

BETA LAB NO.M10198- RECEIPT INSPECTION	TESORO REFINING AND MARKETING COMPANY ANACORTES REFINERY 10200 W. MARCH POINT ROAD T91WA4428 ANACORTES, WA 98221	CUSTOMER P.O. NO.: 4501667904
PART: 6600-E HEAT EXCHANGER INITIAL RECEIPT		DATE: JULY 29, 2010
PAGE 1 OF 8		

RECEIPT INSPECTION REPORT

CONTACT:	JIM McVAY
ISSUED BY:	JEFF BLOUGH
TELEPHONE EXTENSION:	440-604-9843
MAIL STOP:	A- BETA
REVIEWED BY (SIGNATURE ON FILE):	DAVE KLESCH

REPORT ISSUED TO:

Jim McVay	Robert J. Hall	Robert Parker
-----------	----------------	---------------

BACKGROUND: A truck would transport the complete failed 6600-E heat exchanger from the Anacortes Refinery in the state of Washington to Halvorsen Company in Ohio for storage. Additionally Halvorsen would cut requested samples for laboratory testing per the approved test protocol. FirstEnergy BETA Lab would be the referee test laboratory and would perform the test protocol, developed by others, and report the test data with no interpretation or conclusions to the signatory parties of the test protocol.

TEST RESULTS: On June 5, 2010, the truck arrived at Halvorsen Company's Clinton warehouse in Brooklyn, Ohio. The test protocol specifies "The exchanger will be secured to a transport trailer, and protected by a hard cover (e.g. wood box or "conex" with the bottom removed) with a door secured by a tamperproof seal prior to shipment."

Figure 1 shows the two parts on the truck. Each part was wrapped in a plastic type material and bound to the truck body. The main heat exchanger had three wood cradle supports and a wood leg for the bundle support. The back head was positioned on wood rails. Figures 2 and 3 shows the general condition of the wrap and attachment materials. Figure 4 details some areas where the wrap did not totally cover the heat exchanger parts.

The truck was taken into a warehouse and the straps, chains and wrap material were removed from the two heat exchanger parts. Two overhead cranes and stabilizer bar were used to lift the main heat exchanger. The transportation saddles were removed from the truck and positioned under the heat exchanger for supporting in the new storage position. The crane was also used to lift the back head and support it on the same wooden rails used for shipping. No hitting, scrapped or damaged was noted during the lifting operations as shown in Figures 5 and 6.

Inspection of the truck bed after the lift disclosed some debris which is shown in Figure 7. The materials were bagged and logged into evidence for potential examination.

The heat exchangers were covered with plastic type sheets and the gates to the fence surrounding the work area within the warehouse were locked.

This interpretive report is a result of testing/analysis derived from material, information and/or specifications furnished by the customer and is confidential and is intended for the customer only. If you are receiving it in error, please advise immediately. Further, you are prohibited from disclosing, copying, distributing or using any of this information without written approval from Beta Lab. This report shall not be reproduced except in its entirety and, in any case, without prior written approval from Beta Lab. Except for such obligations as are set forth in the Agreement between Beta Lab and its customer for whom this work has been performed, neither the party preparing this report nor any person acting on its behalf. Makes any warranty or representation, express or implied, including merchantability or fitness for a particular purpose, with respect to the accuracy, completeness or usefulness of the information contained in this report, or that the use of any information, apparatus method or process disclosed from this report does not infringe upon privately owned rights or intellectual property; or Assumes any liability with respect to the use of, or for damages, including consequential or punitive damages, resulting from the use of, any information, apparatus, method or process disclosed in this report.

BETA LAB NO.M10198- RECEIPT INSPECTION	TESORO REFINING AND MARKETING COMPANY ANACORTES REFINERY 10200 W. MARCH POINT ROAD T91WA4428 ANACORTES, WA 98221	CUSTOMER P.O. NO.: 4501667904
PART: 6600-E HEAT EXCHANGER INITIAL RECEIPT		DATE: JULY 29, 2010
PAGE 2 OF 8		

