UTAH OIL AND GAS CONSERVATION COMMISSION

REMARKS: WELL LOG ____ ELECTRIC LOGS ✓ X WATER SANDS ____ LOCATION INSPECTED ____ SUB. REPORT/abd.

Commenced Injection 8-18-94 as per monthly inj. RPT
950918 Confidential Status Expired 9-17-95

***Reentry approved 7-29-93 -New lease from #ML-29223 -Original operator American Quasar**

DATE FILED	11-3-77 *7-22-93		
LAND: FEE & PATENTED	STATE LEASE NO. ML40521	PUBLIC LEASE NO.	INDIAN
DRILLING APPROVED:	11-3-77 *7-29-93		
SPUDDED IN:	10-31-77 ✗ 9-14-93		
COMPLETED:	5-13-78 PA	PUT TO PRODUCING:	✗ completed 8-17-94
INITIAL PRODUCTION:	✗		
GRAVITY A.P.I.			
GOR:			
PRODUCING ZONES:	✗ 5726-6156 (NAVA) NAVAJO sandstone		
TOTAL DEPTH:	13,500 ✗ 13514'		
WELL ELEVATION:	5710' GR ✗ 5716 GR		
DATE ABANDONED:	5-13-78 PA		
FIELD:	WILDCAT		
UNIT:	*DRUNKARDS WASH		
COUNTY:	CARBON		
WELL NO.	DRUNKARDS WASH 31-1(D-1)		API NO. 43-007-30040
LOCATION 999 FSL	FT. FROM (N) (S) LINE. 1552 FWL	FT. FROM (E) (W) LINE. SE SW	1/4 — 1/4 SEC. 31

TWP.	RGE.	SEC.	OPERATOR	TWP.	RGE.	SEC.	OPERATOR
14S	10E	31	RIVER GAS Corp ~~OF UTAH INC~~.				

GEOLOGIC TOPS:

QUATERNARY	Star Point			Chinle	6535'	Molas	
Alluvium	Wahweap			Shinarump	6960'	Manning Canyon	11620'
Lake beds	Masuk			Moenkopi	6990'	Mississippian	
Pleistocene	Colorado			Sinbad	7680'	Humbug	12850'
Lake beds	Sego			PERMIAN		Brazer	
TERTIARY	Buck Tongue			Kaibab	8260'	Pilot Shale	
Pliocene	Castlegate			Coconino	8925'	Madison	
Salt Lake	Mancos	Surface		Cutler		Leadville	
Oligocene	Upper			Hoskinnini		Redwall	
Norwood	Middle			DeChelly		DEVONIAN	
Eocene	Lower			White Rim		Upper	
Duchesne River	Emery			Organ Rock		Middle	
Uinta	Blue Gate			Cedar Mesa		Lower	
Bridger	Ferron	1598'		Halgaite Tongue		Ouray	
Green River	~~Frontier~~ Tarlunk	2008'		Phosphoria		Elbert	
	Dakota	2365'		Park City		McCracken	
	Burro Canyon			Rico (Goodridge)		Aneth	
	Cedar Mountain	2492'		Supai		Simonson Dolomite	
	Buckhorn	3128'		Wolfcamp		Sevy Dolomite	
	JURASSIC			CARBON I FEROUS		North Point	
Wasatch	Morrison	3825'		Pennsylvanian	9586'	SILURIAN	
Stone Cabin	Salt Wash			Oquirrh		Laketown Dolomite	
Colton	San Rafeal Gr.			Weber		ORDOVICIAN	
Flagstaff	Summerville	3770'		Morgan		Eureka Quartzite	
North Horn	Bluff Sandstone			Hermosa		Pogonip Limestone	
Almy	Curtis	4188'				CAMBRIAN	
Paleocene	Entrada	4360'		Pardox		Lynch	
Current Creek	Moab Tongue			Ismay		Bowman	
North Horn	Carmel	5014'		Desert Creek		Tapeats	
CRETACEOUS	Glen Canyon Gr.			Akah		Ophir	
Montana	Navajo	5687'		Barker Creek		Tintic	
Mesaverde	Kayenta	6068'				PRE - CAMBRIAN	
Price River	Wingate	6150'		Cane Creek			
Blackhawk	TRIASSIC						

