M-d

Franco-Arizona Oil Co #1 Govt 1-6
SE/4N#/4 S14-T14N-R26E, Apache Coun

1-6

County Apache

Area

Lease No.

Well Name Franco-Arizona Oil Company #1 Government

Location SE NE Sec 14 Twp 14N Range 26E Footage 3212'N. & 388' W of SE Corner (4450' fsl & 388' fel)

Elev 5672 Gr ____ KB Spud Date 9-23-39 Complete Abandon 11-17-39 Total Depth 2595

Contractor: Approx. Cost $

Drilled by Rotary
Cable Tool

Casing Size	Depth	Cement

Production Horizon

Initial Production D & A

Took ~~28~~ 29 cores : see files.

REMARKS: See New Mex. Geol. Soc. Spec. Pub. 3, 1969, p. 14

Elec. Logs

Applic to Plub ___ Plugging Record ___ Completion Report ___

Sample Log X
Sample Descript X
Sample Set
Cores

Water well - accepted by

Bond Co. & No.

Bond Am't $ Cancelled Date Organization Report

Filing Receipt dated Well Book Plat Book

Loc. Plat Dedication

API # 02-001-05013

PERMIT NO. None Date Issued

Formation Tops	Scout	Sample	E. Log	Remarks
Moenkopi			surface	
Kaibab			154	
Coconino			205	
Supai			550	
Paradox ? Supai			1430	
Penn ?			2395	
Temple Butte			2418	
Devonian (IS)			2549	
Granite			2555	
Total Depth			2595	

Core Analysis, DST charts, etc. _____

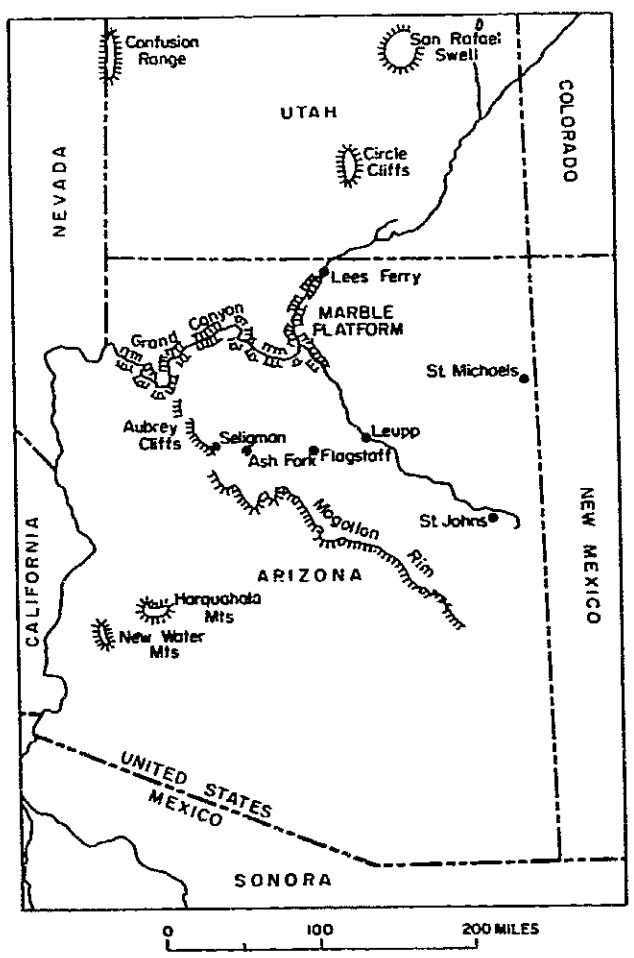

Figure 3
Geographic areas and localities in Arizona and adjoining states referred to in text

continuous outcrops across the state, along the Mogollon Rim, confirm the postulated connection southwest of the Defiance positive element, and scattered outcrops farther south and west, though relatively thin, indicate that marine conditions prevailed in that area for a brief time. This region of relatively little sinking has been referred to by Eardley (1949, fig. 2) as the Arizona sag.

Isopach maps of the Kaibab and Toroweap Formations have been prepared by Elston (1960) and by Baars (1962) but results are quite different. On Elston's map, the thickness of these units increases rather uniformly toward the west across the Grand Canyon region. On Baars' map, a structure that he interprets as "a positive element" and refers to as "the Kaibab monocline" is shown by his isopachs. Unfortunately, without redoing the maps, it is not possible to determine which version is correct; Elston does not show his control points and Baars does not indicate how much of the thinning in eastern Grand Canyon is due to pre-Triassic erosion and how much to later erosion, known to be significant in this area.

In recent years, considerable information has become available, largely from drilling, regarding the shoreward margins of the carbonate parts of the Toroweap and Kaibab Formations. No attempt has been made systematically to tabulate such data, but a few observations seem in order. Deposits of the Kaibab Limestone extend considerably farther onto the Defiance positive element than do those of the Toroweap. Whereas the magnesian limestones of the Toroweap Formation terminate as a tongue between red beds near the eastern end of Grand Canyon and in an area west of Sycamore Canyon to the south, limestone of the Kaibab extends much farther east. Unpublished data of the U. S. Geological Survey report the Kaibab as 40 feet thick at well 5T-308, 13 miles east and 1 mile south of Leupp on the Little Colorado, and as 50 feet thick in the Franco-Arizona No. 1 Government well, northwest of St. Johns in eastern Arizona. North of the latter well, at St. Michaels Mission, sec. 22, T. 26 N., R. 30 E., a limestone unit 22 feet thick between the Chinle Formation and de Chelly Sandstone may represent a maximum extension of the Kaibab, according to the U. S. Geological Survey's unpublished data.

14-14-11-76E

Environment

Recognition of Facies

The great interest in facies, both lithologic and faunal, that developed in America during the 1940's was responsible for a symposium on the subject sponsored by the Geological Society of America in 1949. At this symposium, the Kaibab Limestone was cited (McKee, 1949) as one of the formations that especially well illustrates some of the basic principles of facies development. The Kaibab was shown to include facies of different lithology but similar age and, also as a result of transgression or regression, facies of similar lithology but different ages. In brief, it illustrates distinctive facies that developed contemporaneously and a number of similar facies that formed at different times.

In the Kaibab Limestone, the nature of change between facies is well illustrated. It includes both interfingering, as shown best by the red beds and other continental units, and lateral gradation, as shown among the various marine facies (McKee, 1949). Furthermore, the use of time planes in

F O-1122

THE SAN ANDRES LIMESTONE, A RESERVOIR FOR OIL AND WATER IN NEW MEXICO

SYMPOSIUM

EDITORS
W. K. SUMMERS F. E. KOTTLOWSKI

NEW MEXICO GEOLOGICAL SOCIETY
SPECIAL PUBLICATION No. 3
1969

Sample Log: Franco-Arizona Oil Co., #1 Government, NE¼, Section 14, Townsh 14 N., Range 26 E., (3212' N & 38' W. of SE corner) Apache County, Arizona

Elev. 5672. Spudded in September 23, 1939. Surface Pipe 13" @ 295'; 8-5/8" @ 2000'. Completed November 17, 1939. Sample determinations by E. E. Dawson. Surface structure, mapped by E. S. Shaw; checked by seismograph.

