

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well drilled in SW1/4NE1/4 of sec. 30, T. 3 S.,
R. 97 W., Rio Blanco County, Colorado (2,175 ft.
S. of N. line and 2,035 ft. W. of E. line)

Kelly Bushing elevation 6,816 feet Sample interval 170 to 1,100 feet
(cuttings) and 1,100 to 2,459 (core)

From	To	Description
<u>Drill cutting samples</u>		
170	230	Mudstone; buff and rare dark brown, very calcareous. Rare coarse angular yellowish-gray chert fragments. Some oil shale in lower 10 feet.
230	250	Oil shale, lean; brownish-gray to some dark brown and black, calcareous. Common mudstone as above.
250	330	Marlstone; buff to brownish-gray, rare black. Rare coarse calcite. Some dark brownish-gray oil shale in lower 10 feet.
330	340	Oil shale, medium; dark brownish-gray to black. Common mudstone and marlstone as above.
340	370	Oil shale, medium; brownish-gray, some dark brownish-gray and rare black. Very calcareous.
370	410	Oil shale, medium; dark brownish-gray and black, very calcareous. Some buff marlstone.
410	420	Oil shale, lean; brownish-gray and dark gray, very calcareous. Common buff marlstone. Rare fine pyrite bands.
420	450	Oil shale, rich; brownish-gray, dark gray and black, calcareous. Hackley fracture. Some calcite.
450	480	Oil shale, medium; dark gray and dark brownish-gray, calcareous. Some buff marlstone.
480	500	Oil shale, lean; brownish-gray and dark gray, calcareous. Rare pyrite.
500	570	Oil shale, rich; brown to dark brownish-gray, dark gray and black, calcareous. Rare buff mudstone.
570	580	Oil shale, medium; brownish-gray and dark brownish-gray, very calcareous to calcareous.
580	670	Oil shale, medium; brownish-gray and dark brownish-gray, very calcareous. Common coarse dolomite. Rare yellow limonite.
670 (A-groove)	680	Marlstone; buff. Some brownish-gray and dark gray oil shale.
680	700	Oil shale, lean; brown to dark brownish-gray. Much buff marlstone.
700	720	Oil shale, medium to rich; brown to dark gray and black, calcareous to slightly calcareous.
720	750	Oil shale, medium; brown to dark brownish-gray, calcareous.

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No. 1 well (Con.)

From	To	Description
750	800	Oil shale, medium: brown to dark brownish-gray, some light brown, calcareous. Rare yellow limonite.
800	810	Oil shale, medium: light brown to dark brownish-gray, calcareous.
810	830	Oil shale, medium: brownish-gray and dark brownish-gray, rare black, calcareous.
830	880	Oil shale, lean: brownish-gray and some dark brownish-gray, very calcareous. Rare dolomite grains. Rare pyrite.
880	920	Oil shale, lean: light brown and brownish-gray some dark brownish-gray, very calcareous. Rare pyrite.
920	970	Oil shale, lean: brownish-gray and dark brownish-gray, some light brown, very calcareous. Rare yellow limonite.
970	1100	Oil shale, lean: light brown and brownish-gray, some dark brownish-gray, very calcareous.
<u>Core samples</u>		
Core 1 1100	1101.7	Oil shale, medium: brownish-gray (5YR 5/2, some 10YR 6/2). Smooth and some distorted bedding. A 1/4-inch lamina of silt textured tuff with fine, irregular and contorted oil shale stringers at 1100.3 feet. A small <u>lenticular vug</u> partly filled with brown clay at 1101.5 feet.
1101.7	1101.9	Oil shale, lean: brownish-gray (5YR 5/2-6/2, some 5YR 5/2). Distorted bedding in upper half, distorted to contorted and broken tuffaceous laminations in lower half.
1101.9	1102.3	Sample of tuffaceous shale from 1101.8 feet: X-ray - quartz, feldspar, dolomite, pyrite. Oil shale, rich or medium: brownish-black to light brownish-gray (10YR 1/2-6/3). Contorted to irregular and truncated laminations to gradational banding. Black laminae have waxy luster.
1102.3	1103.1	Oil shale, lean: dark to light olive gray (5Y 3/2-6/3). Faint bedding to irregular and distorted laminations.
1103.1	1105.2	Oil shale, medium: dark to medium brownish-gray (10YR 2/2-5/2). Irregular and distorted to contorted laminations and thin banding. A 0.1-foot band of faint, very irregular laminations at 1104.9 feet.

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From	To	Description
1105.2	1107.7	Oil shale, medium; dark olive-gray to brownish-gray (5Y 2/2 to 10YR 4/2). Slightly distorted laminations (top 1/2-foot) to faintly bedded and variegated. Rare thin stringers of brownish-gray tuff.
1107.7	1108.3	Oil shale, medium or rich; dark olive-gray to dark brownish-gray (5Y 2/2-3/2 to 10YR 3/2). Faint, irregular laminations and thin banding.
1108.3	1111.0	Oil shale, medium; olive-gray to light olive-gray and brownish-gray (5Y 4/2-6/2 and 10YR 4/2). Laminated to bedded. A fine vertical fracture lined with vitreous black organic material runs the length of the sample; in some places the core surface is oil stained adjacent to the fracture.
Core 2 1111.0	1114.4	Oil shale, medium; dark to medium brownish-gray (10YR 3/2-4/2), bedded. Some fine to thin stringers and irregular specks of chalky white material with black coatings. Very small to large vugs on outside of core. Rare small lenses of hard, black vitreous material (one at 1112.8 feet is 18 mm long).
1114.4	1115.5	? Sample of hard black lens from 1112.8 feet; X-ray - small broad peaks (see 2038.5 feet). Oil shale, medium; brownish-gray to dark brownish-gray (10YR 5/2-3/2) and some dark olive-gray (5Y 3/2). Distinctly laminated at top to faintly banded at bottom (laminae make an angle of about 75-80 degrees with edge of core). Irregular laminations and loop structure from 1115.0 to 1115.2 feet. Common small black lenses with wrap-around bedding at one horizon at 1114.6 feet (appear as vugs on outside of core).
1115.5	1118.2	Oil shale, medium to rich; brownish-gray to dark brownish-gray (10YR 5/2-3/2), faintly bedded. Rare small partly dissolved vugs with some porous granular material. Rare fine to thin stringers of organic material. A thin-stringer of gray "sooty" material at base (rubs off on fingers like soot or graphite). [Sample of gray "sooty" material from elongated vug at 1118.1 feet: X-ray - quartz, dolomite, feldspar, dawsonite, pyrite, siderotil. [Sample of gray "sooty" stringer from 1118.2 feet: X-ray - pyrite, marcasite, siderotil, quartz, dolomite, dawsonite.

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From	To	Description
1118.2	1119.2	Oil shale, rich; dark to medium brownish-gray (10YR 2/2-5/2) and some dark gray (2.5N). Irregularly laminated to banded. Chalky, white fracture coatings at 1118.8 feet; chalky white and gray "sooty" coatings at base.
1119.2	1119.5	Oil shale, lean; light olive-gray (5Y 6/2) to brownish-gray (10YR 5/2). Faint, irregular and distorted laminations. Very irregular fracture with white crusts on fracture surfaces. A very irregular band (5-12 mm) and several small stringers of gray to white crystals with some fine pyrite in lower half.
1119.5	1120.1	[Sample of crystal band at 1119.4 feet: X-ray - quartz pyrite, feldspar, kaolin.
1120.1	1120.8	Oil shale, rich; dark brownish-gray (10YR 3/2-2/2), bedded. Rare small lens shaped organic inclusions. Oil shale, medium; medium to dark brownish-gray (10YR 5/2-3/2). Bedded to faint irregular laminations. Rare fine black organic streaks. A 1-1/2- x 3/4-inch vug at 1120.4 feet, partly filled with light gray and chalky white material.
1120.8	1148.0	[Sample of vug filling from 1120.4 feet: X-ray - pyrite, marcasite, siderotil, quartz, dolomite. Missing.
1148.0	1150.1	Oil shale, rich; dark olive-gray (5Y 3/2) to dark brownish-gray (10YR 2/2). Faintly bedded to faintly laminated and banded. Very rare fine streaks of black organic matter. A diagonal fracture with rare tarry stains in top 0.3 foot.
1150.1	1150.6	Oil shale, rich; dark olive-gray (5Y 3/2). Faintly bedded. Cut by very irregular, light brownish-gray (10YR 6/2-7/2), fine grained injected tuffs (up to 15 mm thick) with included fragments and distorted stringers of oil shale.
1150.6	1151.3	[Sample of injected tuff from 1150.5 feet: X-ray - dolomite, quartz.
1151.3	1152.7	Tuff; silty texture, medium to light brownish-gray (10YR 5/2-7/2), some very light patches (10YR 7/2). Irregularly banded to massive. Rare small vugs on outside of core. Cut by a vertical, cemented fracture with displacement of about 8 mm. Oil shale, medium; medium to dark brownish-gray (10YR 4/2-3/2), bedded. Common small chalky white specks and streaks. Rare fine black organic streaks. A 0.2-foot, light brownish-gray to light

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From	To	Description
		brown (10YR 6/2-6/4) bedded tuff at 1152.0 feet, with small vugs filled with gray and chalky white material.
		Sample of vug fillings in tuff from 1152.2 feet: X-ray - fluorite; trace kaolin, siderotil, quartz, dolomite.
1152.7	1158.0	Oil shale, rich; dark to medium brownish-gray (10YR 3/2-5/2). Bedded to faintly laminated and banded. Rare thin to fine black organic streaks.
1158.0	1158.6	Oil shale, rich to medium; dark to light brownish-gray (10YR 3/2-6/2) and light olive-gray (5Y 6/2). Slightly irregularly laminated. Rare fine chalky white laminae.
1158.6	1160.4	Tuff; silty texture, light brownish-gray (10YR 6/2-8/2). Very irregularly laminated to bedded.
1160.4	1172.0	Missing.
Core 4 1172.0	1172.8	Oil shale, medium; medium to rare dark brownish-gray (10YR 5/2-4/2, rare 3/2), silty. Faint, irregular to discontinuous laminations and faint bedding.
1172.8	1173.9	Oil shale, rich; dark to medium brownish-gray (10YR 2/2-4/2), bedded.
1173.9	1175.1	Oil shale, medium; medium to dark brownish-gray (10YR 4/2-2/2). Faint very regular laminations and banding.
1175.1	1175.6	Oil shale, medium or rich; dark to medium brownish-gray (10YR 3/2-4/2). Irregularly laminated to faintly bedded. Rare chalky white specks and thin black organic streaks. Several large vugs on outside of core. (Piece appears to be out of sequence.)
1175.6	1176.0	Oil shale, lean; light to medium brownish-gray (10YR 6/2-5/2), silty. Irregularly laminated.
1176.0	1178.2	Oil shale, rich; dark to rare medium brownish-gray (10YR 3/2-2/2, rare 4/2). Bedded to some faint irregular laminations. Rare to common very fine black waxy organic streaks. Rare diagonal fractures with chalky white coatings.
1178.2	1178.7	Oil shale, medium; brownish-gray (10YR 4/2-5/2). Very faintly laminated to bedded.
1178.7	1182.0	Missing.
Core 5 1182.0	1185.2	Oil shale, lean to very lean; medium to light brownish-gray (10YR 5/2-7/2). Slightly irregular and distorted to regular laminations. Silty in lighter parts. Common vugs on outside of core at some horizons.

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From	To	Description
1185.2	1188.6	Oil shale, medium; medium and some dark brownish-gray (10YR 4/2-3/2). Bedded with rare contorted banding. Some gray gritty friable material on parting surfaces. Rare small, light brown (10YR 6/4) lenses and streaks. Rare very large vugs (up to 2-1/2 inches) coated or partly filled with mud and gray gritty material. Some vugs have yellow limonite stains. Filling in vug at 1187.6 feet shows many elongated crystal cavities (boxwork).
1188.6	1190.7	Oil shale, medium; medium to light brownish-gray (10YR 4/2-6/2), some dark brownish-gray (10YR 3/2-2/2) and resinous to waxy black in upper foot. Irregular and distorted to regular laminations and banding. Small elongated lens-shaped vugs in upper 0.4 foot, some containing gray to white granular material.
1190.7	1192.8	Oil shale, lean; light to medium brownish-gray (10YR 7/2-5/2, rare 4/2) and rare light olive-gray (5Y 7/2). Irregular to regular and some distorted laminations. A large, irregular vug and partially dissolved long lath-shaped crystals with black coatings on outside of core at 1191.7 feet. A large vug (2-1/2 inches) with porous gray and white filling at 1192.1 feet. Sample of chalky, white vug filling from 1191.7 feet: X-ray - kaolin, quartz, fluorite, dolomite, siderotil (?).
1192.8	1194.1	Oil shale, lean; light to medium brownish-gray (10YR 6/2-4/2) and olive-gray (5Y 5/2), silty in part. Bedded to irregularly laminated and banded.
1194.1	1195.0	Oil shale, lean or medium; medium to light brownish-gray (10YR 4/2-6/2) and rare olive-gray (5Y 5/2). Regularly laminated and banded.
1195.0	1196.9	Oil shale, lean; brownish-gray (10YR 4/2-5/3). Very faintly bedded. Rare large vugs (up to 1-1/2 inches) with gray porous fillings.
1196.9	1200.0	Oil shale, rich to medium; dark to medium brownish-gray (10YR 2/2-5/2). Faintly bedded to faintly laminated. Rare large vugs, partly filled with organic matter, white crystalline material and very fine pyrite. Sample of shale containing part of a vug from 1198.0 feet: X-ray - quartz, pyrite, marcasite.

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From	To	Description
1200.0	1202.1	Oil shale, medium: medium to dark brownish-gray (10YR 5/2-3/2). Slightly irregular to regular laminations. Rare irregular laminae and streaks ✓ of tuff in lower part. A fracture with varnish-like coating runs from 1200.6 to 1201.2 feet.
1202.1	1203.9	Oil shale, rich: dark brownish-gray (10YR 2/2-3/2), bedded. Rare large vugs, partly filled with white granular quartz, black organic matter and very fine pyrite. Very uneven split.
1203.9 Core 6	1210.0	Missing.
1210.0	1212.7	Oil shale, rich: dark to medium brownish-gray (10YR 2/2-4/2). Bedded to irregularly laminated. Rare large vugs, partly filled with white granular quartz, black organic matter and very fine pyrite. Black organic matter in shingled plates (like scales) on parting surface at 1211.3 feet.
1212.7	1215.6	Oil shale, medium: medium to dark brownish-gray (10YR 4/2-2/2). Very irregular to contorted laminations and banding. Very rare small vugs.
1215.6	1218.2	Oil shale, very rich: dark brownish-gray (10YR 2/2) to dark gray and black (2.5-2N). Bedded to fine irregular laminations.
1218.2	1219.5	Oil shale, rich: dark to rare medium brownish-gray (10YR 2/2-4/2). Rare, waxy to vitreous, organic streaks. Common (1218.2-1218.6) to rare, thin to fine brownish-gray (10YR 5/2) tuff laminae.
1219.5	1221.5	Oil shale, medium to rich: medium to dark brownish-gray (10YR 5/2-2/2), rare black waxy streaks. Distinctly to faintly laminated and banded; some loop structure and displaced laminae. Common (1219.5-1219.7) to rare, thin to fine light brownish-gray (10YR 6/2-8/2) tuff laminae. ✓
1221.5	1221.9	Oil shale, lean: brownish-gray (10YR 5/2), bedded. Common fine laminae and small lenses and irregular spots of light brownish-gray (10YR 8/2) claystone (appear as vugs on outside of core).
1221.9	1224.4	Sample of claystone from 1221.5-1221.9 feet: X-ray - kaolin, quartz, dolomite, magnesite. Oil shale, medium to lean: medium to light brownish-gray (10YR 4/2-6/2, rare 7/2 and 3/2). Bedded and irregularly laminated in upper part to fine faint slightly irregular laminations in lower part. An irregular, dense, brownish-gray (10YR 4/2) dolomite band at 1224.3 feet.

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From	To	Description
1224.4	1225.1	<p>Sample of band at 1224.3 feet: X-ray - dolomite; trace quartz, feldspar.</p> <p>Oil shale, rich: dark to medium brownish-gray (10YR 2/2-4/2). Irregular and distorted banding to laminations; some loop structure. Very rare vitreous organic streaks.</p>
1225.1	1226.2	Oil shale, very lean; medium to light brownish-gray (10YR 5/2-7/2, very rare 4/2). Laminated to faintly banded. Rare large vugs.
1226.2	1226.7	Oil shale, medium; medium to rare dark brownish-gray (10YR 4/3-3/2). Irregular to distorted (around vugs) laminations and bedding. Common small to large vugs with limonite stains, some vugs contain chalky, white mud and partly dissolved crystals.
1226.7	1227.0	Oil shale, lean; medium to light brownish-gray (10YR 5/2-7/2), regularly laminated.
1227.0	1231.5	Oil shale, rich to very rich; dark to medium brownish-gray (10YR 2/2-4/2). Bedded and some irregular, distorted laminations. Some small to very large vugs (up to 3 inches) and elongated lenses, partly filled with spongy gray and chalky white material. Common limonite stains.
		<p>Sample of vug filling from 1227.4 feet: X-ray - quartz, feldspar, dolomite; trace pyrite, siderotil.</p> <p>Sample of vug filling from 1229.6 feet: X-ray - siderotil, quartz, feldspar, dolomite, pyrite, marcasite?, magnesite?.</p>
1231.5	1233.0	Oil shale, medium; medium to dark brownish-gray (10YR 4/2-3/2), bedded.
1233.0	1239.0	Missing.
Core 7 1239.0	1240.9	Marlstone: light to medium and some dark brownish-gray (10YR 7/2-5/2, some 3/2), rare light gray (6N) laminae. Rare chalky white coatings on fracture and parting surfaces.
1240.9	1243.1	Oil shale, very rich to rich: black (2N) to dark and medium brownish-gray (10YR 2/2-4/2). Bedded to some irregular and distorted laminations. Rare small to large, partly filled vugs in lower half.
1243.1	1244.7	Oil shale, lean to very lean; light to some medium brownish-gray (10YR 6/2-7/2, some 5/2). Regularly laminated to banded. Common fractures with chalky white and rare dull dark brown coatings. Very uneven split.

