

## **OIL ANALYSIS REPORT**

Sample Rating Trend

**WEAR** 



Machine Id CATERPILLAR Caterpillar 980 (S/N WFX01470) Diesel Engine Fluid

**TULCO LUBSOIL CK-**

ISW40 ( GAL)         SAMPLE INFORMATION       method       limit/base       current       history1       history2         Sample Number       Client Info       13 Jun 2024           Sample Date       Client Info       271           Ol Age       hrs       Client Info       271           Ol Changed       Client Info       271            Ol Age       hrs       Client Info       Not Changd           CONTAMINATION       method       Iunit/base       current       history1       history2         Water       WC Method       >0.2       NEG           WEAR METALS       method       Iunit/base       current       history1       history2         Nickel       ppm       ASTM 05165m       >2       0           Silver       ppm       ASTM 05165m       >2            Liead       ppm       ASTM 05165m       >2            Silver       ppm       ASTM 05165m       >4       0 <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th>Ŏ</th></t<>							Ŏ
Sample Number         Client Info         TO10003612             Sample Date         hrs         Client Info         271             Machine Age         hrs         Client Info         271             Oil Age         hrs         Client Info         271             Oil Changed         Client Info         271             Sample Status         Client Info         Not Changd             CONTAMINATION         method         Imit/base         current         history1         history2           Water         WC Method         >0.2         NEG             WEAR METALS         method         Imit/base         current         history1         history2           Iron         ppm         ASTM DS185m         >20         0             Sliver         ppm         ASTM DS185m         >2         0             Sliver         ppm         ASTM DS185m         >2              Auminum         ppm         ASTM DS185m	15W40 ( GAL	.)			Jun2024		
Sample Date         Image         Client Info         13 Jun 2024         Image         Image <thimage< th=""> <thimage< th="">         Image&lt;</thimage<></thimage<>	SAMPLE INFORM		method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         271             Oil Aga         hrs         Client Info         271             Oil Changed         Client Info         Not Changd             Sample Status         Interview         Net Changd             CONTAMINATION         wethod         20.2         NEG             Water         WC Method         20.2         NEG             WEAR METALS         wethod         100         17             Nickel         ppm         ASTM 05185m         >20         0             Nickel         ppm         ASTM 05185m         >22         0             Itanium         ppm         ASTM 05185m         >2         11             Autominum         ppm         ASTM 05185m         >2         1             Itanium         ppm         ASTM 05185m         >2              Itanium         ppm         A	Sample Number		Client Info		TO10003612		
Oil Age         hrs         Client Info         271             Oil Changed         Client Info         Not Changd             Sample Status         I         Imit base         current         history1         history2           Water         WC Method         >0.2         NEG             Water         WC Method         >0.2         NEG             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185n         >100         17             Silver         ppm         ASTM D5185n         >22         0             Aluminum         ppm         ASTM D5185n         >22         0             Silver         ppm         ASTM D5185n         >25         2             Auminum         ppm         ASTM D5185n         >2              Auminum         ppm         ASTM D5185n         100              Aum	Sample Date		Client Info		13 Jun 2024		
Oli Changed         Client Info         Not Changd         ···         ···           Sample Status         Image         Image         Current         history1         history2           CONTAMINATION         method         Imit/base         current         history1         history2           Water         WC Method         >0.2         NEG             WEAR METALS         method         Imit/base         current         history1         history2           Iron         ppm         ASTM D5185         >20         0             Nokel         ppm         ASTM D5185         >22         0             Nokel         ppm         ASTM D5185         >22         0             Silver         ppm         ASTM D5185         >22         2             Lead         ppm         ASTM D5185         >40         11             Copper         ppm         ASTM D5185         >430         11             Addminum         ppm         ASTM D5185         >430         11 </td <td>Machine Age</td> <td>hrs</td> <td>Client Info</td> <td></td> <td>271</td> <td></td> <td></td>	Machine Age	hrs	Client Info		271		
Oli Changed         Client Info         Not Changd         ···         ···         ···           Sample Status         Image Status	Oil Age	hrs	Client Info		271		
