

FILE NOTATIONS

Entered in NID File
 Entered On S R Sheet
 Location Map Pinned
 Card Indexed
 IWR for State or Fee Land: _____

Checked by Chief
 Copy NID to Field Office
 Approval Letter
 Disapproval Letter _____

COMPLETION DATA:

Date Well Completed: 1-27-56
 OW _____ VWV _____ TIA _____
 GW _____ OS _____ PA

Location Inspected _____
 Bond released _____
 State of Fee Land _____

LOGS FILED

Driller's Log
 Electric Logs (No) _____
 E _____ I _____ EII _____ GR _____ GRN Micro
 Lat Mil _____ Sonic _____ Others Hydrocarbon Analysis Log

Scout Report sent out
 Noted in the NID File
 Location map pinned
 Approval or Disapproval Letter
 Date Completed, P. & A, or operations suspended 1-21-56
 Pin changed on location map
 Affidavit and Record of A & P
 Water Shut-Off Test
 Gas-Oil Ratio Test
 Well Log Filed

(SUBMIT IN TRIPLICATE)

Indian Agency Winslow Utah

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Arizona

Allottee Tribal Lands

Lease No. 1-119-INT-9136

	S	

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	<input checked="" type="checkbox"/>	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	
NOTICE OF INTENTION TO CHANGE PLANS.....		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....		SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL.....		SUBSEQUENT REPORT OF REDRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....		SUBSEQUENT REPORT OF ABANDONMENT.....	
NOTICE OF INTENTION TO PULL OR ALTER CASING.....		SUPPLEMENTARY WELL HISTORY.....	
NOTICE OF INTENTION TO ABANDON WELL.....			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

October 5, 1955

Reconnoiter
Well No. 1 is located 760 ft. from [S] line and 1900 ft. from [E] line of sec. 5

R14 S
(1/4 Sec. and Sec. No.)

10 N.
(Twp.)

26 E.
(Range)

S.L.M.
(Meridian)

Utah
(Field)

San Juan
(County or Subdivision)

Utah
(State or Territory)

The elevation ~~at the top of the casing~~ is 5133 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

1. Drill 1 1/2" hole to 500'.
2. Run and cement 9 5/8" casing at 500' with sufficient cement to reach surface.
3. Drill to total depth of 8100'.
4. If commercial production is obtained a supplementary completion notice will be filed, otherwise, plug and abandon in accordance with U.S.B.L.M. regulations.

Surface formation is the Harts Chert.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Shell Oil Company

Address 11 Richards Street

Salt Lake City, Utah

By B. W. Shepard

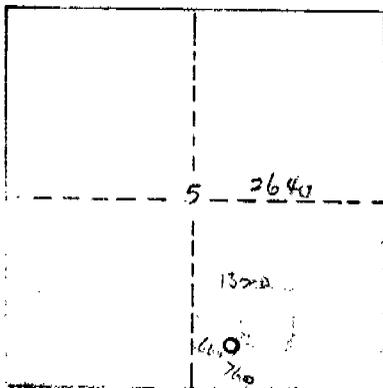
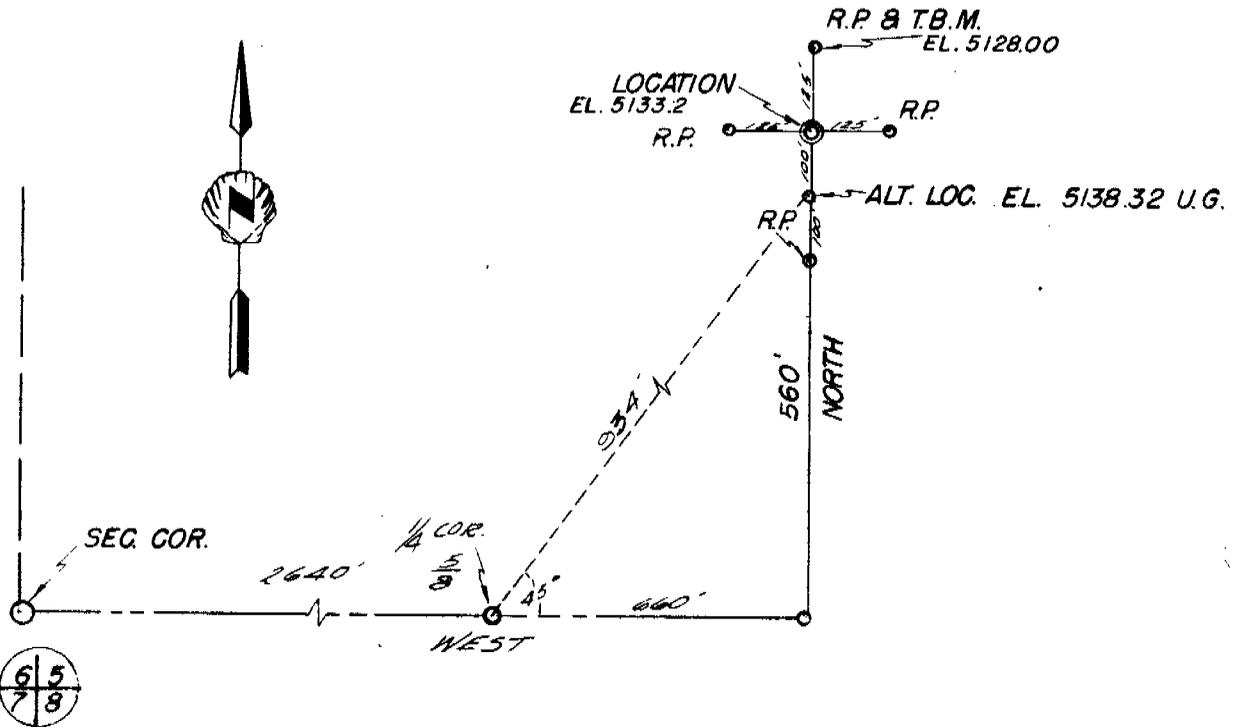
B. W. Shepard

Title Exploitation Engineer

Federal Nation-wide bond #7509759 is on file with U.S.B.L.M.

-NOTE-

1. 1" X 2" STAKES SET 10' FROM LOCATION ON REFERENCE LINES.
2. 1/2" STEEL REFERENCE RODS SET 125' FROM LOCATION, NORTH, SOUTH, EAST, WEST.
3. IRON ROD T.B.M. SET AS R.P. 125' NORTH OF LOCATION, EL. 5128.00.
4. LOCATION, ROD SET 760' F/SOUTH & 1980' F/E LINES OF SEC. 5, T.40S., R.26E., S.L.M. ALT. LOC. STAKED 100' SOUTH OF LOC. — LOCATION ELEVATION 5133.17 U.G.



264
1980
660

HOVENWEEP NO. 1

SHELL OIL CO.

WELL LOCATION, SW 1/4, SE 1/4,
SEC. 5, T.40S., R.26E., S.L.M.
SAN JUAN COUNTY, UTAH

SCALE 1"=300' JUNE 17, 1955

DRAWN BY: DEL A. TALLEY

SAN JUAN ENGINEERING CO.

This is to certify that the above plat was prepared from field notes of actual surveys made by me or under my supervision and that the same are true and correct to the best of my knowledge and belief.

James P. Leese

James P. Leese Reg. Land surveyor
Utah Reg. No. 1472

October 13, 1955

Shell Oil Company
33 Richards Street
Salt Lake City, Utah

Gentlemen:

With reference to your notice of intention to drill, Well No. Hovenweep 1, on SE $\frac{1}{4}$ of Sec. 5, Twp. 40 S., Rg. 26 E., SLM, San Juan County, please be advised that said application is approved as requested.

Yours very truly,

HERBERT F. SMART
COMMISSIONER

js
cc: D. Russel
Geological Survey
Federal Bldg. - City

Hovenweep Area
 (FIELD)
 San Juan County, Utah
 (COUNTY)

DRILLING REPORT
 FOR PERIOD ENDING

5
 (SECTION OR LEASE)
 T. 40 S., R. 26 E.
 (TOWNSHIP OR RANCHO)

DAY	DEPTHS		REMARKS
	FROM	TO	
			<u>Hovenweep 1 Water Well #1</u>
			Location: 1084' N. and 2521' E. of SW corner Sec. 5, T. 40 S., R. 26 E., S.L.B. & M., San Juan County, Utah. Elevation: (GRD) 5093.34'.
10-11-55	0	48'	Spudded. Drilled 8" hole to 48' with cable tools.
10-12-16-55	48'	271'	Drilling.
10-17-55	271'	345'	Formation at 300-305 made small amount of water - 2 gal/min.
10-18-25-55	345'	667'	Drilling.
10-26-55	667'	700' T.D.	Formation 675-700' made 19 gal/min with bailer, fluid level steady at 300'.
10-26-31-55			Hung 6 5/8" casing at 508'. Ran tubing and rods.
11-3-55			On pump, rate 21 gal/min. Well filled with cavings.
11-5,6,7-55			Cleaned out and lowered 6 5/8" casing to 643' with 129' of 7" casing on top of string. Ran tubing and rods to 643'.
11-8,9-55			On pump, rate estimated 15 gal/min.
12-3,9-55			Well filled with cavings. Pulled tubing and casing. Ran 6 5/8" casing, (151' of 7" on top) to 637', bottom joint (26') torched perforated 4 - 3/16" x 1 1/4" shots per row, with metal petal basket at 611'. Cleaned out to 700', T.D. Ran 4" tubing and rods to 688'. Well produced 15-18 gal/min on initial pump test.
			<u>SURFACE FORMATION BURRO CANYON</u>
			<u>Ditch Samples</u>
			0-608' Shale, sandy in part.
			608-700' Sandstone.

PRIVATE & CONFIDENTIAL

CONDITION AT BEGINNING OF PERIOD				
HOLE			CASING SIZE	DEPTH SET
SIZE	FROM	TO		
8"	0	700'	6 5/8" & 7"	637'
DRILL PIPE SIZES				

CONTRACTOR:

Conley Cox
 Box 785
 Aztec, New Mexico

DRILLERS:

O. A. Johnson
 J. L. Trotter

K. A. Hauptfleisch

SIGNED

Hovenweep

DRILLING REPORT

FOR PERIOD ENDING

November 26, 1955

(SECTION OR LEASE)
T. 40 S., R. 26 E., S.L.B.M.
(TOWNSHIP OR RANCHO)

(FIELD)
San Juan, Utah
(COUNTY)

DAY	DEPTHS		REMARKS
	FROM	TO	
11-8 to 11-12	0	930	<p><u>Location:</u> 760' from S. line and 1980' from the E. line of Sec. 5, T. 40 S., R. 26 E., S.L.B.M., San Juan County, Utah.</p> <p><u>Elevations:</u></p> <p style="padding-left: 40px;">K.B. 5147.81' D.F. 5144.31' Mat. 5134.21'</p> <p>Spudded 3:00 P.M., 11-8-55. Drilled 12 1/4" hole. Ran and cemented 9 5/8", 36#, J-55, ST&C National Casing at 897' with 350 sacks construction cement, 118# slurry, last 100 sacks treated with calcium chloride. Displaced with 70 bbl. of water, 20 bbl. ahead. Left 20' of cement in casing. Good returns to surface. Finished 7:10 P.M. 11-11-55.</p> <p>Flanged up. Installed blowout equipment. Standing cemented.</p>
11-13 to 11-26	930	4775	<p>Tested blowout equipment and casing with 800 psi for 15 minutes, O.K.</p> <p>Drilled 7 7/8" hole. Waited on water 5 1/2 hours on 11-17-55. Changed to gypsum base mud at 4400'.</p> <p><u>Mud Summary</u></p> <p>Wt. 9.1 - 9.7#/gal. W.L. 8.2 - 12.2 cc Vis. 45-58 sec. F.C. 2/32 in.</p>

CONDITION AT BEGINNING OF PERIOD				
HOLE			CASING SIZE	DEPTH SET
SIZE	FROM	TO		
DRILL PIPE SIZES	1 1/2"		16.6#/ft.	

H. B. Lynn Drilling Company

Drillers: C. Gunter
D. Brazell
H. Jones

J. M. Burns

SIGNED

DRILLING REPORT

FOR PERIOD ENDING

December 13, 1955

Section 5

(SECTION OR LEASE)

T. 40S., R. 26E., S.L.B.M.

(TOWNSHIP OR RANGHO)

Hovenweep

(FIELD)

San Juan, Utah

(COUNTY)

DAY	DEPTHS		REMARKS
	FROM	TO	
11-27 to 12-13	4775	6042	<p>Lost 3 cones in hole at 4775'. Waited on magnetic basket 6 1/2 hours. Ran in with magnetic basket, pulled, no recovery. Ran in with Reed junk sub, milled on junk and made recovery. Drilled.</p> <p>Ran Schlumberger electric survey (one misrun) and microlog at 5510'. Waited on water 7 3/4 hours on 12-5-55.</p> <p>While running in hole at 5886' lost 16 drill collars and 20' of 4 1/2" drill pipe (total fish 480'). Top of fish 5406'. Ran overshot, no recovery. Waited on additional fishing tools. Ran Bowen overshot, recovered fish.</p> <p>Ran Schlumberger Electrical survey and Microcaliper log at 6042. Attempted to run Laterolog, yoke on logging tool broke. Ran in with drill pipe and conditioned mud, measured out, correct depth 6042'. Repaired logging tool. Ran Laterolog.</p> <p>Tested BOE daily.</p> <p><u>Mud Summary</u> 11/27/55 - 12/13/55</p> <p>Wt. 9.7 - 10.5#/gal. Vis. 42-60 sec. W.L. 7.6 - 15.2 cc F.C. 2 - 3/32 in. Salinity 14,190 - 20,130 ppm(t) pH 7.0 - 12.0</p>

H. B. Lynn Drilling Company

Drillers: C. Gunter
 D. Brazell
 J. Blakely

CONDITION AT BEGINNING OF PERIOD				
HOLE			CASING SIZE	DEPTH SET
SIZE	FROM	TO		
12 1/4"	0	930'	9 5/8"	897'
7 7/8"	930	4775'		
DRILL PIPE SIZES			1 1/2"	16.60#/ft.