Summary of formations:

0	200	Moenkopi Fm. ??
200	545	Coconino Ss.
545	2549	Supai Fm.
2426	2549	Pennsylvanian?
2549	2595	Granite, Pre-Cambrian

5672
-
+5472

Sample Log:

0	87	Medium-grained, greenish limy ss, loosely consolidated, with spots of orange, iron stains and specks of chert.
87	105	Dark brick red clay with streaks of greenish, medium-grained, loosely consolidated ss, with orange streaks, and some black chert, limy.
105	120	Dark red & orange-yellow clays, intermixed, limy.
120	140	Dull, yellow-orange clay with considerable pebbles up to ¼" dia., red, green, yellow & black. Some soft green & yellow medium-grained limy ss.
140	150	Sand & gravel---pebbles up to ¼" dia., red, yellow, orange, tan, black & white --- well rounded. (Cgl in lower Moenkopi ? DAH).
150	153	Same, pebbles larger
153	160	Light tan & yellow shaly ls & limy sh, white ss, cemented with red clay & ls, coarse-grained, well-rounded, mostly sh.
160	165	Light gray, yellowish, limy sh, & coarse-grained, well-rounded white ss, with red ls cementing grains. 25% ss, 75% sh.
165	190	Light gray-yellowish shaly ls with 5% white ss cemented with red lime.
190	200	Shaly, yellow & light gray ls, hd.
200	210	White, even-grained, rounded, fine-grained ss, calcareous cement, soft.
210	220	White, even, rounded, fine-grained ss, with some black chert, calcareous cement, soft.
220	295	White, even rounded, fine-grained ss, with some black chert, calcareous cement, soft.
295	300	White, fine-grained, well-rounded ss, with yellow & red stains, 55%. Light gray soft limy sh 45%.
300	310	Same, shale 50%.
310	315	Same, shale 30%.
317		Lost circulation.
317	320	White & buff ss, soft, fine-grained, rounded, small amount red chert 1/8" dia.; 3% gray limy sh.
320	330	Same, soft ss; shale 10%
330	335	Same, more red chert, 15% sh. 5% black organic sh,; ss coarse.
338		Lost circulation.
335	340	White ss, soft, uniform rounded, fine-grained; 10% gray calc sh, trace carbonaceous matter, trace pyrite.
340	345	Same, with small amount gray & black sh, more pyrite.
345	350	Same
350	355	White to buff, well-cemented, fine-grained, round, ss; black to buff pepples up to 13/16" dia., elongated, Trace pyrite, amethyst qtz.
355	365	White, well-rounded, cemented, fine-grained ss, trace amethyst qutz, trace feldspar pepples.
365	375	White, well-rounded, cemented, fine-grained ss, trace amethyst qtz, trace feldspar, trace pyrite.
375	380	White soft rounded, fine-grained ss; trace tarry substance.
380	385	Same, trace red chert, flakes of carbonaceous sh.
385	390	Same, pepples red ½" dia., well-rounded.
390	395	Same, no pebbles, less chert.
395	400	Same, trace hard gray sh, & hard reddish ss & clay.
400	420	White, iron-stained, fine-grained, rounded ss.
420	425	Same, with gray calcareous sh.
425	430	White to gray fine-grained rounded ss.
430	435	Same with trace pyrite.
435	440	Same, no pyrite.

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A P A C H E C O U N T Y

Franco-Arizona Oil Co., #1, Apache County

440	450	Same, trace tan calcareous sh.
450	455	Same, trace red sh.
455	465	Same, no red sh or chert.
465	470	Same, trace chert & red clay, trace dark gray stain on ss.
470	475	Same, trace dark carbonaceous sh.
475	480	White fine-grained rounded ss, with pyrite, trace red sh.
480	485	Same, trace dark gray chert.
485	500	Same
500	505	Same with trace soft black carbonaceous sh.
505	510	Same with no carbonaceous sh.
510	515	Same, trace carbonaceous sh.
515	545	Same, base Coconino Ss.
545	590	Red, fine-grained ss, well-rounded, 60%; white ss, 40%.
590	595	Red sdy lime clay, some white ss.
595	605	White & red ss.
605	620	Same, red clay increasing.
620	625	Limestone with red sdy clay, some red & white ss, trace dolomite.
625	640	Dolomite, some red sh.
640	650	Light gray dolomite, trace red sh.
650	660	Dolomite 60%, red ss 40%
660	665	Dolomite 70%, gray-red sdy sh 25%, red ss 5%.
665	670	Dolomite 60%, red ss 15%, red sdy sh 25%, trace gypsum.
670	680	Red sdy clay 70%, dolomite 20%, gypsum 10%.
680	685	Red sdy clay 15%, dolomite 30%, red ss 20%, gypsum 35%.
685	690	Gypsum 25%, anydrite 75%.
690	695	Gypsum 40%, anhydrite 60%, trace red sdy sh.
695	705	Dolomite 50%, msv gray; gypsum 40%, anhydrite 20%, trace red sdy sh.
705	710	Dolomite 90%, gypsum 10%
710	715	Dolomite 80%, gypsum 20%, trace red sdy sh.
715	720	Dolomite 40%, gypsum 20%, anhydrite 40%.
720	730	Same, trace red calc. ss.
730	735	Gypsum 60%, dolomite 30%, red sdy sh 10%.
735	755	Gypsum 70%, dolomite 10%, red sdy sh 20%.
755	760	Same with some anhydrite.
760	780	Anhydrite 40%, gypsum 30%, red ss 20%, dolomite 5%, red clay 5%.
780	820	Gypsum 60%, anhydrite 30%, red sdy sh 10%, trace dolomite.
820	825	White soft ss 25%, anhydrite 50%, gypsum 20%, red sdy sh 5%.
825	830	Gypsum 40%, anhydrite 60%, trace red sh.
830	850	White coarse dolomite, trace gypsum, trace anhydrite & red sh.
850	855	Med-grained white ss, 40%, anhydrite 60%, trace red sh.
855	865	White coarse anhydrite.
865	885	Ls & dolomite, anhydrite.
885	895	Anhydrite 30%, gypsum 70% with red sdy sh.
895	900	Anhydrite 70%, dolomite msv, 30%, trace red sh.
900	905	Anhydrite 90%, dolomite 10%.
905	910	Anhydrite 70%, gypsum 30%, trace brown sh.
910	930	Anhydrite 80%, Gypsum 10%, red sh 10%.
930	935	Anhydrite 80%, dolomite 20%, trace gypsum.
935	940	Anhydrite 60%, dolomite 40%.
940	955	Anhydrite 50%, dolomite 50%.
955	960	Anhydrite 55%, dolomite 40%, gypsum 5%.
960	965	Anhydrite 25%, dolomite 5%, red clay 70%.
965	970	Anhydrite 20%, dolomite 20%, gypsum 20%, red clay 40%.
970	975	Anhydrite 10%, gypsum 20%, red clay 70%.
975	980	Gypsum 40%, red clay 50%, dolomite 10%.
980	985	Anhydrite.
985	990	Anhydrite 20%, gypsum 40%, red clay 40%.
990	1000	Anhydrite 100%.
1000	1005	Anhydrite 50%, red clay 50%.
1005	1010	Red clay with trace anhydrite.
1010	1030	Red clay with trace anhydrite and gypsum.
1030	1035	Red clay with some gypsum.
1035	1040	Gypsum 50%, anhydrite 50%.
1040	1045	Same, trace dolomite.
1045	1050	Anhydrite, gypsum & ls, equal amts.
1050	1060	Dark Gray ls with gypsum & Anhydrite.
1060	1075	Dark gray shaly ls.
1075	1085	Gray calc clay & soft ls.
1085	1095	Gray & red calc sh.
1095	1100	Same, more red clay.
1100	1115	Red sh with trace calc gray sh.
1115	1130	Red sh, trace gypsum.

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Franco-Arizona Oil Co., #1, Apache County

