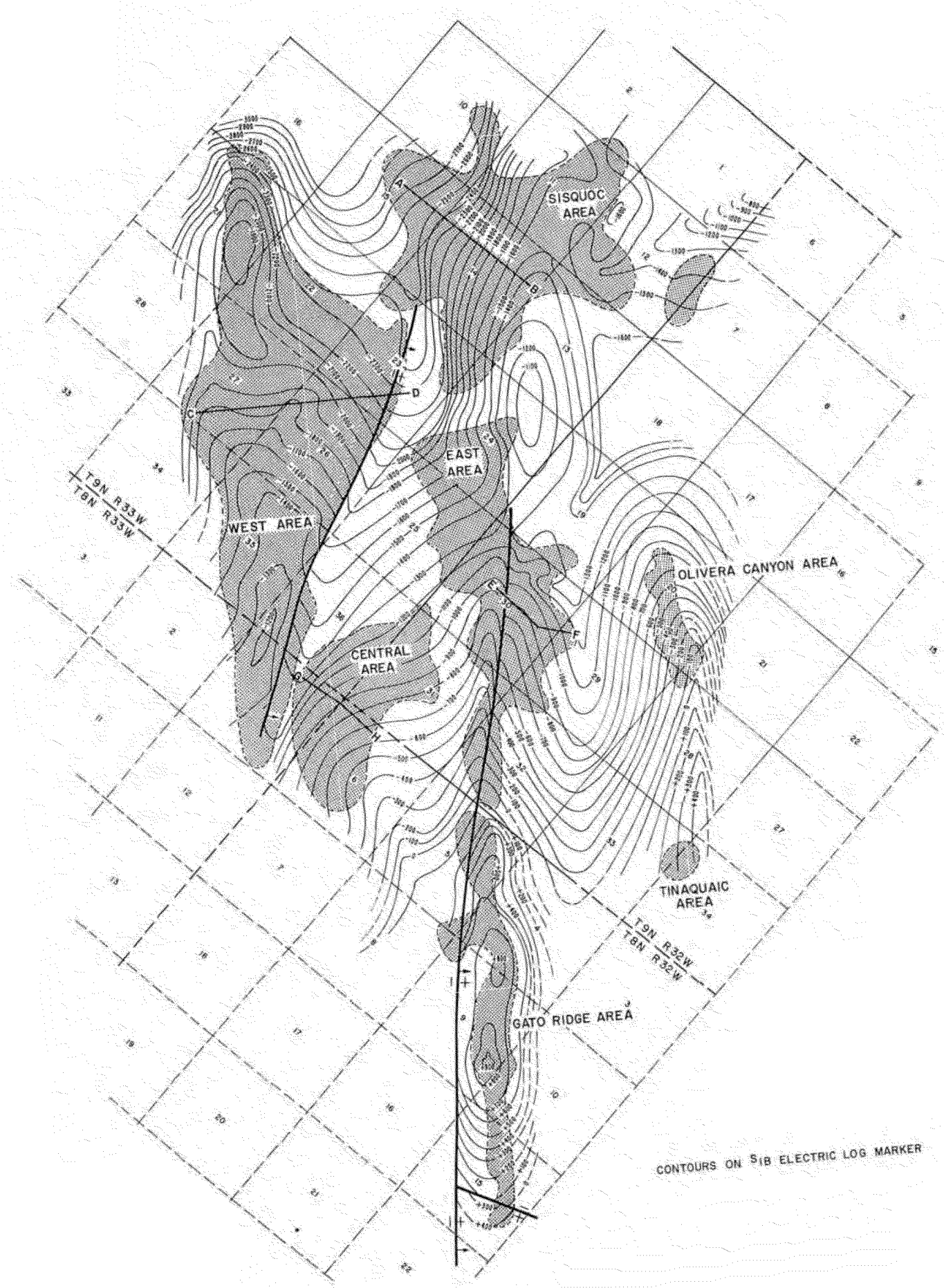
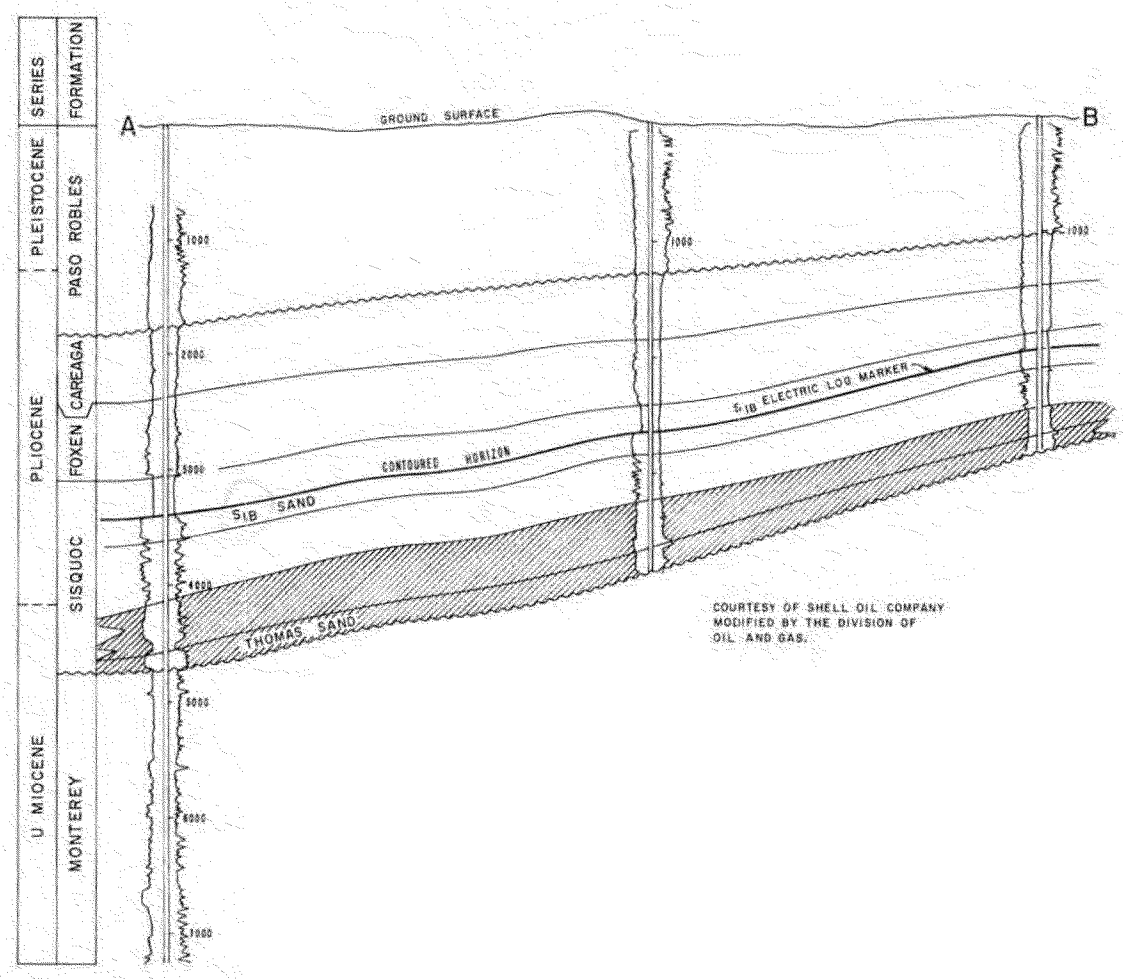
