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DRILLERS' LOGS OF WELLS
IN THE HANFORD RESERVATION

(Two Volumes)

VOLUME II

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Driller's log of 699-50-30 (N050299, W029833) Hanford Wells, 1973

Land surface altitude¹ 527 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

2. Cable tool rig

Depth (ft)		Description
From	To	
0	20	rocks and boulders
20	25	little clay, rocks and boulders
25	65	clay
65	70	rocks, boulders, little sand and little clay
70	85	rocks and boulders
85	89	rocks, boulders, and little sand
89	100	clay and gravel
100	105	clay
105	110	clay and fine sand; caving when out of casing; put in 8 buckets of topsoil and clay so we could bail
110	137	fine sand; caving when out of casing
137	155	sandy clay
155	160	fine, sandy clay
160	166	sand and rocks
166	170	rocks; caving when out of casing
170	175	rocks and gravel; caving
175	177	water sand; caving
177	178	fine water sand; caving
178	191	boulders and rocks; caving
191	197	coarse sand and rocks
197	207	sand and boulders
207	220	fine black and white sand, caving
220	230	little clay and fine sand
230	245	fine white sand
245	265	sand and rocks
265	273	fine sand; caving
273	275	white sand and rocks; sand runs in
275	280	white sand, little clay and rocks, sand runs in
280	295	clay
295	300	gray sand; sand runs in
300	310	fine white sand; sand runs in
310	315	little clay, fine sand and rocks
315	330	clay, soapstone, and rocks
330	350	blue clay and rocks
350	365	blue clay
365	370	basalt sand
370	380	basalt

Driller's log of 699-50-42 (N050206, W041909) Hanford Wells, 1973

Land surface altitude¹ 465 feet msl

1. Estimated from altitude of top of casing given in Hanford files
2. Cable tool rig, using bentonite

Depth (ft)		Description
From	To	
0	5	boulders, sand, and gravel
5	15	gravel, boulders
15	38	gravel
38	54	clay
54	56	record unclear, probably clay
56	64'8"	cemented gravel
64'8"	77	basalt
77	80	gray basalt, brown and red rock
80	90	brown and red rock, porous
90	104	no record, probably brown and red rock
104	115	black and brown rock
115	125	black rock

Drilling log of 699-50-53¹ (N049840, W053267) Hanford Wells, 1973

Land surface altitude² 555 feet msl

1. Also labeled 50-54, 54-50, 241-By-13
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	5	silt, gravel, and cobbles
5	15	gravel and cobbles
15	30	coarse gravel up to 3"
30	37	boulders and gravel
37	47	cobbles and gravel
47	50	gravel and cobbles
50	65	cobbles and gravel
65	72	small and coarse gravel
72	75	coarse gravel
75	87	75% coarse gravel, 25% coarse sand
87	90	50% gravel, 50% sand
90	105	fine and coarse sand
105	110	80% sand, 20% small gravel
110	130	fine and coarse sand
130	143	fine and coarse sand and silt
143	147	coarse gravel and sand
147	156'6"	sand, gravel, and basalt; hard to drill just like basalt; pipe stopped at 156'6"--basalt at 156'6"
156'6"	185	basalt

Driller's log of 699-50-85¹ (N049878, W084505) Hanford Wells, 1973

Land surface altitude² 738 feet msl

1. Labeled 699-50-84 and 699-50-85 in driller's log
2. Calculated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	1	topsoil
1	9	gravel; caved from the grass and roots
9	15	gravel
15	35	boulders, gravel, sand
35	45	sand, gravel, and a littl bit of silt
45	50	60% sand, 25% gravel, 15% silt
50	55	60% gravel, 35% sand, 5% silt
55	60	60% gravel, 30% sand, 10% silt
60	65	gravel, sand, no silt; caves
65	70	granules, small gravel, sand, caliche, no silt; caves, comes back up pipe
70	75	sand, gravel, some silt, caliche
75	100	sand, some silt, caliche
100	120	caliche, sand, fine gravel
120	135	very heavy silt or clay
135	185	heavy silt
185	190	sandy silt, heavy
190	195	pure sand, very little silt
195	205	sandy silt
205	210	sand, some gravel, very little silt
210	215	some boulders, sand, some gravel, very little silt
215	230	90% gravel, sand, very little silt
230	245	60% gravel, 30% sand, 10% silt
245	260	conglomerate, gravel, silt, sand
260	275	gravel, sand, and silt
275	292	sand, gravel, little silt
292	315	conglomeration
315	323	sand, gravel, some silt; comes back up pipe for 20'
323	327	sandy muck with gravel; comes back up pipe
327	331	changed at 327 to better drilling; sand, some silt
331	341	sand, gravel, silt; comes back up pipe
341	355	sand, gravel, silt-just muck; comes back up pipe
355	365	gravel, sand and muck
365	367	muck-came in faster than I could drill it out
367	375	muck; comes back up hole 8 to 12', this formation acts like it is pinching in
375	386	muck-hole makes lots of it; muck, sand, gravel, silt; comes back up hole
386	402	muck, less gravel and coarse sand, more silt and fine sand
402	405	sand, silt, and gravel
405	410	cobbles, gravel, and sand; boulder field
410	415	cobbles, gravel, silt, and sand
415	423	gravel, boulders, sand, silt or muck
423	425	muck
425	430	muck, boulders

Driller's log of 699-50-85 cont

Depth (ft)		Description
From	To	
430	435	less muck, more boulders
435	437	boulders
437	441	gravel, sand, and muck
441	460	conglomeration-gravel 35%, sand 25%, silt 40%
460	465	40% silt, 35% gravel, 25% silt; making muck
465	470	50% gravel, 20% sand, 30% silt-first 2' *Note: I got a good side wall cutting of this true formation at 468'
470	475	60% gravel, 25% sand, 15% silt, 3' whitish clay
475	478	whitish clay or ash
478	480	whitish clay-for 4', very dark gray-1'; makes lots of muck
480	490	dark gray, looks like clay or rotten shale; makes lots of muck
490	497	bluish-green rotten shale, muds up badly
497	500	bluish-green shale
500	505	yellow shale
505	518	bluish green shale and silt; between 505' and 510' picked up a strata of very fine sand, cannot be over 6" to 10" thick
518	520	fine to coarse sand, small gravel
520	532	slate color mud with 50% gravel, 20% sand, 30% silt; the mud in this formation could be lava mud; this mud smells to high heavens
532	545	50% gravels and boulders, 30% sand, 20% silt
545	558	50% gravel and boulders, 25% silt of some kind; this silt when wet is greenish-blue, when dry is yellow-tan, very hard dry
558	560	50% gravel and boulders, 25% sand, 25% silt or mud
560	565	40% gravel and boulders, 35% sand, 25% silt, some wood; wood in sample jar
565	572	40% gravel and boulders, 35% sand, 25% silt, no wood
572	573	gravel, sand, silt
573	576	heavy shale or clay
576	580	gravel, sand, silt
580	585	40% gravel, 35% sand, 25% silt
585	585.5	gravel, sand, and black mud
585.5	596	basalt
596	598	hard basalt
598	600	basalt; drilled about 1' per hour

Driller's log of 699-50-100B

1. Rotary drill rig
2. ? used where record is not clear

Depth (ft)		Description
From	To	
0	10	sand, fine to very fine sand
10	16	sand, fine to very fine sand with medium pebbles
16	20	gravel with silt
20	28	sandy gravel; pebbles and cobbles with very fine sand and silt
28	30	very fine sand
30	35	fine to very fine sand
35	40	gravel, slightly sandy, fine sand
40	68	sandy gravel; pebbles and cobbles with very fine to medium sand
68	70	gravel cemented with calcareous silt
70	80	sandy gravel, cemented with (?) very fine to medium sand
80	90	sandy gravel, pebbles and cobbles with fine to medium sand (cemented)
90	95	no sample
95	100	sandy gravel; pebbles and cobbles with fine to medium sand (cemented)
100	110	sandy gravel; small to medium pebbles with medium to coarse sand
110	115	gravelly sand; coarse sand with small to medium pebbles
115	118	sandy gravel; small to medium pebbles with fine to coarse sand; heavy cementation zone
118	120	muddy gravel; pebbles with fine sand and silt
120	125	muddy gravel; small pebbles with fine sand and silt
125	135	muddy sandy gravel; pebbles with sand and silt
135	140	muddy gravelly sand
140	145	muddy sand; coarse black with silt
145	150	sand, well sorted, clean, very fine to medium
150	155	gravelly sand
155	165	sand, very fine to coarse
165	170	sand, very fine
170	174?	sand, fine to medium, well sorted, clean

Driller's log of 699-50-100C

1. Cable tool rig
2. ? used where difficult to read

Depth (ft)		Description
From	To	
0	26	no record
26	40	70% gravel to small cobbles, 30% medium sand, gray in color
40	50	50% gravel to small cobbles, 50% sand, gray
50	55	60% coarse sand, 20% gravel, 20% clay or fine sand
55	65	60% very coarse sand, 20% gravel, 20% clay
65	70	80% coarse sand, 20% pea gravel
70	74	dark brown dirt
74	75	cemented gravel 50%, coarse sand 50%
75	80	lightly cemented gravel 50%, sand and clay 50%
80	85	lightly cemented gravel to 2 inches, 50% sand and clay
85	95	50% gravel, 20% very coarse sand, 30% medium sand, lightly cemented, dark gray
95	100	70% gravel, 20% very coarse sand, 10% medium sand, not cemented
100	105	60% gravel, 20% coarse sand, 20% medium sand
105	110	70% gravel, cemented, 30% sand; dark gray
110	115	65% gravel, 35% medium sand; dark gray
115	120	70% gravel, 30% sand; dark gray
120	125	60% medium sand, 40% cemented gravel
125	140	50% clay, 30% very coarse sand, 20% fine sand; tan
140	145	40% clay, 40% pea gravels to 1 inch, 20% medium fine sand; tan
145	150	60% gravel, 10% clay, 30% medium sand; tan
150	160	60% gravel, 20% very coarse sand, 20% medium fine sand; gray
160	170	tan silt
170	180	silt 80% very fine sand, tan
180	185	90% very fine sand, 10% clay, gray
185	190	60% coarse sand, 40% medium fine
190	195	70% very coarse sand, 30% silt
195	200	70% gravel, 30% medium sand
200	210	50% coarse sand, 50% clay
210	220	100% clay, tan
220	225	50% large cobbles and gravel, 30% clay, 20% medium sand, tan
225	230	cobble, coarse gravel and very coarse sand, 10% medium sand
230	235	50% gravel and cobbles, 50% coarse sand, gray
235	240	? 50% gravel and cobbles, 50% coarse sand, gray
240	245	50% gravel, 30% very coarse sand, 20% medium sand
245	250	boulders
250	255	cobbles, very coarse sand
255	260	sand and gravel
260	265	50% gravel to 3", 30% very coarse sand, 20% medium sand, tan
265	270	boulders, gravel
270	275	boulders,
275	285	70% cobbles and gravel cemented with brown clay-like material
285	290	70% cobbles and gravel, 30% dark brown clay-like material
290	295	70% gravel, 20% medium fine sand, 10% clay
295	305	60% cobbles and gravel, 20% medium sand, 20% hard brown clay, cemented
305	310	cobbles and gravel 50%, 30% very fine white sand, 20% brown clay
310	320	60% gravel, 40% hard clay-like with white sand

Driller's log of 699-50-100C cont

Depth (ft)		Description
From	To	
320	325	40% gravel, 60% hard clay-like with white sand
325	330	90% brown clay-like material with sand, 10% gravel
330	335	50% very coarse sand, 50% brown clay-like material and white sand
		* driller's note: found a mistake in well depth, had the hole 8 feet too deep
328	340	60% gravel, 20% medium sand, 20% very fine sand and clay-like material
340	342	? no record, bailed white sand out of hole

Driller's log of 699-51-36¹ (N051236, W035886) Hanford Wells, 1973

Land surface altitude² 515 feet msl

1. Previously hole GM-7
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	6	black sand
6	17	black sand and gravel and cobbles
17	20	sand with some gravel
20	30	sand and gravel and boulders and cobbles
30	39	sand and gravel and cobbles and boulders
39	50	red broken rock
50	57	rock basalt
57	63	basalt

Driller's log of 699-51-63 (N051449, W063060) Hanford Wells, 1973

Land surface altitude¹ 570 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig?

Depth (ft)		Description
From	To	
0	6"	topsoil
6"	5	gravel, silt, boulders
5	17	boulders, gravel; caves; hit a large boulder at 5"
17	22	gravel, boulders, silt
22	26	gravel, fine sand
26	35	gravel, sand; caves
35	40	boulders, gravel, sand; caves
40	50	boulders, sand, gravel; caves
50	55	boulders, gravel, black sand; caves
55	60	black sand, caves
60	65	black sand, gravel; caves
65	75	gravel, black sand; caves
75	80	gravel; caves
80	91	pure gravel; caves
91	142	gravel; caves
142	151	pure gravel; caves
151	167	gravel, sand; caves
167	170	gravel; caves
170	182	gravel, sand; caves
		*Hung up, looked like I lost the shoe, pulled pipe, hole filled back up to 17'
17	22	no record
22	25	big boulder
25	45	boulders, gravel
45	50	boulders, gravel, some silt
50	65	old hole; hit old hole at 50', old hole caved in at 65'
65	70	gravel, boulders
70	80	gravel, cavings; caves
80	87	gravel
87	120	gravel, boulders
120	142	gravel, boulders; caves
142	144	gravel, boulders; very bad cave
144	157	boulders, gravel; caves
157	173	gravel, boulders; caves
173	181	boulders, gravel, some silt; caves
181	183	boulders; drills slow and hard
183	184.5	either large boulder bed or basalt; from formation and color of bailings, I think it is basalt

Driller's log of 699-51-75 (N050667, W075151) Hanford Wells, 1973

Land surface altitude¹ 640 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

2. Cable tool rig

Depth (ft)		Description
From	To	
0	10	boulders, gravel and sand
10	42	boulders, gravel
42	50	cobbles, boulders
50	60	boulders, gravel
60	70	cobbles, gravel, boulders
70	95	cobbles, gravel
95	110	sand, gravel, and cobbles
110	125	cobbles, gravel
125	155	gravel, sand, silt
155	165	cobbles, gravel, sand, silt
165	220	gravel, sand silt; 212' sandstone, hard formation
220	225	cobbles, gravel, sand
225	230	gravel, sand
230	235	coarse sand, little gravel
235	240	gravel, sand
240	250	sand, gravel
250	255	sand, gravel, cobbles
255	266	gravel, sand
266	270	sand, little silt; sand and silt at 266', no gravel
270	275	sand, gravel, silt
275	280	sand, gravel
280	292	sand, cobbles, gravel
292	300	coarse gravel, fine sand
300	315	small and coarse gravel, fine sand
315	332	coarse gravel and sand
332	335	sand, silt, gravel
335	340	sand, gravel
340	347	sand, gravel, cobbles
347	355	sand, gravel, basalt, cobbles
355	362	sand and gravel
362	365	sand, silt, gravel
365	372	sand, gravel, basalt
372	375	sand, gravel, basalt, cobbles
375	382	basalt; pipe stopped at 376'8"

Driller's log of 699-52-52¹ (N051890, W052377)

Land surface altitude² 558 feet msl

1. Labeled D.J.B.-5
2. Personal communication with Rod Ledgerwood, 5-13-75
3. Cable tool rig

Depth (ft)		Description
From	To	
0	10	coarse gravel with silt
10	20	coarse sand, black
20	65	coarse gravel with silty sand
65	80	? no record
80	145	gravel, sand, silty
145	152	basalt

Driller's log of 699-53-25

1. Cable tool rig

Depth (ft)		Description
From	To	
0	15	no record
15	30	sand, and silt
30	40	sand and gravel
40	122	sand and silt
122	135	sand and gravel; hit cobble gravel at 122'
135	140	cemented gravel
140	143	sand and gravel
143	159	fine sand and gravel; sand comes in casing when driving
159	166	sand and gravel
166?	170?	fine packed sand (depth numbers marked over, hard to read)
170?	174	packed sand and gravel

Driller's log of 699-53-35¹ (N053199, W034763) Hanford Wells

Land surface altitude² 529 feet msl

1. Previously hole GM-4
2. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	4	fine, silty sand
4	5	fine black and brown sand
5	18	brown sand, fine
18	25	sand and gravel
25	40	coarse sand and some gravel
40	43	silt
43	45	fine brown sandy silt
45	50	sandy silt
50	53	silt
53	60	fine sand
60	70	sand, and some 1"-gravel
70	76	sand and 3/4"-to 4"-gravel
76	87	fine sand and gravel and cobbles
87	95	brown sand and gravel, coarse gravel
95	105	brown sand and 2" gravel and some silt
105	112	brown sand and coarse gravel; at 109' there is a layer of cobbles
112	123	sand and gravel
123	138	brown clay with some sand
138	148	gray clay with some sand

Driller's log of 699-53-47¹ (N052518, W047463) Hanford Wells, 1973

Land surface altitude² 436 feet msl

1. Also labeled 699-52-47
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig?

Depth (ft)		Description
From	To	
0	3	cobbles in dirt
3	13	gravel, cobbles
13	20	boulder, sand and gravel
20	30	sand, gravel, boulders
30	34	boulders; very hard rock could be boulders or fractured basalt, some clay
34	41	boulders

Driller's log of 699-53-55 (N053000, W055000) Hanford Wells, 1973

Land surface altitude¹ 574 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig
3. All measurements taken from deck level

Depth (ft)		Description
From	To	
0	5	gravel and sand and cobble
5	15	gray sand, gravel and cobbles; hit boulders at 5'
15	20	gravel, sand and cobbles
20	25	gravel and sand
25	30	sand and gravel to 3"
30	35	sand, gravel and cobble
35	40	gray silt, sand and cobbles 4"
40	45	gray silt, sand and cobbles 6"
45	50	gravel and cobble up to 5"
50	59	sand, gravel, large cobble
59	60	fine silty sand
60	67	gray sand with a little silt; heaves
67	75	gray sand and gravel
75	80	clean gravel and cobble-boulders
80	85	gravel, cobble, boulders
85	100	gray, gravel, sand, and cobbles
100	105	gravel and sand
105	110	gravel, cobble, sand
110	115	sand and gravel
115	130	gray silt and sand
130	135	sand
135	140	gravel up to 3" in sand
140	150	sand
150	155	gravel and sand
155	160	sand
160	165	gray silt, sand and gravel
165	170	gray mostly gravel with a little sand and silt
170	175	gray gravel with some sand and silt
175	180	small gravel and sand
180	185	coarse sand and gravel
185	187	coarse sand and gravel, clean
187	190	sand, silt, gravel
190	195	sand, silt and mostly gravel
195	200	silt, sand and mostly gravel
200	205	silt, sand, and gravel, too many colors to list
205	210	coarse sand and gravel
210	213	heaving fine silt
213	220	large gravel, cobble up to 5"
220	225	gray sand
225	235	gravel
235	240	sand and gravel
240	245	gray sand
245	250	some sand, gravel
250	258	gravel, cobble

Driller's log of 699-53-55 cont

Depth (ft)		Description
From	To	
258	265	white silt ?; got into the white stuff at 258'
265	275	gray pebbly clay with silt
275	280	brown pebbly clay and silt
280	285	brown pebbly clay
285	290	clay
290	295	clay with broken rock
295	296	some form of rock, not basalt; very hard, may be cemented gravel, doesn't drill like cemented gravel
296	300	rock
300	305	gray basalt (honeycomb)
305	315	broken wormy rock
315	335	gray basalt
335	340	hard, gray basalt
340	345	very hard, gray basalt
345	355	gray basalt
355	360	basalt; last 8" very hard
360	365	gray basalt
365	370	basalt
370	375	dark gray basalt
375	380	basalt; crevice giving trouble, back-filled
380	385	dark gray basalt
385	400	basalt
400	405	very hard
405	440	basalt
440	445	very hard basalt, no interbeds as yet
445	455	no record, probably very hard basalt
		* 3 years later a clean-out found clay, blue, sandy from 333 to 450'

