

P-W

DUVAL CORPORATION #11 STATE NO PERMIT
NE NE Sec. 24-T18N-R26E APACHE COUNTY 1-53

1-53

County Apache
Area Holbrook Basin
Lease No. State

Well Name Duval Corporation #11 State

Location NE NE Sec 24 Twp 18N Range 26E Footage 391' FNL - 277 FEL"
Elev 6095? Gr KB Spud Completed Total 1739'
6130 per Duval sheet Date 1-2-64 Abandon 1-14-64 Depth 1739'

Contractor _____

Casing Size 4" Depth 1270' Cement _____
Drilled by Rotary _____
Cable Tool _____
Production Horizon _____
Initial Production _____

REMARKS This hole drilled as a potash test.
See file for E Core Lithology. (Footage 1597 - 1739.5')

Elec Logs _____
Applic. Gamma Ray - Neutron; Sample Log _____
to Plug _____ Plugging Completion Sample Descript. _____
Record x Report x Sample Set P-1330
Core Analysis _____
DSTs _____

Water well accepted by _____

Bond Co. & No. None

Bond Am't \$ _____ Cancelled _____ Date _____
Organization Report None

Filing Receipt None Dated _____ Well Book x Plat Book x

API No. 02-001-05054 Loc. Plat _____ Dedication None (Strat)

Permit Number None Date Issued _____

1-53

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 11	Field & Reservoir
Location 391' SOUTH OF 277' WEST OF N.E. COR. SEC. 24 T18N, R26E			
County APACHE	Permit number	Date Issued	Previous permit number Date Issued
Date spudded 1-2-64	Date total depth reached 1-14-64	Date completed, ready to produce 1/14/64	Elevation (DF, RKB, RT or Gr.) feet Elevation of casing hd. flange feet
Total depth 1739	P.B.T.D.	Single, dual or triple completion?	If this is a dual or triple completion, furnish separate report for each completion.
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			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	Amt. & 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'ed 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

<u>Hole No.</u>	<u>Interval (feet)</u>	<u>Formation or Member</u>
9	Ground elevation 6515'	
	0-182	Dune Sand
	182-745	Bidahochi
	745-	Upper Petrified Forest
	1313-	Lower Petrified Forest
	1495-	Top of greenish-grey unit
	1785-	Shinarump
	1820-1978	Lower Wupatki
	1978-2263	Coconino
	2263-	Supai
	2341	Top of 1st marker Anhydrite
D	Ground elevation 5790'	
	0-10	Dune Sand
	10-97	Upper Petrified Forest
	97-119	Sonsela
	119-	Lower Petrified Forest
	407-	Top of greenish-grey unit
	658-	Shinarump
	675-917	Lower Wupatki
	917-1262	Coconino
	1262-	Supai
	1348	Top of 1st marker Anhydrite
11	Ground elevation 6095'	
	0-33	Dune Sand
	33-295	Bidahochi
	295-	Upper Petrified Forest
	493-	Lower Petrified Forest
	753	Top greenish-grey unit
	1125-1218	Lower Wupatki
	1218-1516	Coconino
	1613	Top of 1st marker Anhydrite
12	Ground elevation 5670'	
	0-45	Dune Sand
	48-175	Upper Petrified Forest
	175-181	Sonsela
	181-	Lower Petrified Forest
	480-	Top greenish-grey unit
	730 (gradational)	Shinarump
	802-951	Lower Wupatki
	951-1257	Coconino
	1257-	Supai
	1347	Top of 1st marker Anhydrite

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DUVAL SULPHUR & POTASH COMPANY
POTASH DIVISION
CARLSBAD, NEW MEXICO

WHILE WE BELIEVE THIS INFORMATION TO BE
CORRECT, WE MAKE NO REPRESENTATION WITH
RESPECT TO, NOR DO WE ASSUME ANY RESPONSIBILITY
FOR, THE CORRECTNESS THEREOF.
DUVAL CORPORATION

