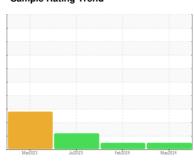


# **OIL ANALYSIS REPORT**

Sample Rating Trend







Machine Id LIM MLU3 LIM MLU3
Component
Outboard Pump

{not provided} (--- GAL)

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

The water content is negligible. There is no indication of any contamination in the oil.

## **Fluid Condition**

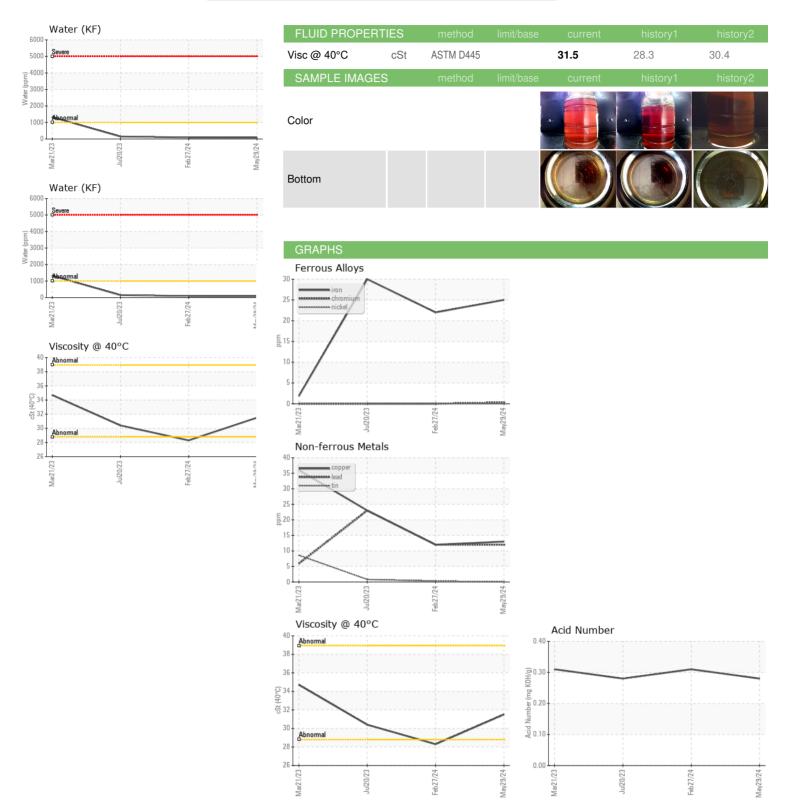
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION         method         limit blass         current         history1         history2           Sample Number         Cilient Info         RP0033140         RP0039819         RP0032852           Sample Date         Cilient Info         29 May 2024         27 Feb 2024         20 Jul 2023           Machine Age         hrs         Cilient Info         0         0         0           Oil Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         method         Imbit base         current         history1         history2           Iron         ppm         ASTM D5185n         >5         -1         0         0           Iron         ppm         ASTM D5185n         >5         -1         0         0           Iron         ppm         ASTM D5185n         >5         -1         0         0           Silver         ppm         ASTM D5185m         >5         -1         0         0           Silver         ppm         ASTM D5185m         >3         0         0         0           Aluminum         ppm         ASTM D5185m         >2         12         12         2			Mar202	3 Jul2023	Feb 2024 N	flay2024	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Date         Client Info         29 May 2024         27 Feb 2024         20 Jul 2023           Machine Age         hrs         Client Info         0         0         0           Oil Age         hrs         Client Info         N/A         N/A         N/A           Oil Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         method         limit/bass         current         bistory1         history2           Iron         ppm         ASTM D5185m         5         <1	Sample Number		Client Info		RP0033140	RP0039819	RP0032852
Machine Age         hrs         Client Info         0         0         0         0           Oil Age         hrs         Client Info         N/A         N/A         N/A         N/A           Coll Changel         Light         N/A         N/A         N/A         N/A         N/A           Samily Sistem         Current         Instory         Normal         Normal         ABNORMAL           WEARM METALS         method         limit/base         current         Inistory         Inistory           Iron         ppm         ASTM D5185m         >9         25         22         30           Ohromium         ppm         ASTM D5185m         >5         0         0         0           Nikel         ppm         ASTM D5185m         >3         0         0         0           Titanium         ppm         ASTM D5185m         >3         0         0         0           Aluminum         ppm         ASTM D5185m         >12         12         12         2           Lead         ppm         ASTM D5185m         >30         13         12         2           Copper         ppm         ASTM D5185m         >3			Client Info		29 May 2024	27 Feb 2024	20 Jul 2023
Oil Age         hrs         Client Info         N/A	·	hrs	Client Info		-	0	0
NORMAL   NORMAL   ABNORMAL		hrs	Client Info		0	0	0
NORMAL   NORMAL   ABNORMAL	Oil Changed		Client Info		N/A	N/A	N/A
Iron	<u> </u>				NORMAL	NORMAL	ABNORMAL
Chromium         ppm         ASTM D5185m         >5         <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>90	25	22	30
Titanium         ppm         ASTM D5185m         >3         0         0         0           Silver         ppm         ASTM D5185m         >3         0         0         0           Aluminum         ppm         ASTM D5185m         >7         0         <1         <1           Lead         ppm         ASTM D5185m         >12         12         12         23           Copper         ppm         ASTM D5185m         >9         0         <1         <1           Vanadium         ppm         ASTM D5185m         >9         0         <1         <1           Vanadium         ppm         ASTM D5185m         0         0         <1         <1           Cadmium         ppm         ASTM D5185m         0         0         0         0           Boron         ppm         ASTM D5185m         0         0         0         0           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0           Magnesium         ppm         ASTM D5185m         <1         1         <1 <td< th=""><th>Chromium</th><th>ppm</th><th>ASTM D5185m</th><th>&gt;5</th><th>&lt;1</th><th>0</th><th>0</th></td<>	Chromium	ppm	ASTM D5185m	>5	<1	0	0