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From	To	Description
1244.7 Core 8	1255.0	Missing.
1255.0	1255.6	Oil shale, medium; medium to dark brownish-gray (10YR 4/2-3/2). Very irregularly laminated. Some chalky white fracture fillings and coatings. Sample of chalky, white coatings from 1255.0-1255.6 feet: X-ray - kaolin; trace quartz, dolomite (drilling mud?).
1255.6	1257.6	Oil shale, rich or medium; dark olive-gray (5Y 3/2) and dark to medium brownish-gray (10YR 3/2-4/2, rare 2/2), rare light brownish-gray (10YR 6/3) streaks. Irregularly to very irregularly laminated. Some chalky white fracture coatings in upper part.
1257.6	1260.0	Oil shale, lean to medium; light to dark brownish-gray (10YR 6/2-3/2). Irregularly to regularly banded and laminated. Rare chalky white fracture coatings.
1260.0	1260.7	Oil shale, rich; dark brownish-gray (10YR 3/3-2/2). Faint, regular laminations. Rare chalky white fracture coatings.
1260.7	1263.0	Oil shale, medium to rich; medium to dark brownish-gray (10YR 5/2-3/2, rare 2/2). Faint regular laminations and banding. Rare black coatings on fracture surfaces.
1263.0	1266.0	Oil shale, medium to lean; medium to light and rare dark brownish-gray (10YR 4/2-6/2, rare 3/2). Regularly laminated and banded. Black vitreous and chalky white coating on parting surface at top. Rare chalky white fracture coatings. Very rare waxy black organic streaks.
1266.0	1267.7	Marlstone; very light to light brownish-gray (10YR 8/2-6/3), regularly laminated. Some gray sooty laminae and partings. Some thin to fine chalky laminae. Some chalky white fracture coatings. Rare small vugs on outside of core. Very uneven split. Sample of gray lamina from 1266.3 feet: X-ray - pyrite, siderotil; trace kaolin, dolomite. Sample of very light colored chalky lamina from 1267.2 feet: X-ray - feldspar, magnesite; trace kaolin, dolomite.

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From	To	Description
1267.7	1270.6	Oil shale, rich; medium to dark brownish-gray (10YR 4/2-3/2, rare 2/2). Bedded and rarely laminated. Distorted laminae in top 0.2 foot. Rare large vugs and irregular fractures with gray fillings and limonite stains.
1270.6	1272.6	Oil shale, medium; medium to dark brownish-gray (10YR 5/2-3/2). Regularly laminated to banded.
1272.6	1273.3	Oil shale, lean; light to medium brownish-gray (10YR 7/2-4/2). Regularly laminated and banded. Rare irregular silty laminae.
1273.3	1277.5	Oil shale, medium to lean; medium to light brownish-gray (10YR 4/2-7/2), rare very light brownish-gray (10YR 8/2) streaks. Regularly laminated and banded. Rare irregular silty laminae.
1277.5	1278.5	Oil shale, rich; dark brownish-gray (10YR 3/2-2/2). Regularly laminated to banded.
1278.5	1281.3	Oil shale, medium or lean; medium and rare dark brownish-gray (10YR 5/2-4/2, rare 2/2). Regular thick banding to faint laminations. Resinous organic fracture coatings in upper 1.1 feet.
1281.3	1283.9	Oil shale, rich to medium; dark to medium brownish-gray (10YR 2/2-4/2). Faint regular laminations and banding.
1283.9	1290.5	Marlstone; light to rare medium brownish-gray (10YR 7/2-6/2, rare 4/2), silty in part. Laminated to thick banded. Some very irregular and distorted laminations. Rare very light brownish-gray (10YR 8/2) chalky lenses; appear as vugs on outside of core. Rare irregular thin tuff bands and stringers. Fine dark laminae and papery parting in upper 0.1 foot.
1290.5	1292.0	Oil shale, medium or rich; medium to dark brownish-gray (10YR 4/3-3/3). Bedded and rarely laminated. Some very large limonite stained vugs.
1292.0	1295.7	Oil shale, rich; dark brownish-gray (10YR 3/3-2/2), bedded. Very uniform.
1295.7	1298.0	Missing.
Core 9 1298.0	1300.3	Oil shale, very rich; dark and rare medium brownish-gray (10YR 3/2-2/2, rare 5/3); some waxy black laminae. Fine distorted laminations to faint bedding.

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From	To	Description
1300.3	1300.9	Oil shale, medium: light to dark brownish-gray (10YR 6/3-2/2). Irregularly laminated and banded, common loop structure. Rare small oil stained crystal masses and stringers.
1300.9	1301.9	Oil shale, medium: medium to dark brownish-gray (10YR 4/3-3/2, rare 5/3) and dark olive-gray (5Y 3/2). Irregular laminations and thick banding.
1301.9	1303.0	Oil shale, rich: medium to dark brownish-gray (10YR 4/2-2/2, rare 6/3). Very irregular, distorted and discontinuous laminations. Rare small to fine crystal filled vugs.
1303.0	1306.5	Oil shale, very rich: medium to dark brownish-gray (10YR 4/2-2/2) and black (2N). Faintly laminated and bedded to fine distorted laminations and loop structures. Common fine resinous to waxy black laminae in middle part (1304.6-1305.4 feet).
1306.5	1307.3	Oil shale, medium: dark to medium brownish-gray (10YR 3/2-5/2, rare 2/2) and olive-gray (5Y 5/2). Very irregular, discontinuous laminations and banding.
1307.3	1308.1	Oil shale, medium to lean: dark to light brownish-gray (10YR 3/2-6/3). Very irregular laminations and banding. Rare small to fine irregular crystalline masses.
1308.1	1311.6	Oil shale, medium: medium to dark brownish-gray (10YR 5/2-3/2); rare resinous, black. Very irregular, discontinuous and distorted laminations. Rare thin crystalline streaks and small irregular masses.
1311.6	1314.1	Oil shale, rich to very rich: medium to dark brownish-gray (10YR 4/2-2/2). Faintly laminated to bedded, some loop structure in upper part.
1314.1	1314.9	Oil shale, medium: medium to dark brownish-gray (10YR 4/2-2/2, rare 6/2). Very irregular and distorted laminations.
1314.9	1317.7	Oil shale, medium to lean: medium to dark brownish-gray (10YR 2/2-5/2), silty. Slightly irregularly laminated to regularly banded.
1317.7	1321.1	Marlstone and lean oil shale: light to medium brownish-gray (10YR 6/3-4/2), silty. Slightly irregular to very regular lamination and banding. Rare to some small lenses and fine streaks of chalky, very light brownish-gray (10YR 8/3) material and brown crystals.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1321.1	1321.6	Oil shale, medium: medium to light brownish-gray (10YR 4/2-6/2, rare 3/2). Distorted bedding. Rare gray granular streaks and small patches with limonitic stains. Uneven split.
1321.6	1323.6	Lean oil shale and marlstone; medium to light brownish-gray (10YR 4/2-6/2). Slightly irregular laminations and banding. Rare small chalky tan and brown crystalline lenses and streaks.
1323.6	1327.9	Oil shale, lean to medium: medium to dark brownish-gray (10YR 5/2-3/2, rare 2/2). Faintly laminated to banded and bedded. Rare thin to fine streaks, lenses and irregular bands of light to medium brown (10YR 7/4-5/4) silty porous tuff; some with crystals with spear and diamond-shaped faces. Matching ridges and grooves on parting surfaces. Sample of porous, crystalline tuff lense from 1326.3 feet: X-ray - dawsonite, norsethite, dolomite, quartz, siderotil?
1327.9	1333.0	Oil shale, rich to very rich: dark brownish-gray (10YR 3/2-2/2), rare to some fine black resinous to vitreous streaks and laminae. Faint irregular laminations and bedding.
1333.0	1335.2	Oil shale, rich: dark brownish-gray (10YR 3/2-2/2), very rare resinous black streaks, <u>silty texture</u> . Bedded to rarely laminated.
1335.2	1344.8	Oil shale, medium or rich, dark brownish-gray (10YR 3/3-3/2, some 2/2). Bedded to irregularly laminated. Common very large vugs (up to 3 inches), partly filled with limonite stained crystals. Some brown crystalline nahcolite masses (slight salty taste). Parting surfaces at 1336.4 feet are covered with gray, spongy crusts with some efflorescent white coating (sweet taste). A vug at 1344.7 shows remnants of mineral zoning with coarse nahcolite on outside, then massive pyrite and gray coating (like 1336.4 feet). Sample of crust from parting surfaces at 1336.4 feet: X-ray - dawsonite, siderotil, quartz, feldspar, dolomite, pyrite. Sample of partly dissolved vug filling from 1339.2 feet: X-ray - quartz, dolomite, feldspar, dawsonite, unidentified peaks. Sample of nahcolite mass from 1339.4 feet: X-ray - nahcolite; trace quartz, pyrite, dawsonite.

1327
to PR4

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1344.8	1352.7	Oil shale, medium to rich; medium to dark brownish-gray (10YR 4/2-2/2). Faintly laminated to bedded. Rare black resinous streaks. Very rare <u>small lenses and stringers of nahcolite</u> . Gray, spongy, sweet crusts on parting surfaces at 1349.0, 1350.8 and 1351.3 feet. A 10-mm, gray stringer with massive pyrite at 1349.7 feet.
Footage adjustment Core 10 1352.0		(Core 10 begins at 1352.0 feet)
1352.0	1354.4	Interbedded tuff and rich oil shale: light brownish-gray tuff (10YR 8/3-6/2) and medium to dark brownish-gray oil shale (10YR 5/2-2/2). Very irregular to contorted laminations and cross-cutting stringers, inclusions and broken laminae. Some <u>small crystal filled vugs and stringers in both shale and tuff</u> . Some fragments of tuff show graded bedding. 1352.0-1352.2 Shale 1352.2-1352.6 Shale and tuff 1352.6-1352.8 Tuff, some shale stringers 1352.8-1353.3 Tuff and shale 1353.3-1353.5 Tuff 1353.5-1354.2 Shale, some tuff 1354.2-1354.4 Tuff, some shale stringers
1354.4	1357.2	Shale, rich to very rich; dark brownish-gray to brownish-black (10YR 3/2-2/2, some 1/2), some resinous luster. Irregularly laminated to bedded. Regular shaly parting, hackly fracture. Rare disseminated nahcolite crystals from 1356.6-1356.8 feet. A vertical fracture with resinous coatings runs from 1356.6-1356.8. Sample of shale with disseminated dawsonite from 1356.6 to 1356.8 feet: X-ray - dolomite; some quartz, dawsonite.
1357.2	1359.6	Oil shale, medium to very rich; dark brownish-gray (10YR 3/2-2/2). Faint very fine laminations; shaly parting and some hackly fracture. Rare to common thin laminae and streaks of nahcolite from 1357.7 to 1359.1 feet. Sample of nahcolite laminae from 1358.6 feet: X-ray - calcite; trace quartz, dawsonite.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1359.6	1364.6	Oil shale, very rich: dark brownish-gray to brownish-black (10YR 2/2-1/2, rare 3/2), rare resinous to waxy streaks and laminae. Bedded to finely laminated. A 0.1-foot band of dark brownish-gray tuffaceous shale at 1361.4 feet. Shaly parting, some hackly fracture.
1364.6	1365.7	Oil shale, very rich: dark brownish-gray (10YR 3/2-2/2), some resinous laminae. Faint, irregular laminations and banding. Some very irregular fracture.
1365.7	1367.1	✓ Tuff: medium to light brownish-gray (10YR 4/3-6/3), silty texture, bedded. Rare, fine, irregular stringers of oil shale in top 0.5 foot. Rare small crystal filled vugs.
1367.1	1371.7	Oil shale, medium or rich: dark brownish-gray (10YR 3/2, some 2/2), silty texture, very rare waxy black streaks. Distorted bedding, irregular to hackly fracture. Common to very common lenses, streaks and irregular bands of medium to dark brownish-gray (10YR 5/3-3/3) tuff. Very rare small to fine crystalline vugs and streaks.
1371.7	1372.5	Oil shale, rich: dark brownish-gray (10YR 3/2-2/2). Bedded to faintly laminated. Very regular shaly to papery parting; hackly fracture.
1372.5	1373.0	Oil shale, medium or lean: medium to dark brownish-gray (10YR 5/2-3/2), some olive-gray (5Y 5/2). Irregularly laminated. Some shaly to papery parting. (Out of sequence?)
1373.0	1373.8	Oil shale, rich: dark to medium brownish-gray (10YR 2/2-4/2), some dark olive-gray (5Y 3/2). Regularly laminated to irregularly bedded. Hackly fracture.
1373.8	1375.0	Oil shale, medium: medium to dark olive-gray and brownish-gray (5Y 5/2-3/2 and 10YR 5/3-3/2), rare gray streaks (5N). Irregularly laminated to banded. Some hackly fracture. A very irregular (0.1 to 0.2 foot) and contorted tuff with rare brown crystalline masses at base.
1375.0	1378.1	Oil shale, medium: medium to dark brownish-gray (10YR 5/2-2/2). Very irregular, discontinuous laminations. Rare small light brownish-gray (10YR 6/3) tuff lenses (one near base is two inches long and one inch thick).

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1378.1	1380.9	Oil shale, very rich to medium; dark to medium brownish-gray (10YR 3/2-2/2 at top to 5/2-3/2 at base). Irregularly laminated to bedded. Rare, black, organic fossil-wood (?) molds. ✓ Light brownish-gray (10YR 7/3-6/2) laminated tuffaceous shale in lower 0.1 foot.
1380.9	1382.5	✓ Oil shale, lean, tuffaceous; medium brownish-gray (10YR 4/2-4/3) and olive-gray (5Y 5/2). Bedded to faintly laminated. Rare small crystalline spots and streaks.
1382.5	1383.2	Oil shale, very lean, tuffaceous; light to medium brownish-gray (10YR 6/2-4/2). Irregularly laminated and bedded to very complicated structure indicating injection, brecciation and partial replacement (?). Common irregular crystalline lenses and streaks.
1383.2	1384.6	✓ Oil shale, lean to medium, tuffaceous; dark to light brownish-gray (10YR 3/2-6/2). Bedded to irregularly laminated. Some very irregular stringers and injection sills of light brownish-gray tuff in dark shale, some suggestion of replacement. Very rare small crystal masses.
1384.6	1385.6	Oil shale, rich; medium to dark brownish-gray (10YR 4/2-2/2). Bedded to irregular and discontinuous laminations. Common to rare very fine crystals and crystalline streaks. Some light brownish-gray (10YR 6/3), tuffaceous shale in laminae and streaks.
1385.6	1388.6	✓ Oil shale, rich to very rich; medium to dark brownish-gray and brownish-black (10YR 4/2-2/2, some 1/2). Bedded to faint slightly irregular laminations. Hackly fracture. Rare to some very fine crystals and crystalline streaks. <i>illite</i>
1388.6	1389.6	Sample of shale with very fine disseminated crystals from 1386.7 feet; X-ray - quartz, dolomite, feldspar, illite, pyrite, dawsonite. Oil shale, lean or medium; medium to dark brownish-gray (10YR 5/2-2/2). Slightly irregularly laminated to bedded and streaked. Rare very fine disseminated crystals and small crystal masses.
1389.6	1390.6	Oil shale, lean; olive-gray (5Y 5/2) and medium to dark brownish-gray (10YR 5/2-3/2). Slightly irregular to very irregular laminations and