RECEIPT INSPECTION REPORT



6600-E Exchanger Damaged shell and bundle Tag # ABSC- R070



6600-E Back head Damaged back head Tag # ABSC-R073

FIGURE 1 As received parts on the truck

BETA LAB NO.M10198- RECEIPT INSPECTION	TESORO REFINING AND MARKETING COMPANY ANACORTES REFINERY 10200 W. MARCH POINT ROAD T91WA4428 ANACORTES, WA 98221	CUSTOMER P.O. NO.: 4501667904
PART: 6600-E HEAT EXCHANGER INITIAL RECEIPT		DATE: JULY 29, 2010
PAGE 3 OF 8		

RECEIPT INSPECTION REPORT



Note opening near wood transportation saddle and metal support

Note opening near the metal support

Note opening near the metal support

FIGURE 2 As received details of drivers side of truck, front to back is top to bottom respectively

BETA LAB NO.M10198- RECEIPT INSPECTION	TESORO REFINING AND MARKETING COMPANY ANACORTES REFINERY 10200 W. MARCH POINT ROAD T91WA4428 ANACORTES, WA 98221	CUSTOMER P.O. NO.: 4501667904
PART: 6600-E HEAT EXCHANGER INITIAL RECEIPT		DATE: JULY 29, 2010
PAGE 4 OF 8		

RECEIPT INSPECTION REPORT



Note opening near the metal support

Note opening near wood transportation saddle and metal support

FIGURE 3 As received details of front and passengers side of truck, front to back, top to bottom respectively

BETA LAB NO.M10198- RECEIPT INSPECTION	TESORO REFINING AND MARKETING COMPANY ANACORTES REFINERY 10200 W. MARCH POINT ROAD T91WA4428 ANACORTES, WA 98221	CUSTOMER P.O. NO.: 4501667904
PART: 6600-E HEAT EXCHANGER INITIAL RECEIPT		DATE: JULY 29, 2010
PAGE 5 OF 8		

RECEIPT INSPECTION REPORT

	
Note opening at the end of the back head	Note opening near wood transportation saddle and metal support
	
Note opening near anchor bracket	Note opening
	
Note tear at top corner	

FIGURE 4 As received details of specific areas

BETA LAB NO.M10198- RECEIPT INSPECTION	TESORO REFINING AND MARKETING COMPANY ANACORTES REFINERY 10200 W. MARCH POINT ROAD T91WA4428 ANACORTES, WA 98221	CUSTOMER P.O. NO.: 4501667904
PART: 6600-E HEAT EXCHANGER INITIAL RECEIPT		DATE: JULY 29, 2010
PAGE 6 OF 8		

RECEIPT INSPECTION REPORT



Main hear exchanger stripped of plastic sheets and rigged for lifting



Main exchanger lifted off wooden transportation saddles-note stabilizer beam



Main heat exchanger ready for wood saddle support insertion



Fracture protection blankets and clip attachments

FIGURE 5 Main Heat exchanger lift off truck and positioning for storage

BETA LAB NO.M10198- RECEIPT INSPECTION	TESORO REFINING AND MARKETING COMPANY ANACORTES REFINERY 10200 W. MARCH POINT ROAD T91WA4428 ANACORTES, WA 98221	CUSTOMER P.O. NO.: 4501667904
PART: 6600-E HEAT EXCHANGER INITIAL RECEIPT		DATE: JULY 29, 2010
PAGE 7 OF 8		

RECEIPT INSPECTION REPORT

	
Main heat exchanger positioned on wood saddles	Heat exchanger back head positioned on wood rails
	
Details of bundle support- fracture protection blankets removed for fracture inspection	Detail of back head
FIGURE 6 Components unloaded and in storage supports	

BETA LAB NO.M10198- RECEIPT INSPECTION	TESORO REFINING AND MARKETING COMPANY ANACORTES REFINERY 10200 W. MARCH POINT ROAD T91WA4428 ANACORTES, WA 98221	CUSTOMER P.O. NO.: 4501667904
PART: 6600-E HEAT EXCHANGER INITIAL RECEIPT		DATE: JULY 29, 2010
PAGE 8 OF 8		

RECEIPT INSPECTION REPORT



Rod found under bundle on truck bed



Details of rod on truck bed



Debris on truck bed at about 130 inch from front of truck



Debris on truck bed at about 147 inch from front of truck

FIGURE 7 materials found on truck bed after lifting the components off the truck all were bagged for evidence