GEOLOGICAL REPORT

DRILLING TIME S.D. ANGLE - COPYRIGHT 2011 **SAMPLE LOG**

COMPANY Russell Oil, Inc.
LEASE Addington
WELL NO. 1-1
LOCATION 1080' FSL + 330' FWL
SEC 1 TWN 16S RNG 15W
COUNTY Barton STATE Kansas
POOL Galatia North
API NO. 15-009-25572-00-00

ELEVATIONS
KB 1945
DF
GL 1938
MEASUREMENT FROM Top of KB
PIPE STRAP @ 3260' .83' short of pipe board.

CONTRACTOR Southwind Rig #4
COMMENCED July 14, 2011
COMPLETED July 23, 2011
RTD July 22, 2011
MUD Chemical, Mud-Co, Inc.
SAMPLES FROM 2700' TO 3485'
DRILLING TIME FROM 2700' TO 3485'
SUPERVISION FROM 2700' TO 3485'
GEOLOGIST Steven D. Angle

CASING RECORD
SURFACE New 8 5/8" set @ 946' w/375 sx comm + 2% gel 370 cc. CDC.
PRODUCTION None Dry + Abandoned

REMARKS Rig on 7' substructure.
KB = GL + 7'

All formation tops, zones of interest, porosity, shows and sample time lag are based from the top of Kelly Bushing measurements. Any corrections in measurements during the drilling of this well have been incorporated into this report.

ORIGINAL COPY

Sincerely,

Steven D. Angle
W.G.C.

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FORMATION TOPS

DATUM ELEVATION 1945 KB

FORMATION	SAMPLE	E LOG	DATUM	WELL A	WELL B
Topeka		2873'	- 928		
Heebner		3101'	- 1156		
Toronto		3119'	- 1174		
Douglass		3136'	- 1191		
Lansing/KC		3164'	- 1219		
Base/KC		3396'	- 1451		
Arbuckle	3483'		- 1538		
Rotary Total Depth	3485'		- 1540		

CORRELATION WELLS

A.

B.

DAILY PENETRATION

DEPTH	@ TIME	ON DATE
UNDER Surface	1:00 A.M.	7-16-2011
1200'	7:00 A.M.	7-16-2011
2270'	7:00 A.M.	7-17-2011
2940'	7:00 A.M.	7-18-2011
3128'	7:00 A.M.	7-19-2011
3263'	7:00 A.M.	7-20-2011
3360'	7:00 A.M.	7-21-2011
3397'	7:00 A.M.	7-22-2011
3485'	11:43 P.M.	7-22-2011

MUD RECORD

DEPTH	TYPE & AMOUNTS
2042'	121 sx Gel, 11 sx Soda Ash, 5 sx caustic Soda, 5 sx lignite, 1 2/3 sx DrisPac.
2740'	24 sx Gel, 4 sx Soda Ash, 2 sx caustic Soda, 2 sx lignite, 2/3 sx DrisPac.
3228'	11 sx Gel, 1 sx Soda Ash, 1 sx caustic Soda, 1/2 sx lignite, 1/2 sx DrisPac.
3295'	30 sx Gel, 2 sx caustic Soda, 1 sx Soda Ash, 1/2 sx lignite, 1/2 sx DrisPac
3397'	14 sx Gel, 1 sx Soda Ash, 2 sx caustic Soda, 1/2 sx lignite, 1 sx DrisPac.
	10 sx Gel, 1 sx Soda Ash, 1/2 sx lignite, 1 sx caustic Soda, 1/2 sx DrisPac.
3470'	18 sx Gel, 3 sx Soda Ash, 2 sx caustic Soda, 1 sx DrisPac.