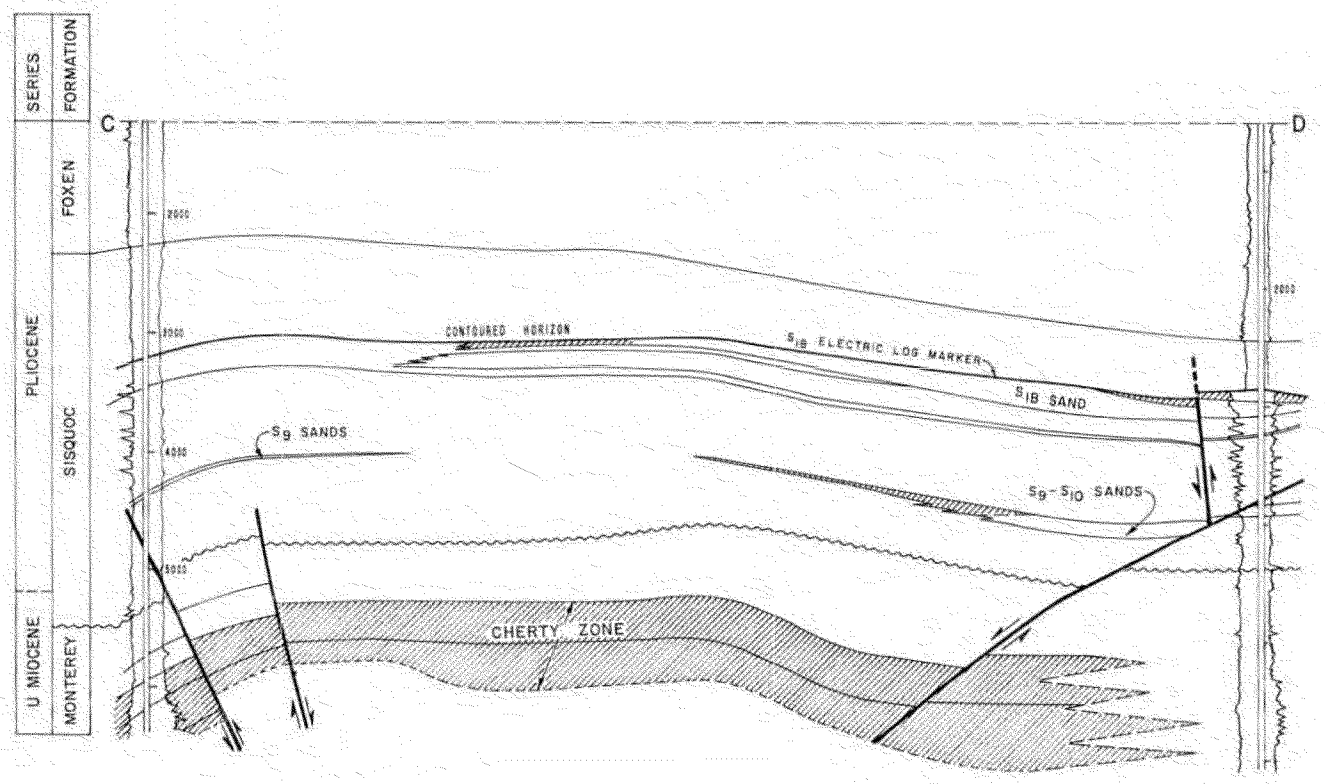
CAT CANYON OIL FIELD



