[redacted]

M-d

DUVAL CORPORATION #39 SANTA FE NO PERMIT
SW SW Sec. 28-T19N-R27E APACHE COUNTY 1-76

M-d

UVAL CORPORATION #39 SANTA FE NO PERMIT
SW Sec. 28-T19N-R27E APACHE COUNTY 1-70

1-70

County Apache

Area Holbrook Basin

Lease No.

Well Name Duval Corporation #39 Santa Fe

Location SW SW Sec 28 Twp 19N Range 27E Footage 965' FSL - 320' FWL

Elev 6110'? Gr KB Spud Date 5-12-64 ~~Completed~~ Abandon 5-21-64 Total Depth 2001'?

Contractor

Drilled by Rotary
Cable Tool

Casing Size	Depth	Cement
6-1/4"	1866'	
4"	2001'	

Production Horizon

Initial Production

REMARKS This hole drilled as a potash test.

See file for Core Lithology (Footage 1861' - 2001.5)

Elec rical Log;
Logs Gamma Ray Neutron; Sonic Log-Gamma Ray; Induction-Elect-

Sample Log
Sample Descript.
Sample Set P-1304
Core Analysis
DSTs

Applic. to Plug
Plugging Record x
Completion Report x

Water well accepted by

Bond Co. & No. None

Bond Am't $ None Cancelled Date Organization Report None

Filing Receipt None Dated Well Book x Plat Book x

Loc. Plat Dedication None (Strat)

API No. None

Permit Number None Date Issued

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WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG

DESIGNATE TYPE OF COMPLETION:

New Well ☐ Work-Over ☐ Deepen ☐ Plug Back ☐ Same Reservoir ☐ Different Reservoir ☐ Oil ☐ Gas ☐ Dry ☐

DESCRIPTION OF WELL AND LEASE

Operator: Duval Corporation	Address: 4715 E FT Lowell Rd Tucson, Arizona
Lease Name	Well Number: 39 — Field & Reservoir
Location: 965' FSL & 320' FWL Sec 28 T19N R27E	Sec.—TWP-Range or Block & Survey

County	Permit number	Date Issued	Previous permit number	Date Issued
Apache				

Date spudded	Date total depth reached	Date completed, ready to produce	Elevation (DF, RKB, RT or Gr.) feet	Elevation of casing hd. flange feet
		5/21/64		

Total depth	P.B.T.D.	Single, dual or triple completion?	If this is a dual or triple completion, furnish separate report for each completion.
1997			

Producing interval (s) for this completion	Rotary tools used (interval)	Cable tools used (interval)

Was this well directionally drilled?	Was directional survey made?	Was copy of directional survey filed?	Date filed

Type of electrical or other logs run (check logs filed with the commission): Gamma Ray-Neutron, Induction Elect Log, Sonic log-Gamma Ray — Date filed:

CASING RECORD

Casing (report all strings set in well—conductor, surface, intermediate, producing, etc.)

Purpose	Size hole drilled	Size casing set	Weight (lb./ft.)	Depth set	Sacks cement	Amt. pulled

TUBING RECORD			LINER RECORD				
Size in.	Depth set ft.	Packer set at ft.	Size in.	Top ft.	Bottom ft.	Sacks cement	Screen (ft.)

PERFORATION RECORD			ACID, SHOT, FRACTURE, CEMENT SQUEEZE RECORD	
Number per ft.	Size & type	Depth Interval	Am't. & kind of material used	Depth Interval

INITIAL PRODUCTION

Date of first production	Producing method (indicate if flowing, gas lift or pumping—if pumping, show size & type of pump:)

Date of test	Hrs. tested	Choke size	Oil prod. during test bbls.	Gas prod. during test MCF	Water prod. during test bbls.	Oil gravity °API (Corr)

Tubing pressure	Casing pressure	Cal'ted rate of Production per 24 hrs.	Oil bbls.	Gas MCF	Water bbls.	Gas—oil ratio

Disposition of gas (state whether vented, used for fuel or sold):

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the ..... of the ..... (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date ..... Signature .....

STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION

Well Completion or Recompletion Report and Well Log

Form No. P-7 File two copies

PLUGGING RECORD

Operator: Duval Corporation	Address: 4715 E Ft Lowell Rd. Tucson, Arizona
Name of Lease	Well No.: 39 — Field & Reservoir
Location of Well: 965' FSL & 320' FWL Sec 28 T19N R27E	Sec-Twp-Rge or Block & Survey — County: Apache
Application to drill this well was filed in name of	Has this well ever produced oil or gas — Character of well at completion (initial production): Oil (bbls/day) — Gas (MCF/day) — Dry?
Date plugged:	Total depth: 1997 — Amount well producing when plugged: Oil (bbls/day) — Gas (MCF/day) — Water (bbls./day)

Name of each formation containing oil or gas. Indicate which formation open to wellbore at time of plugging	Fluid content of each formation	Depth interval of each formation	Size, kind & depth of plugs used Indicate zones squeeze cemented, giving amount cement.

CASING RECORD

Size pipe	Put in well (ft.)	Pulled out (ft.)	Left in well (ft.)	Give depth and method of parting casing (shot, ripped etc)	Packers and shoes

Was well filled with mud-laden fluid, according to regulations?

Indicate deepest formation containing fresh water.

NAMES AND ADDRESSES OF ADJACENT LEASE OPERATORS OR OWNERS OF THE SURFACE

Name	Address	Direction from this well:

In addition to other information required on this form, if this well was plugged back for use as a fresh water well, give all pertinent details of plugging operations to base of fresh water sand, perforated interval to fresh water sand, name and address of surface owner, and attach letter from surface owner authorizing completion of this well as a water well and agreeing to assume full liability for any subsequent plugging which might be required.

Use reverse side for additional detail
File this form in duplicate with the State of Arizona Oil & Gas Conservation Commission

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the.....of the .....(company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date ..... Signature .....

STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION

Plugging Record — File two copies

Form No. P-15

Hole No.	Interval (feet)	Formation or Member
37	Ground elevation 5760'	
	0-100	(No samples)
	-263	Upper Petrified Forest
	263-	Lower Petrified Forest
	553	Top of greenish-grey unit
	842-999	Lower Wupatki
	999-1327	Coconino
	1327-	Supai
	1466	Top of 1st marker Anhydrite
38	Ground elevation 6210'	
	0-85	(No samples)
	-290	Bidahochi (with basal conglomerate)
	290-	Upper Petrified Forest
	1003-	Lower Petrified Forest
	1282	Top of greenish-grey unit
	1599-1655	Lower Wupatki
	1655-1722	Kaibab
	1722-2035	Coconino
	2035-	Supai
	2113	Top of 1st marker Anhydrite
39	Ground elevation 6100' ?	
	0-308	Bidahochi
	308-	Upper Petrified Forest
	753-	Lower Petrified Forest
	1040	Top of greenish-grey unit
	1295-	Shinarump
	1322-1468	Lower Wupatki
	1468-1753	Coconino
	1753-	Supai
	1855	Top of 1st marker Anhydrite
40	Ground elevation 5810'	
	0-15	Dune Sand
	15-66	Bidahochi
	66-571	Upper Petrified Forest
	571-622	Sonsela
	622-	Lower Petrified Forest
	765 (GRN log)	Top of greenish-grey unit (?)
	1008-	Shinarump
	1069-1109	Lower Wupatki
	1109-1174	Kaibab
	1174-1484	Coconino
	1484-	Supai
	1589 (approx.)	Top of 1st marker Anhydrite

6100
1468
7463

RECEIVED
JUL 20 1965
STATE O & G
CONS. COMM.

