 100x											
Photo of Insoluble Contamination Retained on Filter Membrane Disc Magnification 100x 1 Division = 25 Microns											
Contaminant Retain on Filter Disk	% Visual Rating	% Visual Rating	% Visual Rating	% Visual Rating							
Grey & Black Metal			10								
Copper Base Metal											
Bright & White Metal			10								
Rust & Corrosion											
Dirt & Dust	10		10	100							
Fibers / Filters / Seals											
Sludge & Varnish			10								
Insoluble Particle	90		60								
Contamination Weight (mg/100 ml)	2.8 mg/100 ml	mg/100 ml	3.0 mg/100 ml		<table border="1"> <tr> <td>TNO</td> <td>Caution</td> <td>Warning</td> </tr> <tr> <td>1</td> <td>>10</td> <td>>15</td> </tr> </table>	TNO	Caution	Warning	1	>10	>15
TNO	Caution	Warning									
1	>10	>15									



Gravimetric Analysis:

- determines total solid and soft compound contamination level by weight
- determines oil contamination level by colorimetric (color density)

- identifies particle contamination in oils by microscopic analysis
In brief, will analyze oil cleanliness and source(s) of contamination.

C Code :
U Name :
S Address :
T Site :
O Location :
M Test Code : T814 T817
E

Unit ID : **Steam Turbine 2**
Unit Type : Engine Turbine Steam
Unit Make : SIEMENS
Unit Model : SST 300-CE
Oil type/ Viscosity : ISO 46
Oil System Capacity : 8000 Liters

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

Foaming Tendency ASTM D-892 is not within normal limits.
Air Release characteristic ASTM D-3427 is within normal limits.

Wasan C.

Lab ID	Unit	Current Sample	Previous Sample		Foaming Characteristic	
			23122328	23091577	Air Release	
Bottle ID		24035581	23122328	23091577	New Oil	Alarm Limit Range
Date Sampled		705308	215686	706520	ETS ASTM D4378 General	
Oil Hours		25-Mar-24	12-Dec-23	06-Sep-23	Mobil DTE 846	
Unit Hours		28776	26280	23928		
Oil Added (Liters)		119044	116548	114196		
Oil Change						
Filters Hours		28776	26280	23928		

Foaming Characteristics					Test Method : D-892		
Test	Unit	Current Sample	Previous Sample		New Oil	Caution Limit	Warning Limit
Foam Sequence I , 24 °C							
Foaming Tendency	Foaming volumn in ml.	360 C		730 W		Max 350	Max 450
Foaming Stability	Remaining Foam in ml.	10 W		30 W		Max 5	Max 10
Foam Sequence II , 93.5 °C							
Foaming Tendency	Foaming volumn in ml.	30 C		70 W		Max 30	Max 50
Foaming Stability	Remaining Foam in ml.	0		0		Max 1	Max 5
Foam Sequence III , 93.5 to 24 °C							
Foaming Tendency	Foaming volumn in ml.	470 W		590 W		Max 350	Max 450
Foaming Stability	Remaining Foam in ml.	70 W		0		Max 5	Max 10

Explanation: Foaming Tendency : Volumn of foam generated after blowing for 5 minutes period.
Foam Stability : Volumn of residual foam left after10 minutes setting period.

Air Release Properties					Test Method : D-3427		
Test	Unit	Current Sample	Previous Sample		New Oil	Caution Limit	Warning Limit
Air Release at 50°C	Minutes	6		6		Max 7	Max 8

Explanation: Determination the ability of lubricating oils to separate from entrained air or air bubble during the test procedure.
Result of Air Release is the time for the air entrained during the test procedure to detrain to 0.2% by volume.

Note : Alarm Limits are variable and dependent upon dataset and to be used as general guideline
Accuracy of interpretation and recommendation are based on representatives samples and information supplied.

C Code :
U Name :
S Address :
T Site :
O Location :
M Test Code : T814 T817
E

Unit ID : **Steam Turbine 2**
Unit Type : Engine Turbine Steam
Unit Make : SIEMENS
Unit Model : SST 300-CE
Oil type/ Viscosity : ISO 46
Oil System Capacity : 8000 Liters

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

Water Separability ASTM D-1401 is acceptable.

