

**OIL ANALYSIS REPORT** 

## Machine Id 2009 (S/N I290254) Right Diesel Engine TRC MOLY XL PRO-SPEC IV HD SYN 5W40 (1 GAL)

Sample Number         Client Info         TR0822475             Machine Age         hrs         Client Info         07 Apr 2023             Machine Age         hrs         Client Info         1966             Oil Age         hrs         Client Info         282             Filter Age         hrs         Client Info         282             Filter Changed         Client Info         282              Sample Status         Client Info         Changed              ASIM DEIS         >100         36              ASIM DEIS         >100         36              ASIM DEIS         >10         36              ASIM DEIS         >20         36              ASIM DEIS         >20         31              ASIM DEIS         >20         1		••••						
Bisample Number         Client Info         Thesize 379	RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Simple Data         Chink mode         Or Apr 205         Image of the control into the conthe control into the contrel into the control into c	Resample at the next service interval to monitor.	Sample Number		Client Info		TR05823479		
Oil Age         hes         Clent Info         282             Filter Age         hes         Clent Info         Changed          Changed            Sample Siter Changed         Clent Info         No         Changed          Changed             Namele Siter Changed         Clent Info         Sample Siter Changed              Namele Siter Changed         Ppm         ASTIM Differ         >-100         36             Nickel         ppm         ASTIM Differ         >-00              Nickel         ppm         ASTIM Differ         >-00              Siver         ppm         ASTIM Differ         >-00              Siver         ppm         ASTIM Differ         >              Nice         ppm         ASTIM Differ         >              Siver         ppm         ASTIM Differ         >		Sample Date		Client Info		07 Apr 2023		
Filter Age         Ins         Client Info         K2         Participation         Participation           OI Changed         Client Info         Changed		Machine Age	hrs	Client Info		1968		
Oil Changed Filter Changed Sample Status         Client Info Norman         Changed informan		Oil Age	hrs	Client Info		-		
Filter Changed Sample Status         Client info (NORNAL)         Changed (NORNAL)         C		0	hrs	Client Info		282		
NPEAR         Inon         ppm         AST/10 55%         >100         B36            All component wear rates are normal.         Iron         ppm         AST/10 55%         >20              Nickel         ppm         AST/10 55%         >20		Oil Changed		Client Info		Changed		
VEAR         Iron         ppm         ASTV D5155m         >100         36             All component wear rates are normal.         Promouting         ppm         ASTV D5155m         >4         -1             Nickel         ppm         ASTV D5155m         >4         -1             Silver         ppm         ASTV D5155m         >4         -1             All unimum         ppm         ASTV D5155m         >4         0             All unimum         ppm         ASTV D5155m         >4         0             All unimum         ppm         ASTV D5155m         >0         0             Additional ppm         ASTV D5155m         >0         0              Vanadium         ppm         ASTV D5155m         >0         0             Vanadium         ppm         ASTV D5155m         >0         0             Vanadium         ppm         ASTV D5155m         >0         0 <td< td=""><th>-</th><td></td><td>Client Info</td><td></td><th>Changed</th><td></td><td></td></td<>		-		Client Info		Changed		
All component wear rates are normal.         Chromium         ppm         ASTM 0585m         20         c1             Nickel         ppm         ASTM 0585m         20         1             Nickel         ppm         ASTM 0585m         3         0             All component wear rates are normal.         ppm         ASTM 0585m         20         1             All component wear rates are normal.         ppm         ASTM 0585m         20         1             All component wear rates are normal.         ppm         ASTM 0585m         20         1             Lead         ppm         ASTM 0585m         -40         0             Vanadium ppm         ASTM 0585m         -50         0              Vanadium ppm         ASTM 0585m         -50         0		Sample Status				NORMAL		
All component wear rates are normal.         Chromium         ppm         ASTM 0585m         20         c1             Nickel         ppm         ASTM 0585m         20         1             Nickel         ppm         ASTM 0585m         3         0             All component wear rates are normal.         ppm         ASTM 0585m         20         1             All component wear rates are normal.         ppm         ASTM 0585m         20         1             All component wear rates are normal.         ppm         ASTM 0585m         20         1             Lead         ppm         ASTM 0585m         -40         0             Vanadium ppm         ASTM 0585m         -50         0              Vanadium ppm         ASTM 0585m         -50         0	WEAR All component wear rates are normal.	Iron		AGTM D5185m	> 100	26		
All component wear rates are normal.         Nickel         ppr         ASTM 0518m         >4         <1            Thanium         ppr         ASTM 05185m              Silver         ppr         ASTM 05185m              Aluminum         ppr         ASTM 05185m              Aluminum         ppr         ASTM 05185m              Copper         ppr         ASTM 05185m         -15         0             Vanduum         ppr         ASTM 05185m         -20         6             CONTAMINATION         Silicon         ppr         ASTM 05185m         -20         6.								
