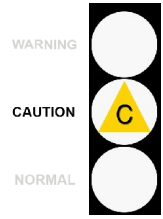


C Code : 19013
 U Name :
 S Address : PT 7308 & PT 7309 MUKIM JIMAH
 T 71960 PORT DICKSON NEGERI
 O SEMBILAN MALAYSIA
 M Site :
 E Location :
 R Test code : P894

Unit ID : **FGD Absorber Pump 2 Motor NDE**
 Unit Type : Pump
 Unit Make : (not given)
 Unit Model : (not given)
 Oil type / Viscosity : SHELL TELLUS T ISO 46
 Oil System Capacity : 127 Liters



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

All wear conditions and wear tests appear in normal working range.
 Note viscosity is slightly lower than normal limits.
 Particle count indicates that oil cleanliness level is in unacceptable range.
 Recommend check the oil filters for proper operation and suggest using an off-line filtration system to clean up the oil system.
 Recommend resample in 500 hours from the time this sample was taken, to monitor.

Wasan C.

			Current Sample			Previous Sample			Baseline and Alarm Limit								
Condition History			Wear	Oil	Cont.	Wear	Oil	Cont.	Wear	Oil	Cont.	Alarm Limit					
Lab ID Bottle ID Date Sampled Oil Hours (Kms) Unit Hours (Kms) Oil Change Oil Added (Liters) Filters Hours (Kms)	Test Method	Result	N	C	W	N	C	N	N	N	W	Alarm Limit Alarm Limit Matrix -Set Name (Equipment type / oil type) Pump General SH Tellus T46 (JIMAH)					
			249306	225024	208478												
			2000200	2000079	2000388												
			19-Feb-14	24-Jul-13	05-Feb-13												
			Not Given	Not Given	Not Given	Not Given	Not Given	Not Given									
Wear Condition													The New Oil (TNO)	Fine wear		Coarse wear	
Wear Element	Method	Unit	Fine(small) Wear	Coarse(large) Wear	Fine(small) Wear	Coarse(large) Wear	Fine(small) Wear	Coarse(large) Wear									
Iron	D-6595	PPM	0.0	4.3	0.1	1.0	0.9	7.0	C	0	>7	>12	>7	>11			
Chromium	D-6595	PPM	0.0	0.2	0.0	0.2	0.3	0.3	0	>1	>2	>1	>2				
Lead	D-6595	PPM	0.6	1.9	0.0	0.4	0.5	1.9	0	>1	>2	>3	>5				
Copper	D-6595	PPM	0.4	0.3	0.3	0.2	0.6	0.2	0	>1	>2	>2	>3				
Tin	D-6595	PPM	0.0	1.6	0.0	0.4	1.4	0.0	1	>3	>4	>14	>25				
Aluminum	D-6595	PPM	0.0	0.0	0.1	1.1	0.9	0.3	0	>1	>2	>1	>2				
Nickel	D-6595	PPM	0.0	0.1	0.0	0.9	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	0.1	0.0	0.0	1.5	0.0	2.4	0								
Titanium	D-6595	PPM	0.0	1.3	0.0	0.5	0.0	3.0	0								
Oil Condition													TNO	L-Warning	L-Caution	U-Caution	U-Warning
Viscosity @ 40 °C	D-445	cSt	46.5	C	46.5	C	46.7	C	49.8	<44.8	<47.3	>52.3	>54.8				
Viscosity @ 100 °C	D-445	cSt															
Oxidation	FTIR	Abs	69.8		70.5		71.1		66.3		>82.9	>99.5					
Nitration	FTIR	Abs	13.7		13.2		13.3		12.0		>18	>24					
TAN	D-974	mg KOH/g.	0.33		0.37		0.35		0.50		>1.5	>2.5					
TBN	D-4739	mg KOH/g.															
Contamination													TNO	U-Caution		U-Warning	
Water	T-H2O CheckTM	% (Wt.)	0.016		0.017		0.023		0.010		>0.03	>0.05					
Sodium	D-6595	PPM	1		1		1		0								
Silicon	D-6595	PPM	9.2	1.8	1.9	0.6	0.7	3.8	0	>10	>17	>5	>9				
Additive Element													TNO				
Boron	D-6595	PPM	0		0		0		0								
Magnesium	D-6595	PPM	10		10		9		12								
Calcium	D-6595	PPM	26		26		32		30								
Barium	D-6595	PPM	0		0		0		0								
Phosphorus	D-6595	PPM	177		198		212		212								
Zinc	D-6595	PPM	268	27	234	37	304	24	276								
Additional Test													TNO	L-Caution	L-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 **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-Caution** : Upper CAUTION Level
U-Warning : Upper WARNING Level **L-Warning** : Lower WARNING required Level **U-Warning** : Upper WARNING 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.