Lab ID	Unit	Current Sample	Previous Sample		Water Seperability (Demulsibility)		
			24035581	23122328	23091577	Filterability	
Bottle ID		705308	215686	706520	New Oil	Alarm Limit Range	
Date Sampled		25-Mar-24	12-Dec-23	06-Sep-23	ETS ASTM D4378		
Oil Hours		28776	26280	23928	General Mobil DTE 846		
Unit Hours		119044	116548	114196			
Oil Added (Liters)							
Oil change							
Filters Hours		28776	26280	23928			
Water Separability Characteristics or Demulsibility					Test Method : D-1401		
Test	Unit	Current Sample	Previous Sample		New Oil	Caution Limit	Warning Limit
Water Separability At 54°C	Oil / Water / Emulsion (Mins)	40 / 40 / 0 / (12.6)	/ / / ()				
		See below details	See below details				
	Volume OIL Layer in ml.	40	40				
	Volume WATER Layer in ml.	40	40				
	Volume EMULSION Layer in ml.	0	0				
	Separation in minutes	12.6	22.1			Max 25	Max 30
Volume Emulsion Layer in ml. after							
5 minutes	Volume emulsion in ml.	18	69				
20 minutes	Volume emulsion in ml.	0	6				
30 minutes	Volume emulsion in ml.	0	0				

Abbreviation : ml = milliliters, mins = minutes

Oil / Water / Emulsion (Mins) = Volume of oil layer in ml. / Volume of water layer in ml. / Volume of emulsion layer (separation in minutes)

Filterability				Test Method : ISO 13357		
Test	Unit	Current Sample	Previous Sample	New Oil	Caution Limit	Warning Limit
ISO 13357-2 : Dry State , Determination of the filterability for dry oils (no water mix)						
Stage I ,F I	%			100	85	60
Stage II ,F II	%			100	85	60
ISO 13357-1 : Wet State , Determination of the filterability for oils in presence of water						
Stage I ,F I	%			100	85	60
Stage I ,F II	%			100	85	60

Note : Alarm Limits are variable and dependent upon dataset and to be used as general guideline
Accuracy of interpretation and recommendation are based on representatives samples and information supplied.

C Code :
U Name :
S Address :
T Site :
O Location :
M Test Code : T814 T817
E R

Unit ID : **Steam Turbine 2**
Unit Type : Engine Turbine Steam
Unit Make : SIEMENS
Unit Model : SST 300-CE
Oil type/ Viscosity : ISO 46
Oil System Capacity : 8000 Liters

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

Note Copper Strip Corrosion value is acceptable and is rated as "PASS".
Note Rust Preventive is acceptable and is rated as "PASS".

Wasan C.

Lab ID	Unit	Current Sample	Previous Sample		Copper Corrosion	
			23122328	23091577	Rust-Preventive Characteristics	
Bottle ID		24035581	23122328	23091577	New Oil	Alarm Limit Range
Date Sampled		705308	215686	706520		ETS ASTM D4378
Oil Hours		25-Mar-24	12-Dec-23	06-Sep-23		General Mobil DTE 846
Unit Hours		28776	26280	23928		
Oil Change		119044	116548	114196		
Oil Added (Liters)						
Filters Hours		28776	26280	23928		

Detection of Copper Corrosion				Test Method : D-130		
Test	Unit	Current Sample	Previous Sample	New Oil	Caution Limit	Warning Limit
Copper Strip Corrosion (3 hours at 100 °c)	D-130	1a	1a		Max	Max 2

Remarks : The result is the corrosiveness in accordance with ASTM D -130 classification

Rust- Preventive Characteristics				Test Method : D-665		
Test	Unit	Current Sample	Previous Sample	New Oil	Caution Limit	Warning Limit
Distilled Water	D-665	Pass	Pass	Pass		
Sea Water	D-665			Pass		

Remarks : The results are reported as " Pass " or " Fail " according to the observed condition of the specimen.