Driller's log of 699-53-55B (N052979, W055030)¹

Land surface altitude¹ 565 feet msl

1. Obtained from personal communication with Roy Gephart, 11-20-75
2. Air rotary drill

Depth (ft)		Description
From	To	
0	5	sand, fine
5	20	gravel; cobbles and boulders with fine to medium sand
20	25	sand, slightly gravelly; coarse black sand with pebbles and cobbles
25	35	gravel, sandy
35	40	gravel
40	45	gravel, slightly muddy, slightly sandy
45	55	gravel, sandy; cobbles, boulders
55	60	sand, gravelly
60	65	gravel, slightly sandy; fine sand and silt blowing off
65	90	gravel, sandy; no sample 80-85'; fines lost at 65-85'
90	95	sand, gravelly
95	105	gravel, slightly sandy
105	110	sand, gravelly; very coarse sand
110	145	sand; coarse to medium
145	150	sand; fine to medium
150	160	sand; medium to coarse
160	165	gravel, sandy; small pebbles with coarse sand
165	170	gravel, slightly sandy; small well sorted pebbles
170	175	gravel, sandy; small pebbles with fine to coarse sand; sand at 172'
175	185	sand, gravelly; coarse sand with small pebbles
185	190	sand, pebbly; very coarse sand with medium to fine pebbles
190	195	gravel, sandy; medium to fine pebbles with very coarse sand
195	200	sand, gravelly; coarse to very coarse sand with medium to fine pebbles
200	205	gravel; medium to fine pebbles with some very coarse sand
205	215	gravel, sandy; pebbles with medium to coarse sand
215	240	gravel, sandy; pebbles with fine to coarse sand
240	251	gravel, sandy; coarse pebbles and small cobbles with fine to medium sand
251	252'8"	mud; gray very fine sand and silt, slightly pebbly

Driller's log of 699-54-17B (N053886, W017330)¹

Land surface altitude¹ 403 feet msl

1. Obtained from personal communication with Roy Gephart, 11-20-75
2. Air rotary drill

Depth (ft)		Description
From	To	
0	20	pebbles, coarse to medium; sandy, fine to medium

Driller's log of 699-54-17C (N053873 W017345)¹

Land surface altitude¹ 404 feet msl

1. Obtained from personal communication with Roy Gephart, 11-20-75
2. Air rotary drill
3. ? used where entry is undecipherable

Depth (ft)		Description
From	To	
0	12	gravel, sandy; pebbles and cobbles with fine to medium sand
12	17	sand, slightly pebbly; medium to coarse sand with small pebbles
17	30	gravel, sandy; pebbles with fine to medium sand
30	37	gravel, slightly sandy; small, large, medium pebbles to cobbles, very fine to fine sand
37	40	sand, gravelly; black sand with small to medium pebbles
40	55	gravel, sandy; pebbles with coarse sand
55	60	gravel, slightly sandy; small to medium pebbles
60	70	gravel, ? sandy, coarse sand
70	75	gravel, sand; pebbles with coarse sand
75	80	mud; very fine sand and ? silt, brown
80	95	mud, gravelly; very fine sand and silt
95	103	gravel, muddy

Driller's log of 699-54-57¹ (N054311, W056639) Hanford Wells, 1973

Land surface altitude² 573 feet msl

1. Labeled 55-55
2. Estimated from altitude or top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	10	no record
10	25	boulders
25	35	gravel
35	45	boulders, gravel
45	55	gravel
55	60	no record, probably gravel
60	65	coarse sand
65	154	gravel; bentonite in hole at 110'
154	160	sand, silt, gravel
160	162	no record, probably sand, silt, gravel
162	175	sand, silt, gravel
175	178	sand, gravel, boulders; large boulder at 178'
178	180	boulders
180	181	boulders, gravel; pea gravel; shoe breaking up, bring chunks of iron in bailer, hole caving
181	199	basalt

Driller's log of 699-55-40¹ (N055331, W040435) Hanford Wells, 1973

Land surface altitude² 541 feet msl

1. Previously hole GM-9
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	25	brown and black sand with traces of silt
25	30	brown and black with some gravel and traces of silt
30	50	sand with some gravel
50	65	sand and gravel
65	95	sand and gravel and cobbles
95	110	gravel and silt, size 3", yellow
110	123	sand and gravel, size 2", yellow
123	130	clay with sand, yellow
130	140	gravel with clay, size 3", yellow
140	145	gravel and sand, fine, yellow

Driller's log of 699-55-44¹ (N055462, W043677) Hanford Wells, 1973

Land surface altitude² 518 feet msl

1. Also labeled Gable Mountain Well #2
2. Estimated from altitude of top of casing given in Hanford Wells
3. Cable tool rig

Depth (ft)		Description
From	To	
0	5	sand
5	10	sand and gravel
10	20	sand, gravel, cobbles; 16' to 19' was a boulder or large cobble
20	25	sand, gravel
25	40	sand, gravel, cobbles
40	75	sand and gravel, some silt
75	90	sand, gravel, cobbles, some silt
90	95	sand, gravel, cobbles
95	100	sand, gravel, cobbles with some brown clay
100	140	brown sandy clay
140	160	gray to brown clay with gravel

Driller's log of 699-55-50A¹ (N055006;W050000) Hanford Wells, 1973

Land surface altitude² 441 feet msl

1. Also labeled 699-55-50#1
2. Estimated from altitude of top of casing in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	5	topsoil and black sand
5	20	black sand and boulders
20	25	black volcanic rock
25	33	black lava rock
33	37	boulders
37	43	gray sand and gravel
43	45	gray sand and boulders
45	60	boulders and black sand
60	70	black sand
70	80	water gravel
80	95	gray sand and gravel
95	100	red volcanic ash
100	105	basalt
105	108	no record, probably basalt
		* Deepened 8 years later, as logged below; this hole had 24 measuring devices in it, rocks 2" to 4" in diameter, assorted nails, and pieces of steel; my 8" bit hung and snapped the pin off; finished with 5 3/4" bit
108	110	porous basalt, not very hard

Driller's log of 699-55-50B¹ (N055000, W049940) Hanford Wells, 1973

Land surface altitude² 441 feet msl

1. Also labeled 55-50#2
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	5"	fine sand
5"	10	gravel
10	16	gravel, cobbles and black sand; cobbles at 14'
16	26	cobbles, gravel and black sand
26	32	cobbles, gravel, sand, little silt; some silt at 28', run out of silt at 32'
32	33	coarse gravel up to 2½" and black sand
33	36	coarse gravel up to 3" and black sand
36	44	gravel up to 3", black sand, little silt
44	45	pea gravel, some gravel up to 2", fine and coarse black sand
45	57	small and coarse gravel up to 3" and sand; very little pea gravel at 50'
57	60	50% small and coarse gravel up to 2", 50% black sand, very little silt; 58' sand came in with water
60	62	black sand, small and coarse gravel up to 4"; formation drills like basalt
62	68	50% pea gravel and coarse gravel up to 4", 50% black sand, little silt
68	70	50% small and coarse gravel up to 2", 50% black fine and coarse sand, some silt; at 70' sand and gravel came back up pipe 3'
70	75	50% fine and coarse sand, 50% small and coarse gravel run up to 4"; at 73', 5' of sand and gravel came in the pipe
75	82	gray sand, gravel, little silt, small and coarse gravel up to 11"; 80' fine and coarse gray sand; sand comes in
82	87	75% small and coarse gravel up to 3", 25% fine and coarse gray sand, little silt
87	89	50% gravel, small up to 3", 50% fine and coarse gray sand
89	93'6"	light gray clay and fine sand
93'6"	95	basalt

Driller's log of 699-55-50C¹

Land surface altitude² 443 feet msl

1. Also labeled 55-50#3
2. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	topsoil, blow sand; caves
5	19	gravel, boulders, sand; caves
19	20	blue gravel
20	25	2' pure gravel, 3' gravel, silt, sand
25	40	gravel, sand, silt
40	45	pure gravel
45	48	pure gravel, small to 2" diameter
48	50	pure gravel
50	55	1' gravel, 4' black medium sand, some gravel
55	58	black sand, some gravel
58	60	coarse black sand, some gravel; caves

Driller's log of 699-55-50D¹ (N055017, W050150) Hanford Wells, 1973

Land surface altitude ² 439 feet msl

1. Also labeled 55-50-#4
2. Calculated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	5	blow sand, some silt; caves
5	15	boulders, gravel, silt; caves
15	32	boulders, gravel, sand, silt; caves
32	45	black sand, some gravel; caves
45	50	black sand, more small gravel
50	60	black sand, small gravel
60	64	? fine sand and granules small gravel-record unclear
64	67	? fine sand and granules, 1½" gravel-record unclear
67	72	? fine sand and granules, gravel, sand and silt-record unclear
72	75	? fine sand and granules to gravel-record unclear
75	80	fine sand to coarse granules, gravel up to 4½'; caves; runs back up pipe
80	86	fine sand, coarse sand, granules, some gravel; sand comes back up hole
86	88	? sand more coarse, more gravel record unclear; at 88' sand came back up pipe 8'
88	89	? sand-record unclear
89	91	gravel and sand
91	95½	basalt, porous and rotten, can drive pipe into this basalt
95½	100	basalt gets harder the deeper I go, pipe stopped 95½'

Driller's log of 699-55-57B (N054608, W057208)¹

Land surface altitude¹ 555 feet msl

1. Obtained from personal communication with Roy Gephart, 11-20-75
2. Air rotary drill

Depth (ft)		Description
From	To	
0	5	sand
5	10	gravel (10-12" boulders at 2')
10	20	gravel, sandy
20	25	gravel
25	35	gravel, sandy
35	40	gravel (boulder at 34')
40	50	gravel, sandy
50	55	sand, gravelly; medium to coarse sand
55	75	gravel, sandy
75	80	sand, gravelly
80	130	gravel, sand
130	145	sand, gravelly; very coarse sand with pebbles
145	150	sand, slightly pebbly
150	160	sand, gravelly
160	170	sand, very coarse sand
170	180	basalt

Formation record of 699-55-60A¹ (N055100, W060100) Hanford Wells, 1973

Land surface elevation² 568 feet msl

1. Also labeled 200 North Area Durand No.1
2. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	4	topsoil
4	132	heavy gravel and boulders
132	138	pea gravel
138	190	gravel and boulders
190	192	wash gravel
192	198	coarse gravel
198	202	heavy gravel
202	233	gravel-boulders

Formation record of 699-55-60B¹ (N055425, W060140), Hanford Wells, 1973

Land surface altitude² 569 feet msl

1. Also labeled 200-North Area, Durand #5 Well
2. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	boulders and gravel
5	23	gravel
23	27	boulders
27	35	gravel and boulders
35	42	gravel
42	53	gravel and boulders
53	57	gravel and sand
57	69	gravel
69	75	gravel and boulders
75	107	gravel
107	123	gravel and sand
123	126	gravel
126	133	gravel and sand
133	140	gravel
140	148	fine gravel and sand
148	170	coarse gravel
170	180	medium gravel
180	190	fine gravel and coarse sand
190	200	fine sand
200	210	fine gravel
210	220	coarse sand
220	230	fine gravel and coarse sand
230	236	fine gravel and fine sand
236	238	medium gravel
238	248	fine gravel
248	258	coarse gravel
258	268	fine gravel
268	278	fine gravel and fine sand
278	288	coarse sand

Formation record of 699-55-63¹ (N055100. W062740), Hanford Wells, 1973

Land surface altitude² 570 feet msl

1. Also labeled 200 Area Durand No, 4
2. Calculated from altitude of top of casing given in Hanford Wells, 1973
3. Hole abandoned, all casing pulled

Depth (ft)		Description
From	To	
0	16	boulders
16	20	rock and boulders
20	22	coarse gravel and boulders
22	27	black gravel
27	39	sand and gravel
39	49	gravel
49	54	coarse gravel
54	62	gravel
62	68	gravel and boulders
68	76	gravel
76	89	gravel and boulders
89	98	gravel
98	105	gravel and sand
105	121	gravel
121	128	fine gravel
128	138	gravel
138	147	fine gravel and sand
147	157	fine gravel
157	169	gravel and sand
169	179	fine gravel
179	198	basalt

Driller's log of 699-55-70 (N055326, W069955), Hanford Wells, 1973

Land surface altitude¹ 567 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	8"	topsoil
8"	5	gravel and boulders
5	25	sand and boulders
25	35	boulders
35	44	gravel and boulders
44	45	sand, boulders, trace of clay
45	61	sand, boulders and clay; 25% clay at 60' with boulders
61	72	boulders, gravel, and clay; 25% clay
72	80	boulders, gravel and clay
80	83	gravel and boulders; at 80' in agate gravel with some boulders and very little clay
83	90	clay and coarse gravel
90	101	sand, gravel and clay; at 90' hit some sand with clay and gravel
101	121	gravel, sand, and 25% clay
121	140	light brown clay, sand and gravel
140	155	brown clay and sand
155	165	sand and clay
165	180	clay
180	182	gravel
182	190	sand, clay and gravel; 13' of open hole at 190' but caving in
190	196	brown clay, sand and gravel
196	200	clay, sand and boulders
200	205	basalt; I am in basalt or on a big boulder

Driller's log of 699-55-76 (N055001, W075897) Hanford Wells, 1973

Land surface altitude¹ 581 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	3	rock, sand, and gravel
3	5	boulders
5	7	no record, probably boulders
7	10	boulders
10	15	sand and gravel
15	25	gravel
25	30	no record, probably gravel
30	45	sand and gravel
45	65	gravel and boulders
65	90	sand and gravel
90	100	gravel and boulders
100	105	sand and gravel, some boulders
105	115	sand and gravel
115	120	no record but sampled
120	125	gravel and boulders
125	129	muddy gravel, few boulders
129	147	muddy gravel and sand
147	152	gravel, hard pan
152	167	sand and gravel, little brown clay
167	180	brown clay, sand and gravel
180	185	sand, gravel (heavy to sand), little brown clay
185	220	sand, gravel, little brown clay; formation heavy to fine sand from 185' to 219'
220	223	record unclear, possibly sand, gravel, little brown clay
223	238	basalt

Drilling log of 699-55-89¹ (N054969, W088592) Hanford Wells, 1973

Land surface altitude² 615 feet msl

1. Also labeled 55-88.5
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig using aquagel

Depth (ft)		Description
From	To	
0	6	no record
6	12	sand, gravel, and boulders
12	17	sand and gravel
17	20	gray sand
20	26	boulders, and medium gravel; some basalt at 22', 22' to 24' gravel is about 1/2 basalt
26	31	coarse and medium gravel; lot of basalt gravel
31	35	coarse to medium gravel, a little over 1/3 basalt and boulders
35	37	coarse to medium gravel and little sand; a lot of the gravel is basalt
37	40	coarse to medium gravel and sand
40	45	coarse to medium gravel with granite and quartzite
45	48	coarse to medium gravel and sand
48	54	gravel and sand
54	55	coarse to medium gravel and sand
55	56	medium gravel and little sand
56	62	silt and gravel
62	68	sand, gravel, boulders and silt
68	81	gravel and boulders 50%, sand 30%, silt 20%
81	85	about 50% gravel, 25% basalt and 25% other, sand 30%, silt 20%
85	90	about 60% gravel and boulders (25% basalt and 35% others), 25% sand, 15% silt
90	91	a boulder at least 1' thick
91	94	50% gravel, ground gravel, and boulders, 30% sand and 20% silt
94	95	mostly small boulders, 60% gravel and rock, 15% silt and 25% sand
95	100	60% gravel and boulders (20% basalt and 40% other rock), 20% silt and 20% sand
100	105	gravel 60% (20% basalt, 40% other) sand 15%, light color and fine, and silt and rotten basalt balls 25%
105	110	gravel and boulders 60%, sand 15%, and silt and rotten basalt 25%; caved at 108'
110	115	60% gravel and boulders, sand 20% and silt 20%
115	118	40% gravel, 40% sand, and 20% silt
118	120	40% gravel, 40% fine light colored sand and 20% rotten basalt or silt that is dark brown; could find no lumps
120	125	50% gravel, 30% sand, and 20% silt, brown clay-like material, also white lumps
125	128	large boulder or boulders
128	132	60% gravel, 30% sand, 10% silt; gravel about 20% basalt and 80% other, sand, fine and light colored, silt light brown 128' to 130' and dark brown 130' to 132', clay-like lump real deep red in 128' to 130'
132	135	60% gravel, and boulders, 30% sand, 10% brown silt

Drilling log of 699-55-89 cont

Depth (ft)		Description
From	To	
135	144	60% gravel and boulders, 20% sand and 20% light brown silt
144	145	40% gravel, 40% sand and 20% silt
145	150	50% gravel and boulders, 30% sand and 20% silt
150	155	40% gravel and boulders, hit boulders at 154', sand 30%, silt 30% which showed brown rotten basalt, or clay-like lumps that were soft
155	160	35% gravel, 40% sand and 25% silt
160	172	50% gravel and boulders, 25% sand and 25% silt; boulder bed 162' to 164'; 168' to 170' there is sand cemented to the gravel, and a few white very soft clay like lumps
172	179	60% gravel and boulders, 25% sand, 15% silt; weathered basalt rocks have fine sand cemented to them
179	188	40% gravel and boulders, 35% sand and 25% silt
188	195	40% gravel and boulders, 20% sand and 40% silt; 20% of gravel and boulders is basalt and 80% other rocks
195	200	40% gravel and boulders, 25% sand, 35% silt; caved; have weathered basalt rocks and brown rotten basalt lumps of clay-like material
200	210	40% gravel and boulders, 40% sand, 20% silt; sand cemented to weathered basalt and any other rough rocks
210	216	40% gravel, 40% sand, 20% silt; rocks have sand cemented to them
216	223	40% gravel and boulders, 35% sand and 25% silt; some sand came in, sand is fine and white
223	227	60% gravel and rock, 30% sand and 10% silt; the gravel and sand all appear to be cemented together; rocks have sand coating and sand like chunks came out that were almost rock; some brown, light brown, and almost white clay-like lumps are mixed with a coarse sand
227	230	60% gravel and boulders, 25% sand and 15% silt; rock and gravel about 20% basalt, 80% others with mostly yellow rock; sand cemented to them, sand is light gray
230	235	50% gravel and boulders, 25% sand and 25% silt and clay-like material; found rock with a hard ash-like coating which was olive green, sand with white clay-like material was outside of this rock, mostly yellow

Drilling log of 699-55-95 (N055000, W094950) Hanford Wells, 1973

Land surface altitude ¹ 775 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	20	boulders and gravel
20	65	gravel
65	75	gravel and boulders
75	100	gravel
100	110	fine sand and gravel
110	135	silty sand
135	150	sand and gravel
150	160	sand
160	175	gravel
175	200	gravel and sand
200	215	sand and gravel, a little clay
215	225	sand and gravel, some clay
225	230	sand, gravel and clay
230	245	small gravel, sand and clay
245	265	gravel, sand, clay
265	285	boulders, gravel and clay
285	315	gravel, sand and clay
315	330	boulders, gravel and clay
330	375	gravel, sand and clay
375	385	sand and clay
385	395	clay
395	405	gravel and clay
405	445	clay
445	460	clay and fine sand
460	470	sand and clay
470	480	sand, gravel and clay
480	490	sand and clay
490	500	sand, clay, and gravel
500	505	gravel and clay
505	510	sand, clay, gravel
510	515	basalt, rock, some cavings; basalt figured at 512'
515	530	basalt rock

Driller's log of 699-56-26¹ (N055801, W025736) Hanford files

Land surface altitude² 407 feet msl

1. Also labeled hole GM-13
2. Estimated from altitude of top of casing given in Hanford files

Depth (ft)		
From	To	Description
0	3	sand
3	4	broken red rock
4	19	red rock
19	25	basalt

Driller's log of 699-56-43¹ (N056261, W043048)

Land surface altitude² 538 feet msl

1. Also labeled Gable Mountain Well #1
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	5	brown sand
5	10	brown sand and silt
10	15	silt and brown sand
15	53	black sand
53	60	broken rock
60	147	weathered basalt, brown clay
147	150	weathered basalt, brown clay; fairly solid basalt, vesicular
150	155	vesicular basalt, brown clay

Driller's log of 699-57-25¹ (N056755, W025477) Hanford files

Land surface altitude² 413 feet msl

1. Also labeled hole GM-14
2. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	28	black sand
28	47	black sand and gravel
47	55	black sand with some gravel
55	60	black sand, fine to medium coarse; after setting screen, total depth 58'

