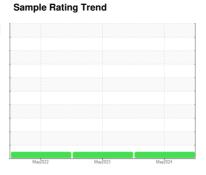


OIL ANALYSIS REPORT



Area Webster Lake Water Pump Station CAT 1500KW Diesel Engine CAT DIESEL ENGINE OIL 15W40 (--- GAL)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

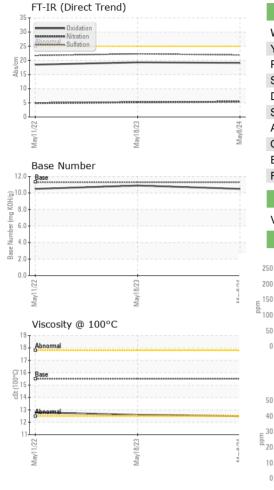
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info	— mmirbasc	WC0934078	WC0810895	WC0696116
Sample Date		Client Info		08 May 2024	18 May 2023	11 May 2022
Machine Age	hrs	Client Info		44	16 Way 2023	11 Iviay 2022
Oil Age	hrs	Client Info		44	16	11
Oil Changed	1113	Client Info		Not Changd	Not Changd	Not Changd
Sample Status		Oliciti IIIIo		NORMAL	NORMAL	NORMAL
	J	method	limit/base	current	history1	history2
Fuel	V	WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method		<1.0 NEG	NEG	×1.0 NEG
		WC Method	>0.2	NEG	NEG	NEG
Glycol				NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	5	4	6
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	1	<1	1
Lead	ppm	ASTM D5185m	>40	2	2	2
Copper	ppm	ASTM D5185m	>330	20	13	11
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		74	75	77
Barium	ppm	ASTM D5185m		4	0	0
Molybdenum	ppm	ASTM D5185m		40	38	40
Manganese	ppm	ASTM D5185m		2	1	1
Magnesium	ppm	ASTM D5185m		506	486	534
Calcium	ppm	ASTM D5185m		1702	1735	1680
Phosphorus	ppm	ASTM D5185m		968	897	981
Zinc	ppm	ASTM D5185m	1460	1112	1199	1112
Sulfur	ppm	ASTM D5185m		3330	3196	2703
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	5	5	7
Sodium	ppm	ASTM D5185m		4	3	3
Potassium	ppm	ASTM D5185m	>20	2	3	1
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0	0	0.1
3001 /6		** OTM D 7004	>20	5.4	5.2	4.9
Nitration	Abs/cm	*ASTM D7624	>20	J. T	5.2	4.0
	Abs/cm Abs/.1mm	*ASTM D7624		21.9	22.3	21.7
Nitration	Abs/.1mm					21.7
Nitration Sulfation	Abs/.1mm	*ASTM D7415	>30	21.9	22.3	



