P-W

DUVAL CORPORATION #22 STATE NO PERMIT
NW NW Sec. 28-T18N-R25E APACHE COUNTY 45

1-45

County Apache

Area Holbrook Basin

Lease No.

Well Name Duval Corporation #22 State

Location NW NW Sec 28 Twp 18N Range 25E Footage 660' FNL - 660' FWL

Elev 5510' Gr KB Spud Date 3-4-64 ~~Completed~~ Abandon 3-23-64 Total Depth 1268'

Contractor

Drilled by Rotary
Cable Tool

Casing Size	Depth	Cement
4-1/2"		

Production Horizon

Initial Production

REMARKS This hole drilled as a potash test.

See file for Core Lithology. (Footage 1051-1165.5')

Elec Logs Gamma Ray - Neutron;

Applic. to Plug ___ Plugging Record xxx Completion Report x

Sample Log
Sample Descript.
Sample Set
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. 02-001-05045 ~~None~~ Loc. Plat Dedication None (Strat)

Permit Number None Date Issued

1-45

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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: 4745 E. Ft. Lowell Rd. Tucson, Arizona
Lease Name:	Well Number: 22 / Field & Reservoir:

Location: 660' SOUTH & 660' E OF N.W. COR. SEC. 28 — Sec.—TWP-Range or Block & Survey: T18N, R25E

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
3-4-64	3-23-64	3/23/64		

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.
1265			

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	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

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Hole No.	Interval (feet)	Formation or Member
21	Ground elevation 5760'	
	0-100(approx.)	Dune Sand
	100-280	Bidahochi
	280-365	Upper Petrified Forest
	365-400	Sonsela
	400-	Lower Petrified Forest
	765 (GRN log)	Top of greenish-grey unit
	1105-1325	Lower Wupatki
	1325-1500	Coconino
	1500-	Supai
	1676	Top of 1st marker Anhydrite
22A	Ground elevation 5510'	
	0-10	Dune Sand
	10-	Lower Petrified Forest
	70-	Top of greenish-grey unit
	376-	Shinarump
	436-581	Lower Wupatki
	581-900	Coconino
	900-	Supai
	1022	Top of 1st marker Anhydrite
23	Ground elevation 5940'	
	0-60	Dune Sand
	60-390	Bidahochi
	390-	Upper Petrified Forest
	985-	Top of greenish-grey unit
	1525-	Shinarump
	1550-1668	Lower Wupatki
	1668-2068	
	(Hole abandoned at 2068')	
24	Ground elevation 5530'	
	0-	Chinle, near or below top of greenish-grey unit
	425-	Shinarump
	477-647	Lower Wupatki
	647-980	Coconino
	980-	Supai
	1061	Top of 1st marker Anhydrite

PLUGGING RECORD

Operator	Address
DUVAL CORPORATION	4715 E. Ft. Lowell Rd. Tucson, Arizona

Name of Lease	Well No.	Field & Reservoir
	22	

Location of Well	Sec-Twp-Rge or Block & Survey	County
660' SOUTH & 660' EAST OF N.W. COR SEC. 28	T18N, R25E	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	Amount well producing when plugged: Oil (bbls/day)	Gas (MCF/day)	Water (bbls./day)
3-23-64	1265			

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

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1-45

FORM 159

DUVAL CORPORATION

INTER-OFFICE MEMORANDUM

FROM Navajo, Arizona

DATE March 30, 1964

TO Esperanza

ATTENTION B.G. Messer

SUBJECT: Duval # 22 State

Location: 0660 FNL, 0660 FEL, S.28, T.18N., R.25E.
Date Started: March 4, 1964
Date Completed: March 30, 1964
Elevation: 5510
T.D.: 1265
Casing: 1054
Elevation Top Coconino: 4929
Elevation Top Halite: 4451
Elevation Top Sylvite: 4446

5510
4451
1059

4

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 WITH RESPECT TO, NOR DO WE ASSUME ANY RESPONSIBILITY FOR, THE CORRECTNESS THEREOF.
DUVAL CORPORATION