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
		streaked bedding. Hackly fracture. Rare fine crystalline streaks in shale with streaked bedding. A 10 to 20 mm, fine grained brownish-gray (10YR 5/3) irregular tuff band with fine shale stringers and fine crystalline streaks at 1390.0 feet.
1390.6	1396.1	Oil shale, medium: medium to dark brownish-gray (10YR 4/2-3/2). Bedded to streaked. Irregular to hackly fracture. Rare fine disseminated crystals and crystalline streaks.
1396.1	1396.9	Oil shale, lean or medium: light to dark brownish-gray (10YR 6/3-3/2). Irregular to broken laminations, some black streaks. Common thin lenses and streaks of gray crystalline material with pyrite in middle part.
1396.9	1398.2	Oil shale, rich: medium to dark brownish-gray (10YR 4/2-2/2). Irregularly laminated to banded. Very rare small crystalline lenses and fine streaks. Hackly fracture.
1398.2	1399.1	Oil shale, medium: medium to dark brownish-gray (10YR 5/3-3/2). Irregularly laminated to bedded and streaked. Irregular fracture. Rare to common fine crystalline masses and streaks.
1399.1	1400.0	Oil shale, very rich: medium to dark brownish-gray (10YR 4/2-2/2). Bedded and streaked to irregularly laminated. Hackly to irregular fracture. Very rare fine disseminated crystals.
1400.0	1402.0	Oil shale, very rich: dark brownish-gray (10YR 2/2-3/2), bedded. Irregular to hackly fracture, some very irregular parting. Uneven sample split.
1402.0	1403.0	Oil shale, rich: dark olive-gray (5Y 3/2) and medium to dark brownish-gray (10YR 4/2-3/2). Faintly bedded to irregularly laminated. A 2 to 3 mm, irregular vitreous organic lamina at base.
1403.0	1404.2	✓ Oil shale, lean, tuffaceous: light to medium brownish-gray (10YR 6/3-4/2). Bedded to irregularly laminated. Rare small crystalline masses.
1404.2	1407.1	✓ Oil shale, medium or lean, tuffaceous: medium to dark brownish-gray (10YR 5/3-3/2, rare 2/2). Bedded and streaked. Rare to common small crystal masses. Uneven split.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1407.1	1410.1	Oil shale, medium to very rich: dark brownish-gray to brownish-black (10YR 3/2-1/2). Irregularly laminated and streaked. Slightly irregular to irregular and hackly fracture. Rare small brown crystalline masses. Rare small hard massive black nodules with nahcolite and pyrite rims. Some fine disseminated crystals in lower part.
1410.1	1412.0	Missing.
Core 11 1412.0	1412.4	Oil shale, medium or rich: dark brownish-gray (10YR 3/2, some 2/2). Faint irregular distorted laminations and streaks. Rare small nahcolite vugs, some with pyrite rims. Irregular fracture.
1412.4	1413.7	Oil shale, very rich: dark brownish-gray and some brownish-black (10YR 3/2-2/2, some 1/2). Slightly irregular laminations. Hackly fracture. Some fine disseminated crystals elongated parallel to laminae. Very rare fine gray crystalline laminae.
1413.7	1414.5	Oil shale, rich: dark brownish-gray and some medium brownish-gray, tuffaceous streaks and lenses (10YR 3/2-2/2, some 4/3). Faintly laminated to bedded. Some very fine disseminated crystals.
1414.5	1416.0	Oil shale, lean: medium to dark brownish-gray (10YR 4/2-3/2, some 5/2) and olive-gray (5Y 4/2), distorted bedding. Irregular and some hackly fracture. Some lenses and irregular laminae of brownish-gray (10YR 5/3) tuff and tuffaceous shale in upper 0.4 foot. Rare small irregular crystalline vugs with pyrite.
1416.0	1417.0	Oil shale, lean: medium to dark olive-gray (5Y 4/2-3/2) and brownish-gray (10YR 4/3-2/2). Irregular distinct to gradational laminations and banding. Irregular and some hackly fracture. Rare small nahcolite vugs.
1417.0	1418.9	Oil shale, very lean: medium to dark brownish-gray (10YR 5/3-3/2) and some olive-gray (5Y 4/2). Irregularly laminated to bedded, distinct slightly irregular laminae from 1418.1 to 1418.6 feet. Slightly irregular and some hackly fracture. Rare small irregular nahcolite vugs.
1418.9	1419.3	Oil shale, medium: medium to dark brownish-gray (10YR 5/3-2/2). Distorted, discontinuous and broken laminations; rare loop structure. Some very irregular fracture. Rare small crystal filled vugs and streaks. Uneven sample split.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1419.3	1420.5	Oil shale, rich: dark brownish-gray to brownish-black (10YR 3/2-1/2, some 4/2). Streaked to distinctly banded and laminated. Some very irregular parting. <u>Rare irregular crystal filled vugs.</u>
1420.5	1423.5	Oil shale, very rich and rich: dark brownish-gray to brownish-black (10YR 2/2-1/2, some 4/2). Faint, slightly irregular laminations and bedding. Irregular to some slightly hackly fracture.
1423.5	1428.7	Oil shale, medium to very rich: brownish-gray to to brownish-black (10YR 4/2-1/2). Faintly laminated to bedded. Rare vitreous black streaks and gray granular calcite laminae in lower foot. Uneven sample split.
1428.7	1432.8	Oil shale, lean to very lean: medium and dark to light brownish-gray (10YR 4/2 and 2/2 to 6/2). Irregular laminations and bedding with some loop structure and imbricate displacement. Some gray (5N) laminae and bands. Fracture with varnish-like coating from 1429.4 to 1429.7 feet.
1432.8	1435.2	Marlstone: light to medium brownish-gray (10YR 7/2-5/2). Contorted and broken laminations. Fitting ridges and grooves on some parting surfaces. Some irregular laminae and streaks of light gray (5.5-6.0N) limestone. Uneven sample split.
1435.2	1437.0	<p>LS { Sample of limestone from 1434.3 feet: X-ray - unidentified peaks, some quartz. Fluorescence shows Ca and Ba. Effervesces in HCl.</p> <p>Missing.</p>
Core 12 1437.0	1441.0	Marlstone: light brownish-gray (10YR 7/2-6/2). Faint, irregular and distorted laminations. Some thin to fine oil shale laminae (distorted and broken to very smooth and regular). Common bands, laminae and streaks of <u>light gray limestone</u> . Uneven sample split. Fracture with varnish-like coating from 1438.6 to 1438.9 feet.
1441.0	1443.0	Oil shale, lean: light to dark brownish-gray (10YR 6/2-3/2). Thin to fine, slightly irregular laminations. Shaly parting. Common silty oil shale and <u>rare gray limestone</u> laminae.
1443.0	1447.5	Oil shale, lean: light to medium brownish-gray (10YR 6/2-4/2). Regular to irregular laminations. Common <u>light gray limestone laminae</u> .

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1447.5	1448.3	Oil shale, lean: light to rare dark brownish-gray (10YR 7/2-4/2, rare 3/2). Distinct, slightly distorted and broken laminations.
1448.3	1449.5	Oil shale, lean: light to medium brownish-gray (10YR 7/2-4/2). Slightly irregular laminations. Some light gray limestone laminae.
1449.5	1451.1	Oil shale, very lean to lean; very light to medium brownish-gray (10YR 8/2-4/2). Distinct, irregular laminations. Some irregular limestone laminae and streaks.
1451.1	1456.8	Marlstone: light brownish-gray (10YR 7/2-6/2). Slightly irregular to distorted and discontinuous laminations. Very common irregular laminae, streaks and stringers of light gray (5.5-6.0N) limestone. Some medium to dark brownish-gray oil shale on parting surfaces and in laminated zones up to 2 inches thick.
1456.8	1457.8	Oil shale, medium to very lean: light to medium brownish-gray (10YR 7/2-4/2, rare 3/2), silty. Irregularly laminated to faintly bedded.
1457.8	1463.0	Marlstone and siltstone: light brownish-gray (10YR 7/3-7/2), irregularly laminated. Much light to dark brownish-gray oil shale in zones up to 0.6 foot thick. Very common to rare light gray limestone.
	1457.8-1459.0	Marlstone and limestone
	1459.0-1459.6	Oil shale, very irregular laminations
	1459.6-1460.2	Marlstone and distinctly laminated oil shale (50:50)
	1460.2-1460.6	Silty marlstone
	1460.6-1460.8	Oil shale; distinct irregular laminations
	1460.8-1462.0	Marlstone and siltstone; some fine irregular oil shale laminae
	1462.0-1463.0	Marlstone and siltstone; common slightly irregularly laminated rich oil shale (10%)
1463.0	1464.5	Oil shale, medium to very lean; light to medium brownish-gray (10YR 7/3-4/2, rare 3/2). Irregular and distorted laminations to faint bedding.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1464.5	1476.5	Oil shale, medium to lean: medium to dark brownish-gray (10YR 5/2-3/2, rare 6/3 to 2/2). Faintly bedded to streaked and irregularly laminated. Rare irregular gray (4N) streaks in lower 4 feet.
1476.5	1479.2	Oil shale, very lean to lean: light to medium brownish-gray (10YR 6/2-4/2). Irregularly laminated to bedded and streaked. Very common irregular light gray limestone laminae in upper part.
1479.2	1483.1	Oil shale, very lean: light to medium brownish-gray (10YR 6/3-4/2). Irregularly laminated, streaked and banded. Some light brownish-gray (10YR 6/2) limestone.
1483.1	1483.9	Marlstone: light brownish-gray (10YR 7/2-6/2). Irregular, distorted laminations. Some fine light gray limestone laminae.
1483.9	1485.3	Oil shale, very lean and lean: light to medium brownish-gray (10YR 7/2-4/2). Irregular, distorted laminations to faint streaked bedding. Some gray limestone laminae in upper 0.4 foot.
1485.3	1488.3	Oil shale, very lean; and siltstone, calcareous: light to dark brownish-gray (10YR 7/2-3/2). Fine, slightly irregular and distorted to contorted laminations and some banding.
1488.3	1495.5	Oil shale, lean to very lean; and siltstone, calcareous: light to medium brownish-gray (10YR 7/2-4/2). Massive to faint streaked bedding; some fine irregular distorted laminations.
1495.5	1496.0	Missing.
Core 13 1496.0	1503.3	Oil shale, lean to very lean; and siltstone, calcareous: light to medium brownish-gray (10YR 7/2-4/2). Faint streaked bedding and irregular, distorted to contorted laminations. 1496.0-1496.6 Streaked bedding 1496.6-1497.3 Distorted to contorted laminations, much siltstone 1497.3-1499.9 Faintly bedded to streaked 1499.9-1500.8 Same, but darker 1500.8-1501.2 Distorted to very contorted laminations 1501.2-1502.0 Massive to very faintly bedded 1502.0-1503.3 Bedded to streaked

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1503.3	1507.0	Oil shale, very lean to medium; light to medium brownish-gray (10YR 6/3-4/2), very <u>silty</u> in part. Streaked bedding to irregular, distorted laminations; rare loop structure. An 8 x 18 mm <u>vug</u> filled with brown crystals at 1506.1 feet. Rare hackly fracture.
1507.0	1511.0	Sample of <u>vug</u> filling from 1506.1 feet: X-ray - dawsonite, calcite, quartz; trace dolomite. Oil shale, medium or rich; medium to dark brownish-gray (10YR 4/2-3/2, some 2/2). Bedded to faintly streaked. Rare to some small lens-shaped and irregular vugs filled with dawsonite and some pyrite.
1511.0	1513.6	Oil shale, rich to very rich; dark brownish-gray to black (10YR 3/2-1/2) some (2N). Faintly laminated to bedded. Some very irregular fracture. Very rare small to <u>fine dawsonite vugs</u> in upper 0.5 foot. Rare fine vitreous black organic streaks in lower 0.3 foot.
1513.6	1514.6	Oil shale, rich to medium; dark to medium brownish-gray (10YR 3/2 and 2/2 to 4/2), bedded. Some small dawsonite vugs in lower 0.7 foot.
1514.6	1516.4	Oil shale, lean; light to medium brownish-gray (10YR 6/3-4/2) and some medium to dark olive-gray (5Y 4/2-2/2). Irregular, distorted to contorted and broken laminations; some imbricate faulting and loop structure. Rare to common light gray (6.5N) <u>limestone laminae</u> . Several, very irregular large dense brown dolomite lenses with some radiating bladed crystal bundles at 1516.1 feet.
1516.4	1517.4	Oil shale, medium; medium to dark brownish-gray (10YR 4/2-3/2, some 2/2). Faintly streaked bedding to irregular laminations. Rare small dawsonite lenses in upper part.
1517.4	1520.4	Oil shale, very rich and rich; black (2N) to dark brownish-gray (10YR 1/2-3/2). Streaked bedding to irregular laminations; some thick banding in lower part. Some very irregular fracture. Very rare small brown crystalline lenses (dawsonite).
1520.4	1523.0	Oil shale, rich; dark brownish-gray (10YR 3/2-2/2, rare 1/2). Streaked bedding to faint laminations. Some very irregular fracture. Rare to some fine streaks and small lenses of dense dark brown material with light brown crystalline rims.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1523.0	1528.3	Oil shale, rich and very rich; dark brownish-gray (10YR 3/2-2/2, rare 1/2 and 4/2). Regular to irregular and distorted, fine, faint laminations. Rare streaks and lenses as above. Very irregular fracture.
1528.3	1532.5	Oil shale; medium: medium to dark brownish-gray (10YR 4/3-3/2, rare 5/2). Irregularly laminated to faintly bedded and streaked. Very irregular fracture; uneven sample split. Common to rare streaks and lenses of dense, dark brown to black material with light brown, crystalline rims and pyrite.
1532.5	1533.2	Sample of shale with resinous black lenses from 1532.0-1532.1 feet; X-ray - quartz, analcite, illite, pyrite, dolomite. Oil shale, rich: medium to dark brownish-gray (10YR 4/3-2/2). Irregular, distorted to contorted laminations. Very irregular fracture; uneven sample split. Some, very irregular, small vugs filled with brown crystals -- some with hard dense black cores.
1533.2	1534.1	Oil shale, medium: medium to dark brownish-gray (10YR 5/2-3/2); some light brownish-gray (10YR 6/2) silty laminae. Contorted and broken laminations, some poorly formed loop structure. Very rare irregular, brown crystalline masses and very fine disseminated bladed crystals.
1534.1	1540.3	Oil shale, very rich: dark brownish-gray to brownish-black (10YR 3/2-1/2, rare 4/2). Faint, irregular to regular, fine laminations. Some very irregular fracture and uneven sample split.
1540.3	1543.5	Oil shale, very rich to rich: dark to medium brownish-gray (10YR 2/2-4/2). Very faint bedding. Very irregular thick shaly to papery parting, some hackly fracture. Rare to very common (1541.7-1542.2) small to fine tan lenses. Core very badly broken up, some mixed up. Sample split and lengths unreliable--especially 1540.3-1541.3 feet and 1542.5-1543.5 feet.
1543.5	1544.5	Oil shale, rich: brownish-gray (10YR 4/2, some 5/2). Faintly bedded to regularly laminated. Very irregular fracture; uneven sample split.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1544.5	1546.9	Oil shale, medium to lean; medium to light brownish-gray (10YR 4/2-6/2). Faint to distinct, slightly distorted laminations; some faint bedding (1544.8-1545.4). Common gray <u>silty limestone</u> laminae in middle part.
1546.9	1554.7	Oil shale, lean to slightly silty marlstone; medium to light brownish-gray (10YR 5/2-7/2, rare 4/2). Irregular, contorted and regular smooth laminations to faintly bedded and massive. <u>Conchoidal fracture</u> in <u>silty marlstone</u> . Common <u>silty limestone</u> laminae. Some tight faults with as much as 14 mm apparent normal displacement.
1554.7	1558.0	Missing.
Core 14 1558.0	1562.0	Oil shale, lean and slightly silty marlstone; alternating intervals of light to dark brownish-gray (10YR 6/2-3/2), slightly distorted to imbricate faulted, oil shale laminae with light gray (6.5N) <u>granular limestones</u> and light brownish-gray (10YR 7/2-6/2) <u>silty faintly bedded to massive marlstone</u> with contorted and broken oil shale stringers. 1558.0-1558.9 Oil shale 1558.9-1560.4 Marlstone and oil shale 1560.4-1562.0 Marlstone and oil shale
1562.0	1567.1	Oil shale, lean; light to dark brownish-gray (10YR 7/2-3/2). Distinct, slightly distorted to contorted and faulted laminations; some loop structure. Rare to some gray <u>granular limestone</u> laminae down to 1566.0 feet. Some very irregular fracture and uneven sample split.
1567.1	1568.4	Marlstone: light brownish-gray (10YR 7/2-6/2). Common contorted, broken and folded stringers and laminae of oil shale and <u>granular limestone</u> .
1568.4	1573.2	Oil shale, lean; light to dark brownish-gray (10YR 7/2-3/2). Distinct, contorted to slightly distorted and faulted laminations; some banding and large loop structures. Rare to common, gray, <u>granular, limestone laminae</u> .
1573.2	1574.7	Marlstone: medium to light brownish-gray (10YR 5/2-7/2), massive. Some contorted stringers of oil shale. Rare, irregular patches of gray <u>limestone</u> .

