GROUND COAL

CEMENTING SERVICE BULLETIN

11/29/91

GROUND COAL

TECHNICAL DATA

GROUND COAL is used primarily for lost-circulation control. It also as an extender, although it is not a preferred extending material. The angular shape of the ground coal particles will provide good bridging action for lost circulation and will also produce a scouring action valuable in mud-cake removal.

PROPERTIES

PETROCHEM MATERIAL	FORM	SP. GR.	ABSOLUTE VOLUME
GROUND COAL	Black Angular Solid	1.30	.0925 gal. lb

SAFETY

Eyes: Flush with plenty of water for five minutes and get medial help if ill effects occur.

Skin: Wash with soap and water.

Inhalation: Not likely a problem.

DISCUSSION

Ground Coal provides a cementing system having low-density and lost-circulation control. It also exhibits superior scouring action when used in turbulent flow. Ground Coal does not accelerate or retard the slurry-thickening time and has less effect on compressive strengths than related materials. Ground Coal is superior to Gilsonite because it is not soluble in petroleum fluids; its melting point is in excess of 1000. F and compressive strengths of the set ground coal cement are higher than those obtained with Gilsonite Cement.

Ground Coal is used as an extender and lost-circulation additive to provide a lightweight, economical slurry. The particle size is controlled. to proved a particle-size range which serves as an aid in controlling lost circulation.

LOST CIRCULATION

Lost circulation, or lost returns, is defined as: "The loss to formation voids of either drilling fluid or cement slurry during the course of drilling or completing a well". This problem involves the loss of the entire slurry, both solids and liquids. In contrast, fluid loss or dehydration results in volume reduction due to loss of liquid form the slurry with subsequent deposition of solids inside the well bore. Ground coal provides lost-circulation control as a result of the bridging action at the face of the well bore or within the formation. Its effectiveness, within the formation, is attributable to the particle-size distribution, which allows coarse and medium-size particles to bridge. This forms a network that the finer particles of ground coal cement can seal. The lower slurry weight also helps lost-circulation control because the hydrostatic pressure is reduced.

USE AS AN EXTENDER

Ground Coal can be used as an extender because of its low density to provide a lightweight slurry.

THICKENING TIME

Ground Coal is an inert solid and, with the small amount of additional water used, does not appreciably change the thickening time. Existent thickening-time data for a particular system can be used.

COMPRESSIVE STRENGTH

Lab tests indicated the cement systems containing ground coal have higher compressive strengths than other available lightweight or lost-circulation systems at the same slurry weight, although strength is less than that of the same system without the ground coal.

COMPATIBILITY

No compatibility problems with various systems and additives are anticipated since the ground coal is a chemically inert material.