

## Machine Id **222054** [] Component **Diesel Engine** Fluid **DIESEL ENGINE OIL SAE 10W30 (--- QTS)**

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

## **WEAR**

All component wear rates are normal.

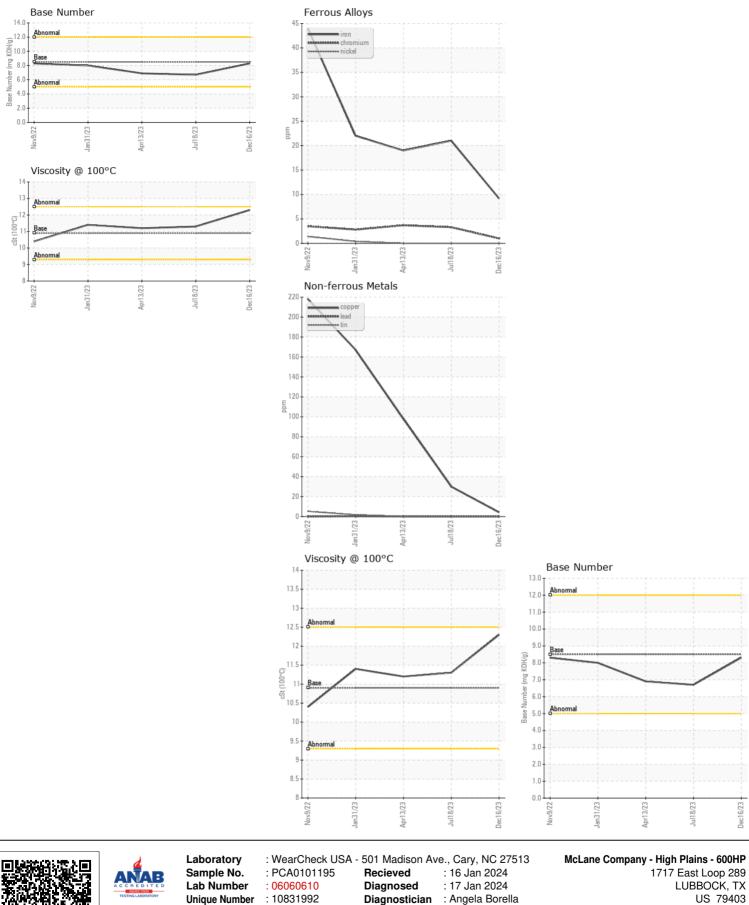
## CONTAMINATION

Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

Test         UOM         Method         LimitAb         Current         History1         History2           Sample Number         Client Info         PCA0073120         PCA073120         PCA073120         PCA073120         PCA073120         PCA0733120         PCA0731310         PCA0733130						· · · · · ·		
Sample Date         Client Info         16 Dec 2023         18 Jul 2023         13 Apr 2023           Machine Age         mls         Client Info         0         30000         30000           Oil Age         mls         Client Info         0         30000         30000           Oil Changed         Client Info         Changed         Chan		Test	UOM	Method	Limit/Abn	Current		History2
Machine Age         mis         Client Info         186164         137134         98073           Oil Age         mis         Client Info         0         30000         30000           Filter Age         Client Info         Changed         Changed         Changed         Changed           Sample Status         Client Info         Changed         Changed         Changed         Changed           Iron         ppm         ASTM D5185m         >20         1         3         4           Nickel         ppm         ASTM D5185m         >20         1         3         4           Nickel         ppm         ASTM D5185m         >20         1         3         4           Nickel         ppm         ASTM D5185m         >20         6         15         17           Lead         ppm         ASTM D5185m         >20         6         10         0         10           Vanadium         ppm         ASTM D5185m         >30         0         0         <11         0           Vanadium         ppm         ASTM D5185m         >20         8         31         31           Filter Mage         WC Method         >5         <1.0 <td< th=""><th rowspan="4"></th><th>Sample Number</th><th></th><th>Client Info</th><th></th><th>PCA0101195</th><th>PCA0073120</th><th>PCA0073136</th></td<>		Sample Number		Client Info		PCA0101195	PCA0073120	PCA0073136
Oil Age         mis         Client Info         0         30000         30000           Filter Age         mis         Client Info         Changed         NORMAL		Sample Date		Client Info		16 Dec 2023	18 Jul 2023	13 Apr 2023
Filter Age         mls         Client Info         0         30000         30000           Oil Changed         Client Info         Changed         Cha		Machine Age	mls	Client Info		186164	137134	98073
Oil Changed Filter Changed Sample Status         Client Info         Changed Changed NORMAL         Changed NORMAL         Changed NORMAL </th <th>Oil Age</th> <th>mls</th> <th>Client Info</th> <th></th> <th>0</th> <th>30000</th> <th>30000</th>		Oil Age	mls	Client Info		0	30000	30000
Filter Changed Sample Status         Client Info         Changed NORMAL         NORMAL         Changed NORMAL         Changed NORMA         Changed NORMA <thchanged< th=""><th></th><th>Filter Age</th><th>mls</th><th>Client Info</th><th></th><th>0</th><th>30000</th><th>30000</th></thchanged<>		Filter Age	mls	Client Info		0	30000	30000
Sample Status         NORMAL         NORMAL         NORMAL         NORMAL         NORMAL           Iron         ppm         ASTM D5185m         >100         9         21         19           Chromium         ppm         ASTM D5185m         >20         1         3         4           Nickel         ppm         ASTM D5185m         >4         0         0         0           Titanium         ppm         ASTM D5185m         >3         0         0         <1           Aluminum         ppm         ASTM D5185m         >30         0         0         0           Lead         ppm         ASTM D5185m         >30         4         30         98           Tin         ppm         ASTM D5185m         >15         0         0         <1         0           Vanadium         ppm         ASTM D5185m         >25         4         3         3         11         31           Fuel         WC Method         >5         <1.0         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG         NEG           Glycol         WC Method         >0.2		Oil Changed		Client Info		Changed	Changed	Changed