Classification	Designation	Description	
1	Slight Tarnish	1 a	Light orange, almost the same as freshly polished strip
		1 b	Dark orange
2	Moderate Tarnish	2 a	Claret red
		2 b	Lavender
		2 c	Multi-colored with lavender blue and/or silver overlaid on claret red
		2 d	Silvery
		2 e	Brassy or gold
3	Dark Tarnish	3 a	Magenta overcast on brassy strip
		3 b	Multi-colored with red and green showing (peacock) green barely showing
4	Corrosion	4 a	Transparent black ,dark gray or brown with peacock green barely showing
		4 b	Graphite or lusterless black
		4 c	Glassy or jet black

Note : Alarm Limits are variable and dependent upon dataset and to be used as general guideline
Accuracy of interpretation and recommendation are based on representatives samples and information supplied.

C Code :
U Name :
S Address :
T Site :
O Location :
M Test Code : T814 T817
E R

Unit ID : **Steam Turbine 2**
Unit Type : Engine Turbine Steam
Unit Make : SIEMENS
Unit Model : SST 300-CE
Oil type/ Viscosity : ISO 46
Oil System Capacity : 8000 Liters

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

Foaming Tendency ASTM D-892 is not within normal limits.

Wasan C.

Sample Information	Unit	Current Sample	Previous Sample	Base Line	Alarm Limit		
Lab ID		24035581	23122328	New Oil	Engine Turbine Steam General Mobil DTE 846 46		
Bottle ID		705308	215686				
Date Sampled		25-Mar-24	12-Dec-23				
Oil Hours		28776	26280				
Unit Hours		119044	116548				
Oil Added (Liters)							
Oil change							
Filters Hours		28776	26280				
Oil Condition - Quality and Performance							
RPVOT (Rotating Pressure Vessel Oxidation Test), ASTM D2272						New Oil	Caution
Oxidation Stability	Minutes	1053	986	1200	<600.0		
% Oxidation Stability Remaining	%	87	82	100	<50.0		
Rating		N	N		<300.0		
Flash Point, ASTM D92				New Oil	Caution		
Flash Point	°C	218	236				
Rating		N	N				
Foaming Characteristics, ASTM D892				New Oil	Caution		
Foam Sequence I @24 °C	Tendency (ml) / Stability (ml)	360 C / 10 W	/	730 W / 30 W	350 / 5		
Foam Sequence II @93.5 °C	Tendency (ml) / Stability (ml)	30 C / 0	/	70 W / 0	450 / 10		
Foam Sequence III @93.5 to 24 °C	Tendency (ml) / Stability (ml)	470 W / 70 W	/	590 W / 0	30 / 1		
Rating		W		W	50 / 5		
Air Release Properties, ASTM D3427				New Oil	Caution		
Air Release @50 °C	Minutes	6	6		7		
Rating		N	N		8		
Water Separability Characteristics or Demulsibility, ASTM D1401				New Oil	Caution		
Water Separability @54 °C	oil / water / emulsion	40 / 40 / 0	/ /	40 / 40 / 0	>25.0		
	Minutes	12.6		22.1	>30.0		
Rating		N		N			
Rust Preventives Characteristics, ASTM D655				New Oil	Caution		
Rust Preventives (Procedure A)		Pass		Pass	Fail		
Rating		N		N			
Copper Strip Corrosion, ASTM D130				New Oil	Caution		
Copper Strip Corrosion	Rating	1a		1a	Max 2		
Rating		N		N			
Gravimetric Analysis, ASTM D4898M				New Oil	Caution		
Gravimetric Analysis	mg / 100 ml	2.8		3.0	<10		
Rating		N		N	<15		
Overall Rating		C		C			

Note : Alarm Limits are variable and dependent upon dataset and to be used as general guideline
Accuracy of interpretation and recommendation are based on representatives samples and information supplied.

