208-16
BLUE-MAR

Lubricant Analysis Report

North America: +1-866-341-0487

0	1	2	3	4
NORMAL		ABNORMAL		CRITICAL

Overall report severity based on comments.

Account Information		Component Information		Sample Information	
Account Number:	LUB307-0037-0000	Component ID:	8980 H	Tracking Number:	25062Y44243
Company Name:	PIDHERNEY'S	Secondary ID:	1T0333GKJRF457348	Lab Number:	E-045887
Contact:	CARLA MERKLIN	Component Type:	HYDRAULIC	Lab Location:	Edmonton
Address:	RANGE RD 70 PO BOX 940 ROCKY MOUNTAIN HOUSE, AB T4T 1A7 CA	Manufacturer:	JOHN DEERE	Data Analyst:	FLG
		Model:	333G	Sampled:	05-Dec-2025
		Application:	CONSTRUCTION	Submitted:	17-Dec-2025
Phone Number:	403-845-3072	Sump Capacity:		Received:	18-Dec-2025
				Completed:	19-Dec-2025
Filter Information		**Miscellaneous Information**		**Product Information**	
Filter Type:	Information Requested	Wildcard 1:	Your Rep.: Cary Maxwell	Product Manufacturer:	CHEVRON
Micron Rating:	0	Wildcard 2:	Ph:(403) 861-9957	Product Name:	RANDO HDZ
				Viscosity Grade:	ISO 46

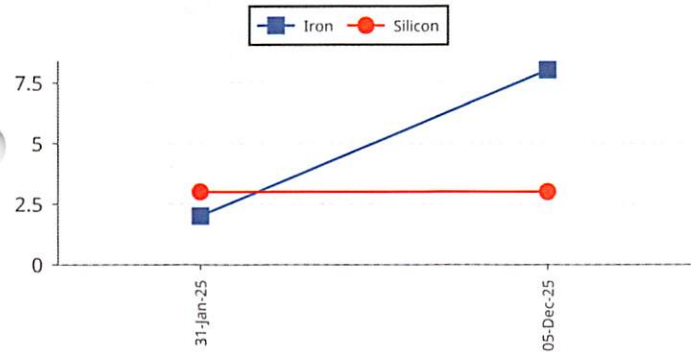
Comments	LUBRICANT CHANGE is suggested if not done at sampling time. OXIDATION is at a SIGNIFICANT level. Drain interval may be over-extended, or unit may be running too hot. Viscosity is SLIGHTLY LOW. Causes include contamination, incorrectly identified viscosity grade, or adding a different viscosity grade to the component. Flagged additives do not match current baseline reference for the specified product (this does not imply the lubricant does not meet proper API, SAE, or ISO classifications). Please provide this units sump capacity with next sample. Filter change acknowledged.

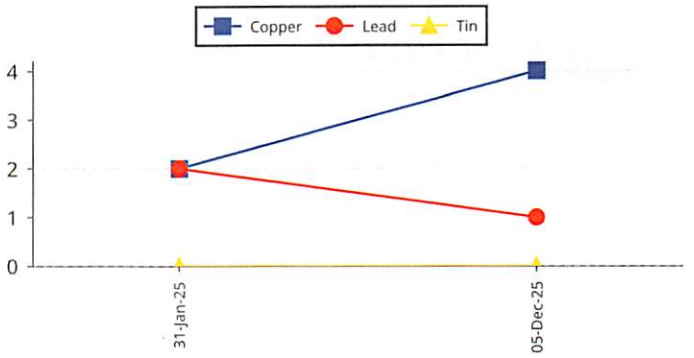
	Wear Metals (ppm)										Contaminant Metals (ppm)			Multi-Source Metals (ppm)						Additive Metals (ppm)				
Sample #	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
BL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	56	0	399	505
1	2	0	0	1	2	2	0	0	0	0	3	1	0	0	2	0	0	0	6	34	163	0	597	971
2	8	0	0	0	4	1	0	0	0	0	3	2	0	0	3	0	0	0	12	31	151	0	573	805

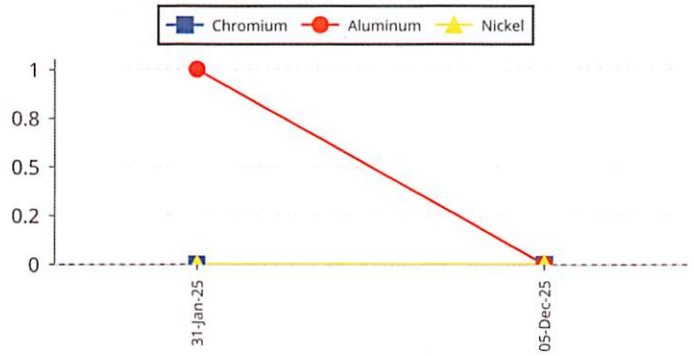
	Sample Information							Contaminants			Fluid Properties					
Sample #	Date Sampled	Date Received	Lube Time h	Unit Time h	Lube Change	Lube Added L	Filter Change	Fuel Dilution %	Soot %	Water %	Viscosity 40°C cSt	Viscosity 100 °C cSt	Acid Number mg KOH / g	Base Num. ASTM4739 mg KOH / g	Oxidation abs / cm	Nitration abs / 0.1mm
BL	10-May-2023	15-May-2023	0	0	Unk	0	Unk			<.1 - FTIR	47.8		0.52		16	2
1	31-Jan-2025	21-Feb-2025	0	496	No	0	No			<.1 - FTIR	44.2		0.91		40	3
2	05-Dec-2025	18-Dec-2025	1105	1105	No	0	Yes			<.1 - FTIR	40.3		0.92		33	2

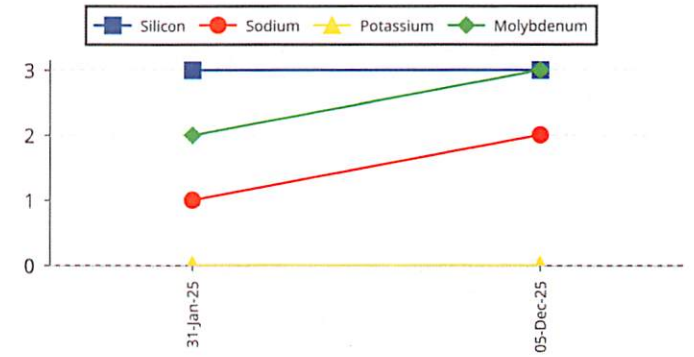
	Particle Count (particles/mL)										Additional Testing
Sample #	ISO Code Based On 4/6/14	> 4 particles / mL	> 6 particles / mL	> 10 particles / mL	> 14 particles / mL	> 21 particles / mL	> 38 particles / mL	> 70 particles / mL	> 100 particles / mL	Test Method	
BL	/ /										
1	/ /										
2	/ /										

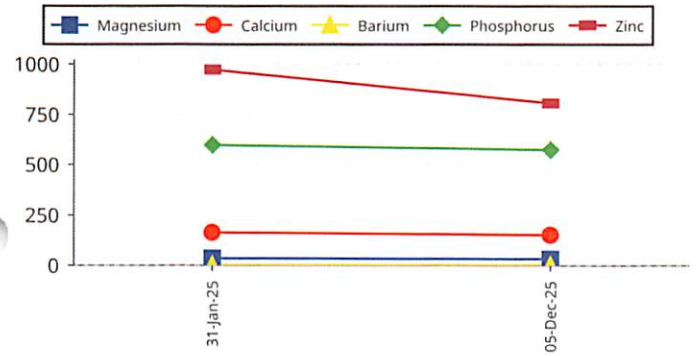
Historical Comments	1	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Acid Number is SLIGHTLY HIGH, which may be due to oxidation, contamination with an acidic product, extended drain interval, or lubricant mixing. Infrared results indicate beginning lube oxidation; Flagged additive levels are higher than expected for the identified lubricant. This may have been topped off with a different lubricant, the fluid may be misidentified, or a different lubricant or formulation may have been in use prior to a recent change. LUBRICANT TIME was not provided for this sample.

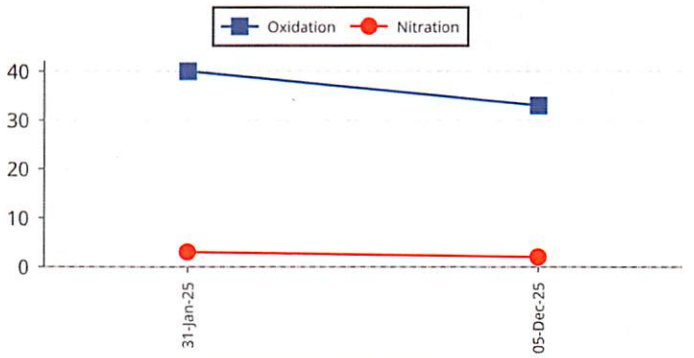

Iron
Silicon
7.5
5
2.5
0
31-Jan-25
05-Dec-25

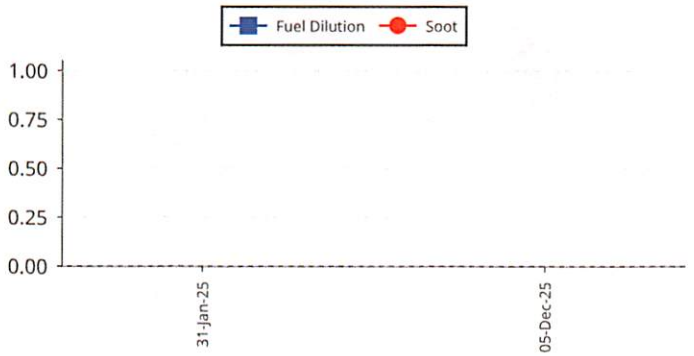

Copper
Lead
Tin
4
3
2
1
0
31-Jan-25
05-Dec-25

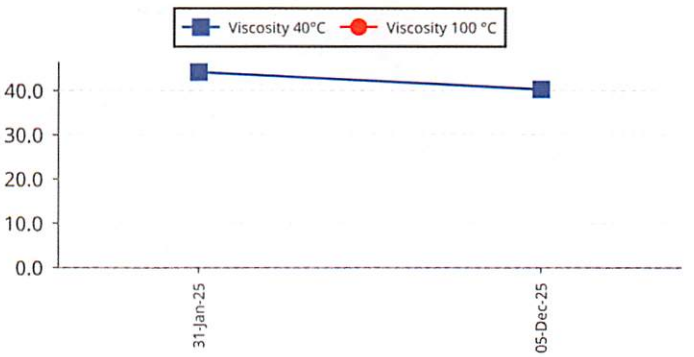

Chromium
Aluminum
Nickel
1
0.8
0.5
0.2
0
31-Jan-25
05-Dec-25

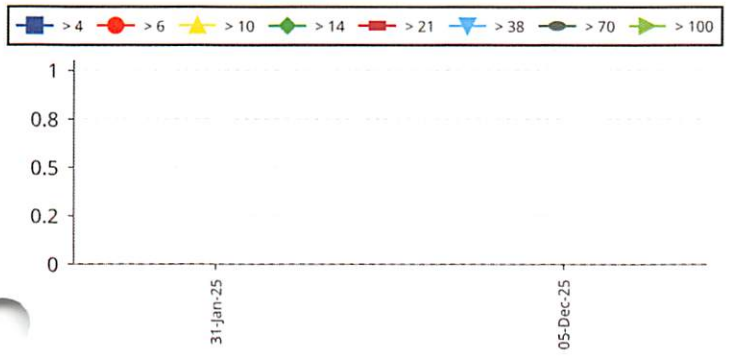

Silicon
Sodium
Potassium
Molybdenum
3
2
1
0
31-Jan-25
05-Dec-25

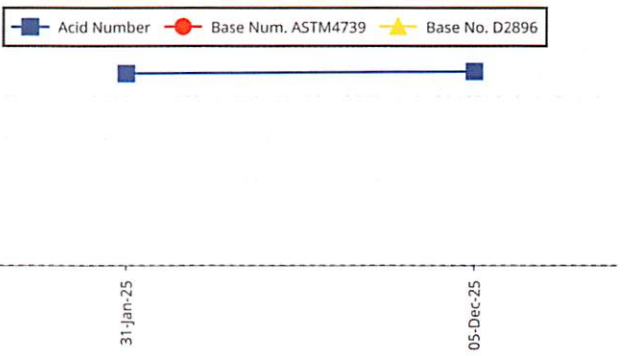

Magnesium
Calcium
Barium
Phosphorus
Zinc
1000
750
500
250
0
31-Jan-25
05-Dec-25


Oxidation
Nitration
40
30
20
10
0
31-Jan-25
05-Dec-25


Fuel Dilution
Soot
1.00
0.75
0.50
0.25
0.00
31-Jan-25
05-Dec-25


Viscosity 40°C
Viscosity 100 °C
40.0
30.0
20.0
10.0
0.0
31-Jan-25
05-Dec-25


> 4
> 6
> 10
> 14
> 21
> 38
> 70
> 100
1
0.8
0.5
0.2
0
31-Jan-25
05-Dec-25


Acid Number
Base Num. ASTM4739
Base No. D2896
0.8
0.6
0.4
0.2
0
31-Jan-25
05-Dec-25

Lubricant Analysis Report

Chevron LubeWatch®

North America: +1-866-341-0487

0	1	2	3	4
NORMAL		ABNORMAL		CRITICAL

Overall report severity based on comments.

Account Information		Component Information		Sample Information	
Account Number:	LUB307-0037-0000	Component ID:	8980 E	Tracking Number:	25062Y44287
Company Name:	PIDHERNEY'S	Secondary ID:	1T0333GKJRF457348	Lab Number:	E-045913
Contact:	CARLA MERKLIN	Component Type:	DIESEL ENGINE	Lab Location:	Edmonton
Address:	RANGE RD 70 PO BOX 940 ROCKY MOUNTAIN HOUSE, AB T4T 1A7 CA	Manufacturer:	YANMAR	Data Analyst:	FLG
		Model:	4TNV94-FHT	Sampled:	05-Dec-2025
		Application:	CONSTRUCTION	Submitted:	17-Dec-2025
Phone Number:	403-845-3072	Sump Capacity:		Received:	18-Dec-2025
				Completed:	19-Dec-2025
Filter Information		**Miscellaneous Information**		**Product Information**	
Filter Type:	Information Requested	Wildcard 1:	Your Rep.: Cary Maxwell	Product Manufacturer:	CHEVRON
Micron Rating:	0	Wildcard 2:	Ph:(403) 861-9957	Product Name:	DELO 400 XSP
		Wildcard 3:	_	Viscosity Grade:	SAE 5W40

Comments

Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Copper is at a MODERATE LEVEL; COPPER is most likely LEACHING into the oil via the OIL COOLER core tubing. This typically DOES NOT REQUIRE MAINTENANCE ACTION unless there is evidence of COOLANT in the oil. Iron is at a MINOR LEVEL. IRON SOURCES in engines can be cylinder liners, iron pistons, hardened steel camshafts, crankshafts, gears, hardened rocker arms, valve bridges,alloyed steel cam follower rollers, etc. Silicon is at a MINOR LEVEL; SILICON sources can be abrasives (dirt, Alumina Silica), seals and gasket material, lube additive or lube supplement, and/or environmental contaminant; Flagged additives do not match current baseline reference for the specified product (this does not imply the lubricant does not meet proper API, SAE, or ISO classifications). Please provide this units sump capacity with next sample. Lubricant and filter change acknowledged.

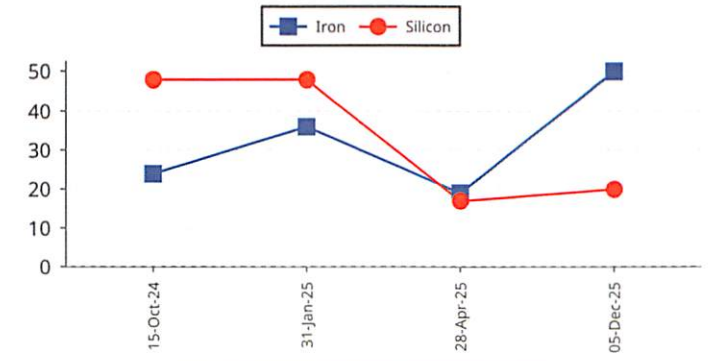
	Wear Metals (ppm)										Contaminant Metals (ppm)			Multi-Source Metals (ppm)						Additive Metals (ppm)				
Sample #	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
BL	3	0	0	1	0	1	0	0	0	0	6	3	3	1	0	0	0	1	98	775	1323	0	768	869
1	24	1	0	3	142	1	1	0	2	0	48	9	0	0	210	0	2	0	191	648	1698	3	888	1033
2	36	1	0	4	364	2	1	0	1	0	48	9	1	0	215	0	2	0	158	741	1867	3	880	1105
3	19	0	0	2	161	1	0	0	1	0	17	4	2	0	57	0	1	0	93	742	1515	1	780	909
4	50	1	0	4	167	1	0	0	0	0	20	5	3	0	59	0	1	0	48	778	1509	1	780	906