Titanium         ppn         ASTM 0515m         c         c1         ····         ····           Silver         ppn         ASTM 0515m         -3         0         ····         ····           Auminum         ppn         ASTM 0515m         -20         1         ····         ····           Lead         ppn         ASTM 0515m         -40         0         ····         ····           Lead         ppn         ASTM 0515m         -40         0         ····         ····           Vanadium         ppn         ASTM 0515m         -40         0         ····         ····           Vanadium         ppn         ASTM 0515m         -10         0         ····         ····           Vanadium         ppn         ASTM 0515m         -20         3         ····         ····           Vanadium         ppn         ASTM 0515m         -20         3         ····         ····           Value         value         Visual         NONE         NONE         ····         ····           Value         value         voltehido         -0.2         NEG         ····         ····           Value         value         voltehido         -0.2<								
Silver         pp         ASTM 05186n         >3         0             Aluminum         pp         ASTM 05186n         >20         1             Copper         pp         ASTM 05186n         >330         3             Copper         pp         ASTM 05186n         >330         3             Vanadium         pp         ASTM 05186n         >330         3             Vanadium         pp         ASTM 05186n         >50              Vanadium         pp         ASTM 05186n         >20         A             Vanadium         pp         ASTM 05186n         >20         S         6             Vanadium         pp         ASTM 05186n         >20         3             Vanadium         pp         ASTM 05186n         >20         3             Vanios         pp         ASTM 05186n         >20         3             Vanios         Mone         Mone         ASTM					>4			
Aluminum         ppm         ASTM D5185m         >20         1            Lead         ppm         ASTM D5185m         >40         0             Lead         ppm         ASTM D5185m         >40         0             Copper         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m         >15         0             White Metail         scalar         'Visual         NONE         NONE             CONTAMINATION         Silicon         ppm         ASTM D5185m         >25         6             There is no indication of any contamination in the oil.         Silicon         ppm         ASTM D5185m         >20         3             Water         WC Method         50.2         NEG              Silicon         ASTM D7824         >30         0.4              Soli %         %         'ASTM D7824         >30         0.4					. 2			
Lead         ppm         ASTM 05185m         >40         0             Copper         ppm         ASTM 05185m         >15         0             Vanadium         ppm         ASTM 05185m         >25         6             Value         NONE         NONE         NONE         NONE             There is no indication of any contamination in the oil.         Silicon         ppm         ASTM 05185m         >20         3             Glycol         WC Method         >0.2         NEG              Glycol         WC Method         >0.2         NEG              Sulfation         Abs/mm         Ysisual         NONE         NONE             Debris								
Copper         ppm         ASTM D5185m         >330         3             Tin         ppm         ASTM D5185m         0             Vanadium         ppm         ASTM D5185m         0             White Metal         scalar         *Visual         NONE         NONE             Valow Metal         scalar         *Visual         NONE         NONE             CONTAMINATION         Silicon         ppm         ASTM D5185m<>-25         6             There is no indication of any contamination in the oil.         Silicon         ppm         ASTM D5185m<>-25         6             Water         WC Method         >5         <1.0								
Tin         ppm         ASTM 05185m         >15         0             Vanadium         ppm         ASTM 05185m         C         0             White Metal         scalar         "Visual         NONE         NONE             Vellow Metal         scalar         "Visual         NONE         NONE             CONTAMINATION         Still Con         ppm         ASTM 05185m         >25         6             Potassium         ppm         ASTM 05185m         >20         3             Potassium         ppm         ASTM 05185m         >20         3             Water         WC Method         >0.2         NEG              Still Scalar         % % MTM 07744         >30         0.4             Sulfation         Abs/cm         Yisual         NONE         NONE             Sulfation         Abs/cm         Yisual         NORE         NONE             Sulfation								