Sample Status         Image         ABNORMAL             CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         >0.2         NEG             Glycol         WC Method         0.2         NEG             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185n         >100         17             Nickel         ppm         ASTM D5185n         >22         0             Nickel         ppm         ASTM D5185n         >22         1             Aluminum         ppm         ASTM D5185n         >22         2             Copper         ppm         ASTM D5185n         >40         11             Cadmium         ppm         ASTM D5185n         >40              Cadmium         ppm         ASTM D5185n         15         2 <tr< td=""><td>-</td><td></td><td>Client Info</td><td></td><td>Not Changd</td><td></td><td></td></tr<>	-		Client Info		Not Changd		
Water         WC Method         >0.2         NEG            Glycol         WC Method         Imit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >20         0             Chromium         ppm         ASTM D5185m         >20         0             Nickel         ppm         ASTM D5185m         >2         0             Silver         ppm         ASTM D5185m         >2         0             Aluminum         ppm         ASTM D5185m         >2         2             Aluminum         ppm         ASTM D5185m         >2         2             Copper         ppm         ASTM D5185m         >15         2             Vanadium         ppm         ASTM D5185m         >15         2             ADDITIVES         method         Imit/base         current         history1         history2           Boron         ppm         ASTM D5185m         100	-				ABNORMAL		
Glycol     WC Method     NEG        WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >20     0         Chromium     ppm     ASTM D5185m     >20     0         Nickel     ppm     ASTM D5185m     >2     0         Silver     ppm     ASTM D5185m     >2     0         Aduminum     ppm     ASTM D5185m     >2     2         Lead     ppm     ASTM D5185m     >40     11         Copper     ppm     ASTM D5185m     >15     2         Qandium     ppm     ASTM D5185m     >15     2         Adminum     ppm     ASTM D5185m     >15     2         Cadmium     ppm     ASTM D5185m     >15     2         Baron     ppm     ASTM D5185m     160     35         Magnaese     ppm     ASTM D5185m     1100     65     43         Magnaesium     ppm     ASTM D518	CONTAMINATION	N	method	limit/base	current	history1	history2
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >20         0             Ohromium         ppm         ASTM D5185m         >20         0             Nickel         ppm         ASTM D5185m         >2         0             Silver         ppm         ASTM D5185m         >2         2             Aluminum         ppm         ASTM D5185m         >2         2             Copper         ppm         ASTM D5185m         >2         2             Lead         ppm         ASTM D5185m         >330         A         706             Copper         ppm         ASTM D5185m         0              ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         15         2             Magnesium         ppm         ASTM D5185m         16	Water		WC Method	>0.2	NEG		
Iron         ppm         ASTM D5185m         >100         17             Chromium         ppm         ASTM D5185m         >20         0             Nickel         ppm         ASTM D5185m         >2         0             Silver         ppm         ASTM D5185m         >2         2             Aluminum         ppm         ASTM D5185m         >2         2             Copper         ppm         ASTM D5185m         >2         2             Copper         ppm         ASTM D5185m         >15         2             Cadmium         ppm         ASTM D5185m         15         2             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         35             Magnese         ppm         ASTM D5185m         1060         637             Magnesium         ppm         ASTM D5185m         1140         1755	Glycol		WC Method		NEG		
Chromium         ppm         ASTM D5185m         >20         0             Nickel         ppm         ASTM D5185m         >2         0             Silver         ppm         ASTM D5185m         >2         2         1             Aluminum         ppm         ASTM D5185m         >2         2             Lead         ppm         ASTM D5185m         >2         2             Copper         ppm         ASTM D5185m         >330         ✓         706             Cadmium         ppm         ASTM D5185m         >15         2             ADDITIVES         method         Imit/base         current         history1         history2           Boron         ppm         ASTM D5185m         15         3             Magneseu         ppm         ASTM D5185m         166         43             Magnesium         ppm         ASTM D5185m         1140         1755             Magnesium         ppm         AS	WEAR METALS		method	limit/base	current	history1	history2
Nickel         ppm         ASTM D5185m         >2         0             Titanium         ppm         ASTM D5185m         >2         0             Silver         ppm         ASTM D5185m         >2         -1             Aluminum         ppm         ASTM D5185m         >25         2             Lead         ppm         ASTM D5185m         >300         A 706             Copper         ppm         ASTM D5185m         >15         2             Vanadium         ppm         ASTM D5185m         >15         2             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         16         43             Molybdenum         ppm         ASTM D5185m         1140         1755             Magnesium         ppm         ASTM D5185m         1140         1755             Phosphorus         ppm         ASTM	Iron	ppm	ASTM D5185m	>100	17		