J. M. Burns

SIGNED

DRILLING REPORT
FOR PERIOD ENDING

Section 5

Hovenweep

(FIELD)

December 15, 1955

(SECTION OR LEASE)

San Juan, Utah

(COUNTY)

T. 40S., R. 26E., S16M

(TOWNSHIP OR RANCHO)

DAY	DEPTHS		REMARKS
	FROM	TO	
12-14 to 12-15	6042	6042	<p><u>DST 1, 5846-6042.</u> Started in with Johnston Tester, two 7 7/8 open hole packers at 5836 and 5846, one Johnston "T" and two regular Johnstone recorders, 3/4" subsurface bean, perforations 5846-5857 and 6031-6042, no water cushion. When five stands off bottom increased weight of drill string indicated drill pipe filling with mud. Pulled out. Found a two foot long section of collapsed drill pipe near middle of 11th joint above drill collars. Replaced collapsed joint. Reran tester with set-up as above. Made 20 minute initial shut in. Dropped first bar - no blow. Dropped second bar - very faint blow one minute, then dead during remainder of one hour 13 minute test. Shut in 45 minutes. Pulled tester. Found 4000' of drilling fluid in drill pipe, disc valve not open, the two bars lodged in backscuttling valve and the backscuttling ports open. Since no fluid was lost in annulus during test apparently the backscuttling valve did not open until the packers were pulled loose. Pressure charts showed initial shut in failed and tool not open. HP 3300 psi.</p> <p>Gauged and strapped drill pipe. Replaced 12 joints. Conditioned mud. <u>DST 1A, 5816-6042.</u> Ran Johnston Tester with two 6 5/8" bobtail packers at 5811' and 5816', four pressure recorders (1 Amerada, 1 Johnston "T", 2 Johnston regular), 3/4" subsurface bean, perforations 5816-5834 and 5008-6042, no water cushion. Initial shut in 20 minutes. Tool open 1 hour 30 minutes. Immediate weak air blow very gradually decreasing to dead after 50 minutes. Shut in 45 minutes. No fluid loss in annulus. Recovered 45' (0.22 bbl) drilling fluid, salinity 20,200 ppm (t). Mud before test 20,200 ppm (t). IFP 0, FFP 180, SIP 1260 (still rising), HP 3400. Initial shut in failed.</p> <p><u>Mud Summary 12-14-55 to 12-15-55</u></p> <p>Wt. 10.5 - 10.6#/gal. Vis. 50-60 sec. W.L. 8.2 - 10 cc. F.C. 2 - 3/32 in. Salinity 20,200 ppm NaCl (t)</p>

CONDITION AT BEGINNING OF PERIOD

HOLE			CASING SIZE	DEPTH SET
SIZE	FROM	TO		
12 1/4"	0	930'	9 5/8"	897'
7 7/8"	930	6042		
DRILL PIPE SIZES			4 1/2"	

H. B. Lynn Drilling Company

Drillers: C. Gunter
D. Brazell
J. Blakely

B. W. Shepard

SIGNED

Hovenweep

DRILLING REPORT

Section 5

(FIELD)

FOR PERIOD ENDING

(SECTION OR LEASE)

San Juan, Utah

January 18, 1956

T. 40S., R. 26E., S1E1M

(COUNTY)

(TOWNSHIP OR RANCHO)

DAY	DEPTHS		REMARKS
	FROM	TO	
12-16 to 1-15	6042	7938	<p>Drilled. Shut down 5 hours relining brake bands and changing drilling line on 12-27-55</p> <p>Cored. Core #1, 7630-7641, recovered 11'. Core #2, 7641-7691, recovered 49'. Core #3, 7691-7729, recovered 36'.</p> <p>Hole made considerable water at 7729'. Raised mud weight to 11.2# / gal. to stop flow.</p> <p>Lost partial circulation 7904' -7909'. Lost approximately 75 bbls. mud. Stopped lost circulation with Fibertex.</p> <p>Lost 3 cones in hole at 7930'.</p> <p>Measured out at 7930', corrected depth 7938'.</p> <p>Released Rotary Engineering Company 1-15-56.</p>
1-16 to 1-18	7938 T.D.		<p>Ran Schlumberger Laterolog, Microlog with Caliper and Gamma Ray-Neutron log, Schlumberger T.D., 7941'. With drill pipe hung at 7938', started displacing 160 sacks of construction cement at 11:34 P.M., 20 bbls. water ahead, 4 bbls. water behind. Finished 12:19 A.M. 1/17/56. Cement set up very rapidly, pulled out 12 stands and tried to break circulation with 1800 psi pump pressure, unsuccessful, pulled out of hole. 25 joints (778') of drill pipe plugged with cement. The open end bottom joint was 2/3 plugged with shale which prevented the rapidly setting cement from circulating out. Ran in and touched plug at 7315', cleaned out to 7530' and tested with 45,000# wt. for 5 min., O.K. Conditioned mud for DST#2.</p> <p>Tested B.O.E. Daily</p> <p><u>Mud Summary 12-16 to 1-18-56</u></p> <p>Wt. 10.2-11.2#/gal. F.C. 2/32 in. Vis. 65-02 sec. Salinity 110,900-228,000 ppm NaCl (t) W.L. 7-10 cc.</p>

CONDITION AT BEGINNING OF PERIOD

HOLE			CASING SIZE	DEPTH SET
SIZE	FROM	TO		
12 1/4"	0	930	9 5/8"	897'
7 7/8"	930	6042		
DRILL PIPE SIZES			16.60#/ft.	

H. B. Lynn Drilling Company

Drillers: W. Killebrew
B. Martin
J. Blakely

J. M. Burns

DRILLING REPORT

Section 5

FOR PERIOD ENDING

(SECTION OR LEASE)

January 21, 1956

T.40 S., R. 26 E., S.L.B.M.
(TOWNSHIP OR RANCHO)

Hovenweep
(FIELD)
San Juan, Utah
(COUNTY)

DAY	DEPTHS		REMARKS																					
	FROM	TO																						
1-19	PBTD 7530		DST #2, 7460-7530. Ran Johnston Tester with two 6 5/8" bobtail open hole packers set at 7456 and 7460, 4 outside pressure recorders, 2 Johnston regular, 1 Johnston type "TW", 1 Amerada, 3/4" subsurface bean and 1" surface bean, perforations: 7460-7488 and 7615-7530, no water cushion. Made 20 min. initial shut-in. Tool open 2 hours, 5 min., Immediate moderate blow increasing to good after 5 min. for duration of test. Shut in 1 hour. Lost 18' (1.1 bbl) fluid in annulus. Recovered 3960' (50.6 bbl.) total fluid as follows: 900' (12.8 bbl) slightly muddy CO ₂ ?cut salt water, salinity 104,000 - 42,900 ppm NaCl (t) + 3060' (37.8 bbl) CO ₂ ?cut salt water, salinity 28,000 - 23,900 ppm NaCl (t). Mud before test 110,500 ppm NaCl (t). IFP 250/250, FFP 1450/1475, SIP 2650/2650, (Nearly stabl. after 60 min.), ISIP 2725/2675, HP 4375/4250. Ran Velocity Survey																					
1-20			Well plugged as follows: <u>Drill Pipe hung at</u> <table border="0"> <tr> <td>7400'</td> <td>30 sacks</td> </tr> <tr> <td>6950'</td> <td>30 sacks</td> </tr> <tr> <td>5750'</td> <td>45 sacks</td> </tr> <tr> <td>4800'</td> <td>30 sacks</td> </tr> <tr> <td>2900'</td> <td>70 sacks</td> </tr> <tr> <td>2400'</td> <td>30 sacks</td> </tr> <tr> <td>1450'</td> <td>30 sacks</td> </tr> <tr> <td>1200'</td> <td>30 sacks</td> </tr> <tr> <td>950'</td> <td>50 treated with Calcium Chloride</td> </tr> </table> <table border="0"> <tr> <td><u>Number sacks</u></td> <td rowspan="2"><u>Construction Cement</u> (Displaced with 4 bbl water ahead, 1 bbl. water behind).</td> </tr> <tr> <td></td> </tr> </table> Waited on cement 5 hours, touched top of top plug at 909'. With Drill Pipe hung at 904', displaced 50 sacks construction cement, treated with calcium chloride. Waited on cement 5 hours. Touched top of plug at 782'. Layed down drill pipe.	7400'	30 sacks	6950'	30 sacks	5750'	45 sacks	4800'	30 sacks	2900'	70 sacks	2400'	30 sacks	1450'	30 sacks	1200'	30 sacks	950'	50 treated with Calcium Chloride	<u>Number sacks</u>	<u>Construction Cement</u> (Displaced with 4 bbl water ahead, 1 bbl. water behind).	
7400'	30 sacks																							
6950'	30 sacks																							
5750'	45 sacks																							
4800'	30 sacks																							
2900'	70 sacks																							
2400'	30 sacks																							
1450'	30 sacks																							
1200'	30 sacks																							
950'	50 treated with Calcium Chloride																							
<u>Number sacks</u>	<u>Construction Cement</u> (Displaced with 4 bbl water ahead, 1 bbl. water behind).																							
1-21			Pulled and capped water well, tore out B.O.E., cemented marker at 11:00 A.M. 1/21/56. Released contractor at 11:00 A.M. 1/21/56. Well abandoned.																					

CONDITION AT BEGINNING OF PERIOD				
HOLE			CASING SIZE	DEPTH SET
SIZE	FROM	TO		
12 1/4"	0	930	9 5/8"	897'
7 7/8"	930	7938		
	PBTD	7530		
DRILL PIPE SIZES			4 1/2" F.H.	16.60#/ft.

Drillers for H. B. Lynn Drilling Co.

W. Killebrew
B. Martin
J. Blakeley

J. M. Burns

SIGNED

DITCH SAMPLES

Examined by C. F. Thomas O to 410
 D. L. Baars & R. L. Knight to _____
 Lithology is from Exploration Department and is interpretative

Shell-Continental

Hovenweep 1

Well

Hovenweep

Field, or Area

NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/ LAGGED
			Tentative surface formation: BRUSHY BASIN	
0	40		No samples.	
40	100	100	<u>Sandstone</u> , light green, very fine, angular, fair sorting, argillaceous, bentonitic.	
100	130	100	<u>Sandstone</u> , white, very fine to fine, angular to well rounded, frosted, bentonitic.	
130	140	100	<u>Shale</u> , light green, sub-waxy, hard.	
140	160	90	<u>Shale</u> , as above, becoming finely sandy.	
		10	<u>Chert</u> , orange, opaque.	
160	200	100	<u>Shale</u> , light gray, mottled orange, bentonitic, finely sandy.	
200	220	100	<u>Shale</u> , medium brown sub-waxy, hard, with streaks orange chert.	
220	230	90	<u>Shale</u> , light green, with orange chert fragments.	
		10	<u>Sandstone</u> , white, fine, sub to well rounded, fair sorting, with grains light green shale.	
230	250	100	<u>Shale</u> , light green, siliceous, silty.	
250	290	100	<u>Quartzite</u> , light green, argillaceous.	
290	310	100	<u>Shale</u> , light green as above.	
310	350	50	<u>Shale</u> , as above.	
		50	<u>Quartzite</u> , as above.	
350	370	100	<u>Shale</u> , green, partly quartzitic.	
			Tentative sample top: WESTWATER CANYON 370'.	
370	390	50	<u>Shale</u> , light green, siliceous.	
		50	<u>Sandstone</u> , pale grayish green, very fine to fine, angular to sub-rounded, fair sorting, bentonitic.	
390	410	20	<u>Shale</u> , as above, sandy, not siliceous.	
		80	<u>Sandstone</u> , as above.	

DITCH SAMPLES

Examined by C. F. Thomas 410 to 930
D. L. Baars & R. L. Knight

Well Hovenweep 1
 Field or Area Hovenweep
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / AGED
410	430	100	<u>Sandstone</u> , pale green, fine to very fine, angular to sorting, bentonitic.	subrounded, fair
430	450	100	<u>Sandstone</u> , as above, calcareous.	
450	470	100	<u>Sandstone</u> , pale gray, very fine, angular, well sorted, argillaceous, calcareous.	subrounded,
470	490	50	<u>Sandstone</u> , light gray, very fine, angular, siliceous.	subrounded, well sorted,
		50	<u>Shale</u> , pale green, siliceous.	
			TENTATIVE SAMPLE TOP: RECAPTURE 490'	
490	510	80	<u>Sandstone</u> , green, as above, not argillaceous, not calcareous.	
		20	<u>Shale</u> , dark brown to medium brown, soft, calcareous, sandy.	
510	530	50	<u>Shale</u> , dark brown to medium brown, as above.	
		50	<u>Shale</u> , pale green, siliceous.	
530	550		<u>Sandstone</u> , pale gray to white, very fine to fine, rounded, frosted, calcareous with green shale fragments and chert, bright yellow, opaque.	subrounded to well
550	590	100	<u>Sandstone</u> , dark brown, very fine, angular, poorly sorted, extremely argillaceous, very calcareous.	
590	690	100	<u>Sandstone</u> , as above, very argillaceous.	
690	710	100	<u>Shale</u> , medium to dark brown, very calcareous.	
710	730	50	<u>Shale</u> , as above.	
		50	<u>Sandstone</u> , white to light green, very fine, angular, well sorted, very calcareous.	
			TENTATIVE SAMPLE TOP: BLUFF 730'.	
730	810	100	<u>Sandstone</u> , medium brown, very fine to silty, angular, very calcareous.	
810	830	50	<u>Shale</u> , brown, sandy, very calcareous.	
		50	<u>Sandstone</u> , white to light green as above.	
830	850	50	<u>Shale</u> , as above.	
		50	<u>Sandstone</u> , as above, calcareous.	
850	890	100	<u>Sandstone</u> , medium brown as above.	
			TENTATIVE SAMPLE TOP: SUMMERVILLE - ENTRADA 890'.	
890	930	100	<u>Sandstone</u> , light orange, very fine to fine, angular to sorting, calcareous.	subrounded, well

DITCH SAMPLES

Shell-Continental

Hovenweep 1

Well

Hovenweep

Examined by J. M. Burns 930 to 1790
D. L. Baars & R. L. Knight to

Field or Area

Hovenweep

NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED
930	940	100	<u>Sandstone</u> , as above.	
940	950	100	<u>Siltstone</u> , brownish red, argillaceous, finely sandy, slightly calcareous.	
950	1010	100	<u>Sandstone</u> , light orange, in part white, fine, angular to rounded, well sorted, medium calcareous.	
1010	1080	100	<u>Sandstone</u> , white, fine, sub to well rounded, frosted, well sorted.	
1080	1100	100	<u>Sandstone</u> , as above, becoming bentonitic. TENTATIVE SAMPLE TOP: CARMEL 1100'	
1100	1140	100	<u>Shale</u> , reddish orange, finely sandy, interbedded with streaks of reddish orange, very fine to silty, argillaceous Sandstone.	
1140	1150	100	<u>Siltstone</u> , reddish orange, argillaceous, calcareous. TENTATIVE SAMPLE TOP: NAVAJO 1150'.	
1150	1180	100	<u>Sandstone</u> , pale orange, very fine to fine, sub to well rounded, frosted well sorted, very slightly calcareous.	
1180	1300	100	<u>Sandstone</u> , as above, calcareous.	
1300	1410	100	<u>Sandstone</u> , as above, not calcareous. TENTATIVE SAMPLE TOP: KAYENTA 1410'	
1410	1480	100	<u>Sandstone</u> , medium red, finely angular, well sorted, with red staining on 50% of grains, tight, micaceous in interval 1470-80. TENTATIVE SAMPLE TOP: WINGATE 1480'.	
1480	1600	100	<u>Sandstone</u> , pale orange, very fine to fine, angular, well sorted, very slightly calcareous.	
1600	1630	100	<u>Sandstone</u> , becoming slightly calcareous.	
1630	1700	50	<u>Sandstone</u> , pale orange, calcareous as above.	
		50	<u>Sandstone</u> , medium red, as above,	
1700	1740	100	<u>Sandstone</u> , pale orange, fine, subrounded, well sorted, slightly calcareous.	
1740	1750	100	<u>Sandstone</u> , medium reddish orange, very fine to fine, angular to subrounded, argillaceous, slightly calcareous, with orange stained grains.	
1750	1780	100	<u>Sandstone</u> , as above.	
1780	1790	100	<u>Sandstone</u> , as above, calcareous.	