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1574.7	1577.8	Oil shale, lean to medium; light to dark brownish-gray (10YR 7/2-3/2). Distorted and faulted laminations. Common laminae and rare bands of gray (6-5N) limestone. Some very irregular fracture and uneven sample split.
1577.8	1580.0	Oil shale, medium; medium to dark brownish-gray (10YR 4/2-3/2, some 5/2). Irregularly laminated and bedded. Rare to some small irregular tan chalky lenses and streaks. Rare irregular gray laminae. Very rare small hard black lenses. Some very irregular fracture and uneven sample split.
1580.0	1580.3	Oil shale, very rich; dark brownish-gray to brownish-black (10YR 3/2-1/2) interfingering with brownish-gray (10YR 4/2), contorted stringers. Some small hard dark resinous lenses. Some small irregular tan chalky masses with radiating crystals. Rare vitreous black organic streaks.
1580.3	1581.2	Sample of shale with dark lenses and tan masses from 1580.0-1580.3 feet: X-ray - quartz, dolomite, analcite, dawsonite. Oil shale, medium; light to dark brownish-gray (10YR 6/3-2/2). Irregular, distorted and faulted laminations. Rare small to large irregular tan masses as above (one at 1580.9 feet is more than 20 mm wide).
1581.2	1582.4	Oil shale, rich to very rich; brownish-gray to brownish-black (10YR 4/2-1/2). Irregular faint to very faint laminations. Very irregular to hackly fracture; uneven sample split. Rare to some tan streaks and irregular masses; some with radiating brown crystal aggregates. Sample of shale with tan masses and radiating crystals from 1581.2-1582.4 feet: X-ray - analcite, dawsonite, quartz, dolomite.
1582.4	1586.0	Oil shale, very rich; black (2N) and brownish-black to dark brownish-gray (10YR 1/2-2/2). Very faintly bedded to laminated. Rare small to fine dark lenses and streaks with pyrite streaks in upper part; some with chalky tan coatings. Very rare fine brown crystalline masses. Some irregular fracture, but fairly good sample split.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1586.0	1589.5	Oil shale, very rich to rich; olive-black to dark olive-brown (2.5Y 1/2-3/2). Very faint to faint laminations. Very rare fine tan granular streaks. A tar coated fracture surface with brown to amber crystal (?) inclusions at 1587.7 feet. A thin gray silty injected stringer with very fine disseminated pyrite at 1588.9 feet.
		{ Sample of silty stringer from 1588.9 feet: X-ray - pyrite, unidentified peaks (same as 2038.1 feet).
1589.5	1593.5	Oil shale, rich: dark to medium olive-brown (2.5Y 2/2-4/2). Faint, regular to irregular laminations and banding. Some gray limestone laminae.
1593.5	1597.9	Oil shale, rich: dark to medium brownish-gray (10YR 2/2-4/2). Irregularly laminated and banded. Rare dense brownish-gray (10YR 4/3) dolomite laminae.
1597.9	1600.7	Oil shale, medium or rich: medium to dark brownish-gray (10YR 4/2-2/2), some olive-brown (2.5Y 4/2), silty texture. Irregularly laminated and banded to very faintly bedded.
1600.7	1601.6	Oil shale, lean, light to medium brownish-gray (10YR 6/2-4/2, rare 3/2). Irregular, distorted and some displaced laminations; some loop structure. Some irregular gray limestone laminae. A diagonal fracture with resinous coatings at 1601.4 feet.
1601.6	1606.3	Marlstone and mudstone: light brownish-gray (10YR 6/2-7/2). Irregular, distorted to contorted laminations. Very common to rare gray limestone laminae and very irregular vertical stringers. Rare fine brownish-black distorted to stylolitic shale partings. Badly broken up; probably mixed up.
1606.3	1606.7	Oil shale, lean: light to medium brownish-gray (10YR 6/2-5/2, rare 3/2). Irregular and distorted laminations. Common gray limestone laminae. Appears out of sequence.
1606.7	1607.3	✓ Mudstone: light brownish-gray (10YR 6/2-7/2), very faintly bedded. May be out of sequence.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1607.3	1608.2	Oil shale, lean; to marlstone: light and some medium brownish-gray (10YR 6/2-7/2, some 5/2). Irregular, distorted and displaced laminations. Some to very common gray limestone laminae. May be out of sequence.
1608.2	1608.6	<u>Limestone</u> : light gray (6N). Very common irregular and slightly distorted light to medium brownish-gray (10YR 6/2-5/2) marlstone laminae. <u>Appears to be out of sequence.</u>
1608.6	1609.4	Oil shale, very lean: light to medium brownish-gray (10YR 7/2-5/2, rare 3/2 partings). Distorted and some displaced laminations; some loop structure.
1609.4	1611.0	<u>Mudstone</u> : light brownish-gray (10YR 6/2-7/2), irregularly laminated. Common gray limestone laminae and very irregular stringers.
1611.0	1612.7	Marlstone and <u>mudstone</u> : light brownish-gray (10YR 6/2-7/2) and rare, thin laminae and fine partings of dark brownish-gray (10YR 3/2-2/2). Irregular, distorted laminations. Some to rare gray limestone laminae.
Core 15 1612.7	1624.9	Break between cores not marked and not obvious. <u>Marlstone and mudstone</u> : light brownish-gray (10YR 6/2-7/2); rare, fine, irregular to stylonitic, brownish-black partings. Irregular and distorted to contorted laminations; some very faintly bedded to massive. Common to rare gray limestone laminae and irregular stringers. Vertical fracture with varnish-like stains at 1623.7 feet.
1624.9	1628.8	Marlstone, <u>silty</u> : light to very light brownish-gray (10YR 6/2-8/2, rare 5/2); rare to some brownish-black partings. Slightly distorted and some contorted laminations. Rare irregular gray limestone laminae and irregular stringers. Rare vertical fractures with varnish-like stains.
1628.8	1629.4	Marlstone, <u>silty</u> : light and some medium brownish-gray (10YR 6/2-7/2, some 5/2); rare, fine brownish-black partings. Distorted laminations, some loop structures. Common gray limestone laminae. Sharp irregular contact with oil shale below.
1629.4	1630.8	Oil shale, medium: dark to medium olive-gray (2.5Y 3/2-4/2), silty texture. Distorted bedding with some irregular bands and stringers of olive-gray (2.5Y 5/2) shale.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1630.8	1637.7	Oil shale, lean to medium: olive-gray (2.5Y 5/2-4/2), silty texture. Distorted to contorted bedding with rare to common irregular dark brownish-gray (10YR 3/2-2/2) bands, laminae, stringers and streaks.
1637.7	1638.8	Oil shale, medium or rich: medium to dark brownish-gray (10YR 5/2-2/2); some irregular olive-gray (2.5Y 5/2) bands and stringers; silty texture. Irregularly bedded and streaked. Parting surface just above base is coated with black to dark gray crusts with bright yellow-orange (10YR 7/8) stains and white efflorescent powder (sweet taste). Sample of coating from parting surface at 1638.7 feet: X-ray - small amounts of pyrite, quartz, dolomite.
1638.8	1640.8	<u>Mudstone</u> : medium to light brownish-gray (10YR 5/2-6/3), calcareous. Irregularly laminated to streaked and very faintly bedded. Some irregular laminae and rare thin bands of medium to dark brownish-gray (10YR 4/2-2/2) oil shale (decreasing toward base). Very rare, small, brown, crystalline masses.
1640.8	1641.4	<u>Mudstone</u> : light to medium brownish-gray (10YR 6/3-5/2). Very irregular, branching and contorted stringers of dark brownish-gray (10YR 3/2-2/2) oil shale.
1641.4	1645.4	<u>Mudstone</u> : light brownish-gray (10YR 6/2-7/3), calcareous. Faint, irregular, contorted laminations with some loop structure to faintly bedded. Rare, irregular to contorted laminae and bands (up to 20 mm) of medium to dark brownish-gray (10YR 4/2-2/2), silty textured oil shale. A vertical fracture coated with black to brown organic material runs from 1643.5 to 1644.9 feet (tightly cemented in some parts).
1645.4	1646.8	Oil shale, lean, grading to mudstone at bottom: medium to light brownish-gray (10YR 4/2-6/3). Irregular distorted laminations to faint bedding.
1646.8	1647.6	Oil shale, lean: medium to dark brownish-gray (10YR 5/2-3/2), silty textured. Irregularly laminated and streaked to faintly bedded. Very rare small dark brown crystalline masses. Sample of dark brown crystalline mass from 1647.3 feet: X-ray - <u>cryolite</u> .

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1647.6	1648.8	Mudstone: light brownish-gray (10YR 6/2-6/3), faintly bedded. Some medium to dark brownish-gray (10YR 4/2-3/2) very irregular laminae and interfingering stringers of oil shale. A 0.2-foot, vertical fracture with varnish-like coatings at 1648.0 feet.
1648.8	1649.7	Oil shale, lean to medium: medium to dark brownish-gray (10YR 5/2-3/2). Irregular, distorted laminations to streaked bedding. Brown crystalline crusts on parting surface at 1649.3 feet. Very rare vitreous black organic streaks.
1649.7	1652.8	Mudstone: light brownish-gray (10YR 6/2-7/3). Irregularly bedded and streaked. Some irregular stringers of dark brownish-gray (10YR 3/2) oil shale in lower 0.1 foot. Rare to common fine seams of varnish-like material run horizontally and diagonally across the core. Some faint laminae are contorted in overturned folds. Rare very irregular gray silty limestone stringers. Some bedding makes an angle of about 60 degrees with the edge of the core.
1652.8	1653.7	Oil shale, lean: brownish-gray (10YR 5/2-5/3), silty. Distorted bedding and some faint irregular laminations. Very irregular parting and fracture.
1653.7	1654.5	Oil shale, medium: medium to dark brownish-gray (10YR 5/2-3/2), silty. Streaked to very irregular, distorted laminations and stringers. Rare small to fine brown crystalline masses.
1654.5	1655.2	Oil shale, lean: light to medium and some dark brownish-gray (10YR 6/2-5/2, some 3/2), very silty. Distorted to very contorted, folded and overturned laminae and stringers.
1655.2	1655.8	Oil shale, lean or medium: dark to medium brownish-gray (10YR 3/2-5/2), silty. Irregular, distorted laminations. Rare small brown crystalline masses. Very irregular fracture.
1655.8	1656.2	Oil shale, medium: dark to medium and some light brownish-gray (10YR 2/2-4/3, some 6/2), tuffaceous in part. Irregular, distorted to contorted laminations (appears to be an overturned fold with laminae repeated above and below an axis through 1656.1 feet). Common small tan granular crystal masses.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1656.2	1656.6	Oil shale, very rich; brownish-black to dark brownish-gray (10YR 1/2-2/2). Very faintly bedded to finely laminated.
1656.6	1657.1	Oil shale, rich; dark brownish-gray (10YR 3/2-2/2). Very faint, irregular laminations and streaks. Very common, fine streaks and specks of tan to dark brown crystalline material.
1657.1	1658.3	Oil shale, medium or rich; dark olive-gray (5Y 2/2-3/2) and dark to medium brownish-gray (10YR 3/2-4/2). Faint, irregular laminations. Some lenses, streaks and specks of tan to brown crystalline material with very fine pyrite. Very irregular fracture.
		Sample of tan and brown lens with pyrite from 1657.3 feet: X-ray - quartz, analcite, dawsonite, dolomite, pyrite.
1658.3	1661.9	Oil shale, medium and rich; dark to medium brownish-gray (10YR 3/2-4/2, some 2/2) and some dark olive-gray (5Y 2/2-3/2). Irregularly laminated and streaked. Some to common tan to dark brown crystalline lenses, specks and streaks. Irregular to hackly fracture.
1661.9	1663.0	Oil shale, medium or lean; medium to dark brownish-gray (10YR 5/2-2/2) and some olive-gray (5Y 4/2). Irregularly laminated and streaked. Rare tan to dark brown spots and streaks.
1663.0	1663.9	Oil shale, medium; medium to dark brownish-gray (10YR 4/2-2/2). Irregularly laminated and streaked. Dark gray and bright yellow-orange crusts on parting surfaces 1/2-inch down from top (very slight sweet taste). Rare tan to dark brown streaks and spots.
1663.9	1664.5	Oil shale, lean or medium; medium to dark olive-gray (5Y 5/2-2/2) and medium to dark brownish-gray (10YR 5/3-3/2). Irregular to slightly contorted laminations. Very rare tan spots and lenses. Some contorted black waxy to dull organic streaks. Rare yellow-orange stains.
1664.5	1666.5	Oil shale, medium; medium to dark brownish-gray (10YR 4/3-3/2) and medium to dark olive-gray (5Y 4/2-3/2). Bedded and streaked to irregularly laminated. Rare tan to dark brown streaks and spots.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1666.5	1674.4 ✓	Oil shale, medium or rich and lean: dark to medium brownish-gray (10YR 2/2-5/3) and dark to medium olive-gray (2.5Y 3/2-4/2). Very irregular, slightly distorted to contorted laminations. Some overturned folds (1668.1, 1669.6, 1671.6, and 1672.7 feet). Rare to some tan specks, lenses and streaks. A 0.1-foot brownish-gray (10YR 4/2) dense tuffaceous (?) band at 1667.5 feet. A 0.4-foot brownish-gray dense tuffaceous (?) band with some faint distorted laminae at 1668.9 feet. A 0.5-foot zone of brownish-gray tuffaceous (?) laminae and bands with irregular dark brownish-gray oil shale stringers at 1673.7 feet.
	1666.5-1667.2	(2.5Y 4/2-3/2) and (10YR 4/3-3/2, rare 2/2)
	1667.2-1667.8	(10YR 4/2-3/2, rare 2/2) and (2.5Y 4/2, rare 3/2)
	1667.8-1668.9	(2.5Y 4/2-3/2, rare 2/2) and some (10YR 4/2-3/2)
	1668.9-1669.3	(10YR 4/2, very rare 3/2), <u>tuffaceous</u> (?)
	1669.3-1671.6	(2.5Y 4/2-3/2, rare 2/2) and some (10YR 4/2-3/2, rare 2/2)
	1671.6-1672.1	(10YR 5/3-3/2, rare 2/2), <u>tuffaceous</u> (?)
	1672.1-1673.7	(2.5Y 4/2-3/2, rare 2/2) and rare (10YR 4/2-3/2)
	1673.7-1674.2	(10YR 4/2-2/2)
	1674.2-1674.4	(10YR 3/2, some 4/2-2/2)
Core 16		(Footage adjustment)
1674.0	1674.9	Oil shale, lean: medium to dark olive-gray (2.5Y 5/2-3/2) and some medium to light brownish-gray (10YR 5/2-6/2, rare 3/3), very calcareous. Irregular, distorted laminations and streaks to irregular banding. Rare small tan specks, lenses and stringers--some with brown watery crystals. [Sample of stringers with brown crystals from 1674.1 feet: X-ray - analcite, quartz, dawsonite.
1674.9	1683.9	Oil shale, medium and lean: light to dark brownish-gray and olive-gray (10YR 6/2-2/2 and 2.5Y 6/2-3/2). Irregular and distorted to very contorted laminations, streaks and rare bands. Rare to some tan spots and stringers.
	1674.9-1679.5	(10YR 5/2-2/2) and (2.5Y 6/2-3/2)
	1679.5-1681.0	(2.5Y 6/2-4/2)
	1681.0-1683.9	(10YR 6/2, 3/2, rare 2/2) some (2.5Y 5/2-4/2)

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1683.9	1685.1	Oil shale, rich: medium to dark brownish-gray (10YR 4/2-2/2). Irregularly laminated to faintly bedded. Rare tan brown and black cherty spots. Very rare waxy black organic streaks. Uneven sample split.
1685.1	1685.8	Oil shale, very rich: dark brownish-gray and some brownish-black (10YR 2/2-3/2, some 1/2). Faint irregular distorted laminations. Rare fine vitreous black organic streaks.
1685.8	1686.7	Oil shale, rich: medium to dark brownish-gray (10YR 4/2-2/2). Irregularly laminated and streaked. Rare small tan to black cherty nodules.
1686.7	1688.6	Oil shale, very rich: brownish-black to brownish-gray (10YR 1/2-4/2). Very irregular faint laminations. Rare irregular waxy patches. Very rare cherty nodules.
1688.6	1692.0	Oil shale, very rich: brownish-black and dark brownish-gray (10YR 1/2-2/2). Fine regular laminations. Common very fine light-colored crystalline streaks and laminae. Shaly to papery parting; hackly fracture.
1692.0	1693.0	Oil shale, very rich: dark brownish-gray (10YR 2/2-3/2). Very faint, regular laminations. Shaly to papery parting. Sample very badly broken up and mixed up; uneven sample split.
1693.0	1694.6	Oil shale, very rich: dark brownish-gray to brownish-black (10YR 3/2-1/2). Very faint regular laminations. Shaly parting. Rare very fine light crystalline laminae and streaks.
1694.6	1697.7	Oil shale, rich: medium to dark brownish-gray and some brownish-black (10YR 5/3-2/2, some 1/2). Distinct, very irregular laminations. Rare tan to dark brown nodules and very irregular stringers. Rare small irregular masses of light colored granular pyrite. Sample from 1694.6 to 1695.3 feet is badly broken up and mixed up.
1697.7	1700.5	Oil shale, very rich: brownish-black and dark brownish-gray (10YR 1/2-2/2). Very faint slightly irregular laminations to faint bedding. Some very fine light crystalline laminae in lower part. Very rare fine vitreous black organic streaks. Shaly fracture; uneven split.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1700.5	1703.1	Oil shale, very rich: dark brownish-gray (10YR 2/2-3/2). Very faint laminations. Very rare small gray silty lenses and stringers. Irregular shaly to papery parting. Some parts badly broken up and mixed up; uneven sample split.
1703.1	1704.5	Oil shale, very rich: brownish-black to dark brownish-gray (10YR 1/2-3/2). Slightly irregular laminations. Slightly irregular shaly parting. Uneven sample split.
1704.5	1706.5	Oil shale, rich to medium: dark to medium and rare light brownish-gray (10YR 2/2-5/2, rare 7/2). Bedded to irregularly laminated. Very irregular shaly parting. Very badly broken up and mixed up; uneven sample split.
1706.5 Core 17	1707.0	Missing.
1707.0	1711.6	Oil shale, lean: light to dark brownish-gray (10YR 7/2-3/2), light to medium olive-gray (2.5Y 6/2-5/2) and some light to medium gray (7-4N). Distinct very regular, smooth to slightly distorted and displaced laminations. Very irregular conchoidal fracture. Badly broken up and somewhat mixed up; uneven sample split.
1711.6	1720.8	Oil shale, medium to rich: light to medium olive-gray (2.5Y 6/2-4/2) and medium to dark brownish-gray (10YR 5/2-3/2). Faint, irregular laminations. Shaly to papery parting. Rare dull to resinous black organic streaks and fossil casts. Rare glossy shear surfaces with slickensides. Badly broken up; uneven sample split.
1720.8	1725.1	Oil shale, rich: dark to medium brownish-gray (10YR 2/2-4/2, rare 1/2). Faintly bedded and streaked to irregularly laminated and banded. Slightly irregular thick shaly parting. Very rare small cryolite masses.
1725.1	1726.3	Oil shale, medium: medium to light brownish-gray (10YR 4/2-7/3) and some olive-gray (2.5Y 6/2-4/2). Distinct contorted, discontinuous and imbricate faulted laminations; some loop structure.
1726.3	1726.9	Oil shale, medium or rich: medium to dark and rare light brownish-gray (10YR 4/3-3/2, rare 2/2 and 6/2). Faint contorted laminations and streaks. Rare contorted dark dense stringers and brown crystalline masses.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1726.9	1727.4	Oil shale, medium; light to medium olive-gray and brownish-gray (2.5Y 6/2-4/2 and 10YR 4/2-7/3). Distinct contorted, discontinuous and imbricate faulted laminations.
1727.4	1728.7	Oil shale, rich: medium to dark and rare light brownish-gray (10YR 4/3-2/2, rare 7/3-5/2). Distinct contorted laminations and banding to distorted laminations and streaks. Rare crystalline vugs and streaks, and black cherty lenses.
		[Sample of shale with crystalline material from 1727.7-1729.8 feet: X-ray - analcite; some feldspar, quartz.
1728.7	1729.0	Oil shale, very rich: dark brownish-gray (10YR 3/2-2/2). Faint, distorted streaks and laminations. Rare small crystalline vugs.
1729.0	1729.8	Oil shale, medium: medium to dark brownish-gray (10YR 4/2-3/2, some 2/2). Bedded and streaked to irregularly laminated. Rare small crystalline vugs.
1729.8	1731.9	Oil shale, rich: light brownish-gray to brownish-black (10YR 5/3-2/2, some 6/3 and 1/2). Very irregular laminations, lenses, streaks and braided stringers. Rare crystalline masses and black cherty lenses.
1731.9	1734.5	Oil shale, rich to medium: dark to light brownish-gray (10YR 3/2-6/3, rare 2/2). Irregular, distorted to very contorted laminations and streaks. Rare, small, crystalline lenses. Laminations from 1734.1-1734.5 feet show an intricately faulted overturned fold.
1734.5	1736.9	Oil shale, medium or rich: medium to dark and rare light brownish-gray (10YR 4/2-3/2, rare 6/3 and 2/2). Irregular distorted laminations and streaks to very faint bedding. Rare to some small crystalline spots and streaks.
1736.9	1740.8	Oil shale, very rich: black (2N) and brownish-black to dark brownish-gray (10YR 1/2-2/2). Bedded to faintly laminated. Shaly parting. Rare crystalline spots and streaks with pyrite rims. Some parts badly broken up; uneven sample split.
		[Sample of shale with dark crystalline streaks with pyrite from 1737.0 feet: X-ray - quartz, illite, pyrite; some analcite, feldspar, dolomite.