1-70

1-70

FORM 153

DUVAL CORPORATION

INTER-OFFICE MEMORANDUM

FROM Navajo, Arizona DATE May 26, 1964

TO Esperanza ATTENTION B.G. Meeser

SUBJECT: Duval # 39 Santa Fe

Location: 965 FSL, 320 FWL, sec.28, T.19N., R.27E.
Date Started: 5/12/64
Date Completed: 5/21/64
Elevation, G.L.: 6110
Casing Point: 1856
Depth, Top Coconino: 1468 (4642)
Depth, Top Halite: 1872 (4238)
Depth, Top Sylvite: 1927 (4183)
T.D.: 1997

Form 3
2M Sheets 5-54

DUVAL SULPHUR & POTASH COMPANY
POTASH DIVISION
CARLSBAD, NEW MEXICO

WHILE WE BELIEVE THIS INFORMATION TO BE CORRECT, WE MAKE NO REPRESENTATION AND DO NOT ASSUME ANY RESPONSIBILITY FOR THE USE OF THIS INFORMATION.
DUVAL SULPHUR & POTASH COMPANY

CORE LITHOLOGY

WELL NO. 39

DEPTH (Feet) From		DEPTH (Feet) To		INTERVAL Feet		ESTIM. % Shale	ESTIM. % R.A	DESCRIPTION
				Abbreviations:				H - Halite; G - Gypsum; A - Anhydrite; C-S - Clay-Silt; P - Polyhalite; med.g. - medium grained; S - Sylvite; clr - clear; C - Carnallite; occ - occasional; f.g. - fine grained; v - very; c.g. - coarse grained; incr - increasing; incl - inclusions; decr - decreasing; irreg - irregular; brn - brown
1861	0	1872	6	11	6	-	100	A, lt-med gray.
1872	6	1876	4	3	8	98	2	C-S, brn, hard; ½" gray A bands at 1874.1 & 1875.3'.
1876	4	1877	2	0	8	5	95	A, white; ½" brn C-S band at base.
1877	2							TOP OF SALT
1877	2	1879	1	1	9	2	-	H, med; few small brn C-S incl.
1879	1	1881	8	2	7	-	2	H, clr, med; v few small white A stringers & ½" band at base.
1881	8	1883	8	2	0	35	2	H, med & C-S; brn bands incr down from 20% to 50%; few med white A blebs.
1883	8	1893	0	9	2	7	-	H, med-c.g.; some irreg med-lg. brn C-S incls decr down from 10% to 4%.
1893	0	1893	3	0	3	90	-	C-S, brn; some H, f.g.
1893	3	1897	4	4	1	3	-	H, med; few med brn C-S incls grading out down.
1897	4	1899	1	3	7	2	3	H, clr, c.g.; few med white A stringers & brn C-S incls
1899	1	1904	6	5	5	-	90	A, white; few irreg med H intergrowths.
1904	6	1907	8	3	2	2	2	H, clr, c.g.; few small white A blebs; few small brn C-S incls grading out down.
1907	8	1909	3	1	5	15	-	H, f.g.; some small-lg. brn C-S incls.
1909	3	1910	9	1	6	55	-	C-S, brn, med-soft, & H, med.g.
1910	9	1915	4	4	5	25	-	H, f-c.g.; some small-lg. brn C-S incls, incr down from 10% at top to 40% at base.
1915	4	1917	4	2	0	2	1	H, clr, med-c.g.; few small brn C-S incls; few med white A stringers in bottom 0.7'.