CORE LITHOLOGY

WELL NO. 11

DEPTH (Feet)		INTERVAL		ESTIM. %		DESCRIPTION
From	To	Feet	Shale	P		
						Abbreviations: H - Halite K - Kieserite A - Anhydrate Le - Leonite P - Polyhalite K - Kainite S - Sylvite L - Langbeinite C - Carnallite Gyp. - Gypsum f.g. - fine grained med. g. - medium grained clr. - Clear C.g. - Coarse grained occ. - occasional incl. - inclusions
1597 0	1603 3	6 3	96	4		Siltstone-clay, hard; many V. thin bands of Selenite; occ. large Gyp. stringer in bottom foot, 1/2" bands of Gyp. at 1602.8' and 1603.2'.
1603 3	1604 0	0 7	80	20		Clay-silt, light brn., V. hard; many small incls. of white A/Gyp.
1604 0	1604 5	0 5	2	98		Gyp./Alabaster, white to translucent pink; few small brn. clay incls. near base.
1604 5	1606 5	2 0	80	20		Clay-silt, dark brn., med. hard; many small Gyp. and selenite incls., 0.3' Gyp. band at 1605.9'.
1606 5	1607 8	1 3	5	95		Gyp./Alabaster, white to translucent pink; few small brn. clay-silt incls. in top 0.3', as brecciated zone.
1607 8	1608 2	0 4	85	15		Clay-silt, brn., soft; Gyp., white as blebs and stringers, increasing down from 5% at top to 20% at base.
1608 2	1612 7	4 5	95	5		Clay-silt, lt. brn., med. hard; many very thin white Gyp. stringers; occ. small selenite bleb.
1612 7	1613 0	0 3	-	100		Gyp./Alabaster translucent, med. soft.
1613 0	1613 4	0 4	80	20		Clay-silt, lt. brn., med. hard; few small to large white Gyp. blebs & stringers.
1613 4	1615 0	1 6	10	90		Gyp., V. dark gray, mottled; 0.2' lt. brn. 80% clay-silt zone at 1613.8'.
1615 0	1615 9	0 9	20	80		Gyp., white; many small to large irreg. brn. clay-silt incls., 0.2' of 80% clay at 1615.0'.

DUVAL SULPHUR & POTASH COMPANY

WELL NO. 11

CORE LITHOLOGY

PAGE NO. 2

DEPTH (Feet)		INTERVAL		ESTIM. %		DESCRIPTION
From	To	Feet		Shale	A	
1615.9	1618.7	2	8	85	15	Clay-silt, lt. to dark brn., med. soft; many small to med. soft white A/Gyp. incls. & stringers.
1618.7	1619.0	0	3	10	90	Gyp., white to dark gray; few small H brn. clay incls.
1619.0	1634.9	15	9	-	100	Gyp., dark gray, mottled, grading down into A, lt. to dark gray, bottom 0.3' is white A.
1634.9	1641.1	6	2	92	8	Clay-silt, lt. brn.; numerous small to large white A blebs & stringers, 0.1' band A at 1638.6' & 0.2' zone of 70% A at base.
1641.1	1642.2	1	1	5	95	A, milky gray; few thin stringers of Dark red hard anhydritic clay.
1642.2	1643.8	1	6	15	85	A, white-gray; 0.3' zones 40% lt. brn. hard clay at top & base, 0.2' zone, 30% clay at 1642.8'.
1643.8	1647.0	3	2	96	4	Clay-silt, dark brn. to red, med. soft; some small white A blebs.
1647.0	1651.3	4	3	-	100	A, gray to lt. gray near base.
1651.3	1655.2	3	9	80	10	Clay-silt, lt. to dark brn., med. soft, V. hard, anhydritic, in top 0.4'; some H incls. grading in down in bottom 1.5'.
1655.2						Top of Salt.
1655.2	1660.0	4	8	4	2	H, med.; some small red-brn. clay-silt incls. & stringers; V. few small white A stringers in top & bottom foot.
1660.0	1662.2	2	2	2	-	H, clr., med. to c.g.; few small to med. red to dark brn. clay incls.
1662.2	1663.4	1	2	6	-	H, f.g. to red.; many small to large irreg. red-brn. clay-silt incls.; occ. V. small white A bleb.
1663.4	1665.5	2	1	2	1	H, clr., med. E.; few thin gray A & red-brn. clay-silt stringers.
1665.5	1666.5	1	0	70	2	Clay-silt, lt. brn. to red decreasing down from 90% near top to 50% at base; some H, f.g. to med. few small white A blebs & thin A parting at top.

