

Customer 8002047 OIL & TRANS/ENOSA

City LIMA

Location OUTDOOR

Sub-Name SULLANA PIURA CENTRO

Unit No.

Other

NAMEPLATE DATA

Manufacturer ABB
 Manufacture Date 1/1/2013
 Serial No. 201120
 KVA Rating 30,000
 High Voltage 58,000
 Low Voltage 24,000
 Weight 121,033.78
 Equipment Type TRANSFORMER
 Transformer Class
 Impedance % 29.58
 Phase/Cycle 3/60
 Liquid Type OIL
 Gallons 3,990
 Other Access

ADDITIONAL EQUIPMENT

Radiators Yes
 Fans Yes
 Water Cooled No
 Oil Pumps No
 Top FPV (inch)
 Bottom FPV (inch)
 InsulationType
 Conservator Tank Yes
 LTC Compartment Yes
 Bushing Location
 Breather
 Hose Length (feet)
 Service Online
 Power Available

VISUAL INSPECTION

DATE	LEVEL	SAMPLE TEMP	TOP TEMP	P/V	PAINT	LEAKS
11/17/15		30	24			
08/16/16	NORMAL				GOOD	
01/31/22		25				
07/24/23		30				YES - BUCHOLZ

FIELD SERVICE

DATE	SERVICE

Additional Information

Reason Not Tested

LIQUID SCREEN TEST DATA

DATE	SERVICE	ACID	IFT	DIEL 877	DIEL 1816	GAP	COLOR	SP. GRAV.	VISUAL	SEDIMENT
01/24/14		0.010 AC	40.4 AC	34 AC			0.50 AC	0.884 AC	CLEAR AC	NONE AC
11/17/15		0.010 AC	44.0 AC	43 AC			0.50 AC	0.871 AC	CLEAR AC	NONE AC
08/16/16		0.010 AC	43.0 AC	41 AC			0.50 AC	0.870 AC	CLEAR AC	NONE AC
01/31/22		0.020 AC	47.0 AC	35 AC			0.50 AC	0.879 AC	CLEAR AC	NONE AC
07/24/23		0.020 AC	41.3 AC	28 QU			0.50 AC	0.876 AC	CLEAR AC	NONE AC

INHIBITOR CONTENT

DATE	PCT. BY WEIGHT
01/24/14	<0.02% UN
11/17/15	<0.02% UN
08/16/16	<0.02% UN
01/31/22	0.02% UN
07/24/23	<0.02% UN

NOTE - THIS UNIT HAS A BLADDER OR CONTINUOUS N2 SYSTEM. THEREFORE, THE UNIT DOES NOT REQUIRE INHIBITED OIL. HOWEVER, HAVING INHIBITED OIL WILL PROVIDE ADDITIONAL PROTECTION AGAINST OIL OXIDATION IF THE CURRENT OIL PRESERVATION SYSTEM WERE TO EVER FAIL.

LIQUID POWER FACTOR

DATE	25 C	100 C
01/24/14	0.002 AC	0.118 AC
11/17/15	0.003 AC	0.147 AC
08/16/16	0.066 AC	1.740 AC
01/31/22	0.007 AC	0.263 AC
07/24/23	0.022 AC	0.648 AC

KEY TO ABBREVIATIONS: AC - ACCEPTABLE QU - QUESTIONABLE UN - UNACCEPTABLE RS - RESAMPLE

NOTE: * After a result indicates that the test or service was performed by an outside source.

Customer 8002047 OIL & TRANS/ENOSA

S/N 201120

Sub-Name ~~CULLENA~~ PIURA CENTRO

Mfg. ABB

Location OUTDOOR

Unit No.

Gallons 3,990
KVA 30,000

High Volt. 58,000
Low Volt. 24,000

KARL FISCHER TESTING MOISTURE CONTENT EXPRESSED IN PPM

DATE	AVG. TEMP	PPM	PCT. SATURATION	MOISTURE BY DRY WEIGHT PCT.
01/24/14	39	8	6.8 AC	0.62
11/17/15	35	9	9.0 AC	0.90
08/16/16		7	N/A RS	RS
01/31/22	30	10	12.1 AC	1.30
07/24/23	35	15	14.4 AC	1.45

RECOMMENDATION RETEST 1 YEAR

The moisture content continues to be acceptable based on the equipment and liquid type. Continued normal monitoring is indicated.

FURAN ANALYSIS EXPRESSED IN PPB

DATE	5H2F	2FOL	2FAL	2ACF	5M2F	TOTAL
01/24/14	ND	ND	1	ND	ND	1
11/17/15	ND	ND	1	ND	ND	1
08/16/16	ND	ND	1	ND	ND	1
01/31/22	ND	ND	ND	ND	ND	ND
07/24/23	ND	ND	ND	ND	ND	ND

RECOMMENDATION RETEST 1 YEAR

NO DIAGNOSTIC CHANGES ARE NOTED IN FURAN LEVELS SINCE THE PREVIOUS ANALYSIS. THE CELLULOSIC INSULATION APPEARS TO BE IN GOOD CONDITION.

CALCULATED DP 800

EST. LIFE REMAINING 100%

GAS-IN-OIL ANALYSIS GAS CHROMATOGRAPHY EXPRESSED IN PPM

DATE	HYDROGEN	OXYGEN	NITROGEN	METHANE	CARBON MONOXIDE	CARBON DIOXIDE	ETHANE	ETHYLENE	ACETYLENE	TOTAL COMBUST.	TOTAL GAS
01/24/14	30	2,592	10,726	ND	37	177	ND	ND	ND	67	13,562
11/17/15	ND	2,353	7,358	ND	36	178	ND	ND	ND	36	9,925
08/16/16	18	9,310	33,300	4	209	781	ND	ND	ND	231	43,622
01/31/22	6	5,540	35,400	9	607	3,300	ND	ND	ND	622	44,862
07/24/23	163	3,580	20,000	30	371	2,640	3	41	4	612	26,832

RECOMMENDATION RETEST 6 MONTHS

K-THE SMALL AMOUNT OF ACETYLENE, EVEN WITHOUT ELEVATED LEVELS OF OTHER COMBUSTIBLE GASES, INDICATES A POSSIBLE ARCING/SPARKING CONDITION OR OTHER SEVERE ELECTRICAL STRESS. POSSIBLE CAUSES INCLUDE ABNORMALITIES RELATED TO DETERIORATED TAP CHANGER CONTACTS, INTERNAL CONNECTIONS, OR THE CORE ASSEMBLY.

ICP METALS-IN-OIL EXPRESSED IN PPM

DATE	ALUMINUM	IRON	COPPER
01/24/14	<0.1	<0.03	0.07
11/17/15	<0.1	<0.03	0.31
08/16/16	<0.1	<0.03	0.58
01/31/22	<0.1	<0.03	0.25
07/24/23	<0.1	<0.03	0.14

RECOMMENDATION RETEST 1 YEAR

THERE HAS BEEN NO DIAGNOSTIC CHANGE SINCE THE PREVIOUS ANALYSIS. THESE DATA INDICATE NORMAL OPERATION.

PCB CONTENT EXPRESSED IN PPM

DATE	1242	1254	1260	OTHER	TOTAL
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