037-20557

CORNISH WIRELINE SERVICES, INC.

P.O. DRAWER H
CHANUTE, KANSAS
PHONE 431-9308

CEMENT BOND — VARIABLE DENSITY

JUL 26 1993
MO Oil & Gas Council

FILING NO.

COMPANY: LEMKO, INC.
WELL: SMITH NO. 3
FIELD:
COUNTY: CASS
STATE: MISSOURI
LOCATION: 235' FSL & 2403' FWL SW/4 SW/4
Sec. 22 Twp. 44N Rge. 33W
OTHER SERVICES: 1-6-93: OPEN HOLE; 5-6-93: GR/N/P

Permanent Datum: GROUND LEVEL, Elev. [illegible]
Log Measured from: G.L. — Ft. Above Perm. Datum
Drilling Measured from: G.L.
Elev.: K.B. — D.F. — G.L. 991' TOPO

Date	5-6-93	Type Fluid in Hole	WATER
Run No.	2 NM	Dens. / Visc.	
Depth—Driller	1020.0'	Max. Rec. Temp.	
Depth—Logger	984.2'	Est. Cement Top	
Btm. Log Interval	979.2'	Equip. / Location	105 / CHANUTE
Top Log Interval	0.0'	Recorded By	SANDERS, C.
Open Hole Size		Witnessed By	BEVTINCO, R.

CASING REC.	Size	Wt/Ft	Grade	Type Joint	Top	Bottom
Surface String						
Prot. String	4½"			COLLAR	0'	T.D.
Prod. String						
Liner						

PRIMARY CEMENTING DATA

STRING	Surface	Protection	Production	Liner
Vol. of cement	CEMENT DATA NOT AVAILABLE			
Type of cement				
Additive				
Additive by %				
Retarder				
Retarder by %				
Wt. of slurry				
Water loss				
Type fluid in csg.				
Fluid wt.				

COMPRESSIVE STRENGTH (p.s.i.) Curing Temp.)

Time Elapsed	Surface		Protective		Production		Liner	
12 Hrs		°F		°F		°F		°F
24 Hrs		°F		°F		°F		°F
72 Hrs		°F		°F		°F		°F

PRIMARY CEMENTING PROCEDURE

	Hour — date	Hours from start of operation
Started pumping cement		
Plug on bottom		
Release pressure		
Start Cement Bond Log		
Finish Cement Bond Log		

Equipment Data: Type standoff; Logging speed; Bias: Max; Cartridge No.; Spacing

Preceding Fluid ______ Volume ______ bbls. Pipe reciprocated during Pumping: Yes ____ No ____
Returns: Full ______ Partial ______ None ______ Pipe reciprocated after plug down: Yes ____ min., No ____

CASING BOND	DEPTH	TRANSIT TIME	VARIABLE DENSITY
BOND INCREASES ← 100% 0%		640 140 MICROSECONDS; CASING COLLARS	200 1000 MICROSECONDS

P.B.D. 979.2'
T.D. 984.2'

SMITH NO. 3
LEMKO, INC.
CASS COUNTY, MISSOURI
MAY 6, 1993
CEMENT BOND

22/44N/33W