DITCH SAMPLES

Examined by J. M. Burns 1790 to 2430
D. L. Baars & R. L. Knight to _____

Shell Continental
Well Hovenweep 1
Field or Area Hovenweep
NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/LAGGED
1790	1800	100	<u>Siltstone</u> , to very fine <u>sandstone</u> , orange - brown, calcareous.	
1800	1850	100	<u>Sandstone</u> , becoming very fine, argillaceous.	
1850	1890	100	<u>Sandstone</u> , as above, very calcareous.	
1890	2040	100	<u>Sandstone</u> , as above.	
2040	2100		NO SAMPLES	
2100	2110	100	<u>Siltstone</u> , brownish red, calcareous, argillaceous.	
2110	2120	100	<u>Siltstone</u> , as above, very calcareous.	
2120	2130	100	<u>Siltstone</u> , as above, calcareous.	
2130	2140	50	<u>Siltstone</u> , as above.	
		50	<u>Shale</u> , red, soft, sandy.	
2140	2220	100	<u>Siltstone</u> , as above.	
2220	2240		NO SAMPLES	
			TENTATIVE SAMPLE TOP: CHINLE 2040'.	
2240	2250	100	<u>Siltstone</u> , as above, with red shale partings.	
2250	2290	100	<u>Siltstone</u> , as above, no partings.	
2290	2300	80	<u>Siltstone</u> , as above.	
		20	<u>Sandstone</u> , white, fine, sub to well rounded.	
2300	2310	40	<u>Shale</u> , red, silty.	
		40	<u>Siltstone</u> , as above.	
		20	<u>Sandstone</u> , as above.	
2310	2320	50	<u>Shale</u> , as above.	
		40	<u>Siltstone</u> , as above.	
		10	<u>Sandstone</u> , as above.	
2320	2330		NO SAMPLES	
2330	2350	100	<u>Shale</u> , red, streaked dark red, in part bentonitic.	
2350	2380	100	<u>Shale</u> , as above, calcareous.	
2380	2430	100	<u>Shale</u> , red, mottled green, calcareous, silty.	

DITCH SAMPLES

Examined by C. F. Thomas 2430 to 2760
 D.L. Baars & R. L. Knight to _____

Well Shell-Continental
Hovenweep 1
 Field or Area Hovenweep

NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/ LAGGED
2430	2450	100	<u>Shale</u> , as above, no green mottling.	
2450	2490	100	<u>Shale</u> , red, very calcareous.	
2490	2500	100	<u>Shale</u> , as above, mottled green.	
2500	2510	80	<u>Shale</u> , red, calcareous.	
		20	<u>Limestone</u> , white to pink, IVFA.	
2510	2520	70	<u>Shale</u> , as above.	
		30	<u>Limestone</u> , as above.	
2520	2530	80	<u>Shale</u> , as above.	
		20	<u>Limestone</u> , as above.	
2530	2540	70	<u>Shale</u> , as above.	
		30	<u>Limestone</u> , as above.	
2540	2550	100	<u>Shale</u> , reddish orange, silty, calcareous.	
2550	2560	60	<u>Shale</u> , as above.	
		40	<u>Limestone</u> , medium purple, IVFA, silty, argillaceous.	
2560	2580	100	<u>Limestone</u> , as above, mottled green.	
2580	2590	60	<u>Limestone</u> , as above.	
		40	<u>Shale</u> , as above.	
2590	2600	60	<u>Shale</u> , as above.	
		40	<u>Limestone</u> , as above.	
2600	2620	100	<u>Limestone</u> , as above.	
2620	2660	100	<u>Shale</u> , ochre, very calcareous, silty.	
2660	2690	100	<u>Shale</u> , red, medium silty, calcareous.	
2690	2700	100	<u>Shale</u> , light red, bentonitic, slightly calcareous.	
			TENTATIVE SAMPLE TOP: SHINARUMP 2700'.	
2700	2740	100	<u>Shale</u> , light purple, bentonitic.	
2740	2750	100	<u>Sandstone</u> , white, speckled purple and green, fine to medium, subrounded, fair sorting, tight.	
2750	2760	100	<u>Sandstone</u> , as above, partly siliceous.	

DITCH SAMPLES

Examined by J. M. Burns 2760 to 3070
 D.L. Barrs & R. L. Knight to _____

Shell-Continental
 Well Hovenweep 1
 Field or Area Hovenweep Area
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/ LAGGED
2760	2780	100	<u>Sandstone</u> , white, fine to coarse, angular, conglomeratic, with large fragments orange grayish, opaque chert. TENTATIVE SAMPLE TOP MOENKOPI 2780'.	
2780	2790		No samples.	
2790	2800	100	<u>Shale</u> , light green, soft, silty, very slightly carbonaceous, calcareous.	
2800	2810	50	<u>Shale</u> , as above.	
		50	<u>Sandstone</u> , as above.	
2810	2850	100	<u>Shale</u> , as above.	
2850	2900	100	<u>Shale</u> , vari-colored, green and red, bentonitic. TENTATIVE SAMPLE TOP CUTLER 2900'.	
2900	2910	100	<u>Shale</u> , as above, sandy.	
2910	2930	50	<u>Shale</u> , as above, not sandy.	
		50	<u>Sandstone</u> , white, fine to coarse, conglomeratic.	
2930	2940	60	<u>Sandstone</u> , as above.	
		40	<u>Shale</u> , as above.	
2940	2960	100	<u>Shale</u> , red, green, purple.	
2960	2990	100	<u>Siltstone</u> , orange brown.	
2990	3000	100	<u>Shale</u> , reddish orange, silty.	
3000	3010	100	<u>Siltstone</u> , reddish orange.	
3010	3020	100	<u>Siltstone</u> , as above, very calcareous.	
3020	3030	50	<u>Shale</u> , red, flaky, soft.	
		50	<u>Siltstone</u> , as above, calcareous.	
3030	3050	100	<u>Sandstone</u> , orange, very fine, well sorted, very calcareous.	
3050	3060	70	<u>Shale</u> , red, sandy.	
		30	<u>Sandstone</u> , as above.	
3060	3070	50	<u>Shale</u> , as above.	
		50	<u>Sandstone</u> , as above.	

DITCH SAMPLES

Examined by J.M. Burns 3070 to 3990
 D.L. Baars & R.L. Knight to _____

Well Shell-Continental
Hovenweep 1
 Field or Area Hovenweep Area

NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
3070	3090	100	<u>Sandstone</u> , as above, becoming brecciated.	
3090	3100	100	<u>Shale</u> , medium green, sub waxy, slightly calcareous.	
3100	3150	100	<u>Shale</u> , medium green, soft, granulated, slightly silty, calcareous, flaked with small particles carbonaceous material.	
3150	3200	100	<u>Shale</u> , vari-colored, red and green, calcareous.	
3200	3330	100	<u>Shale</u> , green, mottled red, calcareous.	
3330	3340	100	<u>Shale</u> , vari-colored, red and purple, calcareous.	
3340	3370	100	<u>Shale</u> , green as above, carbonaceous.	
3370	3450	100	<u>Shale</u> , reddish orange, silty, calcareous.	
3450	3580	100	<u>Shale</u> , vari-colored red and green, calcareous.	
3580	3590	50	<u>Shale</u> , as above.	
		50	<u>Sandstone</u> , red, very fine, angular, calcareous, micaceous.	
3590	3720	100	<u>Shale</u> , as above.	
3720	3750	100	<u>Shale</u> , brownish orange, silty, calcareous.	
3750	3850	100	<u>Shale</u> , as above, very calcareous.	
3850	3860	70	<u>Shale</u> , as above, calcareous.	
		30	<u>Shale</u> , green, calcareous.	
3860	3870	70	<u>Shale</u> , red as above, very calcareous.	
		30	<u>Shale</u> , green as above.	
3870	3880	50	<u>Shale</u> , red as above.	
		50	<u>Shale</u> , green as above.	
3880	3890	60	<u>Shale</u> , orange, silty, micaceous in part.	
		40	<u>Shale</u> , green as above.	
3890	3900	50	<u>Shale</u> , red as above.	
		50	<u>Shale</u> , green as above.	
3900	3910	100	<u>Shale</u> , orange, silty, calcareous.	
3910	3990	100	<u>Shale</u> , red, calcareous, silty, mottled green.	

DITCH SAMPLES

Examined by J.M. Burns 3990 to 4675
 D.L. Baars & R. L. Knight to _____

Shell-Continental
 Well Hovenweep 1
 Field or Area Hovenweep Area
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/LAGGED
3990	4010	100	<u>Shale</u> , as above.	
4010	4020	100	<u>Shale</u> , as above, very calcareous.	
4020	4040	100	<u>Shale</u> , as above, medium calcareous.	
4040	4050	100	<u>Shale</u> , as above, very calcareous.	
4050	4240	100	<u>Shale</u> , as above, medium calcareous.	
4240	4250	100	<u>Shale</u> , light green, soft, calcareous, granulated, finely sandy.	
4250	4400	100	<u>Shale</u> , red as above.	
4400	4450	100	<u>Shale</u> , vari-colored, red, green, purple, calcareous.	
4450	4460	50	<u>Shale</u> , red, purple, soft, sub waxy.	
		50	<u>Shale</u> , red as above.	
4460	4470	70	<u>Shale</u> , red as above.	
		30	<u>Shale</u> , reddish purple, as above.	
4470	4480		No samples.	
4480	4500	100	<u>Shale</u> , reddish orange, silty, medium calcareous.	
4500	4530	100	<u>Shale</u> , orange, mottled green, silty, very calcareous.	
4530	4540	100	<u>Shale</u> , as above, trace <u>limestone</u> .	
4540	4550	100	<u>Shale</u> , as above.	
4550	4590	100	<u>Shale</u> , as above, medium calcareous.	
4590	4600	100	<u>Shale</u> , as above, very calcareous.	
4600	4605	100	<u>Shale</u> , as above, medium calcareous.	
4605	4620	100	<u>Shale</u> , as above, very calcareous.	
4620	4650	100	<u>Shale</u> , as above, calcareous.	
4650	4665	100	<u>Shale</u> , reddish orange, silty, very calcareous.	
4665	4670	50	<u>Limestone</u> , tan, IVFA, chert, white opaque.	
		50	<u>Shale</u> , as above.	
4670	4675	70	<u>Shale</u> , as above.	
		30	<u>Limestone</u> , as above.	

DITCH SAMPLES

Examined by J.M. Burns 4675 to 4770
 D.L. Baars & R.L. Knight ___ to ___

Well Shell-Continental
Hovenweep 1
 Field or Area Hovenweep Area
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
4675	4700	100	<u>Shale</u> , orange, very calcareous, silty, mottled green.	
4700	4725	100	<u>Shale</u> , as above, medium calcareous.	
4725	4770	100	<u>Shale</u> , vari-colored, green, purple, red, calcareous, silty.	

DITCH SAMPLES

Examined by J.M. Burns 4770 to 4825
D.L. Baars & R. L. Knight to _____

Well Shell-Continental
Hovenweep 1
Field or Area Hovenweep Area

NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/LAGGED
------	----	---	------------------	----------------

TENTATIVE SAMPLE TOP HERMOSA 4770'.

4770	4775	50	<u>Limestone</u> , white to light gray, IVFA.	
		25	<u>Siltstone</u> , grayish green, calcareous, micaceous.	
		25	<u>Shale</u> , brick red, calcareous, sandy.	
4775	4780	50	<u>Siltstone</u> , as above.	
		25	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , as above.	
4780	4785	50	<u>Limestone</u> , III/I VFA.	
		25	<u>Shale</u> , as above.	
		25	<u>Siltstone</u> , as above.	
4785	4790	25	<u>Shale</u> , brick red as above.	
		25	<u>Shale</u> , dark gray, fissile.	
		25	<u>Shale</u> , grayish green, blocky, arenaceous.	
		25	<u>Limestone</u> , light to dark gray, III/I VFA.	
4790	4795	50	<u>Limestone</u> , as above.	
		25	<u>Shale</u> , brick red as above.	
		25	<u>Shale</u> , dark gray as above.	
4795	4800		No samples.	
4800	4810	50	<u>Shale</u> , grayish green, arenaceous, micaceous.	
		25	<u>Shale</u> , brick red as above.	
		25	<u>Limestone</u> , light gray, IVFA.	
4810	4815	50	<u>Sandstone</u> , light green, fine to coarse, micaceous.	
		25	<u>Shale</u> , brick red as above.	
		25	<u>Limestone</u> , white to light gray, IVFA.	
4815	4825	50	<u>Limestone</u> , as above.	
		25	<u>Shale</u> , as above.	
		25	<u>Shale</u> , grayish green, micaceous, arenaceous in part.	

