

P2S IS OFFERING THE FOLLOWING EQUIPMENT FOR SALE FROM A MAJOR REFINER

Plant Performance Services (P2S) has entered into an investment recovery agreement with a major worldwide refiner to sell 5 surplus reactors and 2 coke drums. Immediately available are 4 hydrocracker reactors; 1 ultra low sulfur diesel hydrotreater reactor, and 2 coke drums. Reactors range from 517 to 1526 tons each. Coke drums are 494 tons each. These vessels are unused surplus equipment from a 2009 cancelled refinery project.

Vessels are still under warranty or extended warranty can be purchased. These vessels are immediately available (should save up to 16-24 months on delivery). Pricing is negotiable; items are available individually or as a group. If you or any of your clients have an interest in reviewing the details of these reactors and coke drums, contact Joe Zeitouni on 832.532.5586 or email to Joe.Zeitouni@p2sworld.com for details and pricing.

| HYDROCRACKER REACTORS--QTY 4 | | |
|------------------------------|-------------------------|-------------------------|
| Quantity | 2 each | 2 each |
| Built for Service | Hydrocracker Stage 1 | Hydrocracker Stage 2 |
| Metallurgy* | | |
| Shell | ASME SA 336 F22V | ASME SA 336 F22V |
| Heads | ASME SA 542 Gr. D CL.4a | ASME SA 542 Gr. D CL.4a |
| Internals | OUT OF SCOPE OF SUPPLY | OUT OF SCOPE OF SUPPLY |
| Specs | | |
| Design Temperature, F | 849 | 849 |
| Design Pressure, psig | 2878 | 2777 |
| Tangent Length of vessel, ft | 121.4 | 121.4 |
| Inside Diameter, ft | 14.1 | 14.1 |
| Number of Beds | 4 | 3 |
| Wall Thickness, in | 10.63 | 10.24 |
| Catalyst Volume, cft, appx | 15966 | 16900 |
| Erection Weight (tons) | 1,526 | 1,473 |



| HYDROTREATER—QTY 1 | |
|------------------------------|--|
| Built for Service | ULSD |
| Metallurgy* | |
| Shell | SA-387-Gr.22 CL2 + 4 mm MIN. TP:347 W.O. |
| Heads | SA-387-Gr.22 CL2 + 4 mm MIN. TP:347 W.O. |
| Specs | |
| Design Temperature, F | 801 |
| Design Pressure, psig | 1280 |
| Tangent Length of vessel, ft | 126 |
| Inside Diameter, ft | 12 |
| Number of Beds | 4 |
| Wall Thickness, in | 4.33 |
| Catalyst Volume, cft, appx | 11536 |
| Fabricated Weight (tons) | 517 |

| COKE DRUMS—QTY 2 | |
|-------------------------------------|--------------------------------|
| Built for Service | Coke Drums |
| Metallurgy* | |
| Shell | SA-387-12 CL2 + SA 240 TP 410s |
| Heads | SA-387-12 CL2 + SA 240 TP 410s |
| Design Data | |
| Max Design Temperature, C, @ Top | 440 |
| Max Design Temperature, C, @ Bottom | 497 |
| Min Design Temperature, C | -15 |
| Max Design Pressure, bar abs, @ Top | 3 |
| Max Design Pressure, C, @ Bottom | 6.3 |
| Min Design Pressure, bar abs | 1.013 |
| Tangent Length of vessel, mm | 29260 |
| Top Length of Vessel, mm | 4035 |
| Bottom Length of Vesel, mm | 8535 |
| Total Length of Vessel, mm | 41830 |
| Inside Diameter, mm | 9150 |
| Min Wall Thickness, mm | 40 + 2 |
| Weight (tons) | 494 tons |



*Detailed Metallurgy available upon request.
Outline drawings and pricing available upon request.



For more information contact: Joe Zeitouni
+1.832.532.5586, Joe.Zeitouni@p2sworld.com