Vanadium Write Metal         ppm         ASTM D5185m         0             Write Metal         scalar         'Visual         NONE         NONE             CONTAMINATION         Silicon         ppm         ASTM D5185m         >25         6             There is no indication of any contamination in the oil.         Silicon         ppm         ASTM D5185m         >20         3             Water         WC Method         >5         <1.0								
White Metal Yellow Metal         scalar         "Visual NONE         NONE             CONTAMINATION         Silicon         pp         ASTM D5185m         >-25         6             There is no indication of any contamination in the oil.         Silicon         pp         ASTM D5185m         >-25         6             Water         WC Method         >-0.2         NEG             Glycol         WC Method         >-0.2         NEG             Soot %         'ASTM D784         >3         0.4             Sulfation         As/Im         'ASTM D784         >3         0.4             Sulfation         Scalar         'Visual         NONE         NONE					>10			
Yellow Metal         scalar         *Visual         NONE             CONTAMINATION         Silicon         ppm         ASTM 05185m         >20         3             Potassium         ppm         ASTM 05185m         >20         3             Potassium         ppm         ASTM 05185m         >20         3             Water         WC Method         >5         <1.0						-		
Silicon         ppm         ASTM D5185m         >25         6            There is no indication of any contamination in the oil.         Potassium         ppm         ASTM D5185m         >20         3             Fuel         WC Method         >5         <1.0								
Potassium         ppm         ASTM D5165m         >20         3          4           Fuel         WC Method         >5         <1.0		Yellow Ivietal	scalar	visual	NONE	NONE		
Potassium         ppm         ASTM D5165m         >20         3          4           Fuel         WC Method         >5         <1.0	CONTAMINATION	Silicon	ppm	ASTM D5185m	>25	6		
Fuel       WC Method       >5       <1.0		Potassium				3		
Water         W C Method         >0.2         NEG             Glycol         WC Method         S0         %6         *ASTM D7844         >3         0.4             Sotol %         %6         *ASTM D7844         >30         0.4             Nitration         Abs/Imm         *ASTM D7845         >30         17.5             Sulfation         Abs/Imm         *ASIM D7845         >30         17.5             Sulfation         Abs/Imm         *Asim D7844         >30         NONE             Sulfation         Abs/Imm         *Asim D7845         >30         17.5             Sulfation         Abs/Imm         *Asim D7845         NONE         NONE             Sand/Dirlo         scalar         *Visual         NORM         NORM             Odor         scalar         *Visual         NORM         NORM             Odor         scalar         *Visual         NORM         NORM	There is no indication of any contamination in the oil.	Fuel		WC Method	>5	<1.0		
Glycol         WC Method         NEG             Soot %         %         'ASTM D7844         >3         0.4             Nitration         Abs/m         'ASTM D7844         >3         0.4             Sulfation         Abs/m         'ASTM D7815         >30         17.5             Sulfation         Abs/m         'ASTM D7815         >30         17.5             Sulfation         Abs/m         'ASTM D7815         >30         17.5             Sulfation         Abs/m         'Visual         NONE         NONE             Debris         scalar         'Visual         NONE         NONE             Cdor         scalar         'Visual         NORM         NORML             Dodo         scalar         'Visual         NORM         NORM             Odor         scalar         'Visual         NORM         NORM             Thenolifiend Water         scalar <td< td=""><th>Water</th><td></td><td></td><td></td><th>NEG</th><td></td><td></td></td<>		Water				NEG		
Soot %         %         *ASTM D7844         >3         0.4             Nitration         Abs/cm         *ASTM D762         >20         9.0             Sulfation         Abs/tm         *ASTM D7624         >20         NONE         NONE            Silf         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORM         NORML             Appearance         scalar         *Visual         NORML         NORML             Odor         scalar         *Visual         NORML         NORML             The BN result indicates that there is suitable alkalinity remaining in the oil is suitable for further service.         Sodium         ppm         ASTM D5185m <th>Glycol</th> <td></td> <td></td> <td></td> <th>NEG</th> <td></td> <td></td>		Glycol				NEG		