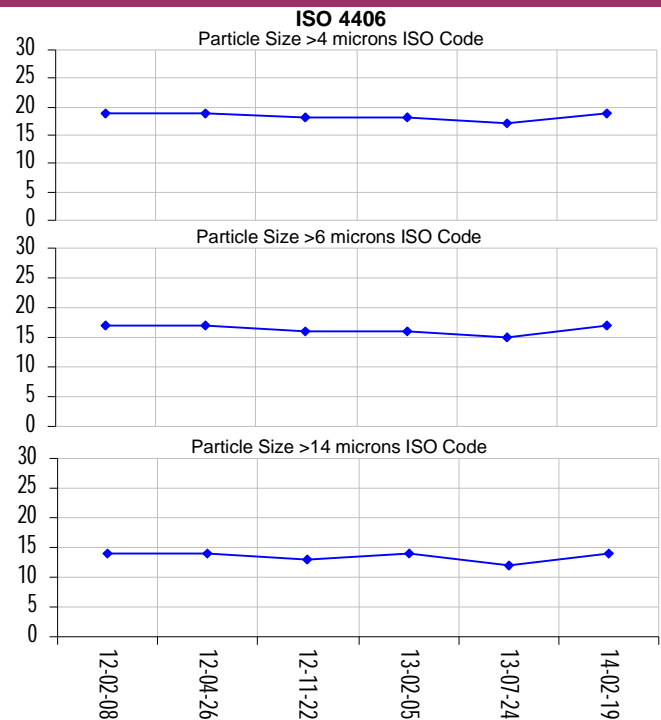
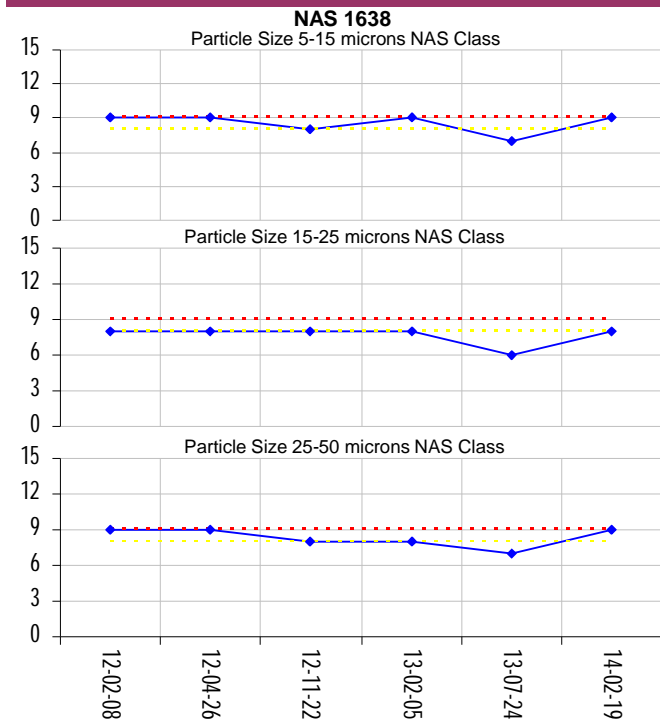
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Notes (Finding, Evaluation, Interpretation, Suggestion and Recommendation)