DITCH SAMPLES

Examined by J. M. Burns 4825 to 4920
D.L. Baars & R. L. Knight to _____

Well Shell-Continental
Hovenweep 1
Field or Area Hovenweep Area
NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/LAGGED
4825	4835	75	<u>Shale</u> , vari-colored, brick red to gray green.	
		25	<u>Limestone</u> , gray, IVFA, cherty.	
4835	4850	75	<u>Limestone</u> , white to light gray, IVFA.	
		25	<u>Shale</u> , as above.	
4850	4855	50	<u>Limestone</u> , as above.	
		25	<u>Shale</u> , vari-colored as above.	
		25	<u>Shale</u> , grayish green, blocky.	
4855	4860	75	<u>Shale</u> , vari-colored, red, gray, grayish green.	
		25	<u>Limestone</u> , as above.	
4860	4865	50	<u>Shale</u> , vari-colored as above.	
		50	<u>Limestone</u> , as above.	
4865	4875	50	<u>Shale</u> , vari-colored, red, gray, grayish green.	
		50	<u>Limestone</u> , light gray, IVFA.	
4875	4885	75	<u>Shale</u> , vari-colored as above.	
		25	<u>Limestone</u> , as above.	
4885	4900	50	<u>Shale</u> , as above.	
		25	<u>Siltstone</u> , grayish green, micaceous, very calcareous.	
		25	<u>Limestone</u> , light gray as above.	
4900	4905	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , dark gray, IVFA.	
4905	4910	50	<u>Shale</u> , as above.	
		25	<u>Siltstone</u> , brown, micaceous, calcareous.	
		25	<u>Limestone</u> , gray, IVFA.	
4910	4915	50	<u>Shale</u> , as above.	
		50	<u>Siltstone</u> , as above.	
4915	4920	75	<u>Limestone</u> , light to dark gray, IVFA.	
		25	<u>Shale</u> , as above.	

DITCH SAMPLES

Examined by J.M. Burns 4920 to 5035
 D.L. Baars & R. L. Knight to _____

Well Shell-Continental
Hovenweep 1
 Field or Area Hovenweep Area

NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
------	----	---	------------------	------------------

4920	4925	50	<u>Shale</u> , vari-colored, red to gray, green, gray.	
		50	<u>Limestone</u> , as above.	
4925	4930	50	<u>Limestone</u> , as above.	
		25	<u>Shale</u> , vari-colored as above.	
		25	<u>Shale</u> , grayish green, blocky, calcareous.	
4930	4935		As above.	
4935	4940	75	<u>Shale</u> , vari-colored as above.	
		25	<u>Limestone</u> , as above.	
4940	4950	100	<u>Shale</u> , vari-colored as above.	
4950	4955	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , white to light gray, IVFA.	
4955	4970	75	<u>Shale</u> , grayish green, soft, blocky.	
		25	<u>Limestone</u> , as above.	
4970	4975	75	<u>Shale</u> , vari-colored, brick red, gray, grayish green.	
		25	<u>Limestone</u> , as above.	
4975	4980	50	<u>Shale</u> , vari-colored, red, gray, grayish green.	
		50	<u>Limestone</u> , light to medium gray, IVFA.	
4980	4990	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , as above, cherty.	
4990	4995	100	<u>Shale</u> , grayish green, blocky, calcareous.	
4995	5000	90	<u>Shale</u> , as above.	
		10	<u>Limestone</u> , tan, IVFA.	
5000	5005	100	<u>Shale</u> , as above.	
5005	5015	90	<u>Shale</u> , as above.	
		10	<u>Limestone</u> , gray to tan, IVFA.	
5015	5035	100	<u>Shale</u> , vari-colored as above.	

DITCH SAMPLES

Examined by J. M. Burns 5035 to 5125
 D.L. Baars & R. L. Knight to _____

Shell-Continental
 Hovenweep 1
 Well _____
 Hovenweep Area
 Field or Area _____
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
5035	5040	75	<u>Shale</u> , vari-colored as above.	
		25	<u>Limestone</u> , white to gray, IVFA.	
5040	5045	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , light to medium gray, IVFA.	
5045	5050	50	<u>Shale</u> , as above.	
		25	<u>Shale</u> , grayish green, pyritic.	
		25	<u>Limestone</u> , as above.	
5050	5055	75	<u>Shale</u> , vari-colored.	
		25	<u>Limestone</u> , as above.	
5055	5065	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , light to medium gray, I/II VFA.	
5065	5070	100	<u>Limestone</u> , white to medium gray, I/II VFA.	
5070	5075	100	<u>Limestone</u> , as above, type II very minor.	
5075	5080	75	<u>Limestone</u> , as above.	
		25	<u>Shale</u> , vari-colored.	
5080	5085	75	<u>Limestone</u> , white to medium gray, I/II VFA.	
		25	<u>Shale</u> , as above.	
5085	5100	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , as above.	
5100	5110	75	<u>Shale</u> , vari-colored.	
		25	<u>Limestone</u> , light to medium gray, IVFA.	
5110	5115	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , medium gray, IVFA.	
5115	5120	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , as above.	
5120	5125	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , as above.	

DITCH SAMPLES

Examined by J. M. Burns 5125 to 5210
D.L. Baars & R.L. Knight ___ to ___

Shell-Continental
Hovenweep 1
Well
Field or Area Hovenweep Area

NOT
SAMPLES/ LAGGED

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/ LAGGED
5125	5130	75	<u>Shale</u> , vari-colored, brick red, gray, grayish green.	
		25	<u>Limestone</u> , medium gray, I/IIIIVFA.	
5130	5135	100	<u>Shale</u> , vari-colored as above.	
5135	5145	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , light gray, IVFA.	
5145	5150	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , light to dark gray, IVFA.	
5150	5155	50	<u>Shale</u> , brick red, grayish green, gray.	
		50	<u>Limestone</u> , medium gray, IVFA, pyritic.	
5155	5160	75	<u>Limestone</u> , as above, cherty.	
		25	<u>Shale</u> , as above.	
5160	5170	75	<u>Limestone</u> , medium gray, IVFA, argillaceous in part.	
		25	<u>Shale</u> , medium gray, blocky, calcareous.	
5170	5175	75	<u>Shale</u> , vari-colored.	
		25	<u>Limestone</u> , medium gray, IVFA.	
5175	5180	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , as above.	
5180	5185	75	<u>Limestone</u> , light to medium gray, I/III VF-FA.	
		25	<u>Shale</u> , as above.	
5185	5190	75	<u>Limestone</u> , light to medium gray, I/III VF-FA.	
		25	<u>Shale</u> , as above.	
5190	5195	100	<u>Limestone</u> , light gray, arenaceous, I/III VF-FA.	
5195	5200	100	<u>Limestone</u> , as above, cherty.	
5200	5205	100	<u>Limestone</u> , light to medium gray.	
5205	5210	75	<u>Limestone</u> , as above.	
		25	<u>Shale</u> , gray, grayish green, red.	

DITCH SAMPLES

Examined by J.M. Burns 5210 to 5225
 D.L. Baars & R.L. Knight to

Well Shell-Continental
Hovenweep 1
 Field or Area Hovenweep Area
 NOT

SAMPLES/LAGGED

FROM	TO	%	SHOWS UNDERLINED
5210	5215	50	<u>Shale</u> , as above.
		50	<u>Limestone</u> , as above.
5215	5220	75	<u>Shale</u> , as above.
		25	<u>Limestone</u> , as above.
5220	5225	50	<u>Shale</u> , grayish green, blocky, calcareous.
		50	<u>Limestone</u> , medium gray, IVFA, cherty.

GAS

Mud

5023-5034 80/0 T.G.
 5034-5038 25/0
 5038-5044 12/0
 5044-5085 8-12/0
 5085-5120 15-25/0
 5120-5128 75/0 T.G.
 5128-5134 25/0
 5134-5206 15-25/0

Cuttings

5023-5206 0/0

DITCH SAMPLES

Examined by J.M. Burns 5225 to 5325
 D.L. Baars & R.L. Knight to _____

Shell-Continental
 Well Hovenweep 1
 Field or Area Hovenweep Area

NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/ LAGGED
------	----	---	------------------	-----------------

5225	5230	100	<u>Shale</u> , medium gray, blocky.	
5230	5235	100	<u>Shale</u> , as above.	
5235	5240	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , light gray, I-VFA.	
5240	5245	50	<u>Shale</u> , vari-colored, red, gray, grayish green.	
		50	<u>Limestone</u> , I/III VFA.	
5245	5250	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , white to light gray, IVFA.	
5250	5255	75	<u>Limestone</u> , light gray to tan, IVFA, arenaceous.	
		25	<u>Shale</u> , as above.	
5255	5260	100	<u>Limestone</u> , as above.	
5260	5270	100	<u>Limestone</u> , dark gray, I-III VFA, very argillaceous.	
5270	5275	75	<u>Limestone</u> , as above.	
		25	<u>Shale</u> , vari-colored gray, grayish green, brick red.	
5275	5280	100	<u>Limestone</u> , dark gray, IVFA, argillaceous.	
5280	5290	75	<u>Limestone</u> , light to medium gray, I/III VF-FA.	
		25	<u>Shale</u> , gray to grayish green.	
5290	5295	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , as above, in part arenaceous.	
5295	5300	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , I VFA.	
5300	5310	75	<u>Shale</u> , vari-colored gray, grayish green, red.	
		25	<u>Limestone</u> , light gray, IVFA.	
5310	5320	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , light gray to tan, IVFA.	
5320	5325	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , as above.	

DITCH SAMPLES

Examined by J.M. Burns 5325 to 5400
 D.L. Baars & R.L. Knight to _____

Well Shell-Continental
Hovenweep 1
 Field or Area Hovenweep Area
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/LAGGED
5325	5330	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , white to medium gray, IVFA.	
5330	5335	50	<u>Shale</u> , vari-colored gray, grayish green, red.	
		50	<u>Limestone</u> , white to medium gray, IVFA.	
5335	5340	50	<u>Shale</u> , as above.	
		50	<u>Shale</u> , medium gray, blocky, calcareous.	
5340	5345	50	<u>Shale</u> , medium gray as above.	
		50	<u>Limestone</u> , light gray to tan, IVFA.	
5345	5350	75	<u>Limestone</u> , as above.	
		25	<u>Shale</u> , as above.	
5350	5355	50	<u>Shale</u> , medium gray, calcareous.	
		50	<u>Limestone</u> , as above.	
5355	5365	50	<u>Shale</u> , vari-colored gray, grayish green, red.	
		50	<u>Limestone</u> , as above.	
5365	5370	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , as above.	
5370	5375	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , as above, chert.	
5375	5380	50	<u>Shale</u> , vari-colored.	
		25	<u>Shale</u> , gray, calcareous.	
		25	<u>Limestone</u> , light to medium gray, IVFA.	
5380	5385	50	<u>Shale</u> , medium gray, calcareous, blocky.	
		50	<u>Limestone</u> , as above.	
5385	5390	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , as above.	
5390	5400	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , as above.	

DITCH SAMPLES

Examined by J.M. Burns 5400 to 5515
 D.L. Baars & R.L. Knight ___ to ___

Well Shell-Continental
 Hovenweep 1
 Field or Area Hovenweep Area

NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/ LAGGED
5400	5405	75	<u>Shale</u> , medium gray, blocky, calcareous.	
		25	<u>Limestone</u> , light to medium gray, I/III VFA.	
5405	5410	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , as above.	
5410	5420	75	<u>Limestone</u> , as above.	
		25	<u>Shale</u> , as above.	
5420	5425	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , I VFA.	
5425	5430	75	<u>Shale</u> , medium gray, hard, blocky, very calcareous.	
		25	<u>Limestone</u> , light gray to tan, IVFA.	
5430	5445	100	<u>Shale</u> , as above.	
5445	5450	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , light gray, IVFA.	
5450	5460	90	<u>Shale</u> , medium to dark gray, hard, blocky, very calcareous.	
		10	<u>Limestone</u> , as above.	
5460	5465	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , medium gray, IVFA.	
5465	5480	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , light to medium gray, IVFA.	
5480	5485	100	<u>Shale</u> , as above.	
5485	5490	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , white to light gray, IVFA.	
5490	5495	100	<u>Limestone</u> , as above.	
5495	5500	100	<u>Limestone</u> , as above, cherty.	
5500	5510	75	<u>Limestone</u> , white to medium gray, IVFA.	
		25	<u>Shale</u> , medium gray, blocky, calcareous.	
5510	5515	100	<u>Shale</u> , vari-colored gray, grayish green, red.	

DITCH SAMPLES

Examined by J.M. Burns 5515 to 5615
D.L. Baars & R.L. Knight to

Shell-Continental
Hovenweep Area
Well Hovenweep I
Field or Area NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
5515	5520	50	<u>Shale</u> , as above.	
		25	<u>Shale</u> , medium gray, calcareous.	
		25	<u>Limestone</u> , light gray, IVFA.	
5520	5525	100	<u>Shale</u> , vari-colored as above.	
5525	5530	75	<u>Shale</u> , medium gray, blocky, calcareous.	
		25	<u>Limestone</u> , light to medium gray, IVFA, cherty.	
5530	5535	100	<u>Shale</u> , as above.	
5535	5550	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , light gray, IVFA.	
5550	5555	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , light to medium gray, IVFA, chert.	
5555	5560	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , as above, no chert.	
5560	5570	75	<u>Limestone</u> , I-III VFA.	
		25	<u>Shale</u> , as above.	
5570	5575	50	<u>Shale</u> , vari-colored gray, grayish green, brick red.	
		50	<u>Limestone</u> , as above.	
5575	5585	75	<u>Shale</u> , gray to grayish green, calcareous.	
		25	<u>Limestone</u> , light gray, IVFA.	
5585	5590	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , as above, cherty.	
5590	5600	100	<u>Shale</u> , as above.	
5600	5605	50	<u>Shale</u> , vari-colored grayish green, medium gray, calcareous.	
		50	<u>Limestone</u> , light gray, IVFA.	
5605	5610	100	<u>Shale</u> , as above.	
5610	5615	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , light gray, IVFA.	

DITCH SAMPLES

Examined by J.M. Burns 5615 to 5690
 D.L. Baars & R. L. Knight to _____

Well Shell-Continental
Hovenweep 1
 Field or Area Hovenweep Area
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
5615	5625	100	<u>Shale</u> , as above.	
5625	5630	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , light gray, IVFA.	
5630	5635	100	<u>Shale</u> , as above.	
5635	5640	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , light to medium gray, IVFA.	
5640	5645	100	<u>Shale</u> , medium gray, blocky to sub fissile, calcareous. micaceous, carbonaceous.	
5645	5655	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , light to medium gray, IVFA.	
5655	5660	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , as above, cherty.	
5660	5670	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , as above, cherty.	
5670	5675	75	<u>Limestone</u> , medium gray, IVFA, abundant chert.	
		25	<u>Shale</u> , as above.	
5675	5685	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , as above.	
5685	5690	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , as above, no chert.	

