

SYNTANA Drill Hole SYN-4Location Sec 29, T9S, R24E,275 FNL, 70' FEL, UINTAH Co, UtahCollar Elevation 5432Total Depth 2254Drilled 0-402Page 1 of --Logged By CRB

Depth	Description
0	Grayish orange siltstone
12	Grayish yellow green marlstone
22	Grayish yellow green marlstone
32	Grayish yellow green marlstone
42	Grayish yellow green marlstone
52	Grayish yellow green siltstone
62	Grayish yellow green siltstone & marlstone
72	Grayish yellow green siltstone & marlstone
82	Grayish yellow green marlstone
92	Grayish yellow green marlstone
102	Grayish orange marlstone
112	Grayish orange marlstone
122	Greenish gray marlstone and ss
132	Greenish gray marlstone and ss
142	Grayish orange marlstone
152	Grayish orange marlstone & ss
162	Grayish orange marlstone
172	Grayish orange marlstone & ss
182	Min yellowish brown ss & marlstone
192	Grayish yellow green marlstone
202	Grayish yellow green marlstone
212	Grayish orange marlstone & ss
222	Grayish orange marlstone
232	Grayish yellow green marlstone & ss
242	Grayish yellow green marlstone
252	Grayish yellow green marlstone
262	Grayish yellow green marlstone & ss
272	Grayish yellow green marlstone
282	Grayish yellow green marlstone & ss
292	Light gray ss
302	Light gray ss
312	Light gray marlstone
322	"
332	"
342	Light gray marlstone & ss
352	Light gray marlstone
362	"
372	"
382	"
392	"
402	"

Start 11/20/80 0700 AM

SYNTANA Drill Hole

SYN-4

Collar Elevation 5432

Page 2 of 12

Location 295 FNL, 70' FEL, Sec 29, T9S, R29E

Total Depth 2254

Uintah Co, UT

Drilled 402'-802'

Logged By CRB

Depth	Description
402	1+ olive gray marlstone
412	" marlstone & ss
422	" marlstone
432	" "
442	" "
452	" "
462	" "
472	" "
482	" ss
492	" ss
502	" Marlstone & ss
512	" Marlstone
522	" "
532	" "
542	" "
552	" "
562	" "
572	" "
582	" "
592	" "
602	" "
612	" "
622	" "
632	" "
642	" "
652	" "
662	" Marlstone & ss
672	" "
682	" "
692	" ss
702	" ss
712	" marlstone & ss
722	pale yellowish brown ss hit water, switched to foam
732	light olive gray ss
742	" "
752	" marlstone
762	" "
772	" "
782	" "
792	" "
802	" "
	stop 11/20/80 1800 hrs

SYNTANA Drill Hole SYN-4  
 Location 295' FNL, 70' FEL, Sec 29, T9S, R24E  
Uintah Co, UT

Collar Elevation 5432  
 Total Depth 2254  
 Drilled 802-1203

Page 3 of 12

Logged By CRB

	Depth	Description
807	813	1/4 olive gray marlstone
	823	" "
	833	" marlstone & ss
	843	" "
	853	" marlstone
	863	" "
	873	" "
	883	" "
	893	" "
	903	" "
	913	" "
	923	" marlstone & ss
	933	" "
	943	" "
	953	" "
	963	" "
	973	" "
	983	" marlstone
	993	" marlstone & ss
	1003	" "
	1013	" marlstone
	1023	" "
	1033	" marlstone & ss
	1043	" "
	1053	pale yellowish brown "
	1063	pale yellowish brown "
	1073	" "
	1083	1/4 olive gray ss
	1093	pale yellowish brown "
	1103	" marlstone & ss
	1113	" "
	1123	" "
	1133	" ss
	1143	" marlstone & ss
	1153	" "
	1163	" ss
	1173	" ss & marlstone
	1183	" "
	1193	" "
	1203	" "

SYNTANA Drill Hole SYN-4  
 Location 295 1/2 S. 175' E. SEC 29, T9S, R24E  
 UTAH CO, UTAH

Collar Elevation 5432  
 Total Depth 2254  
 Drilled 1203' - 1603'

Page 4 of 12

Logged By CRB, VOS

Depth	Chip Density	Description
1203	1213	pale yellowish brown ss & marlstone
	1223	" "
	1233	" ss
	1243	" "
	1253	" ss
	1263	" ss & marlstone
	1273	" ss
	1283	" ss & marlstone
	1293	" ss & marlstone
	1303	" ss
	1313	" ss
	1323	dark yellowish brown oil shale and ss (1st o.s. odor)
	1333	" " and ss
	1343	" " "
	1353	" " "
(+) 1363	(+) 1363	dk yellowish brown oil shale w/trace & green marlstone (minor) Stop 1600 hrs 21 NOV Start Drilling 1600 hrs 29 NOV
	1373	dk yellowish brown oil shale w/green marlstone (minor) & very minor white (calc.?) pebbles
	1383	" " "
	1393	" " "
	1403	" " "
	1413	" " "
	1423	" w/ss "
	1433	" " "
	1443	" " "
	1453	" " "
	1463	" " "
	1473	dk yellowish brown oil shale " "
	1483	" " "
	1493	" " "
	1503	" " "
	1513	" " "
	1523	" " "
	1533	" " "
	1543	" w/trace green marlstone " H <sub>2</sub> S water
	1553	" " 3' Void @ 1553 " @ 1910 hrs 29 NOV 80
	1563	" TDS 1425 ppm " Start Drilling 1600 hrs 29 NOV 80 2.5' Void @ 1557.5 - 60 started mud drilling. lost hole. 3.5' void @ 1563
	1573	dk yellowish brown oil shale w/contaminating green marlstone, some 1/4" vugs
	1583	" " 1/2 Void @ 1577 1350 ppm TDS effluent
	1593	29 " "
	1603	29 " "

SYNTANA Drill Hole SYA-4Collar Elevation 5432Page 5 of 12Location 295'FNL, 70'FEL Sec 29 T9S R24E, Uintah Co, UTTotal Depth 2254Drilled 1603-1943Logged By CRB, VDD

	Depth	Chip Density	Description
1603	1613	2.43	Dusky yellowish brown oil shale w/green marlstone containing w/white (calcite?) nodules
1613	1623	2.52	Dusky yellowish brown oil shale
1623	1633	2.43	"
1633	1643	2.43	"
1643	1653	2.52	"
1653	1663	2.52	"
1663	1673	2.52	"
1673	1683	2.52	" 1475ppm " 0900 hrs 3 Dec 80
1683	1693	2.43	"
1693	1703	2.52	"
1703	1713	2.71	" 1525ppm
1713	1723	2.61	261 " 1500ppm, 175gpm, 470psi, " 125°C
1723	1733	2.29	"
1733	1743	2.38	"
1743	1753	2.33	"
1753	1763	2.20	"
1763	1773	2.29	"
1773	1783	2.38	"
1783	1793	2.33	"
1793	1803	2.33	"
1803	1813	2.10	"
1813	1823	2.29	"
1823	1833	2.29	"
1833	1843	2.33	"
1843	1853	2.33	"
1853	1863	2.24	"
1863	1873	2.29	"
1873	1883	2.43	" 1475ppm 24.5°C 1800 hrs 4 Dec 80
1883	1893	2.10	"
1893	1903	2.61	" 1425ppm 24.5°C 1400 hrs 4 Dec 80
1903	1913	2.38	"
1913	1923	2.38	"
1923	1933	2.38	"
1933	1943	2.38	"
1943	2104		Stopped 1700 hrs 4 Dec 80
2104	2254		NX core 1943-2104.2, pages 6-11
			Rotary - see page 12

No necessary calcite/marl

SYNTANA Drill Hole

SYN-4

Collar Elevation

5432

Page

12 of 12

Location

Sec 29, T9S, R24E

Total Depth

2254

Drilled

2104-2254

Logged By

CRBUDN

	Depth	chip Density	
2104	2114	2.34	DK Yellowish Brown oil shale
	2124	2.32	DK Yellowish Brown oil shale
	2134	2.43	DK yellowish Brown oil shale
	2144	2.43	DK yellowish Brown oil shale
	2154	2.36	DK yellowish Brown oil shale
	2164	2.40	DK yellowish Brown oil shale
	2174	2.43	DK yellowish Brown oil shale
	2184	2.38	DK yellowish Brown oil shale
	2194	2.24	DK yellowish Brown oil shale
	2204	2.38	DK yellowish Brown oil shale
	2214	2.29	DK yellowish Brown oil shale
	2224	2.34	DK yellowish Brown oil shale
	2234	2.10	DK yellowish Brown oil shale
	2244	2.15	DK yellowish Brown oil shale
	2254	2.31	DK yellowish Brown oil shale

Description

Fischer Assays

Summary

Base Uinta	732
Water	712
Aquifer - Bridgman	1560
Top Oil shale	1313
Whit	1940
Mahogany	2019
Top Rich Bed	2037
Cherty	2111