DUVAL SULPHUR & POTASH COMPANY

WELL NO. 11

CORE LITHOLOGY

PAGE NO. 3

DEPTH (Feet)		INTERVAL		ESTIM. %		DESCRIPTION		
From	To	Feet	Shale	XA				
1666	5	1671	4	5	9	22	2	H, med.; numerous small to very large irreg. soft red-brn. clay-silt incls. decreasing down from 35% at top to 10% at base; few small white A blebs, grading out down.
1671	4	1673	65	2	25	7	1	H, med. to c.g.; some small to large soft red-brn. clay-silt incls. decreasing down from 10% at top to 5% at base; occ. small white A bleb.
1673	65	1674	25	0	60	5	-	H, clr., c.g.; few small to med. irreg. pink S blebs; some small red-brn. clay incl. Est. K ₂ O/S = 2%
1674	25	1675	50	1	25	4	-	H, clr., med. to c.g.; S, med. to c.g. clr. to pink, red rimmed; some irreg. brn. clay incls. Est. K ₂ O/S = 28%
1675	50	1676	30	0	80	15	-	H, med.; some irreg. med. red-brn. clay incls; few med. to large clr.-milky red rimmed S blebs. Est. K ₂ O/S = 6%
1676	30	1676	70	0	40	25	-	H, med. to c.g.; several large brn. clay incls; few small to med. pink S blebs. Est. K ₂ O/S = 2%
1676	70	1677	00	0	30	35	-	H, f. to med. g.; several large brn. clay-silt incls., 0.1' zone 85% clay at top; occ. small red S Bleb. Est. K ₂ O/S = 1%
1677	0	1679	0	2	0	-	8	H, clr., med. to c.g.; occ. small gray A stringers; very few brn. clay incls.; occ. very small pink S bleb. Est. K ₂ O/S = less than 1%
1679	0	1680	7	1	7	-	2	H, clr., med. to c.g.; occ. small gray A blebs & stringers in top half foot; very few pink to milky S blebs;
1680	70	1681	50	0	80	-	-	H, clr., med. to c.g.; several small to large pink to milky red-rimmed S blebs increasing down from 2% at top to 40% at base. Est. K ₂ O/S = 13%
1681	50	1681	90	0	40	2	20	H, clr.; several med. to large gray A incls. & stringers; few pink to milky S blebs; some thin gray green clay stringers in top 0.1'. Est. K ₂ O/S = 12%

DUVAL SULPHUR & POTASH COMPANY

WELL NO. 11

CORE LITHOLOGY

PAGE NO. 4

DEPTH (Feet)		INTERVAL		ESTIM. %		DESCRIPTION
From	To	Feet	Feet	Shale	KA	
1681	90	1682	95	1	5	- 15 H, f. to med. g.; 0.1' gray A bands at 1682.20' & 1682.70', few gray A stringers through out rest of interval; few small to large pink to milky S blebs. Est. K ₂ O/S = 6%.
1682	95	1683	50	0	55	- 80 A, gray; some H intergrowths; few med. red S stringers & blebs. Est. K ₂ O/S = 4%.
1683	50	1683	80	0	30	- 15 H, clr., med.; some gray A stringers; few red-milky S blebs. Est. K ₂ O/S = 7%
1683	80	1684	65	0	85	- 5 H, clr., med. to c.g.; few gray A stringers, 1/2" zone 90% gray A at 1684.20'; few red-rimmed milky S blebs. Est. K ₂ O/S = 8%
1684	65	1685	30	0	65	6 - H, med. c.g.; some brn. to gray-green med. hard clay incls.; some med. to large red-rimmed milky S blebs. Est. K ₂ O/S = 12%
1685	3	1686	50	1	2	20 - Recovered 0.1' piece, H, med. to c.g.; several med. to large brn. clay incls., very few small pink A/P blebs.
1686	50	1687	65	1	15	8 - H, clr., c.g.; few med. to large pink to red-rimmed milky S blebs; few large gray-green top brn. hard clay incl. near center. Est. K ₂ O/S = 12%
1687	65	1688	55	0	90	8 - H, clr., med. to c.g.; several large brn. to gray-green clay stringers; occ. small to large red-rimmed milky S bleb grading out down. Est. K ₂ O/S = 1%
1688	55	1689	80	1	25	- - H, clr.; few small to large red-rimmed milky S blebs; occ. small gray A stringers in bottom half. Est. K ₂ O/S = 2%
1689	80	1691	85	2	05	- 3 H, clr.-v. clr.; several small white to gray A stringers; few small to med. pink-milky S blebs. Est. K ₂ O/S = 1%
1691	85	1692	4	0	55	- 12 H, clr. to pink, med.; few small to med. gray A stringers, 1/2" A band at base.