Driller's log of 699-57-25B

1. Air rotary drill

Depth (ft)		Description
From	To	
0	7	no record
7	24	medium sand, 85-90% basalt
24	25	pebbles, medium to fine
25	30	pebbles, sandy; medium to fine pebbles, medium to fine sand
30	40	sand, pebbly; very coarse to coarse sand, medium to fine pebbles
40	45	pebbles, coarse to fine
45	65	pebbles, medium to fine
65	70	sand, pebbly; very coarse to coarse sand, medium to fine pebbles
70	75	pebbly, sandy; medium to fine pebbles, very coarse to coarse sand
75		silt, sandy; fine to very fine sand

Driller's log of 699-57-29B (N057108, W028686)¹ Hanford Wells, 1973

Land surface altitude² 416 feet msl

1. Personal communication with Roy Gephart, 11-20-75
2. Personal communication with Roy Gephart, 11-20-75
3. Air rotary drill

Depth (ft)		Description
From	To	
0	5	sand; medium-fine
5	20	sand; medium, 50% basalt
20	26	gravel, sandy; pebbles with medium to fine sand
26	28	large boulder
28	30	gravel, sandy
30	45	gravel, sandy; small to medium pebbles with fine to coarse sand
45	50	sand, gravelly; coarse sand with small pebbles
50	55	gravel, sandy; small pebbles with coarse sand
55	60	gravel; small to medium pebbles, little sand
60	65	gravel; small to medium pebbles, little sand
65	80	gravel, small to medium pebbles, little sand
80	81	some signs of clay at 81'

Driller's log of 699-57-83 (N057020, W082993), Hanford Wells, 1973

Land surface altitude¹ 576 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	5	solid cobble bed, cobble 12" minus
5	15	12" minus cobble and silty sand
15	36	cobbles and silty sand; hit large boulder 18'; hit boulder at 34'
36	40	cemented gravel, sand
40	55	silty gravel and sand; very silty gravel and sand 44'; hit boulder at 49'
55	60	silty gravel and sand, a few large cobble 6"-8" minus; hit boulder at 59'
60	205	silty gravel and sand; hit boulder 136', added 4" minus cobble to aid bit drilling boulder; between 176' and 180' added cobbles and resumed drilling
205	210	Ringold conglomerate
210	225	sand and silt
225	235	brown silty sand
235	240	yellow sand and silt
240	245	no record but sampled; probably sand and silt
245	265	sand and silt
265	315	sand and gravel
315	325	sand
325	343	sand and gravel
343	355	rock
		* Note written on driller's log says "Basalt from 343'-353' not recorded in logs"

Driller's log of 699-58-24¹ (N058012, W024181) Hanford files

Land surface altitude² 417 feet msl

1. Also labeled as hole GM-15
2. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	3	sand with some gravel
3	5	sand and gravel
5	10	sand and gravel and cobbles
10	24	sand and gravel 1½-
24	27	black sand
27	30	black sand and gravel
30	35	no record; probably black sand and gravel
35	55	black sand and gravel
55	60	black sand

Driller's log of 699-59-32¹ (N059424, W032378) Hanford files

Land surface altitude² 422 feet msl

1. Also labeled hole GM-10
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	2	surf sand, brown
2	45	sand and gravel, size 1½", black
45	50	gravel, dark, size 2"
50	65	sand
65	70	sand and gravel, size ½"
70	75	no record

Driller's log of 699-59-58¹ (N058859, W057763) Hanford Wells, 1973

Land surface altitude² 496 feet msl

1. Also labeled GBM-8
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	13	sand, gravel, cobbles
13	35	no record but sampled
35	40	silt, gravel, cobbles
40	42	sand, gravel, cobbles, boulder
42	43	boulder; had to redrill 38' to 42'
43	45	sand, gravel, cobbles, boulder
45	66	sand, gravel, cobbles
66	75	sand and gravel; broke weld at approximately 30', pulled casing, redrilled 38' to 75'
75	89	sand, gravel, cobbles; broke weld at 33', pulled casing, redrilled 70' to 85'
89	90	sand and gravel
90	102	sand
102	112	medium sand
112	114	no record but sampled

Driller's log of 699-59-80A¹ (N059445, W079548) Hanford Wells, 1973

Land surface altitude² 579 feet msl

1. Also labeled 60-80A
2. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	rocks and sand
5	10	rocks, sand, and little clay
10	11	rocks and sand
11	16	basalt gravel and little sand
16	20	basalt chips
20	24	coarse basalt chips
24	26	basalt sand
26	29	coarse basalt gravel
29	33	basalt sand
33	36	fine basalt sand
36	39	basalt sand and mostly basalt gravel
39	41	basalt sand
41	45	sand and gravel (basalt sand and the gravel is mostly basalt)
45	52	fine basalt
52	55	sand and gravel and mostly basalt
55	62	basalt sand
62	68	basalt sand and gravel
68	71	fine gravel--mostly basalt
71	74	sand and gravel--mostly basalt
74	77	gray sand
77	86	sand and gravel
86	87	sand, gravel, and rocks
87	95	sand, gravel, and rocks and lots of basalt; hole started to cave at 95', had to drill the hole out that caved in; bailer hung up; swedged; hole caved in from 91' to 95' while swedging (WELL ABANDONED)

Driller's log of 699-59-80B¹ (N059453, W079548) Hanford Wells, 1973

Land surface altitude² 581 feet msl

1. Also labeled 60-80B
2. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	rocks and sand; dug hole from 0' to 3' with shovel
5	9	basalt rocks, little sand and blue binder
9	10	basalt rocks and little dark gray sand
10	11	basalt rocks with gray sand
11	14	basalt boulder
14	15	basalt boulder and very fine sand
15	16	basalt boulder and fine to medium sand
16	17	very fine to medium basalt sand
17	18	coarse basalt rock and little sand
18	19	fine basalt rock and little sand
19	20	fine and medium basalt sand
20	21	sharp basalt gravel and little fine and medium basalt sand
21	22	coarse basalt gravel and little fine and medium basalt sand
22	23	fine and medium basalt sand
23	28	basalt, gravel, and sand
28	29	medium basalt sand
29	31	very fine to medium basalt sand
31	33	3/4 basalt gravel and 1/4 other gravel with a blue binder
33	35	fine to medium basalt sand
35	39	fine to medium basalt sand and basalt gravel
39	41	fine to medium basalt sand
41	43	fine basalt sand
43	46	fine and medium basalt sand
46	49	fine to medium basalt sand
49	51	fine to medium basalt sand and little gravel
51	52	fine to medium basalt sand
52	54	medium basalt sand
54	61	fine to medium sand and 2/3 basalt; can't get a sample to tell what I am drilling in
61	68	basalt sand and gravel
68	71	sand, mostly basalt
71	73	sand and gravel, mostly basalt
73	75	little sand and gravel -- 1/2 basalt and 1/2 other
75	77	fine to medium gray sand
77	85	silt, sand and gravel
85	88	silt, sand, and fine gravel
88	92	gray sand and gravel
92	95	gray sand, gravel and little silt
95	99	fine to medium gray sand and gravel
99	100	fine to medium gray sand and fine gravel
100	104	fine to medium gray sand and coarse gravel
104	105	fine to medium gray sand and fine gravel
105	109	fine to medium gray sand and coarse gravel
109	110	fine to medium gray sand and medium coarse gravel
110	115	fine to medium gray sand and coarse gravel
115	117	silt and medium gravel
117	120	silt and coarse gravel

Driller's log of 699-59-80B cont

Depth (ft)		Description
From	To	
120	125	silt and medium to coarse gravel
125	128	silt and coarse gravel
128	135	silt and medium gravel
135	139	silt and medium to coarse gravel
139	140	silt and medium gravel
140	143	silt and medium to coarse gravel
143	145	silt and medium to coarse gravel and little basalt
145	147	silt and medium to coarse gravel
147	152	coarse gravel and silt
152	154	coarse gravel, silt and lump of clay
154	158	coarse gravel, silt and little clay
158	165	medium and coarse gravel, silt and little clay
165	169	medium gravel, clay and little silt
169	173	clay with little fine gravel
173	175	clay with very little fine gravel
175	177	clay and little gravel
177	180	basalt gravel and little clay
180	184	basalt sand and silt
184	185	basalt sand and little clay from above
185	187	basalt sand and gravel
187	190	sharp pieces of basalt
190	192	pieces of basalt gravel
192	198	basalt sand

Driller's log of 699-60-32¹ (N060390, W032032) Hanford Wells, 1973

Land surface altitude² 423 feet msl

1. Labeled hole GM-11 also
2. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	2	surf sand, brown
2	32	sand and gravel, black 2"
32	65	sand and gravel, black
65	70	clay with gravel, yellow
70	79	clay and gravel, size 2", yellow
79	85	clay and broken rock

Driller's log of 699-60-57¹ (N060350, W056612) Hanford Wells, 1973

Land surface altitude² 468 feet msl

1. Also labeled GBM-7
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	6	boulders, cobbles, coarse sand, l. gravel
6	10	cobbles, l. gravel, c. sand
10	11	cobbles, l./m gravel, c. sand
11	12	boulders, cobbles, l/m gravel, c. sand; hit boulders at 12' casing went crooked, pulled casing back, straightened
12	20	cobbles, l/m gravel, c. sand
20	25	cobbles, v.c./f. sand, l/m/s sand
25	30	cobbles, m. sand, l/ms gravel
30	34	cobbles, c/m sand, l/m/s gravel
34	37	v/c m sand, l/m/s gravel
37	38	cobbles, v/c m sand, l/m/s gravel
38	40	vc/m sand, l/m/s gravel
40	45	vc/m /f sand, l/m/s gravel
45	50	vc/m sand, m/s gravel
50	58	f/c sand, m/s gravel
58	62	f/c sand, silt, m/s gravel
62	64	f sand, silt, m/s gravel
64	66	f sand, m/s gravel
66	68	m/f sand, m/s gravel
68	74	f sand, m/s gravel
74	76	f/m sand, m/s gravel
76	81	vf/m sand, m/s gravel
81	84	f/m sand, m/s gravel
84	86	vc/f sand, silt, m/s gravel
86	88	f sand, silt, l/m/s gravel
88	90	f sand, l/m gravel
90	92	m/c sand, l/m gravel
92	94	f/m sand, s. gravel
94	96	vf/f sand, s gravel
96	98	vf/f sand, silt
98	108	vf/f sand; sand heaving 98'-112'
108	110	vf sand; sand heaving 98'-112'
110	114	c sand, m/s gravel; sand heaving 98'-112'
114	118	c sand, l/m/s gravel
118	120	c/f sand, l/m/s gravel
120	125	c/f sand, s gravel, After 125', skipped 10 days and changed drillers
125	133	black sand; 8 feet of sand in hole at start of shift; this sand heaves up the casing some
133	135	blue sand and pea gravel
135	141	blue sand; sand will start to heave up the hole when the tools get within 1 foot of bottom of casing
141	144	blue black sand, sand is fine and heavy
144	145	blue black sand, basalt @ 145'
145	147	rotten basalt

Driller's log of 699-60-57 cont

Depth (ft)		Description
From	To	
147	154	basalt; basalt is very rotten to 148'
154	155	basalt; the basalt is rotten and is light in weight

Driller's log of 699-60-60 (N060030, W059964) Hanford Wells, 1973

Land surface altitude¹ 510 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	5	topsoil and boulders
5	16	sand and boulders
16	20	fine black sand
20	26	boulders
26	33	fine gray sand and boulders
33	35	fine black sand
35	40	coarse black sand
40	50	sand, gravel and boulders
50	56	sand and gravel
56	60	black sand
60	65	coarse black sand
65	68	sand, gravel and boulder
68	70	black and white sand
70	77	black and white sand and gravel
77	81	black and white sand
81	87	black and white sand and gravel
87	90	black and white sand
90	95	black and white sand and gravel
95	98	? record unclear, logged as brown clay but remarks say "hit brown clay at 98'
98	108	brown clay and 1/3 gravel
108	110	fine black and white sand and clay
110	123	clay and gravel
123	126	coarse black and white sand and boulders
126	128	basalt

Driller's log of 699-61-16A¹ (N061467, W015673) Hanford Wells, 1973

Land surface altitude² 411 feet msl

1. Also labeled CC-133, Foster Ranch
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	40	sandy clay and caliche
40	57	clay caliche and sand; heavy clay, yellow and tan color, lot of caliche and some hard rock-like formation, could be shale
57	65	blue-green shale or clay and hard sandstone
65	70	blue shale, gray shale; at 67' hit a break in formation, water rose about 15' in hole; at 70' was back into blue-green shale or mud
70	78	blue shale
78	80	blue shale with a showing of yellow clay
80	90	brown sandy clay or shale
90	95	yellow clay
95	100	brown clay
100	105	reddish brown shale or clay, some pieces of sandstone and caliche in this sample
105	125	reddish brown clay, shale and caliche
125	140	tan, brown, sandy silt
140	146	fine white sand and silt; caves, sand will work back up hole
146	150	light clay and sand, some basalt gravel Hole was perforated and test pumped; when drilling resumed hole had 30' of sand and shale in it, sand was brownish-red color, shale pure blue.
150	165	fine white sand, clay and tan silt
165	185	tan silt, clay mud and fine white sand, showing of sandstone and blue shale; sandstone is fine and rotten, can break it with fingernail
185	194	fine white sand, tan silt and clay, very little sandstone and blue shale
194	195	fine white sand, tan silt and clay, very little gravel
195	205	very fine white sand, mud binder, darker color
205	215	white shale, small amount of fine gravel
215	220	white shale, small amount of fine gravel and some sandstone
220	227	white shale, small amount of fine gravel, layers of reddish-brown sand and clay
227	230	reddish-brown sand, very little binder
230	233	reddish-brown sand
233	235	white tight shale
235	240	layers of red-brown sand and white shale, some blue shale, very little fine gravel
240	243	white shale; hole is making lots of muck Cleaned out 125' of muck; perforated; after 3' months returned pulled pump left in well, it parted; cleaned out and deepening hole
243	250	blue shale, sand, and white clay
250	260	white sticky shale, brown sand and blue shale; pieces of pump strainer; a little gravel showed up at 260'

Driller's log of 699-61-16A cont

Depth (ft)		Description
From	To	
260	265	white clay and sand
265	270	white clay or shale, some sand and sandstone; lots of mud running in hole
270	278	white clay and fine sand; muds up
278	279	pink soapy clay, no sand in it
279	286	white clay and sand; hole is making lots of mud
286	295	white sandy clay; muds up
295	300	white clay, sand and a showing of blue shale; muds up
300	303	blue shale and some basalt chips
303	308	loose green silt, gray sand and basalt chips; sand comes in hole
308	309	green sandy silt and basalt chips
309	310	black sandy basalt; looks like we have struck basalt, hole bridged in above with white quicksand; had to spade out for over 100 feet; casing stopped at 303'
310	318	basalt rock; sand in 315' sample is foreign
318	320	layer of sticky black shale and lots of basalt
320	323	basalt with layers of black shale
323	327	basalt
		left hole about 3 months; cleaning out muck and deepening
327	329	basalt gravel and lava mud
329	330	at 330' fine basalt gravel (rotten basalt) and black basalt mud
330	335	layers of blue shale with basalt gravel and black mud
335	340	basalt gravel, lava mud, some shale
340	348	basalt chips, lava mud; this lava mud runs in along with the sand
348	352	basalt
352	362	no record
362	367	solid basalt
367	368	fine gray sand; put some aquajell in to try and stop this sand from running in
368	370	basalt; muck still comes in hole
370	374½	solid basalt; muck still comes in hole
374½	375½	small break in basalt, some sand and gravel in this break
375½	390	solid basalt; muck still comes in, not as bad
390	415	solid basalt
415	418½	solid basalt, very hard; 20' muck in hole at start of shift
418½	423	solid basalt
423	430	solid basalt, small break; 428'-430' very hard
430	435	solid basalt, very hard
435	436	basalt, showing of Ringold
436	438½	drilled through basalt at 436' and into a rotten sandstone, sand and small gravel, caliche and various other formations
438½	446	solid basalt
		test pumped 2 days; had very thick sand and mud, a lot of gray white sand in hole when resumed drilling
446	451½	solid basalt
451½	458	dark shale, pink mud, basalt chips, and sand; this shale is dark bluish gray when wet and when dried out it is a light whitish gray

Driller's log of 699-61-16A cont

Depth (ft)		Description
From	To	
458	469	gray sandstone, ash, sand, basalt chips
469	472	basalt
472	473	layer of shale, and muds up
473	475	layers of basalt and shale
475	490	lava mud, basalt chips, blue shale, iron, sand, and about everything; 25' muck in hole at start of shift
490	505	porous basalt with blue shale and ash-like substance impregnated all through the pores
505	512	black basalt, some ash; at 505' into a more solid basalt, this basalt is rotten, 510' to 512' more solid
512	517	basalt, black ash mud, various other soft muds; at 517' broke through solid basalt
517	520	loose basalt and sand, caves in, some small gravel in this cave
520	528	solid hard basalt; hole is making more sand
528	565	hard solid basalt; 552' to 555' hardest basalt we have hit
565	568	basalt--small break
568	573	solid basalt with some volcanic ash and mud
573	577	basalt with layers of ash
577	582	basalt and ash
582	583	no record, probably basalt
583	584	solid basalt
584	600	rotten basalt; after changing bits about 586', noted a hard solid layer of basalt at 581' to 583' that bit would not pass through; hole caved in above tools, this cave I would say is between 500' and 560', bailed out big pieces of basalt, caliche, rotten sandstone and etc.
600	607	hard basalt

Driller's log of 699-61-37¹ (N060618, W037043) Hanford Wells, 1973

Land surface altitude² 441 feet msl

1. Labeled hole GM-18
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	3	surf sand, brown
3	25	sand and gravel, size 1½", black
25	50	sand and gravel, size 1½", dark
50	65	sand and gravel, size 2", dark
65	70	sand and gravel, size 1½", dark
70	76	sand, black, medium fine

Driller's log of 699-61-41¹ (N061355, W041118) Hanford Wells, 1973

Land surface altitude² 427 feet msl

1. Labeled GM-16
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	5	surf sand, brown, medium fine
5	10	sand, gray, medium fine
10	15	sand, brown, medium fine
15	30	sand and silt, yellow, fine, soft
30	35	sand and silt and gravel, size 1"
35	40	sand and gravel, size 2", dark
40	45	clay and silt, cream color, soft
45	52	blue soft clay

Driller's log of 699-61-62¹ (N060532, W062217) Hanford Wells, 1973

Land surface altitude 496 feet msl

1. Labeled GBM-1
2. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	2	fine sand; hand dug
2	4	large gravel, cobbles, fine sand, hand dug
4	5	large gravel, small gravel, cobbles, fine sand
5	9	large-small gravel, very fine sand
9	10	large gravel, very fine sand
10	15	l.s. gravel, v.f. sand
15	16	cobbles, v.f. sand/l. gravel
16	18	cobbles, l. gravel, v.f. sand
18	19	no record, probably cobbles, l. gravel, v.f. sand
19	21	cobbles, boulders, l. gravel, v.f. sand
21	22	boulder, l. gravel, v.f. sand
22	25	boulders, s. gravel, v.f. sand; encountered 5 or 6 large boulders 21'-25'
25	28	boulders, cobbles, l. gravel record unclear
28	30	cobbles, l/s gravel; casing took off crooked around boulders, jarred it back, filled hole up 4' with rocks, reamed hole
30	32	boulders, cobbles, l. gravel, v.f. sand
32	33	boulders, cobbles, s. gravel, v.f. sand
33	34	cobbles, s. gravel, v.f. sand
34	35	cobbles, l. gravel, c./f. sand
35	37	l/s gravel, f. sand
37	40	cobbles, l. gravel, c./f. sand
40	43	l. gravel, c./f. sand
43	45	cobbles, l/s gravel, c/f sand; casing took off crooked again, pulled back and straightened hole
45	47	cobbles, gravel, c. sand
47	52	cobbles, gravel, c. sand
52	53	cobbles, gravel, c. sand
53	54	boulders, c. gravel, cobbles, c. sand
54	55	cobbles, c. gravel, c. sand
55	59	boulder, c. gravel, c. sand; a layer of coarse sand 6" to 8", separating boulders approx. 57'
59	60	boulder, cobbles, c. sand
60	61	boulders, cobbles, c. sand, gravel
61	63	cobbles, gravel, c. sand
63	65	cobbles, l. gravel, c. sand
65	66	l. gravel, c. sand
66	69	cobbles, l/s gravel, c. sand; 64'-69' caves quite a bit
69	70	l/s gravel, c. sand, cobbles
70	72	cobbles, c. sand, l/m/s gravel
72	74	boulders, l/m/s gravel; hit rather large boulder at 72'
74	75	boulder, f. sand, l/m/s gravel
75	79	boulders, cobbles, l/s gravel, c/f sand
79	80	cobbles, c. sand, l/m/s gravel
80	85	cobbles, c. sand, m/s gravel

Driller's log of 699-61-62 cont

Depth (ft)		Description
From	To	
85	87	l/m/s gravel, c. sand, silt
87	89	l/m/s gravel, c. sand
89	91	l/m/s gravel, c/f sand
91	93	cobbles, c. sand. l/m/s gravel
93	95	cobbles, c./f. sand, l/m/s gravel
95	97	c/f sand, l/m/s gravel
97	99	cobbles, c. sand, l/m/s gravel
99	100	no record
100	101	cobbles, c./f. sand, l/m/s gravel
101	103	cobbles, c. sand, l/m/s gravel
103	107	c. sand, l/m/s gravel
107	108	c/f sand, m/s gravel
108	109	v.c. sand, m/s gravel
109	111	v.c. sand
111	114	v.c. sand, l/m/s gravel
114	115	v.c. sand, l/m gravel; sand heaving 114'-119'
115	121	v.c. sand, l/m/s gravel; sand heaving 114'-119'
121	127	c. sand, l/m/s gravel
127	129	c/m sand, l/m/s gravel; sand heaving 127'-133'
129	133	v./c sand, m/s gravel; sand heaving 127'-133'
133	137	v/c sand, l/m/s gravel
137	139	cobbles, v.c. sand, l/m/s gravel
139	141	cobbles, v.c. sand, m/s gravel
141	143	vc/m sand, l/m/s gravel
143	145	v/cm sand, l/m gravel
145	146	boulder, v.c. sand, l/m gravel; hit boulder at approx 146'
146	147	v.c. sand, l/m/s gravel
147	150	v.c./c. sand, l/m/s gravel
150	151	v.c. sand, l/m/s gravel
151	153	boulder, cobble, v.c. sand, l/m/s gravel
153	157	v.c. sand, l/m/s gravel
157	161	v.c. sand, m/s gravel
161	163	v.c. sand, s. gravel
163	165	v.c. sand, cobbles, l/m gravel
165	167	v.c. sand, cobbles, l/m/s gravel
167	169	v.c. sand, l/m/s gravel
169	170	v.c./c. sand, l/m/s gravel
170	173	cobbles, v.c. sand, l/m/s gravel
173	175	cobbles, v.c./c. sand, l/m/s gravel
175	176	v.c. sand, m/s gravel
176	177	v.c. sand, l/m/s gravel
177	177½	cemented m/s gravel
177½	181	black basalt, M; black basalt at 177½' recovered piece of honeycombed basalt
181	183	black basalt (H); sand coming in hole
183	186	black basalt; sand coming in hole
186	187	no record, probably black basalt
187	188	black basalt (M)

Driller's log of 699-61-66¹ (N061062, W065626) Hanford Wells, 1973

Land surface altitude² 523 feet msl

1. Labeled 61-65
2. Calculated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	5	boulders, gravel and sand
5	10	no record, probably boulders, gravel and sand
10	20	cobbles and gravel
20	35	small and coarse gravel
35	40	cobbles and gravel, little sand
40	50	cobbles and gravel
50	55	coarse gravel and black sand
55	60	coarse gravel, little sand
60	65	cobbles and gravel, sand and silt
65	70	small and coarse sand, gravel and silt
70	75	coarse gravel
75	85	cobbles and coarse gravel
85	90	fine sand, coarse sand and gravel
90	110	coarse sand and gravel
110	125	cobbles and gravel
125	140	coarse gravel, little silt
140	145	no record
145	160	coarse gravel, fine sand
160	165	coarse sand and gravel-clay
165	170	fine and coarse sand; sand came back up the pipe 8'
170	175	fine and coarse sand and coarse gravel; sand comes in with water
175	180	coarse gravel and sand
180	185	fine and coarse sand
185	195	fine and coarse sand and gravel
195	205	fine and coarse sand, coarse gravel, sand keeps coming up the pipe
205	215	cobbles, coarse gravel, fine and coarse sand; sand comes back up the pipe
215	225	basalt, fine sand comes in with the water; pipe stopped at 216'6"

Driller's log of 699-62-31¹ (N062454, W031412) Hanford Wells, 1973

Land surface altitude² 432 feet msl .

1. Labeled hole GM-12
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	2	surf sand, brown
2	15	sand and boulders size 8"
15	30	sand and boulders, size 2', dark
30	70	sand and gravel, size 2", dark
70	75	sand and gravel, size 1", brown
75	85	sand and silt, fine, brown; total hole 84'

Summary of driller's log 699-62-32 (N062250, W031575) Hanford Wells, 1973

Land surface altitude¹ 430 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	74.5	character of material gravel and sand; dug well

Formation record of 699-62-43A¹ (N061938, W042880) Hanford Wells, 1973

Land surface altitude² 432 feet msl

1. Labeled Gable Mountain Test Hole R-1
2. Altitude given on formation record in Hanford files

Depth (ft)		Description
From	To	
0	5	sand and coarse gravel
5	15	medium gravel
15	20	basalt boulders
20	28	coarse gravel and sand
28	36	coarse gravel
36	46	sand and gravel
46	54	coarse gravel and sand
54	66	sand and gravel
66	72	yellow clay

Driller's log of 699-62-43B¹

Land surface altitude² 420 feet msl

1. Labeled 13-26-13-R2
2. Calculated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		
From	To	
0	5	topsoil and sand
5	7	gravel and sand
7	10	gravel and black sand
10	20	gravel, very little sand
20	25	50% loose sand and 50% gravel
25	30	loose sand and gravel
30	45	no silt, 25% coarse sand, 75% gravel shot size to 4" diameter; 50% of gravel is 1" to 2" size, 40% small, 10% large
45	50	95% fine to coarse gravel, 5% sand; about 55% granules, 45% pebbles, 5% cobbles, 5% sand; this formation would come back up pipe
50	64	95% black and white sand, 5% gravel
64	68	light tan silt
		Hole is 68½' deep

Driller's log of 699-62-43C¹ (N062000, W043000) Hanford Wells, 1973

Land surface altitude² 428 feet msl

1. Labeled 13/26-13-R3
2. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	12	sand
12	25	coarse gravel up to 3"
25	30	gravel up to 1½, little black sand
30	35	coarse gravel up to 4"
35	40	small and coarse gravel, little sand
40	45	small and coarse gravel up to 4"
45	50	pea gravel and coarse gravel up to 3"
50	55	small and coarse gravel, 50% black coarse sand
55	61	75% fine black sand, 25% coarse gravel
61	67	fine black sand, no gravel
67	70	white clay
70	90	brown clay and silt
90	100	clay, silt and sand

Driller's log of 699-62-43D¹

Land surface altitude² 427 feet msl

1. Labeled 13/26-13-R4
2. Calculated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	10	blow sand, top soil
10	50	gravel and sand
50	67	pure sand; at 55' lost, sand came up hole 5'
67	73	light tan silt

Driller's log of 699-62-43E¹ (N062356, W042651) Hanford Wells, 1973

Land surface altitude² 420 feet msl

1. Sometimes labeled 699-67-43E
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	18	boulders and heavy gravel; same material so far as 1st hole
18	30	boulders
30	40	gravel
40	54	coarse gravel; perforated casing lets in a lot of fine sand
54	56	water gravel, up to 2" size
56	58	fine gravel, coarse sand
58	66	fine water sand; requires quite a lot of sand pumping
66	68	fine black sand; added clay; *It's hard to distinguish a sample due to clay we're adding however, some of this greenish blue clay sticks to the bit
68	70	clay (blue), some sample
70	75	clay, no sample
75	78	clay, (blue), sample
78	83	no record
		*total depth from f.l. 83', total pipe 85'

Driller's log of 699-62-43E

1. Well abandoned
2. Cable tool rig

Depth (ft)		Description
From	To	
0	4	sand
4	5	cobbles, size of grapefruit
5	20	heavy gravel, size of golf balls, and cobbles or small boulders, practically no silt or sand mixed with this gravel; samples are not representative, due to outside sand when we add water *Pulled out casing, moved rig ahead 2'

Driller's log of 699-62-43F (N062324, W042718) Hanford Wells, 1973

Land surface altitude¹ 421 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	10	no record
10	15	coarse gravel, washed sample
15	25	boulders
25	40	heavy gravel
40	48	fine sand; sand coming in
48	59	no record
59	64	fine gravel; using some clay
64	66	no record
66	70	clay
70	75	clay and gravel
75	80	clay
80	81	no record, probably clay

Driller's log of 699-62-43G (N062368, W042748) Hanford Wells, 1973

Land surface altitude¹ 418 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	5	gravel; sandstone on top, heavy gravel and cobbles
5	10	cobbles, boulders
10	20	heavy gravel
20	35	fine gravel
35	42	coarse sand
42	58	fine sand
58	66	fine gravel; had some trouble from 60'-65' with sand, took quite a little clay to drill it out
66	68	clay
68	81	no record

Driller's log of 699-62-43H (N062279, W042755), Hanford Wells, 1973

Land surface altitude¹ 425 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	10	medium sand
10	30	sand and gravel
30	50	gravel
50	70	clay and gravel; there's a layer of yellow clay mixed with the gravel
70	90	clay and sand

Driller's log of 699-62-43I (N062332, W042752) Hanford Wells, 1973

Land surface altitude¹ 420 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	10	cobbles
10	20	heavy gravel
20	30	cobbles, gravel
30	40	fine gravel
40	62	fine sand; we have to use clay in this fine sand
62	64	sand
64	66	sand and clay
66	68	sandy clay
68	79	clay

Driller's log of 699-62-43J (N062340, W042787) Hanford Wells, 1973

Land surface altitude¹ 420 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	25	heavy gravel
25	30	coarse sand
30	62	fine gravel
62	64	coarse sand
64	66	sandy clay
66	80	clay

Driller's log of 699-62-43K (N062289, W042722) Hanford Wells, 1973

Land surface altitude¹ 426 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	60	sand and gravel
60	68	sand; using clay
68	70	clay
70	81	no record

Driller's log of 699-62-43L (N062337, W042809) Hanford Wells, 1973

Land surface altitude¹ 420 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	sand and gravel
5	10	? record unclear, cobbles or heavy gravel
10	20	heavy gravel
20	30	medium gravel
30	58	fine gravel
58	66	fine sand; this fine sand is going to cause trouble in the screen
66	75	clay

Driller's log of 699-62-43M (N062305, W042769) Hanford Wells, 1973

Land surface altitude¹ 422 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	35	sand
35	40	gravelly sand
40	50	no record
50	55	sandy
55	70	sand
70	78	sandy clay

Driller's log of 699-62-43N (N062317, W042790) Hanford Wells, 1973

Land surface altitude¹ 420 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	5	sand
5	10	cobblestones
10	15	no record
15	65	sand
65	69	clay

Driller's log of 699-63-25A¹ (N063312, W024806) Hanford Wells, 1973

Land surface altitude² 394 feet msl

1. Labeled Sl683, P-11
2. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	1	topsoil
1	5	large boulders, sand and topsoil
5	8	large boulders, sand and silt
8	12	boulders, sand and silt; at 10' hit a boulder what started hole crooked, put rocks and concrete in hole to drill off ledge caused by boulder, also same at 12'; sample at 10' had some concrete and surface rocks in it
12	15	boulders, gravel, sand and silt; hole caves at 14', gravel and sand and very little silt
15	28	gravel, basalt boulders, sand and very little silt; used aquagel to keep hole from caving
28	30	gravel, black sand and basalt
30	36	gravel and sand
36	40	gravel
40	49	gravel and sand; good pea gravel to 4½" in diameter, coarse black sand
49	55	black sand and gravel
55	56	gravel
56	58	black sand and gravel
58	62	gravel and black sand
62	65	sandy silt
65	79	sandy clay- heavy clay
79	103	sandstone, sand, gravel, reddish shale and clay; shale looks rotten and full of seams
103	110	fine reddish sand with sandstone, basalt chips and fine gravel

Driller's log of 699-63-26A¹

1. Labeled 699-63-25A .
2. This is probably 699-63-25B of Hanford Wells, which is unlocated still as of 1-19-76, Roy Gephart
3. Cable tool rig

Depth (ft)		Description
From	To	
0	3	hard packed silt with gravel to 3"
3	3½	boulder
3½	6	no record, probably boulder
6	10	coarse sand, and gravel
10	12	large gravel
12	15	cobbles, sand and silt
15	20	boulders, cobbles and silt
20	25	cobbles, sand and silt
25	35	cobbles and silt
35	40	fine sand and silt
40	50	1" gravel and sand

Driller's log of 699-63-51¹ (N062557, W050622) Hanford Wells, 1973

Land surface altitude² 423 feet msl

1. Labeled GM-17
2. Altitude on driller's log in Hanford Files
3. Cable tool rig

Depth (ft)		Description
From	To	
0	2	surf sand, brown
2	7	sand and gravel, size 1½"
7	15	sand, coarse, and gravel, size 1", black
15	20	sand, coarse black, and fine gravel ½"
20	25	sand and silt and gravel, brown ½"
25	36	clay, gray, soft

Driller's log of 699-63-55¹ (N062616, W055061) Hanford Wells, 1973

Land surface altitude² 425 feet msl

1. Labeled GBM-6
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	3"	c. sand, brown
3"	5	c. sand, gray, m. gravel
5	8	c. sand, m./s. gravel
8	10	cobbles, v.c. sand, l/m/s gravel
10	15	v.c. sand, l/m/s gravel
15	20	v.f./m. sand, silt, m/s gravel
20	22	cobbles, v.c. sand, l/m/s gravel
22	26	v.c./m sand, l/m/s gravel
26	30	v.c. sand, m/s gravel
30	32	v.c./f sand, l/m/s gravel
32	38	v.c. sand, m/s gravel
38	40	v.c. sand, s. gravel
40	42	v.c. sand, m/s gravel; unable to recover any sample
42	50	v.c. sand, s. gravel; unable to recover any sample
50	52	no record; probably v.c. sand, s. gravel; unable to recover any sample
52	65	v.c. sand, s. gravel; unable to recover any sample
65	66	v.c. sand, silt, m/s gravel
66	68	v.c. sand, silt, s. gravel
68	70	v.c./f. sand, silt, s. gravel
70	78	v.c./c. sand, silt
78	80	v.c./c./f. sand, silt
80	82	f./c. sand, silt
82	84	f. sand, yellow clay
84	86	f./c. sand, yellow clay
86	88	v.c. sand, yellow clay
88	100	gray sandrock
100	102	c. sand, s. gravel
102	104	v.c. sand, s. gravel
104	106	v.c./f. sand
106	108	v.c./c. sand, s. gravel
108	110	v.c./c. sand
110	112	v.f./f. sand
112	116	black basalt M; unable to recover basalt cuttings for sample
116	121	black basalt H; unable to recover basalt cuttings for sample
121	122	black basalt H

Driller's log of 699-63-58¹ (N062691, W057789) Hanford Wells, 1973

Land surface altitude² 490 feet msl

1. Labeled GBM#5
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	2	gravel and silt
2	13	sand and gravel
13	15	cement gravel
15	16	boulders
16	20	boulders and gravel
20	24	cobbles and gravel
24	25	sand and gravel
25	45	sand, gravel and cobbles
45	50	sand and gravel
50	60	sand, gravel and cobbles
60	86	sand and gravel
86	92	sand, gravel and cobbles
92	94	boulder, sand and gravel
94	98	sand and gravel, fine
98	102	sand and gravel, pea
102	110	sand, and gravel
110	112	cemented gravel
112	114	boulder, 20-24 inches
114	120	sand and gravel
120	125	basalt; basalt would break off in pieces at least 3 inches across and sand and gravel would come in hole
125	130	basalt

Driller's log of 699-63-90¹ (N062892, W090264) Hanford Wells, 1973

Land surface altitude² 509 feet msl

1. Labeled 62.5-90
2. Calculated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	5	sand and boulders
5	19	basalt boulders on top of one another
19	20	basalt boulders and gravel; hole caved in and drilling out cave in
20	25	coarse basalt gravel
25	32	fine black sand and some gravel
32	35	fine black sand and gravel
35	38	black sand and lots of gravel; ran out of sand at 38'
38	42	basalt gravel
42	45	coarse gravel
45	54	boulders and coarse gravel; at 45½' hit a boulder about 1' thick
54	58½	coarse gravel
58½	60	boulders
60	117	coarse black sand and gravel
117	120	fine black sand with some clay and silt
120	124	fine black sand, clay and silt
124	129	sand and coarse gravel
129	130	coarse gravel and sand
130	135	coarse gravel, sand, and clay
135	144	clay, sand, and gravel; lots of coarse gravel
144	150	clay, sand and some coarse gravel
150	163	clay, sand and coarse gravel
163	170	lots of basalt gravel with other gravel mixed in; fine and coarse sand, silt and clay binder
170	175	gravel, sand, clay and silt binder; lot of gravel and coarse sand
175	182	lots of gray sand and gravel, silt and clay binder; will cave at 2' below pipe
182	192	lots of basalt gravel, fine to coarse sand, silt and clay binder, rock as big as baseballs
192	202	3" gravel, lots of sand, silt with a little clay binder
202	207	fine gravel, fine to coarse sand, lots of silt and clay
207	211	3" gravel, sand, silt and clay binder
211	214	fine gravel, fine sand, silt and clay binder; this formation lies in layers of coarse gravel, then a layer of fine gravel with lots of silt and clay
214	215	sand, gravel and silt
215	230	medium small gravel, black and white sand and lots of silt
230	236	medium gravel 25%, coarse sand 35%, fine sand 25%, and 15% silt and clay
236	238	B. basalt, sand and silt, very little gravel; had to rock pipe
238	241	basalt
241	247	solid black basalt
247	253	solid black basalt with some white volcanic ash

Driller's log of 699-63-91A

1. Cable tool rig

Depth (ft)		Description
From	To	
0	5	sand
5	10	gravelly sand
10	15	large cobbles and boulders
15	20	gravelly medium sand
20	40	sandy gravel
40	45	gravelly sand, medium sand
45	50	sandy gravel, medium sand; boulders at 50'

Driller's log of 699-64-62¹ (N063786, W061746) Hanford Wells, 1973

Land surface altitude² 498 feet msl

1. Labeled GBM-2
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	5	sand, gravel, cobbles, and boulders
5	13	cobbles, boulders, sand, and gravel
		*7'-18' the sand logged between these depths is not typical sand but is a finely powdered substance that looks and feels like unmixed cement
13	18	cobbles, sand, and gravel
18	25	silt, gravel, cobbles; the gravel and cobbles, between these depths, are stuck together by a clay-like substance
25	30	cobbles, sand, pea gravel
30	35	silt, cobbles, sand, gravel
35	40	cobbles, boulders, sand, gravel
40	60	cobbles, sand, gravel
60	73	gravel, cobbles, fine sand, silt
73	75	cobbles, sand, gravel
75	83	cobbles, boulder, sand, gravel; boulders keep forcing pipe crooked so have to pull back casing and redrill
83	90	cobbles, boulders, sand, gravel
90	105	cobbles, sand, gravel
105	106	gravel, coarse sand
106	116	cobbles, sand, gravel

Driller's log of 699-65-50 (N064699, W050146) Hanford Wells, 1973

Land surface altitude¹ 465 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	40	fine sand
40	45	fine sand and coarse gravel
45	50	coarse black sand and gravel
50	55	fine black sand and coarse gravel
55	65	cobble, gravel, and sand
65	80	coarse gravel
80	90	coarse gravel, little sand
90	95	sand, silt and gravel
95	101	fine sand, coarse gravel
101	105	sand, silt, and clay
105	125	brown clay
125	160	blue clay
160	165	brown clay
165	170	gray clay
170	180	blue clay
180	185	blue clay and gravel
185	190	sand, gravel and clay
190	210	gray, sandy clay
210	215	brown clay
215	220	sand, silt, gravel, and clay
220	225	brown coarse sand and caliche
225	250	sand, silt and gravel
250	265	sand and silt, little clay
265	285	clay, little sand and silt
285	290	sand, silt, little clay, gravel
290	295	brown clay
295	310	sand, silt, gravel, little clay
310	320	yellow clay
320	335	yellow clay, little gravel
335	345	sand, silt and clay
345	350	clay, some silt, sand, and gravel
350	370	sand, silt and clay
370	375	fine sand
375	380	sand and silt
380	385	fine gravel
385	400	fine sand
400	405	sand, silt, little clay
405	415	sand, silt, clay
415	430	fine sand, little silt
430	445	fine sand, little silt and clay
445	460	sand, silt, little clay
460	473	sand, silt, and clay with small gravel mixed in
473	475	blue clay
475	480	gray clay
480	490	gray clay with little gravel
490	520	gray clay
520	530	blue clay
530	540	blue and gray clay with small gravel

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Driller's log of 699-65-50 cont

Depth (ft)		Description
From	To	
540	550	blue clay
550	555	green clay
555	570	blue and black clay, and sandstone in small pieces
570	575	blue and black shale and sandstone
575	580	basalt, sand, and clay

Driller's log of 699-65-59 (N065050, W058931) Hanford Wells, 1973

Land surface altitude¹ 505 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	2	sand
2	15	gravel and rocks
15	23	gravel and sand
23	32	gravel and rock
32	99	sand and gravel
99	117	sand and fine gravel
117	138	sand and gravel
138	150	sand
150	166	sand and gravel
166	193	sand
193	200	sandy clay

Driller's log of 699-65-83 (N064944, W082961) Hanford Wells, 1973

Land surface altitude¹ 484 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	5	tight sand, gravel, and cobbles
5	20	fine loose sand and gravel
20	25	tightly cemented sand and gravel
25	55	loose sand and gravel
55	80	open gravel
80	85	sand and gravel
85	90	sand, gravel, and clay, mostly very fine sand
90	95	fine sand, some gravel
95	100	fine sand, very little gravel
100	115	sand and gravel
115	120	sand

Driller's log of 699-66-23 (N065994, W022997) Hanford Wells, 1973

Land surface altitude¹ 387 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	5	gray gravel and silt
5	15	cobbles and gravel
15	20	cobbles, and sand to gravel
20	25	gray sand, gravel and 6" cobbles
25	30	gray silt, sand, gravel and 6" cobbles
30	35	sand, gravel and cobbles
35	40	gray clay and rock
40	45	gray clay
45	50	gray clay and some rock
50	55	gray clay
55	60	sandy, soft clay
60	65	brown, sandy clay
65	100	yellow, sandy clay

Driller's log of 699-66-38 (N066000, W038000) Hanford Wells, 1973

Land surface altitude¹ 434 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	sand and 1" gravel
5	15	cemented sand and ½" gravel, cement color
15	20	cemented sand and 1½" gravel, cement color
20	27	cemented sand and 1" gravel, cement color
27	32	fine sand, trace of silt, cement color
32	45	fine sand, clay, trace of silt, cement color
45	50	gray clay with some ½" gravel
50	55	gray clay, with trace of black and green clay with ½" gravel and rotten wood
55	60	gray clay with traces of black clay with ½" gravel and rotten wood
60	65	green clay with traces of black clay
65	80	green clay with traces of brown clay
80	85	green clay with traces of brown clay and ½" gravel
85	90	gray clay with some shale and sand and gravel
90	100	gray clay with some ½" gravel
100	105	gray clay
105	110	gray clay with traces of blue clay
110	115	gray clay with traces of green clay and ½" gravel
115	130	gray clay, ½" gravel and traces of green clay
130	135	gray clay, fine gravel and trace of green clay
135	145	gray clay with trace of brown clay with some shale
145	150	gray clay with shale

Driller's log of 699-66-40 (N066099, W039459) Hanford Wells, 1973

Land surface altitude¹ 452 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Originally 699-66-39, labeled hole GM-19
3. Cable tool rig
4. ? used where entry hard to read

Depth (ft)		Description
From	To	
0	25	no record
25	30	coarse sand and gravel size 2"
30	42	sand and gravel, size 3"
42	50	clay, gray, soft
50	60	clay, gray with few gravels size 1"
60	75?	clay, gray, soft
75?	90?	gray clay lighter? color, soft

Driller's log of 699-69-45 (N069000, W045000) Hanford Wells, 1973

Land surface altitude¹ 485 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig
3. ? used where entry hard to read

Depth (ft)		Description
From	To	
0	2	fine brown sand and silt
2	15	loose black sand-some silt
15	30	sand is brown, now more silt
30	47	black loose sand
47	50	black loose sand, occasional gravels
50	55	black loose sand, more gravels
55	60	black loose sand, very gravelly
60	65?	sand, silt, gravels to 4"
65?	70	sand, silt, gravels smaller
70	86	sand, silt, gravels to 2"
86	91	sand, silt, gravels to 1", clay lenses
91	95	hard, sandy, brown clay, will not mix, have to drill on cable
95	115	hard, brown, clay-small gravels
115	120	brown clay and small gravel lenses, clay is softer now
120	125	blue clay and small gravel lenses
125	133	blue clay, fewer gravels
133	135	blue clay, no gravels
135	139	blue clay, harder now
139	140	hard, blue clay
140	145	no record
145	147	blue clay
147	150	brown clay, some gravels
150	172	brown clay, no gravels
172	185	green clay, or blue
185	190	clay turning to brown
190	200	brown clay
200	205	sandy now, brown clay
205	215	brown clay, very hard now
215	220	brown clay, very sandy
220	225	clean black and white sand, very fine (no gravels)
225	230	no record, probably clean black and white sand, very fine, no gravels
230	235	clean black and white sand, very fine, no gravels, some silt now
235	240	soft, sandy, brown clay
240	250	very sandy, soft, brown clay
250	255	very sandy, soft, brown clay; more clay, less sand
255	291	soft, sandy brown clay
291	295	hard, brown clay, gravels, lenses
295	300	hard, brown clay, gravels, lenses

Driller's log of 699-66-58 (N065807, W057768) Hanford Wells, 1973

Land surface altitude¹ 501 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	18	sand and gravel
18	20	sand and few gravel
20	25	sand, coarse and medium
25	35	few gravels, coarse and medium sand
35	55	coarse and medium sand
55	65	coarse, medium and fine sand
65	96	sand and gravel
96	102	sand, cobbles, gravel
102	112	sand and gravel

Driller's log of 699-66-64 (N066483, W064249) Hanford Wells, 1973

Land surface altitude¹ 504 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	10	cobbles, sand, gravel
10	28	sand, cobbles, gravel redrill 20' to 28'
28	44	sand, cobbles, gravel
44	55	packed sand and gravel
55	60	cobbles, sand, gravel
60	80	sand, cobbles, gravel
80	85	sand and gravel
85	90	sand, cobbles and gravel
90	92	sand, gravel
92	94	sand, cobbles, gravel
94	100	sand, gravel
100	112	sand, cobbles, gravel
112	118	? sampled-but no record

Driller's log of 699-67-51 (N067103, W051490) Hanford Wells, 1973

Land surface altitude¹ 523 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	15	black lava sand and gravel, loose
15	55	black and white sand-loose
55	75	sand and silt, brown
75	90	sand and silt, gray
90	96	gray sand and silt and small gravel 1"
96	105	clean gravel to 1"
105	115	gravel to 2" sand and silt
115	120	no record, probably gravel to 2", sand and silt
120	130	gravel to 4" sand and silt
130	140	gravel to 3" sand and silt
140	145	Ringold
145	150	small gravel and sand, clean
150	155	small gravel, sand and silt, brown
155	170	brown clay and gravel streaks
170	190	gray brown clay, gravel streaks
190	200	blue clay, gravel
200	205	blue clay, sand and gravel
205	210	pure blue clay
210	230	blue clay with sand and gravel
230	240	gray clay with sand and gravel
240	245	gray clay and decomposed rock
245	250	brown sandy clay

Driller's log of 699-67-86 (N067000, W086000) Hanford Wells, 1973

Land surface altitude¹ 470 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	5	coarse sand and gravel with silt binder 1½" gravel with some cobbles
5	10	coarse sand and 1½" gravel with silt binder and cobbles, light gray in color
10	15	coarse sand and 1½" gravel with silt binder, light gray in color
15	25	basalt gravel
25	30	¾" gravel and coarse sand with silt binder, light gray in color
30	35	1" gravel and coarse sand with silt binder, light gray in color
35	40	coarse sand and gravel with silt binder, light gray
40	45	1½" gravel and coarse sand with silt binder, light gray
45	70	coarse sand and gravel with silt binder, light gray
70	75	1½" gravel and coarse sand with silt binder, light gray
75	80	coarse and fine black sand; about 98% fine sand
80	85	coarse and fine black sand
85	90	1 ¾" gravel down to fine sand, blackish in color
90	95	coarse and fine sand, about 50% fine black sand
95	100	2" gravel down to fine black sand
100	115	coarse and fine black sand
115	120	light brown gravel and coarse sand
120	125	coarse and 75% fine sand, light brown
125	130	fine, gray, water bearing, sand with 1½" gravel; broken basalt
130	135	2½" gravel down to fine sand; 80% fine sand, light brown; 4" broken basalt
135	140	2½" gravel down to fine sand with a silt binder; light brown
140	145	¾" gravel down to fine sand with silt binder; light brown
145	150	3" gravel down to fine sand; about 99% fine brown sand
150	155	¾" gravel down to fine sand; about 90% fine, brown sand
155	160	¾" gravel down to fine sand; about 99% fine, brown sand
160	165	2" gravel down to fine sand; about 90% fine sand with silt binder, with broken basalt very tightly packed
165	170	basalt gravel with 2" minus gravel with coarse sand and some silt lightly packed
170	175	1" gravel down to fine sand with silt binder; 95% fine brown sand
175	180	¾" gravel down to fine sand with silt binder; about 80% fine brown sand
180	185	1" minus gravel, coarse brown sand, silt binder tightly packed
185	190	4" minus gravel down to fine sand with silt binder
190	195	2" minus gravel down to fine brown sand with silt binder
195	200	2" gravel with 90% coarse brown sand, silt binder
200	205	2" gravel with coarse sand silt binder tightly packed
205	210	4" gravel down to fine brown sand with silt binder and traces of black clay and broken basalt, very tightly packed

Driller's log of 699-67-86 cont

Depth (ft)		Description
From	To	
210	215	2" minus gravel down to fine brown sand with silt binder and traces of clay and broken basalt, very tightly packed
215	220	2" minus gravel, basalt gravel, coarse brown sand, silt binder, tightly packed
220	225	2" minus gravel, basalt chips, coarse brown sand, silt binder, tightly packed
225	230	½" minus gravel down to fine brown sand with a silt binder tightly packed
230	235	2" minus gravel to fine brown sand with a silt binder very tightly packed
235	245	2" minus gravel, basalt chips, coarse brown sand, silt binder, tightly packed
245	247	silt with some sand
247	250	8" broken basalt and silt and caliche light brown in color
250	260	silt and caliche
260	265	½" gravel down to fine brown sand with silt binder
265	270	1" minus gravel, fine brown sand, silt binder
270	275	½" gravel, fine brown sand, silt binder
275	280	½" gravel down to fine brown sand and silt binder
280	285	¼" gravel down to fine brown sand and silt binder
285	290	2" minus gravel, coarse brown and fine sand
290	295	2" minus gravel, coarse and fine sand, basalt chips, traces of silt tightly packed; light brown
295	300	3" gravel down to fine brown sand and basalt chips
300	306	1½" gravel down to fine brown sand
306	310	2" minus gravel and fine brown sand
310	315	3" minus gravel down to fine brown sand with silt binder and basalt chips
315	320	1" gravel down to fine brown sand with silt binder and basalt chips
320	325	1" minus gravel, basalt chips, fine sand, silt binder
325	330	½" gravel down to fine brown sand with silt binder
330	335	2" gravel down to fine brown sand with silt binder
335	340	1" gravel down to fine brown sand with silt binder
340	345	2" gravel down to fine brown sand with silt binder
345	350	2" minus gravel, fine sand, silt binder
350	355	2" minus gravel down to fine brown sand with traces of caliche and silt binder
355	360	¼" minus gravel down to fine brown sand with a silt binder
360	365	½" minus gravel, brown sand with silt binder
365	370	½" minus gravel, brown sand with traces of silt
370	375	2" gravel down to fine brown sand with basalt chips and silt binder, very tightly packed
375	380	1" gravel, fine sand, basalt chips, silt binder, tightly packed
380	385	1" gravel, brown sand with basalt chips, silt binder, tightly packed
385	390	½" gravel down to fine brown sand with silt binder very tightly packed
390	395	fine sand with basalt chips

Driller's log of 699-67-86 cont

Depth (ft)		Description
From	To	
395	400	2" gravel down to fine sand with silt binder
400	405	¼" gravel down to fine sand with silt binder tightly packed
405	410	1" minus gravel, fine brown sand, silt binder
410	415	½" gravel, fine brown sand, silt binder
415	420	1" gravel down to fine brown sand with a silt binder, tightly packed
420	425	½" gravel down to fine brown sand with a silt binder tightly packed
425	430	½" gravel, fine sand, basalt chips, silt binder tightly packed
430	435	3" gravel down to fine brown sand with silt binder, tightly packed
435	440	3" gravel down to fine brown sand with silt binder, seems to be more tightly packed sand
440	445	1" gravel down to fine brown sand with silt binder, broken basalt chips tightly packed
445	450	1" gravel, fine brown sand, clay, trace of silt, tightly packed
450	455	½" gravel, fine brown sand, trace of silt, clay tightly packed
455	460	light brown silty clay with 3" gravel and down
460	465	gray or light brown silty clay

Driller's log of 699-67-98¹ (N066501, W098000) Hanford Wells, 1973

Land surface altitude² 453 feet msl

1. Labeled 699-66-98 in driller's log
2. Estimated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	25	cobble and silty sand
25	30	gravel and silty sand
30	35	gravel and silty sand; hit boulder at 33', very silty sand
		34', few gravels
35	40	silty sand, few gravels
40	45	silty sand, gravel
45	50	gravel and sand
50	55	gravel and silty sand
55	69	gravel and sand
69	115	black silty sand
115	121	black sand, silty, and gravel
121	129	silty sand and gravel
129	130	yellow clay; pipes broken basalt
130	145	yellow clay
145	146	1' layer broken basalt
146	150	hit claiche 146'; small pieces broken basalt in caliche
150	170	caliche, broken basalt
170	180	basalt decomposed; some layers of very hard basalt
180	185	blue basalt

Summary of driller's log 669-68-105 (N068139, W105214) Hanford Wells, 1973

Land surface altitude¹ 450 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	11	loose sand and gravel
11	27	loose gravel and boulders
27	66	loose gravel
66	80	loose sand and gravel
80	93	loose sand and gravel, some boulders
93	94	boulders

Driller's log of 699-70-68 (N070123, W068357) Hanford Wells, 1973

Land surface altitude¹ 524 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	10	boulders,-sand and silt
10	18	boulders and gravel
18	20	cobbles and gravel
20	25	coarse gravel
25	30	fine and coarse black sand
30	35	black sand and gravel
35	40	black sand
40	45	fine black sand
45	50	sand, small and coarse gravel
50	58	gravel-small to coarse sand
58	63	sand and gravel
63	70	3' sand-2' gravel
70	75	gravel-1' sand
75	77	sand
77	95	gravel and sand
95	100	sand
100	149	gravel and sand

Driller's log of 699-71-30 (N071300, W030400) Hanford Wells, 1973

Land surface altitude¹ 399 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	20	small gravel
20	25	loose gravel-drilling fair
25	30	cemented gravel-drilling hard
30	32	clay
32	35	small gravel
35	50	clay
50	60	clay and gravel mixed
60	70	sandy clay and gravel
70	80	sandy clay
80	85	sandy clay-soft
85	90	sandy clay-harder, small gravel
90	95	sandy clay-softer
95	115	sandy clay-soft
115	120	sandy clay-quantities of small gravel increasing
120	125	sandy clay, quantities of small gravel
125	135	sand-gravel-hard
135	140	sandy clay
140	145	sand and small gravel
145	150	sand and small gravel, some clay

Driller's log of 699-71-52 (N071310, W052368) Hanford Wells, 1973

Land surface altitude¹ 521 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Rotary rig

Depth (ft)		Description
From	To	
0	3	sand and silt
3	10	small and coarse gravel
10	15	sand and gravel, silt
15	20	sand, very little gravel
20	55	black sand, very little gravel
55	90	black sand, some silt and gravel
90	95	3' sand, 2' gravel
95	100	gravel, some sand
100	110	coarse gravel up to 4" and black sand
110	115	coarse gravel, sand, some silt
115	155	gravel, silt sand; (whitish gray silt at 155')
155	165	sandy silt, sand and gravel
165	175	white clay or shale or silt
175	180	light green silt
180	210	medium green silt

Driller's log of 699-71-77 (N071000, W077000) Hanford Wells, 1973

Land surface altitude¹ 470 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	5	cobbles or gravel; 3'-8' had trouble keeping casing plumb; probably boulder or large cobbles
5	10	gravel with some sand, trace of silt
10	15	basalt gravel with some sand and trace of silt
15	20	basalt gravel sand and some silt
20	25	basalt gravel, 2" gravel, sand, and some silt
25	35	basalt gravel, sand and some silt
35	40	5" minus basalt gravel with some coarse sand and a little silt
40	45	6" minus basalt gravel and coarse sand with traces of silt
45	55	2" minus basalt gravel with coarse and fine sand, trace of silt
55	60	3" minus gravel with fine and coarse sand, trace of silt
60	65	2" minus basalt gravel, fine and coarse sand, some silt
65	70	2" minus basalt gravel, fine and coarse sand, some silt
70	75	2" minus gravel, coarse and fine sand
75	80	3" minus gravel and sand with some coarse sand
80	85	2½" minus gravel and sand with some coarse sand and trace of silt
85	90	2" minus gravel and sand with silt very tightly packed
90	95	2" minus gravel with fine and coarse sand tightly packed
95	100	2" minus gravel with sand tightly packed
100	105	small gravel with fine and coarse sand 2" minus gravel with sand
105	115	2" minus gravel with sand and a little silt; very tightly packed
115	120	4" minus gravel with fine and coarse sand and trace of silt-loose
120	125	2" minus gravel with fine and coarse sand, trace of silt
125	130	2" minus gravel, sand tightly packed
130	135	cemented sand and gravel tightly packed
135	140	3" minus gravel with brown sand and some silt with small bits of blue clay, very tightly packed
140	145	3" minus gravel with sand and some silt, very tightly packed
145	150	2" minus gravel with sand and some silt
150	155	2" minus gravel packed, sand and some silt
155	160	1" minus gravel with fine sand and some coarse, trace of silt
160	165	2" minus gravel and sand with some coarse and trace of silt, sample color brown
165	170	2" minus gravel with fine sand and some coarse sand; trace of silt, water color brown
170	175	2" minus gravel with fine and coarse sand, brown
175	190	silt with sand, brown color; hit silt at 177'
190	200	sand and silt, light brown in color
200	205	silt and clay-light brown
205	210	silt and clay with 1" minus gravel, brown
210	220	silt and sand, brown
220	225	silt and sand, brown, trace of gravel

Driller's log of 699-71-77 cont

Depth (ft)		Description
From	To	
225	240	sand and silt, brown
240	245	small gravel with sand and silt, brown with different color rock
245	250	sand and silt with 1" minus gravel
250	275	silt, fine and medium sand with light brown color
275	290	sand and silt, brown and gray
290	295	2" minus gravel with sand and silt, brown and gray
295	300	sand and 2" minus gravel, trace of silt

Driller's log of 699-72-73 (N072000, W073000) Hanford Wells, 1973

Land surface altitude¹ 481 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	5	gray cobbles
5	25	gray gravel, cobbles
25	30	gray boulders and gravel
30	50	gray cobbles, gravel
50	75	sand, cobbles, gravel-gray
75	85	gray gravel, cobbles
85	110	gray cemented gravel, cobbles
110	115	gray, gravel, sand
115	150	gray, cemented gravel and cobbles
150	160	gray gravel and cobbles
160	165	gray cemented gravel and cobbles
165	170	gray and brown clay
170	175	gray, hard clay
175	200	brown clay

Driller's log of 699-72-92 (N072000, W092000) Hanford Wells, 1973

Land surface altitude¹ 450 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
Form	To	
0	15	gray gravel, sand, cobble-3"
15	20	sand, gravel and cobbles-6"
20	25	sand, gravel and cobbles
25	40	gray boulders
40	45	gravel and boulders
45	50	gray gravel and cobbles
50	55	dark gray gravel
55	60	gray sand and gravel
60	70	gray gravel and cobbles
70	75	gravel, boulders to sand and silt
75	80	gravel and cobbles
80	90	gray cobbles
90	95	gray, heaving sand and gravel
95	100	gray, heaving sand
100	105	gray heaving sand and gravel
105	115	gray sand and gravel
115	120	gray silt, sand, and boulders
120	130	gray sand and gravel
130	135	gray silt, sand, and cobbles or boulders
135	140	gray silt and gravel
140	150	gray sand and gravel
150	165	gray cemented gravel and cobbles
165	175	gray cobbles, sand
175	195	gray cemented gravel
195	200	gray gravel and cobbles

Summary of driller's log of 699-74-23 (N074490, W023330) Hanford Wells, 1973

Land surface altitude¹ 374 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	15	small cobbles, coarse gravel and sand
15	20	fine sand
20	23	boulders and sand
23	35	coarse gravel and cobbles with some sand
35	37	sand and yellow silt
37	50	gray silt

Driller's log of 699-74-44 (N074200, W044200) Hanford Wells, 1973

Land surface altitude¹ 443 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable rig

Depth (ft)		Description
From	To	
0	5	3' sand, 2' cobbles
5	35	gravel
35	40	cobbles, gravel
40	45	gravel
45	50	sand
50	70	sand and clay
70	95	clay
95	105	clay-small gravel streaks
105	110	clay
110	115	clay-gravel
115	135	clay-blue
135	140	clay-yellow and small gravel
140	145	green sandy clay
145	150	sandy clay

Driller's log of 699-74-48 (N074000, W048000) Hanford Wells, 1973

Land surface altitude¹ 485 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	5	gray sand and gravel
5	12	gray sand and gravel
12	15	coarse black sand and 2" minus gravel with trace of fine sand and silt, dark gray in color
15	20	coarse black sand and 1½" minus gravel with trace of fine sand and silt, dark gray
20	30	3" minus gravel with coarse sand, trace of fine sand and silt, dark gray
30	35	3" minus gravel with coarse black sand, trace of fine sand and silt, dark gray
35	65	coarse black sand with trace of silt minus gravel
65	67	coarse black sand with trace of silt and gravel
67	70	3" minus gravel with a little sand and trace of silt, dark gray
70	75	3" minus gravel with a little coarse sand and fine sand, trace of silt, tanish gray in color
75	85	coarse sand with gravel and some fine sand and silt tanish gray
85	90	coarse and fine sand with a little 1" minus gravel, trace of silt, light brown
90	95	1" minus gravel and coarse black sand with trace of fine sand and silt, dark brown
95	100	1" minus gravel with trace of fine sand and silt, brown
100	105	1" minus gravel and fine sand and silt, (brown)
105	110	minus gravel with trace of sand and silt, brown
110	115	minus gravel with trace of sand and silt
115	124	tightly packed gravel and sand with trace of silt light brown in color
124	125	clay, silt with trace of sand
125	135	silt, clay, brown in color
135	140	silty clay, blue in color
140	145	silty clay and trace of gravel with fine sand
145	150	blue silty clay with trace of gravel

Driller's log of 699-74-60 (N074000, W060000) Hanford Wells, 1973

Land surface altitude¹ 530 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	1	silt and sand gravel with cobbles
1	5	gravel and cobbles
5	20	gravel, sand and cobbles
20	25	3" minus basalt gravel with sand and trace of silt material dark gray in color
25	30	2" minus basalt gravel with fine and coarse sand and little silt material, dark gray
30	35	2" minus basalt gravel with coarse black sand, some fine sand with a little silt color material
35	45	coarse black sand and 1" minus gravel with fine sand and silt
45	55	black sand with 1" minus fine gray sand
55	60	black basalt, gravel with fine and coarse sand
60	75	black basalt, gravel with coarse sand and some silt
75	80	basalt gravel with coarse sand and silt, gray
80	85	black basalt gravel, sand, and some gray silt
85	95	2" minus gravel with coarse sand, some fine sand, trace of silt, dark gray
95	100	1" minus gravel with coarse sand and a little fine sand and silt possibly cemented
100	105	3/4" minus gravel with coarse sand and a little fine sand and silt
105	110	2" minus gravel with coarse and fine sand, traces of silt, dark gray
110	112	gravel caving in
112	115	gray gravel
115	120	gray sand
120	133	tan sand and gravel
133	140	2" minus gravel and fine sand with trace of coarse sand and silt material, brown
140	150	15" minus gravel with fine sand and trace of silt-brown

Summary of driller's log of 699-75-23A (N074590, W023350) Hanford Wells, 1973

Land surface altitude¹ 377 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	10	cobbles, coarse gravel and sand filling the spaces
10	27	fine to medium-grained sand
27	30	coarse gravel and sand with scattered cobbles
30	35	fine grained sand

Summary of driller's log of 699-75-23B (N074690, W023370) Hanford Wells, 1973

Land surface altitude¹ 278 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	10	coarse gravel and cobbles
10	15	coarse gravel and sand
15	20	boulders and sand
20	25	sand and scattered boulders
25	28	boulders
28	36	fine sand

Driller's log of 699-77-36 (N076700, W036150) Hanford Wells, 1973

Land surface altitude¹ 410. feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	2	top sand
2	3	cemented gravel
3	5	sand, cemented gravel
5	15	gravel
15	20	hard, cemented gravel
20	25	loose gravel
25	30	loose gravel, small
30	40	loose gravel
40	45	loose gravel, sandy green clay
45	55	green, sandy clay-streaks of yellow
55	60	green, sandy clay
60	70	gray clay
70	75	firm brown clay
75	90	firm gray clay
90	110	green, sandy clay
110	120	brown, sandy clay
120	135	brown sandy clay, coarse sand
135	150	brown sandy clay, fine gravel

Driller's log of 699-77-54 (N076700, W054100) Hanford Wells, 1973

Land surface altitude¹ 479 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	10	cobbles and boulders
10	20	cobbles and gravel
20	30	loose gravel
30	35	gravel
35	40	gravel-silt streaks
40	41	cobbles
41	42	gravel and cobbles
42	43	gravel
43	44	gravel and cobbles
44	56	gravel
56	70	loose gravel
70	75	loose gravel and sand
75	85	loose fine gravel
85	90	gravel-sand
90	100	cemented gravel
100	110	cemented gravel and sand
110	115	hard packed sand and gravel
115	118	sand heaving-large gravel mixed with sand
118	120	heaving sand and gravel
120	130	sand and small gravel
130	140	sand and small gravel-clay
140	145	gravel and sand
145	150	clean gravel

Driller's log of 699-78-62 (N077750, W062300) Hanford Wells, 1973

Land surface altitude¹ 468 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	1	top sandy
1	2	large loose gravel
2	10	small cemented gravel-hard
10	15	small boulders and large loose gravel
15	20	small gravel-cemented-hard
20	25	large loose gravel
25	30	loose gravel-caving, slow
30	40	loose gravel-slow drilling
40	44	loose gravel-caving, slow
44	50	small cemented gravel-hard
50	60	cemented gravel-hard
60	61	sandy clay, soft
61	65	cemented gravel-hard
65	70	layers of gravel and clay 6-12" of gravel and 1- $\frac{1}{2}$ to 2' of clay
70	75	large loose gravel-slow, hole caving-pulled out and redrilled
75	90	gravel
90	91	green sand
91	93	gravel
93	95	green sand and gravel
95	100	green sand
100	120	sand-gravel
120	125	sand and gravel, softer with some signs of clay
125	130	sandy clay
130	132	clay and small gravel
132	140	sandy clay and gravel
140	150	sandy clay

Driller's log of 699-79-104

Land surface altitude¹ 772 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	4	topsoil
4	37	loose, black sand
37	50	sand, loose gravel and cobbles
50	52	brown sand
52	60	gravel and sand, some binder
60	125	boulders
125	160	gravel, some clay and sand
160	169	brown sand
169	206	coarse black sand, hard streaks
206	294	sand, similar to above with clay
294	320	sand, talus and clay
320	324	sand and loose gravel
324	541	clay, sand and cemented gravel boulders at 368'
541	550	sandy clay
550	570	clay, sand and cemented gravel
570	699	brown sand, clay and gravel

Driller's log of 699-80-39B (N079801, W038544) Hanford Wells, 1973

Land surface altitude¹ 402 feet msl

1. Given in formation record in Hanford files

Depth (ft)		Description
From	To	
0	4	sand and gravel
4	23	gravel
23	38	coarse gravel
38	40	fine sand
40	43	gravel and clay
43	53	clay

Driller's log fo 699-80-43P (N079538, W043176) Hanford Wells, 1973

Land surface altitude¹ 412 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	1	sand
1	40	gravel
40	45	clay and gravel
45	60	sandy clay
60	75	sandy-clay-brown
75	105	clay
105	112	sand and clay with gravels
112	126	sandy clay, with gravels
126	135	sandy clay
135	210	sand and clay with gravel
210	225	sandy clay
225	255	clay and sand
255	270	clay and sand with gravel
270	345	sandy clay
345	375	sandy clay with gravels
375	380	sandy clay-green
380	390	sandy clay-blue green
390	405	clay-blue-gray, sticky
405	421	clay-blue-gray with gravels
421	435	clay with gravels

Driller's log of 699-80-43Q (N079588, W043178) Hanford Wells, 1973

Land surface altitude¹ 411 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	15	gravel and sand
15	30	gravel
30	45	sand and clay with gravel; 42'-sandy clay with gravel
45	75	brown clay; 55'-brown clay
75	90	clay, brownish gray
90	135	sand and clay and gravel
135	150	sand and clay and very coarse gravel
150	165	sand and gravel
165	180	sand and clay

Driller's log of 699-80-43R (N079638, W043180), Hanford Wells, 1973

Land surface altitude¹ 411 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	30	gravel
30	45	sandy clay with gravels
45	60	clay with gravels
60	90	firm clay
90	140	sandy clay

Driller's log of 699-80-43S (N079685, W043182), Hanford Wells, 1973

Land surface altitude¹ 411 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	40	gravel
40	45	sandy clay with gravels
45	50	no record, probably sandy clay with gravels

Driller's log of 699-81-58 (N081004, W057993) Hanford Wells, 1973

Land surface altitude¹ 438 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth(ft)		Description
From	To	
0	5	large gravel with sand and trace of silt
5	10	3" minus gravel
10	14	boulders
14	15	boulders and gravel
15	20	large gravel and cobble with some sand and trace of silt; 16'-boulders
20	25	3' minus gravel with some trace of silt, coarse sand and fine sand, stray cobbles
25	40	sand and gravel
40	45	3" minus gravel with fine sand and some coarse sand and a little silt, brownish gray
45	50	3" minus gravel with some fine and coarse sand, traces of silt, brownish gray
50	55	1 1/8" minus gravel with fine sand and silt, brownish gray
55	60	light gray sand and gravel
60	65	sand
65	67	gray sand
67	70	1" minus gravel with fine sand and some silt, light brown
70	75	1" minus gravel with coarse and fine sand, trace of silt, light brown
75	80	1" minus gravel with coarse and fine sand with trace of silt, light brown
80	85	sand and gravel
85	90	sand and gravel, silt, light brown
90	97	tan silt
96	105	silt with a little sand and 3/4" minus gravel, light brown
105	115	silt with some sand, lumps of silt and a few pea gravel, brown
115	120	silt with some hard lumps of silt and some pea gravel, brown
120	135	tan silt
135	145	light gray-green silt with flakes of gravel
145	150	sand and gravel

Driller's log of 699-83-47 (N082850, W047100) Hanford Wells, 1973

Land surface altitude¹ 433 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	10	brown sand
10	25	gray sand
25	30	no record, possibly gray sand
30	35	boulders and cemented gravel; hit boulders at 32' with sand
35	50	small gravel-cemented
50	55	coarse sand
55	80	gravel
80	90	gray clay and gravel
90	105	brown sandy clay
105	115	gray sandy clay
115	120	brown sandy clay
120	125	brown sandy clay with gravel
125	130	brown sandy clay
130	140	brown sandy clay-loose
140	145	brown sandy clay with two streaks of gravel at 144'
145	150	brown sandy clay

Driller's log of 699-84-35A¹ (N084000, W035000) Hanford Wells, 1973

Land surface altitude² 398 feet msl

1. Labeled 699-84-35
2. Calculated from altitude of top of casing given in Hanford Wells, 1973
3. Cable tool rig

Depth (ft)		Description
From	To	
0	35	sand and gravel
35	40	gray silt and small gravel
40	48	tan silt
48	50	clay, silt with trace of coarse sand, grayish brown in color
50	55	clay, silt with a little fine gravel and coarse sand, grayish brown in color
55	65	silty sand with very light trace of gravel, brown in color
65	70	silt and fine sand with trace of coarse sand, tightly packed
70	75	silty fine sand with tightly packed 1" minus gravel
75	100	brown silt and sand
100	130	light brown sand, silt, and gravel
130	140	brown silty sand with traces of fine gravel
140	150	brown silty sand with a few hard lumps
150	195	silt with little clay and some gravel, golden brown in color
195	200	silty sand with light trace of gravel, brown in color
200	210	silty sand with some 3/4" minus gravel, brown in color
210	215	tan silt and gravel
215	220	light gray clay and caliche
220	225	silty clay with some pea gravel and coarse sand, tan in color
225	230	silty clay with trace of gravel and coarse sand, tan in color
230	240	silty clay with trace of gravel and sand, tinted blue
240	245	silt with trace of sand and 1" minus gravel, brownish color
245	255	sand and silty gravel
255	260	sand and silty pea gravel
260	270	light brown sand and silty pea gravel with rusty colored streaks
270	281	light brown sand and silty pea gravel
281	290	silt with cemented 3/4" minus gravel, light brown in color
290	295	light blue silt with little "schall"
295	300	light blue silt with a little blue "schall" and gravel
300	303	no record; but brown mica sand came in with the water at 303'
303	305	black clay with "schall"
305	325	grayish black clay and silt
325	335	grayish black clay and pea gravel
335	340	silty black clay with some "schall" clay
340	345	silty black clay with black "schall" clay
345	350	blue and black "schall" clay
350	355	light blue "schall" clay with 1/4" minus basalt gravel
355	359	no record
359	360	basalt bedrock
360	365	coarse and fine basalt chips
365	370'1"	bedrock with a lot of fine sand and silt in sample

Driller's log of 699-84-36D White Bluff

Depth (ft)		Description
From	To	
0	8	no record
8	25	60% gravel, 40% gray sand
25	35	50% gravel, 50% sand

Driller's log of 699-84-36E

Depth (ft)		Description
Form	To	
0	20	60% gravel, 40% sand
20	35	60% gravel, 40% sand

Driller's log of 699-84-36F

Depth (ft)		Description
From	To	
0	2	80% sand, 20% brown gravel
2	12	60% sand, 40% gray gravel
12	25	60% sand, 40% gray gravel
25	35	60% gravel, 30% sand, 10% cobbles

Driller's log of 699-86-60 (N085723, W059826) Hanford Wells, 1973

Land surface altitude¹ 452 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	6	sand and gravel with some cobble
6	10	sand, gravel and cobbles-8 and 9"
10	15	cobbles and boulders
15	16	sand
16	20	cobbles, gravel and sand
20	25	sand, silt and gravel
25	30	sand, silt and gravel up to 1"
30	35	silt, sand and 4" gravel
35	40	sand, gravel and cobbles
40	45	sand and gravel
45	50	gravel and cobbles
50	55	cemented sand and gravel
55	60	silt, sand and gravel up to 5"
60	62	sand and gravel and moisture
62	65	sand and gravel to 6"
65	70	cobble
70	75	sand, gravel and cobble
75	80	clean gravel and cobble to 6 and 8"
80	85	sand and gravel
85	90	very little sand, 2/3 gravel
90	95	mostly gravel
95	96	light gray clay
96	100	light gray clay with some gravel
100	130	light gray clay
130	155	silty clay
155	160	brownish red clay
160	165	brownish clay with some small gravel
165	170	brown silt and sandy clay
170	175	brown silt and sandy clay, some pea gravel
175	195	sandy clay; small bits of sandstone at 180'
195	200	silty sand
200	220	sandy clay and gravel
220	230	silty sand
230	240	brown silty sand with decayed pea gravel
240	245	brown silty sticky clay
245	255	brown silty sandy clay
255	275	brwon, sandy sticky clay
275	280	light brown, sandy sticky clay
280	285	dark brown clay, drills slowly
285	290	weathered rock and gravel
290	295	brown silt, sand, and weathered gravel; hardpan at 291'
295	305	brown silty clay, with pea gravel
305	310	sticky, silty clay with pea gravel
310	315	brown and gray, sticky, silty clay and pea gravel
315	335	sandy clay
335	345	sandy, sticky clay

Driller's log of 699-86-60 cont

Depth (ft)		Description
From	To	
345	350	sandy clay
350	355	sticky clay
355	360	sticky, brown clay
360	380	sticky, brown, silty clay
380	390	blue silty clay with some gravel
390	395	tough, sticky blue clay
395	400	tough sticky blue clay with pea gravel
400	405	sticky, dark, gray clay
405	410	very sticky, dark gray clay
410	415	sticky blue and black silty clay
415	435	brown and gray silty clay
435	440	brownish gray sticky clay
440	445	grayish black clay
445	455	"softer" from 446 to 453 is a multicolored material that is fairly hard. Has a lot of gravel in it. Drills like some kind of cemented material
455	460	small gravel and clay with areas of cemented material
460	465	clay, light gray gravel up to 3" with areas of cemented material
465	470	caliche and gravel
470	475	light clay and pea gravel
475	480	sticky brown silty clay, pea gravel and some 1"
480	490	hard, brown sand and gravel
490	510	cemented gravel
510	515	cemented gravel, 70% quartz
515	530	basalt

Driller's log of 699-89-35 (N089000, W035000) Hanford Wells, 1973

Land surface altitude¹ 395 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	5	silt and 12" cobbles, brown
5	10	silt and 10" cobbles, brown
10	25	cobbles and boulders
25	30	gravel and cobbles
30	40	no record
40	50	sand and gravel; 47' to 54'-fine sand
50	75	brown clay

Summary of driller's log of 699-92-14 (N092000, W014000) Hanford Wells, 1973

Land surface altitude¹ 860 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	3	topsoil
3	9	caliche
9	210	light brown clay, sandy
210	278	sticky blue clay, shale streaks; sand 270-274
278	291	green and black clay
291	303	blue clay
303	329	gray clay
329	365	hard gray clay and green shale
365	397	blue clay and streaks of shale
397	415	brown sandy clay
415	438	blue and brown clay layers
438	580	brown silt and clay, limey streaks, pea gravel in clay 573-580'
580	588	sandstone and gravel
588	601	hard gray basalt
601	625	soft red basalt
625	648	black basalt
648	697	gray basalt
697	701	green shale and talus
701	730	gray hard pan
730	770	black basalt
770	804	hard, gray basalt
804	810	broken black basalt
810	836	hard, gray basalt
836	839	broken, gray basalt
839	841	hard gray basalt
841	842	black basalt
842	854	hard, gray, basalt
854	860	broken, gray basalt with hard streaks
860	874	hard gray basalt
874	883	red porous rock and clay
883	1146	porous black basalt
1146	1165	hard gray basalt
1165	1195	blue gumbo clay
1195	1246	gray basalt
1246	1276	probably conglomerate; sand, gravel and black basalt layers
1276	1283	blue clay
1283	1291	probably conglomerate; sand, gravel and black basalt
1291	1294	black basalt
1294	1313	gray basalt
1313	1348	black basalt
1348	1371	gray basalt, hard
1371	1396	porous black basalt, clay and gravel layers; black basalt at 1396'

Summary of driller's log of 699-93-93¹

Land surface altitude² 635 feet msl

1. Summary gives location as SW $\frac{1}{4}$, SE $\frac{1}{4}$, Sec. 16, T14N, R25E, Wahluke Slope
2. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	22	coarse gray sand
22	77	fine gray sand
77	197	sandy clay
197	214	sandy clay and gravel
214	227	cement gravel
227	263	sand, clay and gravel
263	268	cement gravel
268	274	gray clay, sand and gravel
274	288	brown and gray sand with clay
288	290	gray clay
290	300	yellow clay
300	310	gray clay
310	325	clay, sand and gravel
325	343	light brown clay
343	378	sand and gravel, clayey
378	407	cement gravel
407	429	yellow clay
429	451	yellow clay with gravel
451	453	yellow and blue clay
453	480	blue shale
480	486	yellow sandy clay
486	488	soft sand and clay
488	506	hard sand and clay
506	513	sand, gravel and clay
513	520	cement gravel

Driller's log of 699-96-49 (N096388, W049232) Hanford Wells, 1973

Land surface altitude¹ 417 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	3" gravel
5	10	3" minus gravel with some coarse and fine sand, trace of silt, gray in color
10	20	2" minus gravel with some fine and coarse sand, trace of silt, gray in color
20	50	3" minus gray gravel and fine sand and silt
50	55	fine sand with some coarse sand and fine gravel, gray in color
55	60	gray, fine and coarse sand
60	65	brown sand and silt with little fine gravel
65	70	brown sandy silt with bit of hard lumps of silt and fine gravel
70	75	brown sand and silt with bit of hard lumps of silt
75	85	brown sand and silt with schall, silt and calcihe
85	100	brown sandy silt with fine caliche

Driller's log of 699-97-43 (N097143, W043421) Hanford Wells, 1973

Land surface altitude¹ 420 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	3" minus gravel with coarse and fine sand, little silt, gray in color
5	25	3" minus gray gravel with coarse and fine sand
25	30	8" minus, gray gravel, fine silt and sand
30	35	fine sand with trace of coarse sand and 1" minus gravel and silt, light gray in color
35	45	3" minus gravel with coarse and fine sand, trace of silt, gray
45	50	clay and silt with gravel, reddish brown in color
50	60	reddish brown clay and silt with bits of fine gravel
60	65	reddish brown clay and silt with bits of coarse sand and hard silt
65	80	brown sand and hard silt
80	100	brown sand and caliche

Summary of driller's log of 699-101-48A (N101465, W047884) Hanford Wells, 1973

Land surface altitude¹ 388 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	35	boulders, cobbles, coarse gravel with some sand and sandy clay in the openings
35	40	fine sand
40	48	medium sand with very little gravel and a few cobbles
48	50	firm yellow sandstone

Summary of driller's log of 699-101-48B (N101454, W047787), Hanford Wells, 1973

Land surface altitude¹ 388 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	35	boulders, cobbles, with some sand and sandy clay in the openings
35	46	fine sand and cobbles with scattered boulders
46	48	sand with medium and coarse gravel

Summary of driller's log of 699-101-48C (N101476, W047985) Hanford Wells, 1973

Land surface altitude¹ 388 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	21	boulders and cobbles with some sand and sandy clay in the openings
21	24	sand and cobbles
24	43	coarse gravel and cobbles with some sand
43	45	medium and coarse gravel with very little sand
45	47	sand and fine gravel
47	49	clay bound medium and coarse gravel
49	77	fine yellow sandstone-calcareous cement

Summary of driller's log of 699-102-48 (N101550, W047790) Hanford Wells, 1973

Land surface altitude¹ 388 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	38	boulders, cobbles, with some sand and sandy clay in the openings
38	41	fine and medium sand
41	56	yellow sandstone-calcareous cement, streak of pebbles on top

Summary of driller's log of 699-107-79 (N107000, W078890) Hanford Wells, 1973

Land surface altitude¹ 657 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	10	soil
10	49	caliche (hard 26-28) cemented gravel, very hard at 40'
49	51	gravel
51	60	clay
60	80	shale and clay
80	84	clay
84	93	hard shale
93	110	shale and clay
110	181	red, sandy shale
181	191	sand carrying water; hard sand streak at 185'
191	193	consolidated material, drills like rock
193	224	sand and clay
224	226	sand
226	234	consolidated material
234	246	sandy clay
246	251	caliche
251	278	sand and clay
278	290	brown sand, hole caves
290	316	white, sticky clay
316	328	brown, sticky clay
328	335	fine sand
335	354	shale
354	363	black basalt
363	368	alternate shale and basalt streaks
368	458	black basalt
458	470	broken basalt
470	485	conglomerate of rock and shale
485	490	broken red basalt
490	492	basalt (harder)
492	499	basalt
499	625	gray basalt, very dense at 518', extremely hard at 523'-525' and 541'-543'; crevices at 590'
625	630	broken rock, some water
630	635	brown clay, very sticky
635	643	basalt
643	645	basalt and brown clay streaks
645	658	gray clay
658	661	basalt and clay streaks
661	665	brown clay
665	673	basalt with crevices
673	680	gray basalt
680	685	basalt with streaks of blue clay
685	748	gray basalt as above
748	760	porous blue basalt; clay streaks at 755'
760	767	gray basalt
767	769	blue clay
769	798	gray basalt; blue clay streak at 795'

Summary of driller's log of 699-107-79 cont

Depth (ft)		Description
From	To	
798	813	blue clay
813	823	yellow sand and clay
823	859	gray sandstone
859	861	yellow clay
861	862	basalt
862	880	yellow clay and sand
880	889	blue shale
889	895	blue shale and sand
895	900	sand bearing water
900	905	shale and basalt streaks
905	934	basalt
934	935	white porous rock

Summary of driller's log of 699-111-24 (N111000, W024000) Hanford Wells, 1973

Land surface altitude¹ 698 feet msl

1. Altitude given on summary driller's log, Hanford files

Depth (ft)		Description
From	To	
0	109	hard, compact, white clay
109	148.5	red-brown shale
148.5	151	sand lense, red; caves at 148'
151	204	red-brown shale
204	208	blue clay; hole caves
208	219	brown and gray basalt
219	226	alternate layers of hard and soft rock
226	238	hard gray basalt
238	254	medium hard gray basalt, green clay in seams
254	269	porous black basalt, somewhat vesicular
269	294	very hard black basalt
294	297	brittle, hard basalt
297	339	porous black basalt, sand in interbedding
339	354	hard, black basalt, sand in interbeds
354	367	fractured basalt, hard
367	390	hard basalt
390	433	hard, rough, black basalt
433	476	hard gray basalt, crevasse at 468', rock showed smooth side
476	490	brown and gray basalt, softer
490	509	gray basalt
509	535	gray basalt with seams of blue clay
535	560	broken basalt
560	568	gray basalt
568	590	gray and black basalt
590	598	hard, broken basalt
598	604	gray basalt
604	608	gray basalt with soapstone streaks
608	614	gray basalt, closely fractured from 608' to 609'
614	620	vesicular basalt, slightly altered, vesicles coated with blue clay
620	634.5	basalt

Summary of drilling log of 699-113-38 (N113000, W038000) Hanford Wells, 1973

Land surface altitude¹ 730 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	6	topsoil
6	23	caliche
23	78	white clay and gravel
78	107	brown clay scattered gravel
107	145	hard caliche
145	158	brown sandy clay
158	163	brown clay, sand and gravel
163	172	fine brown sand
172	275	brown clay, basalt talus, hard
275	277	coarse sand and gravel
277	300	porous black basalt
300	324	gray basalt
324	358	porous black basalt with green material in pores
358	377	hard gray basalt
377	405	porous gray basalt and clay
405	458	medium hard, gray basalt
458	510	soft, dark gray basalt
510	560	hard gray basalt
560	565	black basalt
565	580	gray clay
580	598	gray basalt
598	643	black basalt
643	662	gray basalt
662	702	black basalt
702	706	gray basalt
706	715	black basalt
715	721	gray basalt
721	765	soft gray basalt with streaks of white ash
765	797	blue clay
797	816	blue clay and sand
816	846	sticky yellow clay
846	872	black clay with decomposed rock
872	876	black basalt
876	879	broken black basalt and black sand
879	921	black sandstone
921	955	gray basalt
955	982	black basalt
982	998	porous brown basalt, broken
998	1032	black basalt
1032	1034	hard gray basalt
1034	1038	red and brown cinders
1038	1067	black basalt
1067	1077	broken black and brown basalt
1077	1100	broken black basalt
1100	1124	hard black basalt
1124	1132	light brown basalt
1132	1140	hard gray basalt

Summary of drilling log of 699-114-60 (N114000, W060000) Hanford Wells, 1973

Land surface altitude¹ 786 feet msl .

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	13	topsoil
13	16	clay and gravel
16	23	brown sand
23	101	brown and gray clay
101	193	soft brown clay with pebbles
193	276	light gray sandy clay
276	288	broken basalt
288	341	hard gray basalt (crevices)
341	360	porous black rock with clay
360	366	yellow clay
366	373	porous black rock and clay
373	399	brown and black porous rock
399	522	medium hard, gray basalt
522	527	gray clay, sand and gravel
527	536	brown clay and gravel
536	546	brown sand and clay
546	549	brown and red clays in streaks
549	570	broken rock
570	640	gray basalt; crevices at 635'
640	660	broken gray basalt
660	710	yellow sticky clay
710	744	brown sand
744	754	yellow clay
754	770	yellow, brown, and green clay and talus rock
770	774	red clay with some rock
774	784	gray clay-brown rock
784	861	gray basalt
861	868	red, yellow, and gray broken rock
868	880	gray, broken basalt

Formation record of 699-HAN-8 (N053862, W018985) Hanford Wells, 1973

Land surface altitude¹ 382 feet msl

1. Given in formation record, Hanford files

Depth (ft)		Description
From	To	
0	2	top soil
2	9	gravel
9	19	gravel and boulders
19	26	gravel
26	28	pea gravel
28	50	sand and gravel
50	60	sand, some gravel

Formation record of 699-HAN-9 (N054065, W018331) Hanford Wells, 1973

Land surface altitude¹ 392 feet msl

1. Given in formation record, Hanford files

Depth (ft)		Description
From	To	
0	10	sand, gravel, boulders
10	16	gravel, boulders
16	18	boulders
18	48	sand, gravel
48	50	sand
50	79	sand, gravel-coarse
79	90	yellow clay entered

Summary of driller's log of 1199-12-13 (N011822, W013489) Hanford Wells, 1973

Land surface altitude¹ 349 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	topsoil
5	15	rock and gravel
15	18	coarse, dry gravel
18	70	sandy blue shale

Summary of driller's log of 1199-14-13 (N014060, W013015) Hanford Wells 1973

Land surface altitude¹ 369 feet msl

1. Ground altitude given on summary log; top of casing given in Hanford Wells, 1973 is 363 feet

Depth (ft)		Description
From	To	
0	8	silt
8	13	boulders and coarse gravel
13	20	boulders and gravel
20	35	fine sand
35	48	gray shale

Drilling log of 1199-14-14 (N014130, W013980) Hanford Wells, 1973

Land surface altitude¹ 353 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	5	gravel and boulders
5	19	sand, gravel, and boulders
19	33	silt, sand, gravel and boulders
33	36	brown clay and fine gravel
36	85	clay
85	95	greenish blue shale
95	100	dark green shale; a little white sand on top of basalt; gravel
100	102	basalt, and gravel
102	112	basalt
112	121	solid basalt
121	123	solid basalt and some white sand
123	131	solid basalt

Summary of driller's log 1199-15-13C (N015060, E013015) Hanford Wells, 1973

Land surface altitude¹ 358 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	18	fine sand
18	28	silt and clay
28	32	sand and gravel
32	34	coarse gravel
34	41	sand
41	45	coarse sand, gravel
45	61	fine sand, coarse gravel
61	70	gravel and boulders
70	72.3	clay

Summary of driller's log of 1199-16-12 (N015600, E012000) Hanford Wells, 1973

Land surface altitude¹ 418 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	37	silt and fine sand

Summary of driller's log of 1199-16-13D (N016059, E013014) Hanford Wells, 1973

Land surface altitude¹ 357 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	21	overburden
21	25	silt, sand
25	29	basalt and quartz; sand and gravel
29	65	cobbles, rocks; sand and gravel
65	70	green clay

Summary of driller's log of 1199-17-13A (N016955, E013000) Hanford Wells, 1973

Land surface altitude¹ 358 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	16	yellow silt
16	20	sand and silt
20	25	dark sandy silt
25	30	sand and silt
30	33	coarse sand and gravel
33	35	medium gravel
35	48	coarse gravel
48	51	sand and gravel
51	56	boulders and gravel
56	61	gravel and brown sand
61	67	blue clay

Summary of driller's log of 1199-17-13B (N016986, E013013) Hanford Wells, 1973

Land surface altitude¹ 354 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	10	yellow silt
10	54	sand and gravel
54	56	sand
56	65	blue shale

Summary of driller's log of 1199-18-13 (N018454, E013007) Hanford Wells, 1973

Land surface altitude¹ 358 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	23	sand and silt
23	40	sand and medium gravel
40	51	sand and gravel
51	68	sand and clay

Summary of driller's log of 1199-19-11 (N019330, E010920) Hanford Wells, 1973

Land surface altitude¹ 413 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	40	fine sand
40	58	fine sand and gravel
58	69	sand and gravel
69	77	gravel
77	87	blue shale

Summary of driller's log of 1199-19-13C (N019254, E013085) Hanford Wells, 1973

Land surface altitude¹ 354 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	30	silt and sand
30	31	gravel
31	35	cemented sand
35	39	sand
39	41	sand and gravel
41	45	sand and coarse gravel
45	48	coarse gravel
48	52	sand and gravel
52	54	green clay

Summary of drilling log of 1199-20-12. (N020300, E012200) Hanford Wells, 1973

Land surface altitude¹ 400 feet msl

1. Estimated from altitude of top of casing given in Hanford files, 1973

Depth(ft)		Description
Form	To	
0	34	sand, gravel and silt
34	39	boulders
39	45	boulders, sand and gravel
45	50	boulders and gravel
50	54	boulders and sand
54	57	fine gravel
57	62	sand and gravel
62	68	coarse gravel
68	71	brown shale
71	76	blue shale

Summary of driller's log of 1199-20-13 (N020200, E013100) Hanford Wells, 1973

Land surface altitude¹ 354 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	22	overburden-sand and gravel
22	33	gravel, little sand
33	40	clay and cemented sand
40	44	basalt sand
44	51	clean basalt and quartz
51	62	blue-gray silt

Summary of driller's log of 1199-20-14 (N020139, E014267) Hanford Wells, 1973

Land surface altitude¹ 355 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth(ft)		Description
From	To	
0	4	topsoil
4	17	gravel
17	36	sand
36	45	medium gravel
45	53	fine sand
53	55	sand and gravel
55	65	blue sandy clay

Summary of driller's log of 1199-20-17 (N019800, E016800) Hanford Wells, 1973

Land surface altitude¹ 353 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 197

Depth (ft)		Description
From	To	
0	18	overburden
18	26	sand and gravel
26	48	brown clay
48	70	black clay
70	88	coarse gravel
88	138	black clay
138	155	basalt

Summary of driller's log of 1199-21-12 (N020507, E011942) Hanford Wells, 1973

Land surface altitude¹ 405 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973, summary log gives ground elevation of 408 feet

Depth (ft)		
From	To	Description
0	10	sand and silt
10	37	quartz, basalt and sand
37	43	fine sand
43	46	fine sand and little gravel
46	48	coarse gravel
48	54	coarse gravel, sand and rock
54	57	gravel, sand, and rock
57	60	coarse gravel
60	67	coarse gravel, and sand
67	70	gravel and sand
70	72	sandy brown shale
72	77	brown shale
77	82	green shale

Summary of driller's log of 1199-22-11A (N021838, E011360) Hanford Wells, 1973

Land surface altitude¹ 402 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	45	sand and gravel
45	70	sand and coarse gravel
70	72	boulders
72	82	boulders and coarse gravel
82	84	sand and fine gravel
84	94	yellow clay
94	98	coarse gravel
98	108	coarse gravel and sand
108	111	boulders
111	117	blue mud
117	125	blue mud and coarse gravel
125	140	blue shale
140	170	basalt boulders and gravel
170	178	brown shale

Summary of driller's log of 1199-22-11B (N021851, E011356) Hanford Wells, 1973

Land surface altitude¹ 403 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	10	topsoil
10	18	gravel
18	40	gravel and sand
40	45	sand
45	55	small gravel and sand
55	62	fine gravel and sand
62	70	little gravel and fine sand
70	74	boulders and fine sand
74	80	quicksand
80	86	silt, sand, and gravel
86	92	fine gravel and sand
92	103	fine sand, very little gravel
103	111	fine sand, gravel and silt
111	124	fine sand, some shale, silt
124	130	fine sand, little shale
130	141	coarse gravel and sand
141	146	basalt gravel and sand
146	175	basalt gravel-coarse quartz
175	190	little gravel, sandy shale
190	200	gray shale

Driller's log of 1199-22-13A (N022054, E013139) Hanford Wells, 1973

Land surface altitude¹ 356 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	12	blue sand
12	33	sampled but not recorded
33	50	blue clay

Driller's log of 1199-22-13B (N022072, E013192) Hanford Wells, 1973

Land surface altitude¹ 352 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	10	sand and clay
10	15	yellow clay
15	27	yellow and blue clay
27	30	blue clay

Driller's log of 1199-22-13C (N022053, E013017) Hanford Wells, 1973

Land surface altitude¹ 368 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable rig

Depth (ft)		Description
From	To	
0	15	sand, hole caved in at 15'
15	25	sand and clay
25	50	no record
50	55	blue clay

Summary of driller's log of 1199-22-13D (N021743, E013117) Hanford Wells, 1973

Land surface altitude¹ 355 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		
From	To	Description
0	32	overburden
32	38	cobble rock
38	39	sandy shale
39	56	shale
56	61	sand and gravel
61	63	sand
63	119	shale
119	129	gravel; entered shale at 129'

Driller's log of 1199-22-16A (N021720, E015780) Hanford Wells, 1973

Land surface altitude¹ 357 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	small gravel, little sand, small and coarse gravel up to 3"
5	10	little sand and silt
10	15	coarse gravel (up to 6"), little sand and silt
15	17.5	small and coarse gravel and sand
17.5	18	small and coarse gravel and sand, little silt

Driller's log of 1199-22-16B (N021735, E015900) Hanford Wells, 1973

Land surface altitude¹ 358 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	10	sand and gravel to 6"
10	12.5	small and coarse gravel
12.5	17.5	gravel up to 4", sand
17.5	22	small and coarse gravel

Driller's log of 1199-22-16C (N021875, E016240) Hanford Wells, 1973

Land surface altitude¹ 358 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	2.5	gravel to 3", and silt
2.5	5	boulders, pea gravel, sand and silt
5	7.5	gravel to 3", little sand, silt
7.5	10	gravel up to 3" and sand
10	12.5	pea gravel and sand
12.5	17.5	gravel up to 4", sand and silt
17.5	20	coarse gravel, little sand

Driller's log of 1199-29-12B

1. No coordinates given but log indicates "tract house"

Depth (ft)

From	To	Description
0	9	topsoil
9	15	sand and gravel
15	54	sand
54	55	quicksand

Summary of driller's log of 1199-30-14 (N029600, E013600), Hanford Wells, 1973

Land surface altitude¹ 357 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	2	topsoil
2	7	loose gravel
7	32	cemented gravel and boulders (gray binder)
32	35	loose sand and gravel
35	39	cemented gravel with yellow binder
39	53	yellow clay
53	55	blue clay

Driller's log of 1199-31-19¹

Land surface altitude² 343 feet msl

1. Driller's log calls this N. Richland Island test hole and gives coordinates N30,850, E19,300
2. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	50% gravel and 50% fine sand
5	8	60% gravel and 40% fine sand
8	14	60% golfball to pea size gravel, 40% white sand
14	16	pure gravel
16	21	60% gravel and 40% fine sand
21	25	60% gravel and 40% sand and silt
25	29	80% gravel and 20% sand and silt
29	33	50% gravel, 50% sand and silt
33	47	5% gravel, 10% silt, and 85% fine sand; there are thin layers of gravel, not over a foot thick, in this fine sand

Driller's log of 1199-32-17 (N031840, E017417) Hanford Wells, 1973

Land surface altitude¹ 370 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		
From	To	Description
0	15	coarse gravel and rocks
15	20	rocks and coarse gravel
20	25	coarse gravel and rocks
25	35	fine black and white sand
35	40	coarse sand and gravel
40	50	sand
50	53	gray sand
53	55	gray sand and some yellow clay
55	60	gray sand and yellow clay
60	68	sand and red clay
68	75	blue clay and shale

Driller's log of 1199-33-13A (N033285, E012622) Hanford Wells, 1973

Land surface altitude¹ 378 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth(ft)		Description
From	To	
0	7	sandy loam; large boulder at 7'
7	15	boulders
15	20	coarse sand and gravel
20	25	coarse sand, getting finer
25	38	coarse sand and fine gravel
38	40	coarse sand and yellow clay
40	47	sand, gravel and clay
47	48	yellow sand
48	58	yellow sand and gravel
58	60	yellow clay, sand and gravel
60	80	yellow clay, coarse sand and gravel
80	84	yellow clay sand and gravel
84	100	yellow clay
100	105	yellow clay with coarse gray sand
105	108	white sand, water gravel with trace of blue clay
108	110	slate and sand
110	115	blue clay and sand
115	120	blue clay or shale

Driller's log of 1199-33-13B (N033258, E013195) Hanford Wells, 1973

Land surface altitude¹ 378 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	sand
5	15	sand and gravel
15	20	black sand and gravel
20	25	black sand and coarse gravel
25	40	black sand and gravel
40	45	yellow clay, sand and gravel
45	55	yellow clay and gravel
55	90	yellow clay, sand, and gravel
90	105	yellow clay and sand
105	117	yellow clay and less sand
117	130	blue clay

Summary of driller's log of 1199-33-18B (N032564, E018161) Hanford Wells, 1973

Land surface altitude¹ 376 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	2	sand
2	4	coarse gravel
4	5	sand
5	8	sandy gravel
8	17	gravel and sand
17	23	2" gravel
23	28	gravel and sand
28	30	gravel
30	56	gravel, 26% sand
56	66	gravel, 30% sand
66	73	sand, 4" gravel
73	77	clay and conglomerate

Summary of driller's log of 1199-33-18C (N032578, E017746) Hanford Wells, 1973

Land surface altitude¹ 374 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	1	clay, sand, and gravel
1	3	sand and gravel
3	10	fine sand
10	16	fine sand and gravel
16	22	fine sand and gravel to 6"
22	29	fine sand and gravel to 8"
29	34	fine sand and gravel to 6" cemented with some clay
34	44	fine sand and gravel to 6" cemented with clay
44	48	fine sand and gravel, some clay (cemented), stones to 9"
48	52	fine sand and gravel, some clay; cemented, stones to 10"
52	56.5	fine sand and gravel, less clay, (loose) stones to 6" diameter
56.5	60	fine sand and gravel, (trace of clay), stones to 6"
60	67	fine sand and gravel, (some clay); stones to 6"
67	69	fine muddy sand with chunks of clay (brown), stones to 4"
69	70.6	fine muddy sand with chunks of clay (yellow sticky)

Driller's log of 1199-33-18D (N032764, E017918) Hanford Wells, 1973

Land surface altitude¹ 363 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	boulders
5	8	coarse sand and boulders; caves at 8'
8	25	sand and gravel
25	30	coarse sand and fine gravel
30	33	coarse gravel
33	37	coarse sand and gravel
37	40	washed sand and silt
40	41	gravel and silt
41	46	clay, sand and gravel
46	80	blue shale
80	84	gravel
84	85	shale
85	100	slate, sand, and fine gravel
100	101	fine black sand

Driller's log of 1199-33-18E (N032855, E018200) Hanford Wells, 1973

Land surface altitude¹ 374 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth(ft)		Description
From	To	
0	18	sand and little gravel
18	27	fine black and white sand
27	50	coarse sand and gravel
50	60	fine black and white sand
60	70	brown sand and gravel
70	80	blue clay

Summary of driller's log of 1199-33-18F (N032964, E018217) Hanford Wells, 1973

Land surface altitude¹ 366 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	1	sand and gravel
1	21	fine sand, gravel, stone
21	26	fine sand, gravel
26	43	fine sand, gravel, stone
43	44	sand
44	50	fine sand, gravel, stones to 8"
50	52	conglomerate

Driller's log of 1199-34-13 (N034026, E013203) Hanford Wells, 1973

Land surface altitude¹ 389 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	25	sandy loam
25	30	sand and gravel
30	49	coarse gray sand
49	50	fine black and white sand
50	52	fine black and white sand with little clay
52	65	coarse pea gravel and clay, with sand
65	75	gravel with lots of clay
75	85	sandy clay
85	86	boulders, sand, and clay
86	92	gravel-pea to marble size, sand and gravel
92	103	gray sand and gravel

Summary of driller's log of 1199-34-15 (N033750, E014700) Hanford Wells, 1973

Land surface altitude¹ 369 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	18	topsoil
18	24	coarse gravel, some sand (cemented)
24	27	coarse gravel, some sand
27	36	coarse gravel, some sand and clay
36	38	gravel with some sand
38	44	gravel, sand, and clay
44	66	loose gravel
66	100	sand, gravel, some clay
100	119	sand, gravel, some clay
119	120	blue clay

Driller's log of 1199-34-19 (N034260, E018598) Hanford Wells, 1973

Land surface altitude¹ 378 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	20	sand and gravel
20	30	gravel
30	40	sand
40	50	gravel
50	60	sand
60	62	sand and gravel
62	63	sand

Summary of driller's log of 1199-38-11 (N037856, E010621) Hanford Wells, 1973

Land surface altitude¹ 362 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	3	sand and silt
3	4	coarse gravel
4	10	sand and gravel
10	22	sand and gravel, some boulders
22	24	coarse gravel
24	30	sand and gravel
30	40	fine sand, heavy gravel
40	55	fine sand, with a little yellow clay
55	68	fine sand
68	75	sand and gravel
75	90	sand, fine gravel

Summary of driller's log of 1199-39-10A (N038585, E009526) Hanford Wells, 1976

Land surface altitude¹ 367 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	10	sand and silt
10	20	sand and gravel
20	30	medium gravel
30	40	fine sand and gravel
40	55	fine heaving sand
55	65	coarse gravel
65	70	fine gravel and sand
70	75	coarse gravel
75	84	fine gravel and sand
84	94	blue slate and mud
94	100	blue slate and sand

Summary of driller's log of 1199-39-10B (N039072, E010160) Hanford Wells, 1973

Land surface altitude¹ 362 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	silt and sand
5	10	gravel
10	17	coarse gravel
17	28	boulders and gravel
28	30	boulders
30	44	sand and gravel
44	54	yellow clay

Summary of driller's log of 1199-39-16A (N038831, E015904) Hanford Wells, 1973

Land surface altitude¹ 367 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	2	not recorded
2	8	sand
8	10	10" stone
10	12	sand and 4" gravel
12	16	gravel and 6" stone
16	18	sand and gravel
18	21	sand, gravel and boulders
21	31	gravel, sand, and stone
31	33	gravel and sand
33	36	gravel and stone
36	41	sand, gravel, stone and clay
41	57	not recorded
57	62	clay

Driller's log of 1199-39-16B (N038808, E015848) Hanford Wells, 1973

Land surface altitude¹ 369 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	sand
5	15	sand and gravel
15	20	gravel
20	22	sand
22	30	sand and fine gravel
30	35	sand and gravel with little clay
35	38	rocks, sand, and gravel
38	40	sand and gravel
40	42	white sand and gravel
42	45	whitish brown sand
45	60	gray sand and gravel
60	63	gravel and sand
63	65	clay
65	77	yellow clay
77	85	yellow clay and gravel
85	95	blue shale, gravel and black basalt
95	100	blue shale and basalt
100	105	blue shale, clay, and basalt
105	110	blue shale and clay

Driller's log of 1199-39-16C (N039097, E015621) Hanford Wells, 1973

Land surface altitude¹ 385 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	5	sand and boulders
5	8	sand
8	14	black and white sand
14	16	sand and gravel
16	20	rocks and sand
20	25	sand, and gravel
25	32	black sand and gravel
32	36.5	black sand and rocks
36.5	67	gravel and sand
67	75	boulders and sand

Driller's log of 1199-39-16D (N039300, E015945) Hanford Wells, 1973

Land surface altitude¹ 369 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth(ft)		Description
From	To	
0	10	sand and rocks
10	18	rocks and boulders
18	27	sand, rocks, and boulders
27	35	rocks and boulders
35	39	rocks and gravel
39	40	fine sand, rocks and gravel
40	47	sand, rocks, and boulders
47	56	sand and gravel
56	60	quicksand, gravel and yellow clay
60	65	yellow clay, heavy

Drilling log of 1199-40-15 (N040088, E015442) Hanford Wells, 1973

Land surface altitude¹ 394 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	4	sand and boulders
4	5	boulders
5	20	sand and boulders
20	25	black sand
25	38	black sand and gravel
38	43	boulders
43	46	fine gray sand
46	48	sand and gravel
48	51	coarse gravel
51	55	coarse gravel and rocks
55	66	pea to baseball size gravel and sand
66	72	gravel, sand, and clay
72	75	pea gravel, coarse sand and clay
75	77	pea gravel, coarse sand and very little gravel
77	82	gravel and sand and some clay
82	83	gravel, sand and more clay
83	84	gravel and sandy clay
84	88	fine to coarse sand and gravel

Driller's log of 1199-40-16A (N040100, E016000) Hanford Wells, 1973

Land surface altitude¹ 388 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	10	sand, gravel, and boulders
10	20	coarse gravel, boulders, and gray sand
20	30	rocks and black sand
30	55	black sand and boulders
55	60	gray sand and boulders
60	85	sand and gravel with some yellow clay; lot of clay at 83'
85	90	yellow clay
90	117	yellow clay and gravel
117	120	blue shale and clay
120	125	blue clay

Driller's log of 1199-40-16B (N040087, E015977) Hanford Wells, 1973

Land surface altitude¹ 391 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	6	boulders
6	13	boulders and cemented gravel
13	21	boulders and sand
21	34	rocks and sand
34	36	fine black sand
36	44	black sand and gravel
44	45	black sand
45	48	black sand and rocks
48	54	rocks and boulders
54	55	boulders, coarse gravel and gray sand
55	73	boulders and gray sand
73	81	gray sand and boulders with some yellow clay
81	82	gray sand and boulders
82	87	gray sand and boulders with a lot of clay (yellow)
87	90	gray sand, boulders and yellow clay

Summary of driller's log of 1199-41-13A (N040796, E013256) Hanford Wells, 1973

Land surface altitude¹ 402 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		
From	To	Description
0	2	overburden
2	40	coarse gravel
40	52	gravel
52	58	sand
58	63	sand and fine gravel; entered silt at 63'

Summary of driller's log of 1199-41-13B (N040949, E013351) Hanford Wells, 1973

Land surface altitude¹ 403 feet msl

1. Calculated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	2	overburden
2	54	sand, gravel and cobble
54	55	sand and gravel
55	64	fine sand and gravel
64	65	cemented gravel

/

Summary of driller's log of 1199-41-13C (N041030, E013259) Hanford Wells, 1973

Land surface altitude¹ 404 feet msl

1. Altitude given in driller's log in Hanford Files

Depth (ft)		Description
From	To	
0	5	sand
5	29	coarse gravel
29	37	sand and gravel
37	40	coarse gravel and rock
40	66	boulders and gravel
66	70	sand and gravel
70	72	fine sand
72	77	coarse gravel
77	79	boulders and gravel
79	84	sand and gravel
84	95	brown clay

Summary of driller's log of 1199-41-15 (N040767, E015184) Hanford Wells, 1973

Land surface altitude¹ 397 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	6	fill
6	44	fine sand and gravel (stones to 6")
44	46	fine sand and gravel (stones to 16")
46	49	fine sand and gravel (stones 4 to 5")
49	74	fine sand, stones, boulders, cemented with clay
74	76.5	brown clay

Driller's log of 1199-45-12

Land surface altitude¹ 400 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Labeled North Richland

Depth (ft)		
From	To	Description
0	42	no record
42	53	sand, gravel, and muck
53	60	sand and gravel
60	63	gravel, sand, and sandy clay
63	70	sand, silt and small gravel
70	80	sand, very little gravel, silt
80	90	lots of sand, some good gravel

Driller's log of 3099-41-14 (N040907, E014022) Hanford Wells, 1973

Land surface altitude¹ 398 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	2	sandy loam
2	15	coarse gravel and sand
15	22	fine sand
22	35	gray sand
35	44	sand and gravel
44	50	black sand
50	55	fine black sand
55	60	coarse gray sand
60	65	coarse gray sand, silt, and clay

Summary of driller's log of 3099-41-14A (N040956, E013532)

Depth (ft)		Description
From	To	
0	2	sand overburden
2	54	cobbles, coarse gravel and sand
54	55	cobbles
55	64	small gravel with streaks of sand
64	68	cemented gravel (conglomerate)

Summary of driller's log of 3099-41-14B¹

1. Approximately 250' NW of well 3099-41-14A

Depth (ft)		Description
From	To	
0	2	sand overburden
2	40	coarse gravel and cobbles
40	52	gravel (muddy)
52	56	sand
56	63	sand and pea and medium gravel

Summary of driller's log of 3099-42-16 (N041572, E016180) Hanford Wells, 1973

Land surface altitude¹ 406 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	2	sand
2	6	gravel and boulders
6	16	coarse gravel
16	26	medium gravel
26	32	coarse gravel and sand
32	40	medium gravel and some sand
40	78	coarse gravel and some sand
78	80	medium gravel and sand
80	83	boulders
83	94	coarse gravel and some sand
94	98	fine sand and medium gravel
98	112	coarse gravel and boulders
112	120	medium gravel and some sand
120	124	coarse gravel and some sand
124	128	boulders and some sand
128	134	blue sandy shale

Driller's log of 3099-45-18A (N045450, E017980) Hanford Wells, 1973

Land surface altitude¹ 359 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	10	sand and gravel
10	15	boulders
15	19	gravel, and boulders
19	25	sand, gravel and boulders
25	28	sand and gravel
28	60	yellow sand and gravel
60	63	sand and gravel
63	74	white sand and gravel
74	79	sand and gravel
79	87	blue shale
87	90	slate clay
90	95	blue clay
95	99	blue clay with trace of coarse sand

Driller's log of 3099-45-18B (N045475, E017960) Hanford Wells, 1973

Land surface altitude¹ 359 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973
2. Cable tool rig

Depth (ft)		Description
From	To	
0	15	sandy loam
15	25	sand, gravel and boulders
25	30	yellow sand and finer gravel
30	37	gray, and yellow sand and gravel
37	40	yellow clay
40	50	heavy clay
50	54	clay
54	70	pea to medium and coarse gravel, blue slate and white fine sand with shale as binder
70	71	fine, gray sand
71	77	slate and gravel; 77' to 80' caving in
77	78	sand
78	80	sand, gravel and clay; 80' caving in
80	90	slate, sand and clay, all more blue in color
90	93	finer clay, slate and green clay
93	95	green and gray clay
95	101	blue clay and gravel

Driller's log of 3099-47-18A (N047102, E017686) Hanford Wells, 1973

Land surface altitude¹ 372 feet msl

1. Estimated from altitude of top of casing given in Hanford Wells, 1973

Depth (ft)		Description
From	To	
0	12	sand
12	15	gravel
15	24	fine, black sand, and gravel
24	27	sand
27	40	fine gravel and gray sand
40	45	fine yellow sand, marble size gravel, and gray clay
45	50	fine yellow sand, marble size gravel, and lots of gray clay
50	55	fine yellow sand, marble size gravel and heavy gray clay
55	67	yellow clay, sand and gravel
67	75	gray sand, gravel, and gray shale; 67' to 75' is a gray shale binder
75	88	lot of muck, gray shale, fine sand, and pea to marble size gravel
88	90	no record
90	91	sand, gravel, basalt, and less shale
91	92	shale, black basalt, gravel, and gray sand
92	95	shale, sand, gravel and basalt
95	98	shale, sand, gravel, and basalt, and gray sand
98	100	gray shale, gray, fine sand, gravel
100	102	fine sand and gravel
102	115	blue shale
115	120	blue shale, very fine water-sand, and sandstone
120	125	good water gravel-large marble to pea size, fine sand, gray shale
125	135	white sand and gravel, gray shale
135	136	pure white, gray sand
136	146	shale, sand and pea to marble gravel
146	150	blue shale
150	160	dark gray shale, mud
160	165	dark gray shale
165	167	dark gray shale, mud
167	172	gray shale, mud
172	174	coarse black and white sand
174	180	fine black and white sand with red particles in it
180	185	fine black and white sand
185	191	basalt-coarse and black cuttings

Driller's log of 3099-49-E16

Depth (ft)		Description
From	To	
0	2	brown, fine sand
2	3	cemented gravel and 10" minus cobbles
3	5	cemented gravel with a little sand, dark gray in color
5	15	cemented gravel and cobbles with a trace of sand
15	20	cemented 2" minus gravel with coarse black sand, dark gray to black
20	25	4" minus gravel with some coarse black sand and a trace of brown sand
25	30	lightly cemented, 3" minus gravel with sand color gray
30	35	3" minus gravel with coarse sand and some finer sand
35	40	2½" minus gravel and coarse sand with a little fine sand
40	45	coarse sand with 2½" minus gravel, trace of fine sand
45	50	3" minus gravel with a little sand
50	60	2½" minus gravel with a trace of sand, color-gray
60	65	2" minus gravel with coarse and fine sand
65	70	3" minus gravel with some sand, light brown in color
70	75	1'5" minus gravel with coarse and fine sand
75	80	1½" minus gravel with coarse and fine sand
80	85	1" minus gravel with some coarse and fine sand
85	90	1'5" minus gravel, tightly packed with light brown and blue sand
90	95	2" minus gravel with green sand and a little black clay very tightly packed
95	100	3" minus gravel with green sand and a little black clay, very tightly packed
100	105	2½" minus gravel with green sand very tightly packed
105	110	2" minus gravel with green sand very tightly packed
110	115	3" minus gravel with a little light gray sand very tightly packed
115	120	3½" minus gravel and white and gray sand
120	125	greenish blue clay with small pebbles in it (silty)
125	130	greenish blue clay with small pebbles; clay a little silty
130	135	fine green sand, with some lumps of sand
135	140	3" minus gravel with green sand
140	145	2" minus gravel with fine and coarse sand
145	150	1" minus gravel with fine sand and some coarse sand
150	155	4" minus gravel with some greenish blue sand
155	160	1" minus gravel with greenish blue sand; very tightly packed
160	165	clay-like silt
165	170	dark brown silt and clay
170	175	silt and clay with stray 1" gravel-dark brown
175	195	silt and clay with blue tint
195	200	2" minus pits of soft basalt with coarse sand and blue clay
200	205	basalt gravel and coarse sand with some clay
205	210	basalt bedrock with sand
210	218.5	basalt bedrock

Driller's log of 3099-49-17

Depth (ft)		Description
From	To	
0	9	sand, gravel $\frac{1}{4}$ " to boulders
9	20	sand, $\frac{1}{4}$ " gravel to cobbles
20	35	coarse to fine black sand and $1\frac{1}{2}$ " gravel
35	55	no record
55	60	black sand
60	65	black sand, coarse to fine with $1\frac{1}{2}$ " gravel
65	68	fine brown sand with coarse black sand and silt with 2" gravel
68	75	fine brown sand, and 4" gravel
75	80	fine brown sand

Driller's log of 3099-50-15

Depth (ft)		Description
From	To	
0	3	sand and cobbles
3	9	brown and black sand with boulders and gravel
9	17	black sand, coarse, gravel, and cobbles
17	20	coarse black sand and gravel with boulders
20	30	black sand, gravel and cobbles
30	45	black, coarse sand and gravel
45	50	brown sand, fine to 1½" gravel
50	63	fine, brown sand and 1½" gravel with some silt
63	65	fine brown sand with very little gravel
65	68	brown sand, some silt and ½" gravel
68	75	brown sand and some silt with ½" gravel
75	80	brown sand with some 1½" gravel and traces of silt

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