<p>C Code : U Name : S T O Address : M E R</p>	<p>E Unit ID : Steam Turbine 2 Q U I Unit Type : Engine Turbine Steam P Unit Make : SIEMENS M Unit Model : SST 300-CE E N T</p>
<p>Site : Location : Test Code : T814 T817</p>	<p>O Oil type/ Viscosity : ISO 46 I L</p> <p>Oil System Capacity : 8000 Liters</p>

Lab ID : 24035581 **Date sampled :** 25-Mar-2024 **Hours on Oil :** 28776 **Hours on Unit :** 119044 **Bottle ID :** 705308

ส่วนที่ 1 : หน้าหลัก **Section 1 : Main Page**

สภาพการสึกหรอและผลทดสอบการสึกหรอทั้งหมด พบว่าอยู่ในช่วงปกติ
 การทดสอบ RPVOT พบว่ายังอยู่ในช่วงยอมรับได้ ตามมาตรฐาน ASTM D 4378
 สิ่งเกตุค่าความหนืดสูงกว่าเกณฑ์ระดับปกติเล็กน้อย
 ผลการตรวจนับอนุภาคสิ่งสกปรกชี้ว่าระดับความสะอาดของน้ำมันเกินค่าความสะอาดเป้าหมายที่กำหนดไว้
 และแนะนำให้ระบบกรองภายนอกพร้อมด้วย เพื่อจัดการให้ระบบน้ำมันสะอาดขึ้น
 แนะนำว่าไม่จำเป็นต้องเปลี่ยนถ่ายน้ำมันในขณะนี้ น้ำมันยังมีสภาพเหมาะสมที่จะใช้งานต่อไป ยังคงเก็บตัวอย่างอย่างต่อเนื่อง

ส่วนที่ 2 : หน้าของ Particle Count **Section 2 : Particle Count**

ผลการตรวจนับอนุภาคสิ่งสกปรกชี้ว่าระดับความสะอาดของน้ำมันเกินค่าความสะอาดเป้าหมายที่กำหนดไว้

ส่วนที่ 3 : หน้าของ Ferrographic Analysis **Section 3 : Ferrographic Analysis**

ส่วนที่ 4 : หน้าของ Varnish and Sludge Potential **Section 4 : Varnish and Sludge Potential**

ค่าดัชนีการเกิด Varnish ชี้ว่าเกิดคราบ Varnish ในน้ำมันบ้างเล็กน้อย แต่ยังไม่ถึงขั้นอันตรายกับเครื่องจักรในขณะนี้

ส่วนที่ 5 : หน้าของ Gravimetric Analysis **Section 5 : Gravimetric Analysis**

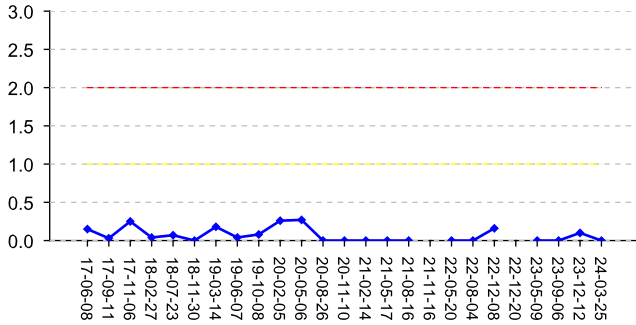
ผลวิเคราะห์จากการกรองพบว่าน้ำมันมีความสกปรกปานกลาง ซึ่งสังเกตพบตะกอน แขนวนลอย ในน้ำมัน (แสดงดังภาพ)

C Code :
S Name :
T Address :
O Site :
M Location :
E Test Code : T814 T817

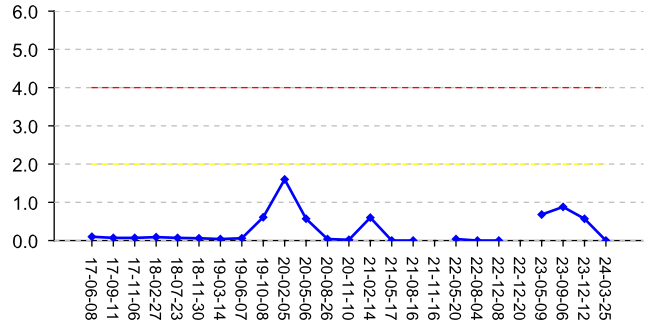
U Unit ID : **Steam Turbine 2**
Q Unit Type : Engine Turbine Steam
I Unit Make : SIEMENS
P Unit Model : SST 300-CE
M Oil type/
E Viscosity : ISO 46
N Oil System Capacity : 8000 Liters