GAS

Mud

5206-5248	8-12/0	5408-5414	10/0
5248-5258	65/0 T.G.	5414-5418	45-50/0
5258-5296	8-14/0	5418-5425	8-12/0
5296-5326	15-40/0	5425-5440	100/0 T.G.
5326-5334	75/0 T.G.	5440-5510	8-15/0
5334-5408	10-20/0	5510-5515	65/0 T.G.
		5515-5598	3-12/0

DITCH SAMPLES

Examined by J. M. Burns 5690 to 5775
D. L. Baars and R. L. Knight

Well Hovenweep #1
 Field or Area Hovenweep
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
5690	5695	75	<u>Shale</u> , medium gray, calcareous, blocky to sub fissile.	
		25	<u>Limestone</u> , light to medium gray, I VFA, cherty.	
5695	5700	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , as above.	
5700	5705	75	<u>Shale</u> , medium to dark gray, calcareous, blocky.	
		25	<u>Limestone</u> , light gray to tan, I VFA.	
5705	5710	100	<u>Shale</u> , as above.	
5710	5720	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , light gray to light tan, I VFA.	
5720	5735	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , as above.	
5735	5740	25	<u>Shale</u> , as above.	
		75	<u>Limestone</u> , light gray to light tan, I VFA, pyritic.	
5740	5750	75	<u>Shale</u> , varicolored, gray, grayish green to red.	
		25	<u>Limestone</u> , light gray to light tan, I VFA, arenaceous in part.	
5750	5755	75	<u>Shale</u> , medium to dark gray, calcareous.	
		25	<u>Limestone</u> , light gray to light tan, I VFA, arenaceous in part.	
5755	5760	75	<u>Shale</u> , medium to dark gray, sub fissile.	
		25	<u>Limestone</u> , light gray to tan, I VFA, arenaceous in part.	
5760	5765	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , light gray to tan, I VFA, arenaceous in part.	
5765	5770	50	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , light gray to tan, I VFA.	
5770	5775	75	<u>Shale</u> , varicolored gray, grayish green, red.	
		25	<u>Limestone</u> , light gray, I VFA and IIIMA, oolitic in part.	
			<u>Mud</u> 5598-5727 0-5/0	

GAS

DITCH SAMPLES

Examined by J. M. Burns 5775 to 5840
 D. L. Baars and R. L. Knight to _____

Well Hovenweep #1
 Field or Area Hovenweep Area
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/ LAGGED
5775	5785	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , light tan, I VFA.	
5785	5790	75	<u>Shale</u> , as above.	
		25	<u>Limestone</u> , light gray, I VFA.	
5790	5795	100	<u>Shale</u> , as above.	
5795	5800	90	<u>Shale</u> , as above.	
		10	<u>Limestone</u> , light gray, I VFA.	
5800	5805	25	<u>Shale</u> , medium to dark gray, calcareous.	
		75	<u>Limestone</u> , light gray to tan, I VFA.	
5805	5815	75	<u>Shale</u> , varicolored gray to grayish green, red.	
		15	<u>Limestone</u> , as above.	
		10	<u>Anhydrite</u> , white.	
			<u>Gas</u>	
			Mud: 5736-5750 4-8/0	Cuttings o/o
			5750-5756 4-5/0 T.G.	
			5756-5778 4-6/0	
			5778-5810 4-8/0	
5815	5825	50	<u>Shale</u> , as above.	
		40	<u>Limestone</u> , light gray to tan, I VFA.	
		10	<u>Anhydrite</u> , calcareous.	
5825	5830	75	<u>Shale</u> , varicolored, gray to dark gray, grayish green, calcareous.	
		25	<u>Limestone</u> , light to medium gray, I VFA.	
5830	5835	50	<u>Shale</u> , medium to dark gray, calcareous.	
		40	<u>Limestone</u> , light to dark gray, I/III VFA.	
		10	<u>Chert</u> , dark gray.	
5835	5840	50	<u>Shale</u> , as above.	
		15	<u>Dolomite</u> , medium gray to tan, III VFA, argillaceous.	
		10	<u>Chert</u> , as above.	

DITCH SAMPLES

Examined by J. M. Burns 5840 to 5930
 D. L. Baars & R. L. Knight to _____

Well Hovenweep #1
 Field or Area Hovenweep
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/LAGGED
5840	5845	25	<u>Shale</u> , as above.	
		65	<u>Limestone</u> , medium gray to tan, I VFA, argillaceous.	
		10	<u>Chert</u> , as above.	
5845	5860	25	<u>Shale</u> , as above.	
		75	<u>Limestone</u> , as above, no chert.	
5860	5865	25	<u>Shale</u> , as above.	
		50	<u>Limestone</u> , as above.	
		25	<u>Dolomite</u> , tan, III VFA, <u>5% fairly uniform milky white fluorescence, milky white cut fluorescence, cut very slow.</u>	
5865	5870	25	<u>Shale</u> , as above.	
		75	<u>Dolomite</u> , as above <u>20% fluorescence and cut fluorescence.</u>	
5870	5875	100	<u>Dolomite</u> , as above, <u>10% fluorescence as above.</u>	
5875	5880	75	<u>Dolomite</u> , as above, <u>10% fluorescence as above.</u>	
		25	<u>Shale</u> , dark gray, slightly calcareous, sub-fissile.	
5880	5885	75	<u>Dolomite</u> , as above, <u>5% fluorescence as above.</u>	
		25	<u>Shale</u> , as above.	
5885	5890	100	<u>Shale</u> , medium to dark gray, calcareous, blocky.	
5890	5905	100	<u>Shale</u> , as above.	
5905	5910	90	<u>Shale</u> , black, soft, blocky.	
		10	<u>Limestone</u> , light gray to white, I VFA.	
5910	5920	100	<u>Shale</u> , as above.	
5920	5925	50	<u>Shale</u> , varicolored, gray to grayish green, medium gray.	
		25	<u>Shale</u> , as above.	
		25	<u>Dolomite</u> , tan, calcareous, III VFA, argillaceous.	
5925	5930	75	<u>Dolomite</u> , as above.	
		25	<u>Shale</u> , medium to dark gray, blocky.	

DITCH SAMPLES

Examined by J.M. Burns 5930 to 5990
 D.L. Baars & R. L. Knight _____ to _____

Well Hovenweep 1
 Field or Area Hovenweep

NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
5930	5935	50	<u>Dolomite</u> , as above.	
		50	<u>Dolomite</u> , medium gray, very argillaceous, I VFA. <u>20% light yellow fluorescence, bluish white cut fluorescence.</u>	
5935	5940	50	<u>Shale</u> , medium gray to black, soft to hard, slightly calcareous.	
		25	<u>Dolomite</u> , gray as above.	
		25	<u>Dolomite</u> , tan as above. <u>5% fluorescence in dolomites, as above.</u>	
5940	5955		No samples.	
5955	5960	75	<u>Dolomite</u> , medium gray to tan, III VFA, calcareous.	
		25	<u>Anhydrite</u> , white, crystalline, mottled brown.	
5960	5965	90	<u>Dolomite</u> , medium gray to tan, I/III VFA, calcareous, very argillaceous, <u>10% pale yellow fluorescence, bluish white fluorescence.</u>	
		10	<u>Anhydrite</u> , as above.	
5965	5970	90	<u>Dolomite</u> , as above, <u>10% fluorescence and cut fluorescence as above.</u>	
		10	<u>Anhydrite</u> , as above.	
5970	5975	75	<u>Dolomite</u> , as above.	
		25	<u>Dolomite</u> , light gray, II VFA, calcareous, argillaceous. <u>20% light yellow fluorescence, bluish white cut fluorescence.</u>	
5975	5980	50	<u>Dolomite</u> , as above.	
		25	<u>Dolomite</u> , light gray, III VF-FA, calcareous, argillaceous. <u>10% light yellow fluorescence, light bluish white cut fluorescence in dolomites.</u>	
		25	<u>Anhydrite</u> , white, crystalline, mottled brown, brown sucrose.	
5980	5990	50	<u>Anhydrite</u> , white, crystalline, mottled brown.	
		50	<u>Dolomite</u> , dark gray, IVFA, as above, <u>5% total fluorescence and cut fluorescence, as above.</u>	

Circulation sample at

5990' Anhydrite, 25% as above.Limestone, 25% medium gray, I VFA.Shale, 25% medium to dark gray.Dolomite, 25% as above.2% fluorescence and cut fluorescence.

DITCH SAMPLES

Examined by J.M. Burns 5990 to 6050
 D. L. Baars and R. L. Knight to _____

Well Hovenweep 1
 Field or Area Hovenweep Area

NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
5990	5995	60	<u>Limestone</u> , brownish gray, I VFA.	
		40	<u>Anhydrite</u>	
5995	6000	60	<u>Limestone</u> , tan to light brown, I VFA.	
		40	<u>Shale</u> , black, hard, calcareous.	
6000	6005	60	<u>Limestone</u> , tan, I VFA.	
		40	<u>Shale</u> , as above.	
6005	6010	70	<u>Shale</u> , black to dark gray, very soft, very calcareous.	
		30	<u>Limestone</u> , as above.	
6010	6030	100	<u>Shale</u> , as above.	
6030	6040	100	<u>Limestone</u> , grayish brown, I-III VFA, with anhydrite inclusions.	
6040	6050	75	<u>Limestone</u> , as above with rare crinoid.	
		25	<u>Shale</u> , black to medium gray, moderately hard, slightly calcareous.	

TENTATIVE TOP OF SALT 6045'

Mud Gas

5810-70: 4-10/0
 5870-78: 10-12/2
 5878-86: 12-16/0
 5886-92: 45/0 T.G.
 5892-5900: 2-3/0
 5900-30: 0/0
 5930-40: 3/1
 5940-42: 5/2
 5842-48: 50/0 T.G.

No Reading

5955-65: 3/2
 5965-75: 0/0
 5975-85: 2/1

Cuttings Gas

5930-35: 5/2
 5935-40: 4/1
 5940-55: No samples
 5955-60: 12/6
 5960-65: 3/1
 5965-75: 0/0
 5975-80: 10/8
 5980-85: 6/5

DITCH SAMPLES

Examined by J. M. Burns 6050 to 6342
 D.L. Baars and R.L. Knight to _____

Well Hovenweep 1
 Field or Area Hovenweep Area
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / AGGED
6050	6172	-	NOTE: Drilling break and salinity increase starting at 6045' indicates top of salt at this depth. Samples vary from 50% anhydrite and 50% black shale to 100% anhydrite, but the interval is considered to be salt with the possible exception of the following intervals.	
6064	6065	100	<u>Anhydrite</u> , white, granulated to powdery, soft.	
6073	6076	100	<u>Anhydrite</u> , as above.	
6081	6084	100	<u>Anhydrite</u> , as above.	
6115	6116	100	<u>Anhydrite</u> , as above.	
			Anhydrite is occasionally salt-castic and contains rare anhydrite pseudomorphs after salt.	
			NOTE: Intervals below determined by drilling speeds. Samples remain mostly cavings.	
6172	6214	100	<u>Salt</u>	
6214	6219	100	<u>Anhydrite</u> , crystalline, very dolomitic.	
6219	6234	100	<u>Salt</u> .	
6234	6253	100	<u>Anhydrite</u> , crystalline, very dolomitic, with dolomite inclusions, very porous salt, castic, porosity probably result of salt solution.	
6253	6266	60	<u>Dolomite</u> , tan to light grayish tan, I-III VF-FA, anhydritic.	
		40	<u>Anhydrite</u> , as above.	
6266	6277	100	<u>Salt</u> .	
6277	6280	100	<u>Anhydrite</u> , as above.	
6280	6286	100	<u>Salt</u>	
6286	6300	100	<u>Dolomite</u> , tan, I VF-FA + 5B ₁₋₈ , argillaceous, <u>2% dull yellow fluorescence and cut fluorescence.</u>	
6300	6317	100	<u>Salt</u>	
6317	6319	100	<u>Dolomite</u> , tan to light brown, III FA + B ₁ , calcareous, anhydrite, <u>1% fluorescence and cut fluorescence.</u>	
6319	6339	100	<u>Anhydrite</u> , with interbeds of shale, black, hard, calcareous.	
6339	6342	100	<u>Salt</u>	

DITCH SAMPLES

Examined by J.M. Burns 6342 to 6616
 D. L. Baars & R. L. Knight to _____

Well Hovenweep 1
 Field or Area Hovenweep

NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/ LAGGED
6342	6366	100	<u>Anhydrite</u> , white to tan, very dolomitic, with partings of dolomite as above and limestone, tan, I VFA, fusulinid.	
6366	6394	100	<u>Salt</u> .	
6394	6413	100	<u>Dolomite</u> , tan to light brown, III VF-FA+B ₁ , slightly calcareous, anhydritic, in part argillaceous, <u>1% dull yellow fluorescence and milky cut fluorescence.</u>	
6413	6425	100	<u>Anhydrite</u> , white to tan, dolomitic in part.	
6425	6445	100	<u>Dolomite</u> , tan to light brown, III VF-FA+B ₁ , calcareous to very calcareous, <u>anhydritic, argillaceous, very dolomitic in part, 1% dull yellow fluorescence and cut fluorescence.</u>	
6445	6450	100	<u>Anhydrite</u> , white, crystalline, dolomitic, calcareous in part.	
6450	6455	100	<u>Salt</u> .	
6455	6462	100	<u>Anhydrite</u> , as above.	
6462	6492	100	<u>Shale</u> , black, moderately hard, calcareous in part.	
6492	6495	100	<u>Salt</u> .	
6495	6507	100	<u>Anhydrite</u> , and black <u>shale</u> interbedded.	
6507	6552	100	<u>Salt</u> .	
6552	6561	100	<u>Interbedded anhydrite, shale, black; and dolomite, light brown, III A.</u>	
6561	6568	100	<u>Salt</u> .	
			<u>Mud Gas</u>	
			6515 - 6583 4-5/4	
			6583 - 6585 12/10	
			6585 - 6590 2/1	
6568	6593	100	<u>Shale</u> , black, hard, dolomitic, with anhydrite and dolomite inclusions.	
6593	6596	100	<u>Anhydrite</u> .	
6596	6603	100	<u>Limestone</u> , tan, III FA, dolomitic.	
6603	6607	100	<u>Salt</u> .	
6607	6616	100	<u>Shale</u> , as above.	