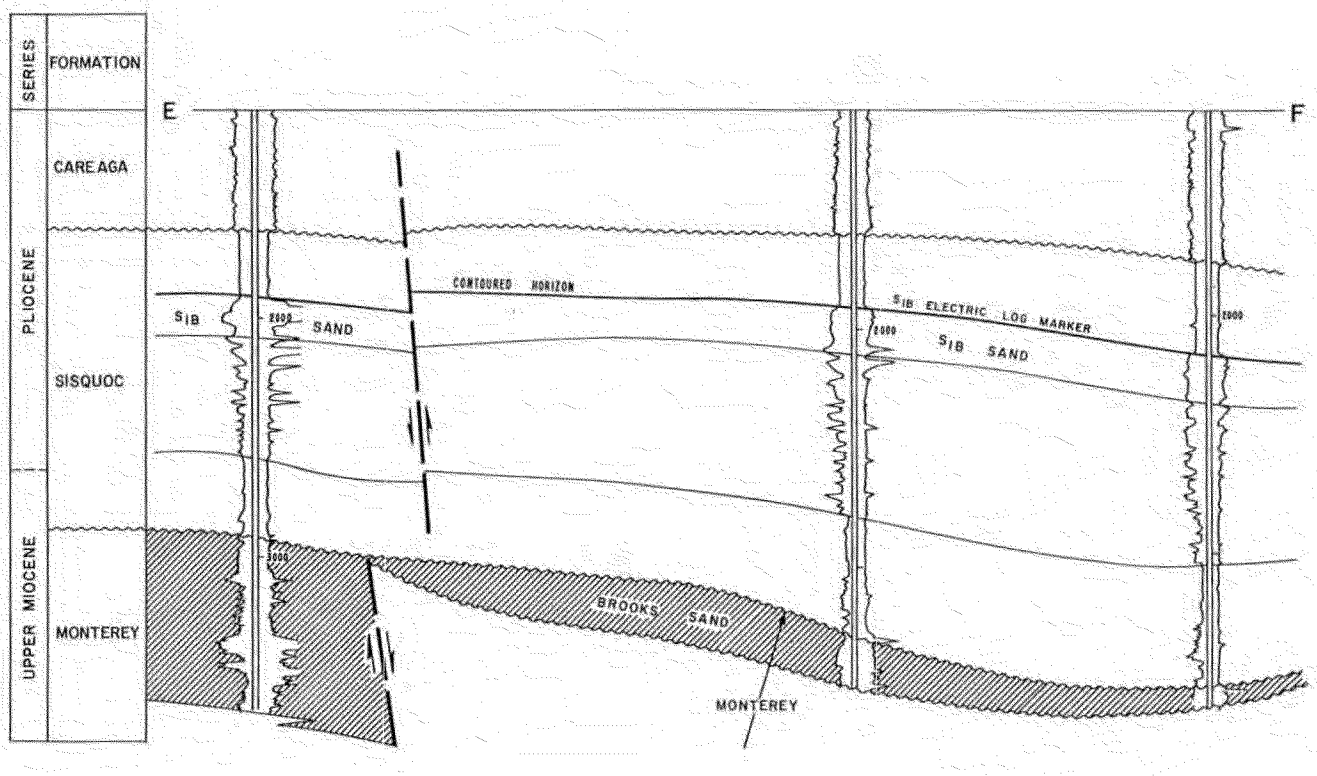
CAT CANYON OIL FIELD

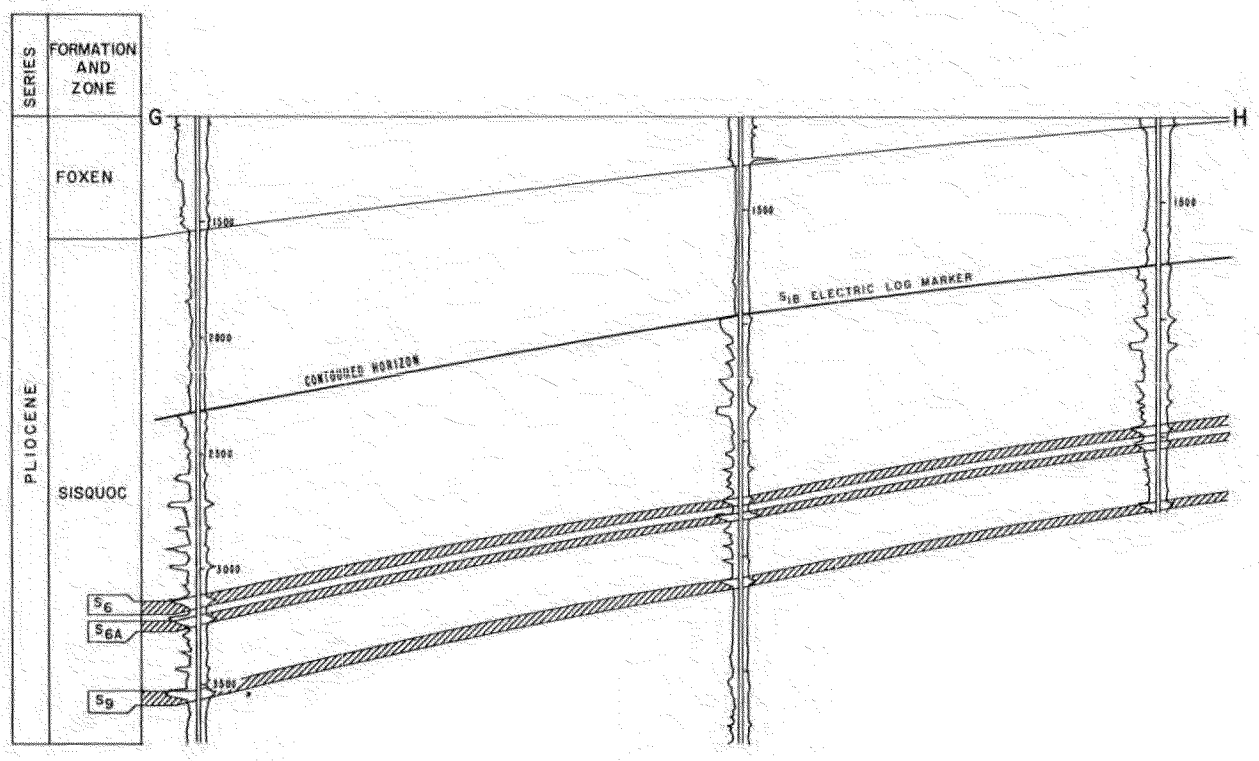
Sisquoc Area and West Area





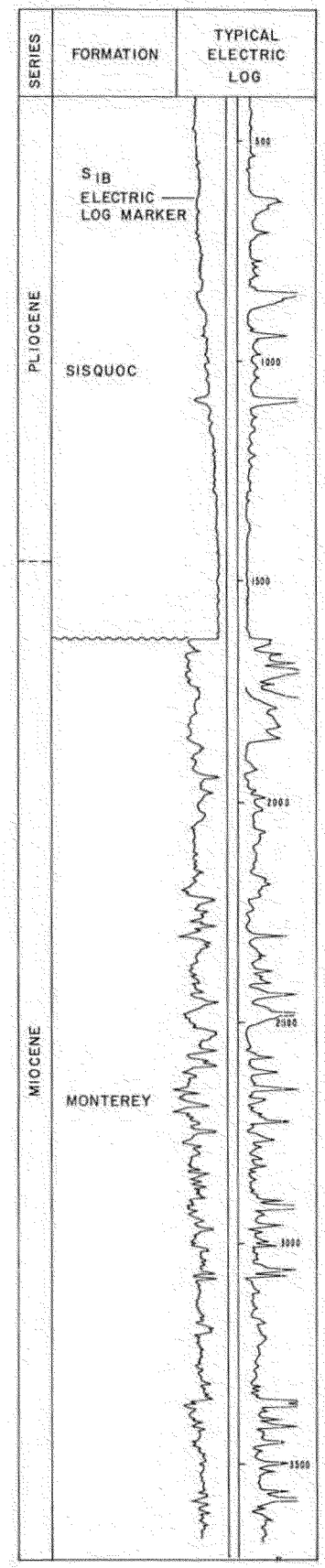
CAT CANYON OIL FIELD
East Area and Central Area



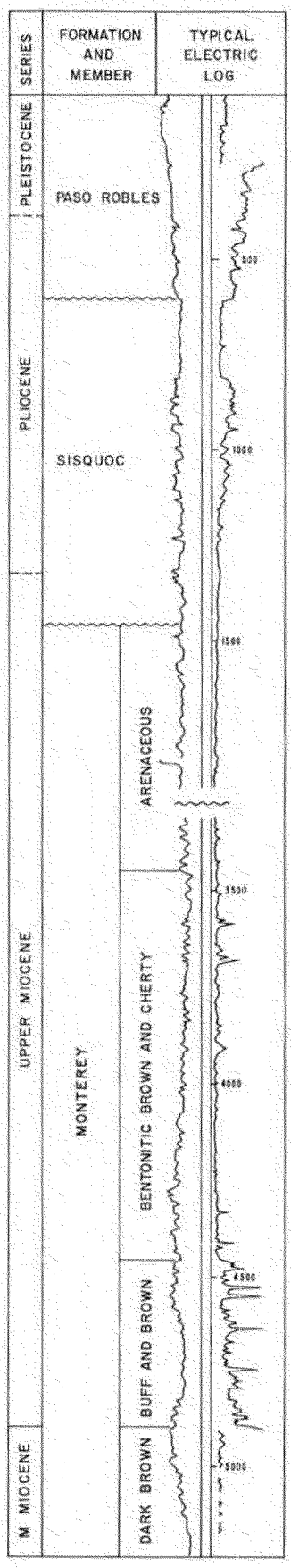


CAT CANYON OIL FIELD

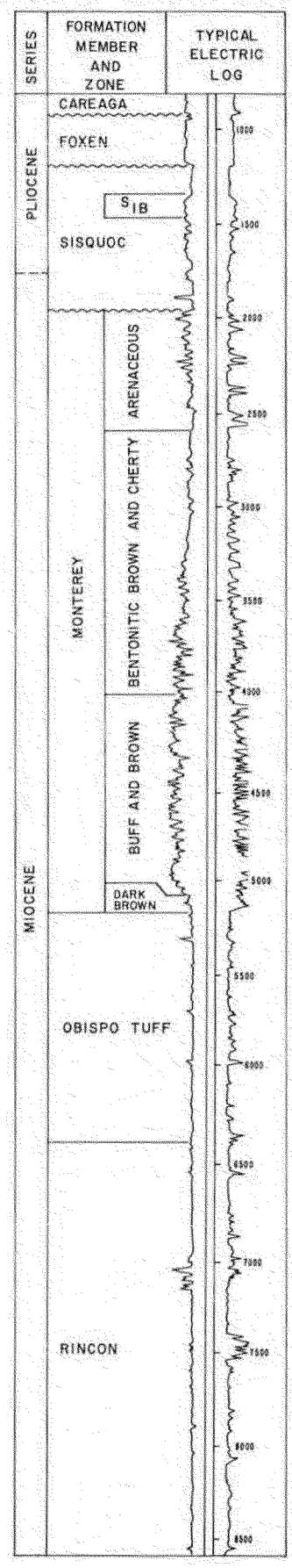
GATO RIDGE AREA



TINAQUAIC AREA



OLIVERA CANYON AREA



LOCATION: 8 miles southeast of Santa Maria

TYPE OF TRAP: See areas

ELEVATION: 700 - 1,400

DISCOVERY DATA

Zone	Present operator and well name	Original operator and well name	Sec. T. & R.	B & M	Initial daily production Oil (bbl)	Initial daily production Gas (Mcf)	Date of completion
Sisquoc	Union Oil Co. of Calif. "Palmer Stendel" (Old) 1	Palmer Union Oil Co. 1	26 9N 33W	SB	150	N.A.	1908

Remarks:

DEEPEST WELL DATA

Present operator and well name	Original operator and well name	Date started	Sec. T. & R.	B & M	Depth (feet)	At total depth: Strata	At total depth: Age
Continetal Oil Co. "McNee" 4	Union Oil Co. of Calif. "McNee" 4	Jul 1945	20 9N 32W	SB	9,001	Rincon	early Mio

PRODUCING ZONES (See areas)

Zone	Average depth (feet)	Average net thickness (feet)	Geologic: Age	Geologic: Formation	Oil gravity (°API) or Gas (btu)	Salinity of zone water gr/gal	Class BOPE required

PRODUCTION DATA (Jan. 1, 1974)

1973 Production: Oil (bbl)	1973 Production: Net gas (Mcf)	1973 Production: Water (bbl)	1973 Proved acreage	1973 Average number producing wells	Cumulative production: Oil (bbl)	Cumulative production: Gas (Mcf)	Peak oil production: Barrels	Peak oil production: Year	Total number of wells: Drilled	Total number of wells: Completed	Maximum proved acreage
6,832,620	3,601,914	33,499,949	7,400	634	208,900,427	105,519,748	8,373,328	1953	1,334	1,174	8,160

STIMULATION DATA (Jan. 1, 1974) (See areas)

Type of project	Date started	Cumulative injection - Water, bbl; Gas, Mcf; Steam, bbl (water equivalent)	Maximum number of wells used for injection

SPACING ACT: See areas

BASE OF FRESH WATER: See areas

CURRENT CASING PROGRAM: See areas

METHOD OF WASTE DISPOSAL: See areas

REMARKS: Effective January 1, 1972, the Four Deer area of Cat Canyon oil field was classified as a separate field.