- sam. of 1730 missing

1730 and X-ray trace

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Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
1740.8 Core 18	1746.0	Missing.
1746.0	1750.8	Oil shale, very rich; brownish-black to dark brownish-gray (10YR 1/2-2/2, rare 3/2). Faint bedding to slightly irregular laminations. Shaly to papery parting. Rare crystalline stringers with pyrite. Badly broken up into small pieces; uneven sample split.
1750.8	1754.2	<p>{ Sample of shattered shale from 1748.3 feet: X-ray - illite, quartz, dolomite.</p> <p>Oil shale, very rich; brownish-black to dark brownish-gray (10YR 1/2-3/2, rare 4/2). Faint to very faint bedding, streaks and irregular laminations. Irregular thick shaly parting. Very rare small brownish-gray crystalline masses.</p>
1754.2	1756.7	Oil shale, medium to lean; medium to dark and some light brownish-gray (10YR 4/2-3/2, some 6/3, rare 2/2). Distinct irregular, distorted and displaced laminations to faint contorted bedding. Rare dark crystalline spots. Upper 0.3 foot and lower 0.5 foot very tuffaceous. Sharp contacts at top and bottom.
1756.7	1759.1	Oil shale, very rich; dark brownish-gray to brownish-black (10YR 3/2-1/2). Very faintly bedded. Irregular shaly to papery parting. Rare sparkly crystalline lenses with pyrite. Some very fine crystalline streaks in lower part. Very badly broken up; shatters and falls to pieces on splitting. Uneven sample split.
1759.1	1760.0	<p>{ Sample of large, brown to smoky gray, crystalline lens from 1757.8 feet: X-ray - quartz, ferroan (magnesian siderite), pyrite.</p> <p>Oil shale, medium; medium to dark brownish-gray (10YR 4/2-3/2, some 2/2). Very faintly bedded to irregularly laminated and streaked. Rare dark crystalline stringers. Irregular fracture; uneven sample split.</p>
1760.0	1764.0	Oil shale, very rich; dark brownish-gray to brownish-black (10YR 3/2-1/2). Very faintly laminated and streaked. Papery parting. Rare to common fine light gray crystalline streaks and irregular laminae. Very badly broken up; uneven sample split.

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Drill cutting and core samples of Equity Oil Company's Ebler
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From	To	Description
1764.0	1764.5	Oil shale, rich; dark brownish-gray (10YR 3/2-2/2). Very fine regular laminations. Irregular conchoidal fracture.
		Sample of shale from 1764.3 feet: X-ray - dolomite, quartz.
1764.5	1765.5	Oil shale, very rich; dark brownish-gray to brownish-black (10YR 3/2-1/2). Very faintly laminated. Papery to shaly parting. Very badly broken up.
1765.5	1766.5	Oil shale, rich; dark to light brownish-gray (10YR 2/2-6/2). Irregular, distorted and displaced laminations and distinct banding. Upper 0.2 foot is tuffaceous.
1766.5	1767.0	Oil shale, medium; dark brownish-gray (10YR 3/2, rare 2/2). Faintly laminated to very faintly bedded.
1767.0	1768.3	Oil shale, medium; medium to dark brownish-gray (10YR 5/2-2/2) and rare olive-gray (2.5Y 5/2-4/2). Irregular to discontinuous, distorted laminations.
1768.3	1772.0	Oil shale, medium; light to dark brownish-gray (10YR 5/2-4/2, rare 6/3 and 3/2) and olive-gray (5Y 6/2-4/2). Very irregular, distorted to imbricate faulted laminations and streaks; some faintly bedded and variegated. Some very irregular fracture.
1772.0	1773.4	Oil shale, medium to lean; medium to light brownish-gray (10YR 4/2-7/2) and olive-gray (2.5Y 6/2-4/2). Distinct, irregular, distorted to contorted and imbricate faulted laminations; some loop structure. Some laminae make an angle of about 70 degrees with the edge of the core.
1773.4	1777.4	Oil shale, medium or lean; light to medium and rare dark brownish-gray (10YR 6/3-4/3, some 7/3, rare 2/2) and olive-gray (2.5Y 5/2-4/2). Very irregular, distorted to contorted and displaced laminations and streaks.
1777.4	1779.2	Oil shale, rich to medium; medium to dark brownish-gray (10YR 4/2-2/2) and some olive-gray (2.5Y 5/2-4/2). Irregular distorted laminations. Rare to some irregular tan silty lenses.
1779.2	1781.6	Oil shale, medium and rich; dark to light brownish-gray (10YR 3/2-6/3, rare 2/2). Distinct irregular, distorted and imbricate faulted laminations. Rare dark crystalline to chalky specks.

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From	To	Description
1781.6	1782.6	Oil shale, medium or rich: medium to dark brownish-gray (10YR 4/2-3/2). Faintly bedded and streaked to faintly laminated. Rare tan silty spots and dark crystalline specks. Irregular fracture.
1782.6	1783.6	Oil shale, rich: dark and some medium brownish-gray (10YR 3/2-2/2, some 4/2). Faint to distinct very regular laminations. Irregular shaly parting.
1783.6	1784.3	Oil shale, very rich: dark brownish-gray to brownish-black (10YR 3/2-1/2). Very faintly laminated. Shaly to papery parting.
1784.3	1788.7	Oil shale, very rich: dark brownish-gray to brownish-black (10YR 2/2-1/2). Very faintly bedded and streaked. Shaly to papery parting. Very badly broken up; uneven sample split.
1788.7	1793.0	Missing.
1793.0	1799.0	Oil shale, very rich: dark brownish-gray to brownish-black (10YR 2/2-1/2). Very faintly bedded and streaked. Shaly to papery parting. Very badly broken up and mixed up; uneven sample split.
1799.0	1801.9	Oil shale, rich: dark and some medium brownish-gray (10YR 3/2-2/2, some 5/2). Finely laminated; papery parting. Some gray silty limestone laminae.
1801.9	1804.1	Oil shale, medium and lean: medium to light brownish-gray (10YR 4/2-7/3). Irregular, distorted and contorted laminations. Thick irregular shaly parting. Badly broken up into large pieces; uneven sample split.
1804.1	1809.0	Oil shale, lean and medium: medium to light brownish-gray, tuffaceous shale (10YR 5/2-7/3) alternating with darker brownish-gray (10YR 4/2-3/2) and olive-gray (2.5Y 5/2-4/2). Irregular, distorted to contorted and displaced laminations. Very irregular thick shaly parting. Badly broken up into large pieces; uneven sample split.
1809.0	1812.9	Oil shale, medium and lean: medium to light and some dark brownish-gray (10YR 4/2-6/2, some 3/2). Slightly distorted to contorted and displaced laminations. Very irregular thick shaly parting;

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

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From	To	Description
		rare papery parting. Rare to some gray limestone laminae. Badly broken up into large pieces. Uneven sample split.
1812.9 Core 20	1854.0	Missing.
1854.0	1856.2	Oil shale, medium to lean: dark to medium brownish-gray (10YR 2/2-4/2). Very regular, slightly distorted to smooth laminations and rare bands. Slightly irregular thick shaly parting; irregular fracture. Rare to common gray limestone laminae. Very rare small brown crystalline masses.
1856.2	1858.0	Oil shale, lean to very lean: medium to dark brownish-gray (10YR 4/2-3/2). Very regular to slightly irregular, smooth laminations. Slightly irregular and rare very irregular thick shaly parting. Common to very common slightly brownish, gray (4.5N) limestone laminae.
1858.0	1858.6	Oil shale, medium or lean: dark to medium brownish-gray (10YR 3/2-4/2). Irregular distorted laminations and streaks. Thick irregular shaly parting. Rare gray limestone laminae.
1858.6	1867.5	Limestone and oil shale: slightly brownish, gray limestone (4.5-3.5N) and some to very common, medium to dark brownish-gray oil shale (10YR 4/2-3/2). Very regular smooth laminations and rare bands; rare irregular distorted laminations and faint bedding. Regular to very irregular thick shaly parting; some very irregular fracture.
		Sample of gray limestone from 1867.3 feet: X-ray - illite, quartz, feldspar, calcite, dolomite, pyrite.
1867.5	1868.7	Limestone: gray (5.5-4.5N), slightly brownish. Very regular, smooth to slightly distorted and displaced laminations. Slightly irregular thick shaly parting. Some to common medium to dark brownish-gray (10YR 4/2-3/2), oil shale laminae.
1868.7	1871.5	Limestone: medium to dark gray (5.5-3.5N). Regular smooth laminations and bands. Irregular thick shaly parting; some very irregular fracture. Some to rare fine medium to dark brownish-gray (10YR 4/2-3/2) oil shale laminae. Some uneven sample split.

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From	To	Description
1871.5	1873.8	Limestone; medium to dark gray (4.5-3.5N). Regular smooth laminations. Slightly irregular to regular thick shaly parting; irregular fracture. Common to some medium to dark brownish-gray (10YR 4/2-3/2) oil shale laminae. Uneven sample split.
1873.8	1875.9	Limestone; medium to dark gray (5.0-3.5N). Regular, smooth laminations and some thick bands. Irregular thick shaly parting. Rare medium to dark brownish-gray (10YR 4/2-3/2) oil shale laminae.
1875.9	1880.2	Limestone; medium to dark gray (4.5-3.5N). Regular smooth laminations and rare bands. Irregular thick shaly parting. Some to common fine medium to dark brownish-gray (10YR 4/2-3/2) oil shale laminae. Badly broken up into large pieces; uneven sample split.
1880.2	1881.3	Limestone; light olive-gray (5Y 7/2) and medium to dark gray (4.5-2.5N). Regular smooth to slightly irregular and distorted laminations. Some to common medium to dark brownish-gray (10YR 4/2-3/2) oil shale laminae. Two 0.1-foot bands of hard dense medium to dark brownish-gray (10YR 4/2-2/2) chert at 1880.2 and 1881.0 feet. Badly broken up into large pieces; uneven sample split.
1881.3	1887.3	Limestone; gray (5.0-4.0N). Regular smooth laminations and bands. Irregular thick shaly parting; irregular to conchoidal fracture. Rare to common medium to dark brownish-gray (10YR 4/2-3/2) oil shale laminae. Badly broken up into large pieces; uneven sample split. Rare irregular papery parting in lower half.
1887.3	1889.7	Oil shale, lean to medium; medium to dark brownish-gray (10YR 4/2-3/2). Regular smooth to slightly irregular and distorted laminations. Irregular shaly to papery parting. Rare to some gray limestone laminae. Rare glossy shear surfaces with slickensides. Some parts badly shattered into small pieces; uneven sample split.
1889.7	1892.0	Missing? (Ends match perfectly at core-end marker).
Core 21 1892.0	1892.4	Oil shale, medium; medium to dark and some light brownish-gray (10YR 5/2-3/2, some 2/2 and 6/2).

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
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From	To	Description
		Faint to distinct laminations. Irregular shaly parting. Rare glossy shear surfaces with slickensides.
1892.4	1894.6	Limestone; gray (5.5-4.5N) and some light brownish-gray (10YR 6/2). Regular to slightly irregular and distorted laminations and rare bands. Irregular thick shaly and some papery parting. Rare to common medium to dark brownish-gray oil shale.
1894.6	1895.3	Oil shale, medium; medium to dark and some light brownish-gray (10YR 4/2-2/2, some 6/2). Regular smooth to irregular and contorted laminations. Irregular shaly to papery parting. Some gray limestone in lower part.
1895.3	1896.4	Oil shale, rich or very rich; medium to dark brownish-gray (10YR 4/2-2/2). Faint irregular laminations to faint bedding. Irregular shaly to papery parting. Some parting surfaces and diagonal fractures have waxy luster. Badly shattered into small pieces; uneven sample split.
1896.4	1901.8	Oil shale, rich to medium; dark to some light brownish-gray (10YR 2/2-4/2, some 6/2) and some dark olive-gray (2.5Y 3/2). Faint slightly irregular laminations. Shaly to papery parting. Rare glossy shear surfaces. Rare gray limestone laminae. Common <u>fish scales</u> on some parting surfaces. Rare resinous black lenses with pyrite and white efflorescent powder (sweet taste). Badly shattered; uneven sample split.
1901.8	1903.7	Oil shale, very rich to rich; dark to medium brownish-gray (10YR 2/2-4/2). Irregular distorted laminations to faint bedding; some loop structure. Irregular papery to shaly parting. Some parting surfaces have waxy luster. Rare resinous black stringers with white efflorescent powder. Badly shattered; uneven sample split.
1903.7	1905.7	Oil shale, rich to medium; dark to medium brownish-gray (10YR 3/2-4/2) and some olive-gray (2.5Y 4/2). Faintly laminated to bedded. Shaly and rare papery parting. Very soft when wet--makes black sooty smudges when rubbed between fingers. Rare black stringers and irregular masses with white efflorescent powder and yellow limonite stains. Uneven sample split.

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From	To	Description
1905.7	1906.1	<p>Sample of black, almond shaped lens with white efflorescent powder from 1904.0 feet: X-ray - pyrite.</p> <p>Oil shale, medium: brownish-gray (10YR 4/2-5/2). Irregular distorted to contorted and displaced laminations. Some resinous black streaks with pyrite.</p>
1906.1	1906.3	<p>Oil shale, lean, tuffaceous: medium to light brownish-gray (10YR 4/2-7/3). Contorted laminations and stringers. Rare black resinous streaks and brown crystalline masses.</p>
1906.3	1909.3	<p>Oil shale, medium: dark to medium brownish-gray (10YR 2/2-4/3) and rare olive-gray (2.5Y 5/2). Faint distorted laminations and bedding. Slightly irregular thick shaly parting. Some black resinous to waxy streaks--some with pyrite and yellow stains. Rare dense translucent brown lenses. Two 0.1-inch contorted tuffaceous zones at 1906.7 and 1907.0 feet. Rare gray limestone laminae near base. Several large brown watery crystalline lenses with pyrite rims at 1909.1 feet.</p>
1909.3	1910.3	<p>Sample of brown crystalline lenses from 1909.1 feet: X-ray - quartz, pyrite.</p> <p>Oil shale, rich: brownish-gray to brownish-black (10YR 4/2-1/2). Faint irregular slightly distorted laminations. Irregular shaly parting. Rare small brown crystalline lenses with watery luster.</p>
1910.3	1916.0	<p>Oil shale, very rich: dark brownish-gray to brownish-black (10YR 3/2-1/2, some 4/2). Very faintly laminated to faintly bedded. Irregular shaly parting. Rare small brown crystalline masses near top. Very rare glossy shear surfaces with slickensides.</p>
1916.0	1918.1	<p>Oil shale, medium: dark to medium brownish-gray (10YR 3/2-5/2, rare 2/2). Irregular distorted laminations. Very irregular parting and fracture. A 0.2-foot zone of medium to light brownish-gray (10YR 4/2-6/3) lean contorted tuffaceous shale at 1916.4 feet. Uneven sample split.</p>
1918.1	1921.9	<p>Oil shale, rich to very rich: dark brownish-gray and some brownish-black (10YR 3/2-2/2, some 1/2).</p>

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Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
		Faint irregular laminations. Irregular, thick, shaly parting. Some tuffaceous shale in upper 1.5 feet. Very rare small brown crystalline lenses and streaks.
1921.9 Core 22	1932.0	Missing.
1932.0	1935.9	Oil shale, very rich: dark brownish-gray to some brownish-black (10YR 3/2-2/2, some 1/2). Distinct to very faint laminations. Slightly irregular to regular shaly and some papery parting. Some fine light brownish-gray (10YR 6/2) and gray (5.5N) laminae in upper part. Very rare small brown crystalline masses.
1935.9	1936.9	Oil shale, medium, tuffaceous: dark to light brownish-gray (10YR 2/2-7/3). Irregular distorted laminations and streaks. Irregular shaly parting.
1936.9	1938.5	Oil shale, very rich to rich: brownish-black to dark brownish-gray (10YR 1/2-3/2, rare 4/2). Faintly bedded to laminated. Papery to shaly parting. Rare very fine waxy black organic streaks.
1938.5	1940.2	Oil shale, rich: dark to medium brownish-gray (10YR 2/2-4/2). Irregular distorted to contorted laminations. Irregular shaly to papery parting. Some 0.1-0.2-foot zones with common gray limestone laminae.
1940.2	1943.8	Oil shale, very rich: brownish-black to dark brownish-gray (10YR 1/2-3/2). Irregularly laminated. Shaly to papery parting. A very irregular 3/4-inch light brownish-gray (10YR 7/2) finegrained sandstone band at 1942.4 feet. Some parts badly shattered; uneven sample split. Sample of sandstone from 1942.4 feet: X-ray - dolomite, mixed layer clay; trace quartz, feldspar, pyrite.
1943.8	1946.6	Oil shale, medium to rich: medium to dark brownish-gray (10YR 4/2-2/2, some 5/2). Faint distorted laminations. Irregular shaly parting. Rare vitreous black streaks with some disseminated crystals. Uneven sample split.
1946.6	1952.2	Oil shale, very rich: dark brownish-gray to brownish-black (10YR 3/2-1/2, rare 4/2-5/3). Faint distorted laminations. Irregular shaly and