ACME VISIBLE CROZET VIRGINIA 100730

AMERICAN QUASAR PETROLEUM CO.
OF NEW MEXICO

707 UNITED BANK TOWER, 1700 BROADWAY, DENVER, COLORADO 80290, U.S.A.
TELEPHONE (303) 861-8437

September 9, 1977

Mr. Cleon B. Feight
Oil Gas & Mining Division
State of Utah
1588 West North Temple
Salt Lake City, UT 84116

Dear Mr. Feight:

Subject: Drunkards' Wash #31-1, Carbon County, Utah

Enclosed is American Quasar's application to drill the captioned well. The plat for this well will be mailed directly to you from the office of the surveyor.

As we have a rig ready to move onto this location, we would appreciate your prompt approval of this application.

Very truly yours,

A. H. Hurley, Jr.

AHH:ld

Enc.

Form OGC-1a

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. Lease Designation and Serial No.: Utah St. ML-29223

6. If Indian, Allottee or Tribe Name:

7. Unit Agreement Name:

8. Farm or Lease Name: Drunkard's Wash

9. Well No.: 31-1

10. Field and Pool, or Wildcat: Wildcat

11. Sec., T., R., M., or Blk. and Survey or Area: 31-14S-10E

1a. Type of Work: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. Type of Well: Oil Well [X] Gas Well [ ] Other Single Zone [ ] Multiple Zone [ ]

2. Name of Operator: American Quasar Petroleum Co. of New Mexico

3. Address of Operator: 707 United Bank Tower, 1700 Broadway, Denver, Colorado 80290

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface: SE SW (See survey plat for exact footages)
At proposed prod. zone: Same

14. Distance in miles and direction from nearest town or post office*: 4 miles south of Price, Utah

12. County or Parrish: Carbon 13. State: Utah

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. line, if any): 900' FSL

16. No. of acres in lease: 757.42

17. No. of acres assigned to this well: 640

18. Distance from proposed location* to nearest well, drilling, completed, or applied for, on this lease, ft.: N/A

19. Proposed depth: 12,500'

20. Rotary or cable tools: Rotary

21. Elevations (Show whether DF, RT, GR, etc.): (See survey plat for exact GL elevation)

22. Approx. date work will start*: October 1, 1977

23. PROPOSED CASING AND CEMENTING PROGRAM

Size of Hole	Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
17½"	13 3/8"	54.5#	600	Circ. to surface
12¼"	9 5/8"	40#	6000	To be calc. from caliper log.
8 3/4"	7"	23 & 26#	12500	" "

Drill 12¼" hole to 600' ±, open hole to 17½" and run 13 3/8" surface csg.
NU 12" 3000 psi wp double ram type BOP and Hydril
Drill 12¼" hole to 6000' ± utilizing lightly treated gel chem mud system.
Run BHC-sonic GR and DIL logs.
Run and cement 9 5/8" csg.
NU 10" 5000 psi wp double ram type BOP and Hydril
Drill 8 3/4" hole to total depth. Run BHC sonic-GR, DIL and CNL-FDC logs.
Blow out preventors will be pressure tested every 30 days and upon installation.
Operation will be checked daily.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

Signed: [signature] Title: Division Engineer Date: 9-8-77

(This space for Federal or State office use)