1130	1135	Red sdy sh, 70%, gray soft ls, 30%.
1135	1140	Red sdy sh, trace gypsum.
1140	1145	Same, trace ls.
1145	1150	Red silty clay, trace gypsum.
1150	1155	Redsh 25%, gypsum 50%, anhydrite 25%.
1155	1180	Red sdy 25%, gray ls 25%, gypsum 25%, anhydrite 25%.
1180	1185	Red sdy sh 35%, gypsum 25%, ls 40%?
1185	1195	Clay 20%, ls 40%, gypsum 40%.
1195	1200	Red sdy sh 10%, gypsum 10%, gray ls 20%, anhydrite 60%.
1200	1205	Gray ls 40%, anhydrite 40%, red ss 10%, gypsum 10%.
1205	1210	Fine tan ss 60%, ls 10%, Anhydrite 20%, gypsum 10%.
1210	1215	Buff, fine-grained calc ss 70%, red sh 10%, gypsum 10%, gray clay 10%.
1215	1220	Buff ss 40%, red gypsum 40%, ls 10%, anhydrite 10%.
1220	1225	Red gypsum 50%, buff ss 20%, red clay 10%, anhydrite 15%, ls 5%.
1225	1235	Red sh 30%, red gypsum 40%, anhydrite 20%, gray sh 5%, ls 5%.
1235	1240	Buff ss 50%, gypsum 30%, red sh 10%, ls 5%.
1240	1250	Anhydrite 40%, red shale 40%, gypsum 15%, blue sh 5%.
1250	1255	Equal amts. ls, red sh, red gypsum, anhydrite.
1255	1260	Red sdy sh 50%, white gypsum 25%, red gypsum 15%, gray sh 10%.
1260	1265	Red sdy clay 70%, anhydrite 20%, gypsum 10%.
1265	1270	Red sdy clay 70%, anhydrite 10%, gypsum 20%.
1270	1280	Red sdy clay 60%, anhydrite 20%, gypsum 20%, trace gray ls.
1280	1285	Red sdy clay 25%, gypsum 25%, dolomite 20%, gray cl 5%, anhydrite 25%.
1285	1295	Dolomite 30%, red sdy cl 30%, gypsum 20%, anhydrite 20%.
1295	1300	Dolomite 25%, red sdy cl 15%, gypsum 50%, anhydrite 30%.
1300	1305	Dolomite 30%, blue sh 10%, gypsum 20%, red sdy sh 40%.
1305	1315	Gypsum 30%, anhydrite 20%, dolomitic sh 15%, red sdy sh 30%, black ls 5%.
1315	1330	Gypsum 20%, anhydrite 15%, dolomite 40%, red sh 20%, blue sh 5%.
1330	1335	Gypsum 15%, anhydrite 15%, dolomite 35%, red & gray ss 35%.
1335	1340	Dolomitic ss 70%, gypsum 15%, anhydrite 15%.
1340	1355	Dolomitic ss 30%, gypsum 10%, sdy anhydrite 50%, red sdy sh 10%.
1355	1365	Anhydrite 85%, red shaly ss 15%.
1365	1370	Anhydrite 50%, brown dolomitic ss 40%, red sh 10%.
1370	1375	Brown gray domomitic ss 40%, anhydrite 30%, red sdy sh 30% ?
1375	1380	Anhydrite 50%, brown dolomitic ss 50%.
1380	1385	Anhydrite 30%, brown dolomitic ss 70%.
1385	1410	Brown dolomitic ss 50%, dolomite 50%.
1410	1435	Gray dolomitic sdy sh.
1435	1440	Red calc ss 30%, gray sdy ls 70%.
1440	1445	Red calc ss 70%, gray sdy ls 30%.
1445	1450	Red calc ss 75%, gray sdy ls 25%.
1450	1455	Red calc ss 85%, gray sdy ls 15% ..... first trace salt
1455	1470	Red calc ss 90%, gray sdy ls 10%.
1470	1475	Same with trace anhydrite.
1475	1480	Anhydrite 50%, red calc ss 40%, gray calc ss 10%.
1480	1490	Anhydrite 50%, red calc ss 40%, gypsum 5%, gray calc ss 5%.
1490	1545	Red calc sh. ss, trace anhydrite.
1545	1560	Red calc sh ss 80%, gypsum 10%, anhydrite 10%.
1560	1565	Red calc sh ss 65%, gypsum 20%, anhydrite 15%.
1565	1570	Red calc sh ss 65%, gypsum 20%, anhydrite 15%, trace brown dol ss.
1570	1575	Red calc sh ss 50%, gypsum 25%, anhydrite 25%.
1575	1585	Red calc sh ss 40%, gypsum 30%, anhydrite 30%.
1585	1590	Red calc sh ss 60%, gypsum 10%, anhydrite 30%.
1590	1595	Red gypsif ss 70%, Gypsum 15%, anhydrite 15%.
1595	1600	Red argillaceous, gypsif ss 90%, gypsum 10%.
1600	1605	Red argillaceous, gypsif ss 80%, gypsum 5%, anhydrite 15%.
1605	1610	Red argillaceous, gypsif ss 85%, gypsum 15%.
1610	1620	Red argillaceous, gypsif ss 70%, anhydrite 25%, brown dol calc, ss 5%.
1620	1630	Red argillaceous, gypsif ss 50%, anhydrite 35%, gypsum 5%, brown 5%, brown dol calc ss 10%.
1630	1640	Red argillaceous, gypsif ss 40%, anhydrite 15%, gypsum 30%, brown dol calc ss 15%.
1640	1655	Red argillaceous, gypsif ss 60%, anhydrite 20%, gypsum 15%, brown dol calc ss 5%.
1655	1665	Same, trace black ls with leaf fragments.
1665	1680	Anhydrite 40%, red argillaceous calc ss 40%, gypsum 20%.
1680	1690	Anhydrite 25%, red argillaceous calc ss 50%, gypsum 25%.
1690	1705	Anhydrite 20%, red argillaceous calc ss 60%, gypsum 20%.
1705	1710	Same, ss 40%, anhydrite 40%, gypsum 20%.

Franco-Arizona Oil Co., #1, Apache County

	1710	1725	Same, ss 35%, anhydrite 40%, gypsum 25%.
	1725	1730	Same, ss 50%, anhydrite 15%, gypsum 35%.
	1730	1735	Same, ss 40%, anhydrite 20%, gypsum 40%. ?
	1735	1745	Same, ss 30%, anhydrite 10%, gypsum 60%.
	1749		Started coring 8½" hole.
Core #1	1749	1774	Salt & red sdy sh, 30% salt.
Core #2	1774	1797	Red, fine-grained sandy siltstone cemented with salt. 30% salt.
Core #3	1797	1819	Gray, argillaceous, calcareous, gypsiferous siltstone, some salt; 1815 - 1819 red ss with salt.
Core #4	1819	1835	12' recovery. Rock salt 50%, red siltstone 50%.
Core #5	1835	1860	18' recovery. Rock salt 30%, red siltstone 70%.
Core #6	1860	1870	9' recovery. Red saliferous, gypsiferous siltstone, rock salt 10%.
Core #7	1870	1891	21' recovery. Hard red shaly saliferous gypsiferous siltstone. 20% rock salt.
Core #8	1891	1907	9' recovery. Red gypsiferous saliferous siltstone with interbedded rock salt.
Core #9	1907-	1931	21' recovery. Same as core #8.
Core #10	1980	1986½	Base of salt.
Core #11	1986	2011	23' recovery. Hard red argillaceous, saliferous, gypsiferous calcareous fine-grained ss.
Core #12	2011	2036	25' recovery. Same as Core #11.
Core #13	2036	2061	24' recovery. Same as Core #11.
Core #14	2061	2086	24' recovery. Same as Core #11 with streaks anhydrite. Start red crumbly shale 2065
Core #15	2086	2106	20' recovery. Red, shaly, gypsiferous, salty, fine-grained ss, with interbedded anhydrite.
Core #16	2106	2131	Red shaly salty fine-grained ss.
Core #17	2131	2151	Hard red fine-grained salty shaly ss with streaks of greenish gray hard salty gypsiferous & dolomitic shaly ls 20%.
Core #18	2151	2176	Same. 30% gray-green ss.
Core #19	2176	2192	Red sh, dolomitic, salty, hard fine-grained ss with alternating beds red hard coarse ss.
Core #20	2192	2207	15' recovery. Same. Balls of green-gray dol sdy sh, ½" dia.
Core #21	2207	2227	15' recovery. Hard red ss with balls of green dolomitic ss 1" dia and red crumbly sh.
Core #22	2227	2247	20' recovery. Red ss with green balls & crumbly sh. red.
Core #23	2247	2267	Red to gray ss to 2262, then red crumbly sh with green balls. 15' recovery.
Core #24	2267	2283	Red crumbly sh with green balls. 18' recovery.
Core #25	2285	2303	18' recovery. Same, with some interbedded anhydrite.
Core #26	2303	2323	20' recovery. Same, with patches of anhydrite.
Core #27	2323	2342	12' recovery. Same, with streaks of anhydrite.
Core #28	2342	2345	12' recovery. Same, with streaks of anhydrite.
			ceased coring 2345.

Samples:

2345	2426	Red crumbly sh, anhydrite, green-patched sh with black organic spots.
2426	2460	Soft limestone.
2460	2549	Red and dark gray shale, variable color.
2549	2595	Granite.