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From	To	Description
1952.2	1958.8	<p>✓ some papery parting. A 0.2-foot, medium to light brownish-gray (10YR 4/3-6/3) contorted tuff showing flow structure at 1957.1 feet.</p> <p>Oil shale, rich: brownish-gray to some brownish-black (10YR 4/2-2/2, some 1/2). Fine distorted laminations and rare bands. Thick to medium irregular shaly parting. Rare thin dense brown crystalline laminae and streaks. Rare black tarry streaks. Rare distorted silty gray bands and laminae.</p>
1958.8	1961.7	<p>{ Sample of thin silty greenish-gray laminae with mosaic pattern on upper surface from 1957.8 feet: X-ray - mixed layer clay, ferroan, pyrite.</p> <p>Oil shale, very rich to rich: brownish-black to dark brownish-gray (10YR 1/2-3/3). Fine faint regular smooth to slightly distorted laminations. Irregular shaly to regular papery parting. Slightly irregular to hackly fracture. Some parting surfaces have resinous luster.</p>
1961.7	1964.3	<p>Oil shale, medium or rich: dark brownish-gray (10YR 2/2-3/2). Slightly irregular and some contorted laminations. Irregular shaly parting. Some brownish-gray (10YR 4/3-5/3), tuffaceous shale in upper 0.1 foot and lower 0.4 foot.</p> <p>✓ Tuffaceous shale at base shows some resinous brown varnish-like luster on parting surfaces. Thin to fine crystalline laminae at 1963.5 feet and 1963.7 feet, with colorless to smoky gray prismatic crystals arranged normal to sides.</p>
1964.3	1966.7	<p>{ Sample of prismatic crystal lamina from 1963.5 feet: X-ray - calcite.</p> <p>{ Sample of tuffaceous shale from 1964.0 feet: X-ray - quartz, calcite, pyrite.</p> <p>Oil shale, very rich: brownish-black to dark brownish-gray (10YR 1/2-3/2). Regular smooth to contorted laminations. Irregular shaly to papery parting. Many irregular and displaced stringers and streaks of crystalline calcite from 1964.7-1965.3 feet. Rare small resinous black organic lenses. Rare small brown and black crystalline lenses.</p>
1966.7 Core 23	1989.0	Missing.
1989.0	1991.9	Oil shale, rich: dark brownish-gray (10YR 3/2-2/2, rare 4/2 and 1/2). Faint, regular to

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From	To	Description
		irregular laminations. Irregular shaly and rare papery parting; some hackly fracture. Rare very fine prismatic calcite streaks. Some brown shale with waxy luster near top. Rare fine waxy black streaks.
1991.9	1993.9	Oil shale, very rich; brownish-black to dark brownish-gray (10YR 1/2-2/2, rare 3/2). Bedded to very faintly laminated. Shaly to papery parting. Rare very fine crystalline streaks and disseminated crystals. Some parts badly broken up; uneven sample split.
1993.9	1996.7	Oil shale, rich or very rich; dark brownish-gray (10YR 2/2-3/2, very rare 4/2). Very faint, smooth to distorted laminations. Irregular shaly to papery parting; very irregular hackly fracture. Very rare resinous black organic streaks. A fracture at 1994.9 feet has brown to amber waxy coatings with slickensides. Uneven sample split.
1996.7	1998.3	Oil shale, very rich; brownish-black to brownish-gray (10YR 1/2-4/2). Distinct irregular laminations and some bands. Shaly to papery parting. A 1-inch irregular dense brownish-gray dolomite band at 1997.3 feet. Several irregular, diagonal fractures with olive-gray (5Y 4/2-3/2) coatings. Some parts badly broken up; uneven sample split.
1998.3	1998.7	<p>{ Sample of olive-gray coatings scraped off of fracture surfaces from 1996.7 to 1998.3 feet: X-ray - pyrite; trace quartz, dolomite.</p> <p>Oil shale, rich; medium to dark brownish-gray (10YR 4/2-2/2). Irregular to contorted laminations. A gray silty lamina and several prismatic crystal stringers at 1998.4 feet. Black gritty gilsonite-like coating on parting surface at base.</p> <p>{ Sample of gray silty lamina from 1998.4 feet: X-ray - mixed layer clay, ferrean.</p>
1998.7	2001.6	<p>Oil shale, rich and very rich; dark brownish-gray to brownish-black (10YR 3/2-1/2, very rare 4/2). Regular to slightly irregular and some displaced laminations. Irregular shaly parting. Rare very light colored massive pyrite streaks. Rare unidentified black fossil fragments on parting surfaces (some fish ribs?).</p> <p>{ Sample of pyrite streak from 1999.8 feet: X-ray - marcasite; trace dolomite, quartz.</p>

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From	To	Description
2001.6	2003.5	Oil shale, very rich: brownish-black and rare dark brownish-gray (10YR 1/2, rare 2/2-3/2), common resinous luster. Faint slightly distorted laminations. Irregular shaly and rare papery parting. Very rare large soft tarry nodules. A glossy shear surface at 2001.8 feet.
2003.5	2007.1	Oil shale, very rich: brownish-black to brownish-gray (10YR 1/2-4/2); some resinous to waxy luster. Irregular distorted laminations. Irregular papery to shaly parting. Rare fine light colored marcasite stringers. Rare olive-gray coatings on parting surfaces. Rare fish fossil fragments.
2007.1	2012.1	Oil shale, very rich to rich: dark to medium brownish-gray (10YR 2/2-4/2). Very faint distorted laminations to streaked bedding. Irregular shaly and some papery parting. Rare small lenses and distorted stringers of colorless to brown prismatic to granular crystals with some yellow iron stains--especially at 2009.2 feet.
2012.1	2013.6	Oil shale, rich to medium; medium to dark brownish-gray (10YR 4/3-2/2). Faintly bedded and streaked to very irregular distorted laminations. Irregular thick shaly parting. Very rare small brown crystalline masses.
2013.6	2014.3	Oil shale, rich: dark to medium brownish-gray (10YR 3/2-4/2, some 2/2). Streaked bedding and some irregular distorted laminations. Very irregular thick shaly parting. Rare thin dark stringers with yellow iron stains.
2014.3	2014.7	Oil shale, very rich: brownish-black to dark brownish-gray (10YR 1/2-3/2). Regular smooth to slightly distorted laminations. Irregular shaly parting. Very common irregular stringers of colorless to brown prismatic crystals--laminae distorted around stringers.
2014.7	2015.7	Oil shale, very rich: brownish-black to dark brownish-gray (10YR 1/2-3/2). Very faintly laminated and bedded. Slightly irregular to regular papery and shaly parting. Rare fossil fish skeletons and scales--partly replaced by pyrite. Very rare fine soft vitreous black organic streaks.
2015.7	2018.0	Oil shale, rich: dark to medium brownish-gray (10YR 2/2-4/2). Faint fine smooth to distorted laminations. Regular to slightly irregular shaly

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From	To	Description
2018.0	2021.5	and papery parting; some hackly fracture. Rare small black lenses and streaks. Rare fossil fish skeletons. Rare glossy shear surfaces. Oil shale, medium and lean; medium to dark brownish-gray (10YR 4/2-2/2, rare 5/2). Irregular, distorted to contorted and displaced laminations and some banding. Some to very common gray (4.0-5.5N) limestone laminae and bands. Several 1/4- to 2-inch bands of dense brownish-gray (10YR 4/2) dolomite from 2018.8-2019.3 feet. Very badly broken up; very uneven sample split.
2021.5	2024.4	Oil shale, very rich; brownish-black to dark brownish-gray (10YR 1/2-2/2, rare 3/2). Faint, irregular, smooth to distorted laminations and faint bedding. Very irregular to slightly irregular shaly and papery parting. Rare very fine pyrite streaks and disseminated pyrite. Rare vitreous black fossil fragments (some are fish scales and ribs). Rare glossy shear surfaces. A fracture surface at 2022.7 to 2022.9 feet is coated with vitreous black organic material.
2024.4	2024.6	Limestone: gray (5N); very fine silty texture. Some very fine dark brownish-gray displaced laminae.
2024.6 Core 24	2027.0	Missing.
2027.0	2031.1	Oil shale, rich and very rich; brownish-black to brownish-gray (10YR 1/2-4/2, some 5/2). Distinct irregular to distorted laminations and rare bands. Very irregular shaly to papery parting. Some gray limestone. Rare to common black fossil fragments (some are fish ribs and vertebrae). Very rare small to medium dense brown to brownish-gray dolomite lenses and irregular laminae. A very irregular thin stringer of very light olive-gray (2.5Y 8/3) chalky material at 2029.4 feet.
2031.1	2034.8	Sample of light olive-gray chalky stringer from 2029.4 feet: X-ray - mixed layer clay, ferroan (magnesian siderite). Oil shale, medium to lean; dark to medium brownish-gray (10YR 2/2-5/2). Irregularly laminated. Very irregular shaly parting. Some to very common irregular laminae and bands of gray (5.5-4.5N)

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
2034.8	2036.9	limestone. Rare black fossil fragments and very rare large black organic nodules. Badly broken up; uneven sample split. Oil shale, medium or rich; medium to dark brownish-gray (10YR 4/2-3/2) and rare olive-gray (2.5Y 5.2). Faint distorted laminations. Irregular to regular shaly and papery parting. Rare fractures with dark brown organic (?) stains. Rare very irregular dense dark brownish-gray dolomite laminae. Rare black fossil fragments and very rare large black organic nodules. Uneven sample split.
2036.9	2038.6	Oil shale, very rich; brownish-black to dark brownish-gray (10YR 1/2-2/2). Faint fine distorted to contorted laminations. Slightly irregular to regular shaly and papery parting. Some black shale has resinous to waxy luster. Very rare olive-gray silty textured fossil (?) fragments. Some large black organic nodules from 2037.8 to 2038.6 feet. A very irregular thick brownish-black band with disseminated crystals at 2038.1 feet. Sample of brownish-black band with disseminated crystals from 2038.1 feet: X-ray - unidentified peaks (same as sample at 1588.9 feet), some analcite. Sample of black organic lens with olive-gray granular crust on fracture surface from 2038.5 feet: X-ray - small broad peaks (same as 1112.8 feet). Identified by C. Milton as apatite.
2038.6	2039.9	Oil shale, rich and very rich; dark and rare medium brownish-gray (10YR 3/2-2/2, rare 4/2). Faint fine smooth to slightly distorted laminations. Irregular to smooth shaly parting. Very rare black fossil fragments and glossy shear surfaces.
2039.9	2044.4	Oil shale, medium; medium to dark brownish-gray (10YR 5/2-2/2) and olive-gray (2.5Y 5/2-4/2). Irregular, distorted to contorted laminations; an overturned fold at 2042.5 feet. Slightly irregular to very irregular shaly and rare papery parting; some very irregular fracture. Rare glossy shear surfaces with slickensides. Some

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
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From	To	Description
2044.4	2045.5	irregular to globular olive-gray masses (like 2038.5 feet) on parting surfaces from 2041.9 to 2042.2 feet. Oil shale, medium: medium to dark olive-gray (2.5Y 4/2-3/2). Irregularly laminated. Irregular shaly parting; very irregular to hackly fracture. Some fine micaceous crystals on parting surfaces. Rare dark olive-gray (5Y 3/2) silty textured masses on parting surfaces. Rare black fossil fragments (plant?). A smooth fracture with brown varnish-like coatings runs from 2044.7 to 2045.3 feet. Uneven sample split.
2045.5	2049.1	Oil shale, very rich: brownish-black to dark brownish-gray (10YR 1/2-3/2) and rare olive-gray (2.5Y 4/2). Irregular distorted to contorted laminations. Very irregular and some slightly irregular shaly parting. Rare large black organic nodules (several at 2048.3 feet); some with pyrite rims. Rare black fossil fragments. An irregular (10-15 mm) dark gray silty band with massive to fine crystalline pyrite at 2048.8 feet.
2049.1	2052.2	Sample of dark gray silty band with pyrite from 2048.8 feet: X-ray - pyrite, analcite, mixed layer clay. Oil shale, medium and lean: dark to light brownish-gray (10YR 3/2-6/2) and olive-gray (2.5Y 4/2-5/2). Faint to distinct irregular and distorted laminations. Very irregular shaly and some papery parting; common hackly fracture. Rare gray (4.5N) limestone laminae. Rare black fossil fragments and glossy shear surfaces with slickensides. Very rare fine dark gray silty textured stringers with pyrite. Crayfish fossil at 2049.5 feet. A 0.1-foot silty textured light brownish-gray (10YR 6/2) dolomite band at 2051.9 feet. Badly broken up; uneven sample split.
2052.2	2056.8	Oil shale, rich and very rich: brownish-gray to some brownish-black (10YR 4/2-2/2, some 1/2, rare 5/2). Faint slightly irregular and distorted laminations. Slightly irregular shaly to papery parting; some hackly fracture. Rare small to large black organic nodules. Rare to common black fossil fragments. Rare glossy shear surfaces with

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Drill cutting and core samples of Equity Oil Company's Ebler
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From	To	Description
2056.8	2059.5	slickensides. A fracture surface at 2056.2 feet has black and very dark brown to amber, vitreous to waxy coatings. Oil shale, medium to lean; dark to medium olive-gray (2.5Y 3/2-5/2); common brownish-gray (10YR 4/3), tuffaceous shale in upper 1.2 feet. Irregular, distorted to contorted and broken laminations. Slightly irregular to very irregular shaly and papery parting; very irregular to hackly fracture. Very rare black fossil fragments. Uneven sample split.
2059.5	2063.5	Oil shale, rich and very rich; brownish-gray to brownish-black (10YR 4/2-1/2). Faint very fine irregular, slightly distorted and rare contorted laminations. Slightly irregular, shaly to papery parting; hackly fracture. Very rare light gray crystalline stringers. Very rare black fossil fragments. A thin very irregular light colored pyrite lamina at 2059.6 feet; fine pyrite lenses and streaks at 2060.7 feet. Very irregular contorted brownish-black silty bands with fine disseminated crystals at 2061.4 and 2061.7 feet.
2063.5	2082.0	Missing.
Core 25 2082.0	2084.8	Oil shale, medium to rich; medium to dark brownish-gray (10YR 4/2-2/2). Faint irregular, distorted laminations. Irregular shaly parting. Rare glossy shear surfaces with slickensides. Rare fine irregular pyrite streaks. Rare small brownish-black and olive-gray silty lenses with disseminated crystals.
2084.8	2093.4	Oil shale, very rich; brownish-black to dark brownish-gray (10YR 1/2-3/2). Very faint bedding and laminations. Irregular thick shaly and rare papery parting; common hackly fracture. Rare thin to fine light colored pyrite stringers and streaks. Very rare irregular brownish-black silty to dense massive bands with disseminated crystals. Very rare small brown crystalline masses in lower three feet (most evident on parting surfaces).

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From	To	Description
2093.4	2098.4	Oil shale, lean to rich: dark brownish-gray (10YR 3/2-2/2). Very faint bedding and rare laminations. Some very thick massive bands of gray (4-3N) hard marlstone. Very badly broken up into large very irregular pieces; uneven sample split.
2098.4	2105.7	Sample of hard gray marlstone from 2095.3 feet: X-ray - quartz, dolomite, illite. Oil shale, medium and rich; medium to dark brownish-gray (10YR 4/2-2/2). Very faint bedding to irregular, distorted laminations. Irregular shaly to papery parting; some very irregular fracture. Rare thick (up to 0.3 foot) irregular bands of hard dense brownish-gray (10YR 4/2) bedded to laminated dolomite. Some parts are badly shattered into small pieces; uneven sample split.
2105.7	2110.5	Oil shale, medium and rich; medium to dark brownish-gray (10YR 4/2-2/2) and some dark gray (4.5-3.5N). Irregular distorted laminations and irregular papery to shaly parting. Rare thick distorted to contorted bands of brownish-gray dolomite. Some black fossil fragments--crayfish(?) fragments at 2105.8 feet. A 0.2-foot band of hard dense massive gray (4.5-4.0N) marlstone at 2109.3 feet. Uneven sample split.
2110.5	2112.9	Oil shale, very rich; dark brownish-gray to rare brownish-black (10YR 3/2-2/2, rare 1/2). Faintly laminated to bedded. Slightly irregular papery to shaly parting. Rare fine gray stringers and lenses with yellow to orange iron stains. A 0.4-foot brownish-gray (10YR 5/2-4/2) tuff with rare contorted shale stringers at 2110.5 feet; a 0.3-foot tuff with slightly distorted shale laminae at 2111.5 feet. Many angular shell fragments on parting surfaces at 2111.1 feet. Pelyco-pod (?) at 2112.2 feet.
2112.9	2124.0	Missing.
2124.0	2124.6	Oil shale, rich or very rich: dark brownish-gray (10YR 3/2-2/2). Faintly bedded. Shaly to papery parting, hackly fracture. Very rare fossil fragments.

X-RAY DATA BUT NOT
INCLUDED HERE
RCS 2/23/12

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Drill cutting and core samples of Equity Oil Company's Ebler
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From	To	Description
2124.6	2126.4	Oil shale, medium or rich: brownish-gray to rare brownish-black (10YR 4/2-2/2, rare 1/2). Smooth to slightly distorted laminations. Slightly irregular thick shaly parting; rare, very irregular fracture. Rare faint very small ostracodes (?). Shale has a silty-crystalline texture.
2126.4	2129.3	Sample of brownish-gray, silty-crystalline oil shale, from 2124.9 feet: X-ray - calcite, quartz, dolomite. Oil shale, rich and very rich: dark brownish-gray to some brownish-black (10YR 2/2-3/2, some 1/2). Faint, smooth to slightly distorted laminations to faint bedding. Slightly irregular to irregular shaly parting. Rare glossy shear surfaces with slickensides (one at 2128.0 feet has vitreous black organic crusts). Very rare very fine, brownish-gray, crystalline streaks. Very rare, fine black organic nodules and black to brown fossil fragments.
2129.3	2131.3	Oil shale, rich to medium: dark brownish-gray (10YR 2/2-3/3). Irregularly laminated. Irregular shaly to papery parting. Rare small black organic nodules. Very rare black to brown fossil fragments.
2131.3	2136.3	Oil shale, very rich and rich: brownish-black to dark brownish-gray (10YR 1/2-3/2). Faint irregular distorted laminations to very faint bedding. Common to rare fine black organic lenses and streaks. A 0.2-foot dense dark brownish-gray oil stained tuff at 2132.3 feet. Common olive-gray silty coatings on parting and fracture planes from 2133.1 to 2133.7 feet.
2136.3	2137.5	Oil shale, very rich: brownish-black and some dark brownish-gray (10YR 1/2, some 2/2). Very faintly bedded. Irregular shaly parting. Rare to common black fossil fragments.
2137.5	2138.6	Oil shale, rich: dark brownish-gray to brownish-black (10YR 3/2-1/2). Very faintly laminated to bedded. Irregular shaly parting; some very irregular fracture. Rare olive-gray coatings. Very rare fine brownish-gray crystalline streaks and small pyrite lenses.

