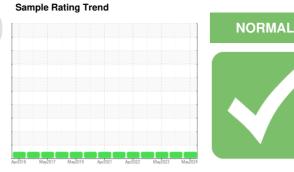


OIL ANALYSIS REPORT







Machine Id **Dutchess Country Social Services 2028619** Diesel Engine Fluid **DIESEL ENGINE OIL SAE 15W40 (4 GAL)**

SAMPLE INFORMATION method

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.

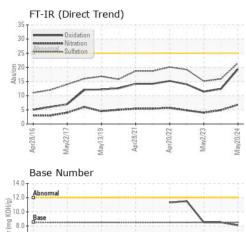
Fluid Condition

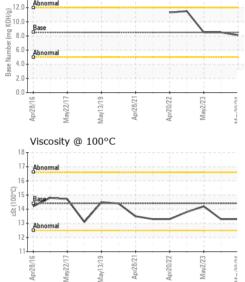
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		method	iimii/base	current	nistory i	nistoryz
Sample Number		Client Info		WC0921619	WC0799941	WC0799935
Sample Date		Client Info		20 May 2024	02 May 2023	02 May 2023
Machine Age	hrs	Client Info		0	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	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	current	history1	history2
Iron	ppm	ASTM D5185m	>100	2	2	<1
Chromium	ppm		>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m		<1	0	0
Aluminum	ppm	ASTM D5185m	>25	2	<1	<1
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	<1	<1	3
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 250	current		history2 10
	ppm ppm				history1 9 0	
Boron Barium	ppm	ASTM D5185m	250 10	14 0	9 0	10 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	250	14	9	10
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	14 0 83 0	9 0 56	10 0 48
Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	14 0 83	9 0 56 <1	10 0 48 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	14 0 83 0 890	9 0 56 <1 885	10 0 48 <1 786
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	14 0 83 0 890 1112	9 0 56 <1 885 1230	10 0 48 <1 786 1214
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350	14 0 83 0 890 1112 1139	9 0 56 <1 885 1230 1073	10 0 48 <1 786 1214 1017
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	250 10 100 450 3000 1150 1350 4250	14 0 83 0 890 1112 1139 1195 3570	9 0 56 <1 885 1230 1073 1311 4113	10 0 48 <1 786 1214 1017 1258 3967
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	250 10 100 450 3000 1150 1350 4250	14 0 83 0 890 1112 1139 1195 3570 current	9 0 56 <1 885 1230 1073 1311 4113 history1	10 0 48 <1 786 1214 1017 1258 3967 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	250 10 100 450 3000 1150 1350 4250 limit/base >25	14 0 83 0 890 1112 1139 1195 3570 current 3	9 0 56 <1 885 1230 1073 1311 4113 history1 2	10 0 48 <1 786 1214 1017 1258 3967 history2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	14 0 83 0 890 1112 1139 1195 3570 current 3 2	9 0 56 <1 885 1230 1073 1311 4113 history1 2 <1	10 0 48 <1 786 1214 1017 1258 3967 history2 2 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	14 0 83 0 890 1112 1139 1195 3570 current 3 2 2 2	9 0 56 <1 885 1230 1073 1311 4113 history1 2 2 <1 <1	10 0 48 <1 786 1214 1017 1258 3967 history2 2 2 <1 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	14 0 83 0 890 1112 1139 1195 3570 current 3 2 2 2	9 0 56 <1 885 1230 1073 1311 4113 history1 2 <1	10 0 48 <1 786 1214 1017 1258 3967 history2 2 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	14 0 83 0 890 1112 1139 1195 3570 current 3 2 2 2	9 0 56 <1 885 1230 1073 1311 4113 history1 2 2 <1 <1	10 0 48 <1 786 1214 1017 1258 3967 history2 2 2 <1 1
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	250 10 100 450 3000 1150 1350 4250 Imit/base >25 >158 >20 Imit/base	14 0 83 0 890 1112 1139 1195 3570 current 3 2 2 2 2	9 0 56 <1 885 1230 1073 1311 4113 history1 2 <1 <1 <1 history1	10 0 48 <1 786 1214 1017 1258 3967 history2 2 <1 1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 Imit/base >25 >158 >20 Imit/base >3	14 0 83 0 890 1112 1139 1195 3570 current 3 2 2 2 2 current 0.3	9 0 56 <1 885 1230 1073 1311 4113 history1 2 <1 <1 <1 history1 0.1	10 0 48 <1 786 1214 1017 1258 3967 history2 2 2 <1 1 history2 0
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	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20	14 0 83 0 890 1112 1139 1195 3570 current 3 2 2 current 0.3 6.8	9 0 56 <1 885 1230 1073 1311 4113 history1 2 <1 <1 <1 history1 0.1 4.9	10 0 48 <1 786 1214 1017 1258 3967 history2 2 2 <1 1 1 history2 0 4.0
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 D7844 *ASTM D7844	250 10 100 450 3000 1150 1350 4250 Iimit/base >25 >158 >20 Iimit/base >3 >20 >30	14 0 83 0 890 1112 1139 1195 3570 current 3 2 2 2 current 0.3 6.8 21.5 current	9 0 56 <1 885 1230 1073 1311 4113 history1 2 <1 <1 <1 history1 0.1 4.9 15.9 history1	10 0 48 <1 786 1214 1017 1258 3967 history2 2 <1 1 history2 0 4.0 15.1 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	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20 >3	14 0 83 0 890 1112 1139 1195 3570 current 3 2 2 2 2 current 0.3 6.8 21.5	9 0 56 <1 885 1230 1073 1311 4113 history1 2 <1 <1 <1 history1 0.1 4.9 15.9	10 0 48 <1 786 1214 1017 1258 3967 history2 2 <1 1 history2 0 4.0 15.1

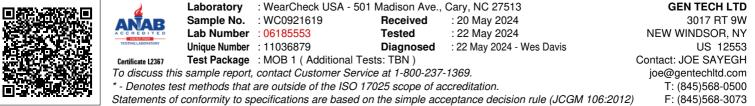


OIL ANALYSIS REPORT





VISUAL		meth	nod	limit/base	current	t	history	1	histo	ry2
Vhite Metal	scalar	*Visua	al	NONE	NONE	ľ	IONE		NONE	
ellow Metal	scalar	*Visual		NONE	-		NONE		NONE	
recipitate	scalar	*Visual		NONE			NONE		NONE	
Silt	scalar	*Visual		NONE	NONE	1	NONE		NONE	
Debris	scalar	*Visual		NONE	NONE	1	NONE		NONE	
Sand/Dirt	scalar	*Visual		NONE	NONE		IONE	NONE		
ppearance	scalar	*Visual		NORML	NORML		NORML		NORML	
)dor	scalar	*Visual		NORML	NORML		NORML	NORML		
mulsified Water	scalar	*Visual		>0.2	NEG		NEG		NEG	
Free Water	scalar	*Visua		20.L	NEG		NEG		NEG	
LUID PROPERTIES		method		limit/base	current	t	history1		history2	
/isc @ 100°C	cSt ASTM D445		14.4	13.3	1	3.3		14.2		
GRAPHS										
Iron (ppm)					Lead (ppn	n)				
Severe				10	Severe					
0			1	8						1
Abnormal				6 8	Abaranal					
				4						
				2						
71/ 10-	21	22	23		1 19	61	21	22	23	
Apr28/16 May22/17 May13/19	Apr28/21	Apr20/22	May2/23	May20/24	Apr28/16	May13/19	Apr28/21	Apr20/22	May2/23	
Aluminum (ppm)		-	_	2	Chromium	-		4	_	;
						r (ppin)				
Severe				4	0 - Severe					
Abnormal				_ 3	0					
				und 2	Abnormal					
				1						
	_				0					_
Apr28/16 May22/17 May13/19	Apr28/21	Apr20/22	May2/23	May20/24	Apr28/16	May13/19	Apr28/21	Apr20/22	May2/23	
Apr May May	Api	Apr	Ma	May	Apr May	May	Api	Apr	Ma	:
Copper (ppm)					Silicon (pp	om)				
Asveremal				8	Severe					
•				6	0					
				E 4	0					
				2	Abnormal					
16	21	22	23			19	21-	22	23	
Apr28/16 May22/17 May13/19	Apr28/21	Apr20/22	May2/23	May20/24	Apr28/16 May22/17	May13/19	Apr28/21	Apr20/22	May2/23	
E 2	4	A	2	N	-		4	A	2	:
Viscosity @ 100°C				15.	Base Num	ider				
Abnormal				(B/HO	Abnormal					
0				₽10.	Base					
Base			~	nber (Abnormal					
Base										
Abnormal	\sim			N 5.						
Base				.5 0 Base Mumber (mg	0					
Base	Apr28/21	Apr20/22	May2/23	May20/24	Apr28/16	May13/19	Apr28/21	Apr20/22	May2/23	



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Submitted By: CHRIS HALVORSEN

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