Iron         ppm         ASTM D5185m         >100         9         21         19           Chromium         ppm         ASTM D5185m         >20         1         3         4           Nickel         ppm         ASTM D5185m         >4         0         0         0           Titanium         ppm         ASTM D5185m         >20         6         15         17           Lead         ppm         ASTM D5185m         >20         6         15         17           Lead         ppm         ASTM D5185m         >20         6         15         17           Lead         ppm         ASTM D5185m         >30         4         30         98           Tin         ppm         ASTM D5185m         >15         0         <1         0           Vanadium         ppm         ASTM D5185m         >25         4         3         3           Potassium         ppm         ASTM D5185m         >20         8         311         31           Fuel         WC Method         >5         <1.0         <1.0         <1.0         <1.0           Vater         WC Method         >0.2         NEG         NEG         NEG		Filter Changed		Client Info		Changed	Changed	Changed
Chromium         ppm         ASTM D5185m         >20         1         3         4           Nickel         ppm         ASTM D5185m         >4         0         0         0           Titanium         ppm         ASTM D5185m         >3         0         0         <1           Aluminum         ppm         ASTM D5185m         >30         0         0         <1           Lead         ppm         ASTM D5185m         >30         4         30         98           Tin         ppm         ASTM D5185m         >330         4         30         98           Tin         ppm         ASTM D5185m         >15         0         <1         0           Vanadium         ppm         ASTM D5185m         >20         8         31         31           Vellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yula         WC Method         >0.2         NEG         <		Sample Status				NORMAL	NORMAL	NORMAL
Chromium         ppm         ASTM D5185m         >20         1         3         4           Nickel         ppm         ASTM D5185m         >4         0         0         0           Titanium         ppm         ASTM D5185m         >3         0         0         <1           Aluminum         ppm         ASTM D5185m         >30         0         0         <1           Lead         ppm         ASTM D5185m         >30         4         30         98           Tin         ppm         ASTM D5185m         >330         4         30         98           Tin         ppm         ASTM D5185m         >15         0         <1         0           Vanadium         ppm         ASTM D5185m         >20         8         31         31           Vellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yula         WC Method         >0.2         NEG         <								
Nickel         ppm         ASTM D5185m         >1         0         0         0           Titanium         ppm         ASTM D5185m         >3         0         0         <1         0           Silver         ppm         ASTM D5185m         >20         6         15         17           Lead         ppm         ASTM D5185m         >20         6         15         17           Lead         ppm         ASTM D5185m         >20         6         15         17           Lead         ppm         ASTM D5185m         >20         6         0         0         <1           Quadium         ppm         ASTM D5185m         >15         0         0         <1         0           Vanadium         ppm         ASTM D5185m         >15         0         <1         0         0         <1         0         0         <1         0         0         <1         0         0         <1         0         0         <1         0         0         <1         0         0         <1         0         0         <1         0         0         0         1         3         3         3         1         1			ppm		1.00	-		
Titanium         ppm         ASTM D5185m         0         <1			ppm			-		