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Drill cutting and core samples of Equity Oil Company's Ebler
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From	To	Description
2138.6	2141.2	Oil shale, very rich: brownish-black to dark brownish-gray (10YR 1/2-2/2, some 3/2). Faint bedding and some irregular laminations. Irregular thick shaly parting; common very irregular fracture.
2141.2	2143.0	Oil shale, medium: dark to medium brownish-gray (10YR 3/2-4/2). Faint irregular laminations and streaked bedding. Some very fine to thin crystalline streaks. Some very irregular sooty black to olive-gray vertical stringers with pyrite in upper 0.8 foot.
2143.0	2144.2	Oil shale, very rich: brownish-black and some dark brownish-gray (10YR 1/2, some 2/2). Very faintly bedded. Slightly irregular shaly and rare papery parting. Rare thin to fine vitreous black organic streaks.
2144.2	2145.2	Oil shale, medium: medium to dark brownish-gray (10YR 4/2-2/2). Very faintly laminated. Very irregular parting. Badly broken up into large pieces; uneven sample split.
2145.2	2147.0	Oil shale, very rich: dark brownish-gray to brownish-black (10YR 2/2-1/2). Faint, irregular, distorted to contorted laminations. Slightly irregular thick shaly parting. Very irregular to hackly fracture; uneven sample split.
2147.0	2149.0	Oil shale, rich and medium: dark to medium brownish-gray (10YR 2/2-4/2). Faint irregular laminations and streaked bedding. Rare fine light gray crystalline streaks. Common very uneven fracture; uneven sample split.
2149.0	2153.6	Oil shale, very rich and rich: dark brownish-gray and rare brownish-black (10YR 2/2-3/2, rare 1/2). Very faint bedding and rare faint irregular laminations. Very irregular shaly to papery parting; some very irregular fracture and uneven sample split. Some, very irregular, olive-gray, silty stringers near top. Sample from 2152.1-2153.6 feet is badly broken up to completely shattered into small pieces--grab sampled.
2153.6	2154.9	Oil shale, rich: dark brownish-gray and rare brownish-black (10YR 3/2-2/2, rare 1/2). Very irregular, faint laminations and streaked bedding. Slightly irregular shaly parting. Some olive-

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
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From	To	Description
		gray (5Y 4/2-4/3) silty crusts on fracture surfaces near base. Very uneven fracture; uneven sample split.
2154.9	2156.3	Oil shale, rich: dark brownish-gray (10YR 3/2-2/2). Very faintly bedded. Irregular shaly to papery parting. Badly broken up; uneven sample split.
2156.3	2157.3	Oil shale, very rich: dark brownish-gray (10YR 2/2, some 3/2). Very faintly bedded. Irregular shaly parting. Some olive-gray fracture coatings. Partial core; uneven sample split.
2157.3	2165.6	Oil shale, rich and very rich: brownish-black to dark brownish-gray (10YR 1/2-2/2, some 3/2). Very faint bedding and some laminations. Irregular shaly to papery parting. Rare olive-gray fracture coatings. Very rare dense dark brownish-gray dolomite bands. Very rare light gray crystalline laminae. Very rare black plant fossils. Badly broken up; uneven sample split.
2165.6	2165.9	Oil shale, medium, tuffaceous: dark brownish-gray and brownish-black (10YR 3/2 and 1/2). Very irregular, distorted and displaced laminations.
2165.9	2167.1	Oil shale, rich: dark brownish-gray (10YR 2/2-3/2). Faint bedding to faint smooth laminations. Very regular to irregular shaly parting. Rare fine very irregular black organic streaks.
2167.1	2167.4	Oil shale, lean or medium: medium to dark brownish-gray (10YR 5/2-3/2, some 2/2), silty crystalline texture. Slightly distorted and displaced laminations.
2167.4	2169.3	Oil shale, very rich: dark brownish-gray (10YR 2/2). Very faintly laminated. Regular to irregular shaly and papery parting. Badly broken up; uneven sample split.
2169.3	2170.2	Oil shale, medium to lean: medium to dark brownish-gray (10YR 5/2-2/2). Slightly irregular to contorted laminations. Some thin gilsonite-like stringers near top (not included in assay sample). A 1/2- to 3/4-inch, irregular band of gray (4N) very pyritic siltstone at base with irregular to vermiform stringers running up into contorted shale.
		Sample of pyritic siltstone band from 2170.1 feet: X-ray - pyrite, marcasite, analcite.

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From	To	Description
2170.2	2171.5	Oil shale, very rich: dark brownish-gray and rare brownish-black (10YR 2/2, rare 1/2 and 3/2). Irregularly laminated. Papery to shaly parting. An irregular (5-9 mm) very light olive-gray (2.5Y 8/4) silty band and several thin light brownish-gray (10YR 7/2-6/4) stringers at 2171.1 feet. Badly broken up; uneven sample split. Sample of very light olive-gray band from 2171.1 feet: X-ray - mixed layer clay, ferroan (magnesian siderite).
2171.5	2171.8	Oil shale, medium or lean: brownish-gray (10YR 4/2-5/3), silty crystalline texture. Fine irregular laminations. Rare small brown pebble-like inclusions.
2171.8	2175.5	Oil shale, rich and very rich: dark brownish-gray and some brownish-black (10YR 2/2-3/2, some 1/2 and 4/2). Irregular laminations to very faint bedding. Regular to irregular papery and shaly parting. Very rare black fossil fragments. Badly broken up; uneven sample split.
2175.5	2177.4	Oil shale, very rich or rich: dark reddish brown (5YR 3/3-2/2) to dark brownish-gray (10YR 3/2-2/2). Faint to distinct irregular laminations. Shaly parting; hackly to irregular fracture. Rare small dark brown to black chert nodules with pyrite rims. Partial core; uneven sample split.
2177.4	2178.3	Oil shale, rich: brownish-gray to brownish-black (10YR 4/2-1/2). Faint to distinct, irregular, distorted and contorted laminations. Irregular shaly to papery parting.
2178.3 Core 27	2182.0	Missing.
2182.0	2188.1	Oil shale, rich and very rich: dark and rare medium brownish-gray (10YR 2/2-3/2, rare 4/2). Faintly laminated to very faintly bedded; rare bands. Thin, irregular, shaly and papery parting. Badly broken up; uneven sample split.
2188.1	2190.1	Oil shale, medium and rich: medium to dark brownish-gray (10YR 5/2-2/2). Irregular distorted laminations and bedding. Thick irregular shaly to rare papery parting. Very irregular fracture; uneven sample split.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
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From	To	Description
2190.1	2195.1	Oil shale, very rich: dark brownish-gray to brownish-black (10YR 2/2-1/2, some 3/2). Very faintly bedded to faintly laminated. Shaly to papery parting. Rare black fossil fragments. A very irregular thin brownish-gray (10YR 4/2) to yellow-gray (2.5Y 8/4) silty textured band at 2190.3 feet. Badly broken up; uneven sample split.
2195.1	2195.4	Sample of brownish-gray to yellow-gray band from 2190.3 feet: X-ray - ferroan (magnesian siderite). Oil shale, medium: brownish-gray (10YR 4/2-4/3), silty crystalline texture. Faintly bedded to massive.
2195.4	2197.4	Oil shale, rich or medium: dark brownish-gray (10YR 2/2-3/2) with common 1/4-to 1-1/2-inch, silty crystalline bands of medium to light brownish-gray (10YR 5/2-6/2). Faintly bedded with common bands. Fine papery to shaly parting. Rare to common black fossil fragments. Badly broken up; uneven sample split.
2197.4	2200.9	Oil shale, medium: dark to medium olive-gray (2.5Y 3/2-4/2) and dark to light brownish-gray (10YR 3/2-6/2). Faint irregular laminations, bedding and some banding. Irregular shaly parting. Some to rare black fossil fragments.
2200.9	2201.8	Oil shale, rich: dark brownish-gray (10YR 2/2-3/2). Faint irregular laminations. Irregular papery parting. Some black fossil fragments. Badly shattered; uneven sample split.
2201.8	2202.9	Oil shale, very rich: brownish-black to dark brownish-gray (10YR 1/2-2/2). Very faint distorted bedding. Irregular shaly to papery parting. Rare, small, gray, crystalline lenses and stringers. Rare small nodular casts and molds.
2202.9	2204.3	Oil shale, rich to very rich: dark brownish-gray to brownish-black (10YR 2/2-1/2). Irregularly laminated to very faintly bedded. Irregular shaly to fine papery parting. Some <u>very</u> fine gray crystalline streaks.
2204.3	2204.9	Oil shale, very rich: dark brownish-gray to brownish-black (10YR 2/2-1/2). Very faintly bedded. Very irregular shaly to papery parting. Two 0.1-foot brownish-gray (10YR 4/2) massive dolomite bands.

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Drill cutting and core samples of Equity Oil Company's Ebler
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From	To	Description
2204.9	2205.3	Dolomite: brownish-gray (10YR 5/2-4/2), dense, massive.
2205.3	2207.3	Oil shale, very rich: brownish-black to dark brownish-gray (10YR 1/2-2/2). Very faintly bedded. Fine papery and some shaly parting. Rare dolomite bands. Badly shattered; uneven sample split.
2207.3	2207.7	Dolomite: brownish-gray (10YR 5/2-4/2), dense, massive. Fracture with resinous brown coating.
2207.7	2210.7	Oil shale, very rich: dark brownish-gray (10YR 2/2-3/2). Very faintly bedded to laminated. Irregular papery and shaly parting. Rare black to brown fossil fragments. Badly broken up; uneven sample split.
2210.7	2211.4	Dolomite: brownish-gray (10YR 4/2). Faintly laminated and bedded to massive. Rare black fossil fragments--some turret shaped. A smooth fracture with resinous brown coatings runs the length of the sample.
2211.4	2212.8	Oil shale, very rich: dark brownish-gray (10YR 2/2-3/2). Very faintly bedded. Fine papery to irregular shaly parting. Rare black fossil fragments. A 0.2-foot brownish-gray (10YR 4/2) bedded dolomite band at base. Badly broken up; uneven sample split.
2212.8	2215.4	Oil shale, rich to very rich: medium to dark brownish-gray (10YR 4/2-2/2). Faintly laminated to very faintly bedded. Thick irregular shaly to some papery parting. Some brownish-gray (10YR 5/2) tuffaceous streaks in middle part. Very rare brown fossil fragments. Badly broken up and some partial core; uneven sample split.
2215.4 Core 28	2221.0	Missing.
2221.0	2222.7	Oil shale, rich: dark to medium brownish-gray (10YR 2/2-4/3). Very faintly bedded to irregularly laminated. Irregular, thick, shaly parting. Rare light colored pyrite lenses. Rare black plant (?) fossils and fine vitreous black organic streaks. Rare glossy shear surfaces.
2222.7	2225.5	Oil shale, very rich: dark olive-gray (2.5Y 2/2-3/2) and some dark brownish-gray (10YR 2/2-3/2). Faintly bedded to very faintly laminated. Fine

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Drill cutting and core samples of Equity Oil Company's Ebler
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From	To	Description
2225.5	2227.5	papery to shaly parting. Very rare fossil fragments. Badly broken up; uneven sample split. Oil shale, medium: dark to medium brownish-gray and some dark brown (10YR 3/2-4/2, some 3/4). Irregularly laminated. Very irregular thick shaly parting. Rare olive-gray fracture coatings.
2227.5	2229.1	Oil shale, very rich to rich: brownish-black to dark brownish-gray (10YR 1/2-2/2). Very faintly laminated to bedded. Irregular thick shaly parting. Very rare fossil fragments.
2229.1	2229.4	Dolomite: medium to dark brownish-gray (10YR 4/2-2/2), dense, silty crystalline texture. Irregular displaced laminations. Rare small black chert nodules with pyrite rims. A smooth fracture with brown to black, varnish-like coatings runs the length of the sample.
2229.4	2230.5	Oil shale, very rich: brownish-black to dark brownish-gray (10YR 1/2-2/2, rare 3/2). Very faintly laminated and bedded. Thick shaly to papery parting. Rare black fossil fragments and small dark gray nodules with disseminated pyrite. A black organic nodule at top had rare disseminated small round crystals.
2230.5	2232.5	Oil shale, rich: dark to medium brownish-gray (10YR 2/2-4/2) and some dark olive-gray (2.5Y 3/2). Irregular distorted and some displaced laminations and bands. Thick irregular shaly parting. Some dense brownish-gray (10YR 4/2) dolomite bands. Rare glossy shear surfaces with slickensides. Rare olive-gray coatings on parting surfaces. A 0.2-foot gray (3.5N), very fine silty textured, non-calcareous band at 2231.0 feet (displaced contact at base).
2232.5	2235.0	Sample of gray band from 2231.0 feet: X-ray - quartz, illite, pyrite, trace ferroan. Oil shale, rich: dark brownish-gray (10YR 3/2-2/2). Faint, distorted to smooth laminations and some streaked bedding. Irregular shaly and rare papery parting; some very irregular fracture. Rare olive-gray coatings on parting and fracture surfaces.
2235.0	2236.0	Oil shale, very rich: dark brownish-gray (10YR 2/2). Very faintly bedded. Irregular papery and shaly parting. Badly shattered; uneven sample split.

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From	To	Description
2236.0	2238.0	Oil shale, medium to rich: dark brownish-gray (10YR 3/2-2/2). Faint laminations to streaked bedding. Irregular, thick, shaly parting; some very irregular fracture. Very rare fine buff silty streaks and very rare olive-gray coatings on parting surfaces.
2238.0	2241.6	Oil shale, very rich: dark brownish-gray (10YR 2/2, some 3/2). Very faint fine, slightly distorted to smooth laminations. Irregular shaly to papery parting. Very rare olive-gray coatings on fracture and parting surfaces. Very rare black fossil fragments. Badly broken to shattered; uneven sample split.
2241.6	2243.5	Oil shale, rich: dark brownish-gray (10YR 3/2-2/2). Very faint irregular laminations to streaked bedding. Very irregular thick shaly parting.
2243.5	2243.9	Oil shale, medium: dark to medium brownish-gray (10YR 3/2-4/2). Streaked bedding and some very faint laminations.
2243.9	2247.8	Oil shale, rich or very rich: dark brownish-gray (10YR 2/2-3/2). Very faint laminations to streaked bedding. Very irregular, thick, shaly parting. Rare <u>very</u> fine crystalline streaks. Rare black fossil fragments (plant?).
2247.8	2249.2	Oil shale, rich: dark brownish-gray (10YR 3/2-2/2). Faint irregular laminations to streaked bedding. Thick slightly irregular shaly parting. Very rare black plant (?) fossils.
2249.2	2250.5	Oil shale, very rich: dark brownish-gray (10YR 2/2). Very faintly laminated to bedded. Thick slightly irregular shaly parting. Very rare black fossil fragments.
2250.5	2253.2	Oil shale, rich and very rich: brownish-black to brownish-gray (10YR 1/2-4/3). Distorted laminations to faint bedding. Thin tuffaceous laminae in upper part. Irregular shaly and papery to very thick shaly parting. Rare fine gray crystalline laminae. Rare black fossil fragments. Rare glossy shear surfaces with slickensides. Thick brownish-gray silty-crystalline dolomite bands with oil shale stringers in lower half. A zone of 4- to 10-mm, fine grained gray pyritic lenses at 2250.6 feet. Fracture with

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Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
2253.2	2255.5	<p>varnish-like coatings in dolomite at base. Some parts badly broken; uneven sample split.</p> <p>Sample of gray pyritic lens from 2250.6 feet: X-ray - pyrite, analcite, ferroan (magnesian siderite).</p> <p>Oil shale, very rich: dark brownish-gray (10YR 2/2-3/2). Very faintly bedded. Regular shaly and some papery parting; hackly fracture. Rare black fossil fragments. Very rare vitreous black organic streaks and small brownish-black organic nodules.</p>
2255.5	2256.1	<p>Dolomite: dark brownish-gray (10YR 3/2), massive. Some dark brownish-gray (10YR 2/2), irregular to contorted oil shale laminae and stringers. Several irregular and intersecting fractures filled with soft black bitumen and dolomite breccia (bitumen excluded from assay sample).</p>
2256.1	2260.6	<p>Oil shale, very rich: dark brownish-gray (10YR 2/2-3/2). Very faintly bedded and laminated. Slightly irregular papery and shaly parting. Rare very small black fossil fragments (some shell fragments). Very rare small dull brown nodules. Rare dark brownish-gray (10YR 3/2), irregular to vermiform, silty stringers near top. A thin gray silty pyritic stringer at 2256.7 feet. Nearly all parting surfaces below 2257.8 feet are covered with intricate very fine pits, bumps, ridges and grooves (some may be <u>ostracod</u> casts and molds?).</p>
2260.6	2261.0	<p>Dolomite: translucent dark brownish-gray (10YR 2/2) to gray (4.5N), massive, fine to coarse crystalline. Very irregular fracture; uneven split. Some rich shale laminae.</p> <p>Sample of dense translucent dolomite from 2260.6 feet: X-ray - dolomite.</p> <p>Sample of fine to coarse crystalline gray dolomite from 2260.9 feet: X-ray - dolomite.</p>
2261.0	2261.7	<p>Oil shale, very rich: dark brownish-gray (10YR 2/2). Very faint bedding. Irregular papery and shaly parting. Some pitted and grooved parting surfaces like 2257.8 to 2260.6 feet. Badly broken; uneven sample split.</p>
2261.7	2264.5	<p>Oil shale, rich: dark brownish-gray (10YR 3/2-2/2), rare thin bands of gray (3.5N). Very faint smooth</p>