Silver	Nickel	ppm	ASTM D5185m	>5	0	0	0
Aluminum         ppm         ASTM D5185m         >7         0         <1	Titanium	ppm	ASTM D5185m	>3	0	0	0
Lead         ppm         ASTM D5185m         >12         12         12         23           Copper         ppm         ASTM D5185m         >30         13         12         23           Tin         ppm         ASTM D5185m         >9         0         <1         <1           Vanadium         ppm         ASTM D5185m         0         0         0         <1           Cadmium         ppm         ASTM D5185m         0         0         0         0           Boron         ppm         ASTM D5185m         0         0         0         0           Boron         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0           Manganese         ppm         ASTM D5185m         <1         1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper         ppm         ASTM D5185m         >30         13         12         23           Tin         ppm         ASTM D5185m         >9         0         <1         <1           Vanadium         ppm         ASTM D5185m         0         0         <1         <1           Cadmium         ppm         ASTM D5185m         0         0         0         0           Boron         ppm         ASTM D5185m         0         0         0         0           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0           Manganesium         ppm         ASTM D5185m         40         52         50         0           Calcium         ppm         ASTM D5185m         40         52         50         0           Calcium         ppm         ASTM D5185m         41         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <	Aluminum	ppm	ASTM D5185m	>7	0	<1	<1
Tin         ppm         ASTM D5185m         >9         0         <1	Lead	ppm	ASTM D5185m	>12	12	12	<u>^</u> 23
Vanadium         ppm         ASTM D5185m         <1	Copper	ppm	ASTM D5185m	>30	13	12	23
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0           Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0           Manganese         ppm         ASTM D5185m         40         52         50           Manganesium         ppm         ASTM D5185m         40         52         50           Calcium         ppm         ASTM D5185m         41         -1	Tin	ppm	ASTM D5185m	>9	0	<1	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	0	<1
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0           Manganese         ppm         ASTM D5185m         <1         1         <1           Magnesium         ppm         ASTM D5185m         40         52         50           Calcium         ppm         ASTM D5185m         40         52         50           Calcium         ppm         ASTM D5185m         41         <1         <1           Phosphorus         ppm         ASTM D5185m         18         15         32           Zinc         ppm         ASTM D5185m         24         16         33           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >60         2         2         3           Sodium         ppm         ASTM D5185m         >20         0         0         1           Water         96         ASTM D5185m         >20         0         0         1           Water         96         ASTM D5185m         >20	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         0         0         0           Manganese         ppm         ASTM D5185m         <1	Boron	ppm	ASTM D5185m		0	0	0
Manganese         ppm         ASTM D5185m         <1	Barium	ppm	ASTM D5185m		0	0	0
Magnesium         ppm         ASTM D5185m         40         52         50           Calcium         ppm         ASTM D5185m         <1         <1         <1         <1           Phosphorus         ppm         ASTM D5185m         18         15         32           Zinc         ppm         ASTM D5185m         24         16         33           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >60         2         2         3           Sodium         ppm         ASTM D5185m         >20         0         0         1           Vater         %         ASTM D5185m         >20         0         0         1           Water         %         ASTM D6304         >.1         0.008         0.008         0.014           ppm Water         ppm         ASTM D6304         >.1         0.008         89         147.9           FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOHg         ASTM D8045         0.28         0.31	Molybdenum	ppm	ASTM D5185m		0	0	0
Calcium         ppm         ASTM D5185m         <1	Manganese	ppm	ASTM D5185m		<1	1	<1