DITCH SAMPLES

Examined by J. M. Burns 6616 to 6884
 D. L. Baars & R. L. Knight to _____

Well Hovenweep 1
 Field or Area Hovenweep
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
6616	6640	100	<u>Anhydrite</u> , with 1' interbeds of dolomite, tan, III FA, calcareous.	
6640	6700	100	<u>Salt.</u> <u>Mud Gas</u> 6590 - 6600 4/2 6600 - 6605 6/2 6605 - 6610 25/5 T.G. 6610 - 6614 4/2 6614 - 6700 0/0	
6700	6715	100	<u>Salt.</u>	
6715	6721	100	<u>Anhydrite.</u>	
6721	6728	100	<u>Interbedded limestone and dolomite</u> , light to medium brown, III FA, argillaceous in part with <u>1% pale yellow fluorescence and very pale cut fluorescence.</u>	
6728	6736	100	<u>Anhydrite</u> , salt-castic.	
6736	6744	100	<u>Salt.</u>	
6744	6751	100	<u>Anhydrite</u> , as above, with <u>dolomite partings.</u>	
6751	6758	100	<u>Interbedded anhydrite</u> as above, <u>dolomite</u> as above, and <u>shale</u> , black, hard, anhydritic.	
6758	6769	100	<u>Anhydrite</u> , crystalline, salt-castic in part.	
6769	6775	100	<u>Limestone</u> , light brown, III FA, slightly dolomitic, anhydritic in part, <u>1% yellow fluorescence, very pale cut fluorescence.</u>	
6775	6804	100	<u>Anhydrite</u> , as above, with occasional partings, of dolomite, light brown, III VF-FA+B _{tr} (believed to be washed out anhydrite crystals), very anhydritic, <u>1% pale yellow fluorescence and very pale cut fluorescence.</u>	
6804	6825	100	<u>Salt.</u>	
6825	6868	100	<u>Salt</u> , with occasional anhydrite stringers.	
6868	6871	100	<u>Shale</u> , black, hard, calcareous in part.	
6871	6879	100	<u>Salt</u> , with occasional anhydrite stringers.	
6879	6884	100	<u>Limestone</u> , light brown, III FA, anhydritic and argillaceous in part. <u>3% pale yellow spotty fluorescence, pale bluish white cut fluorescence.</u>	

DITCH SAMPLES

Examined by J.M. Burns 6884 to 7055
 D.L. Baars and R. L. Knight to _____

Well Hovenweep 1
 Field or Area Hovenweep Area
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/ LAGGED
6884	6910	100	<u>Salt.</u>	
6910	6940	100	<u>Limestone</u> , tan to medium brown, III FA, <u>dolomitic in part, trace pale yellow fluorescence, pale bluish white cut fluorescence.</u>	
6940	6960	70	<u>Limestone</u> , dark brown, III/IVF-FA, argillaceous in part, dolomitic.	
		30	<u>Dolomite</u> , medium brown, III FA, calcareous, rare chert fragments, orange transparent. <u>1% spotty yellow fluorescence, pale yellow cut fluorescence in limestone, cuts very slow.</u>	
6960	6965	100	<u>Limestone</u> , as above, with occasional milky chert fragments, <u>trace fluorescence, cut fluorescence as above.</u>	
6965	6970	60	<u>Limestone</u> , as above, with chert becoming tan to dark brown, <u>trace fluorescence, cut fluorescence as above.</u>	
		40	<u>Dolomite</u> , as above.	
6970	6975	100	<u>Limestone</u> , as above, <u>trace fluorescence, cut fluorescence as above.</u>	
6975	7005	100	<u>Limestone</u> , tan to medium brown, I-III VF-FA, slightly sandy, pseudo-oolitic in part, stylolitic, contains rare milky chert fragments, <u>trace fluorescence and cut fluorescence as above.</u>	
7005	7015	100	<u>Limestone</u> , tan to light brown, I VFA, with occasional anhydrite inclusions, <u>trace fluorescence and cut fluorescence as above.</u>	
7015	7025	100	<u>Limestone</u> , tan to dark brown, I-III VF-FA, with occasional anhydrite inclusions, <u>1-2% milky white to pale yellow uniform spotty fluorescence, very pale yellow cut fluorescence (slow).</u>	
7025	7030	60	<u>Dolomite</u> , tan to medium brown, III VF-FA, calcareous, with anhydrite inclusions. <u>Trace pale yellow spotty fluorescence, pale yellow cut fluorescence.</u>	
		40	<u>Limestone</u> , as above. <u>Fluorescence as above.</u>	
7030	7035	100	<u>Limestone</u> , as above. <u>Shows as above.</u>	
7035	7045	50	<u>Limestone</u> , as above, not anhydritic. <u>Shows as above.</u>	
		50	<u>Dolomite</u> , as above, III-IVF-FA.	
7045	7055	100	<u>Dolomite</u> , tan to medium brown, III-IVF-FA, with rare anhydrite inclusions, <u>shows as above.</u>	

DITCH SAMPLES

Examined by J.M. Burns 7055 to 7160
 D. L. Baars & R. L. Knight to _____

Well Hovenweep #1
 Field or Area Hovenweep

NOT
 SAMPLES / LAGGED

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
7055	7060	80	<u>Dolomite</u> , light brown to gray, III FA.	
		20	<u>Sandstone</u> , medium gray, very fine, calcareous.	
7060	7065	100	<u>Dolomite</u> , as above, anhydritic?	
7065	7070	100	<u>Dolomite</u> , as above, <u>1% pale yellow spotty fluorescence, pale white cut fluorescence.</u>	
7070	7075	70	<u>Dolomite</u> , as above, <u>shows as above.</u>	
		30	<u>Limestone</u> , medium gray, I VFA.	
7075	7080	100	<u>Dolomite</u> , as above, <u>shows as above.</u>	
7080	7085	100	<u>Dolomite</u> , as above, <u>2% fluorescence and cut fluorescence</u> as above.	
7085	7095	100	<u>Dolomite</u> , light grayish brown, III FA, anhydritic?	
7095	7100	100	<u>Dolomite</u> , as above, <u>trace fluorescence and cut fluorescence</u> as above.	
7100	7105	60	<u>Limestone</u> , light brown, III FA.	
		40	<u>Dolomite</u> , light brown, III FA, <u>shows as above.</u>	
7105	7115	80	<u>Dolomite</u> , light grayish brown, III FA.	
		20	<u>Limestone</u> , medium brown, I VF-FA.	
7115	7120	60	<u>Dolomite</u> , grayish brown, III FA, anhydritic.	
		40	<u>Limestone</u> , as above.	
7120	7130	80	<u>Dolomite</u> , as above.	
		20	<u>Limestone</u> , as above.	
7130	7135	100	<u>Dolomite</u> , grayish brown, III FA, anhydritic, <u>shows as above.</u>	
7135	7140	60	<u>Dolomite</u> , as above.	
		40	<u>Limestone</u> , brown, I-III VF-FA.	
7140	7150	80	<u>Dolomite</u> , as above.	
		20	<u>Limestone</u> , as above, <u>shows as above.</u>	
7150	7155	100	<u>Dolomite</u> , light grayish brown, III FA, calcareous, anhydritic.	
7155	7160	100	<u>Dolomite</u> , as above.	

DITCH SAMPLES

Examined by J.M. Burns 7160 to 7270
D. L. Baars & R. L. Knight to _____

Well Hovenweep 1
Field or Area Hovenweep

NOT
SAMPLES / LAGGED

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
7160	7170	80	<u>Dolomite</u> , as above.	
		20	<u>Limestone</u> , tan, I VFA.	
7170	7175	50	<u>Dolomite</u> , as above.	
		50	<u>Limestone</u> , grayish brown, I/III VF-FA.	
7175	7180	100	<u>Limestone</u> , grayish brown, III/I VF-FA.	
7180	7185	100	<u>Limestone</u> , light grayish brown, I VFA.	
7185	7190	100	<u>Limestone</u> , as above, anhydritic.	
7190	7195	100	<u>Limestone</u> , as above.	
7195	7200	100	<u>Limestone</u> , light brown, I VFA, anhydritic.	
7200	7215	100	<u>Limestone</u> , light grayish brown, I-III VF-FA, anhydritic.	
7215	7220	80	<u>Limestone</u> , tan, I/III VF-FA, anhydritic.	
		20	<u>Limestone</u> , dark brown, I VFA.	
7220	7225	100	<u>Limestone</u> , tan as above, predominantly I VFA.	
7225	7230	100	<u>Limestone</u> , tan, I/III VF-FA, with trace light green shale and trace light green, I VFA, limestone, showing possible D porosity.	
7230	7235	100	<u>Limestone</u> , tan as above, with fragments tan, translucent chert.	
7235	7240	90	<u>Limestone</u> , as above with chert fragments.	
		10	<u>Shale</u> , light green, calcareous.	
7240	7245	90	<u>Limestone</u> , as above.	
		10	<u>Shale</u> , green as above.	
7245	7250	100	<u>Limestone</u> , as above with chert fragments.	
7250	7255	100	<u>Limestone</u> , tan, I VFA, with thin streaks of light green shale.	
7255	7260	100	<u>Limestone</u> , tan, I VFA, streaked green.	
7260	7265	60	<u>Limestone</u> , tan, as above.	
		40	<u>Limestone</u> , light green, I VF-FA, fossiliferous.	
7265	7270	80	<u>Limestone</u> , tan as above.	
		20	<u>Limestone</u> , light green as above.	

DITCH SAMPLES

Examined by J.M. Burns 7270 to 7330
 D. L. Baars & R. L. Knight to _____

Well Hovenweep #1
 Field or Area Hovenweep
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / AGGED
7270	7275	50	<u>Limestone</u> , tan as above.	
		50	<u>Limestone</u> , light green, as above, very slight streaks reddish purple, fusulinids, <u>trace yellowish white spotty fluorescence, pale yellow cut fluorescence.</u>	
7275	7280	50	<u>Limestone</u> , tan as above, pseudo-oolitic in part.	
		40	<u>Limestone</u> , light green as above.	
		10	<u>Limestone</u> , dark brown, I VFA, purple streaks in part.	
7280	7285	30	<u>Shale</u> , light green.	
		40	<u>Limestone</u> , light purple, mottled green, I/III VF-FA.	
		30	<u>Limestone</u> , tan, I VFA.	
7285	7290	60	<u>Shale</u> , pale purple, very soft, calcareous.	
		40	<u>Limestone</u> , green, I VFA.	
7290	7295	40	<u>Shale</u> , purple, as above.	
		40	<u>Shale</u> , light brown, slightly carbonaceous.	
		20	<u>Limestone</u> , tan to green, I VFA.	
7295	7300	100	<u>Shale</u> , medium purple, soft.	
7300	7305	70	<u>Shale</u> , light green, silty, blocky, slightly carbonaceous.	
		30	<u>Shale</u> , purple as above.	
7305	7310	100	<u>Shale</u> , light green as above, part mottled purple.	
7310	7315	50	<u>Shale</u> , green as above.	
		50	<u>Shale</u> , purple as above.	
7315	7320	70	<u>Shale</u> , medium purple, mottled green.	
		30	<u>Limestone</u> , tan and green, I VFA.	
7320	7325	100	<u>Shale</u> , medium purple, silty.	
7325	7330	50	<u>Shale</u> , purple as above.	
		30	<u>Shale</u> , light green.	
		20	<u>Limestone</u> , light brown, I VFA.	

DITCH SAMPLES

Examined by J.M. Burns 7330 to 7345
 D. L. Baars & R. L. Knight to _____

Well Hovenweep #1
 Field or Area Hovenweep
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
7330	7335	40	<u>Shale</u> , purple, as above.	
		20	<u>Shale</u> , light green.	
		40	<u>Limestone</u> , medium brown, I VFA.	
7335	7340	60	<u>Limestone</u> , tan, I/III VF-FA, with few fragments white, transparent chert.	
		20	<u>Shale</u> , purple as above.	
		20	<u>Shale</u> , light green.	
7340	7345	60	<u>Shale</u> , medium purple, mottled green.	
		40	<u>Limestone</u> , tan, I VF-FA, fragments chert as above.	
			<u>Gas Mud</u>	<u>Cuttings</u>
			6700-7345 0/0	0/0

DITCH SAMPLES

Examined by J. M. Bums 7345 to 7435
 D. L. Baars & R. L. Knight to _____

Well Hovenweep #1
 Field or Area Hovenweep
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/LAGGED
7345	7350	40	<u>Limestone</u> , tan to light green, I VFA, fusulinids.	
		30	<u>Shale</u> , medium purple, silty.	
		30	<u>Shale</u> , light green.	
7350	7355	50	<u>Shale</u> , light green.	
		30	<u>Shale</u> , purple, silty.	
		20	<u>Limestone</u> , tan, I M-LA, fragments white to tan, transparent to translucent chert.	
7355	7360	60	<u>Limestone</u> , tan, I VF-MA.	
		20	<u>Shale</u> , light green.	
		20	<u>Shale</u> , purple as above. TENTATIVE SAMPLE TOP - LEADVILLE 7360'	
7360	7365	100	<u>Limestone</u> , tan, I VFA, pseudo oolitic, streaked purple.	
7365	7370	100	<u>Limestone</u> , tan as above, except no streaks of purple.	
7370	7375	100	<u>Limestone</u> , tan, I VFA, with small pseudo oolites (very small)	
7375	7380	100	<u>Limestone</u> , tan, I VFA.	
7380	7390	100	<u>Limestone</u> , light brown, I VFA, trace ochre limestone, streaked purple.	
7390	7395	50	<u>Limestone</u> , tan, I VFA, with rare large pseudo oolites.	
		50	<u>Limestone</u> , tan, I/III VF-FA.	
7395	7400	100	<u>Limestone</u> , tan to ochre, I VFA, streaked with red and dark purple shale.	
7400	7405	50	<u>Limestone</u> , as above.	
		50	<u>Limestone</u> , white to pale gray, I VFA.	
7405	7420	100	<u>Limestone</u> , pale grayish white to tan, I VFA, part pseudo oolitic.	
7420	7425	70	<u>Limestone</u> , tan, I VF-FA.	
		30	<u>Limestone</u> , white, II VFA, very soft.	
7425	7430	100	<u>Limestone</u> , tan, I VFA.	
7430	7435	80	<u>Limestone</u> , white to pale gray, III/I VF-FA.	
		20	<u>Limestone</u> , white, II A.	