Permit No. Approval Date

Approved by Title Date

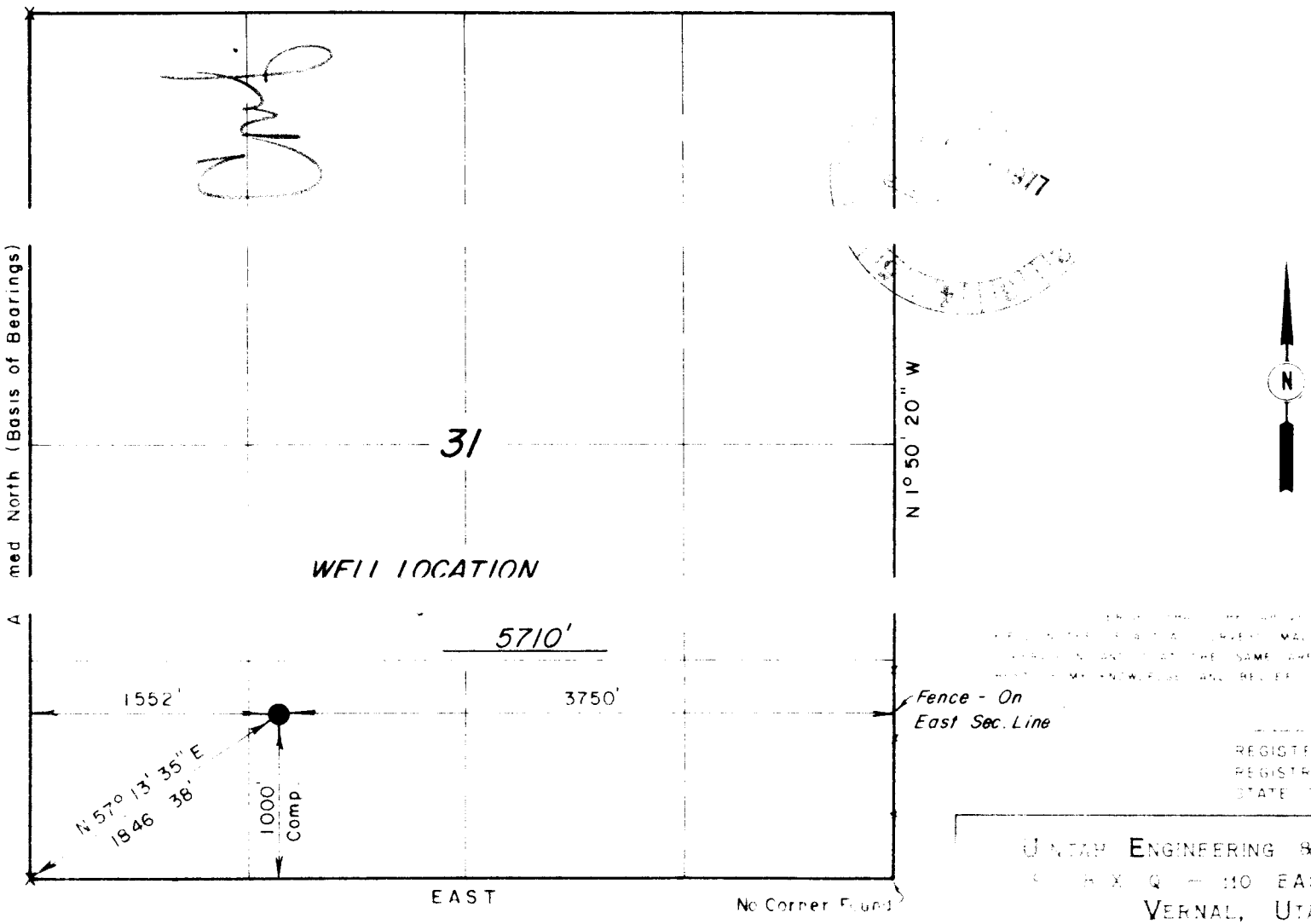
Conditions of approval, if any:

*See Instructions On Reverse Side

PROJECT

AMERICAN QUASAR PETROLEUM CO.

the SE 1/4 SW 1/4 Section 31, T 14 S, R 10 E, S.L.B.& M. Carbon County, Utah.



