supplying a quench medium; a device for contacting the heated coker feedstock with the quench medium to reduce a temperature of the heated coker feedstock and produce a quenched effluent; a fluid conduit for feeding the quenched effluent to a coking drum for thermal cracking of the quenched effluent to (a) crack a portion of the quenched effluent to produce a cracked vapor product, and (b) produce a coke product having a volatile combustible material (VCM) concentration in the range from about 13% to about 50% by weight, as measured by ASTM D3175.

[0008] Other embodimentaspects and advantages will be apparent from the following description and the appended claims.

BRIEF DESCRIPTION OF DRAWINGS

[0009] FIG. 1 is a simplified process flow diagram of a coking process according to embodiments disclosed herein.

DETAILED DESCRIPTION

[0010] In one aspect, embodiments disclosed herein relate to the production of coke having a high concentration of volatile combustible material (high VCM coke). In another aspect, embodiments disclosed herein relate to improving the operation of coke processes to provide for one or more of increased throughput, sufficient coke make, and desirable coke properties, including coke crystalline structure, softness, combustion properties, and a VCM content of greater than 13% or 15% by weight, such as around 18% to 20%.

[0011] To produce coke having a high VCM content, as noted above, the prior art indicated that it was necessary to operate the coking drums at a relatively low temperature. To achieve the low operating temperatures in the coking drum, it was taught to decrease the temperature of the feedstock at the outlet of the coker heater.

[0012] Cracking that may occur in the transfer line between the coker heater and the coking drums allows for production of desirable lighter hydrocarbons. As such it is desirable to run the heater at relatively high temperatures. However, production of coke with a high VCM content requires operating the coking drums at a lower temperature. To meet the objectives of cracking and high VCM coke make, it has been found that quenching the feed to the coking drums via direct heat exchange with a quench medium may provide for both high heater outlet temperatures and low coking drum operating temperatures.