Wear Condition

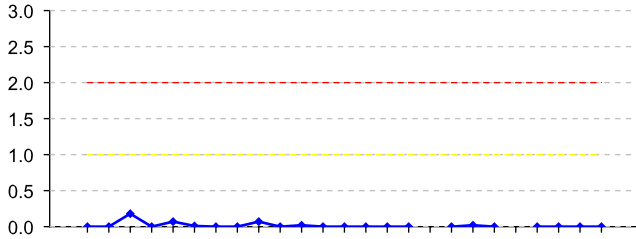
Iron - Fine Wear (ICP-AES) Particles in PPM



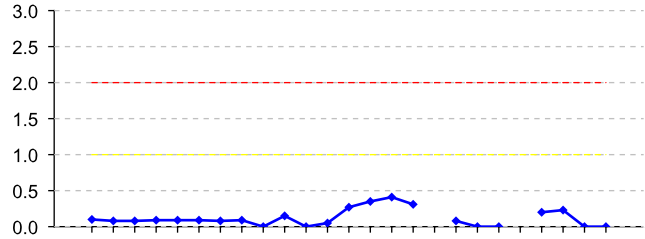
Iron - Coarse Wear (RFS-AES) Particles in PPM



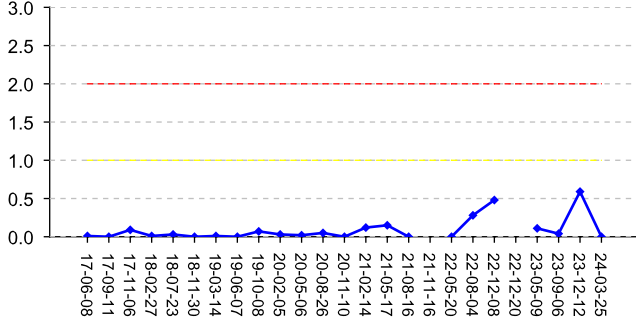
Chromium - Fine Wear (ICP-AES) Particles in PPM



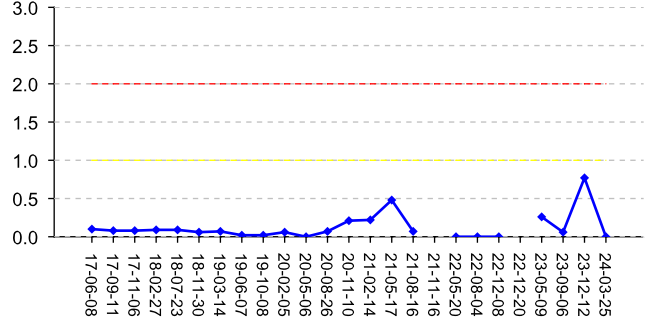
Chromium - Coarse Wear (RFS-AES) Particles in PPM



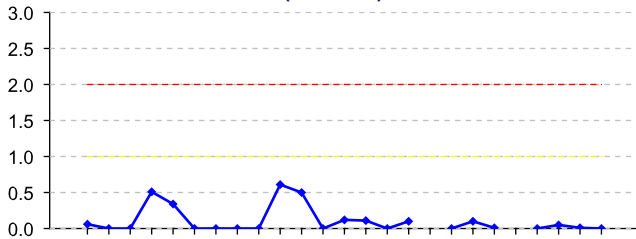
Copper - Fine Wear (ICP-AES) Particles in PPM



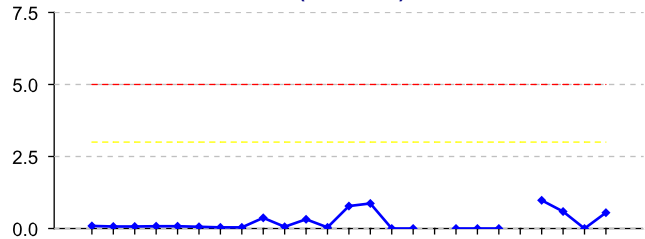
Copper - Coarse Wear (RFS-AES) Particles in PPM



