

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **21406** Component **Diesel Engine** Fluid

MOBIL 15W40 (--- QTS)

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

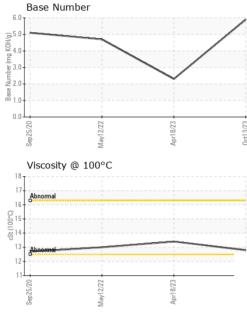
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		IL0032490	IL0028928	IL0023713
Sample Date		Client Info		13 Oct 2023	18 Apr 2023	12 May 2022
Machine Age	mls	Client Info		133218	122758	104277
Oil Age	mls	Client Info		15000	15000	15000
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	ABNORMAL	NORMAL
CONTAMINATION	٧	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	43	81	79
Chromium	ppm	ASTM D5185m	>20	1	2	2
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	4	13	13
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	2	1	2
Tin	ppm	ASTM D5185m	>15	0	0	<1
Antimony	ppm	ASTM D5185m				
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1 7	history2 30
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	0	7 0 48	30 0 41
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	limit/base	0 4	7 0 48 1	30 0 41 1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 4 61 <1 877	7 0 48 1 834	30 0 41 1 506
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 4 61 <1 877 1045	7 0 48 1 834 1172	30 0 41 1 506 1725
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	limit/base	0 4 61 <1 877 1045 849	7 0 48 1 834 1172 901	30 0 41 1 506 1725 729
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	limit/base	0 4 61 <1 877 1045 849 1174	7 0 48 1 834 1172 901 1132	30 0 41 1 506 1725 729 979
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 4 61 <1 877 1045 849	7 0 48 1 834 1172 901 1132 3120	30 0 41 1 506 1725 729 979 2172
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 4 61 <1 877 1045 849 1174 3297 current	7 0 48 1 834 1172 901 1132 3120 history1	30 0 41 1 506 1725 729 979 2172 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 ASTM D5185m	limit/base	0 4 61 <1 877 1045 849 1174 3297 current 5	7 0 48 1 834 1172 901 1132 3120 history1 8	30 0 41 1 506 1725 729 979 2172 history2 8
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 ASTM D5185m ASTM D5185m	limit/base >25 >118	0 4 61 <1 877 1045 849 1174 3297 current 5 0	7 0 48 1 834 1172 901 1132 3120 history1 8 3 3	30 0 41 1 506 1725 729 979 2172 2172 history2 8 2
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 ASTM D5185m	limit/base	0 4 61 <1 877 1045 849 1174 3297 current 5	7 0 48 1 834 1172 901 1132 3120 history1 8	30 0 41 1 506 1725 729 979 2172 history2 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 limit/base	0 4 61 <1 877 1045 849 1174 3297 current 5 0 9	7 0 48 1 834 1172 901 1132 3120 history1 8 3 17 history1	30 0 41 1 506 1725 729 979 2172 history2 8 2 2 17 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 limit/base >3	0 4 61 <1 877 1045 849 1174 3297 <u>current</u> 5 0 9 <u>current</u>	7 0 48 1 834 1172 901 1132 3120 history1 8 3 17 history1 0.8	30 0 41 1 506 1725 729 979 2172 history2 8 2 17 history2 0.7
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	limit/base >25 >118 >20 limit/base >3 >20	0 4 61 <1 877 1045 849 1174 3297 current 5 0 9 current 0.6 13.2	7 0 48 1 834 1172 901 1132 3120 history1 8 3 17 history1 0.8 16.1	30 0 41 1 506 1725 729 979 2172 history2 8 2 2 17 history2 0.7 16.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 limit/base >3	0 4 61 <1 877 1045 849 1174 3297 <u>current</u> 5 0 9 <u>current</u>	7 0 48 1 834 1172 901 1132 3120 history1 8 3 17 history1 0.8	30 0 41 1 506 1725 729 979 2172 history2 8 2 17 history2 0.7
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	limit/base >25 >118 >20 limit/base >3 >20	0 4 61 <1 877 1045 849 1174 3297 current 5 0 9 current 0.6 13.2	7 0 48 1 834 1172 901 1132 3120 history1 8 3 17 history1 0.8 16.1	30 0 41 1 506 1725 729 979 2172 history2 8 2 2 17 history2 0.7 16.9
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	Imit/base >25 >118 >20 Imit/base >3 >20 >30	0 4 61 <1 877 1045 849 1174 3297 <u>current</u> 5 0 9 <u>current</u> 0.6 13.2 26.9	7 0 48 1 834 1172 901 1132 3120 history1 8 3 17 history1 0.8 16.1 31.9	30 0 41 1 506 1725 729 979 2172 history2 8 2 17 history2 0.7 16.9 31.4
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	limit/base >25 >118 >20 limit/base >3 >20 >30 limit/base	0 4 61 <1 877 1045 849 1174 3297 Current 5 0 9 Current 0.6 13.2 26.9 Current	7 0 48 1 834 1172 901 1132 3120 history1 8 3 3 17 history1 0.8 16.1 31.9 history1	30 0 41 1 506 1725 729 979 2172 history2 8 2 2 17 history2 0.7 16.9 31.4 history2