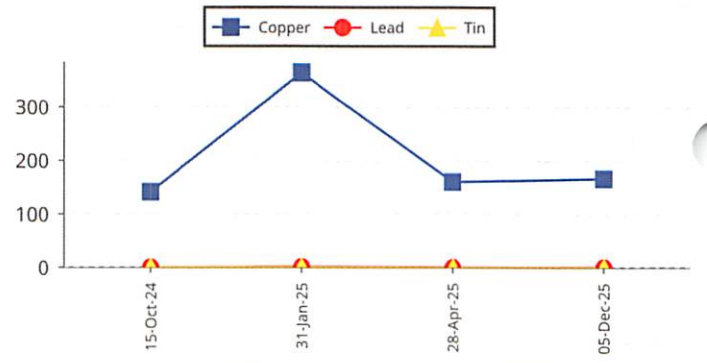
	Sample Information							Contaminants			Fluid Properties					
Sample #	Date Sampled	Date Received	Lube Time h	Unit Time h	Lube Change	Lube Added L	Filter Change	Fuel Dilution %	Soot %	Water %	Viscosity 40°C cSt	Viscosity 100 °C cSt	Acid Number mg KOH / g	Base Num. ASTM4739 mg KOH / g	Oxidation abs / cm	Nitration abs / 0.1mm
BL	01-Jan-2023	18-Sep-2023	0	0	Unk	0	Unk			<.1 - FTIR		15.3		6.21	10	7
1	15-Oct-2024	18-Oct-2024	0	205	No	0	No	0.2 - GC	<.1	<.1 - FTIR		12.1	2.06		17	8
2	31-Jan-2025	21-Feb-2025	0	496	Yes	0	Yes	1.0 - GC	0.1 - E2412	<.1 - FTIR		12.1	4.11		19	9
3	28-Apr-2025	04-Jun-2025	182	678	No	0	No	<2 - Estimate	<.1	<.1 - FTIR		13.3	3.49		13	9
4	05-Dec-2025	18-Dec-2025	609	1105	Yes	0	Yes	0.9 - GC	.3 - E2412	<.1 - FTIR		12.8	4.37		17	11

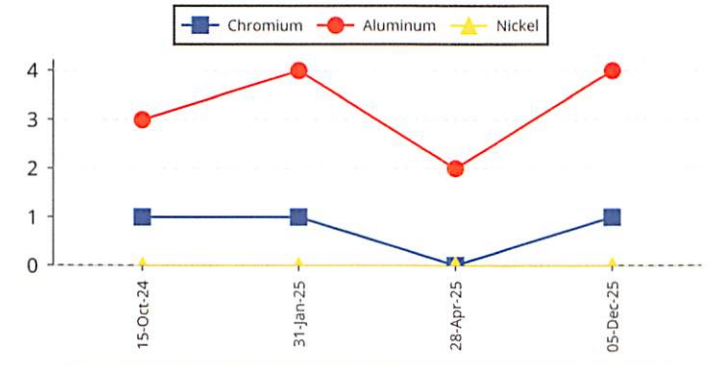
	Particle Count (particles/mL)										Additional Testing
Sample #	ISO Code Based On 4/6/14	> 4 particles / mL	> 6 particles / mL	> 10 particles / mL	> 14 particles / mL	> 21 particles / mL	> 38 particles / mL	> 70 particles / mL	> 100 particles / mL	Test Method	
BL	/ /										
1	/ /										
2	/ /										
3	/ /										
4	/ /										

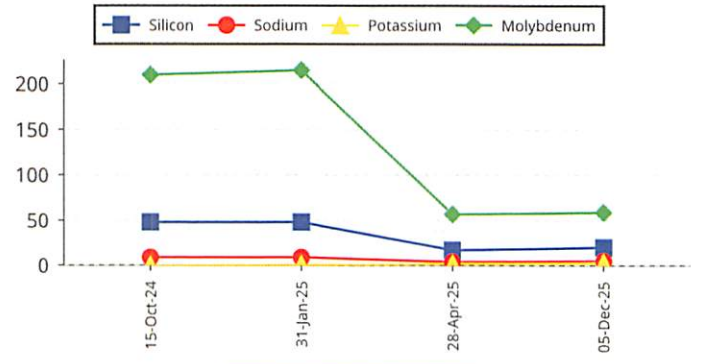
Comments are advisory only and are based on the sample information provided by the customer being valid. Results related only to the items tested. Missing fluid or component information limits the evaluation. No warranty is expressed or implied. Measurement uncertainty available upon request.