REFERENCES: Prutzman, P.W., Petroleum in Southern California: Calif. State Mining Bureau Bull. 63 (1912).
Woodring, W.P., and M.N. Bramlette, Geology and Paleontology of the Santa Maria District, California: U.S. Geol. Survey Prof. Paper 222, p. 120 (1950).

CALIFORNIA DIVISION OF OIL AND GAS

CAT CANYON OIL FIELD

CENTRAL AREA

Santa Barbara County

LOCATION: See map sheet of Cat Canyon Oil Field

TYPE OF TRAP: Sand pinchout on homocline

ELEVATION: 1,000

DISCOVERY DATA

Zone	Present operator and well name	Original operator and well name	Sec. T. & R.	B & M	Initial daily production Oil (bbl)	Initial daily production Gas (Mcf)	Date of completion
Sisquoc	Getty Oil Co. "Los Alamos" 32	Pacific Western Oil Corp. "Los Alamos" 32	6 8N 32W	SB	184	8	May 1956

Remarks:

DEEPEST WELL DATA

Present operator and well name	Original operator and well name	Date started	Sec. T. & R.	B & M	Depth (feet)	At total depth: Strata	At total depth: Age
Getty Oil Co. "Los Alamos" 32	Pacific Western Oil Corp. "Los Alamos" 32	Feb 1956	6 8N 32W	SB	5,210	Monterey	Miocene

PRODUCING ZONES

Zone	Average depth (feet)	Average net thickness (feet)	Geologic: Age	Geologic: Formation	Oil gravity (°API) or Gas (btu)	Salinity of zone water gr/gal	Class BOPE required
Sisquoc	2,800	45	Pliocene	Sisquoc	13	450	II

PRODUCTION DATA (Jan. 1, 1974)

1973 Production: Oil (bbl)	1973 Production: Net gas (Mcf)	1973 Production: Water (bbl)	1973 Proved acreage	1973 Average number producing wells	Cumulative production: Oil (bbl)	Cumulative production: Gas (Mcf)	Peak oil production: Barrels	Peak oil production: Year	Total number of wells: Drilled	Total number of wells: Completed	Maximum proved acreage
559,826	58,321	1,046,398	590	47	N.A.	N.A.	N.A.	N.A.	84	71	710

STIMULATION DATA (Jan. 1, 1974)

Type of project	Date started	Cumulative injection - Water, bbl; Gas, Mcf; Steam, bbl (water equivalent)	Maximum number of wells used for injection
Water flood	1964	18,002,456	9
Cyclic steam	1963	1,180,231	15
Fire flood	1965	41,322	1

SPACING ACT: Applies

BASE OF FRESH WATER: 850

CURRENT CASING PROGRAM: 10 3/4" cem. 275; 7" cem. above zone and across base of fresh-water sands; 5 1/2" liner landed through zone.

METHOD OF WASTE DISPOSAL: Waste water is used in the water-flood project.

REMARKS: This area was formerly considered to be part of the West area.

REFERENCES: Bailey, Wm., C., Operations in District No. 3: Calif. Div. of Oil and Gas, Summary of Operations--Calif. Oil Fields, Vol. 42, No. 2, p. 93 (1956).

CALIFORNIA DIVISION OF OIL AND GAS

CAT CANYON OIL FIELD

EAST AREA

Santa Barbara County

LOCATION: See map sheet of Cat Canyon Oil Field

TYPE OF TRAP: Faulted homocline; lenticular sands.

ELEVATION: 900

DISCOVERY DATA

Zone	Present operator and well name	Original operator and well name	Sec. T. & R.	B & M	Initial daily production Oil (bbl)	Initial daily production Gas (Mcf)	Date of completion
Sisquoc	Getty Oil Co. "G.W.P." 44A	Slick-Moorman Production Co. 44A	24 9N 33W	SB	25	0	Jun 1953
Brooks	Robert G. Russell & Son "Field Fee" 1	Brooks Oil Co. 1	31 9N 32W	SB	150	0	1909
Monterey	Continental Oil Co. "Porter" 1-C	Slick-Moorman Production Co. "Palmer Stendel" 1-C	24 9N 33W	SB	*7	0	Oct 1953

Remarks: * Includes some oil produced from 40' of basal Sisquoc sand.

DEEPEST WELL DATA

Present operator and well name	Original operator and well name	Date started	Sec. T. & R.	B & M	Depth (feet)	At total depth: Strata	At total depth: Age
Husky Oil Co. of Delaware "Victory" 20	Palmer Union Oil Co. "Stendel" 20	Jul 1928	30 9N 32W	SB	7,200	Knoxville	Jurassic

PRODUCING ZONES

Zone	Average depth (feet)	Average net thickness (feet)	Geologic: Age	Geologic: Formation	Oil gravity (°API) or Gas (btu)	Salinity of zone water gr/gal	Class BOPE required
Sisquoc	3,000	250	Pliocene	Sisquoc	18	N.A.	I
Brooks	2,100	200	late Miocene	Monterey	10	425	I
Monterey	3,000	500	Miocene	Monterey	6	330	II

PRODUCTION DATA (Jan. 1, 1974)

