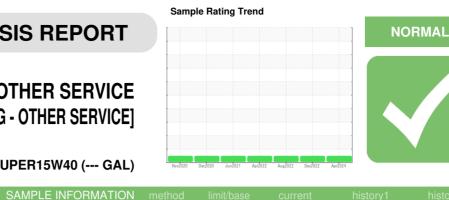


OIL ANALYSIS REPORT

Area KANSAS/44/EG - OTHER SERVICE 63.03 [KANSAS^44^EG - OTHER SERVICE] Diesel Engine

Fluid MOBIL DELVAC 1300 SUPER15W40 (--- GAL)





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.

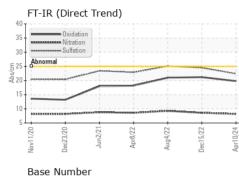
Fluid Condition

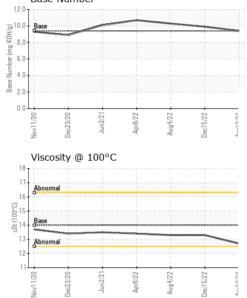
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		methou	iiiiii/base	current	TIIStory I	nistoryz
Sample Number		Client Info		WC0908847	WC0746037	WC0697711
Sample Date		Client Info		10 Apr 2024	15 Dec 2022	04 Aug 2022
Machine Age	hrs	Client Info		13432	13171	12885
Oil Age	hrs	Client Info		345	12885	333
Oil Changed		Client Info		Changed	N/A	Changed
Sample Status				NORMAL	NORMAL	NORMAL
	_					
CONTAMINATIO	N	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	ourropt	history1	history2
				current		
Iron	ppm		>100	27	26	27
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m	>2	1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>25	9	1	1
Lead	ppm	ASTM D5185m	>40	2	2	2
Copper	ppm	ASTM D5185m	>330	25	16	11
Tin	ppm	ASTM D5185m	>15	1	<1	2
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method			history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base		history1 49	history2 48
	ppm ppm	ASTM D5185m		current 52 <1		
Boron Barium	ppm	ASTM D5185m	0	52	49	48
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0	52 <1 38	49 0 39	48 0
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	52 <1 38 <1	49 0 39 0	48 0 35 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0	52 <1 38 <1 495	49 0 39 0 513	48 0 35 <1 525
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	52 <1 38 <1 495 1596	49 0 39 0 513 1736	48 0 35 <1 525 1530
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	52 <1 38 <1 495 1596 734	49 0 39 0 513 1736 735	48 0 35 <1 525 1530 706
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	52 <1 38 <1 495 1596 734 922	49 0 39 0 513 1736 735 926	48 0 35 <1 525 1530 706 877
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 0	52 <1 38 <1 495 1596 734 922 2734	49 0 39 0 513 1736 735 926 2966	48 0 35 <1 525 1530 706 877 2484
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 limit/base	52 <1 38 <1 495 1596 734 922 2734 current	49 0 39 0 513 1736 735 926 2966 2966 history1	48 0 35 <1 525 1530 706 877 2484 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 limit/base	52 <1 38 <1 495 1596 734 922 2734	49 0 39 0 513 1736 735 926 2966	48 0 35 <1 525 1530 706 877 2484
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 limit/base	52 <1 38 <1 495 1596 734 922 2734 current	49 0 39 0 513 1736 735 926 2966 2966 history1	48 0 35 <1 525 1530 706 877 2484 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 0 0 0 limit/base	52 <1 38 <1 495 1596 734 922 2734 2734 current 20	49 0 39 0 513 1736 735 926 2966 2966 history1 6	48 0 35 <1 525 1530 706 877 2484 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 0 0 limit/base >25	52 <1 38 <1 495 1596 734 922 2734 current 20 2	49 0 39 0 513 1736 735 926 2966 2966 history1 6 0	48 0 35 <1 525 1530 706 877 2484 history2 3 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 limit/base >25 >20	52 <1 38 <1 495 1596 734 922 2734 current 20 2 2 4	49 0 39 0 513 1736 735 926 2966 2966 history1 6 0 1	48 0 35 <1 525 1530 706 877 2484 history2 3 2 2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	52 <1 38 <1 495 1596 734 922 2734 current 20 2 2 4 current	49 0 39 0 513 1736 735 926 2966 history1 6 0 1 1 history1	48 0 35 <1 525 1530 706 877 2484 history2 3 2 2 2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 limit/base >25 >20 limit/base >3	52 <1 38 <1 495 1596 734 922 2734 current 20 2 2 4 current 0.6	49 0 39 0 513 1736 735 926 2966 history1 6 0 1 1 history1 0.6	48 0 35 <1 525 1530 706 877 2484 history2 3 2 2 2 history2 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1	52 <1 38 <1 495 1596 734 922 2734 current 20 2 4 current 0.6 8.2 22.4	49 0 39 0 513 1736 735 926 2966 history1 6 0 1 1 history1 0.6 8.6 24.5	48 0 35 <1 525 1530 706 877 2484 history2 3 2 2 2 history2 1 9.3 25.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 0 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1	52 <1 38 <1 495 1596 734 922 2734 Current 20 2 2 4 Current 0.6 8.2 22.4 Current	49 0 39 0 513 1736 735 926 2966 2966 history1 6 0 1 history1 0.6 8.6 24.5 history1	48 0 35 <1 525 1530 706 877 2484 history2 3 2 2 8 history2 1 9.3 25.1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	52 <1 38 <1 495 1596 734 922 2734 current 20 2 4 current 0.6 8.2 22.4	49 0 39 0 513 1736 735 926 2966 history1 6 0 1 1 history1 0.6 8.6 24.5	48 0 35 <1 525 1530 706 877 2484 history2 3 2 2 2 history2 1 9.3 25.1



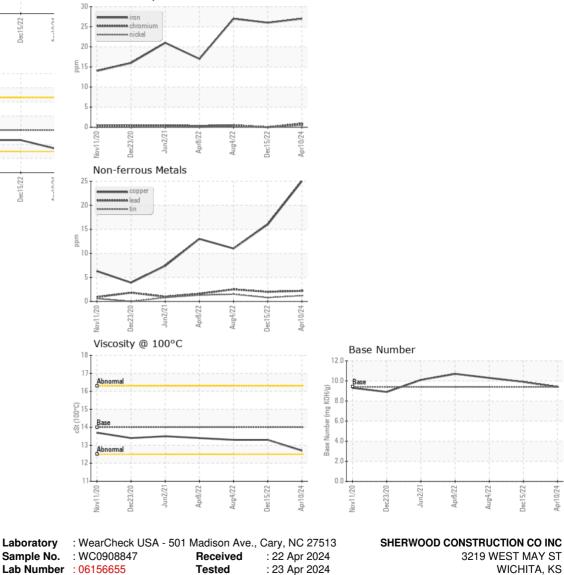
OIL ANALYSIS REPORT





VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14	12.7	13.3	13.3

GRAPHS Ferrous Alloys



Lab Number : 06156655 Tested : 23 Apr 2024 Unique Number : 10992078 Diagnosed : 23 Apr 2024 - Wes Davis Test Package : CONST (Additional Tests: TBN) Contact: DOUG KING Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. doug.king@sherwood.net * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (316)617-3161 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: SHEWIC [WUSCAR] 06156655 (Generated: 04/23/2024 18:08:19) Rev: 1

Laboratory

Submitted By: BOBBY JONES

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