OIL ANALYSIS REPORT



18 - Abnormal							
Yellow Metal scalar "Visual NONE NONE NONE NONE NONE NONE NONE NON	VISUAL		method	limit/base	current	history1	history2
Precipitate scalar "Visual NONE NONE NONE NONE NONE NONE NONE NON	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silt scalar "Visual NONE NONE NONE NONE LIGHT Sand/Dirt scalar "Visual NONE NONE NONE LIGHT Sand/Dirt scalar "Visual NONE NONE NONE NONE NONE NONE NONE NON	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Debris scalar *Visual NONE NONE NONE NONE NONE Sadar *Visual NONE NONE NONE NONE NONE NONE NONE Appearance scalar *Visual NORML NORM	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt scalar "Visual NONE NONE NONE NONE NONE Appearance scalar "Visual NORML NO	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance scalar Visual NORML	Debris	scalar	*Visual	NONE	NONE	NONE	LIGHT
Odor scalar Visual NORML	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Emulsified Water scalar *Visual >0.2 NEG	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Free Water scalar *Visual NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 15.5 12.6 12.8 GRAPHS Iron (ppm) Aluminum (ppm) Chromium (ppm) Chromium (ppm) Copper (ppm) Silicon (ppm)	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 15.5 12.5 12.6 12.8 GRAPHS Iron (ppm) Aluminum (ppm) Chromium (ppm) Copper (ppm) Silicon (ppm)	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Visc @ 100°C	Free Water	scalar	*Visual		NEG	NEG	NEG
GRAPHS Iron (ppm) Lead (ppm) Severe Abnormal Aluminum (ppm) Chromium (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Silicon (ppm)	FLUID PROPER	TIES	method	limit/base	current	history1	history2
Iron (ppm) Lead (ppm) Abnormal Aluminum (ppm) Chromium (ppm) Chromium (ppm) Severe Abnormal Aluminum (ppm) Copper (ppm) Silicon (ppm)	Visc @ 100°C	cSt	ASTM D445	15.5	12.5	12.6	12.8
Abnormal Copper (ppm) Silicon (ppm) Copper (ppm) Silicon (ppm)	GRAPHS						
Severe Abnormal Abnormal Abnormal Copper (ppm) Copper (ppm) Copper (ppm) Sovere							
Abnormal Copper (ppm) Copper (ppm) Severe Copper (ppm) Silicon (ppm) Abnormal Copper (ppm) Silicon (ppm) Severe Silicon (ppm) Silicon (ppm) Severe	Severe	1			Severe		
Abnormal Abnormal Abnormal Abnormal Corporer (ppm) Copper (ppm) Servere Abnormal Silicon (ppm)				C	1		
Aluminum (ppm) Chromium (ppm) Chromium (ppm) Copper (ppm) Silicon (ppm)	Abnormal			5.	Ab		
Aluminum (ppm) Chromium (ppm) Chromium (ppm) Chromium (ppm) Chromium (ppm) Severe Abnormal Copper (ppm) Silicon (ppm)						:	1
Aluminum (ppm) Chromium (ppm) Chromium (ppm) Chromium (ppm) Severe Aluminum (ppm) Copper (ppm) Silicon (ppm)							
Aluminum (ppm) Chromium (ppm) Severe Abnormal Copper (ppm) Copper (ppm) Silicon (ppm) Sil		8/23 -				8/23 -	8/24
Severe S	May1	May1		Мау	May1	May1	May
Severe 40 Severe 40 Abnormal 40						pm)	
Abnormal 10	Severe				Severe		
Copper (ppm) Silicon (ppm) Silicon (ppm) Silicon (ppm) Silicon (ppm) Source 60 40 40 40 40 40 40 40 40 40					T.		
Copper (ppm) Silicon (ppm) Silicon (ppm) Silicon (ppm) Silicon (ppm) Source 60 40 40 40 40 40 40 40 40 40	Abnormal			E 30	Abnormal		
Copper (ppm) Silicon (ppm) Silicon (ppm) Silicon (ppm) Silicon (ppm) Silicon (ppm) Solution (ppm) Solut	1						-
Copper (ppm) Silicon (ppm)							
Copper (ppm) Silicon		/23				/23	/24
Copper (ppm) Silicon (ppm) Output Silicon (ppm) Source Abnormal Viscosity @ 100°C Base Number	/lay11	Nay 18		May8	/lay11	/lay18	May8
80 Severe Severe		~			_		
00	00			80			
20 Abnormal 20 CZZI, Ide W Infe W Inf)+		
Viscosity @ 100°C Base Number	00			E 40	1		
Viscosity @ 100°C Base Number					Abnormal		
ZZ/I I/keW Way18/23	00			20			
Viscosity @ 100°C Base Number		- 53			D-I	+ 52	*
Viscosity @ 100°C Base Number	lay11/.	lay 18/.		May8/.	lay11/.	ay18//	May8/2
20 12.0 P 200				_			_
18 - Abnormal 16 - Base ### Base	20	-		12.0) Page		******************
16 - Base	18 Abnormal)		
	16 - Base			B 8.0	(1)		





Certificate 12367

Sample No. : WC0934078 Lab Number : 06176912

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Unique Number : 11022965

Test Package : MOB 1 (Additional Tests: TBN)

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Received **Tested** Diagnosed

: 13 May 2024 : 14 May 2024 : 14 May 2024 - Sean Felton

8.0 6.0 Base Number (0.0 4.0 2.0 0.0

> MONROE COUNTY WATER AUTHORITY 4799 DEWEY AVE ROCHESTER, NY US 14612

May18/23

Contact: SCOTT TRAIL scott.trail@mcwa.com T: (585)775-5257

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Submitted By: SCOTT TRAIL