1973 Production: Oil (bbl)	1973 Production: Net gas (Mcf)	1973 Production: Water (bbl)	1973 Proved acreage	1973 Average number producing wells	Cumulative production: Oil (bbl)	Cumulative production: Gas (Mcf)	Peak oil production: Barrels	Peak oil production: Year	Total number of wells: Drilled	Total number of wells: Completed	Maximum proved acreage
752,180	24,220	1,083,280	1,120	111	N.A.	N.A.	N.A.	N.A.	230	199	1,280

STIMULATION DATA (Jan. 1, 1974)

Type of project	Date started	Cumulative injection - Water, bbl; Gas, Mcf; Steam, bbl (water equivalent)	Maximum number of wells used for injection
Steam flood	1966	3,971,777	9
Cyclic steam	1964	2,672,691	77

SPACING ACT: Does not apply

BASE OF FRESH WATER: 1,000

CURRENT CASING PROGRAM: 10 3/4" cem. 300; 7" cem. above zone and across base of fresh-water sands; 5 1/2" liner landed through zone.

METHOD OF WASTE DISPOSAL: Waste water is injected into disposal wells.

REMARKS: East area data includes the Slick-Moorman area.

REFERENCES: Bailey, Wm. C., Operations in District No. 3: Calif. Div. of Oil and Gas, Summary of Operations--Calif. Oil Fields, Vol. 39, No. 2 (1953).
Cross, R.K., East Cat Canyon Area of the Cat Canyon Oil Field: Calif. State Div. of Mines Bull. 118, p. 435 (1940).
Prutzman, P.W., Petroleum in Southern California: Calif. State Mining Bureau Bull. 63, p. 379 (1912).
Woodring, W.P., and M.N. Bramlette, Geology and Paleontology of the Santa Maria District, California: U.S. Geol. Survey Prof. Paper 222, p. 121 (1950).

CALIFORNIA DIVISION OF OIL AND GAS

CAT CANYON OIL FIELD

GATO RIDGE AREA

Santa Barbara County

LOCATION: See map sheet of Cat Canyon Oil Field

TYPE OF TRAP: Faulted anticline

ELEVATION: 1,400

DISCOVERY DATA

Zone	Present operator and well name	Original operator and well name	Sec. T. & R.	B & M	Initial daily production Oil (bbl)	Initial daily production Gas (Mcf)	Date of completion
Sisquoc	Union Oil Co. of Calif. "Union-Continental" 1	O.C. Field Gasoline Corp. "Continental" 1	4 8N 32W	SB	580	N.A.	Mar 1937
Buff and Brown	Pinal Dome Corp. No. T-2	Same as present	15 8N 32W	SB	50	0	Jan 1915

Remarks:

DEEPEST WELL DATA

Present operator and well name	Original operator and well name	Date started	Sec. T. & R.	B & M	Depth (feet)	At total depth: Strata	At total depth: Age
Sun Oil Co. "Tognazzini" 1	Barnsdall Oil Co. of Calif. "Tognazzini" 1	Apr 1930	9 8N 32W	SB	6,510	Monterey	Miocene

PRODUCING ZONES

Zone	Average depth (feet)	Average net thickness (feet)	Geologic: Age	Geologic: Formation	Oil gravity (°API) or Gas (btu)	Salinity of zone water gr/gal	Class BOPE required
Sisquoc	2,210	200	early Pliocene	Sisquoc	14	N.A.	II
Buff and Brown	3,800	300	Miocene	Monterey	13	330	II

PRODUCTION DATA (Jan. 1, 1974)

1973 Production: Oil (bbl)	1973 Production: Net gas (Mcf)	1973 Production: Water (bbl)	1973 Proved acreage	1973 Average number producing wells	Cumulative production: Oil (bbl)	Cumulative production: Gas (Mcf)	Peak oil production: Barrels	Peak oil production: Year	Total number of wells: Drilled	Total number of wells: Completed	Maximum proved acreage
475,885	688,958	1,504,465	690	66	N.A.	N.A.	N.A.	N.A.	114	94	740

STIMULATION DATA (Jan. 1, 1974)

Type of project	Date started	Cumulative injection - Water, bbl; Gas, Mcf; Steam, bbl (water equivalent)	Maximum number of wells used for injection
--			

SPACING ACT: Does not apply

BASE OF FRESH WATER: None

CURRENT CASING PROGRAM: 10 3/4" cem. 300; 7" cem. above zone; 5 1/2" liner landed through zone.

METHOD OF WASTE DISPOSAL: Waste water is injected into Monterey zone disposal wells.

REMARKS:

REFERENCES: Cross, R.K., Gato Ridge Area of Cat Canyon Oil Field: State Div. of Mines, Bull. 118, p. 438 (1940).
Dolman, S.G., Operations in District No. 3: Calif. Div. of Oil and Gas, Summary of Operations--Calif. Oil Fields, Vol. 17, No. 3, p. 34 (1931).
Woodring, W.P., and M.N. Bramlette, Geology and Paleontology of the Santa Maria District, California: U.S. Geol. Survey Prof. Paper 222, p. 121 (1950).

CALIFORNIA DIVISION OF OIL AND GAS

OLIVERA CANYON AREA

CAT CANYON OIL FIELD

Santa Barbara County

LOCATION: See map sheet of Cat Canyon Oil Field

TYPE OF TRAP: Anticline

ELEVATION: 800

DISCOVERY DATA

Zone	Present operator and well name	Original operator and well name	Sec. T. & R.	B & M	Initial daily production Oil (bbl)	Initial daily production Gas (Mcf)	Date of completion
Cherty - Bentonitic Brown	Continental Oil Co. "McNee" 2	Union Oil Co. of Calif. "McNee" 2	20 9N 32W	SB	37	N.A.	Jun 1944
Buff and Brown	Same as above	Same as above	20 9N 32W	SB	*	N.A.	Jun 1944

Remarks: * Production commingled.