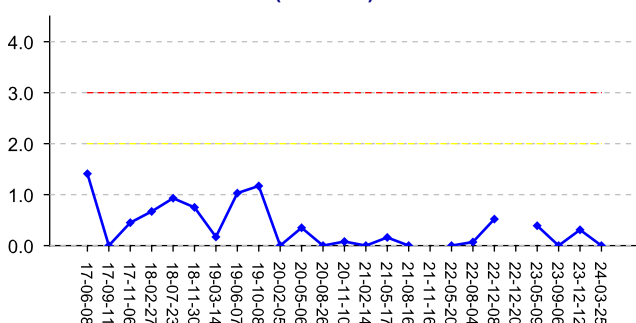
Lead - Fine Wear (ICP-AES) Particles in PPM



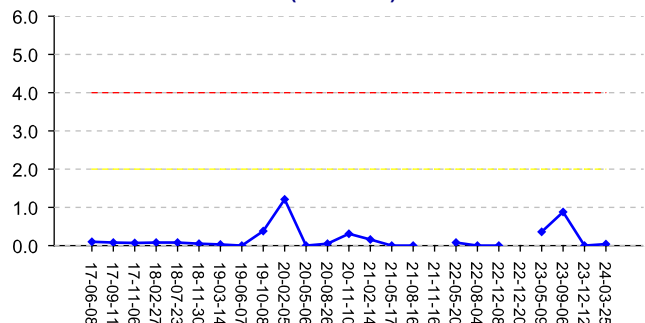
Lead - Coarse Wear (RFS-AES) Particles in PPM