CORE LITHOLOGY

WELL NO. 22

DEPTH (Feet) From		DEPTH (Feet) To		INTERVAL Feet		ESTIM. % Shale	ΣA	DESCRIPTION
								Abbreviations: H - Halite; Gyp - Gypsum; A - Anhydrite; C-S - Clay-Silt; P - Polyhalite; Med.g. - Medium grained; S- Sylvite; clr - clear; C - Carnallite; oco - occasional; f.g. - fine grained; V - Very; c.g. - coarse grained; incr - increasing; incl - inclusions; decr - decreasing; irreg - irregular; brn - brown
1051	0							START CORING
1051	0	1070	0	19	0	97	3	C-S, brn, little green, med. hd.; few white A/Gyp blebs, 0.1' gray A band at base. (Most of core lost: recovered 0.8')
1070	0	1073	0	3	0	100	-	C-S, lt. red-brn, little gray-green, med. soft. (0.3' core recovered)
1073	0							TOP OF SALT (?)
1073	0	1076	0	3	0	7	-	H, med.; many small-lg. brn C-S incls., decr down, from 12% at top to 2% at base. (1.6' core recovered)
1076	0	1079	4	3	4	20	-	H, f.g.-med.; many small-V lg. red-brn med.hd. C-S incls.; occ V small white a bleb.
1079	4	1083	3	3	9	9	1	H, med.g.; some small-lg. brn C-S incls. decr down from 12% at top to 6% at bottom; V few white A stringers.
1083	3	1085	10	1	8	4	2	H, med.g.; some small brn C-S incls.; few V small white A stringers.
1085	10	1085	75	0	65	2	3	H, pink, med.-c.g.; few small-med. pink-gray A blebs & small lt. brn C-S stringers; occ V small red S bleb. Est. K_2O/S = -1%
1085	75	1086	50	0	75	-	4	H, clr, med.-c.g., few small-lg. pink A/P blebs; occ small red S bleb. Est. K_2O/S = 1%
1086	50	1087	15	0	65	-	-	H, V clr, med. gr.; V few small red & red-rimmed milky S blebs. Est. K_2O/S = 2%

Form 3-A
3M Sheets 5-54

DUVAL SULPHUR & POTASH COMPANY

WELL NO. 22 — CORE LITHOLOGY — PAGE NO. 2

DEPTH (Feet) From		DEPTH (Feet) To		INTERVAL Feet		ESTIM. % Shale	ESTIM. % KA	DESCRIPTION
1087	15	1087	90	90	75	-	1	H, V clr, med.-V c.g.; occ V small pink S blebs & pink A/P blebs. Est. K_2O/S = -1%.
1087	90	1089	0	1	1	-	2	H, clr, c.g.; few lt. red A/P stringers & blebs; occ V small brn C-S incl.
1089	0	1091	3	2	3	-	1	H, V clr, med.-c.g.; occ small tan A/P stringers & blebs.
1091	3	1092	7	1	4	1	3	H, clr, c.g.; few red A/P stringers, ½" white A band at base; V few lt. brn C-S incls., grading out down.
1092	7	1099	8	7	1	25	1	H, f.g.; many small-lg. red-brn C-S incls., 0.1' 80% zones at 1092.8', 1096.9' & 1098.0'; few small-med. white A blebs in lower third.
1099	8	1101	4	1	6	3	-	H, clr, med.-c.g.; few small red-brn C-S incls., occ white A bleb.
1101	4	1102	5	1	1	5	1	H, med; some small red-brn C-S incls; V few small white-gray A blebs & stringers.
1102	5	1105	9	3	4	2	3	H, clr, med.-c.g.; few small-lg. lt. gray A blebs; few small red-brn C-S incls.
1105	9	1108	1	2	2	2	1	H, fairly clr, med.-c.g., few small-med. brn C-S incls, grading out down; V few white A stringers.
1108	1	1111	0	2	9	-	2	H, V clr, c.g.; few small tan A/P stringers & gray A blebs.
1111	0	1113	1	2	1	30	1	H, f.g.-med.; many small V lg. brn C-S incls., decr down from 50% at top to 10% at base; occ small white A bleb.
1113	1	1114	7	1	6	4	-	H, med.-c.g.; some small red-brn C-S incls, decr down from 6% at top to 2% at base; occ V small white A bleb.
1114	7	1115	0	0	3	4	20	H, c.g.; some V lg. lt. gray A blebs in upper half; few lg. brn C-S incls.
1115	0	1120	0	5	0	6	3	H, med.-c.g.; some small-lg. brn C-S incls; few small med. white A blebs & stringers.