DRILLING INFORMATION

RILLING CONTR: Southwind Drilling Rig #4
G PHONE:
OL PUSHER Robert L. Stevenson
IONE:
RILLERS - DAYLIGHT TOUR: Brent Babcock
EVENING TOUR: Jonathan Amos
MORNING TOUR: Shawn Epp
UD DATE 7-14-2011 DATE OF RTD: 7- -2011
TE DIRECTIONS: 1 mile South Milberger, Ks. 2 west 1/2 South, East into location.
URFACE PIPE: Ran 22 jts, New 23# 8 5/8", set @ 346' w/375 sx Common + 2% gel, 3% cc. Cement Circ.
ELL STATUS:
RODUCTION CASING:

RILLING MUD CONTR: MUD-Co, Chemical mud

RILL STEM TESTING: Trilobite, Ray Schwager, Cell # 785-650-9628
EMENTING: Surface By Quality Cementing.

LECTRIC LOGGING: LOG-Tech, Ran Dual Induction, Microresistivity + Dual Compensated Porosity. Engineer: B. Becker

BIT RECORD

.	PURPOSE	SIZE	MAKE	TYPE	IN	OUT	JETS	PUMP
	Surface	12 1/4"	Reed	HP11	0	946	3/15's	600#
	Bore	7 7/8	Reed	S-52	946	3485	14-14-15	750#

DST NO. 1 INTERVAL 3041 TO 3100 TYPE Anchor 59' TIMES 30 - 30 - 30 - 30
Blow: weak - Died in 25 minutes. SI - No return blow. Open - Surface blow - died in 20 minutes. SI No return blow.
Rec: 70' oil cut mud (10% oil - 90% mud).
IF/FF 20 - 34 SIF/SFF 44 - 57 ISI/FSI 910 - 862 IH/FH 1459 - 1451 Temp: 101 °F

DST NO. 2 INTERVAL 3096 TO 3228 TYPE Anchor 132' TIMES 30 - 30 - 30 - 30
Blow: weak blow - died in 25 minutes. SI - No return blow. Open - blow - died in 20 minutes. SI - No blow.
Rec: 20' of mud
IF/FF 23 - 33 SIF/SFF 33 - 33 ISI/FSI 116 - 76 IH/FH 1463 - 1447 Temp: 100 °F

DST NO. 3 INTERVAL 3228 TO 3274 TYPE Anchor 46' TIMES 60 - 30 - 60 - 30
Blow: Weak to Strong - B.O.B in 6 minutes. SI - No return blow. Open - Weak to Strong - B.O.B. in 40 minutes. SI No blow.
Rec: 960' Gas In Pipe, 90' slightly oil cut mud (1% oil - 99% mud), 60' water Mud w/ show of oil (40% water - 60% mud). Chlorides 63000 p.p.m.
IF/FF 23 - 62 SIF/SFF 68 - 79 ISI/FSI 325 - 302 IH/FH 1526 - 1519 Temp: 100 °F

Blow: Surface blow - died in 10 minutes. SI. No blow back. 2nd No blow - Flushed Tool - Surge - Tool open - no blow. SI - No blow.

Rec: 10' MUD.

IF/FF 20 - 23 SIF/SFF 24 - 29 ISI/FSI 87 - 60 IH/FH 1575 - 1574 Temp: 100°F

DST NO. 5 INTERVAL 3360 TO 3397 TYPE Anchor 37' TIMES 60 - 30 - 60 - 30

Blow: weak 1/2" to Fair 3 1/2". SI - No blow. 2nd weak blow 1/4" To 1/2" blow. SI. No blow.

Rec: 100' Gas In Pipe, 5' Clean oil, 75' MUDDY WATER w/show of oil (75% water - 25% MUD).

Chlorides 60,000 PPM.

IF/FF 20 - 85 SIF/SFF 85 - 110 ISI/FSI 836 - 784 IH/FH 1594 - 1584 Temp: 102°F

DST NO. 6 INTERVAL 3396 TO 3485 TYPE Anchor 89' TIMES 60 - 30 - 60 - 30

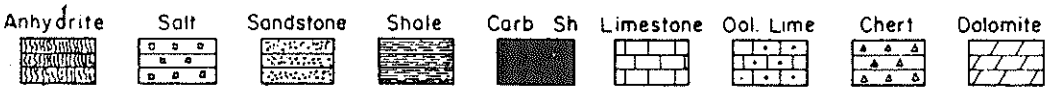
Blow: Strong Blow - B.O.B in 4 minutes. SI - No return Blow. 2nd Strong Blow - B.O.B. in 5 minutes. SI - No Blow.