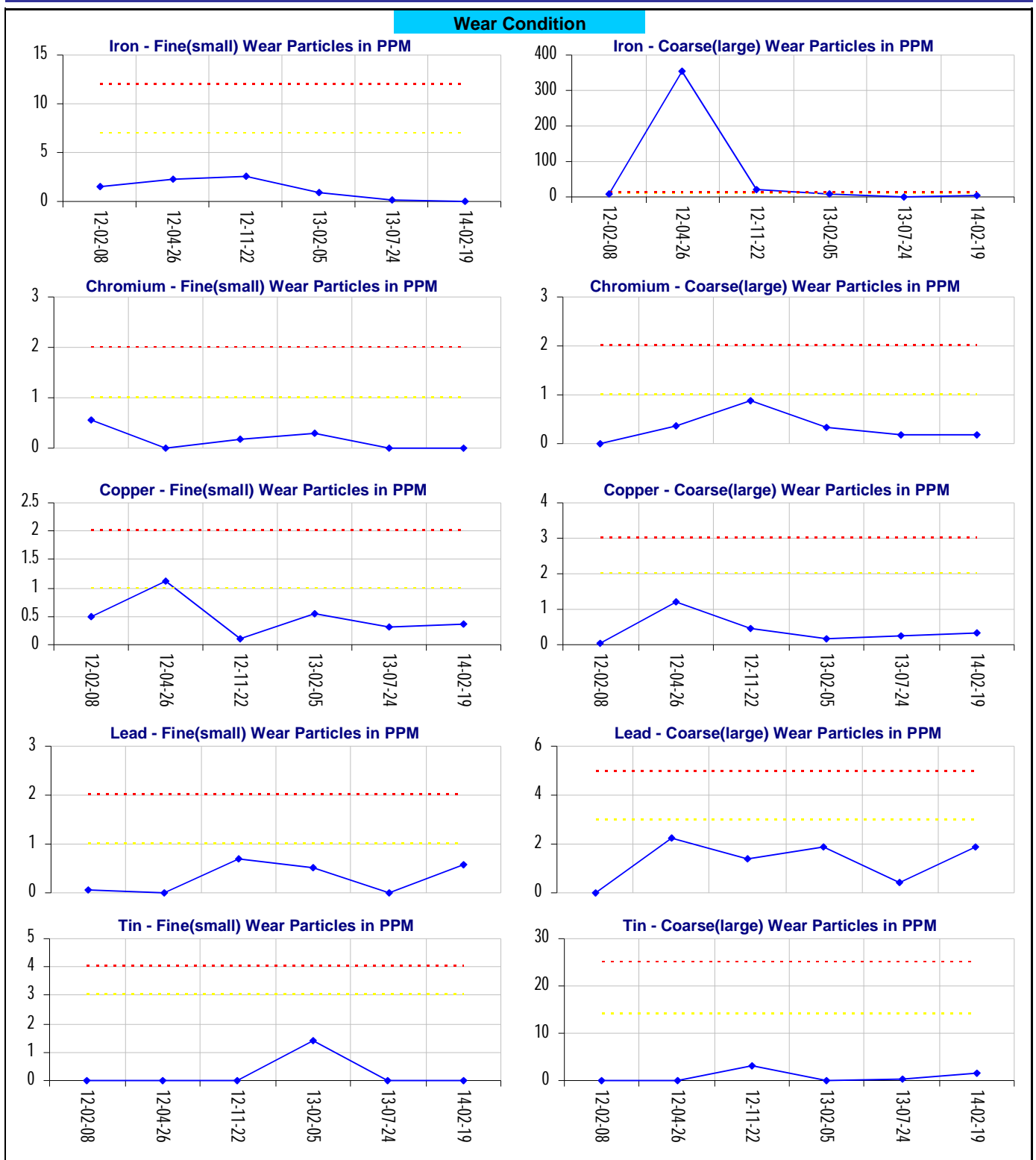
Particle count indicates that oil cleanliness level is in unacceptable range.

Lab ID	Current Sample		Previous Sample				Particle Count	
	Bottle ID	249306	225024	208478		NAS 1638		ISO 4406
Date Sampled	2000200	2000079	2000388		BASELINE		Alarm Limit	
Oil Hours (Kms)	19-Feb-14	24-Jul-13	05-Feb-13		Pump General SH Tellus T46 (JIMAH)			
Unit Hours (Kms)	Not Given	Not Given	Not Given					
Oil Change	Not Given	Not Given	Not Given					
Oil Added (Liters)	Not Given	Not Given	Not Given					
Filters Hours (Kms)	Not Given	Not Given	Not Given					
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	U-Caution	U-Warning
Particle Size 5-15 microns	103,300	9 W	27,300	7	72,100	9 W	>32000	>64000
Particle Size 15-25 microns	9,400	8 C	2,500	6	6,600	8 C	>5700	>11400
Particle Size 25-50 microns	2,700	9 W	700	7	1,800	8	>1012	>2025
Particle Size 50-100 microns	200	8	<100	6	200	8		
Particle Size >100 microns	<100	7	<100	4	<100	6		
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	Class
Particle Size > 4 microns	3,097	19	818	17	2,164	18		
Particle Size > 6 microns	867	17	229	15	605	16		
Particle Size > 14 microns	121	14	32	12	85	14		
ISO 4406 Class Rating	19 / 17 / 14		17 / 15 / 12		18 / 16 / 14			



