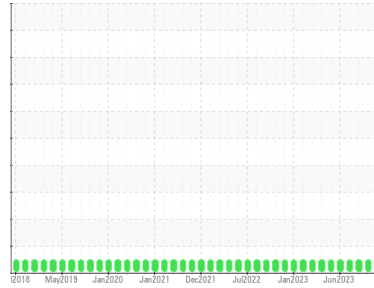




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
SEAWATER SUMP
 Machine Id
DDE-9101 (S/N FIRE WATER PUMP)
 Component
Diesel Engine
 Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (20 GAL)

DIAGNOSIS

Recommendation
 Resample at the next service interval to monitor.

Wear
 All component wear rates are normal.

Contamination
 There is no indication of any contamination in the oil.

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 INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			HLC0002844	HLC0002871	HLC0002783
Sample Date	Client Info			04 Nov 2023	10 Oct 2023	02 Sep 2023
Machine Age	hrs Client Info			525	0	0
Oil Age	hrs Client Info			0	0	0
Oil Changed	Client Info			N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<1.0	<1.0	<1.0
Water	WC Method	>0.2		NEG	NEG	NEG
Glycol	WC Method			NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	8	10	11
Chromium	ppm	ASTM D5185m	>20	4	4	3
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	<1
Lead	ppm	ASTM D5185m	>40	1	3	3
Copper	ppm	ASTM D5185m	>330	6	7	6
Tin	ppm	ASTM D5185m	>15	2	2	2
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	<1	<1

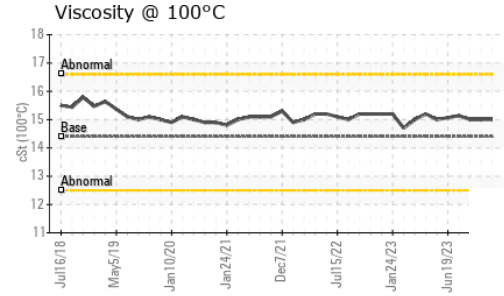
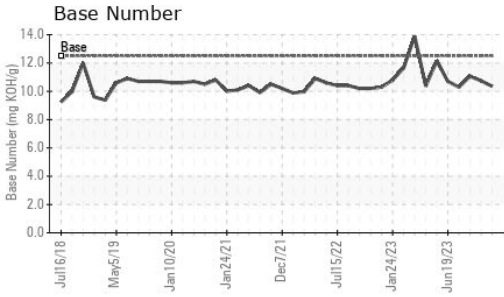
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	151	125	132	127
Barium	ppm	ASTM D5185m	0.4	0	0	0
Molybdenum	ppm	ASTM D5185m	250	31	35	36
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	0	210	163	147
Calcium	ppm	ASTM D5185m	2046	2779	2742	3030
Phosphorus	ppm	ASTM D5185m	1043	1121	1065	1133
Zinc	ppm	ASTM D5185m	943	1338	1308	1412
Sulfur	ppm	ASTM D5185m	5012	4547	4457	5550

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	5	5	5
Sodium	ppm	ASTM D5185m		1	3	1
Potassium	ppm	ASTM D5185m	>20	1	5	2

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	7.5	7.5	7.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.9	22.0	22.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.6	18.0	17.9
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	10.36	10.74	11.06

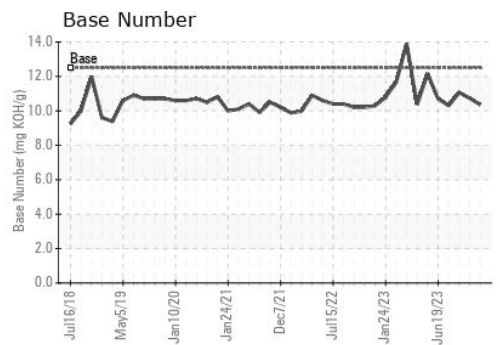
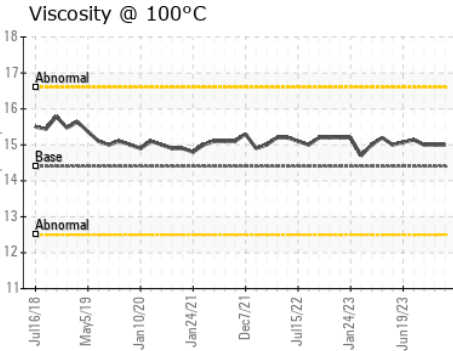
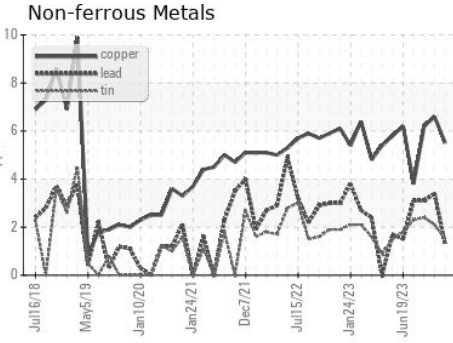
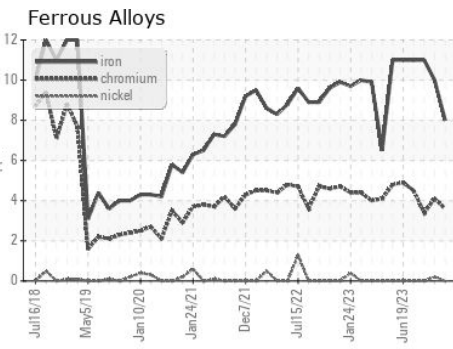
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	14.4	15.0	15.0	15.0

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HLC0002844 **Received** : 17 Nov 2023
Lab Number : **06011654** **Diagnosed** : 21 Nov 2023
Unique Number : 10750798 **Diagnostician** : Don Baldrige
Test Package : IND 2

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