DUVAL SULPHUR & POTASH COMPANY

WELL NO. 11

CORE LITHOLOGY

PAGE NO. 5

DEPTH (Feet)		INTERVAL		ESTIM. %		DESCRIPTION		
From	To	Feet		Shale	RA			
1692	4	1693	0	0	6	65	5	Clay-silt, soft, lt. to dark brn.; some H, f.g. to med.; few small to med. white A blebs.
1693	0	1696	5	3	5	45	1	H, f.g. to med.; numerous very large red-brn. clay-silt incls., 0.3' band at 1693.4', 0.4' 80% zone at base; occ. small white A blebs.
1696	5	1699	6	3	1	8	1	H, med. to c.g.; numerous small to large red-brn. clay silt incls. & stringers decr. down from 12% at top to 4% at base; occ. small white to gray A stringer.
1699	6	1703	8	9	8	2	3	H, clr., med. to c.g.; few lt. gray A stringers, 1/4" partings at 1705.7' and at base; occ. small dark brn. clay-silt incls.
1703	8	1711	4	2	6	65	2	Clay-silt, lt. to dark brn., med. soft; numerous zones of H, f to c.g.; occ. small white A blebs & stringers.
1711	4	1712	7	1	3	35	2	H, f.g. to med.; numerous large brn. clay-silt incls.; occ. small to med. white A bleb.
1712	7	1715	1	2	4	3	1	H, clr., med. to c.g.; few small brn. clay-silt incls., decreasing down from 4% at top to 2% at base; occ. small gray A bleb.
1715	1	1718	7	3	6	3	3	H, clr., med. to c.g.; few small brn. clay silt incls. & gray A stringers.
1718	7	1721	4	2	7	3	1	H, clr., med. to c.g.; few small to med. red-brn. clay-silt incls., decreasing down from 5% at top to 1% at base; V. few white A stringers.
1721	4	1723	9	2	5	35	2	H, f.g. to med.; numerous V. large brn. clay-silt incls., increasing down from 10% near top to 40% near base, 0.1' band at top 0.2' band at base; V. few white A stringers.
1723	9	1727	0	3	1	3	1	H, clr., med.; few small red-brn. clay-silt incls., decreasing down from 4% at top to 2% at base; few small gray A blebs & stringers in bottom 0.5'.

3-A
Sheets 5-54

DUVAL SULPHUR & POTASH COMPANY

WELL NO. 11

CORE LITHOLOGY

PAGE NO. 6

DEPTH (Feet)		INTERVAL		ESTIM. %		DESCRIPTION	
From	To	Feet	Feet	Shale	KA		
1727	0	1729	6	2	6	15 10 H, med. to V. c.g.; some V. large brn. clay-silt incls. & white A blebs, A partings at 1728.4' & 1728.7'.	
1729	6	1731	5	1	9	4 8 H, med. to c.g., fairly clr.; numerous V. large white A/Gyp. incls. & stringers; few large dark brn. clay-silt incls., decreasing down from 6% at top to 2% at base.	
1731	5	1734	2	2	7	1 1 H, V. clr., f.g. to c.g.; V. few small gray A blebs & brown clay incls.	
1734	2	1735	3	1	1	- 90 A, gray, grading into Gyp. in bottom 0.2'; few H, f.g., intergrowths, grading out down.	
1735	3	1737	1	1	8	80 10 Clay-silt, red-brn., soft; 0.2' 50% white A/Gyp. zones at top & 1736.5'; some H, med., in bottom 0.4'.	
1737	1	1739	5	2	4	3 3 H, clr., med.; some white to gray A stringers & blebs, partings at 1737.6' & 1739.4'; few small dark brn. to red clay-silt incls., decreasing down from 4% at top to 2% at base.	
		1739	5				T.D.
LOGGED BY <u>Karl E. Ebers</u> K. E. Ebers							

DUVAL CORPORATION
INTER-OFFICE MEMORANDUM

FROM NAVAJO
TO TUCSON
SUBJECT: DUVAL # 11

DATE 1/28/64
ATTENTION B.G. MESSER

DATE STARTED	<u>1/2/64</u>	
DATE COMPLETED	<u>1/14/64</u>	
G.L. ELEV.	<u>6095</u>	Top Coco → A
K.B. ELEV.	<u>6100</u>	390'
T.D.	<u>1739</u>	6095 4447 1648
CASING	<u>1270</u>	46' FROM TOP COCO.
ELEV. COCO.	<u>4874</u>	BELOW
ELEV. TOP HALITE	<u>4447</u>	} 5' ADDED FOR K.B. DATUM
ELEV. SYLVITE	<u>4431</u>	

6100
4431
1669

6100
1270
4874

6100
1739
1926