Titanium         ppm         ASTM D5185m         >2         0             Silver         ppm         ASTM D5185m         >2         <1	Chromium	ppm	ASTM D5185m	>20	0		
Silver       ppm       ASTM D5185m       >2       <1           Aluminum       ppm       ASTM D5185m       >25       2           Lead       ppm       ASTM D5185m       >40       11           Copper       ppm       ASTM D5185m       >330       706           Vanadium       ppm       ASTM D5185m       >15       2           Cadmium       ppm       ASTM D5185m       >15       2           ADDITIVES       method       limit/base       current       history1       history2         Boron       ppm       ASTM D5185m       6       43           Malganese       ppm       ASTM D5185m       1060       637           Manganese       ppm       ASTM D5185m       1140       1755           Sulfur       ppm       ASTM D5185m       1140       1753           Sulfur       ppm       ASTM D5185m       1330       3550           Sulfur       ppm       ASTM D5185m </td <td>Nickel</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;2</td> <td>0</td> <td></td> <td></td>	Nickel	ppm	ASTM D5185m	>2	0		
Aluminum         ppm         ASTM D5185m         >25         2             Lead         ppm         ASTM D5185m         >40         11             Copper         ppm         ASTM D5185m         >330         A         706             Tin         ppm         ASTM D5185m         >15         2             Vanadium         ppm         ASTM D5185m         >15         2             Cadmium         ppm         ASTM D5185m         0              ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         35             Molybdenum         ppm         ASTM D5185m         65         43             Manganese         ppm         ASTM D5185m         1060         637             Magnesium         ppm         ASTM D5185m         1140         17755             Sulfur         ppm         ASTM D5185m         123	Titanium	ppm	ASTM D5185m	>2	0		
Lead         ppm         ASTM D5185m         >40         11             Copper         ppm         ASTM D5185m         >330         ▲ 706             Tin         ppm         ASTM D5185m         >15         2             Vanadium         ppm         ASTM D5185m         >15         2             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         35             Molybdenum         ppm         ASTM D5185m         2             Magnesse         ppm         ASTM D5185m         65         43             Magnesium         ppm         ASTM D5185m         1060         637             Calcium         ppm         ASTM D5185m         1140         1755             Sulfur         ppm         ASTM D5185m         1230         1153             Sulfur         ppm         ASTM D5185m         22         6	Silver	ppm	ASTM D5185m	>2	<1		
Copper         ppm         ASTM D5185m         >330         ▲ 706             Tin         ppm         ASTM D5185m         >15         2             Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         35             Molybdenum         ppm         ASTM D5185m         65         43             Marganese         ppm         ASTM D5185m         1060         637             Calcium         ppm         ASTM D5185m         1140         1755             Suffur         ppm         ASTM D5185m         1230         1153             Suffur         ppm         ASTM D5185m         25         62             Suffur         ppm         ASTM D5185m         >20         0	Aluminum	ppm	ASTM D5185m	>25	2		
Tin         ppm         ASTM D5185m         >15         2            Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         35             Molybdenum         ppm         ASTM D5185m         65         43             Manganese         ppm         ASTM D5185m         1060         637             Calcium         ppm         ASTM D5185m         1140         1755             Magnese         ppm         ASTM D5185m         1230         1153             Calcium         ppm         ASTM D5185m         1230         1153             Sulfur         ppm         ASTM D5185m         22              Sulfur         ppm         ASTM D5185m         220         0 <td< td=""><td>Lead</td><td>ppm</td><td>ASTM D5185m</td><td>&gt;40</td><td>11</td><td></td><td></td></td<>	Lead	ppm	ASTM D5185m	>40	11		
Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         35              Barium         ppm         ASTM D5185m         65         43             Molybdenum         ppm         ASTM D5185m         65         43             Maganese         ppm         ASTM D5185m         1060         637             Magnesium         ppm         ASTM D5185m         1060         637             Calcium         ppm         ASTM D5185m         1140         1755             Sulfur         ppm         ASTM D5185m         11230         1153             Sulfur         ppm         ASTM D5185m         3130         3550             Solicon         ppm         ASTM D5185m         >25         62	Copper	ppm	ASTM D5185m	>330	<b>A</b> 706		
Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         35             Barium         ppm         ASTM D5185m         65         43             Molybdenum         ppm         ASTM D5185m         65         43              Manganese         ppm         ASTM D5185m         65         43              Manganesum         ppm         ASTM D5185m         1060         637              Manganesum         ppm         ASTM D5185m         1060         637              Calcium         ppm         ASTM D5185m         1140         1755              Sulfur         ppm         ASTM D5185m         1230         1153              Sulfur         ppm         ASTM D5185m         >25         62           -	Tin	ppm	ASTM D5185m	>15	2		
ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m35BariumppmASTM D5185m6543MolybdenumppmASTM D5185m6543MaganeseppmASTM D5185m6543MagnesiumppmASTM D5185m1060637CalciumppmASTM D5185m11401755PhosphorusppmASTM D5185m1170965ZincppmASTM D5185m12301153SulfurppmASTM D5185m31303550SoliumppmASTM D5185m>2562SodiumppmASTM D5185m>200Fuel%ASTM D5185m>200INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7624>208.9NitrationAbs/m*ASTM D715>3022.5FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/Itm*ASTM D7414>2520.7	Vanadium	ppm	ASTM D5185m		0		
Boron         ppm         ASTM D5185m         35             Barium         ppm         ASTM D5185m         65         43             Molybdenum         ppm         ASTM D5185m         65         43             Manganese         ppm         ASTM D5185m         1060         637             Magnesium         ppm         ASTM D5185m         1060         637             Calcium         ppm         ASTM D5185m         1140         1755             Phosphorus         ppm         ASTM D5185m         1140         1755             Sulfur         ppm         ASTM D5185m         1230         1153             Sulfur         ppm         ASTM D5185m         3130         3550             Soliton         ppm         ASTM D5185m         >25         62             Soliton         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D5185m         >	Cadmium	ppm	ASTM D5185m		0		
Barium         ppm         ASTM D5185m         2             Molybdenum         ppm         ASTM D5185m         65         43             Manganese         ppm         ASTM D5185m         1060         637             Magnesium         ppm         ASTM D5185m         1060         637             Calcium         ppm         ASTM D5185m         1140         1755             Phosphorus         ppm         ASTM D5185m         1140         1755             Zinc         ppm         ASTM D5185m         1230         1153             Sulfur         ppm         ASTM D5185m         1230         1153             Sulfur         ppm         ASTM D5185m         3130         3550             Solicon         ppm         ASTM D5185m         >25         62             Solicon         ppm         ASTM D5185m         >20         0             Fuel         %         ASTM D5185m         >20<	ADDITIVES		method	limit/base	current	history1	history2
MolybdenumppmASTM D5185m6543ManganeseppmASTM D5185m1060 $637$ MagnesiumppmASTM D5185m1060 $637$ CalciumppmASTM D5185m11401755PhosphorusppmASTM D5185m1170965ZincppmASTM D5185m12301153SulfurppmASTM D5185m31303550CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25 $62$ SodiumppmASTM D5185m>200PotassiumppmASTM D5185m>200Fuel%ASTM D5185m>200Soot %%ASTM D5185m>200.2INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>30.2SulfationAbs/:nm*ASTM D715>3022.5FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/:nm*ASTM D744>2520.7FLUID DEGRADATIONhistory1history2<	Boron	ppm	ASTM D5185m		35		
Manganese         ppm         ASTM D5185m         3             Magnesium         ppm         ASTM D5185m         1060         637             Calcium         ppm         ASTM D5185m         1140         1755             Phosphorus         ppm         ASTM D5185m         1170         965             Zinc         ppm         ASTM D5185m         1230         1153             Sulfur         ppm         ASTM D5185m         3130         3550             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         62             Sodium         ppm         ASTM D5185m         >20         0             Fuel         %         ASTM D5185m         >20         0             Fuel         %         ASTM D5185m         >20         0.2             Soot %         %         *ASTM D7844	Barium	ppm	ASTM D5185m		2		
Magnesium         ppm         ASTM D5185m         1060         637             Calcium         ppm         ASTM D5185m         1140         1755             Phosphorus         ppm         ASTM D5185m         1170         965             Zinc         ppm         ASTM D5185m         1230         1153             Sulfur         ppm         ASTM D5185m         1230         1153             Sulfur         ppm         ASTM D5185m         1230         1153             Sulfur         ppm         ASTM D5185m         3130         3550             CONTAMINANTS         method         limit/base         current         history1         history2           Solicon         ppm         ASTM D5185m         >20         0             Solicon         ppm         ASTM D5185m         >20         0             Fuel         %         ASTM D5185m         >20         0             Fuel         %         ASTM D5185m	Molybdenum	ppm	ASTM D5185m	65	43		