DITCH SAMPLES

Examined by J.M. Burns 7435 to 7505
 D. L. Baars & R. L. Knight to _____

Well Hovenweep #1
 Field or Area Hovenweep
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
7435	7440	80	<u>Limestone</u> , tan to white, III/I VF-FA.	
		20	<u>Limestone</u> , white as above.	
7440	7450	50	<u>Limestone</u> , tan, I F-MA.	
		50	<u>Limestone</u> , white, II/III VF-FA.	
7450	7465	100	<u>Limestone</u> , tan to white, III/I VF-FA, with some limestone, white, II A, very soft.	
7465	7475	100	<u>Limestone</u> , as above, <u>trace yellow fluorescence, pale bluish white cut fluorescence.</u>	
7475	7480	60	<u>Limestone</u> , as above.	
		40	<u>Dolomite</u> , light brown, III MA, trace B, calcareous.	
7480	7485	50	<u>Limestone</u> , as above.	
		50	<u>Dolomite</u> , light to medium brown, III FB ₁ , trace C, calcareous, <u>trace yellow fluorescence, pale bluish white cut fluorescence.</u>	
7485	7490	40	<u>Limestone</u> , tan, I LA.	
		40	<u>Limestone</u> , white, II A.	
		20	<u>Dolomite</u> , light brown, III FA, + trace B, <u>trace yellow fluorescence, very pale yellow cut fluorescence.</u>	
7490	7495	40	<u>Limestone</u> , white, III/II VF-FA.	
		30	<u>Limestone</u> , tan, I LA.	
		30	<u>Dolomite</u> , light brown, III F-MA + trace B and C.	
7495	7500	50	<u>Limestone</u> , white, II VFA.	
		30	<u>Dolomite</u> , light brown, III FA.	
		20	<u>Limestone</u> , light brown, III FA.	
7500	7505	50	<u>Dolomite</u> , light brown, III F-MA.	
		30	<u>Limestone</u> , white, II VFA.	
		20	<u>Limestone</u> , tan as above.	

DITCH SAMPLES

Examined by J.M. Burns 7505 to 7595
 D. L. Baars & R. L. Knight _____ to _____

Well Hovenweep #1
 Field or Area Hovenweep
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
7505	7510	50	<u>Limestone</u> , white, II/III VF-FA.	
		30	<u>Limestone</u> , tan as above.	
		20	<u>Dolomite</u> , as above.	
7510	7515	60	<u>Limestone</u> , white, II/III VF-FA.	
		40	<u>Dolomite</u> , light brown, III FA.	
7515	7520	70	<u>Dolomite</u> , as above, III FA + trace B.	
		30	<u>Limestone</u> , tan to cream, III/I F-MA.	
7520	7525	50	<u>Dolomite</u> , III FA.	
		50	<u>Limestone</u> , as above.	
7525	7530	100	<u>Dolomite</u> , light brown, III F-MA.	
7530	7535	100	<u>Dolomite</u> , as above, III M + 5 (B ₁ + C ₁)	
7535	7540	100	<u>Dolomite</u> , as above, III MA + trace C.	
7540	7545	100	<u>Dolomite</u> , light brown, III F-M 10 (B ₅ + C ₁).	
7545	7550	100	<u>Dolomite</u> , light brown, III F-M + trace B & C.	
7550	7555	100	<u>Dolomite</u> , light to medium brown, III F-M 20 (B ₅ + C ₅).	
7555	7560	50	<u>Dolomite</u> , cream, III FA.	
		50	<u>Dolomite</u> , medium brown, III MB ₁ + C ₂ .	
7560	7565	80	<u>Dolomite</u> , light to medium brown, III F-M B ₅ + C ₁ .	
		20	<u>Dolomite</u> , cream, III FA + trace C.	
7565	7570	100	<u>Dolomite</u> , light to medium brown, III M 20 (B ₁ + C ₁) + possible D.	
7570	7575	100	<u>Dolomite</u> , light to medium brown, III F-M 20 (C ₁).	
7575	7580	100	<u>Dolomite</u> , as above, III F-MA, with trace B and C.	
7580	7590	100	<u>Dolomite</u> , as above, with trace C.	
7590	7595	50	<u>Dolomite</u> , tan, III F-MA.	
		50	<u>Dolomite</u> , as above, with trace C and B.	

DITCH SAMPLES

Examined by J.M. Burns 7595 to 7630
 D. L. Baars & R. L. Knight to _____

Well Hovenweep #1
 Field or Area Hovenweep
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
7595	7605	100	<u>Dolomite</u> , light to medium brown, III F-M 20 (C ₁).	
7605	7610	100	<u>Dolomite</u> , medium brown, III F-M 30 (C ₁ + B ₁).	
7610	7615	100	<u>Dolomite</u> , as above, III F-MA trace C.	
7615	7620	80	<u>Dolomite</u> , medium brown, III F-M 40 (B ₁ + C ₁)	
		20	<u>Limestone</u> , tan, J VFA, with M pseudo oolites.	
7620	7630	70	<u>Dolomite</u> , as above, III F-M 20 (B ₁ + C ₁).	
		30	<u>Limestone</u> , as above.	
			<u>Gas</u>	
			<u>Mud</u>	
			7345-7630	0/0

SHELL OIL COMPANY

WEEK ENDING _____

AREA OR FIELD HovenweepCORE FROM 7630 TO 7641

CORE RECORD

COMPANY Shell Oil CompanyCORES EXAMINED BY J. M. Burns, D. L. Baars & R. L. KnightLEASE AND WELL NO. 1

NO.	FROM	TO	RECOV. ERED	FORMATIONAL, STRUCTURAL AND PROBABLE PRODUCTIVITY DESCRIPTION OF CORE	SYMBOL	OBSERVED DIP	CORE INDICATIONS OIL-GAS
							CORE OR DITCH
1	7630	7641	11'				
	7630	7631	1'	<u>Dolomite</u> , light brown, III FA.			
	7631	7632	1'	<u>Dolomite</u> , light grayish brown, III FA, stylolite at 31.5'.			
	7632	7633	1'	<u>Dolomite</u> , light gray, III FA, stylolite at 33.5'.			
	7633	7634.4	1.4'	<u>Dolomite</u> , light brown, III F-MA.			
	7634.4	7634.6	.2'	<u>Dolomite</u> , medium brown, III VF-FA.			
	7634.6	7637	2.4'	<u>Dolomite</u> , tan, III FA.			
	7637	7638	1'	<u>Dolomite</u> , tan, III VF-FA.			
	7638	7638.5	.5'	<u>Dolomite</u> , pale gray, III VF-FA, wavy contact at 38.5'.			
	7638.5	7639	.5'	Large white calcareous nodule.			
	7639	7641	2'	<u>Limestone</u> , pale grayish brown, I VFA; @ 39.4' irregular contact, @ 40.4' stylolite.			

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CLAY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%).

NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND.

SHELL OIL COMPANY

WEEK ENDING _____

CORE FROM 7641 TO 7691CORES EXAMINED BY Burns, Baars, & Knight

CORE RECORD

AREA OR FIELD HovenweepCOMPANY Shell Oil CompanyLEASE AND WELL NO. 1

NO.	FROM	TO	RECOVERED	FORMATIONAL, STRUCTURAL AND PROBABLE PRODUCTIVITY DESCRIPTION OF CORE	SYMBOL	OBSERVED DIP	CORE INDICATIONS
							OIL-GAS
							CORE OR DITCH
2	7641	7691	49'				
	7641	7642	1'	<u>Limestone</u> , pale grayish brown, I VFA.			
	7642	7643	1'	<u>Dolomite</u> , medium brown, III F-MA.			
	7643	7644	1'	<u>Dolomite</u> , medium brown, III FA, calcareous.			
	7644	7645	1'	<u>Dolomite</u> , dark brown, III FA.			
	7645	7647	2'	<u>Dolomite</u> , dark grayish brown, III FA, calcareous.			
	7647	7648	1'	<u>Dolomite</u> , medium to light gray, III FA.			
	7648	7649	1'	<u>Dolomite</u> , tan, III FA, with abundant medium to well rounded, frosted sand grains.			
	7649	7650	1'	<u>Dolomite</u> , light brown, III FA, at 49.7' irregular wavy contact.			
	7650	7651	1'	<u>Limestone</u> , light grayish brown, I VFA. TENTATIVE TOP - ELBERT 7650'			
	7651	7652	1'	<u>Dolomite</u> , tan, III FA.			
	7652	7653	1'	<u>Limestone</u> , light brown, I-III VF-MA.			
	7653	7654.3	1.3'	<u>Limestone</u> , as above, irregular contact at 54.3'.			
	7654.3	7659	4.7'	<u>Limestone</u> , pale grayish brown, I VFA.			
	7659	7660	1'	<u>Limestone</u> , as above, I VF-MA.			
	7660	7661.8	1.8'	<u>Limestone</u> , as above, I VFA.			
	7661.8	7663	1.2'	<u>Limestone</u> , dark brown, I VFA.			

SHELL OIL COMPANY

AREA OR FIELD Hovenweep

WEEK ENDING _____

CORE RECORD

CORE FROM 7641 TO 7691

COMPANY Shell Oil Co.

CORES EXAMINED BY Burns, Baars, & Knight

LEASE AND WELL NO. 1

NO.	FROM	TO	RECOVERED	FORMATIONAL, STRUCTURAL AND PROBABLE PRODUCTIVITY DESCRIPTION OF CORE	SYMBOL	OBSERVED DIP	CORE INDICATIONS
							OIL-GAS
CORE OR DITCH							
				<u>Core #2 Continued</u>			
	7663	7665	2'	<u>Limestone</u> , light gray, III-I VF-FA, with irregular green shale stringers.			
	7665	7667.3	2.3'	<u>Limestone</u> , as above. NOTE: 7663-7667.3' brecciated zone with streaks of green shale and brown limestone around angular fragments.			
	7667.3	7668	.7'	<u>Limestone</u> , light gray, III-I VF-FA, with irregular partings of light green, shows waxy, micro pyritic shale, 7667.3-7667.6'.			
	7668	7669	1'	<u>Limestone</u> , light gray, III FA, with pockets and streaks of dark brown limestone, I VF-MA.			
	7669	7670	1'	<u>Limestone</u> , as above, with irregular shale green partings.			
	7670	7672	2'	<u>Limestone</u> , as above, with rounded fragments, tan, gray and brown, III FA limestone.			
	7672	7673	1'	<u>Limestone</u> , as above, with pockets green shale, no fragments limestone as above.			
	7673	7674	1'	<u>Limestone</u> , as above, with pyrite. NOTE: 7667.3-7674' appears brecciated and re-cemented.			
	7674	7676.5	2.5'	<u>Limestone</u> , as above, with abundant irregular green shale partings.			
	7676.5	7677	.5'	<u>Limestone</u> , pale gray, III FA, shows pink or mottling.			
	7677	7678	1'	<u>Limestone</u> , pale grayish brown, I VFA, with brachiopod fragments.			
	7678	7681	3'	<u>Limestone</u> , pale gray, III FA, with patches green shale and orange stain.			
	7681	7682	1'	<u>Limestone</u> , as above, with brachiopod.			

SHELL OIL COMPANY

AREA OR FIELD Hovenweep

WEEK ENDING _____

CORE FROM 7681 TO 7691

CORE RECORD

COMPANY Shell Oil Co.CORES EXAMINED BY Burns, Baars, & KnightLEASE AND WELL NO. 1

NO.	FROM	TO	RECOVERED	FORMATIONAL, STRUCTURAL AND PROBABLE PRODUCTIVITY DESCRIPTION OF CORE	SYMBOL	OBSERVED DIP	CORE INDICATIONS OIL-GAS
							CORE OR DITCH
				<u>Core #2 Continued</u>			
7682	7684	2'		<u>Limestone</u> , pale grayish brown, I-III VF-FA.			
7684	7685	1'		<u>Limestone</u> , pale grayish green, I-VF-MA.			
7685	7686	1'		<u>Limestone</u> , light gray, I-III VF-FA with abundant irregular wavy thin green shale partings.			
7686	7690	4'		<u>Limestone</u> , as above.			
7690	7691			Not Recovered.			

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CLAY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%).
NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND.

SHELL OIL COMPANY

AREA OR FIELD Hovenweep

WEEK ENDING _____

CORE FROM 7691 TO 7729

CORE RECORD

COMPANY Shell Oil CompanyCORES EXAMINED BY Burns, Baars, KnightLEASE AND WELL NO. 1

NO.	FROM	TO	RECOVERED	FORMATIONAL, STRUCTURAL AND PROBABLE PRODUCTIVITY DESCRIPTION OF CORE	SYMBOL	OBSERVED DIP	CORE INDICATIONS
							OIL-GAS
							CORE OR DITCH
3	7691'	7729'	36'				
	7692	7708.2	16.2	<u>Dolomite</u> , light gray, III F-MA, with rare, thin irregular black shale partings, slight vertical fracturing.			
	7708.2	7709	.8	<u>Limestone</u> , dark gray, I VFA, transitional contacts.			
	7709	7710	1	<u>Dolomite</u> , pale gray, I-III VF-FA.			
	7710	7712	2	<u>Dolomite</u> , medium grayish brown, III FA.			
	7712	7715.5	3.5	<u>Dolomite</u> , medium gray, III FA.			
	7715.5	7717	1.5	<u>Dolomite</u> , medium gray, III FC _g .			
	7717	7720.5	3.5	<u>Dolomite</u> , medium gray, III FA.			
	7720.5	7728	7.5	<u>Dolomite</u> , light grayish brown, I VFA, with one vug at 20.5' and 2-3 vertical fractures through each foot of core. At 7723' thin light green, waxy shale parting. At 7726.9 - 7727.5' interbedded waxy green and black shale. At 7728' $\frac{1}{4}$ " green shale parting. Contacts irregular. Top 1' of core was badly broken.			

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CLAY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%).
NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND.

DITCH SAMPLES

Examined by J.M. Burns 7730 to 7805
 D. L. Baars & R. L. Knight to _____

Well Hovenweep #1
 Field or Area Hovenweep
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/LAGGED
7730	7735	90	<u>Dolomite</u> , light brown, I VFA.	
		10	<u>Shale</u> , light green.	
7735	7740	70	<u>Shale</u> , medium purple, nodular, glauconitic?	
		30	<u>Shale</u> , light green.	
7740	7745	80	<u>Dolomite</u> , medium gray, III FA.	
		20	<u>Shale</u> , purple and green.	
7745	7750	75	<u>Dolomite</u> , brown to dark gray, I VFA.	
		25	<u>Shale</u> , green, in part very calcareous.	
7750	7755	75	<u>Shale</u> , green, in part very calcareous.	
		25	<u>Dolomite</u> , brown, I VFA.	
7755	7760	75	<u>Shale</u> , as above.	
		25	<u>Dolomite</u> , as above.	
7760	7765	80	<u>Shale</u> , green.	
		20	<u>Limestone</u> , cream to brown, I VFA.	
7765	7770	65	<u>Shale</u> , green.	
		30	<u>Limestone</u> , cream to brown, I VFA.	
		5	<u>Sandstone</u> , fine, very calcareous.	
7770	7775	75	<u>Shale</u> , green in part very calcareous.	
		25	<u>Limestone</u> , gray, I VFA.	
7775	7780	100	<u>Shale</u> , green, purple, red.	
7780	7785	100	<u>Dolomite</u> , tan, I VFA.	
7785	7795	100	<u>Dolomite</u> , gray to brown, I VFA.	
7795	7800	100	<u>Dolomite</u> , as above, trace clear fine grained sandstone.	
7800	7805	95	<u>Dolomite</u> , as above.	
		5	<u>Quartzite</u> , white to clear, fine to medium.	