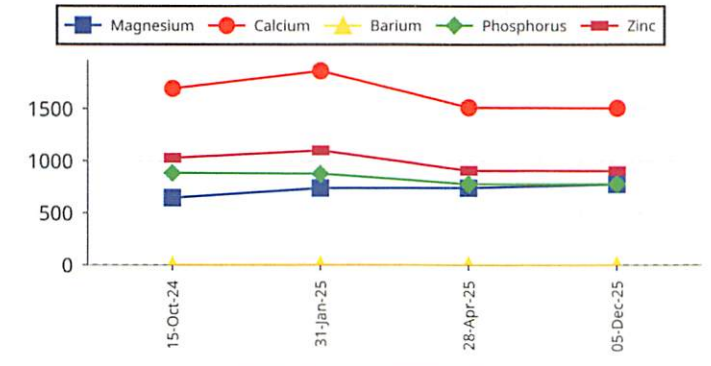
Historical Comments		
	1	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Suspect most of the copper may be coming from the lubricant cooler and/or EGR cooler (as applicable). Silicon is at a MODERATE LEVEL; SILICON sources can be abrasives (dirt, Alumina Silica), seals and gasket material, lube additive or lube supplement, and/or environmental contaminant; Viscosity is SLIGHTLY LOW. Causes include contamination, incorrectly identified viscosity grade, or adding a different viscosity grade to the component. Silver Possibly from solder; Flagged additive levels are different than what should be present for the identified lubricant. This may have been topped off with a different lubricant, the fluid may be misidentified, or a different lubricant or formulation may have been in use prior to a recent change. LUBRICANT TIME was not provided for this sample.
	2	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Flagged data may be 'wear-in' or contamination from overhauled or new unit; Copper is at a MODERATE LEVEL; COPPER is most likely LEACHING into the oil via the OIL COOLER core tubing. This typically DOES NOT REQUIRE MAINTENANCE ACTION unless there is evidence of COOLANT in the oil. Silicon/Dirt may be present due to new unit contamination; Lead possibly from solder; Viscosity is SLIGHTLY LOW. Causes include contamination, incorrectly identified viscosity grade, or adding a different viscosity grade to the component. Flagged additive levels are higher than expected for the identified lubricant. This may have been topped off with a different lubricant, the fluid may be misidentified, or a different lubricant or formulation may have been in use prior to a recent change. Lubricant and filter change acknowledged.
	3	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Copper is at a MODERATE LEVEL; COPPER is most likely LEACHING into the oil via the OIL COOLER core tubing. This typically DOES NOT REQUIRE MAINTENANCE ACTION unless there is evidence of COOLANT in the oil. Molybdenum is slightly high for this lubricant.