Phosphorus         ppm         ASTM D5185m         18         15         32           Zinc         ppm         ASTM D5185m         24         16         33           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >60         2         2         3           Sodium         ppm         ASTM D5185m         2         0         2           Potassium         ppm         ASTM D5185m         >20         0         0         1           Water         %         ASTM D6304         >.1         0.008         0.008         0.014           ppm Water         ppm         ASTM D6304         >.1         0.008         0.008         0.014           ppm Water         ppm         ASTM D6304         >.1         0.008         0.008         0.014           ppm Water         ppm         ASTM D6304         >.1         0.008         0.008         0.014           ppm Water         ppm         ASTM D6304         >.1         0.008         0.008         0.014           ppm Water         ppm         ASTM D6304         >.1         0.008         0	Magnesium	ppm	ASTM D5185m		40	52	50
Zinc         ppm         ASTM D5185m         24         16         33           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >60         2         2         3           Sodium         ppm         ASTM D5185m         >20         0         0         1           Potassium         ppm         ASTM D5185m         >20         0         0         1           Water         %         ASTM D6304         >.1         0.008         0.008         0.014           Water         %         ASTM D6304         >.1         0.008         0.008         0.014           ppm Water         ppm         ASTM D6304         >.1000         86         89         147.9           FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOHlg         ASTM D8045         0.28         0.31         0.28           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE <th>Calcium</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>&lt;1</th> <th>&lt;1</th> <th>&lt;1</th>	Calcium	ppm	ASTM D5185m		<1	<1	<1
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >60         2         2         3           Sodium         ppm         ASTM D5185m         2         0         2           Potassium         ppm         ASTM D5304         >.1         0.008         0.008         0.014           Water         %         ASTM D6304         >.1         0.008         0.008         0.014           ppm Water         ppm         ASTM D6304         >.1000         86         89         147.9           FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg K0Hg         ASTM D8045         0.28         0.31         0.28           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yellow Metal         scalar <th>Phosphorus</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>18</th> <th>15</th> <th>32</th>	Phosphorus	ppm	ASTM D5185m		18	15	32
Silicon         ppm         ASTM D5185m         >60         2         2         3           Sodium         ppm         ASTM D5185m         2         0         2           Potassium         ppm         ASTM D5185m         >20         0         0         1           Water         %         ASTM D6304         >.1         0.008         0.008         0.014           ppm Water         ppm         ASTM D6304         >.1000         86         89         147.9           FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOH/g         ASTM D8045         0.28         0.31         0.28           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE         NONE         NONE         NONE	Zinc	ppm	ASTM D5185m		24	16	33
Sodium         ppm         ASTM D5185m         2         0         2           Potassium         ppm         ASTM D5185m         >20         0         0         1           Water         %         ASTM D6304         >.1         0.008         0.008         0.014           ppm Water         ppm         ASTM D6304         >1000         86         89         147.9           FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOH/g         ASTM D8045         0.28         0.31         0.28           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE         NONE           Silt         scalar         *Visual<	CONTAMINANTS	;	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 0 1 Water % ASTM D6304 >.1 0.008 0.008 0.014 ppm Water ppm ASTM D6304 >1000 86 89 147.9  FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.28 0.31 0.28  VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE LIGHT NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Scalar *Visual NONE NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE NONE Scalar *Visual NONE NONE NONE NONE NONE NONE Scalar *Visual NONE NONE NONE NONE NONE NONE NONE Scalar *Visual NORML	Silicon	ppm	ASTM D5185m	>60	2	2	3
