

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id INTERNATIONAL 33 Component

Diesel Engine

CONOCO PHILLIPS GUARDOL ECT 15W40 (--- Oz)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. Test for glycol is negative.

Fluid Condition

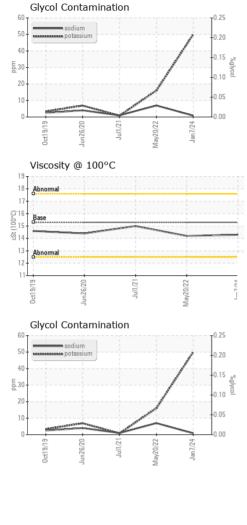
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0083465	PCA0066176	PCA0028053
Sample Date		Client Info		07 Jan 2024	20 May 2022	01 Jul 2021
Machine Age	mls	Client Info		782015	0	0
Oil Age	mls	Client Info		10000	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>2.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	60	23	25
Chromium	ppm	ASTM D5185m	>20	3	1	2
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m	~	10	0	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	1	2	1
Lead	ppm	ASTM D5185m	>20	3	1	1
Copper	ppm	ASTM D5185m	>330	10	6	5
Tin	ppm	ASTM D5185m	>330	10	<1	<1
Antimony	ppm	ASTM D5185m	>15			0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
	PPIII				0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method	limit/base		history1	history2
Boron	ppm	ASTM D5185m	limit/base 85	18	6	5
Boron Barium	ppm	ASTM D5185m ASTM D5185m		18 0	6 0	5 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		18 0 56	6 0 61	5 0 58
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85	18 0 56 1	6 0 61 <1	5 0 58 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350	18 0 56 1 922	6 0 61 <1 926	5 0 58 <1 943
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800	18 0 56 1 922 1130	6 0 61 <1 926 1075	5 0 58 <1 943 1133
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	85 350 1800 1000	18 0 56 1 922 1130 1019	6 0 61 <1 926 1075 1015	5 0 58 <1 943 1133 1031
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800	18 0 56 1 922 1130	6 0 61 <1 926 1075	5 0 58 <1 943 1133
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	85 350 1800 1000 1100	18 0 56 1 922 1130 1019 1230 3573	6 0 61 <1 926 1075 1015 1198	5 0 58 <1 943 1133 1031 1256
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500	18 0 56 1 922 1130 1019 1230 3573	6 0 61 <1 926 1075 1015 1198 3579	5 0 58 <1 943 1133 1031 1256 2694
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN 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	85 350 1800 1000 1100 3500	18 0 56 1 922 1130 1019 1230 3573 current	6 0 61 <1 926 1075 1015 1198 3579 history1	5 0 58 <1 943 1133 1031 1256 2694 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN 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	85 350 1800 1000 1100 3500 limit/base >25	18 0 56 1 922 1130 1019 1230 3573 current 4	6 0 61 <1 926 1075 1015 1198 3579 history1 3	5 0 58 <1 943 1133 1031 1256 2694 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm 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	85 350 1800 1000 1100 3500 limit/base >25	18 0 56 1 922 1130 1019 1230 3573 current 4 <	6 0 61 <1 926 1075 1015 1198 3579 history1 3 7	5 0 58 <1 943 1133 1031 1256 2694 history2 4 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 limit/base >25	18 0 56 1 922 1130 1019 1230 3573 current 4 < <1 ► 50 NEG	6 0 61 <1 926 1075 1015 1198 3579 history1 3 7 16	5 0 58 <1 943 1133 1031 1256 2694 history2 4 1 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 limit/base >25 >20	18 0 56 1 922 1130 1019 1230 3573 <u>current</u> 4 <1 ≤1 ≤50 NEG	6 0 61 <1 926 1075 1015 1198 3579 history1 3 7 16 NEG	5 0 58 <1 943 1133 1031 1256 2694 history2 4 1 <1 <1 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982	85 350 1800 1000 1100 3500 limit/base >25 >20	18 0 56 1 922 1130 1019 1230 3573 current 4 < 1 ≤ 0 NEG current	6 0 61 <1 926 1075 1015 1198 3579 history1 3 7 16 NEG history1	5 0 58 <1 943 1133 1031 1256 2694 history2 4 1 <1 <1 NEG history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D2982 method *ASTM D7844 *ASTM D7844	85 350 1800 1000 1100 3500 limit/base >25 >20 limit/base >3	18 0 56 1 922 1130 1019 1230 3573 <i>current</i> 4 <1 < ↓ 50 NEG <i>current</i> 0.6	6 0 61 <1 926 1075 1015 1198 3579 history1 3 7 16 NEG history1 0.3	5 0 58 <1 943 1133 1031 1256 2694 history2 4 1 <1 ×1 NEG history2 0.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm 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 *ASTM D2982 nethod *ASTM D7844 *ASTM D7844	85 350 1800 1000 1100 3500 limit/base >25 >20 limit/base >3 >20	18 0 56 1 922 1130 1019 1230 3573 current 4 <1 ▲ 50 NEG 0.6 9.9 21.7	6 0 61 <1 926 1075 1015 1198 3579 history1 3 7 16 NEG history1 0.3 7.7	5 0 58 <1 943 1133 1031 1256 2694 history2 4 1 <1 ×1 NEG history2 0.4 8.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm ppm 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 *ASTM D2982 nethod *ASTM D7844 *ASTM D7844	85 350 1800 1000 1100 3500 limit/base >25 >20 limit/base >3 >20	18 0 56 1 922 1130 1019 1230 3573 current 4 <1 ▲ 50 NEG 0.6 9.9 21.7	6 0 61 <1 926 1075 1015 1198 3579 history1 3 7 16 NEG history1 0.3 7.7 19.9	5 0 58 <1 943 1133 1031 1256 2694 history2 4 1 <1 ×1 NEG history2 0.4 8.5 21.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982 method *ASTM D7844 *ASTM D7844	85 350 1800 1000 1100 3500 imit/base >25 >20 >20 imit/base >3 >20 >30 imit/base	18 0 56 1 922 1130 1019 1230 3573 current 4 < 4 <1 ► 50 NEG 0.6 9.9 21.7 current	6 0 61 <1 926 1075 1015 1198 3579 history1 3 7 16 NEG history1 0.3 7.7 19.9 history1	5 0 58 <1 943 1133 1031 1256 2694 history2 4 1 <1 <1 NEG history2 0.4 8.5 21.3 history2