	2530		Shale, traces ls & granite?
	2530	2540	Red & gray sh, trace chert & granite
	2540	2545	Same, more chert & granite
	2550		Same
	2555		Same, definite granite fragments.
	2560		Cavings and granite.
	2565		25% gnanite.
	2570		Same
Cored	2576	2595	Solid granite, coarse-grained, feldspars weathered, ferro-magnesian minerals oxidized. T. D. 2595.

FORMATION TOPS BY NEW MEXICO BUREAU OF MINES FRANCO-ARIZONA #1 - APACHE COUNTY

0	154	Moenkopi	550	1430?	Supai	2418	Top, Temple Butte
154	205	Kaibab ?	1430	2418	Paradox ? Supai	2549	Top, Devonian ls?
205	550	Coconino	2395?		Top, Penna ?	2555	Granite
						TD	2595'

Sample Log: Franco Arizona Oil Co., #1 Government, ¼NE¼, Section 14, Townsh 14 N., Range 26 E., (3212' N & 38' W. of SE corner) Apache County, Arizona

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105	120	Dark red & orange-yellow clays, intermixed, limy.
120	140	Dull, yellow-orange clay with considerable pebbles up to ¼" dia., red, green, yellow & black. Some soft green & yellow medium-grained limy ss.
140	150	Sand & gravel---pebbles up to ¼" dia., red, yellow, orange, tan, black & white --- well rounded. (Cgl in lower Moenkopi ? DAH).
150	153	Same, pebbles larger
153	160	Light tan & yellow shaly ls & limy sh, white ss, cemented with red clay & ls, coarse-grained, well-rounded, mostly sh.
160	165	Light gray, yellowish, limy sh, & coarse-grained, well-rounded white ss, with red ls cementing grains. 25% ss, 75% sh.
165	190	Light gray-yellowish shaly ls with 5% white ss cemented with red lime.
190	200	Shaly, yellow & light gray ls, hd.
200	210	White, even-grained, rounded, fine-grained ss, calcareous cement, soft.
210	220	White, even, rounded, fine-grained ss, with some black chert, calcareous cement, soft.
220	295	White, even,rounded, fine-grained ss, with some black chert, calcareous cement, soft.
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300	310	Same, shale 50%.
310	315	Same, shale 30%.
317		Lost circulation.
317	320	White & buff ss, soft, fine-grained, rounded, small amount red chert 1/8" dia.; 3% gray limy sh.
320	330	Same, soft ss; shale 10%
330	335	Same, more red chert, 15% sh. 5% black organic sh,; ss coarse.
338		Lost circulation.
335	340	White ss, soft, uniform rounded, fine-grained; 10% gray calc sh, trace carbonaceous matter, trace pyrite.
340	345	Same, with small amount gray & black sh, more pyrite.
345	350	Same
350	355	White to buff, well-cemented, fine-grained, round, ss; black to buff pepples up to 13/16" dia., elongated, Trace pyrite, amethyst qtz.
355	365	White, well-rounded, cemented, fine-grained ss, trace amethyst qutz, trace feldspar pepples.
365	375	White, well-rounded, cemented, fine-grained ss, trace amethyst qtz, trace feldspar, trace pyrite.
375	380	White soft rounded, fine-grained ss; trace tarry substance.
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385	390	Same, pepples red ½" dia., well-rounded.
390	395	Same, no pebbles, less chert.
395	400	Same, trace hard gray sh, & hard reddish ss & clay.
400	420	White, iron-stained, fine-grained, rounded ss.
420	425	Same, with gray calcareous sh.
425	430	White to gray fine-grained rounded ss.
430	435	Same with trace pyrite.
435	440	Same, no pyrite.

#1 GOVERNMENT-Sec 14-T14N-R26E
APACHE COUNTY

Franco-Arizona Oil Co., #1, Apache County

440	450	Same, trace tan calcareous sh.
450	455	Same, trace red sh.
455	465	Same, no red sh or chert.
465	470	Same, trace chert & red clay, trace dark gray stain on ss.
470	475	Same, trace dark carbonaceous sh.
475	480	White fine-grained rounded ss, with pyrite, trace red sh.
480	485	Same, trace dark gray chert.
485	500	Same
500	505	Same with trace soft black carbonaceous sh.
505	510	Same with no carbonaceous sh.
510	515	Same, trace carbonaceous sh.
515	545	Same, base Coconino Ss.
545	590	Red, fine-grained ss, well-rounded, 60%; white ss, 40%.
590	595	Red sdy lime clay, some white ss.
595	605	White & red ss.
605	620	Same, red clay increasing.
620	625	Limestone with red sdy clay, some red & white ss, trace dolomite.
625	640	Dolomite, some red sh.
640	650	Light gray dolomite, trace red sh.
650	660	Dolomite 60%, red ss 40%
660	665	Dolomite 70%, gray-red sdy sh 25%, red ss 5%.
665	670	Dolomite 60%, red ss 15%, red sdy sh 25%, trace gypsum.
670	680	Red sdy clay 70%, dolomite 20%, gypsum 10%.
680	685	Red sdy clay 15%, dolomite 30%, red ss 20%, gypsum 35%.
685	690	Gypsum 25%, anydrite 75%.
690	695	Gypsum 40%, anhydrite 60%, trace red sdy sh.
695	705	Dolomite 50%, msv gray; gypsum 40%, anhydrite 20%, trace red sdy sh.
705	710	Dolomite 90%, gypsum 10%
710	715	Dolomite 80%, gypsum 20%, trace red sdy sh.
715	720	Dolomite 40%, gypsum 20%, anhydrite 40%.
720	730	Same, trace red calc. ss.
730	735	Gypsum 60%, dolomite 30%, red sdy sh 10%.
735	755	Gypsum 70%, dolomite 10%, red sdy sh 20%.
755	760	Same with some anhydrite.
760	780	Anhydrite 40%, gypsum 30%, red ss 20%, dolomite 5%, red clay 5%.
780	820	Gypsum 60%, anhydrite 30%, red sdy sh 10%, trace dolomite.
820	825	White soft ss 25%, anhydrite 50%, gypsum 20%, red sdy sh 5%.
825	830	Gypsum 40%, anhydrite 60%, trace red sh.
830	850	White coarse dolomite, trace gypsum, trace anhydrite & red sh.
850	855	Med-grained white ss, 40%, anhydrite 60%, trace red sh.
855	865	White coarse anhydrite.
865	885	Ls & dolomite, anhydrite.
885	895	Anhydrite 30%, gypsum 70% with red sdy sh.
895	900	Anhydrite 70%, dolomite msv, 30%, trace red sh.
900	905	Anhydrite 90%, dolomite 10%.
905	910	Anhydrite 70%, gypsum 30%, trace brown sh.
910	930	Anhydrite 80%, Gypsum 10%, red sh 10%.
930	935	Anhydrite 80%, dolomite 20%, trace gypsum.
935	940	Anhydrite 60%, dolomite 40%.
940	955	Anhydrite 50%, dolomite 50%.
955	960	Anhydrite 55%, dolomite 40%, gypsum 5%.
960	965	Anhydrite 25%, dolomite 5%, red clay 70%.
965	970	Anhydrite 20%, dolomite 20%, gypsum 20%, red clay 40%.
970	975	Anhydrite 10%, gypsum 20%, red clay 70%.
975	980	Gypsum 40%, red clay 50%, dolomite 10%.
980	985	Anhydrite.
985	990	Anhydrite 20%, gypsum 40%, red clay 40%.
990	1000	Anhydrite 100%.
1000	1005	Anhydrite 50%, red clay 50%.
1005	1010	Red clay with trace anhydrite.
1010	1030	Red clay with trace anhydrite and gypsum.
1030	1035	Red clay with some gypsum.
1035	1040	Gypsum 50%, anhydrite 50%.
1040	1045	Same, trace dolomite.
1045	1050	Anhydrite, gypsum & ls, equal amts.
1050	1060	Dark Gray ls with gypsum & Anhydrite.
1060	1075	Dark gray shaly ls.
1075	1085	Gray calc clay & soft ls.
1085	1095	Gray & red calc sh.
1095	1100	Same, more red clay.
1100	1115	Red sh with trace calc gray sh.
1115	1130	Red sh, trace gypsum.