Form 3-A

DUVAL CORPORATION

Core Lithology, Supplemental Page

WELL NO. 39 CORE LITHOLOGY PAGE NO. 2

DEPTH (Feet) From		DEPTH (Feet) To		INTERVAL Feet		ESTIM. % Shale	ESTIM. % A/P	DESCRIPTION
1917	4	1919	5	2	1	1	1	H, clr, c.g.; v few small brn C-S incls & white A stringers.
1919	5	1921	2	1	7	3	-	H, med; few small brn C-S incls, ¼" band at 1920.2'.
1921	2	1922	4	1	2	-	-	H, clr, med; occ med pink S bleb in bottom 0.2'. Est. K_2O/S - 0%
1922	4	1922	6	0	2	-	30	H, f.g.; many A bands & blebs.
1922	6	1924	8	2	4	50	-	H, f.g., & C-S, brn, 60% C-S in top & bottom 0.8', 20% in remainder.
1924	8	1927	1	2	3	4	-	H, med-c.g.; few small-lg. brn C-S incls & stringers.
1927	1	1931	75	4	65	15	-	H, med-c.g.; some irreg small-v lg. brn C-S incls.
1931	75							TOP OF SAMPLES
1931	75	1933	00	1	25	15	1	H, med; some small-lg. brn C-S incls; few small-med red-rimmed milky S blebs; v few white A stringers. Est K_2O/S - 8%
1933	00	1934	75	1	75	50	-	H, med, & C-S, brn, soft, as small-v lg. incls; decr down from 80% at top to 20% at base; v few med red S blebs. Est K_2O/S - 1%
1934	75	1935	85	1	10	2	4	H, med-c.g., clr lower ½; few gray A stringers & tan A/P blebs; few small brn C-S incls grading out down; few small-med red S blebs. Est K_2O/S - 2%
1935	85	1937	65	1	80	-	3	H, clr, c.g.; few small tan A/P blebs; v few small pink-milky S blebs; occ small brn C-S incl. Est K_2O/S - 1%

Form 3-A

DUVAL CORPORATION

Core Lithology, Supplemental Page

WELL NO. 39 — CORE LITHOLOGY — PAGE NO. 3

DEPTH (Feet) From	DEPTH (Feet) To	INTERVAL Feet	ESTIM. % Shale	ESTIM. % Ax	DESCRIPTION
1938 65	1939 05	1 40	2	4	H, clr, med; few med A stringers & tan A/P blebs; ¼" A bands at 1938.20' & 1938.50'; few v small red S blebs & brn C-S incls. Est K_2O/S - 1%
1939 05	1940 10	1 05	12	4	H, clr, med; 0.1' 80% zone of soft brn C-S at top, few small incls in middle third; v few small red S blebs in upper half, some small milky S blebs in bottom 0.2'; two 0.1' zones of tan A/P (10%) at 1939.15' & 1939.75'. Est K_2O/S - 3%
1940 10	1940 70	0 60	-	1	H, v clr, f.g.-med; some lg. milky-red-rimmed S blebs; v few small white A stringers. Est K_2O/S - 22%
1940 70	1941 55	0 85	-	4	H, clr, med-c.g.; some irreg small-med red-milky to pink S blebs; v few med white A blebs, think stringers at top, ½" band at 1941.25'. Estk K_2O/S - 6%
1941 55	1942 45	0 90	-	70	A, gray; some H f.g., as irreg intergrowths; few small-med red S blebs & intergrowths. Est K_2O/S - 2%
1942 45	1943 60	1 15	5	3	H, clr, med-c.g.; 0.1' zone 50% lg. red-rimmed milky S blebs at 1943.40'; few irreg brn-gray C-S incls in lower 0.7'; few small-med gray A blebs & stringers. Est K_2O/S - 4%
1943 60	1944 05	0 45	40	2	H, med-c.g.; several small-v lg. brn C-S incls; few small red S blebs. & small white A stringers. Est K_2O/S - 3%
1944 05	1946 00	1 95	6	-	H, c.g., some med-lg. red-rimmed milky S blebs; few small-lg. gray, little brn C-S incls, ½" 50% zone at base; occ small gray A bleb. Est K_2O/S - 14%