Calcium         ppm         ASTM D5185m         1140         1755             Phosphorus         ppm         ASTM D5185m         1170         965             Zinc         ppm         ASTM D5185m         1230         1153             Sulfur         ppm         ASTM D5185m         1230         1153             Sulfur         ppm         ASTM D5185m         3130         3550             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         62             Sodium         ppm         ASTM D5185m         >20         0             Fuel         %         ASTM D3524         >5         22             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         8.9             Sulfation         Abs/.tmm         *ASTM D7415	Manganese	ppm	ASTM D5185m		3		
Phosphorus         ppm         ASTM D5185m         1170         965             Zinc         ppm         ASTM D5185m         1230         1153             Sulfur         ppm         ASTM D5185m         1230         1153             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         62             Sodium         ppm         ASTM D5185m         >20         0             Fuel         %         ASTM D3524         >5         A         2.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/.mm         *ASTM D7624         >20         8.9             Sulfation         Abs/.lmm         *ASTM D7415         >30         22.5             FLUID DEGRADATION	Magnesium	ppm	ASTM D5185m	1060	637		
Zinc         ppm         ASTM D5185m         1230         1153             Sulfur         ppm         ASTM D5185m         3130         3550             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         62             Sodium         ppm         ASTM D5185m         >25         62             Sodium         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D5185m         >20         0             Fuel         %         ASTM D5185m         >20         0             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2             Sulfation         Abs/cm         *ASTM D7624         >20         8.9             FLUID DEGRADATION         method         limit/base	Calcium	ppm	ASTM D5185m	1140	1755		
SulfurppmASTM D5185m31303550CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>2562SodiumppmASTM D5185m>200PotassiumppmASTM D5185m>200Fuel%ASTM D5185m>200INFRA-RED%ASTM D524>52.2NitrationAbs/cm*ASTM D7624>30.2SulfationAbs/cm*ASTM D7624>3022.5FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2520.7	Phosphorus	ppm	ASTM D5185m	1170	965		
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>2562SodiumppmASTM D5185m3PotassiumppmASTM D5185m>200Fuel%ASTM D5185m>200Fuel%ASTM D5185m>200INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>30.2NitrationAbs/cm*ASTM D7624>208.9SulfationAbs/limm*ASTM D7415>3022.5FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/limm*ASTM D7414>2520.7	Zinc	ppm	ASTM D5185m	1230	1153		
Silicon         ppm         ASTM D5185m         >25         62             Sodium         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D5185m         >20         0             Fuel         %         ASTM D3524         >5         A 2.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         8.9             Nitration         Abs/.1mm         *ASTM D7415         >30         22.5             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7	Sulfur	ppm	ASTM D5185m	3130	3550		
Sodium         ppm         ASTM D5185m         3             Potassium         ppm         ASTM D5185m         >20         0             Fuel         %         ASTM D5185m         >20         0             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm         *ASTM D7615         >30         22.5             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         0             Fuel         %         ASTM D3524         >5         ▲ 2.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.5             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7	Silicon	ppm	ASTM D5185m	>25	62		
Fuel         %         ASTM D3524         >5         2.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.5             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7	Sodium	ppm	ASTM D5185m		3		
INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>30.2NitrationAbs/cm*ASTM D7624>208.9SulfationAbs/.1mm*ASTM D7415>3022.5FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2520.7	Potassium	ppm	ASTM D5185m	>20	0		
Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.5             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7	Fuel	%	ASTM D3524	>5	<u> </u>		
Nitration         Abs/cm         *ASTM D7624         >20         8.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.5             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         22.5             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7	Soot %	%	*ASTM D7844	>3	0.2		
FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7	Nitration	Abs/cm	*ASTM D7624	>20	8.9		
Oxidation Abs/.1mm *ASTM D7414 >25 20.7	Sulfation	Abs/.1mm	*ASTM D7415	>30	22.5		
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 10.8 9.44	Oxidation	Abs/.1mm	*ASTM D7414	>25	20.7		
	Base Number (BN)	mg KOH/g	ASTM D2896	10.8	9.44		

### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

### A Wear

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other metal levels are typical for a new component breaking in.

#### Contamination

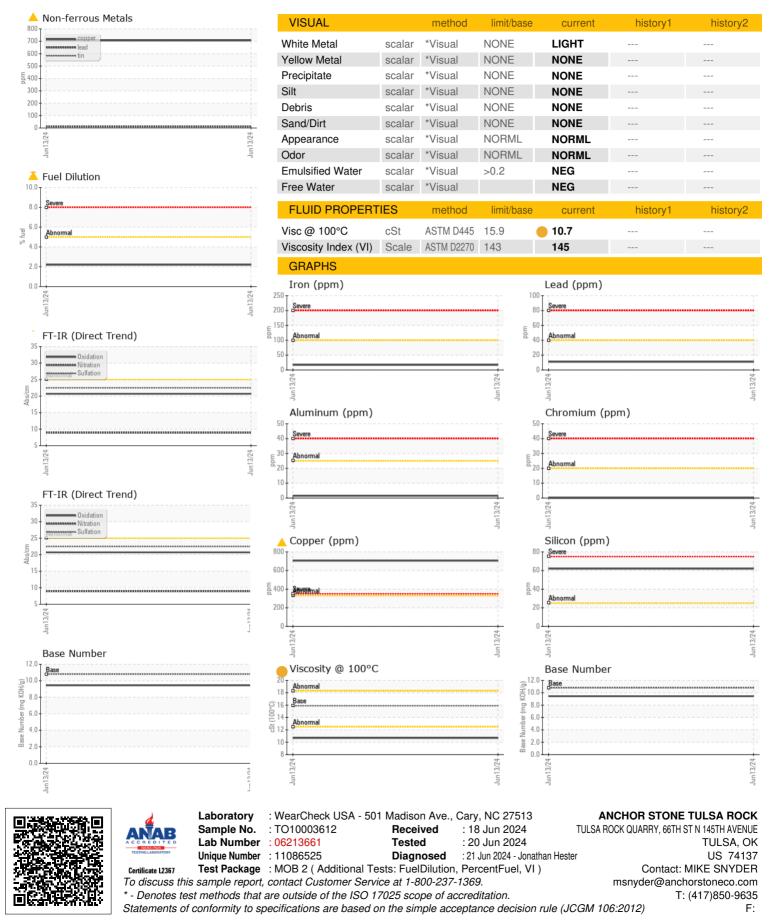
Light fuel dilution occurring.

#### Fluid Condition

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.



# **OIL ANALYSIS REPORT**



Submitted By: SKIP SAENGERHAUSEN

Page 2 of 2