Water % ASTM D6304 >.1 0.008 0.008 0.014 ppm Water ppm ASTM D6304 >1000 86 89 147.9  FLUID DEGRADATION method limit/base current history1 history2  Acid Number (AN) mg KOH/g ASTM D8045 0.28 0.31 0.28  VISUAL method limit/base current history1 history2  White Metal scalar *Visual NONE LIGHT NONE NONE NONE  Yellow Metal scalar *Visual NONE NONE NONE NONE NONE  Precipitate scalar *Visual NONE NONE NONE NONE NONE  Silt scalar *Visual NONE NONE NONE NONE NONE  Debris scalar *Visual NONE NONE NONE NONE NONE  Sand/Dirt scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NORML NORML NORML NORML  Odor scalar *Visual NORML NORML NORML NORML  NORML	Sodium	ppm	ASTM D5185m		2	0	2
ppm Water ppm ASTM D6304 >1000 86 89 147.9  FLUID DEGRADATION method limit/base current history1 history2  Acid Number (AN) mg KOH/g ASTM D8045 0.28 0.31 0.28  VISUAL method limit/base current history1 history2  White Metal scalar *Visual NONE LIGHT NONE NONE  Yellow Metal scalar *Visual NONE NONE NONE NONE  Precipitate scalar *Visual NONE NONE NONE NONE  Silt scalar *Visual NONE NONE NONE NONE  Silt scalar *Visual NONE NONE NONE NONE  Sand/Dirt scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NORML NORML NORML NORML  Odor scalar *Visual NORML NORML NORML NORML  NORML	Potassium	ppm	ASTM D5185m	>20	0	0	1
FLUID DEGRADATION method limit/base current history1 history2  Acid Number (AN) mg KOH/g ASTM D8045 0.28 0.31 0.28  VISUAL method limit/base current history1 history2  White Metal scalar *Visual NONE LIGHT NONE NONE  Yellow Metal scalar *Visual NONE NONE NONE NONE  Precipitate scalar *Visual NONE NONE NONE NONE  Silt scalar *Visual NONE NONE NONE NONE  Debris scalar *Visual NONE NONE NONE NONE  Sand/Dirt scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NORML NORML NORML NORML  Odor scalar *Visual NORML NORML NORML NORML  NORML	Water	%	ASTM D6304	>.1	0.008	0.008	0.014
Acid Number (AN) mg KOH/g ASTM D8045 0.28 0.31 0.28  VISUAL method limit/base current history1 history2  White Metal scalar *Visual NONE LIGHT NONE NONE  Yellow Metal scalar *Visual NONE NONE NONE NONE  Precipitate scalar *Visual NONE NONE NONE NONE  Silt scalar *Visual NONE NONE NONE NONE  Debris scalar *Visual NONE NONE NONE NONE  Sand/Dirt scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NORML NORML NORML NORML  Odor scalar *Visual NORML NORML NORML NORML  NORML	ppm Water	ppm	ASTM D6304	>1000	86	89	147.9
VISUAL       method       limit/base       current       history1       history2         White Metal       scalar       *Visual       NONE       LIGHT       NONE       NONE         Yellow Metal       scalar       *Visual       NONE       NONE       NONE       NONE         Precipitate       scalar       *Visual       NONE       NONE       NONE       NONE         Silt       scalar       *Visual       NONE       NONE       NONE       NONE         Debris       scalar       *Visual       NONE       NONE       NONE       NONE         Sand/Dirt       scalar       *Visual       NORM       NORML       NORML       NORML       NORML         Odor       scalar       *Visual       NORML       NORML       NORML       NORML       NORML       NORML	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
White Metal scalar *Visual NONE LIGHT NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML	Acid Number (AN)	mg KOH/g	ASTM D8045		0.28	0.31	0.28
Yellow Metal scalar *Visual NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML	VISUAL		method	limit/base	current	history1	
Precipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONEMODERSand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORML		scalar	*Visual	NONE	LIGHT	NONE	
Siltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORML	Yellow Metal		*Visual	NONE	NONE		NONE
Debrisscalar*VisualNONENONENONEMODERSand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORML	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORML	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORML	Debris	scalar	*Visual	NONE	NONE	NONE	▲ MODER
Odor scalar *Visual NORML NORML NORML NORML	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water scalar *Visual >.1 NEG NEG NEG	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	<b>Emulsified Water</b>	scalar	*Visual	>.1	NEG	NEG	NEG

INDREW WYDERKALENELIM



# **OIL ANALYSIS REPORT**







Certificate 12367

Laboratory Sample No.

: RP0033140 Lab Number : 06202854 Unique Number : 11070315

Test Package : IND 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 07 Jun 2024 **Tested** : 10 Jun 2024

Diagnosed

: 10 Jun 2024 - Don Baldridge

1520 BUCKEYE RD

Contact/Location: ANDREW WYDERKA - ENELIM

US 45804 Contact: ANDREW WYDERKA

**ENERGY TRANSFER - LIMA** 

andrew.wyderka@energytransfer.com T: (419)618-1505

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)

LIMA, OH

F: