

ASTORIA WELL

Lower Columbia Oil

Brown #1

1-30	Surface
100	Fine-grained sand, logs and roots
150	Gray water sand and boulders
175	Yellow clay
250	Brown shale and boulders
332	Brown shale, hard shells and boulders
390	Soft gray shale
420	Dark gray shale
447	Gray shale and boulders
450	Dark gray shale, sticky - some hard shale
465	Gray shale and shells
475	Hard shells, gray and sandy shale
489	Hard shells, shale and boulders
495	Shale and boulders
500	Hard shells
525	Coarse sandstone and shells - oil and gas show
528	Tough blue shale
531	Soft gray sandstone
538	Hard sandstone shells
579	Brown shale
582	Boulders
589	Sandy gray shale
617	Soft brown shale and boulders
618	Hard shell of shale
647	Sandy shale, some streaks of green shale



649 Boulders
661 Brown sandy shale
665 Hard shale and conglomerate
675 Soft brown shale
690 Boulders, tough brown shale and shells
700 Black shale
720 Tough light brown shale
726 Coarse light brown sand shale
728 Hard sand shale
757 Sticky brown shale
758 Boulders
772 Light brown soft shale
779 Boulders
780 Tough brown shale and shell
800 Sticky brown shale
808 Boulders
810 Hard shell and hard brown shale
812 Boulders
815 Shell of hard shale
839 Hard brown shale
841 Boulders
850 Hard brown shale
865 Boulders
873 Soft brown shale
880 Hard brown shale
890 Boulders
892 Hard brown shell



912	Hard brown shale
918	Boulders and hard shells
940	Hard brown shale and shells
965	Hard brown shale
975	Boulders
996	Soft light brown shale
998	Hard shell
1010	Light brown shale, tough
1017	Hard shell and shale
1022	Hard shell, blue lime
1045	Brown shale and boulders
1050	Brown shale
1053	Boulders
1056	Hard blue limestone
1085	Hard shell cement gravel
1095	Soft (sluffing) brown shale
1120	Brown shale
1140	Hard brown shale - some boulders
1177	Hard brown shale - boulders
1200	Alternating hard brown shale and boulders
1225	Light brown shale
1250	Soft sandy shale
1270	Boulders
1375	Soft brown sandy shale
1430	Hard shell, brown sandy shale
1435	Hard sand, shell, brown shale
1445	Soft shale, brown sluffing

SCANNED

1450	Firm brown sandy shale
1497	Boulders in brown sandy shale
1540	Soft brown sandy shale
1545	Boulders
1610	Brown shale, alternating streaks of sandy shale
1615	Hard shell gray limestone
1675	Alternate streaks gray and brown shale
1696	Boulders and hard shells, gray and brown shale
1697	Hard lime shell
1710	Hard gray sandy shale
1715	Hard shell, gray limestone
1725	Gray and brown sandy shale
1735	Gray and brown sandy shale
1741	Soft brown sluffing shale
1745	Hard shell, fine gray sandstone
1780	Alternating hard gray sandstone and brown sandy shale
1810	Gray lime shale - soft and hard
1839	Gray and blue shale, hard shells, gray and white limestone
1847	Alternating streaks gray and brown shale, thin streaks of lime
1850	Hard shell, gray limestone
1875	Blue shale, hard shells, limestone and sandstone
1922	Blue lime - streaks of hard shells
1926	Hard shell, blue limestone
1935	Shell, gray sandstone - blue limestone
1940	Gray sandstone, hard shell
1945	Soft blue shale sluffing
1980	Blue shale, small brown sandstone boulders

SCANNED

2000	Blue shale
2010	Gravelly brown shale
2020	Shell of hard brown shale
2035	Blue shale and kidneys of hard blue shale
2045	Light blue shale streaks and hard shells
2275	Blue shale
2350	Hard sandstone and gray limestone (10" landed at 2300)
2378	Hard sandstone and gray limestone
2380	Coarse brown gas sand
2444	Hard blue sandstone
2445	Gas sand - strong pressure
2480	Hard blue sandstone
2521	Blue sandstone
2530	Blue shale and shell, sandstone and shale - some gas
2600	Blue sandstone
2610	Light blue sandstone - sandy shale - some gas
2615	Hard blue sandstone
2634	Dark blue sandstone, coarse
2685	Soft blue gray sandstone
2690	Blue gray sandstone - hard
2705	Brown and gray shale
2735	Hard shells, sandy shale - blue and gray shale
2761	Hard shells of sandstone and blue and gray shale
2784	Blue and gray shale - sandstone and shale shells
2785	Hard shells, sandy shale
2790	Hard shells, gray and brown shale
2818	Gas sand - hard to put in mud to drill through

SCANNED

2824 Sandy gray shale and hard shells
2836 Sandy gray shale
2844 Hard sandstone, shell and sandy gray shale
2846 Sandy gray shale
2852 Sandy gray shale, sandstone shells
2858 Blue and brown shale, sandstone shells
2930 Blue and brown shale - some sandstone shells
2941 Hard brown shale
2948 Brown shale
2952 Brown shale
2955 Brown shale, lime streaks
2957 Brown shale, lime streaks
2959 Brown shale
2962 Brown shale
2965 Brown shale, lime streaks
2970 Brown shale
2974 Brown shale
2981 Brown shale, soft - gas show
2990 Brown shale
2992 Brown shale, lime streaks
3017 Brown shale, sandy - gas show
3020 Brown shale, lime streaks
3027 Sandy coarse brown shale
3046 Brown shale, lime streaks
3057 Hard and soft streaks of brown shale
3060 Hard shell, brown shale
3079 Firm brown shale

SCANNED

3090 Brown shale
3092 Soft brown shale - gas show
3099 Brown shale
3100 Brown shale, hard shell
3104 Brown shale and gypsum
3121 Brown shale and lime
3128 Brown shale, gypsum and lime
3131 Brown shale, hard
3142 Brown shale, lime streaks
3160 Brown shale, hard and soft
3189 Brown shale, hard
3201 Brown shale, hard
3208 Brown shale, firm
3210 Sandstone shell, pyrites
3220 Brown shale, soft
3342 Hard and soft streaks, soft brown shale and shells, hard shale
3354 Sand shale sluffing
3375 Blue shale
3380 Blue shale and shells
3385 Sand shale and brown platy shale
3442 Tough blue shale
3451 Sand shale
3454 Brown platy shale sluffing
3475 Blue shale
3500 Blue shale and shells, blue sandstone
3524 Sandy formation, gray sandstone and sand shale - gas and oil colors
3534 Blue black shale

SCANNED

3554 Gray sandstone and dark blue shale - colors
3553 (?) Hard shell, sandstone
3560 Black shale
3565 Gray sandstone and gray sandstone shale - blue black shale - colors
3675 Blue gray sand shale
3690 Coarse gray sandstone - oil and gas show
3693 Blue shale
3723 Fine and coarse oil sand
3729 Streaks of blue shale
3796 Coarse oil sandstone
3799 Blue shale streaks
3854 Oil sandstone - landed the 6 1/4"
3877 Oil sandstone
3968 Sand shale
3970 Gas sandstone
3986 Sand shale
4005 Hard sand shale - gas show
4016 Dark sand shale and shell of dark sandstone
4035 Black sandstone - hard
4046 Blue shale
4053 Hard dark shale, shell, dark sandstone
4063 Hard dark shale
4079 Hard dark sand shale
4095 Hard sand shale
4100 Black sandstone, hard
4155 Dark sand shale
4134 (?) Hard sandy shale

SCANNED

4174	Gray sandstone, shale hard and soft
4181	Dark gray sand shale, very hard
4185	Hard dark gray sand shale
4191	Hard shale, dark gray sandstone
4500	Dark gray black sandstone shale - hard and soft streaks
4545	Gray dark sandy lime shale - gas
4704	Dark lime shale
4711	Hard shell of lime
4772	Dark lime shale, gas at 4740
4808	Soft sluffing, lime shale (4 1/2" carried to 4559)
TOTAL DEPTH	

SCANNED