REGISTERED LAND SURVEYOR
REGISTRATION No 2454
STATE OF UTAH

UINTAH ENGINEERING & LAND SURVEYING
P. O. BOX Q — 110 EAST - FIRST SOUTH
VERNAL, UTAH - 84078

X = Section Corners Located

N J M	BFW	BFW	GLO Plat
Hot & Windy			AMERICAN QUASAR PETRO CO

AMERICAN QUASAR PETROLEUM COMPANY

13 Point Surface Use Plan

for

Well Location

Located In

Section 31, T14S, R10E, S.L.B. & M.

Carbon County, Utah

1. EXISTING ROADS

See attached Topographic Map "B".

To reach American Quasar Petroleum Company Well location located in the SE 1/4 SW 1/4 Section 31, T14S, R10E, S.L.B. & M. Carbon County, Utah, from Price, Utah, proceed South out of Price on Utah State Highway 10, 4.17 miles to an existing highway exit, exit right and proceed Westerly on an existing dirt road 2.27 miles to the proposed location site.

There will need to be some upgrading of the existing road in areas where flash floods have washed across existing road.

The roads that are required for access during the drilling phase, completion phase, and production phase of this well, will be maintained at the standards required by the B.L.M. or other controlling agencies.

All fences crossed on existing access road will be cut and be replaced with cattleguards with a minimum width of 18' and a loading factor large enough to facilitate the heavy equipment required in the drilling and production of this well, new gates will be installed at one end of the cattleguards.

See attached location layout sheet for position of existing road on proposed location site.

2. PLANNED ACCESS ROAD

There will be no planned access road as the existing road passes through the proposed location site.

3. LOCATION OF EXISTING WELLS

There are no other known wells within a radius of two miles. (See location plat for placement of American Quasar Petroleum Company well within the section).

4. LOCATION OF TANK BATTERIES, PRODUCTION FACILITIES, AND PRODUCTION GATHERING AND SERVICE LINES

At the present time there are no American Quasar Petroleum Company batteries, production facilities, oil gathering lines, gas gathering lines, injection or disposal lines within a one-mile radius.

In the event that production of this well is established, then the existing area of the location will be utilized for the establishment of the necessary production facilities.

This area will be built, if possible, with native materials and if these materials are not available then the necessary arrangements will be made to get them from private sources.

The total area that is needed for the production of this well will be fenced and cattleguards will be utilized for access to these facilities.

The rehabilitation of the disturbed area that is not required for the production of this well, will meet the requirements of Items #7 and #10 and these requirements and standards will be adhered to.

5. LOCATION AND TYPE OF WATER SUPPLY

The primary water source for this location will be an existing irrigation canal one mile East of the proposed location site and will be hauled by truck on road described in item No. 1.

In the event this is not a suitable source other arrangements will be made.

All regulations and guidelines will be followed and no deviation will be made unless all concerned agencies are notified.

6. SOURCE OF CONSTRUCTION MATERIALS

All construction materials for this location site and access road shall be borrow materials accumulated during construction of the location site and access road. No additional road gravels or pit lining material from other sources are anticipated at this time, but if they are required, the appropriate actions will be taken to acquire them from private sources.

7. METHODS FOR HANDLING WASTE DISPOSAL

A reserve and burn pit shall be constructed, and at least half of the depth of the reserve pit shall be below the existing ground surface. All trash and flammable materials will be burned in the burn pit. Non-flammable materials such as cuttings, salts, chemicals, etc., will be buried in the reserve pit and covered with a minimum of four feet of earth material. Prior to the onset of drilling, the burn pit will be fenced on all four sides with net wire, and the reserve pit will be fenced on three sides. Upon completion of drilling, the fourth side of the reserve pit will be fenced and allowed to dry completely before back-filling and reclamation are attempted. A portable chemical toilet will be supplied for human waste.

8. ANCILLARY FACILITIES

There are no ancillary facilities planned for at the present time and none foreseen in the near future.

9. WELL SITE LAYOUT

See attached Location Layout Sheet.

The B.L.M. District Manager shall be notified before any construction begins on the proposed location site.

As mentioned in Item #7, the pits will be unlined unless it is determined by the representatives of the agencies involved that the materials are too porous and would cause contamination to the surrounding area; then the pits will be lined with a gel and any other type material necessary to make it safe and tight.