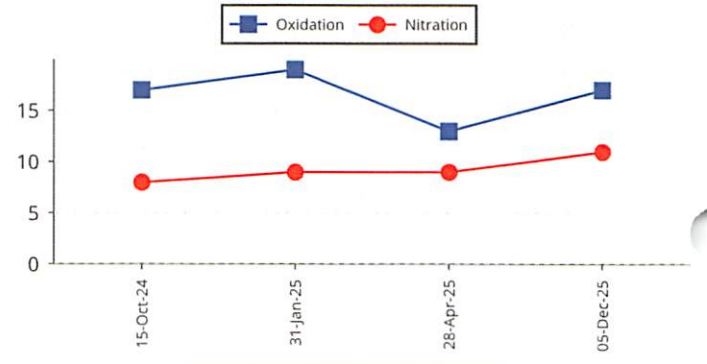

Iron
Silicon
50
40
30
20
10
0
15-Oct-24
31-Jan-25
28-Apr-25
05-Dec-25

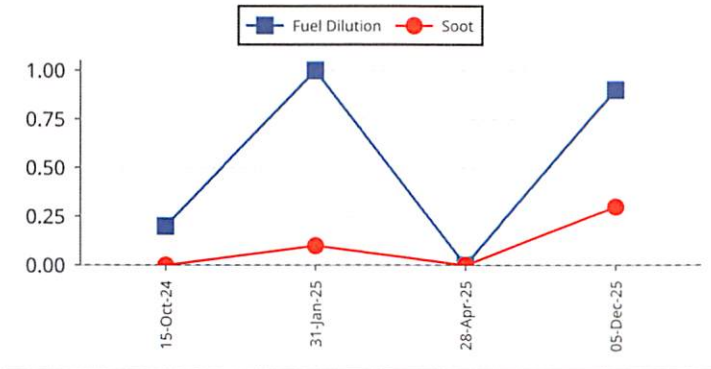

Copper
Lead
Tin
300
200
100
0
15-Oct-24
31-Jan-25
28-Apr-25
05-Dec-25

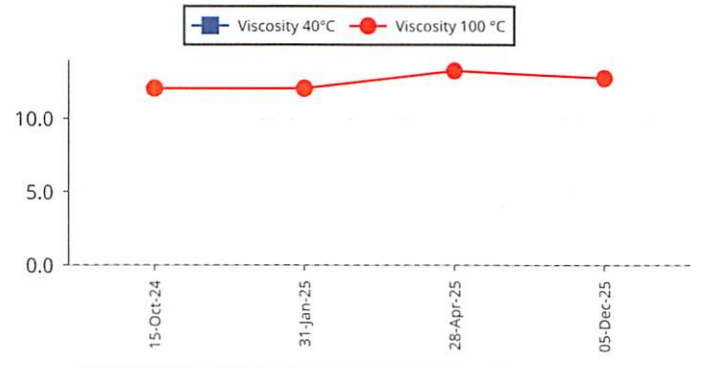

Chromium
Aluminum
Nickel
4
3
2
1
0
15-Oct-24
31-Jan-25
28-Apr-25
05-Dec-25

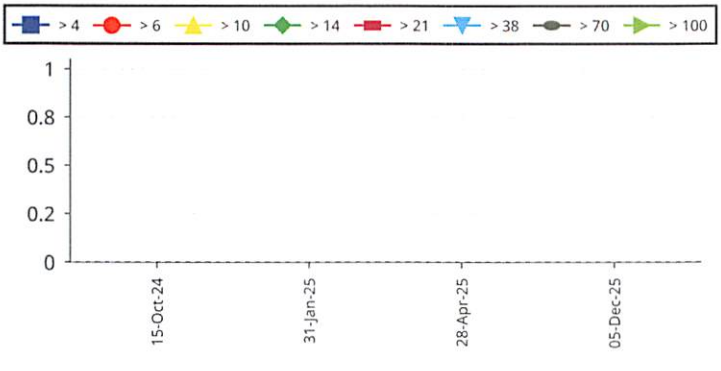

Silicon
Sodium
Potassium
Molybdenum
200
150
100
50
0
15-Oct-24
31-Jan-25
28-Apr-25
05-Dec-25

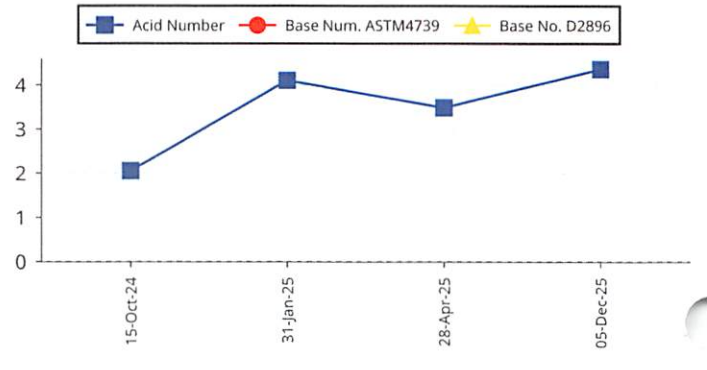

Magnesium
Calcium
Barium
Phosphorus
Zinc
1500
1000
500
0
15-Oct-24
31-Jan-25
28-Apr-25
05-Dec-25


Oxidation
Nitration
15
10
5
0
15-Oct-24
31-Jan-25
28-Apr-25
05-Dec-25


Fuel Dilution
Soot
1.00
0.75
0.50
0.25
0.00
15-Oct-24
31-Jan-25
28-Apr-25
05-Dec-25


Viscosity 40°C
Viscosity 100 °C
10.0
5.0
0.0
15-Oct-24
31-Jan-25
28-Apr-25
05-Dec-25


> 4
> 6
> 10
> 14
> 21
> 38
> 70
> 100
1
0.8
0.5
0.2
0
15-Oct-24
31-Jan-25
28-Apr-25
05-Dec-25


Acid Number
Base Num. ASTM4739
Base No. D2896
4
3
2
1
0
15-Oct-24
31-Jan-25
28-Apr-25
05-Dec-25