Contact/Location: LOREN JACK - OILELD



OIL ANALYSIS REPORT



оп т0.25	VISUAL		method	limit/base	current	history1	history2		
+0.20	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE		
-0.15 ag	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE		
0.10 8	Silt	scalar	*Visual	NONE	NONE	NONE	NONE		
0.05	Debris	scalar	*Visual	NONE	NONE	NONE	NONE		
0.00	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE		
	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML		
Jan7/24	Odor	scalar	*Visual	NORML	NORML	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG		
	Free Water	scalar	*Visual		NEG	NEG	NEG		
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2		
	Visc @ 100°C	cSt	ASTM D445	15.3	14.3	14.2	15.0		
	GRAPHS								
	Iron (ppm)			10	Lead (ppm)				
21	200 Severe	1	1	81	Severa				
Juli/21 May20/22 ۸۸۹/۲۱		1	1						
Ma	4 Abnormal			E 4	Abaranal				
				21					
T0.25	50								
0.20		Jul1/21-	1/22			Jul1/21.	. 22/0		
0.15	0ct19/19 Jun26/20	Jul	May20/22	Jan7/24	0ct19/19 Jun26/20	Jul	May20/22		
0.15 age 0.10	Aluminum (ppm)		2		Chromium (pp	om)	2		
0.10 [©]	⁵⁰ T			50	T		· · · · · · · · · · · · · · · · · · ·		
0.05	40 - Severe	1		41) - Severe				
0.00	E ³⁰			= ³¹	•••				
May20/22 Jan7/24	E 20 - Abnormal			³⁰ 20	Abnormal				
Jai	10-			10)				
	0	_		_					
	0ct19/19 Jun26/20	Jul1/21	May20/22	Jan7/24	0ct19/19 Jun26/20	Jul1/21	May20/22		
	Jun Oct	7	May	Ja	Jun	7	May		
	Copper (ppm)				Silicon (ppm)				
	400 Severe			80	Severe	1	1		
	300			60	•				
	톨 200 -			E 41)				
					Abnormal		-		
	100-		1	2	J				
		21	22	24		21-	22		
	0ct19/19 Jun 26/20	Jul1/21	May20/22	Jan 7/24	0ct19/19 Jun26/20	Jul1/21	May20/22		
			Ma	,	,		Ma		
	Viscosity @ 100°C			10.0	Base Number				
	18 Abnormal			8.4 (0)/00 (m) KOH(0) (m) KOH(0)	0				
	Q		: 	Ξ 6.0					
	30 16 Base								
	Abnormal			un N 19 2.0					
	10								
	0ct19/19	Jul1/21.	0/22	Jan 7/24 -	0ct19/19 -	Jul1/21.	lay20/22 .		
	0ct1 Jun2	ηr	May20/22	Jan	0ct1 Jun2	ηr	May20/22		
Laboratory	: WearCheck USA - 501	Madiso	n Ave., Car	V. NC 27513	AL RERT I		ELD TRUCKING IN		
Sample No.	: PCA0083465	Recei		6 Feb 2024	,		767 OIL HILL ROAD		
	: 06092147	Teste	ted : 20 Feb 2024			EL DORADO, K			
Lab Number	· 10885000	Diagn	osed : 20	Feb 2024 - Jonat		US 67042			
Unique Number		: MOB 1 (Additional Tests: Glycol, TBN)							
Unique Number ertificate L2367 Test Package	: MOB 1 (Additional Te	sts: Glyc					t: LOREN JACI		
Unique Number	: MOB 1 (Additional Tes , contact Customer Servio	sts: Glyc ce at 1-8	00-237-136				t: LOREN JACI ⊉hogoboom.ne T		

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