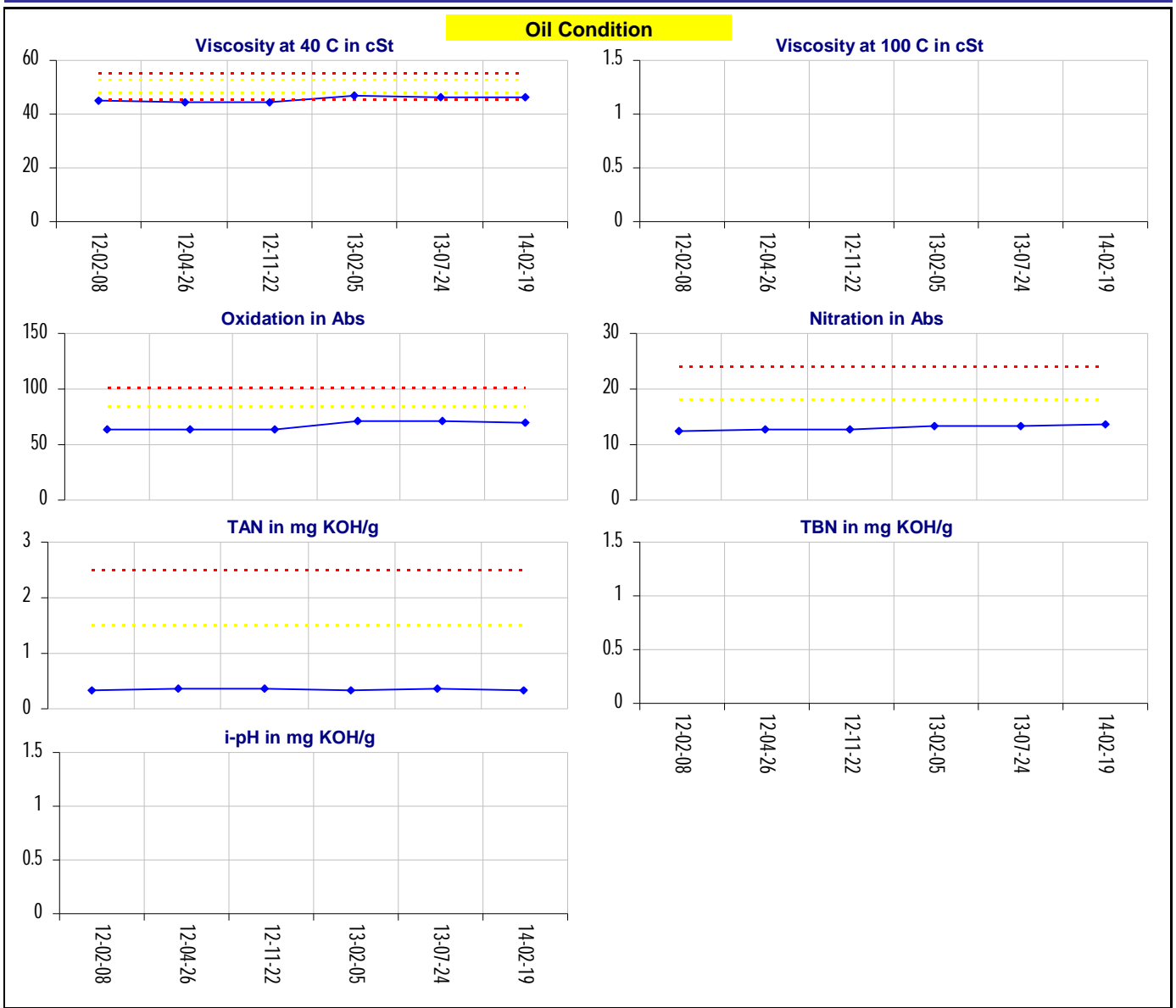
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