DEEPEST WELL DATA

Present operator and well name	Original operator and well name	Date started	Sec. T. & R.	B & M	Depth (feet)	At total depth Strata	At total depth Age
Continental Oil Co. "McNee" 4	Union Oil Co. of Calif. "McNee" 4	Jul 1945	20 9N 32W	SB	9,001	Rincon	early Mio

PRODUCING ZONES

Zone	Average depth (feet)	Average net thickness (feet)	Geologic Age	Geologic Formation	Oil gravity (°API) or Gas (btu)	Salinity of zone water gr gal	Class BOPE required
Cherty - Bentonitic Brown	3,000	1,200	Miocene	Monterey	10	700	II
Buff and Brown	4,000	300	Miocene	Monterey	10	700	II

PRODUCTION DATA (Jan. 1, 1974)

1973 Production Oil (bbl)	1973 Production Net gas (Mcf)	1973 Production Water (bbl)	1973 Proved acreage	1973 Average number producing wells	Cumulative production Oil (bbl)	Cumulative production Gas (Mcf)	Peak oil production Barrels	Peak oil production Year	Total number of wells Drilled	Total number of wells Completed	Maximum proved acreage
223,648	0	459,221	200	15	4,578,523	0	369,422	1953	37	23	210

STIMULATION DATA (Jan. 1, 1974)

Type of project	Date started	Cumulative injection - Water, bbl; Gas, Mcf; Steam, bbl (water equivalent)	Maximum number of wells used for injection
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SPACING ACT: Applies

BASE OF FRESH WATER: 600

CURRENT CASING PROGRAM: 13 3/8" cem. 720; 8 5/8" combination string landed through zone and cemented through ports above zone.

METHOD OF WASTE DISPOSAL: Waste water is injected into water-disposal wells.

REMARKS:

REFERENCES: Dolman, S.G., Operations in District No. 3: Calif. Div. of Oil and Gas, Summary of Operations--Calif. Oil Fields, Vol. 30, No. 2, p. 43 (1944).

CALIFORNIA DIVISION OF OIL AND GAS

CAT CANYON OIL FIELD

SISQUOC AREA

Santa Barbara County

LOCATION: See map sheet of Cat Canyon Oil Field

TYPE OF TRAP: Permeability barrier on west flank of anticline

ELEVATION: 700

DISCOVERY DATA

Zone	Present operator and well name	Original operator and well name	Sec. T. & R.	B & M	Initial daily production Oil (bbl)	Initial daily production Gas (Mcf)	Date of completion
Sisquoc	Husky Oil Co. of Del. "Goodwin" 1	Union Oil Co. of Calif. "Santa Maria Realty" 1	10 9N 33W	SB	69	0	Dec 1944
Thomas	Shell Oil Co. "Thomas" 88-X	M J M & M Oil Co. "Thomas" 88-X	15 9N 33W	SB	89	0	Nov 1954
Monterey	Husky Oil Co. of Del. "Goodwin" 1	Union Oil Co. of Calif. "Santa Maria Realty" 1	10 9N 33W	SB	*	0	Dec 1944

Remarks: * Production from Sisquoc and Monterey zones commingled.

DEEPEST WELL DATA

Present operator and well name	Original operator and well name	Date started	Sec. T. & R.	B & M	Depth (feet)	At total depth: Strata	At total depth: Age
Shell Oil Co. "Lloyd et al" 7	Same	Mar 1971	15 9N 33W	SB	7,860	Monterey	Miocene

PRODUCING ZONES

Zone	Average depth (feet)	Average net thickness (feet)	Geologic: Age	Geologic: Formation	Oil gravity (°API) or Gas (btu)	Salinity of zone water gr/gal	Class BOPE required
Sisquoc	2,750	500	Pliocene	Sisquoc	10	50	II
Thomas	4,900	70	Miocene	Sisquoc	7	700	II
Monterey	4,000	500	Miocene	Monterey	9	610	II

PRODUCTION DATA (Jan. 1, 1974)

1973 Production: Oil (bbl)	1973 Production: Net gas (Mcf)	1973 Production: Water (bbl)	1973 Proved acreage	1973 Average number producing wells	Cumulative production: Oil (bbl)	Cumulative production: Gas (Mcf)	Peak oil production: Barrels	Peak oil production: Year	Total number of wells: Drilled	Total number of wells: Completed	Maximum proved acreage
3,305,917	396,492	3,472,015	1,970	231	N.A.	N.A.	N.A.	N.A.	401	374	2,190

STIMULATION DATA (Jan. 1, 1974)

Type of project	Date started	Cumulative injection - Water, bbl; Gas, Mcf; Steam, bbl (water equivalent)	Maximum number of wells used for injection
Water flood	1963	1,404,573	2
Steam flood	1967	693,193	2
Cyclic steam	1963	10,675,132	289

SPACING ACT: Applies

BASE OF FRESH WATER: 2,000

CURRENT CASING PROGRAM: 10 3/4" cem. 60 or 9 5/8" cem. 400; 7" combination string landed through zone and cemented through ports above zone and across base of fresh-water sands; 7" cem. above zone to the surface; 5 1/2" liner hung through zone (Sisquoc).

METHOD OF WASTE DISPOSAL: Waste water is injected into disposal wells.

REMARKS: The Sisquoc area includes the Bradley Canyon area.

REFERENCES: Bailey, Wm. C., Operations in District No. 3: Calif. Div. of Oil and Gas, Summary of Operations--Calif. Oil Fields, Vol. 40, No. 2 (1954).