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From	To	Description
2264.5	2266.3	bedding and rare bands. Irregular thick shaly parting. Common pitted and grooved parting surfaces like 2257.8 to 2260.6 feet. Rare fish scales. Oil shale, very rich: dark brownish-gray to rare brownish-black (10YR 2/2, rare 1/2). Very faint smooth laminations and bedding. Irregular to very irregular thick shaly parting. Some to common ostracodes (?) and other casts and molds on parting surfaces.
2266.3	2274.3	Oil shale, very rich: dark brownish-gray (10YR 2/2, rare 3/2). Very faint smooth bedding and laminations; some distinct bedding near top. Very irregular thick shaly and rare papery parting. Some pitted and grooved parting surfaces. Very rare fine grained light colored pyrite stringers. Very rare small angular chalky buff (10YR 8/4) clay inclusions. A fine irregular light brownish-gray (10YR 7/3) silty stringer at 2269.3 feet. Some very irregular fracture and uneven sample split.
2274.3	2276.2	Sample of light brownish-gray stringer from 2269.3 feet: X-ray - mixed layer clay, kaolin. Oil shale, rich: dark brownish-gray (10YR 2/2-3/2), fine silty texture. Faint, very distorted bedding and irregular laminations. Very irregular thick shaly parting. Interfingering shale and sandstone stringers at base. Common ostracodes (?). Some small chalky buff clay inclusions. Rare small olive-gray pyritic masses on parting surfaces; very rare disseminated bright yellow pyrite crystals. A 0.4-foot medium to dark brownish-gray (10YR 4/2-3/2), faintly laminated to bedded dolomite band at 2274.7 feet.
SS → 2276.2	2276.6	Sandstone, medium to fine grained: medium to light gray (5.5-7N), very calcareous. Common dark grains.
2276.6	2281.0	Missing.
Core 29 SS → 2281.0	2283.9	Sandstone, fine to coarse grained: light gray (7.5N) and light brownish-gray (10YR 7/2), very calcareous. Massive to faint irregular bedding. Colorless to gray, subrounded to angular quartz grains; rare dark grains. Brownish-gray sandstone has much clay. Rare very fine distorted

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Drill cutting and core samples of Equity Oil Company's Ebler
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From	To	Description
		dark gray stringers and partings. Some light to medium gray (6-4N) distorted to contorted mudstone and shale stringers at 2281.6 to 2281.9 feet and 2282.7 to 2283.1 feet.
SS 2283.9	2285.2	Sandstone, medium grained; light brownish-gray (10YR 7/2). Common mica flakes. Some to common fine irregular stringers and partings of black gilsonite-like organic material.
2285.2	2287.0	Oil shale, mudstone and fine sandstone; dark to medium brownish-gray (10YR 3/2-4/2) and medium to light gray (4-7N). Contorted laminations, streaks and stringers. A large fossil leaf (2-1/2 inches wide) on parting surface at 2285.7 feet.
2287.0	2288.0	Limestone; medium to light gray (5.5-7N), very sandy. Some parts almost entirely composed of calcite filled gastropod shells. Sandstone and mudstone in upper 0.4 foot with fine black gilsonite-like stringers. Very contorted oil shale stringers in middle and lower part.
SS 2288.0	2291.7	Sandstone; light brownish-gray (10YR 7/2-8/2) and light gray (7-8N), very fine to medium grained, very calcareous. Massive and streaked to irregular contorted laminations. Rare to some fine gray (4-5N) mudstone laminae and streaks. Some very contorted black gilsonite-like stringers in upper 0.2 foot.
2291.7	2294.7	Sandstone, mudstone and oil shale; light to medium gray (7-4.5N) and medium to light brownish-gray (10YR 5/2-7/2). Contorted and broken bedding, laminations and stringers.
2294.7	2295.2	Oil shale, siltstone and sandstone; dark to light brownish-gray (10YR 3/2-7/2) and medium to light gray (3.5-6N). Distorted to contorted laminations and bedding. Very irregular parting and fracture; uneven sample split.
2295.2	2296.1	Oil shale, rich; dark brownish-gray (10YR 2/2-3/2). Contorted bedding and rare gray silty laminations. Very irregular shaly parting.
2296.1	2296.6	Oil shale, medium; dark brownish-gray (10YR 3/2). Very contorted bedding and some very irregular bands of gray sandstone and siltstone.
2296.6	2301.1	Mudstone and rare sandstone; light to medium olive-gray (2.5Y 6/2-4/2) and some brownish-gray (10YR 5/2-6/2), massive, calcareous. <u>Very irregular</u>

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Drill cutting and core samples of Equity Oil Company's Ebler
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	From	To	Description
			fracture, no prominent parting; some pieces can be easily broken with the fingers. Badly broken; very uneven sample split.
SS	2301.1	2304.0	Sandstone; fine to very fine grained. Medium to light gray (5.5-6.5N), calcareous. Massive to very faint distorted bedding.
	2304.0	2305.4	Mudstone; gray (4-5N), massive. Very irregular fracture; no prominent parting. Some parts are friable. Some very irregular glossy shear surfaces near base. Badly broken up into very large pieces; very uneven sample split.
stf	2305.4	2310.6	Siltstone and fine to medium grained sandstone; medium to light gray (5.5-7N), very calcareous. Massive to bedded and streaked. Rare bands of gray (5N) bedded mudstone. Rare thin bands of very light brownish-gray (10YR 8/2-6/2) limestone.
	2310.6	2311.0	Mudstone; light to medium gray (6.5-5.5N). Irregular laminations to distorted bedding. Very irregular thick shaly parting and very irregular fracture. Rare fine black dendritic streaks. Uneven sample split.
SS	2311.0	2313.8	Siltstone, mudstone and fine sandstone; very light to rare medium gray (8-6N, rare 5N), calcareous. Irregular, contorted to smooth laminations. Rare cross-bedding and loop structure. A 0.1-foot band of light to medium brownish-gray (10YR 7/2-5/2) sandstone at top.
	2313.8	2314.6	Mudstone and oil shale; medium to dark gray (5.5-3N) and rare dark brownish-gray (10YR 2/2), calcareous. Irregularly bedded; some very irregular fracture. Some irregular very light gray siltstone laminae near top.
SS	2314.6	2314.8	Siltstone and very fine sandstone; very light to medium gray (8-5N). Contorted laminations and streaks.
	2314.8	2316.0	Claystone; medium to dark gray (5.5-2.5N). Distorted to contorted laminations. Very irregular thick shaly parting; soft when wet. Some gray siltstone laminae and stringers. Many very fine interlacing buff stringers near base. Uneven sample split.
			[Sample of claystone from 2315.8 feet: X-ray - illite, quartz, kaolin, pyrite.

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Drill cutting and core samples of Equity Oil Company's Ebler
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From	To	Description
2316.0	2316.8	Mudstone: medium to dark olive-gray (2.5Y 5/2-3/2). Massive to faintly bedded. Very irregular fracture and parting. Many <u>very fine</u> inter-lacing buff stringers near top. A <u>large clam fossil</u> at 2316.6 feet and several large fragments near base.
2316.8	2317.1	Claystone: dark brownish-gray (10YR 2/2). Faint distorted bedding. Very irregular fracture and parting.
2317.1	2318.2	Sandstone, mudstone and claystone: very light to dark brownish-gray (10YR 8/2-2/2) and gray (5.5-4N). Contorted bedding and irregular stringers and bands. Very irregular parting and fracture. Rare vitreous black organic streaks.
SS 2318.2	2320.7	<u>Siltstone and fine sandstone</u> : very light to light gray (8-6N). Common very irregular to cross-bedded gray (5-4N) silty claystone laminae down to 2319.4 feet; faintly bedded from 2319.4 feet to base. Very rare small tan silty nodules (bedding passes through nodules?).
2320.7	2322.6	Siltstone and silty claystone: very light to medium gray (8-4N). Very irregular and some contorted laminations and stringers.
2322.6	2326.9	Claystone: dark to medium-gray (3-5N) and dark brownish-gray (10YR 2/2-3/2). Faint distorted bedding. Very irregular fracture and parting; soft when wet. Some to common black fossil fragments (some plant and clam fragments). Rare glossy shear surfaces and vitreous black organic streaks. A brownish-gray mud conglomerate at 2323.2 feet. Uneven sample split.
2326.9	2327.6	Siltstone: brownish-gray (10YR 5/2), dense, massive. Some mudstone near top.
2327.6	2330.5	Claystone: dark to medium gray (2-5N). Faint distorted bedding. Very irregular parting and fracture; crumbly to friable. Rare very irregular glossy shear surfaces with slickensides. Uneven sample split.
2330.2	2332.3	Mudstone: medium to dark gray (4-3N), massive. Very irregular fracture and parting. Rare very irregular glossy shear surfaces. Uneven sample split.
2332.3	2339.0	Missing.

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Drill cutting and core samples of Equity Oil Company's Ebler
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From	To	Description
Core 30 2339.0	2339.8	Sandstone and claystone: light to dark gray (7-2N), some dark brownish-gray (10YR 2/2-3/2). Very irregular laminations and stringers. Irregular thick shaly parting. Some gray silty limestone.
2339.8	2342.6	Claystone and mudstone: medium to dark gray (4-2N) and dark brownish-gray (10YR 2/2), calcareous to very calcareous. Distorted to contorted bedding. Very irregular shaly parting. Some coarse granular limestone lenses and bands. Common fossils. A 0.2-foot limestone band with coarsely crystalline calcite replaced gastropods at 2341.4 feet. Some vitreous black organic material near base.
2342.6	2348.1	Mudstone: gray (4-5.5N) and some light brownish-gray (10YR 7/2), calcareous to very calcareous. Massive with rare dark contorted stringers. Irregular to very irregular parting and fracture. Badly broken; uneven sample split.
2348.1	2350.3	Mudstone: medium to light gray (5.5-6N, some 4N), massive, calcareous to very calcareous. Regular and some irregular parting.
2350.3	2353.3	Mudstone: medium to light gray (4-6N), massive, calcareous to very calcareous. Irregular and some very irregular parting.
2353.3	2355.7	Mudstone to siltstone and fine sandstone: very light to medium gray (8-5N), very calcareous. Massive to bedded and cross-bedded. Slightly irregular parting. Common interlacing stringers and fine laminae of dark brownish-gray to vitreous black oil shale near base.
2355.7	2356.7	Mudstone: dark brownish-gray (10YR 2/2-3/2), very calcareous. Massive to distorted bedding. Some brownish-gray (10YR 5/3) limestone bands with replaced gastropods (?).
2356.7	2357.4	Mudstone: dark gray (2-3N) and dark brownish-gray (10YR 2/2). Contorted to distorted bedding. Very irregular thick shaly parting. Some to common vitreous black coaly streaks.
2357.4	2359.6	Mudstone: medium and some dark brownish-gray (10YR 4/2-5/2, some 3/2-2/2), very calcareous to calcareous. Massive to faint distorted bedding and some thick bands. Very irregular parting.

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Drill cutting and core samples of Equity Oil Company's Ebler
No. 1 well (Con.)

From	To	Description
2359.6	2361.3	Mudstone and siltstone: light to medium and some dark brownish-gray (10YR 7/2-5/2, some 3/2-2/2 near base), calcareous. Massive and faintly bedded to distorted laminations and bands. Very thick irregular parting.
2361.3	2362.9	Mudstone: medium to dark olive-gray (2.5Y 4/2-2/2), calcareous to very calcareous. Distorted streaked bedding. Very irregular medium to thick parting. Common very calcareous specks and stringers. Some coarsely crystalline calcite masses.
SS 2362.9	2363.7	<u>Sandstone</u> : light to medium gray (6-4N), fine to very fine grained, very calcareous. Massive with some fine contorted stringers.
2363.7	2367.3	Shale, siltstone and very fine sandstone: dark to light gray (3.5-7N) and rare dark brownish-gray (10YR 2/2), calcareous to very calcareous. Distorted to contorted, broken and brecciated laminations.
2367.3	2370.7	Mudstone and siltstone: medium to very light and rare dark gray (4-8N, rare 2.5N), very calcareous. Massive to distorted laminations and streaks. Very thick irregular parting. A 0.4-foot light brownish-gray (10YR 7/2) chalky marlstone at 2369.5 feet.
SS 2370.7	2372.9	<u>Siltstone</u> : white (9N), very calcareous. Massive to finely streaked and laminated with light gray (6N). Very thick regular parting.
2372.9	2374.9	Shale and siltstone: medium to very light gray (4-8N), calcareous to very calcareous. Distorted laminations and bands. Irregular and some regular thick parting. A 1/2-inch broken band of light brownish-gray (10YR 7/2) chalky marlstone at 2373.4 feet.
2374.9	2377.3	Shale: medium to dark gray (4-3.5N), calcareous. Common distorted laminae of very light gray (8N) siltstone. Regular thick parting.
2377.3	2378.3	Shale: dark brownish-gray (10YR 2/2). Distorted bedding with some very irregular light to medium brownish-gray (10YR 7/2-5/2) laminae. Very irregular shaly to some papery parting. Uneven sample split.

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From	To	Description
SS 2378.3	2381.5	Siltstone; white (9N), very calcareous. Massive with rare fine irregular gray laminae and some cross-bedding. A 0.6-foot gray (5.5N) fine grained sandstone at top.
SS 2381.5	2385.3	Siltstone; <u>white</u> and some medium to light gray (9N, some 5-6N), very calcareous. Faintly bedded and streaked to cross-bedded.
SS 2385.3	2388.5	Siltstone and very fine sandstone; <u>white</u> (9-8.5N), very calcareous, massive.
2388.5	2394.0	Missing.
Core 31		(Core 31 may have been reboxed in wrong sequence)
2394.0	2394.9	Shale; dark to medium gray (2-4N) and some dark brownish-gray (10YR 2/2), very calcareous. Very faint distorted bedding. Irregular papery to very irregular shaly parting. Badly broken up; uneven sample split.
2394.9	2396.1	Mudstone: dark to medium gray (3-4N) and some dark to medium olive-gray (2.5Y 2/2-4/2), very calcareous. Distorted bedding to massive. Irregular fracture and thick parting.
2396.1	2398.2	Mudstone: light to medium gray (7-5N, very slight blue-green tint), calcareous to very calcareous, massive. Very irregular fracture. Badly broken up; uneven sample split.
SS 2398.2	2399.2	Sandstone: light gray (6.5N), massive, medium grained, very calcareous. A 0.2-foot mudstone band at base.
2399.2	2404.5	Mudstone: dark to light gray (3.5-6N, very slight blue-green tint), massive, calcareous to very calcareous. Rare coarsely crystalline calcite stringers. Rare very irregular black dendrites. A 0.1-foot band of very fine grained bedded sandstone at base. Some parts badly broken up; uneven sample split.
2404.5	2408.3	Mudstone and <u>coaly shale</u> : medium gray to black (4-1N), slightly calcareous to non-calcareous. Massive to distorted bedding. Very irregular fracture, some irregular papery parting. Some vitreous black coal streaks. Rare very irregular glossy shear surfaces. Badly broken up; uneven sample split.
2408.3	2417.3	Mudstone: dark to light gray (3.5-6N), massive, calcareous to very calcareous. Very irregular

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From	To	Description
		fracture. Rare very irregular black dendrites. Badly broken up; uneven sample split.
2417.3	2427.0	Missing.
2427.0	2433.2	Mudstone, siltstone and very fine sandstone: medium to very light gray (4.5-8N), very calcareous. Massive to distorted laminations and bands; rare cross-bedding. Very thick irregular parting.
2433.2	2434.5	Mudstone and siltstone: medium to light gray (4-7N) and some light to medium brownish-gray (10YR 6/2-4/2), calcareous. Massive to contorted stringers and laminations. Very thick irregular parting.
2434.5	2435.3	Mudstone and <u>coaly shale</u> : light to dark brownish-gray (10YR 6/2-2/2) with some vitreous black coal streaks. Massive to distorted bedding. Very irregular to slightly irregular shaly parting. Some small lenses and irregular stringers of pyrite.
2435.3	2437.1	Shale: dark to medium gray (3.5-4.5N) and light to medium brownish-gray (10YR 7/2-4/2), calcareous. Massive to bedded to irregularly laminated. Irregular shaly parting. Some large clam fossils.
2437.1	2439.0	Shale: dark brownish-gray (10YR 2/2-3/2), non-calcareous. Faintly bedded. Thin to thick irregular shaly parting. Common very irregular laminae and bands of gray (5.5N) granular limestone.
2439.0	2440.6	Mudstone and marlstone: medium to dark gray (4-3N). Faintly laminated to massive. Very irregular parting and fracture. Badly broken up; uneven sample split.
2440.6	2442.7	Marlstone: gray (5-4N) and some brownish-gray (10YR 5/2). Faint laminations and rare bands. Very thick irregular parting. Some fine granular limestone laminae near top.
2442.7	2443.6	Shale: dark brownish-gray (10YR 2/2), silty, very calcareous. Distorted bedding. Irregular papery to shaly parting. Some large clam fossils. Rare irregular pyrite masses. Badly broken up; uneven sample split.
2443.6	2448.3	Mudstone: light to medium gray (6-4.5N), massive, slightly calcareous to calcareous. Some dark brownish-gray (10YR 2/2) shale near top. Rare medium to very large lenses of buff (10YR 7/2)

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Drill cutting and core samples of Equity Oil Company's Ebler
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From	To	Description
SS2448.3	2451.7	marlstone. Very irregular fracture and parting; uneven sample split.
2451.7	2459.0	Siltstone and very fine sandstone: light to medium gray (6.5-5N), very calcareous. Massive to very faintly bedded. Very thick irregular parting. Rare medium gray (4.5N) mudstone. Mudstone: gray (5-3.5N) and rare dark olive-gray (2.5Y 3/2, almost neutral), calcareous. Massive and some distorted bedding. Irregular fracture and thick parting; rare irregular thin shaly parting. Badly broken up into large irregular pieces; uneven sample split.
2459.0		Bottom of core.

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Laramie Petroleum Research Center, Laramie, Wyoming

January 18, 1963