Nitration         Abs/cm         *ASTM D7624         >20         9.0             Sulfation         Abs/tm         *ASTM D7624         >30         17.5             Sulfation         Abs/tm         *ASTM D7415         >30         17.5             Sit         scalar         *Visual         NONE         NONE             Debris         scalar         *Visual         NONE         NONE             Sand/Dit         scalar         *Visual         NORM         NORM             Appearance         scalar         *Visual         NORM         NORM             Cdor         scalar         *Visual         NORM         NORM             Cdor         scalar         *Visual         NORM         NORM             The Norsult indicates that there is suitable alkalinity remaining in the oil is suitable for further service.         Sodium         ppm         ASTM D5185m         0             Boron         ppm         ASTM D5185m         -<			%	*ASTM D7844	>3	0.4		
Siltscalar*VisualNONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORLNORLOdorscalar*VisualNORLNORLCdorscalar*VisualNORLNORLCdorscalar*VisualNORLNORLEmulsified Waterscalar*VisualNORLNORLSodiumppmASTM D5185m1BoronppmASTM D5185m0BariumppmASTM D5185m0MaganeseppmASTM D5185m11MagnesiumppmASTM D5185m11PhosphorusppmASTM D5185m101116SulfurppmASTM D5185m12001116SulfurppmASTM D5185m110.0SulfurppmASTM D5185m10.0SulfurppmASTM D5185m10.0SulfurppmASTM D5185m10.0SulfurppmASTM D5185m10.0<		Nitration						
Debrisscalar*VisualNONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLThe DS result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.SodiumppmASTM D5185m1MolybdenumppmASTM D5185m0MarganeseppmASTM D5185m100		Sulfation	Abs/.1mm	*ASTM D7415	>30	17.5		
Debrisscalar*VisualNONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLThe DS result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.SodiumppmASTM D5185m1MolybdenumppmASTM D5185m0MarganeseppmASTM D5185m100		Silt	scalar	*Visual	NONE	NONE		
Sand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGEmulsified Waterscalar*Visual>0.2NEGEmulsified Waterscalar*Visual>0.2NEGBoronppmASTM D5185m09BariumppmASTM D5185m0MolybdenumppmASTM D5185m0ManganeseppmASTM D5185m145MagnesiumppmASTM D5185m19PhosphorusppmASTM D5185m45005086SulfurppmASTM D5185m12001116SulfurppmASTM D5185m12001116SulfurppmASTM D5185m12001116SulfurppmASTM D5185m10.0SulfurppmASTM D5185m10.0SulfurppmASTM D5185m10.0SulfurppmASTM D5185m10.0Sulfurp		Debris	scalar			NONE		
Appearancescalar*VisualNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGFLUID CONDITIONSodiumppmASTM D5185m1BoronppmASTM D5185m0BoronppmASTM D5185m0MolybdenumppmASTM D5185m0MaganeseppmASTM D5185mCalciumppmASTM D5185m45005086PhosphorusppmASTM D5185m12001116SulfurppmASTM D5185m12001116SulfurppmASTM D5185m12001116SulfurppmASTM D5185m12001116Base Number (BN)mg KOHgASTM D2185m1510.0Base Number (BN)mg KOHgASTM D2185m1		Sand/Dirt	scalar			NONE		
Odorscalar*VisualNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m1BoronppmASTM D5185m9BariumppmASTM D5185m0MolybdenumppmASTM D5185m0MaganeseeppmASTM D5185m145MagnesiumppmASTM D5185m19MagnesiumppmASTM D5185m19PhosphorusppmASTM D5185m199SulfurppmASTM D5185m12001116SulfurppmASTM D5185m12001116OxidationAbs'.1mm'ASTM D5185m10.0Base Number (BN)mg KOHgASTM D28961519.76In the server (BN)mg KOHgASTM D28961519.76		Appearance		*Visual				
Emulsified Waterscalar*Visual>0.2NEGFLUID CONDITIONThe BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.SodiumppmASTM D5185m9BariumppmASTM D5185m0MalganeseppmASTM D5185m145MagnesiumppmASTM D5185m19CalciumppmASTM D5185m19PhosphorusppmASTM D5185m45005086ZincppmASTM D5185m12001116SulfurppmASTM D5185m12001116OxidationAbs/.1mm*ASTM D714>2510.0Base Number (BN)mg KOH'gASTM D28961519.76			scalar			NORML		
Boron       ppm       ASTM D5185m       9          Barium       ppm       ASTM D5185m       0          Molybdenum       ppm       ASTM D5185m       0          Manganese       ppm       ASTM D5185m       145          Manganesum       ppm       ASTM D5185m           Magnesium       ppm       ASTM D5185m       19           Calcium       ppm       ASTM D5185m       19           Magnesium       ppm       ASTM D5185m       4500       50866           Calcium       ppm       ASTM D5185m       4500       50866           Phosphorus       ppm       ASTM D5185m       1200       1116           Sulfur       ppm       ASTM D5185m       1200       1116           Oxidation       Abs/.tmm       *ASTM D5185m       10.0           Base Number (BN)       mg KOHg       ASTM D2896       15       19.76		Emulsified Water	scalar	*Visual	>0.2	NEG		