CALIFORNIA DIVISION OF OIL AND GAS

CAT CANYON OIL FIELD

TINAQUAIC AREA

Santa Barbara County

LOCATION: See map sheet of Cat Canyon Oil Field

TYPE OF TRAP: Anticline

ELEVATION: 1,020

DISCOVERY DATA

Zone	Present operator and well name	Original operator and well name	Sec. T. & R.	B & M	Initial daily production Oil (bbl)	Initial daily production Gas (Mcf)	Date of completion
Monterey	Continental Oil Co. "Wickenden" 1	Four-Five-Six Oil Co. "Wickenden" 1	34 9N 32W	SB	90	0	Feb 1945

Remarks:

DEEPEST WELL DATA

Present operator and well name	Original operator and well name	Date started	Sec. T. & R.	B & M	Depth (feet)	At total depth Strata	At total depth Age
Continental Oil Co. "Wickenden" 5	Same	Jun 1973	33 9N 32W	SB	5,250	Monterey	Miocene

PRODUCING ZONES

Zone	Average depth (feet)	Average net thickness (feet)	Geologic Age	Geologic Formation	Oil gravity (°API) or Gas (btu)	Salinity of zone water gr/gal	Class BOPE required
Monterey	2,020 - 3,180	1,200 - 3,200	Miocene	Monterey	6	N.A.	II

PRODUCTION DATA (Jan. 1, 1974)

1973 Production Oil (bbl)	1973 Production Net gas (Mcf)	1973 Production Water (bbl)	1973 Proved acreage	1973 Average number producing wells	Cumulative production Oil (bbl)	Cumulative production Gas (Mcf)	Peak oil production Barrels	Peak oil production Year	Total number of wells Drilled	Total number of wells Completed	Maximum proved acreage
6,963	0	4,559	50	2	21,519	0	7,342	1948	7	3	50

STIMULATION DATA (Jan. 1, 1974)

Type of project	Date started	Cumulative injection - Water, bbl; Gas, Mcf; Steam, bbl (water equivalent)	Maximum number of wells used for injection
--			

SPACING ACT: Applies

BASE OF FRESH WATER: 380 - 600

CURRENT CASING PROGRAM: 13 3/8" cem. 200; 8 5/8" combination string landed through zone and cemented through ports above zone and across base of fresh-water sands; or 9 5/8" cem. 1,800; 7" liner landed through zone.

METHOD OF WASTE DISPOSAL: Water is transported to Olivera Canyon area for subsurface disposal.

REMARKS: No formal production reports were filed until July 1948. Cumulative production only includes oil that was reported since July 1948.

REFERENCES: Dolman, S.G., Operations in District No. 3: Calif. Div. of Oil and Gas, Summary of Operations--Calif. Oil Fields, Vol. 31, No. 2 (1945).

CALIFORNIA DIVISION OF OIL AND GAS

CAT CANYON OIL FIELD

WEST AREA

Santa Barbara County

LOCATION: See map sheet of Cat Canyon Oil Field

TYPE OF TRAP: Faulted anticline; sand pinchout

ELEVATION: 800 - 1,200

DISCOVERY DATA

Zone	Present operator and well name	Original operator and well name	Sec. T. & R.	B & M	Initial daily production Oil (bbl)	Initial daily production Gas (Mcf)	Date of completion
Sisquoc (S_{1b})	Union Oil Co. of Calif. "Palmer Stendel" (Old) 1	Palmer Union Oil Co. 1	26 9N 33W	SB	150	N.A.	1908
Alexander (S_9-S_{10})	Standard Oil Co. of Calif. "Alexander" 164	Same as present	21 9N 33W	SB	366	N.A.	Mar 1953
Los Flores (Cherty)	Standard Oil Co. of Calif. "Los Flores" 1-1	Standard Oil Co. of Calif. "Los Flores Land and Oil Co. Standard" 1	27 9N 33W	SB	716	N.A.	Aug 1938

Remarks: Indications of oil in the Monterey Formation were noted as early as August 1918 in Pan American Pet. Inv. Corp. well No. 15A (now Getty Oil Co. "Los Alamos" 15-A).

DEEPEST WELL DATA

Present operator and well name	Original operator and well name	Date started	Sec. T. & R.	B & M	Depth (feet)	At total depth: Strata	At total depth: Age
Union Oil Co. of Calif. "Bell" 106	Same	Sep 1951	35 9N 33W	SB	7,460	Monterey	Miocene

PRODUCING ZONES

Zone	Average depth (feet)	Average net thickness (feet)	Geologic: Age	Geologic: Formation	Oil gravity (°API) or Gas (btu)	Salinity of zone water gr/gal	Class BOPE required
Sisquoc (S_{1b})	2,800	600	Pliocene	Sisquoc	17	1,330	II
Alexander (S_9-S_{10})	3,750	200	Pliocene	Sisquoc	23	1,200	II
Los Flores (Cherty)	6,000	1,500	Miocene	Monterey	15	400	II

PRODUCTION DATA (Jan. 1, 1974)

1973 Production: Oil (bbl)	1973 Production: Net gas (Mcf)	1973 Production: Water (bbl)	1973 Proved acreage	1973 Average number producing wells	Cumulative production: Oil (bbl)	Cumulative production: Gas (Mcf)	Peak oil production: Barrels	Peak oil production: Year	Total number of wells: Drilled	Total number of wells: Completed	Maximum proved acreage
1,508,201	2,433,923	25,930,011	2,780	162	N.A.	N.A.	N.A.	N.A.	461	410	2,980

STIMULATION DATA (Jan. 1, 1974)

Type of project	Date started	Cumulative injection - Water, bbl; Gas, Mcf; Steam, bbl (water equivalent)	Maximum number of wells used for injection
Water flood	1954	120,032,572	70
Cyclic steam	1964	247,972	20

SPACING ACT: Does not apply

BASE OF FRESH WATER: 1,000

CURRENT CASING PROGRAM: 13 3/8" or 11 3/4" cem. 200 - 400; 8 5/8" or 7" cem. above zone and across base of fresh-water sands; 6 5/8" or 5 1/2" liner landed through zone; or 7" combination string landed through zone and cemented through ports above zone and across base of fresh-water sands.

METHOD OF WASTE DISPOSAL: Waste water is injected into water-disposal wells or is used in water-flood projects.

REMARKS:

REFERENCES: Huey, W.F., West Cat Canyon Area of Cat Canyon Oil Field: Calif. Div. of Oil and Gas, Summary of Operations--Calif. Oil Fields, Vol. 40, No. 1 (1954).
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