Silver         ppm         ASTM D5185m         >3         0         0         <1			ppm		>4	-		
Aluminum         ppm         ASTM D5185m         >20         6         15         17           Lead         ppm         ASTM D5185m         >40         0         0         0         0           Copper         ppm         ASTM D5185m         >330         4         30         98           Tin         ppm         ASTM D5185m         0         0         <1         0           Wanadium         ppm         ASTM D5185m         >15         0         <1         0           White Metal         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Silicon         ppm         ASTM D5185m         >25         4         3         3         1           Fuel         WC Method         >5         <1.0         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG           Soot %         %         'ASTM D7142<>30         18.8         20.6         17.9           Silt         scalar         'V			ppm			-		-
Lead         ppm         ASTM D5185m         >40         0         0         0         0           Copper         ppm         ASTM D5185m         >330         4         30         98           Tin         ppm         ASTM D5185m         >15         0         0         <1           Vanadium         ppm         ASTM D5185m         0         <1         0           White Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Silicon         ppm         ASTM D5185m<>20         8         31         31           Fuel         WC Method         >5         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG           Sulfation         Abs/Imm< *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/Imm< *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/Imm< *ASTM D7624         >20         7.0         8.5         7.4 <th></th> <th>ppm</th> <th></th> <th></th> <th>-</th> <th>÷</th> <th></th>			ppm			-	÷	
Copper         ppm         ASTM D5185m         >330         4         30         98           Tin         ppm         ASTM D5185m         >15         0         0         <1           Vanadium         ppm         ASTM D5185m         0         0         <1         0           White Metal         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Silicon         ppm         ASTM D5185m         >20         8         31         31           Fuel         WC Method         >5         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         >0.2         NEG         NEG         NEG           Solfation         Abs/Imm         *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/Imm         *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/Imm         *ASTM D7614         >30 <th></th> <th>ppm</th> <th></th> <th></th> <th>-</th> <th></th> <th></th>			ppm			-		
Tin         ppm         ASTM D5185m         >15         0         <1						-	-	-
Vanadium         ppm         ASTM D5185m         0         <1			ppm			-		
White Metal Yellow Metal         scalar scalar         *Visual         NONE         NONE         NONE         NONE           Silicon         ppm         ASTM D5185m         >25         4         3         3           Potassium         ppm         ASTM D5185m         >20         8         31         31           Fuel         WC Method         >5         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         >0.2         NEG         NEG         NEG           Soot %         %         *ASTM D7844         >3         0.3         0.5         0.4           Nitration         Abs/Imm         *ASTM D7844         >30         18.8         20.6         17.9           Silt         scalar         *Visual         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NONE         NONE         NONE         NONE           Appearance         scalar         *Visual         NORML         NORML         NORML         NORML           Agrearian         ppm         ASTM D5185m         1         3 <th></th> <th>ppm</th> <th></th> <th>&gt;15</th> <th>-</th> <th></th> <th></th>			ppm		>15	-		
Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Silicon         ppm         ASTM D5185m         >25         4         3         3           Potassium         ppm         ASTM D5185m         >20         8         31         31           Fuel         WC Method         >5         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         >0.2         NEG         NEG         NEG           Soot %         %         *ASTM D7844         >3         0.3         0.5         0.4           Nitration         Abs/.mm         *ASTM D7644         >20         7.0         8.5         7.4           Sulfation         Abs/.imm         *ASTM D7644         >30         18.8         20.6         17.9           Silt         scalar         *Visual         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NORML         NORML         NORML         NORML           Agpearance         scalar         *Visual         NORML         NORML						0		÷
Silicon         ppm         ASTM D5185m         >25         4         3         3           Potassium         ppm         ASTM D5185m         >20         8         31         31           Fuel         WC Method         >5         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         >0.2         NEG         NEG         NEG           Soot %         %         "ASTM D7844         >3         0.3         0.5         0.4           Nitration         Abs/.tmm<"ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/.tmm<"ASTM D715         >30         18.8         20.6         17.9           Silt         scalar         *Visual         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Appearance         scalar         *Visual         NORML         NORML         NORML         NORML         NORML           Odor         scalar         *Visual         >0.2         NEG		White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Potassium         ppm         ASTM D5185m         >20         8         31         31           Fuel         WC Method         >5         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         0.2         NEG         NEG         NEG           Soot %         %         *ASTM D7844         >3         0.3         0.5         0.4           Nitration         Abs/cm         *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/cm         *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/cm         *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/cm         *ASTM D715         >30         18.8         20.6         17.9           Silt         scalar         *Visual         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NORML         NORML         NORML         NORML           Odor         scalar         *Visual         NORM         NORML <td< th=""><th></th><th>Yellow Metal</th><th>scalar</th><th>*Visual</th><th>NONE</th><th>NONE</th><th>NONE</th><th>NONE</th></td<>		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Potassium         ppm         ASTM D5185m         >20         8         31         31           Fuel         WC Method         >5         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         0.2         NEG         NEG         NEG           Soot %         %         *ASTM D7844         >3         0.3         0.5         0.4           Nitration         Abs/cm         *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/cm         *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/cm         *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/cm         *ASTM D715         >30         18.8         20.6         17.9           Silt         scalar         *Visual         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NORML         NORML         NORML         NORML           Odor         scalar         *Visual         NORM         NORML <td< th=""><th rowspan="3"></th><th>Ciliara</th><th></th><th></th><th>05</th><th>4</th><th>0</th><th>0</th></td<>		Ciliara			05	4	0	0
Fuel         WC Method         >5         <1.0						-		
Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         NEG         NEG         NEG           Soot %         %         *ASTM D7844         >3         0.3         0.5         0.4           Nitration         Abs/.tmm         *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/.tmm         *ASTM D7615         >30         18.8         20.6         17.9           Silt         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Sand/Dirt         scalar         *Visual         NOR         NORML         NORML         NORE         NORML         S			ррпі			-	÷.	÷.
Glycol         WC Method         NEG         NEG         NEG           Soot %         %         *ASTM D7844         >3         0.3         0.5         0.4           Nitration         Abs/cm         *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/cm         *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/cm         *ASTM D7615         >30         18.8         20.6         17.9           Silt         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Appearance         scalar         *Visual         NORML         Sodium         NOR								
Soot %         %         *ASTM D7844         >3         0.3         0.5         0.4           Nitration         Abs/cm         *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/.tmm         *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/.tmm         *ASTM D7415         >30         18.8         20.6         17.9           Silt         scalar         *Visual         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NONE         NONE         NONE         NONE           Sand/Dirt         scalar         *Visual         NORML         NORML         NORML         NORML         NORML           Appearance         scalar         *Visual         NORML         NORML         NORML         NORML         NORML           Odor         scalar         *Visual         NORM         NORML         NORML         NORML         NORML           Emulsified Water         scalar         *Visual         >0.2         NEG         NEG         NEG           Sodium         ppm         ASTM D5185m         10         0         0					>0.2			
Nitration         Abs/cm         *ASTM D7624         >20         7.0         8.5         7.4           Sulfation         Abs/.tmm         *ASTM D7415         >30         18.8         20.6         17.9           Silt         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Sand/Dirt         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Appearance         scalar         *Visual         NORML         NO		,	0/		. 0			
SulfationAbs/.1mm*ASTM D7415>3018.820.617.9Siltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLOdorscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m132BoronppmASTM D5185m10000MolybdenumppmASTM D5185m100586463ManganeseppmASTM D5185m45085310431003CalciumppmASTM D5185m115095210211024PhosphorusppmASTM D5185m1350117712911309SulfurppmASTM D5185m4250271328042990OxidationAbs/.1mm*ASTM D7414>2514.517.315.5Base Number (BN)mg KOHgASTM D28968.58.36.76.9								
Siltscalar*VisualNONENONENONENONENONEDebrisscalar*VisualNONENONENONENONENONESand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m2502602BoronppmASTM D5185m10000MolybdenumppmASTM D5185m100586463ManganeseppmASTM D5185m1005811331003CalciumppmASTM D5185m115095210211024ZincppmASTM D5185m1350117712911309SulfurppmASTM D5185m4250271328042990OxidationAbs/.tim*ASTM D7414>2514.517.315.5Base Number (BN)mg KOHgASTM D28968.58.36.76.9						-		
Debrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m2502602BoronppmASTM D5185m10000MolybdenumppmASTM D5185m100586463ManganeseppmASTM D5185m1005811331003CalciumppmASTM D5185m300096611881126PhosphorusppmASTM D5185m115095210211024ZincppmASTM D5185m1350117712911309SulfurppmASTM D5185m4250271328042990OxidationAbs/timm*ASTM D7414>2514.517.315.5Base Number (BN)mg KOHgASTM D28968.58.36.76.9								
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m132BoronppmASTM D5185m2502602BariumppmASTM D5185m100000MolybdenumppmASTM D5185m100586463ManganeseppmASTM D5185m00<111MagnesiumppmASTM D5185m300096611881126PhosphorusppmASTM D5185m115095210211024ZincppmASTM D5185m1350117712911309SulfurppmASTM D5185m4250271328042990OxidationAbs/.tmm*ASTM D7414>2514.517.315.5Base Number (BN)mg KOH/gASTM D28968.58.36.76.9		•						
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m132BoronppmASTM D5185m2502602BariumppmASTM D5185m10000MolybdenumppmASTM D5185m100586463ManganeseppmASTM D5185m0<11MagnesiumppmASTM D5185m45085310431003CalciumppmASTM D5185m115095210211024ZincppmASTM D5185m1350117712911309SulfurppmASTM D5185m4250271328042990OxidationAbs/.tmm*ASTM D7414>2514.517.315.5Base Number (BN)mg KOH/gASTM D28968.58.36.76.9								
Odorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m132BoronppmASTM D5185m2502602BariumppmASTM D5185m10000MolybdenumppmASTM D5185m100586463ManganeseppmASTM D5185m0<11MagnesiumppmASTM D5185m45085310431003CalciumppmASTM D5185m115095210211024ZincppmASTM D5185m1350117712911309SulfurppmASTM D5185m4250271328042990OxidationAbs/.imm*ASTM D7414>2514.517.315.5Base Number (BN)mg KOH/gASTM D28968.58.36.76.9						-		
Emulsified Water         scalar         *Visual         >0.2         NEG         NEG         NEG           Sodium         ppm         ASTM D5185m         1         3         2           Boron         ppm         ASTM D5185m         250         26         0         2           Barium         ppm         ASTM D5185m         10         0         0         0           Molybdenum         ppm         ASTM D5185m         100         58         64         63           Manganese         ppm         ASTM D5185m         100         58         64         63           Magnesium         ppm         ASTM D5185m         0         <1         1           Magnesium         ppm         ASTM D5185m         450         853         1043         1003           Calcium         ppm         ASTM D5185m         3000         966         1188         1126           Phosphorus         ppm         ASTM D5185m         1350         1177         1291         1309           Sulfur         ppm         ASTM D5185m         4250         2713         2804         2990           Oxidation         Abs/.timm<*ASTM D7414         >25         14.5 <t< th=""><th></th><th></th><th></th><th></th><th></th><th>-</th><th></th><th></th></t<>						-		
Sodium         ppm         ASTM D5185m         1         3         2           Boron         ppm         ASTM D5185m         250         26         0         2           Barium         ppm         ASTM D5185m         10         0         0         0           Molybdenum         ppm         ASTM D5185m         100         58         64         63           Manganese         ppm         ASTM D5185m         100         58         64         63           Magnesium         ppm         ASTM D5185m         100         58         64         63           Calcium         ppm         ASTM D5185m         450         853         1043         1003           Calcium         ppm         ASTM D5185m         3000         966         1188         1126           Phosphorus         ppm         ASTM D5185m         1350         1177         1291         1309           Sulfur         ppm         ASTM D5185m         4250         2713         2804         2990           Oxidation         Abs/.tmm<*ASTM D7414         >25         14.5         17.3         15.5           Base Number (BN)         mg KOH/g         ASTM D2896         8.5						-		
Boron         ppm         ASTM D5185m         250         26         0         2           Barium         ppm         ASTM D5185m         10         0         0         0           Molybdenum         ppm         ASTM D5185m         100         58         64         63           Manganese         ppm         ASTM D5185m         00         <1         1           Magnesium         ppm         ASTM D5185m         450         853         1043         1003           Calcium         ppm         ASTM D5185m         3000         966         1188         1126           Phosphorus         ppm         ASTM D5185m         1150         952         1021         1024           Zinc         ppm         ASTM D5185m         1350         1177         1291         1309           Sulfur         ppm         ASTM D5185m         4250         2713         2804         2990           Oxidation         Abs/.tmm<*ASTM D7414         >25         14.5         17.3         15.5           Base Number (BN)         mg KOH/g         ASTM D2896         8.5         8.3         6.7         6.9			Scalai	Visual	20.2		NLQ	NLG
Barium         ppm         ASTM D5185m         10         0         0         0           Molybdenum         ppm         ASTM D5185m         100 <b>58</b> 64         63           Manganese         ppm         ASTM D5185m         100 <b>58</b> 64         63           Magnesium         ppm         ASTM D5185m         0         <1         1           Magnesium         ppm         ASTM D5185m         450 <b>853</b> 1043         1003           Calcium         ppm         ASTM D5185m         3000 <b>966</b> 1188         1126           Phosphorus         ppm         ASTM D5185m         1150 <b>952</b> 1021         1024           Zinc         ppm         ASTM D5185m         1350 <b>1177</b> 1291         1309           Sulfur         ppm         ASTM D5185m         4250 <b>2713</b> 2804         2990           Oxidation         Abs/.tmm<*ASTM D7414         >25 <b>14.5</b> 17.3         15.5           Base Number (BN)         mg KOH/g         ASTM D2896         8.5 <b>8.3</b> 6.7         6.9		Sodium	ppm	ASTM D5185m		1	3	2
Barium         ppm         ASTM D5185m         10         0         0         0           Molybdenum         ppm         ASTM D5185m         100         58         64         63           Manganese         ppm         ASTM D5185m         100         58         64         63           Magnesium         ppm         ASTM D5185m         450         853         1043         1003           Calcium         ppm         ASTM D5185m         3000         966         1188         1126           Phosphorus         ppm         ASTM D5185m         1150         952         1021         1024           Zinc         ppm         ASTM D5185m         1350         1177         1291         1309           Sulfur         ppm         ASTM D5185m         4250         2713         2804         2990           Oxidation         Abs/.tmm<*ASTM D7414         >25         14.5         17.3         15.5           Base Number (BN)         mg KOH/g         ASTM D2896         8.5         8.3         6.7         6.9		Boron	ppm	ASTM D5185m	250	26	0	2
Molybdenum         ppm         ASTM D5185m         100         58         64         63           Manganese         ppm         ASTM D5185m         0         <1         1           Magnesium         ppm         ASTM D5185m         450         853         1043         1003           Calcium         ppm         ASTM D5185m         3000         966         1188         1126           Phosphorus         ppm         ASTM D5185m         1150         952         1021         1024           Zinc         ppm         ASTM D5185m         1350         1177         1291         1309           Sulfur         ppm         ASTM D5185m         4250         2713         2804         2990           Oxidation         Abs/.tmm         *ASTM D7414         >25         14.5         17.3         15.5           Base Number (BN)         mg KOH/g         ASTM D2896         8.5         8.3         6.7         6.9		Barium		ASTM D5185m	10	0	0	0
Manganese         ppm         ASTM D5185m         0         <1		Molybdenum		ASTM D5185m	100	58	64	63
Magnesium         ppm         ASTM D5185m         450         853         1043         1003           Calcium         ppm         ASTM D5185m         3000         966         1188         1126           Phosphorus         ppm         ASTM D5185m         1150         952         1021         1024           Zinc         ppm         ASTM D5185m         1350         1177         1291         1309           Sulfur         ppm         ASTM D5185m         4250         2713         2804         2990           Oxidation         Abs/.tmm         *ASTM D7414         >25         14.5         17.3         15.5           Base Number (BN)         mg KOH/g         ASTM D2896         8.5         8.3         6.7         6.9		-		ASTM D5185m		0	<1	1
Phosphorus         ppm         ASTM D5185m         1150         952         1021         1024           Zinc         ppm         ASTM D5185m         1350         1177         1291         1309           Sulfur         ppm         ASTM D5185m         4250         2713         2804         2990           Oxidation         Abs/.tmm         *ASTM D7414         >25         14.5         17.3         15.5           Base Number (BN)         mg KOH/g         ASTM D2896         8.5         8.3         6.7         6.9		Magnesium	ppm	ASTM D5185m	450	853	1043	1003
Phosphorus         ppm         ASTM D5185m         1150         952         1021         1024           Zinc         ppm         ASTM D5185m         1350         1177         1291         1309           Sulfur         ppm         ASTM D5185m         4250         2713         2804         2990           Oxidation         Abs/.tmm         *ASTM D7414         >25         14.5         17.3         15.5           Base Number (BN)         mg KOH/g         ASTM D2896         8.5         8.3         6.7         6.9		Calcium		ASTM D5185m	3000		1188	1126
Zinc         ppm         ASTM D5185m         1350         1177         1291         1309           Sulfur         ppm         ASTM D5185m         4250         2713         2804         2990           Oxidation         Abs/.tmm         *ASTM D7414         >25         14.5         17.3         15.5           Base Number (BN)         mg KOH/g         ASTM D2896         8.5         8.3         6.7         6.9		Phosphorus	ppm	ASTM D5185m	1150	952	1021	1024
Sulfur         ppm         ASTM D5185m         4250         2713         2804         2990           Oxidation         Abs/.tmm         *ASTM D7414         >25         14.5         17.3         15.5           Base Number (BN)         mg KOH/g         ASTM D2896         8.5         8.3         6.7         6.9		·			1350			
Oxidation         Abs/.1mm         *ASTM D7414         >25         14.5         17.3         15.5           Base Number (BN)         mg KOH/g         ASTM D2896         8.5         8.3         6.7         6.9		Sulfur	ppm	ASTM D5185m	4250	2713	2804	2990
Base Number (BN)         mg KOH/g         ASTM D2896         8.5         8.3         6.7         6.9							17.3	
		Base Number (BN)	mg KOH/g	ASTM D2896	8.5	8.3	6.7	6.9
		Visc @ 100°C	cSt	ASTM D445	10.9	12.3	11.3	11.2

## 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.





 Certificate 12367
 Test Package
 : FLEET

 To discuss this sample report, contact Customer Service at 1-800-237-1369.
 \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

1717 East Loop 289 LUBBOCK, TX US 79403 Contact: RITA GARCIA rita.garcia@mclaneco.com T: (806)766-2902

Contact/Location: RITA GARCIA - MCLLUB