Tin - Fine Wear (ICP-AES) Particles in PPM

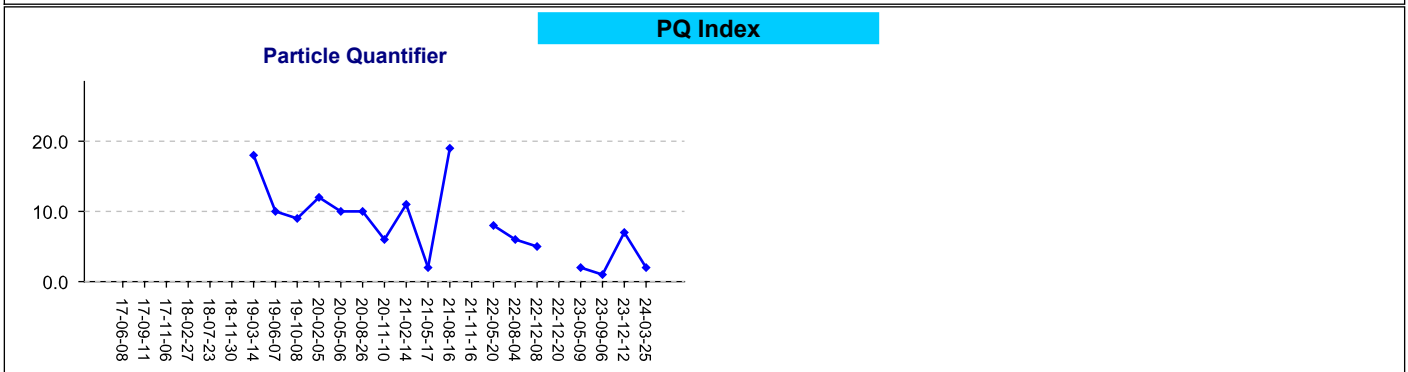
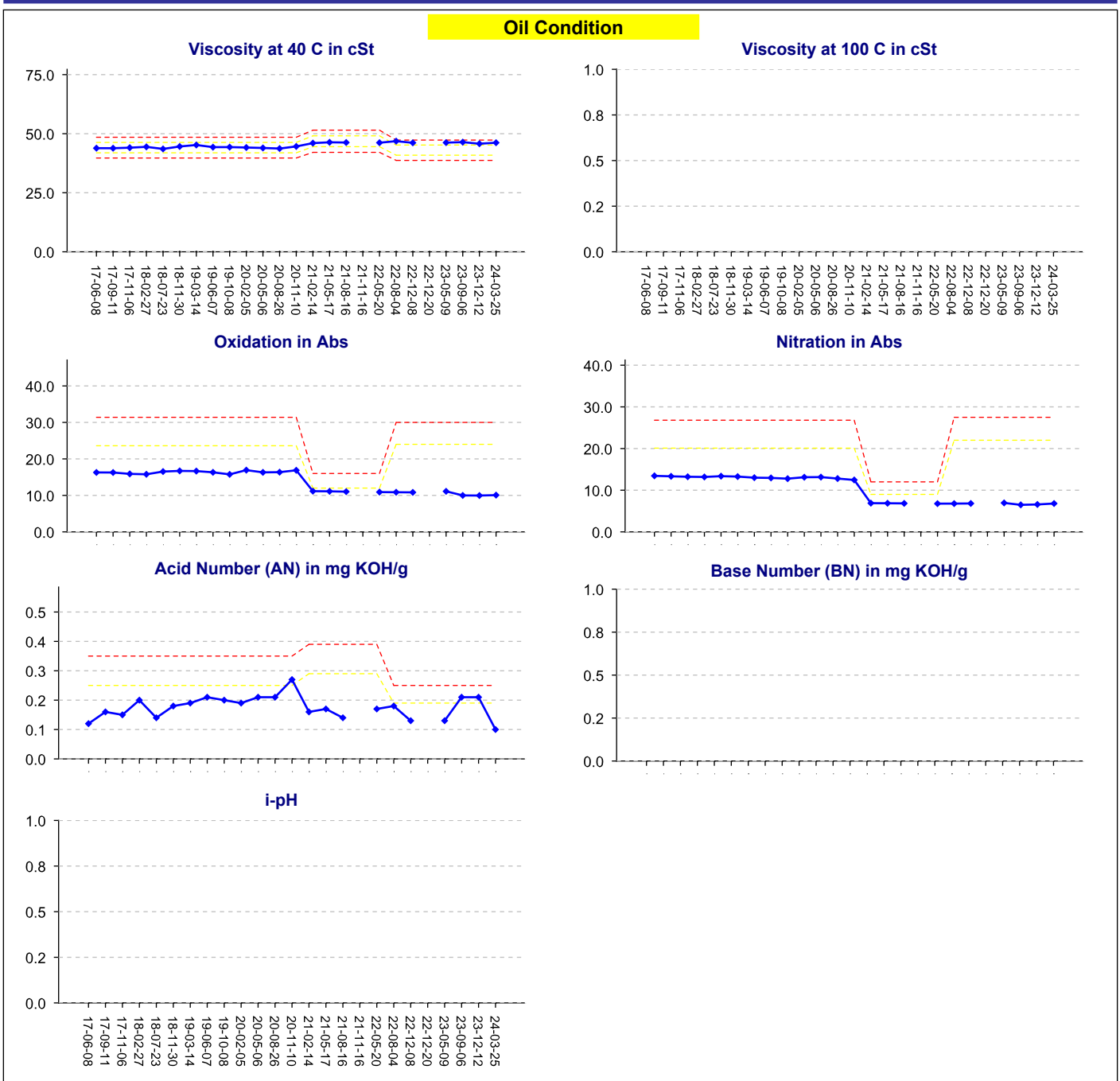


Tin - Coarse Wear (RFS-AES) Particles in PPM



C Code :
S Name :
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M Location :
E Test Code : T814 T817

U Unit ID : **Steam Turbine 2**
Q Unit Type : Engine Turbine Steam
I Unit Make : SIEMENS
P Unit Model : SST 300-CE
M Oil type/
E Viscosity : ISO 46
N Oil System Capacity : 8000 Liters



C Code :
S Name :
T Address :
O Site :
M Location :
E Test Code : T814 T817

U Unit ID : **Steam Turbine 2**
Q Unit Type : Engine Turbine Steam
I Unit Make : SIEMENS
P Unit Model : SST 300-CE
M Oil type/
E Viscosity : ISO 46
N Oil System Capacity : 8000 Liters