Franco-Arizona Oil Co., #1, Apache County

	1710	1725	Same, ss 35%, anhydrite 40%, gypsum 25%.
	1725	1730	Same, ss 50%, anhydrite 15%, gypsum 35%.
	1730	1735	Same, ss 40%, anhydrite 20%, gypsum 40%. ?
	1735	1745	Same, ss 30%, anhydrite 10%, gypsum 60%.
	1749		Started coring 8½" hole.
Core #1	1749	1774	Salt & red sdy sh, 30% salt.
Core #2	1774	1797	Red, fine-grained sandy siltstone cemented with salt. 30% salt.
Core #3	1797	1819	Gray, argillaceous, calcareous, gypsiferous siltstone, some salt; 1815 - 1819 red ss with salt.
Core #4	1819	1835	12' recovery. Rock salt 50%, red siltstone 50%.
Core #5	1835	1860	18' recovery. Rock salt 30%, red siltstone 70%.
Core #6	1860	1870	9' recovery. Red saliferous, gypsiferous siltstone, rock salt 10%.
Core #7	1870	1891	21' recovery. Hard red shaly saliferous gypsiferous siltstone. 20% rock salt.
Core #8	1891	1907	9' recovery. Red gypsiferous saliferous siltstone with interbedded rock salt.
Core #9	1907-	1931	21' recovery. Same as core #8.
Core #10	1980	1986½	Base of salt.
Core #11	1986	2011	23' recovery. Hard red argillaceous, saliferous, gypsiferous calcareous fine-grained ss.
Core #12	2011	2036	25' recovery. Same as Core #11.
Core #13	2036	2061	24' recovery. Same as Core #11.
Core #14	2061	2086	24' recovery. Same as Core #11 with streaks anhydrite. Start red crumbly shale 2065
Core #15	2086	2106	20' recovery. Red, shaly, gypsiferous, salty, fine-grained ss, with interbedded anhydrite.
Core #16	2106	2131	Red shaly salty fine-grained ss.
Core #17	2131	2151	Hard red fine-grained salty shaly ss with streaks of greenish gray hard salty gypsiferous & dolomitic shaly ls 20%.
Core #18	2151	2176	Same. 30% gray-green ss.
Core #19	2176	2192	Red sh, dolomitic, salty, hard fine-grained ss with alternating beds red hard coarse ss.
Core #20	2192	2207	15' recovery. Same. Balls of green-gray dol sdy sh, ½" dia.
Core #21	2207	2227	15' recovery. Hard red ss with balls of green dolomitic ss 1" dia and red crumbly sh.
Core #22	2227	2247	20' recovery. Red ss with green balls & crumbly sh. red.
Core #23	2247	2267	Red to gray ss to 2262, then red crumbly sh with green balls. 15' recovery.
Core #24	2267	2283	Red crumbly sh with green balls. 18' recovery.
Core #25	2285	2303	18' recovery. Same, with some interbedded anhydrite.
Core #26	2303	2323	20' recovery. Same, with patches of anhydrite.
Core #27	2323	2342	12' recovery. Same, with streaks of anhydrite.
Core #28	2342	2345	12' recovery. Same, with streaks of anhydrite.
			ceased coring 2345.

Samples:

2345	2426	Red crumbly sh, anhydrite, green-patched sh with black organic spots.
2426	2460	Soft limestone.
2460	2549	Red and dark gray shale, variable color.
2549	2595	Granite.

	2530		Shale, traces ls & granite?
	2530	2540	Red & gray sh, trace chert & granite
	2540	2545	Same, more chert & granite
	2550		Same
	2555		Same, definite granite fragments.
	2560		Cavings and granite.
	2565		25% granite.
	2570		Same
Cored	2576	2595	Solid granite, coarse-grained, feldspars weathered, ferro-magnesian minerals oxidized. T. D. 2595.

FORMATION TOPS BY NEW MEXICO BUREAU OF MINES FRANCO-ARIZONA #1 - APACHE COUNTY

0	154	Moenkopi	550	1430?	Supai	2418	Top, Temple Butte
154	205	Kaibab ?	1430	2418	Paradox ? Supai	2549	Top, Devonian ls?
205	550	Coconino	2395?		Top, Penna ?	2555	Granite
						TD	2595'

Franco-Arizona Oil Co., #1, Apache County

1130	1135	Red sdy sh, 70%, gray soft ls, 30%.
1135	1140	Red sdy sh, trace gypsum.
1140	1145	Same, trace ls.
1145	1150	Red silty clay, trace gypsum.
1150	1155	Redsh 25%, gypsum 50%, anhydrite 25%.
1155	1180	Red sdy 25%, gray ls 25%, gypsum 25%, anhydrite 25%.
1180	1185	Red sdy sh 35%, gypsum 25%, ls 40%?
1185	1195	Clay 20%, ls 40%, gypsum 40%.
1195	1200	Red sdy sh 10%, gypsum 10%, gray ls 20%, anhydrite 60%.
1200	1205	Gray ls 40%, anhydrite 40%, red ss 10%, gypsum 10%.
1205	1210	Fine tan ss 60%, ls 10%, Anhydrite 20%, gypsum 10%.
1210	1215	Buff, fine-grained calc ss 70%, red sh 10%, gypsum 10%, gray clay 10%.
1215	1220	Buff ss 40%, red gypsum 40%, ls 10%, anhydrite 10%.
1220	1225	Red gypsum 50%, buff ss 20%, red clay 10%, anhydrite 15%, ls 5%.
1225	1235	Red sh 30%, red gypsum 40%, anhydrite 20%, gray sh 5%, ls 5%.
1235	1240	Buff ss 50%, gypsum 30%, red sh 10%, ls 5%.
1240	1250	Anhydrite 40%, red shale 40%, gypsum 15%, blue sh 5%.
1250	1255	Equal amts. ls, red sh, red gypsum, anhydrite.
1255	1260	Red sdy sh 50%, white gypsum 25%, red gypsum 15%, gray sh 10%.
1260	1265	Red sdy clay 70%, anhydrite 20%, gypsum 10%.
1265	1270	Red sdy clay 70%, anhydrite 10%, gypsum 20%.
1270	1280	Red sdy clay 60%, anhydrite 20%, gypsum 20%, trace gray ls.
1280	1285	Red sdy clay 25%, gypsum 25%, dolomite 20%, gray cl 5%, anhydrite 25%.
1285	1295	Dolomite 30%, red sdy cl 30%, gypsum 20%, anhydrite 20%.
1295	1300	Dolomite 25%, red sdy cl 15%, gypsum 50%, anhydrite 30%.
1300	1305	Dolomite 30%, blue sh 10%, gypsum 20%, red sdy sh 40%.
1305	1315	Gypsum 30%, anhydrite 20%, dolomitic sh 15%, red sdy sh 30%, black ls 5%.
1315	1330	Gypsum 20%, anhydrite 15%, dolomite 40%, red sh 20%, blue sh 5%.
1330	1335	Gypsum 15%, anhydrite 15%, dolomite 35%, red & gray ss 35%.
1335	1340	Dolomitic ss 70%, gypsum 15%, anhydrite 15%.
1340	1355	Dolomitic ss 30%, gypsum 10%, sdy anhydrite 50%, red sdy sh 10%.
1355	1365	Anhydrite 85%, red shaly ss 15%.
1365	1370	Anhydrite 50%, brown dolomitic ss 40%, red sh 10%.
1370	1375	Brown gray domomitic ss 40%, anhydrite 30%, red sdy sh 30% ?
1375	1380	Anhydrite 50%, brown dolomitic ss 50%.
1380	1385	Anhydrite 30%, brown dolomitic ss 70%.
1385	1410	Brown dolomitic ss 50%, dolomite 50%.
1410	1435	Gray dolomitic sdy sh.
1435	1440	Red calc ss 30%, gray sdy ls 70%.
1440	1445	Red calc ss 70%, gray sdy ls 30%.
1445	1450	Red calc ss 75%, gray sdy ls 25%.
1450	1455	Red calc ss 85%, gray sdy ls 15% ..... first trace salt
1455	1470	Red calc ss 90%, gray sdy ls 10%.
1470	1475	Same with trace anhydrite.
1475	1480	Anhydrite 50%, red calc ss 40%, gray calc ss 10%.
1480	1490	Anhydrite 50%, red calc ss 40%, gypsum 5%, gray calc ss 5%.
1490	1545	Red calc sh. ss, trace anhydrite.
1545	1560	Red calc sh ss 80%, gypsum 10%, anhydrite 10%.
1560	1565	Red calc sh ss 65%, gypsum 20%, anhydrite 15%.
1565	1570	Red calc sh ss 65%, gypsum 20%, anhydrite 15%, trace brown dol ss.
1570	1575	Red calc sh ss 50%, gypsum 25%, anhydrite 25%.
1575	1585	Red calc sh ss 40%, gypsum 30%, anhydrite 30%.
1585	1590	Red calc sh ss 60%, gypsum 10%, anhydrite 30%.
1590	1595	Red gypsif ss 70%, Gypsum 15%, anhydrite 15%.
1595	1600	Red argillaceous, gypsif ss 90%, gypsum 10%.
1600	1605	Red argillaceous, gypsif ss 80%, gypsum 5%, anhydrite 15%.
1605	1610	Red argillaceous, gypsif ss 85%, gypsum 15%.
1610	1620	Red argillaceous, gypsif ss 70%, anhydrite 25%, brown dol calc, ss 5%.
1620	1630	Red argillaceous, gypsif ss 50%, anhydrite 35%, gypsum 5%, brown 5%, brown dol calc ss 10%.
1630	1640	Red argillaceous, gypsif ss 40%, anhydrite 15%, gypsum 30%, brown dol calc ss 15%.
1640	1655	Red argillaceous, gypsif ss 60%, anhydrite 20%, gypsum 15%, brown dol calc ss 5%.
1655	1665	Same, trace black ls with leaf fragments.
1665	1680	Anhydrite 40%, red argillaceous calc ss 40%, gypsum 20%.
1680	1690	Anhydrite 25%, red argillaceous calc ss 50%, gypsum 25%.
1690	1705	Anhydrite 20%, red argillaceous calc ss 60%, gypsum 20%.
1705	1710	Same, ss 40%, anhydrite 40%, gypsum 20%.

Sample Log: Franco-Arizona Oil Co., # 1 Government, SE¼NE¼, Section 14, Town-

ship 14 N., Range 26 E., (3212' N & 388' W of SE corner) Apache County, Ariz.

Elev. 5872. Spudded in September 23, 1939. Surface pipe 13" @ 205'; 8-5/8" @ 2000'. Completed November 17, 1939. Sample determinations by E. E. Dawson. Surface structure, mapped by E. S. Shaw; checked by seismograph.

Summary of formations:

0-200	Moenkopi Fm.
200-545	Coconino Ss.
545-2420	Supai Fm.
2420-2540	Pennsylvanian ?
2540-2595	Granite, Pre-Cambrian.

Sample Log:

0-87	Medium-grained, greenish limy ss, loosely consolidated, with spots of orange, iron stains and specks of chert.
87-105	Dark brick red clay with streaks of greenish, medium-grained, loosely consolidated ss, with orange streaks, & some black chert, limy.
105-120	Dark red & orange-yellow clays, intermixed, limy.
120-140	Dull, yellow-orange clay with considerable pebbles up to ¼" dia., red, green, yellow & black. Some soft green & yellow medium-grained limy ss.
140-150	Sand & gravel---pebbles up to ½" dia., red, yellow, orange, tan, black & white---well rounded. (Cgl in lower Moenkopi ? Mbr).
150-153	Same, pebbles larger.
153-160	Light tan & yellow shaly ls & limy sh, white ss, cemented with red clay & ls, coarse-grained, well-rounded, mostly sh.
160-165	Light gray, yellowish, limy sh, & coarse-grained, well-rounded white ss, with red ls cementing grains. 25% ss, 75% sh.
165-190	Light gray-yellowish shaly ls with 5% white ss cemented with red lime.
190-200	Shaly, yellow & light gray ls, ls.
200-210	White, even-grained, rounded, fine-grained ss, calcareous cement, soft.
210-220	White, even, rounded, fine-grained ss, with some black chert, calcareous cement, soft.
220-295	White, even, rounded, fine-grained ss, with some black chert, calcareous cement, soft.
295-300	White, fine-grained, well-rounded ss, with yellow & red stains, 55%. Light gray soft limy sh 45%.
300-310	Same, shale 50%.
310-315	Same, shale 30%.
317	Lost circulation.
315-320	White & buff ss, soft, fine-grained, rounded, small amount red chert 1/8" dia.; 5% gray limy sh.
320-330	Same, soft ss; shale 10%.
330-335	Same, more red chert, 15% sh, 5% black organic sh.; ss coarse.
339	Lost circulation.
335-340	White ss, soft, uniform, rounded, fine-grained; 10% gray calc sh, trace carbonaceous matter, trace pyrite.
340-345	Same, with small amount grey & black sh, more pyrite.
345-350	Same
350-355	White to buff, well-cemented, fine-grained, round, ss; black to buff pebbles up to 15/16" dia., elongated. Trace pyrite, amethyst qtz.
355-365	White, well-rounded, cemented, fine-grained ss, trace amethyst qtz, trace feldspar pebbles.

365-375	White, well-rounded, cemented, fine-grained ss, trace amethyst qtz, trace feldspar, trace pyrite.
375-380	White soft rounded, fine-grained ss; trace tarry substance.
380-385	Same, trace red chert, flakes of carbonaceous sh.
385-390	Same, pebbles red, $\frac{1}{8}$" dia., well-rounded.
390-395	Same, no pebbles, less chert.
395-400	Same, trace hard gray sh, & hard reddish ss & clay.
400-420	White, iron-stained, fine-grained, rounded ss.
420-425	Same, with gray calcareous sh.
425-430	White to gray fine-grained rounded ss.
430-435	Same with trace pyrite.
435-440	Same, no pyrite.
440-450	Same, trace tan calcareous sh.
450-455	Same, trace red sh.
455-465	Same, no red sh or chert.
465-470	Same, trace chert & red clay, trace dark gray stain on ss.
470-475	Same, trace dark carbonaceous sh.
475-480	White fine-grained rounded ss, with pyrite, trace red sh.
480-485	Same, trace dark gray chert.
485-500	Same
500-505	Same with trace soft black carbonaceous sh.
505-510	Same with no carbonaceous sh.
510-515	Same, trace carbonaceous sh.
515-545	Same, base Coconino Ss.
545-590	Red, fine-grained ss, well-rounded, 60%; white ss, 40%.
590-595	Red sdy lime clay, some white ss.
595-605	White & red ss.
605-620	Same, red clay increasing.
620-625	Limestone with red sdy clay, some red & white ss, trace dolomite.
625-640	Dolomite, some red sh.
640-650	Light gray dolomite, trace red sh.
650-660	Dolomite 60%, red ss 40%.
660-665	Dolomite 70%, gray-red sdy sh 25%, red ss 5%.
665-670	Dolomite 60%, red ss 15%, red sdy sh 25%, trace gypsum.
670-680	Red sdy clay 70%, dolomite 20%, gypsum 10%.
680-685	Red sdy clay 15%, dolomite 30%, red ss 20%, gypsum 35%.
685-690	Gypsum 25%, anydrite 75%.
690-695	Gypsum 40%, anhydrite 60%, trace red sdy sh.
695-705	Dolomite 50%, msv gray; gypsum 30%, anhydrite 20%, trace red sdy sh.
705-710	Dolomite 90%, gypsum 10%.
710-715	Dolomite 80%, gypsum 20%, trace red sdy sh.
715-720	Dolomite 40%, gypsum 20%, anhydrite 40%.
720-730	Same, trace red calc ss.
730-735	Gypsum 60%, dolomite 30%, red sdy sh 10%.
735-755	Gypsum 70%, dolomite 10%, red sdy sh 20%.
755-760	Same with some anhydrite.
760-780	Anhydrite 40%, gypsum 30%, red ss 20%, dolomite 5% red clay 5%.
780-820	Gypsum 60%, anhydrite 30%, red sdy sh 10%, trace dolomite.
820-825	White soft ss 25%, anhydrite 50%, gypsum 20%, red sdy sh 5%.
825-830	Gypsum 40%, anhydrite 60%, trace red sh.
830-850	White coarse dolomite, trace gypsum, trace anhydrite & red sh.
850-855	Med-grained white ss, 40%, anhydrite 60%, trace red sh.
855-865	White coarse anhydrite.
865-885	Ls & dolomite, anhydrite.
885-895	Anhydrite 30%, gypsum 70% with red sdy sh.
895-900	Anhydrite 70%, dolomite msv, 30%, trace red sh.
900-905	Anhydrite 90%, dolomite 10%.
905-910	Anhydrite 70%, gypsum 30%, trace brown sh.

910-930	Anhydrite 80%, Gypsum 10%, red sh 10%.
930-935	Anhydrite 80%, dolomite 20%, trace gypsum.
935-940	Anhydrite 60%, dolomite 40%.
940-955	Anhydrite 50%, dolomite 50%.
955-960	Anhydrite 55%, dolomite 40%, gypsum 5%.
960-965	Anhydrite 25%, dolomite 5%, red clay 70%.
965-970	Anhydrite 20%, dolomite 20%, gypsum 20%, red clay 40%.
970-975	Anhydrite 10%, gypsum 20%, red clay 70%.
975-980	Gypsum 40%, red clay 50%, dolomite 10%.
980-985	Anhydrite.
985-990	Anhydrite 20%, gypsum 40%, red clay 40%.
990-1000	Anhydrite 100%.
1000-1005	Anhydrite 50%, red clay 50%.
1005-1010	Red clay with trace anhydrite.
1010-1030	Red clay with trace anhydrite and gypsum.
1030-1035	Red clay with some gypsum.
1035-1040	Gypsum 50%, anhydrite 50%.
1040-1045	Same, trace dolomite.
1045-1050	Anhydrite, gypsum & ls, equal amts.
1050-1060	Dark gray ls with gypsum & Anhydrite.
1060-1075	Dark gray shaly ls.
1075-1085	Gray calc clay & soft ls.
1085-1095	Gray & red calc sh.
1095-1100	Same, more red clay.
1100-1115	Red sh with trace calc gray sh.
1115-1130	Red sh, trace gypsum.
1130-1135	Red sdy sh, 70%, gray soft ls, 30%.
1135-1140	Red sdy sh, trace gypsum.
1140-1145	Same, trace ls.
1145-1150	Red silty clay, trace gypsum.
1150-1155	Red sh 25%, gypsum 50%, anhydrite 25%.
1155-1180	Red sdy sh 25%, gray ls 25%, gypsum 25%, anhydrite 25%.
1180-1185	Red sdy sh 35%, gypsum 25%, ls 40% ?
1185-1195	Clay 20%, ls 40%, gypsum 40%.
1195-1200	Red sdy sh 10%, gypsum 10%, gray ls 20%, anhydrite 60%.
1200-1205	Gray ls 40%, anhydrite 40%, red ss 10%, gypsum 10%.
1205-1210	Fine tan ss 60%, ls 10%, anhydrite 20%, gypsum 10%.
1210-1215	Buff, fine-grained calc ss 70%, red sh 10%, gypsum 10%, gray clay 10%.
1215-1220	Buff ss 40%, red gypsum 40%, ls 10%, anhydrite 10%.
1220-1225	Red gypsum 50%, buff ss 20%, red clay 10%, anhydrite 15%, ls 5%.
1225-1235	Red sh 30%, red gypsum 40%, anhydrite 20%, gray sh 5%, ls 5%.
1235-1240	Buff ss 50%, gypsum 30%, red sh 10%, ls5%.
1240-1250	Anhydrite 40%, red shale 40%, gypsum 15%, blue sh 5%.
1250-1255	Equal amts. ls, red sh, red gypsum, anhydrite.
1255-1260	Red sdy sh 50%, white gypsum 25%, red gypsum 15%, gray sh 10%.
1260-1265	Red sdy clay 70%, anhydrite 20%, gypsum 10%.
1265-1270	Red sdy clay 70%, anhydrite 10%, gypsum 20%.
1270-1280	Red sdy clay 60%, anhydrite 20%, gypsum 20%, trace gray ls.
1280-1285	Red sdy clay 25%, anhydrite 25%, gypsum 25%, dolomite 20%, gray cl 5%.
1285-1295	Dolomite 30%, red sdy cl 30%, gypsum 20%, anhydrite 20%.
1295-1300	Dolomite 25%, red sdy cl 15%, gypsum 50%, anhydrite 30%.
1300-1305	Dolomite 30%, blue sh 10%, gypsum 20%, red sdy sh 40%.
1305-1315	Gypsum 30%, anhydrite 20%, dolomitic sh 15%, red sdy sh 30%, black ls 5%.
1315-1330	Gypsum 20%, anhydrite 15%, dolomite 40%, red sh 20%, blue sh 5%.
1330-1335	Gypsum 15%, anhydrite 15%, dolomite 35%, red & gray ss 35%.
1335-1340	Dolomitic ss 70%, gypsum 15%, anhydrite 15%.
1340-1355	Dolomitic ss 30%, gypsum 10%, sdy anhydrite 50%, red sdy sh 10%.
1355-1365	Anhydrite 85%, red shaly ss 15%.
1365-1370	Anhydrite 50%, brown dolomitic ss 40%, red sh 10%.

1365-1370 Anhydrite 50%, brown dolomitic ss 40%, red sh 10%.
1370-1375- Brown gray dolomitic ss 40%, anhydrite 30%, red sdy sh 30%. ?
1375-1380 Anhydrite 50%, brown dolomitic ss 50%.
1380-1385 Anhydrite 30%, brown dolomitic ss 70%.
1385-1410 Brown dolomitic ss 50%, dolomite 50%.
1410-1435 Gray dolomitic sdy sh.
1435-1440 Red calc ss 30%, gray sdy ls 70%.
1440-1445 Red calc ss 70%, gray sdy ls 30%.
1445-1450 Red calc ss 75%, gray sdy ls 25%.
1450-1455 Red calc ss 85%, gray sdy ls 15%.....first trace salt.
1455-1470 Red calc ss 90%, gray sdy ls 10%.
1470-1475 Same with trace anhydrite
1475-1480 Anhydrite 50%, red calc ss 40%, gray calc ss 10%.
1480-1490 Anhydrite 50%, red calc ss 40%, gypsum 5%, gray calc ss 5%.
1490-1545 Red calc sh. ss, trace anhydrite.
1545-1560 Red calc sh ss 80%, gypsum 10%, anhydrite 10%.
1560-1565 Red calc sh ss 65%, gypsum 20%, anhydrite 15%.
1565-1570 Red calc sh ss 65%, gypsum 20%, anhydrite 15%, trace brown dol ss.
1570-1575 Red calc sh ss 50%, gypsum 25%, anhydrite 25%.
1575-1585 Red calc sh ss 40%, gypsum 30%, anhydrite 30%.
1585-1590 Red calc sh ss 60%, gypsum 10%, anhydrite 30%.
1590-1595 Red gypsif ss 70%, gypsum 15%, anhydrite 15%.
1595-1600 Red argillaceous, gypsif ss 90%, gypsum 10%.
1600-1605 Red argillaceous, gypsif ss 80%, gypsum 5%, anhydrite 15%.
1605-1610 Red argillaceous, gypsif ss 85%, gypsum 15%.
1610-1620 Red argillaceous, gypsif ss 70%, anhydrite 25%, brown dol calc ss 5%.
1620-1630 Red argillaceous, gypsif ss 50%, anhydrite 35%, gypsum 5%, brown dol calc ss 10%.
1630-1640 Red argillaceous, gypsif ss 40%, anhydrite 15%, gypsum 30%, brown dol calc ss 15%.
1640-1655 Red argillaceous, gypsif ss 60%, anhydrite 20%, gypsum 15%, brown dol calc ss 5%.
1655-1665 Same, trace black ls with leaf fragments.
1665-1680 Anhydrite 40%, red argillaceous calc ss 40%, gypsum 20%.
1680-1690 Anhydrite 25%, red argillaceous calc ss 50%, gypsum 25%.
1690-1705 Anhydrite 20%, red argillaceous calc ss 60%, gypsum 20%.
1705-1710 Same, ss 40%, anhydrite 40%, ~~anhydrite 40%~~, gypsum 20%.
1710-1725 Same, ss 35%, anhydrite 40%, gypsum 25%.
1725-1730 Same, ss 50%, anhydrite 15%, gypsum 35%.
1730-1735 Same, ss 40%, anhydrite 20%, gypsum 40%. ?
1735-1745 Same, ss 30%, anhydrite 10%, gypsum 60%.
1749 Started coring 8½" hole.
Core #1. 1749-1774 Salt & red sdy sh. 30% salt.
Core #2. 1774-1797 Red, fine-grained sandy siltstone cemented with salt. 30% salt.
Core #3. 1797-1819 Gray, argillaceous, calcareous, gypsiferous siltstone, some salt; 1815-1819 red ss with salt.
Core #4. 1819-1835 12' recovery. Rock salt 50%, red siltstone 50%.
Core #5. 1835-1860 18' recovery. Rock salt 30%, red siltstone 70%.
Core #6. 1860-1870 9' recovery. Red saliferous, gypsiferous siltstone, rock salt 10%.
Core #7. 1870-1891 21' recovery. Hard red shaly saliferous gypsiferous siltstone. 20% rock salt.
Core #8. 1891-1907 9' recovery. Red gypsiferous saliferous siltstone with interbedded rock salt.
Core #9. 1907-1931 21' recovery. Same as core #8.
Core #10. 1930-1986½ Base of salt.
Core #11. 1986-2011 23' recovery. Hard red argillaceous, saliferous, gypsiferous calcareous fine-grained ss.
Core #12. 2011-2036 25' recovery. Same as Core #11.

Core #13. 2056-2061 24' recovery. Same as Core #11.
Core #14. 2061-2086 24' recovery, Same as Core #11 with streaks anhydrite. Start red crumbly shale 2065

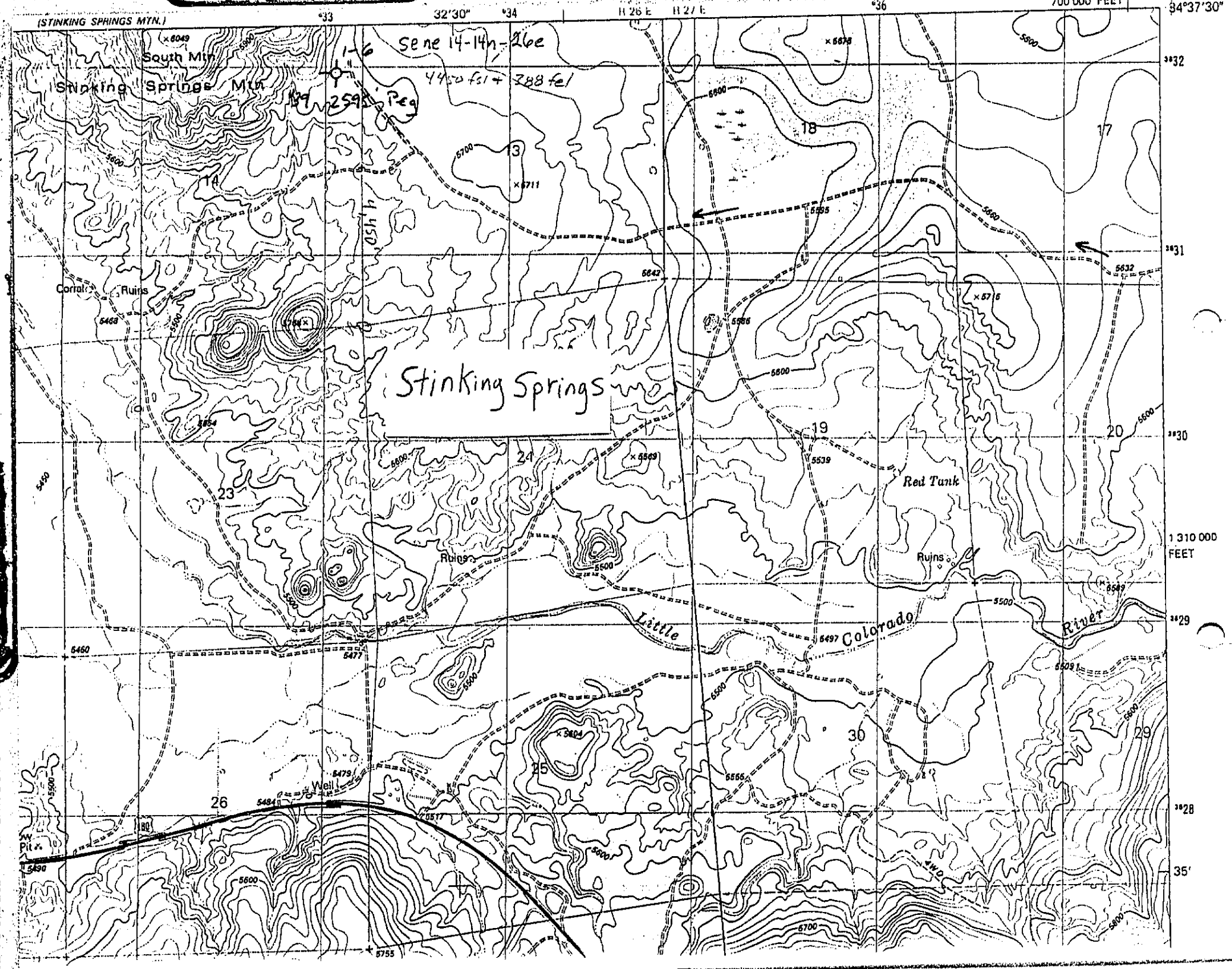
Core #15. 2086-2106 20' recovery. Red, shaly, gypsiferous, salty, fine-grained ss, with interbedded anhydrite.
Core #16. 2106-2131 Red shaly salty fine-grained ss.
Core #17. 2131-2151 Hard red fine-grained salty shaly ss with streaks of greenish gray hard salty gypsiferous & dolomitic shaly ls. 20%.
Core #18. 2151-2176 Same. 50% gray-green ss.
Core #19. 2176-2192 Red sh, dolomitic, salty, hard fine-grained ss with alternating beds red hard coarse ss.
Core #20. 2192-2207 15' recovery. Same. Balls of green-gray dol sdy sh, 1/8" dia.
Core #21. 2207-2227 15' recovery. Hard red ss with balls of green dolomitic ss 1" dia and red crumbly sh.
Core #22. 2227-2247 20' recovery. Red ss with green balls & crumbly sh. red.
Core #23. 2247-2267 Red to gray ss to 2262, then red crumbly sh with green balls. 15' recovery.
Core #24. 2267-2283 Red crumbly sh with greens balls. 18' recovery.
Core #25. 2283-2303 18' recovery. Same, with some interbedded anhydrite.
Core #26. 2303-2323 20' recovery. Same, with patches of anhydrite.
Core #27. 2323-2342 12' recovery. Same with streaks of anhydrite.
Core #28. 2342-2345 Same.

Ceased coring 2345

Samples:

2345-2420 Red crumbly sh, anhydrite, green-patched sh with black organic spots.
2420-2460 Soft limestone.
2460-2549 Red and dark gray shale, variable color.
2549-2595 Granite.

2530 Shale, traces ls & granite?
2530-2540 Red & gray sh, trace chert & granite.
2540-2545 Same, more chert & granite.
2550 Same
2555 Same, definite granite fragments.
2560 Cavings and granite.
2565 25% granite.
2570 Same
Cored 2576-2595 Solid granite, coarse-grained, feldspars weathered, ferro-magnesian minerals oxidized. T. D. 2595.


(STINKING SPRINGS MTN.)
32'30"
R 26 E
R 27 E
700 000 FEET
34°37'30"
South Mtn
Stinking Springs Mtn
Se ne 14-14n-26e
4450 fsl + 288 fel
Stinking Springs
Corrals
Ruins
Red Tank
Little Colorado River
Ruins
Ruins
Well
1 310 000 FEET
35'