Rec: 310' MUDDY WATER w/show of oil (80% water - 20% MUD). 1620' WATER.

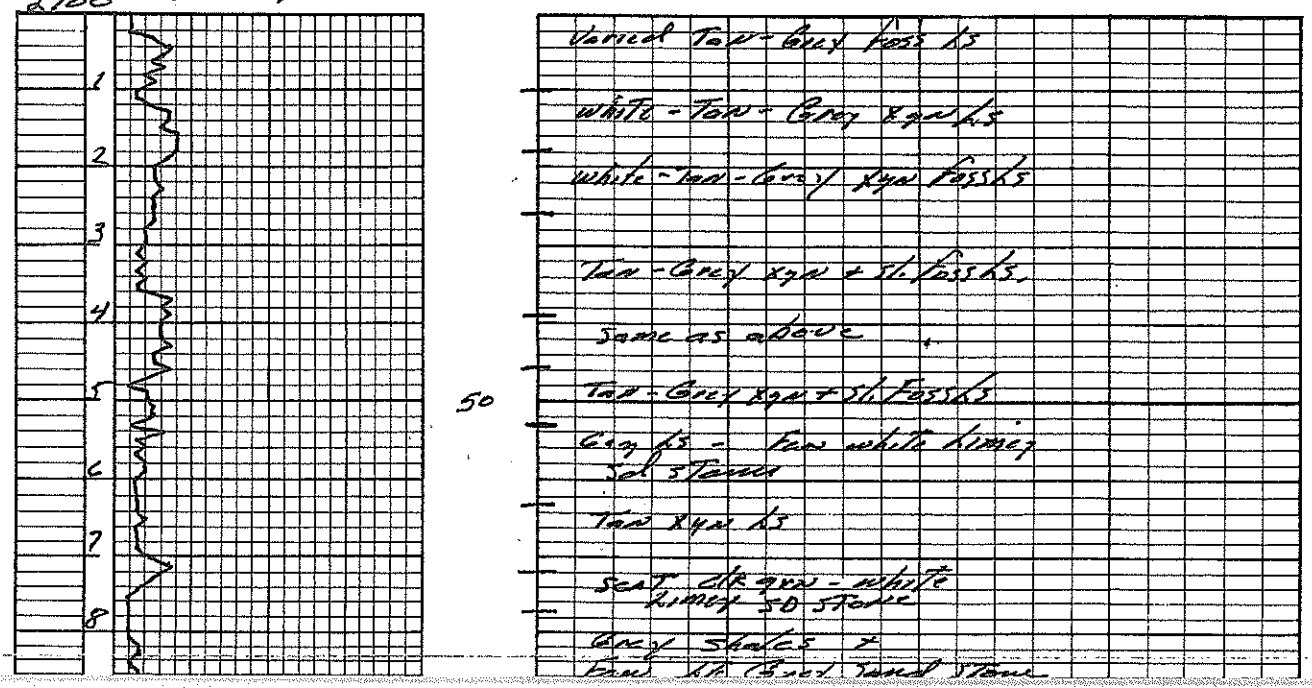
Chlorides 24,000 PPM.