orm 3-A

DUVAL CORPORATION

Core Lithology, Supplemental Page

WELL NO. 39 CORE LITHOLOGY PAGE NO. 4

DEPTH (Feet) From		DEPTH (Feet) To		INTERVAL Feet		ESTIM. % Shale	ESTIM. % A%	DESCRIPTION
1946	00	1947	75	1	75	2	5	H, clr, med; several small gray A stringers; few small
								med red-rimmed milky S blebs; few lg. brn C-S incls
								in top 0.2'. Est K_2O/S - 3%
1947	75							END OF SAMPLES
1947	75	1950	8	3	05	-	15	H, tan-clr, f.g.-med; several small white A stringers
								& tan A/P zones.
1950	8	1953	0	2	2	40	-	H, f.g.-med, & C-S, brn, incr down from 20% at top to
								60% at base; occ small white A bleb.
1953	0	1954	4	1	4	15	-	H, med-c.g.; some med brn C-S incls; few small red
								S blebs. Est. K_2O/S - 4%
								(0.2' of Core Recovered)
1954	4	1954	9	0	5	80	-	C-S, brn, soft; some H, f.g., as irreg blebs & veinlets
1954	9	1957	4	2	5	12	2	H, med; some small-lg. brn C-S incls; few gray A
								stringers, thinx band at 1955.5'.
1957	4	1961	1	3	7	5	3	H, med-c.g.; few small brn C-S incls, decr down from
								8% at top to 2% at base; few lg. white A stringers.
1961	1	1962	8	1	7	1	4	H, clr, med to c.g., few med white A stringers & tan
								A/P zones; occ small brn C-S incls.
1962	8	1967	4	4	6	1	5	H, clr to tan, med to c.g., several lt. gray A stringers
								thin partings at 1963.5 & 1963.8, v few brn C-S incls
								in bottom 0.5'.
1967	4	1971	3	3	9	20	2	H, med.g. to f.g., many small to lg. brn C-S incls;
								few small white A stringers, ½" band at top.

Form 3-A

DUVAL CORPORATION

Core Lithology, Supplemental Page

WELL NO. 39 CORE LITHOLOGY PAGE NO. 5

DEPTH (Feet) From		To		INTERVAL Feet		ESTIM. % Shale	AR	DESCRIPTION
1971	3	1974	8	3	5	5	1	H, med to c.g., few small to med brn C-S incls, v few white A stringers.
1974	8	1978	9	4	1	1	-	H, v clr, c.g., v few small red-brn C-S incls; occ white A blebs.
1978	9	1982	0	3	1	2	2	H, med to c.g.; few med white A stringers & small brn C-S incls, thin C-S parting at 1979.2'.
1982	0	1984	5	3	5	20	2	H, f.g. to med, many small to lg. brn C-S incls. decr down from 30% at top to 10% at base; few small white A blebs.
1984	5	1989	5	5	0	2	3	H, med to c.g., few small to med white A stringers, few small brn C-S incls.
1989	5	1992	9	3	9	-	3	H, v clr, c.g., few irreg lt. gray A zones & stringers; occ v small brn C-S blebs in top foot.
1992	9	1995	1	2	2	-	6	H, clr, med to c.g., several small to med gray A stringers & blebs, 0.1' band at 1994.8; few tan A/P zones in lower ½.
1995	1	1996	2	1	1	3	92	A, lt. gray, few H, f.g. intergrowths grading out down; few small brn to gray C-S blebs in bottom 0.2'.
1996	2	1998	0	3	8	85	1	C-S, brn, soft; some H, f.g. to med, blebs & irreg zones, very few small white A blebs.
1998	0	2000	4	2	4	3	3	H, med.g., few small to med brn C-S incls & lt. gray A stringers, thin A parting at 1999.7'.
2000	4	2001	5	1	1	1	4	H, clr, med.g., few small white A stringers, ¼" band at 2001.2, v few small brn C-S incls.

Form 3-A

DUVAL CORPORATION

Core Lithology, Supplemental Page

WELL NO. 39 CORE LITHOLOGY PAGE NO. 6

DEPTH (Feet) From		DEPTH (Feet) To		INTERVAL Feet		ESTIM. % Shale	ESTIM. % Ar	DESCRIPTION
2001	5							TOTAL DEPTH
								LOGGED BY B. F. McGuire
								B. F. McGuire
								Karl E. Elers
								Karl E. Elers