OIL ANALYSIS REPORT

VISUAL



		v	Vhite Metal	scalar	*Visual	NONE	NONE	NONE	NONE		
			ellow 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		*Visual	NONE	NONE	NONE	NONE		
22 -	- 23			scalar		NORML		NORML	NORML		
May12/22 Aor18/23	0ct13/23		Appearance Odor	scalar	*Visual		NORML				
2 4	0		Emulsified Water	scalar	*Visual *Visual	NORML	NORML	NORML	NORML		
0°C			Free Water	scalar scalar	*Visual	>0.2	NEG NEG	NEG	NEG NEG		
					visuai		NEG	NLG	NEG		
			FLUID PROPERT	IES	method	limit/base	current	history1	history2		
		Ň	/isc @ 100°C	cSt	ASTM D445		12.8	13.4	13.0		
			GRAPHS								
		0.0	Ferrous Alloys								
		90- 80-	iron		1						
May12/22 . Aor18/23 .		70	nickel								
Ac		60									
		톱 ⁵⁰	· · · · · · · · · · · · · · · · · · ·								
		30- 20-									
		10-									
		0									
			Sep 25/20 May 12/22		Apr18/23	0ct13/23					
			Sep		Apr	Oct					
		1.0	Non-ferrous Metal	S							
		10	copper								
		8	sessesses lead								
		udd									
		₫ 4-									
		2									
		0	L <u></u>								
			Sep 25/20 May 12/22		Apr1 8/23	0ct13/23					
			2		Api	00					
		18	Viscosity @ 100°C	;			Base Number				
						6.0			/		
		17	Abnormal			5.0-			/		
		16				0/H0X 4.0	1				
		(0-15- (100-1) 14-	-			(B/H) HOX B ba 3.0- Bay 2.0- Bage B					
		ा सुरा 14-	•					\sim			
		13	Abnormal			2.0					
		12				° 1.0-					
		11-				0.0-					
			Sep25/20 May12/22		Apr18/23	0ct13/23	Sep 25/20	Apr18/23	0ct13/23		
			Sepi		Apri	Octi	Sep.	Apri	Oct		
,	Laboratory	. \	MaarChack USA 5	01 Madia		n/ NC 07510	סוופט דסווג				
4	Laboratory Sample No.			601 Madison Ave., Cary, NC 27513 Received : 03 Nov 2023				RUSH TRUCK CENTER - CHICAGO IDEALEASE 4655 SOUTH CENTRAL AVENUE			
ACCREDITED	Lab Number			Diagnosed : 06 Nov 2023			-000	CHICAGO, IL			
TESTING LABORATORY	Unique Number		10726043 I	Diagnost		Baldridge			US 60638		
Certificate L2367	Test Package		FLEET					Contact: MIKE LINLEY			
			tact Customer Servi		lir	linleym@rushtruckcenters.com					
			outside of the ISO 1 ations are based on tl				CGM 106.2012)		708)496-7500 708)496-8818		
								(

Contact/Location: MIKE LINLEY - IDECHIIL