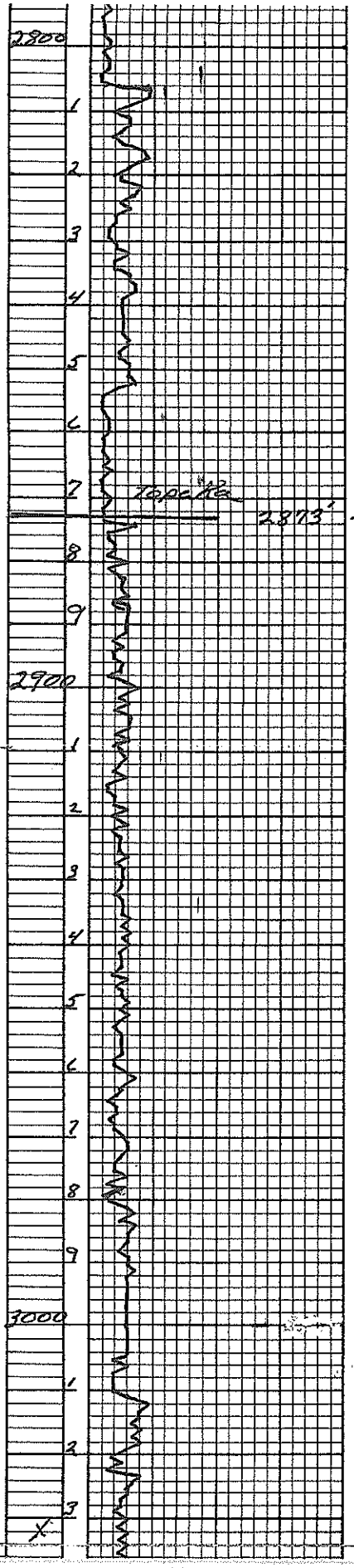
IF/FF 38 - 595 SIF/SFF 601 - 893 ISI/FSI 1123 - 1125 IH/FH 1619 - 1609 Temp: 105°F

LEGEND



X = Shows + ODORS
LOG TOPS MARKED





Topeka 2873' -928

Brown xyn ls
20 Few white Limey Sd clusters

30 Tan - Brn xyn ls

White - Grey Tan ls -
40 Couple white Sd Tite clusters

50 Varied Tan ls -
Few pieces white Firm Sd Stone

60 Tan - Brn Foss ls

50 Tan + Grey xyn ls
1 Loose grey Sd cluster
Tan + Brn xyn ls

Brn - Gray Sh +
SCAT Tan Sl. weathered
xyn + Foss ls.

90 Tan - Brn Foss limes

2900
10 Tan + Brn dense - xyn
Sl. Foss ls

20 Number of pieces BLK Fr. cuts
Tans - Brns ls.

30 Tan xyn fossiliferous ls.

40 Same as above.

50 Varied Tan dense + xyn
Foss ls

60 Same as above

50 70 lavidtan xyn
ls.

80 Varied colored shs - sl.
Silty + xyn ls.

90 Same as above

Tan - Buff Silty to xyn ls.

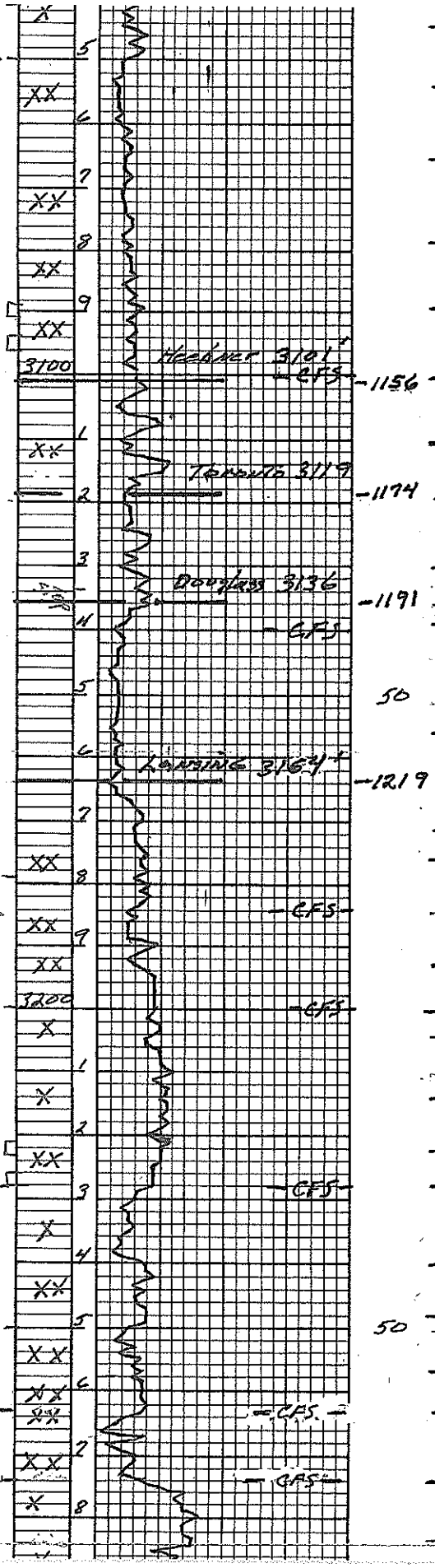
3000
10 Tan xyn ls.

Tan xyn - Varied dense
20 To sl. weathered - sl. Foss ls.

30 Same as above

Tan buff ls. + some
40 fn xyn + SCAT fn Silty ls.

50 SCAT white buff Foss, sl. weath.
w/ Tuff Foss & w/ FS chunks



SFO - NO ODOR
SAME AS ABOVE

SCAT Tan xyn vuggy lm
w/FSFO - Fair odor

SCAT piece white Fn xyn To vuggy ls
A Piece white Fn xyn To vuggy ls.
Pinpt To vuggy POR ⌀. Fr-Gd S oil
Some Blk stai FSFO - Free drops Gd ODOR
SCAT Tan CHERTY To Sl. Sucy ls
w/GS oil - Fair oil streams - Fair OD

Few white xyn + Foss ls w/
Gd vuggy POR. FSFO w/ Fnt odor
Few Tan Fn xyn ls Gd Pinpt + vuggy ⌀ GSO
SCAT Coal Blk Shales.
Varied Tan Varied xyn ls.

Few white sl. xyn pinpt POR
Some vuggy ⌀. SFO - Gd oil SATURATION
NO ODOR
white - varied Tan
xyn ls - some Foss ls.

white xyn - SCAT Foss
Tan chalsc ls
Same as above - some wrath ls.

White - Tan - Gray - Some Sdy
xyn SCAT Foss ls - SCAT Blk-Gray shs.

White - Buff xyn ls - SCAT
Foss ls - Blk - Green - Brn shs.

SCAT pinpt'd xyn ls - wht - Tan xyn
Foss ls.
1 piece Brn Fairly hard
Cmn vuggy lm w/GSF Dk Brn oil F-G OD
Few lt tan v sl. vuggy w/tr. wet oil stn
Few Gray Fr. chts - Very Fnt odor
Few SCAT Foss ls w/SCAT Foss vuggy ⌀ Fr. stn
SFO Fnt ODOR
Varied Tans + some Foss ls.
1 piece Tan weathered foss lm
Gd vuggy POR - Gd oil SATURATION SSFO
GS oil streams NO ODOR
Same as above

Few pieces Tan xyn + Tan Foss ls.
SSFO - Gd staining VFT ODOR

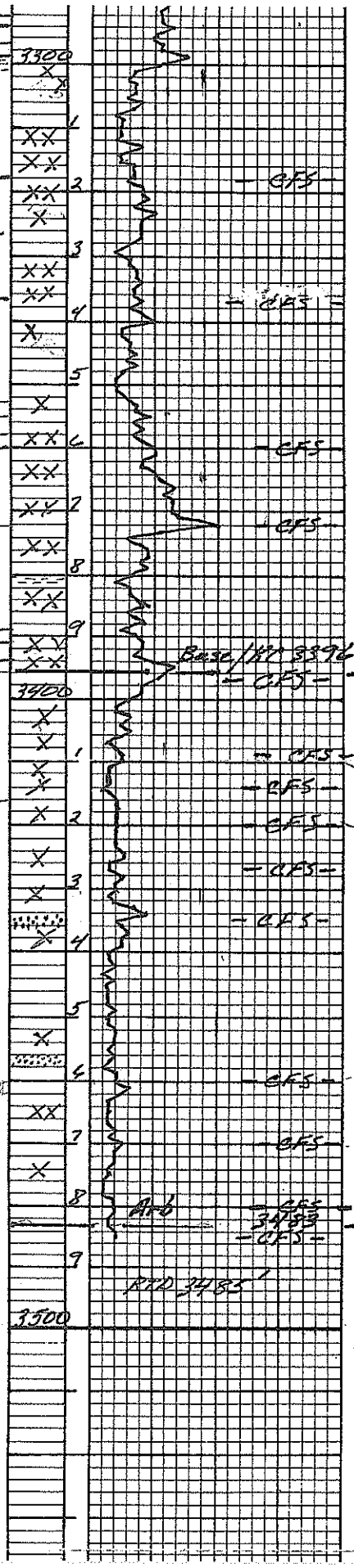
Few small pieces varied weathered
Tan Foss ls + white varied ls. Fnt OD
Few small pieces - Varied
Wrath Tan Foss ls vuggy ⌀ w/tr. oil
Fair ODOR
Few small pieces Velcdy ls
v sl. vuggy SSO v. Fnt ODOR +
1 Tan oolicast lm w/SO
Same as above
SCAT pieces Brn wrath Foss ls w/Gd
oil SAT. SFO Fair ODOR
Few v sl dkgrn oolic ls w/ WSO
Few Tan Fn xyn Sdy Gd oil SAT shows
1 piece sl. vuggy Cdy wht Fnt ODOR
lm v ss wet oil stn

2 pieces white Foss wrath ls

DST #1 3011'-3100'

DST #2 3098'-3128'

DST #3 3172'-3224'



NO OD
WAT xln LS - Few wat poorly devel. oolitic LS.
1 piece Foss LS Gd Frgs ϕ FG3 wet STN
A Few U Small CLR Sol qtzs
white CATS V Sl uvgy x lm SS wet STN FAT ODOR
2 pieces wat CATS V Sl. uvgy, LS w/ SS wet oil STN w/ FAT ODOR
2 pieces Some FG3 wet Brn STN. FAT OD.
Few varied LS w/ FSO DX oil
Gilsonite - Gd STN FAT ODOR
Few pieces WAT xln Sl uvgy LS SS wet STN
Fair Amt wat Foss wea LS & weat CATS - Some uvgy ϕ 1x FO Fair STN FAT ODOR
Same w/ some dad FLKY oil FAT ODOR
Few pieces WAT lm w/ dad oil STN.

Few Scat Pieces wat Sl. uvgy lm w/SS. BLK oil
2 pieces wat Foss lm Foss ϕ SSFO FAT OD
Fair Amt Tan xln LS Some Int Foss ϕ FG3 wet STN + oil Sheen FAT ODOR
Same w/ uvgy ϕ FG oil Scat UV LT FAT OD
Tan weath Foss LS FG wet oil STN STN FT OD
Scat pieces - wat xln Foss LS
Some Brn wet oil STN - Scat Rainbow drops
Fair ODOR

Few Scat pieces Tan xln LS
LS wet STN - Rainbows Fair ODOR
Same w/ Gd ODOR

Scat Tan CATS Rd Foss LS -
Some weath LS uvgy ϕ SS Brn oil Drops
1 piece yellow CAT
7 pieces Tan Foss LS - Poly col. LS
FG wet STN Few weath CATS
Poly Foss LS FSO - Brn any yellow CATS
Multi col CATS - Dark CATS Eq LS & oil
Same Var loose Sol Grns
Scat wat xln LS - 1 piece pink dolomite
Some CLR + Rd loose Sol Grns. BLK oil
Scat rd SLS wat rd CATS - 1 piece
Tan Sl. uvgy lm w/ BLK Foil
Fair Amt Varied Size rd CLR Sol Grns
1 piece lm FSEO Fair ODOR - Gilsonite
Multi. Col SLS + CATS

wat. soft CATS - Scat wat - Dry CATS
Scat wat LS w/ Gilsonite
Fair Eq Amt Multi Size Sub Rnd loose Sol
Scat Dark LS. - Clr CAT Sl weath w/ oil
Rd - wat Grey CATS Scat Multi Size
w/ SSO - Drops oil CLR Sol Grns
Few CATS - 1 piece wat lm w/ SO
Brn FLKY oil

Number wat MED xln Sol.
Varied CATS - LS - no ODOR