Form 3-A
3M Sheets 5-54

DUVAL SULPHUR & POTASH COMPANY

WELL NO. 22 — CORE LITHOLOGY — PAGE NO. 3

DEPTH (Feet) From		To		INTERVAL Feet		ESTIM. % Shale	KA	DESCRIPTION
1120	0	1120	8	0	8	2	8	H, clr, c.g.; few lg. white-gray A blebs in top half; few brn C-S incls, grading in down.
1120	8	1123	0	2	2	-	3	H, V clr, pink in bottom 0.5', c.g.; few lt. gray A blebs & pink A/P incls, partings at top & 1121.2'.
1123	0	1124	1	1	1	-	90	A, gray, pink A/P parting at top: some H, f.g., intergrowths, grading out down.
1124	1	1124	7	0	6	85	-	C-S, dk. red-brn, med.hd.; some red H, schistose, as vertical veinlets.
1124	7	1126	0	1	3	3	1	H, med.g., becoming clr. in lower half; few brn C-S incls, decr down from 5% to 1%; occ small gray A bleb in lower half.
1126	0	1130	7	4	7	1	4	H, clr-tan, med.-c.g.; few small-lg. lt. gray A stringers, ¼" partings at 1128.9', 1129.3', & 1129.8'; V few red-brn C-S incls.
1130	7	1131	8	1	1	3	3	H, med.g., few small-med. brn C-S incls, few lt. gray A stringers, irreg thin partings at 1131.1' & base.
1131	8	1133	8	2	0	1	4	H, clr-V clr in lower half, c.g.; few gray A stringers & many partings, at 1132.2', 1133.3', & base; V few red-brn C-S incls in top third.
1133	8	1134	6	0	8	-	65	A, lt. gray, incr down from 30% at top to 100% at base; many irreg H, med, stringers, some as intergrowths in A.
1134	6	1136	2	1	8	2	2	H, med.-c.g.; few small-med. lt. brn C-S stringers, grading in down; few med. white-gray A stringers.
1136	2	1138	3	2	1	2	3	H, fairly clr, med.-c.g.; few lt. gray A stringers; V few small-lg. lt. brn C-S incls.
1138	3	1138	5	0	2	3	15	H, med; few V lg. white A blebs & stringers; few small brn C-S incls.
1138	5	1143	6	5	1	1	2	H, V clr, c.g.; few small gray A stringers, thin parting at 1143.5'; V few brn C-S incls, grading out down.