Boron       ppm       ASTM D5185m       9          Barium       ppm       ASTM D5185m       0          Molybdenum       ppm       ASTM D5185m       0          Manganese       ppm       ASTM D5185m       145          Manganesum       ppm       ASTM D5185m           Magnesium       ppm       ASTM D5185m       19           Calcium       ppm       ASTM D5185m       19           Magnesium       ppm       ASTM D5185m       4500       50866           Calcium       ppm       ASTM D5185m       4500       50866           Phosphorus       ppm       ASTM D5185m       1200       1116           Sulfur       ppm       ASTM D5185m       1200       1116           Oxidation       Abs/.tmm       *ASTM D5185m       10.0           Base Number (BN)       mg KOHg       ASTM D2896       15       19.76								
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.       Barium       ppm       ASTM D5185m       0           Molybdenum       ppm       ASTM D5185m       145            Manganese       ppm       ASTM D5185m       <11	FLUID CONDITION		ppm					
Barum       ppm       ASTM US185m       0           Molybdenum       ppm       ASTM D5185m       145           Manganese       ppm       ASTM D5185m       145           Magnesium       ppm       ASTM D5185m       19           Calcium       ppm       ASTM D5185m       4500       5086           Phosphorus       ppm       ASTM D5185m       1200       1116           Sulfur       ppm       ASTM D5185m       1200       1116           Oxidation       Abs/.tmm       *ASTM D5185m       1200       1116           Base Number (BN)       mg KOHg       ASTM D5185m       15       10.0	The BN result indicates that there is suitable alkalinity remaining in the		ppm					
Molybdenum       ppm       ASTM Ub185m       145           Manganese       ppm       ASTM D5185m       <1	oil. The condition of the oil is suitable for further service.							
Magnesium       ppm       ASTM D5185m       19           Calcium       ppm       ASTM D5185m       4500       5086           Phosphorus       ppm       ASTM D5185m       1200       1116           Zinc       ppm       ASTM D5185m       1200       1116           Sulfur       ppm       ASTM D5185m       1200       1116           Oxidation       Abs/.tmm       *ASTM D7144       >25       10.00           Base Number (BN)       mg KOHg       ASTM D2896       15       19.76		,						
Calcium       ppm       ASTM D5185m       4500       5086           Phosphorus       ppm       ASTM D5185m       1200       926           Zinc       ppm       ASTM D5185m       1200       1116           Sulfur       ppm       ASTM D5185m       1200       1116           Oxidation       Abs/.tmm       *ASTM D7414       >25       10.0           Base Number (BN)       mg KOH/g       ASTM D2896       15       19.76		-	ppm					
Phosphorus         ppm         ASTM D5185m         926             Zinc         ppm         ASTM D5185m         1200         1116             Sulfur         ppm         ASTM D5185m         1200         4676             Oxidation         Abs/.tmm         *ASTM D7414         >25         10.0             Base Number (BN)         mg KOH/g         ASTM D2896         15         19.76		-	ppm					
Zinc       ppm       ASTM D5185m       1200       1116          Sulfur       ppm       ASTM D5185m       1200       4676          Oxidation       Abs/.tmm       *ASTM D7414       >25       10.0          Base Number (BN)       mg KOH/g       ASTM D2896       15       19.76					4500			
Sulfur         pm         ASTM D5185m         4676             Oxidation         Abs/.1mm         *ASTM D7414         >25         10.0             Base Number (BN)         mg KOH/g         ASTM D2896         15         19.76			ppm					
Oxidation         Abs/.1mm         *ASTM D7414         >25         10.0            Base Number (BN)         mg KOH/g         ASTM D2896         15         19.76					1200			
Base Number (BN)         mg KOH/g         ASTM D2896         15         19.76			ppm					
Visc @ 100°C cSt ASTM D445 15 ( 15.5 )						19.76		
		Visc @ 100°C	cSt	ASTM D445	15	15.5		



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 HARRIS ENERGY INC Sample No. : TR05823479 Received 456 WEST MAIN ST : 18 Apr 2023 Lab Number : 05823479 Tested : 19 Apr 2023 LITTLETON, NH Diagnosed Unique Number : 10431562 : 19 Apr 2023 - Wes Davis US 03561 Test Package : MOB 2 Contact: DON PERCY Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-827-0711. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: 

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

Contact/Location: DON PERCY - HARLIT Page 2 of 2

F: