API # 15-191-22.590-00-00

GEOLOGICAL REPORT

DRILLING TIME & SAMPLE LOG

REPORT PREPARED BY KENT CRISLER/GEOLOGIST

COMPANY BEREXCO INC.
LEASE KGS 1-28
FIELD WELLINGTON NORTHEAST
LOCATION NESWSESW
SEC 28 TWSP 31 S RGE 1 W
COUNTY SUMNER STATE KANSAS
CONTRACTOR BEREXCO DRILLING
SPUD 02/19/11 COMP 03/06/11
SAMPLES SAVED FROM 2200 TO TD

REPORT PREPARED BY KENT CRISLER/GEOLOGIST

ELEVATION
K.B. 1270
D.F.
G.L.

DEPTH MEASURED FROM KB
Log 4250 Drilling 4250

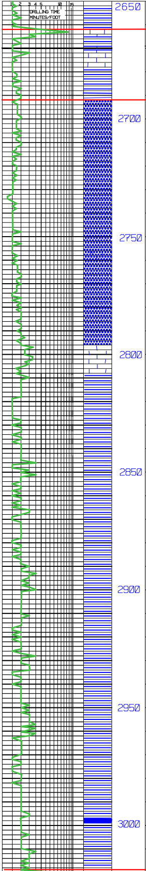
Surface 663' 8 5/8
Production 5250' 5 1/2"

Electric Logs
DSN/SDL
MICRO
CSNG
GEM
WSTT
XRMI
MRIL

FORMATION	SAMPLE	E LOG	DATUM
BROWN LM	2662-1392	2663-1393	
STALNAKER SAND	2692-1422	2705-1435	
KANSAS CITY	3019-1749	3021-1751	
STARK SHALE	3156-1886	3156-1886	
HUSHPUCKNEY SH	3189-1919	3190-1920	
BKC	3256-1986	3259-1989	
MARMATON	3350-2080	3351-2081	
CHEROKEE	3491-2221	3490-2220	
REWORKED MISS	3645-2375	3648-2378	
MISSISSIPPIAN	3659-2389	3661-2391	
KINDERHOOK SH	4054-2784	4042-2772	
CHATTANOOGA	4058-2788	4052-2782	
SIMPSON SAND	4084-2814	4082-2812	
ARBUCKLE	4171-2901	4171-2901	
GRANITE SOLID	5173-3903	5168-3898	
RTD	5250	5250	

	A. GR	B. elog	C. elog

A.
B.
C.



SH-LT GRAY SLTY PYRITIC TRACE OF LS LT TAN

IATAN OR BROWN LM 2662 -1392

LS-BROWN FOSS DENSE
SH-GRAY SILTY IN PART

LS- WHITE SLT FOSS W/ FINE OOLITES F POR
NS NO FLOR

SH- GRAY

STALNAKER SAND 2692 -1422

SAND-CLEAR FRIABLE FAIR TO GOOD POROSITY
SLTY DOLOMITIC CEMENT NS NO ODOR OR FLOR

SAND-LENSES OF PERMAIBLE AND TITIE SD
VARING GR SIZE MEDIUM TO FINE W/ VARIOUS
DEGREES OF SICILA CEMENTING FAIR TO GOOD

POROSITY NS OR ODER W/ MICA BROWN AND BLUE-GREEN

SAND-AS ABOVE W/ INCREASE IN CARBONIFEROUS
LAYERING NO FLOR NS

SD- LIMY NO POR NS

SAND- AA BUT SLIGHTY COARSER GRAIN NS

LS- TAN SLTY OOLITIC DENSE NO POROSITY NS

SH-SILVER GRAY SLTY PYRITIC

SH-AS ABOVE BUT SLIGHTLY DARKER

VIS 39 WT 8.8 FILT 8.8 CL 1.00
LCM 2#

LS-REDDIDSH BROWN DENSE FN CXTLN NS

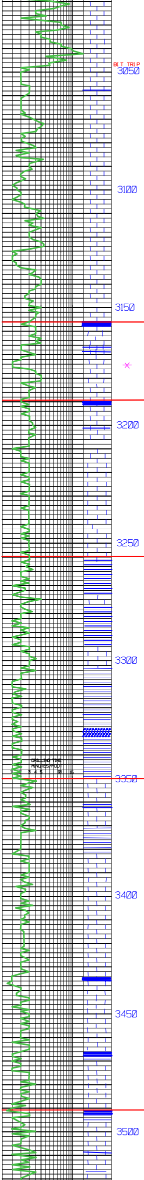
SH-LT GRAY W/ FN GRAY SILTSTONES NO POR NS

SH-AS ABOVE W/ MINOR LT BROWN SLTY FOSS LS
NO RESERVOIR NS

LIGNITE-NEAR COAL SHINNY BLACK BROWN STREAK
SLOWLY OUT GASSING

SH-DARK GRAY W/ MUCH PYRITE NUGGETS

KANSAS CITY 3019 -1749



LS-TAN & DARK BROWN SLTY FOSS POOR TO NO POROSITY NS

LS-CREAM TO GRAY-BROWN SLTY FOSS POOR-NO POROSITY NSFO TRACE STN VERY WEAK FLOR

SH-LT GRAY
LS-GRAY DENSE FN CXTLN NO POR NS

SH-BLACK

LS-CREAM FOSS & OOLITIC FN CXTLN POOR POROSITY NS OR ODOR INTER OOL AND MINOR VUG POR

LS-AS ABOVE IMPROVED POROSITY TO FAIR W/ WHITE & CREAN FRESH CHERT NS

LS-CREAM DENSE NS

LS-CREAM SLTY FOSS P-FAIR POROSITY LT ODOR

LS-AS ABOVE BETTER POROSITY PINPOINT & VUG ALSO SHOW & LEACHING ALONG FRACTURES

LS-CREAM SLTY CHALKY REDUCED POR & SHOW

LS-CREAM FN CXTLN PORCLIN LOOKING W/ POOR PINPOINT POROSITY TRACE SHOW NO ODOR WEAK FLOR

LS-CRM-TAN CRYPTO CXTLN DENSE NO POR NS W/FOSS & OOLITIC DARK BROWN AND TAN CHERT

LS-CREAM SLTY OOLITIC DENSE W/FAIR SOLUTION POROSITY ALONG FRACTURES NO SHOW OIL

LS-GRAY MASSIVE DENSE W/LT AND DARK BROWN CHERT NO POROSITY NS

VIS 38 WT 9.0 FIL 8.0 CL 1000
LCM 2

STARK SHALE 3156 -1886

SH-BLACK CARB

LS-TAN OOLITIC FEW LARGE MOST VERY SMALL NO SHOW STREAKS FAIR POROSITY

SH-GRAY

✳

LS-CREAM OOLITIC SMALL POOR TO FAIR POR FAIR SHOW FREE OIL FAIR FLOR CLEAR LITE OIL IN 3190 SAMPLE DECREASED IN NEXT

LS-GRAY & BROWN DENSE NO POR NO SHOW

SH-BLACK CARB

HUSHPUCKNEY SHALE 3189 -1919

LS-GRAY BROWN DENSE NS

SH-GRAY'

LS-GRAY PARCIAL FRACTURED AND LEACHED W/ MINOR PINPOINT AND LEACHED POOR AND SOME TRACE SHOW OF OIL

LS-CREAM FN CXTLN DENSE NS

LS-GRAY-BROWN FN CXTLN DENSE NS

BKC 3256 -1986

SH-LT GRAY W/BLACK STREAKS

LS-GRAY-BROWN TURBID MIX FOSS AND LS INCLUSION NO POROSITY NS

SH-DARK GRAY W/ STREAKS OF DARK DENSE LIMESTONE NO POR NS

LS-LT CREAM TO GREEN W/WHITE FRESH CHERT NO POROSITY NS

SH-GRAY

SILTSTONE TO VF SAND MICACOUS CALCAROUS NS

SH-GRAY & GREEN W/ MINOR SILTSTONES

MARMATON 3350 -2080

LS-LT TAN PORCLIEN LOOKING NO POROSITY NS

SH BLACK CARB
LS-TAN SLTY FOSS NO POR W/VERY BLACK CHERT

SH-GRAY SLTY PYRITIC

LS-LT TAN FOSS AND OOLITIC DENSE NO POROSITY NS W/DARK TAN FRACTURED AND HEALED CHERT

LS-DARK GRAY DENSE PRYTIC NO POROSITY OR SHOW MANY DARK INCLUSIONS

SOME WHAT SHALEY

SH-BLACK CARB

LS-DARK BROWN-GRAY MASSIVE SLTY FOSS NO POROSITY NS

SH-BLACK CARB

SHALE-GRAY AND GREEN

LS-LT TAN DENSE SLTY PYRITE STUDDED SLTY FOSS FRACTURED AND HEALED NS

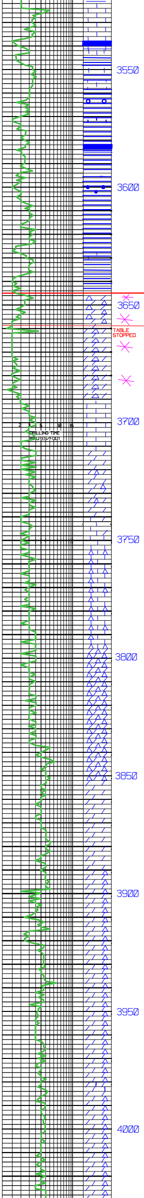
CHEROKEE SHALE 3491 -2221

SH-VERY BLACK CARB W/ SHOW GAS

SH-GRAY

LS-TAN TO GRAYISH DENSE SOME W/ FEW LARGE OOLITES NO POR NS

LS-W/SH INCLUSIONS NO POR



LS-TAN TO CREAM SLTY FOSS AND OOLITIC
NO POROSITY NS

LS- AS ABOVE BUT ADDING VARIOUS THIN
LS AND GRAY SILTY SHALES SOME LA AND SH
ARE GREENISH NO RESERVOIR

SH-BLACK CARB W/ GAS BUBLES

SH-GRAY W/ THIN BEDDED LS DIRTY NO
POROSITY NS

SH-BLACK CARB W/ GAS BUBLES

SH- GRAY AND BROWN

SH-GREEN & RED W/ THIN IMATURE CALCAROUS
SANDS TITE NS & FEW THIN BED LS SLTY
FOSS NO POROSITY OR SHOW

SH-GRAY & PURPLE & COPPER COLOR W/ GREEN
TITE SANDS

W/ THIN DIRTY LS

REWORKED MISSISSIPPIAN 3645 -2375

CHERT VARIOUS COLORS SSO IN WEATHERED
FEW WEATHERED DOLO W/ GOOD SHOW OIL
POOR POROSITY

MISSISSIPPIAN 3659 -2389

DOLO-TAN TO BROWN VERY FINE CXTLN OIL
SATURATED W/CLEAR LITE OIL GOOD ODOR
FAIR POROSITY W/TRANSLUCENT CHERTS

LS- GRAY FN CXTLN LITTLE TO NO POROSITY
NS SLTY FOSS AND OOLITIC

LS-AS ABOVE W/ TRACE SHOW AROUND FRACTURE
DENSE

DOLO-LIMEY VERY FINE CXTLN TITISH GRAY

DOLO- LIMEY FN CXTL W/ SMOKEY GRAY CHERT

LS DOLOMITIC MASSIVE AND DENSE NS SOME

LS-BROWN W/ALOT OF WHITE CHERT W/BROWN

STREAKS SOME PYRITE INCLUSION IN THE CHT
NS NO POROSITY OR FLOR

VIS 41 WT 9.2 FIL 6.4 CL 1000
LCM 6

DOLO-LMY EVEN MORE CHERTY NO POR
FEW PIECES FN BROWN DOLO LIKE FROM
ABOVE W/ SHOW ? 3820 SMP

DOLO-DARK BROWN-GRAY VERY CHERTY MILKY
DENSE NO FLOR FEW GRAY DOLO OUT GAS

DOLO-GRAY-BROWN MEDIUM CXTL W/SANDY
LOOK POOR-NO POR NS LESS CHERT

DOLO-GRAY FINE CXTLN DENSE LITTLE TO NO
CHERT NO POROSITY OR SHOW

DOLO-BROWN FINE CXTLN SLTY CHERTY
SOME DOLO IS LITE AND DARK BANDED
NO POROSITY OR SHOW

DOLO-LT GRAY MED CXTLN DENSE NO POR
NS

DOLO- LT TAN W/SPONGE SPICULE TRANS
CHERT NO RESERVOIR

DOLO-AS ABOVE BUT MODELED LT AND DARK
AMORPHOUS QUARTZ GROWTHS

DDOLO-BROWN MED TO FN CXTLN DENSE NS W/

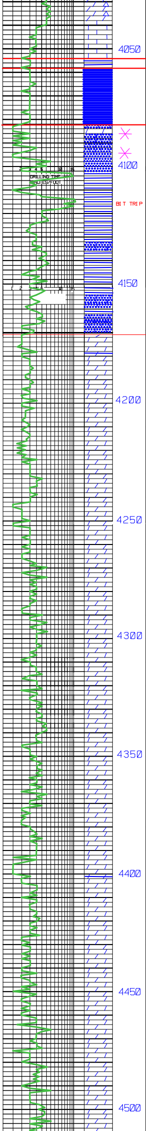
LIGHT GRAY CHERT

DOLO- AS ABOVE BECOMING CHOCOLATE BROWN

W/ MORE DARK SHALE AND CALCITE NODULES

DOLO-AS ABOVE DENSE NS

VIS 45 WT 9.1 FIL 6.0 CL 1500
LCM 6



LS-WHITE FOSS AND NODULAR OOLITIC ?
NS NO FLOR NO ODOR
SPICULAR DENSE CHERT NS NO FLOR

KINDERHOOK 4054 -2784

SH-GREEN RED AND BLACK THIN
CHATTANOOGA SH 4058 -2788

SH-CHOCOLATE BROWN W/ BROWN STREAK MANY
FLOR SPORES

SIMPSON SAND 4084 -2804 REWORKED

SAND- V V FINE DOLOMITIC TITE
DOLO-LT CREAM VUG POR FAIR.FAIR SHOW OIL
SAND-MED GR DOLO FAIR SO & ODOR SPOTTED FLOR

W/ STREAKS OF PYRITE SOME FREE SD GR
ENCASED IN DOLO
SAND-PART DOLO CEMENT TITE W/GOOD SHOW OIL
PART CLEAR W/QTZ OVER-GROWTHS GOOD SHOW OIL

NO 4120 SAMPLE
SH-APPLE GREEN

SH-APPLE GREEN VERY PYRITIC AND SAND
STUDDED

SD- VERY FINE GR GLOCK CREAM W/GREEN TINT
NS

SH- GREEN W/ SAND INCLUSIONS MANY LOOSE GR
MEDIUM TO COARSE NS

SAND-PRYRITIC AND VERY GLOCK POOR POROSITY
NS

SAND- GLOCK AND PYRITIC POOR POROSITY NS

ARBUCKLE 4171 -2901

DOLO- TAN DENSE POOR POROSITY NO SHOW

SH-GREEN

DOLO-LITE CREAM MOSTLY DENSE W/ STREAKS
OF COARSE CXTLN OR RECXTL CALCITE IN
HEALED FRACTURES FAIR POR NS

DOLO- AS ABOVE W/ INCREASE IN LITE GRAY
CHERT NS

DOLO-MED CXTL TITE HIGHLY RECXTL NS

VIS 47 WT 9.1 FIL 6.0 CL 2500
LCM 6

DOLO-COARSE CXTLN MAY HAVE BEEN OOLITIC
BEFORE THIS CXTLN GROWTH NS

DOLO- WHITE W/ SMALL OOLITES FAIR POROSITY
NS

DOLO- WHITE TO OFF GRAY DENSE W/SPICULAR
TRANSLUCENT CHERT W/BLACK MINERAL
INCLUSIONS

DOLO-TAN FINE CXTLN W/ OOLITIC CHERT
POOR-FAIR POROSITY NS

DOLO-DARK BROWN DENSE POOR TO NO MATRIX
POROSITY NS

DOLO-GRAY W/TAN OOLITES MEDIUM FAIR POR

DOLO-MED TO COARSE CXTN W/DARK SHALE
STREAKS W/CHERT OOLITIC SLTY PYRITIC

DOLO-DARK BROWN MED CXTL FAIR POROSITY

DOLO-WHITE TO LT CREAM MED CXTL W/
WHITE CHERT NS

DOLO- TAN SOFT FAIR POROSITY W/ WHITE
CHERT GROWTHS

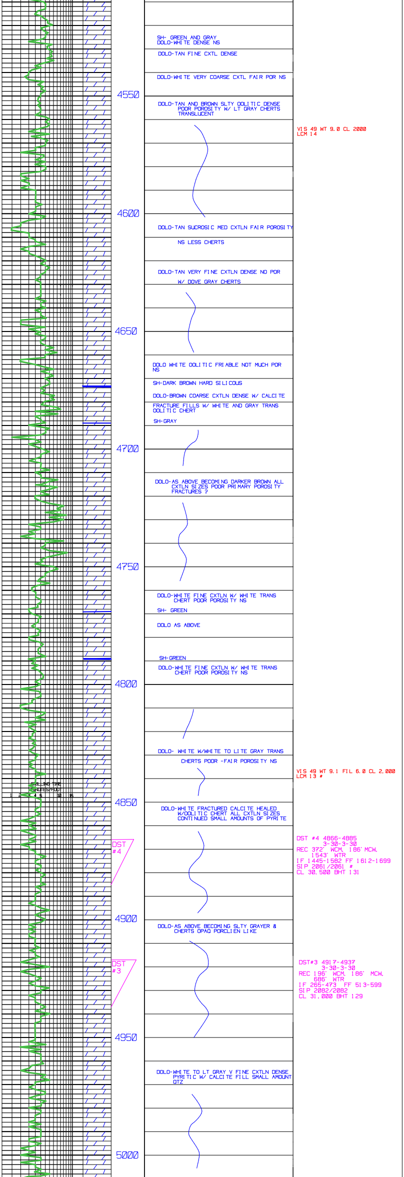
SH-GRAY

DOLO-WHITE VERY FINE CXTL DENSE W/ QTZ
GROWTHS

SH-DARK GRAY

DOLO-TAN OOLITIC BROWN FAIR POROSITY

DOLO- AS ABOVE W/ LT GRAY OPAC CHERT



SH- GREEN AND GRAY
DOLO-WHITE DENSE NS

DOLO-TAN FINE CXTL DENSE

DOLO-WHITE VERY COARSE CXTL FAIR POR NS

DOLO-TAN AND BROWN SLTY OOLITIC DENSE
POOR POROSITY W/ LT GRAY CHERTS
TRANSLUCENT

VIS 49 WT 9.0 CL 2000
LCM 14

DOLO-TAN SUCROSIC MED CXTLN FAIR POROSITY

NS LESS CHERTS

DOLO-TAN VERY FINE CXTLN DENSE NO POR

W/ DOVE GRAY CHERTS

DOLO WHITE OOLITIC FRIABLE NOT MUCH POR
NS

SH-DARK BROWN HARD SILICOUS

DOLO-BROWN COARSE CXTLN DENSE W/ CALCITE

FRACTURE FILLS W/ WHITE AND GRAY TRANS
OOLITIC CHERT

SH-GRAY

DOLO-AS ABOVE BECOMING DARKER BROWN ALL
CXTLN SIZES POOR PRIMARY POROSITY
FRACTURES ?

DOLO-WHITE FINE CXTLN W/ WHITE TRANS
CHERT POOR POROSITY NS

SH- GREEN

DOLO AS ABOVE

SH-GREEN

DOLO-WHITE FINE CXTLN W/ WHITE TRANS
CHERT POOR POROSITY NS

DOLO- WHITE W/WHITE TO LITE GRAY TRANS

CHERTS POOR -FAIR POROSITY NS

VIS 49 WT 9.1 FIL 6.0 CL 2,000
LCM 13 #

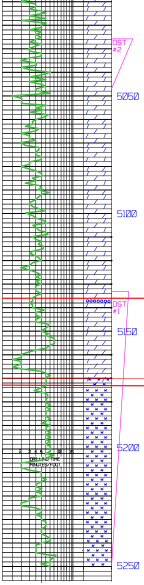
DOLO-WHITE FRACTURED CALCITE HEALED
W/OOLITIC CHERT ALL CXTLN SIZES
CONTINUED SMALL AMOUNTS OF PYRITE

DST #4 4866-4885
3-30-3-30
REC 372' WCM, 186' MCW,
1543' WTR
IF 1445-1582 FF 1612-1699
SIP 2061/2061 #
CL 30,500 BHT 131

DOLO-AS ABOVE BECOMING SLTY GRAYER &
CHERTS OPAQ PORCLIEN LIKE

DST#3 4917-4937
3-30-3-30
REC 196' WCM, 186' MCW,
686' WTR
IF 265-473 FF 513-599
SIP 2082/2082
CL 31,000 BHT 129

DOLO-WHITE TO LT GRAY V FINE CXTLN DENSE
PYRITIC W/ CALCITE FILL SMALL AMOUNT
QTZ



DOLO-TAN GOING TO LT GREENISH-GRAY
FINE AND MEDIUM CXTLN W/ OPAC
CHERT AND SOME PYRITE

DST #2 5026-5047
5-30-5-30
REC 230' MW. 2480' WTR
IF 949-1410 FF 1285-1537
SIP 2138/2138 #
CL 34.000 BHT 132

DOLO- AS ABOVE BECOMING GRAYER

DOLO-BROWN OOLITIC IN PART, REST COARSE
CXTLN ROMBIC FAIR-GOOD POROSITY NS

REAGAN SAND 5136 -3866

SD-MED GRAIN FAIR POROSITY SEMI-ROUNDED

DOLO-BROWN OOLITIC IN PART, REST COARSE
CXTLN ROMBIC FAIR-GOOD POROSITY NS

VIS 48 WT 9.0 FIL 6.0 CL 2.000
LCM 13

DST#1 5133-5250
15-60-30-90
REC 185' WM . 185 MW
370' TOTAL
IF 36-96 FF 106-203
SIP 2189/2186 #
CL 39.000 BHT 131

GRANITE WASH

SOLID GRANITE 5173 - 3903

GRANITE-FELSPATHIC W/ BIOTITE SLIGHTY
WEATHERED NOW SEEING MORE SAND

MAYBE A CONGLOMERATE WASH

GRANITE- INCREASE IN QUARTZ CLEAR AND
MILKY

GRANITE- ALSO A QTZ VEIN

GRANITE-QUARTZITIC W/FELDSPARS AND MICAS
BIOTITE AND SOME GREEN PLATE
MINERAL MAYBE CLORITE W/BLACK
COATING ALONG FRAC FACES?

VIS 49 WT8.9 FIL 6.0 CL 2.000
LCM 12