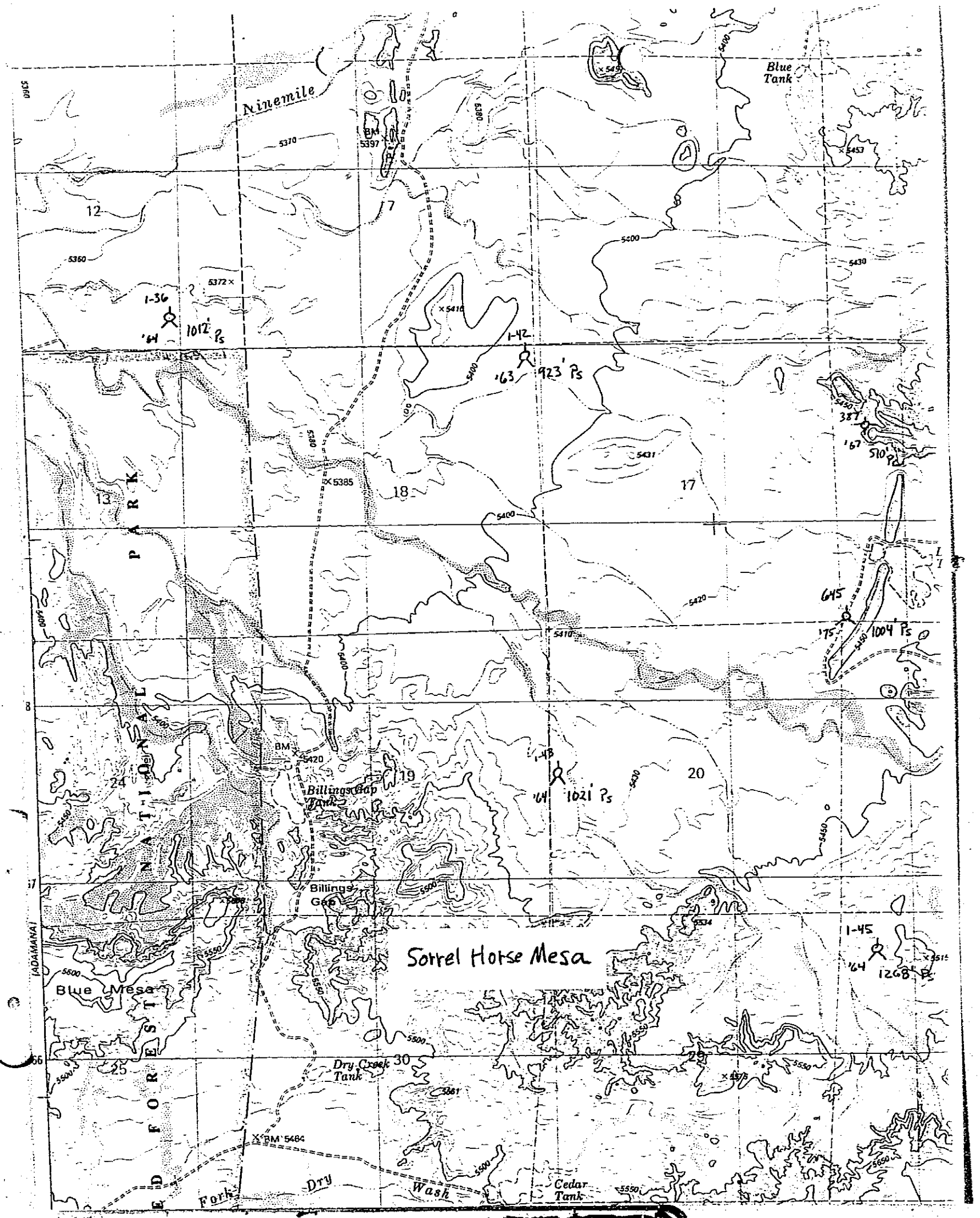
m 3-A
l Sheets 5-54

DUVAL SULPHUR & POTASH COMPANY

WELL NO. 22 — CORE LITHOLOGY — PAGE NO. 4

DEPTH (Feet) From		DEPTH (Feet) To		INTERVAL Feet		ESTIM. % Shale	ESTIM. % ~~SA~~	DESCRIPTION
1143	6	1144	1	0	5	-	30	H, f.g.; many V small gray A stringers, 0.1' 90% zone at top.
1144	1	1145	5	1	4	45	3	H, f.g.-med, & C-S, lt. red-brn, decr down from 80% at top to 10% at base; few med white A blebs in lower half.
1145	5	1147	0	1	5	35	1	H, f.g.; many small-V lg. brn C-S incls, 0.1' band at top; occ small white A bleb.
1147	0	1147	7	0	7	80	-	C-S, lt. red-brn, little gray-green; few H, f.g.-med, zones in middle third, occ veinlets throughout interval.
1147	7	1150	6	2	9	15	-	H, med.g.; many lg. brn C-S incls, decr down from 20% at top to 10% at base; occ small white A bleb.
1150	6	1153	4	2	8	24	4	H, f.g.; many small lt. brn C-S incls, decr down from 40% at top to 8% at base; some small white A blebs in upper half.
1153	4	1154	3	0	9	40	3	H, f.g.-V f.g.; many small lt. brn C-S incls, 0.2' 80% zone at 1153.9'; some small white A blebs in lower 0.2'.
1154	3	1155	7	1	4	3	3	H, fairly clr, med.g.; few small brn C-S incls & white A stringers, thin A parting at 1154.4'.
1155	7	1158	2	2	5	5	2	H, med.g.; few small-lg. brn C-S incls, V few white A stringers & blebs.
1158	2	1162	9	4	7	65	1	C-S, lt. red-brn, med.hd.-hd., 0.6' band at top, 0.4' band at 1159.6', & 1.2' 85% zone at base; some H, f.g.-med.; few small white A blebs in upper half.
1162	9	1165	5	2	6	35	2	H, med.-c.g.; many small-lg. brn C-S incls, 0.1' band at 1164.3'; few small white A blebs & stringers, grading in down.
1165	5							TOTAL DEPTH.

LOGGED BY: Karl E. Elers
Karl E. Elers


Ninemile
Blue Tank
BM 5397
12
7
1-36
'64
1012' Ps
1-42
'63
923' Ps
387
'67
510' Ps
13
18
17
PARK
645
'75
1004' Ps
24
19
20
BM 5420
Billings Gap Tank
1-43
'64
1021' Ps
Billings Gap
1-45
'64
1268' Ps
Sorrel Horse Mesa
Blue Mesa
25
30
29
Dry Creek Tank
BM 5484
Fork
Dry
Wash
Cedar Tank
ADAMANA
NATIONAL FOREST