DITCH SAMPLES

Examined by J. M. Burns 7805 to 7835
 D. L. Baars & R. L. Knight to _____

Well Hovenweep #1
 Field or Area Hovenweep

NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
7805	7810	95	<u>Dolomite</u> , cream to brown, I VFA.	
		5	<u>Quartzite</u> , white to clear, fine to coarse.	
7810	7815	95	<u>Dolomite</u> , as above.	
		5	<u>Quartzite</u> , as above.	
7815	7820	60	<u>Dolomite</u> , as above.	
		40	<u>Quartzite</u> , purple, pink, white, fine to medium.	
			Trace sandstone, clear to white, very fine, <u>good spotty heavy dark stain, bluish white, fluorescence, pale bluish white cut fluorescence.</u>	
7820	7825	100	<u>Quartzite</u> , grading into sandstone, pink, white to clear, fine to medium.	
7825	7830	100	<u>Quartzite</u> , as above.	
7830	7835	100	<u>Quartzite</u> , as above, predominantly white and clear, trace gilsonite.	

DITCH SAMPLES

Examined by J.M. Burns 7835 to 7910
 D. L. Baars & R. L. Knight to _____

Well Hovenweep #1
 Field or Area Hovenweep
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/LAGGED
7835	7840	50	<u>Quartzite</u> , as above.	
		50	<u>Dolomite</u> , gray to brown, I VFA.	
7840	7845	75	<u>Sandstone</u> , white, pink, clear, fine to medium, in part quartzite.	
		25	<u>Dolomite</u> , cream to brown, I VFA.	
7845	7855	50	<u>Sandstone</u> , as above.	
		50	<u>Dolomite</u> , as above.	
7855	7860	90	<u>Dolomite</u> , brown, I VFA, trace dolomite having medium grained sandstone inclusions.	
		10	<u>Sandstone</u> , as above.	
7860	7870	100	<u>Dolomite</u> , cream to brown, I/III VF-FA.	
7870	7875	95	<u>Dolomite</u> , light gray to brown, I VFA.	
		5	<u>Dolomite</u> , dark gray, III VFA.	
7875	7880	70	<u>Dolomite</u> , light gray to brown, I VFA.	
		30	<u>Dolomite</u> , gray, III VF-FA, trace with medium grained sandstone, inclusions.	
7880	7885	70	<u>Dolomite</u> , as above.	
		30	<u>Dolomite</u> , as above.	
7885	7895	80	<u>Dolomite</u> , cream to brown, I VFA.	
		20	<u>Dolomite</u> , light gray, I VFA, fine to medium grained, sandstone inclusions.	
7895	7900	80	<u>Dolomite</u> , cream to brown, I VFA.	
		15	<u>Dolomite</u> , cream, I VFA, with fine to medium grained sandstone inclusions.	
		5	<u>Quartzite</u> , clear, white, pink, fine to medium grains, grading into sandstone.	
7900	7905	80	<u>Dolomite</u> , as above.	
		15	<u>Dolomite</u> , as above.	
		5	<u>Quartzite</u> , as above.	
7905	7910	95	<u>Dolomite</u> , cream to dark brown, I VFA.	
		5	<u>Quartzite</u> , as above.	

DITCH SAMPLES

Examined by J. M. Burns 7910 to 7930
 D. L. Baars & R. L. Knight to _____

Well Hovenweep #1
 Field or Area Hovenweep
 NOT

FROM	TO	%	SHOWS UNDERLINED	SAMPLES / LAGGED
7910	7915	95	<u>Dolomite</u> , as above.	
		5	<u>Quartzite</u> , as above.	
7915	7920		Sample - cavings.	
7920	7925	90	<u>Dolomite</u> , gray to brown, I/III VFA, trace with fine to medium grained sandstone inclusions.	
		10	<u>Quartzite</u> , white, fine to medium.	
7925	7930	50	<u>Quartzite</u> , cream to dark brown, I-III VFA.	
		50	<u>Quartzite</u> , pink to white, fine to medium.	
			<u>Gas</u>	
			7835-7930 Mud - 0	Cuttings - 0
			TENTATIVE SAMPLE TOP - MC CRACKEN 7928 (?)	

(SUBMIT IN TRIPLICATE)

Indian Agency _____

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Navajo

Allottee Tribal Lands

Lease No. 1-149-IND-9126

	5	
		X

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	SUBSEQUENT REPORT OF WATER SHUT-OFF
NOTICE OF INTENTION TO CHANGE PLANS	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING
NOTICE OF INTENTION TO TEST WATER SHUT-OFF	SUBSEQUENT REPORT OF ALTERING CASING
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL	SUBSEQUENT REPORT OF REDRILLING OR REPAIR
NOTICE OF INTENTION TO SHOOT OR ACIDIZE	SUBSEQUENT REPORT OF ABANDONMENT
NOTICE OF INTENTION TO PULL OR ALTER CASING	SUPPLEMENTARY WELL HISTORY
NOTICE OF INTENTION TO ABANDON WELL	

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

NOV 22 1955

Well No. Hovenweep is located 760 ft. from S line and 1980 ft. from E line of sec. 5
SE/4 5 40 S. 26 E. S.L.B & M.
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Wilcox San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation ~~of the well~~ is 5133 ft. (approx. ground)

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

11-11,12,13-55 Ran and cemented 9 5/8", 364/ft, J-55, S.T.&C. casing at 897' with 350 sacks construction cement, last 100 sacks treated with calcium chloride. Pumped 20 bbls. of water ahead of cement and displaced with 67 bbls. water. Good returns at surface. Left 20' of cement in casing. Finished 7:10 P.M. 11-11-55. Flanged up. Tested casing with 800 psi for 15 min., O.K. Drilled out.

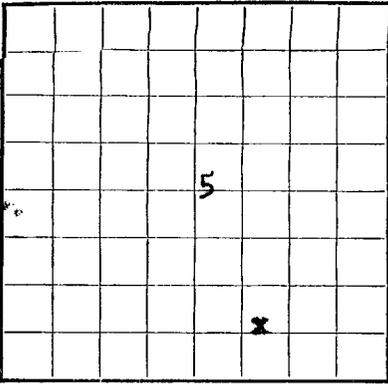
I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Shell Oil Company
 Address 33 Richards Street
Salt Lake City, Utah
 By B.W. Shepard
B. W. Shepard
 Title Exploitation Engineer

15

Form 9-330

U. S. LAND OFFICE Window Rock
 SERIAL NUMBER 1-149-IND-9126
 LEASE OR PERMIT TO PROSPECT



LOCATE WELL CORRECTLY

UNITED STATES
 DEPARTMENT OF THE INTERIOR
 GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

Company Shell Oil Company Address 33 Richards St., Salt Lake City, Utah
 Lessor or Tract Tribal Lands Field Wildcat State Utah
Hovenweep 1
 Well No. 7 Sec. 5 T. 40S R. 26E Meridian S.L.B.&M. County San Juan
 Location 760 ft. {N. / SX} of S Line and 1980 {EX / W} of E Line of Sec. 5 Elevation 5147.81 KB
(Derrick floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed B. W. [Signature]

Date February 20, 1956 Title Exploitation Engineer

The summary on this page is for the completion of the well at above date.

Commenced drilling November 8, 1955 Finished drilling January 15, 1956

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from _____ to _____ No. 4, from _____ to _____
 No. 2, from _____ to _____ No. 5, from _____ to _____
 No. 3, from _____ to _____ No. 6, from _____ to _____

IMPORTANT WATER SANDS

No. 1, from _____ to _____ No. 3, from none noted to _____
 No. 2, from _____ to _____ No. 4, from _____ to _____

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated		Purpose
							From--	To--	
<u>9-5/8"</u>	<u>36</u>	<u>8pd</u>	<u>Hot 11</u>	<u>897'</u>	<u>Baker</u>				<u>Surface Casing</u>
HISTORICAL OIL OR GAS WELL									

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
<u>9-5/8"</u>	<u>897'</u>	<u>350 sacks</u>	<u>displacement</u>	<u>-</u>	<u>see attached</u>

PLUGS AND ADAPTERS

Heavy plug—Material cement Length _____ Depth set see attached
 Adapters—Material _____ Size _____

SHOOTING RECORD

FOLD MARK

PLUGS AND ADAPTERS

Having plug—Material **cement** Length _____ Depth set **see attached**
 Adapters—Material _____ Size _____

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out
			none			

TOOLS USED

Rotary tools were used from **0** feet to **7938** feet, and from _____ feet to _____ feet
 Cable tools were used from _____ feet to _____ feet, and from _____ feet to _____ feet

DATES

Abandoned as a dry hole
 _____ **January 21,** _____, 19**56** Put to producing _____, 19_____

The production for the first 24 hours was _____ barrels of fluid of which _____% was oil; _____% emulsion; _____% water; and _____% sediment. Gravity, °Bé. _____

If gas well, cu. ft. per 24 hours _____ Gallons gasoline per 1,000 cu. ft. of gas _____

Rock pressure, lbs. per sq. in. _____

EMPLOYEES

G. Gunter _____, Driller **H. Jones** _____, Driller
D. Brayell _____, Driller **J. Blakely** _____, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	370	370	Brushy Basin
370	490	120	West Water Canyon
490	730	240	Recapture
730	890	160	Bluff
890	948	58	Summersville
948	1100	152	Entrada
1100	1151	51	Carmel
1151	1406	255	Navajo
1406	1478	72	Kayenta
1478	1723	245	Wingate
1723	2684	961	Chinle
2684	2790	106	Shinarump
2790	2886	96	Moenkopi
2886	4738	1852	Cutler
4738	5875	1137	Hermosa
5875	6925	1050	Paradox member
6925	7360	435	Molas
7360	7520	160	Leadville
7520	7643	123	Duray
7643	7938	T.D	Elbert

[OVER]

STATE OF UTAH
OIL AND GAS CONSERVATION COMMISSION
AFFIDAVIT AND RECORD OF ABANDONMENT AND PLUGGING

- PLUGGING METHODS AND PROCEDURE: - The methods and procedure for plugging a well shall be as follows:
- (a) The bottom of the hole shall be filled to, or a bridge shall be placed at, the top of each producing formation open to the well bore, and in either event a cement plug not less than fifty (50) feet in length shall be placed immediately above each producing formation open to the well bore whenever possible.
 - (b) A cement plug not less than fifty (50) feet in length shall be placed at approximately fifty (50) feet above and below all fresh water bearing strata.
 - (c) A plug shall be placed at or near the surface of the ground in each hole.
 - (d) The interval between plugs shall be filled with heavy mud laden fluid.
 - (e) The hole shall be plugged with heavy mud up to the base of the surface string at which point a plug of not less than fifty (50) feet of cement shall be placed.

Field or Pool Hovenweep Area County San Juan

Lease Name Navajo Tribal Lands Well No. 1 Sec. 5 Twp. 40 S. Range 26 E.

Date well was plugged January 19, 20, 21, 19 56

Was the well plugged according to regulation of the Commission? yes

Set out method used in plugging the well, the nature and quantities of materials used in plugging, size of plugs, location and extent (by depths) of the plugs of different materials, and the amount of casing left in hole, (giving size, top and bottom elevations of each section of abandoned casing)

Status: T.D. 7938'

Surface Casing: 9-5/8" at 897'

Hole size: 7-7/8" from 897' to T.D.

Plugging method: Displacement of cement through open-end drill pipe with heavy mud between plugs.

Abandonment work:

(Over)

R. E. Eddy
Operator Shell Oil Company
Address 33 Richards Street
Salt Lake City, Utah

AFFIDAVIT

STATE OF UTAH

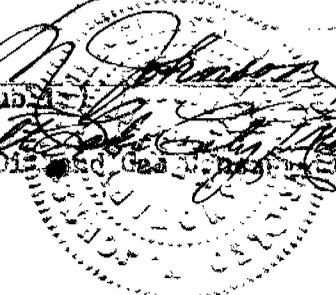
COUNTY OF SALT LAKE

Before me, the undersigned authority, on this day personally appeared R. E. Eddy, known to me to be the person whose name is subscribed to the above instrument, who being by me duly sworn on oath states that he is authorized to make this report and has knowledge of the facts stated herein and that said report is true and correct.

Subscribed and sworn to before me this 25th day of January 19 56

My Commission Expires: JUNE 9, 1959

Cleo M. Johnson
(Notary Pub.)
RESIDING AT: Salt Lake City, Utah



INSTRUCTIONS: Complete this form in duplicate and mail both copies to the Oil and Gas Conservation Commission, Room 105, Capitol Bldg, Salt Lake City 14, Utah.

1. With open-end drill pipe hung at 7938' plugged with 160 sacks construction cement (Plug #1). Ran back in and found cement at 7315'. Cleaned out firm cement to 7530'. Tested with 45,000 # wt., OK.

2. Made DST No. 2 7460-7530'.

3. Placed following cement plugs through open end drill pipe:

- Plug #2 With drill pipe at 7400' plugged with 30 sacks.
- Plug #3 With drill pipe at 6950' plugged with 30 sacks.
- Plug #4 With drill pipe at 5750' plugged with 45 sacks.
- Plug #5 With drill pipe at 4800' plugged with 30 sacks.
- Plug #6 With drill pipe at 2900' plugged with 70 sacks.
- Plug #7 With drill pipe at 2400' plugged with 30 sacks.
- Plug #8 With drill pipe at 1450' plugged with 30 sacks.
- Plug #9 With drill pipe at 1200' plugged with 30 sacks.
- Plug #10 With drill pipe at 950' plugged with 50 sacks.

4. Ran in and found top plug at 909'. With drill pipe hung at 904' plugged with 50 sacks cement. Found top plug at 782'. Capped with a 10 sack cement plug, installed marker and officially abandoned 11:00 a.m. 1-21-56.

Note: Mr. P. T. McGrath, District Engr., U.S.G.S. (Tribal Lands) approved abandonment procedure verbally in telecon on January 11, 1956.