When drilling activities commence, all work shall proceed in a neat and orderly sequence.

10. PLANS FOR RESTORATION OF SURFACE

As there is some topsoil on the location site, all topsoil shall be stripped and stockpiled. (See location layout sheet and Item #9). When all drilling and production activities have been completed, the location site and access road will be reshaped to the original contour and stockpiled topsoil spread over the

10. PLANS FOR RESTORATION OF SURFACE - Continued

disturbed area. Fences around pits are to be removed upon completion of drilling activities and all waste being contained in the trash pits shall be buried with a minimum of 5' of cover. The reserve pit will be completely fenced and allowed to dry before covering. When restoration activities have been completed, the location site and access ramp shall be reseeded with a seed mixture recommended by the B.L.M. District Manager when the moisture content of the soil is adequate for germination. The Lessee further covenants and agrees that all of said cleanup and restoration activities shall be done and performed in a diligent and most workmanlike manner and in strict conformity with the above mentioned Items #7 and #10.

11. OTHER INFORMATION

The topography of the general area (See Topographic Map "A").

The topography of the general area is a large valley formed by the Price River drainage, which lies at the South side of the Book Cliffs and on the East of the Wasatch Plateau, and with the San Rafael Swell to the South.

The valley area is generally flat and is dry with very little vegetation, except where the land is watered by man made irrigation ditches and canals. There are numerous washes and small canyons of which the majority are of a non-perennial nature.

The Price River drains Southeasterly into the Greenriver drainage. The majority of the surrounding drainages are of a non-perennial nature with normal flow limited to the early spring run-off and extremely heavy rain storms of long duration. This type of storm is of an extremely rare nature as the normal annual precipitation is only 8".

The visible geological structures of the area are from the Mancos Shale formations from the Upper Cretaceous Epoch which consists of Blue Gate Mancos Shales of a light gray color.

The topsoils in the area range from a sandy clay (sm-ml) to a silty clayey (ol) type soil.

Due to the low precipitation average, climate conditions and the marginal types of soils, the vegetation that is found in the area is common of the semi-arid region we are located in and in the lower elevations, and consists of sagebrush, rabbit brush, some grasses, and cacti as the primary flora.

The fauna of the area is sparse and consists predominantly of the mule deer, coyotes, rabbits, and varieties of small ground squirrels and other types of rodents. The area is used by man for the primary purpose of grazing domestic livestock.

The birds of the area are raptors, finches, ground sparrows, magpies, crows, and jays.

Topography of the immediate area (See Topographic Map "B").

The location of American Quasar Petroleum Company Well location, is located on a small plateau which falls sharply at the South side of the location onto a smaller flat area and then into a large non-perenial wash which slope to the East and into the Price River drainage.

11. OTHER INFORMATION - Continued

All drainages in the immediate area are non-perennial in nature and flow to the East into the Price River which is a tributary of the Green River to the Southeast.

The Geologic structure of the location is primarily made up of Blue Gate Mancos Shale of a light gray color, of the Upper Cretaceous Epoch (sm-ml) and (ol).

The ground slopes Northeasterly through the location at about a 2% grade except on the South edge where it falls into the before mentioned wash.

The location is vegetated by some small grasses and some low growing sage-brush.

There are no occupied dwellings or other facilities of this nature in the immediate area. The rural areas of Price, Utah, begin at approximately 1.5 miles East of the location consisting mostly of small farms and some businesses.

There is an old railroad bed which lies approximately 1/4 miles west of the proposed location site. There are no other known archaelogical, historical, or cultural sites within any reasonable proximity of the proposed location site. (See Topographic Map "B").

12. LESSEE'S OR OPERATOR'S REPRESENTATIVES

John Sindelar
330 Pacific Western Life Building
Casper, Wyoming 82602
Phone: (307) 265-3362

13. CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by American Quasar Petroleum Company and its contractors and sub-contractors in conformity with this plan and terms and conditions with this plan and the terms and conditions under which it is approved.

Date

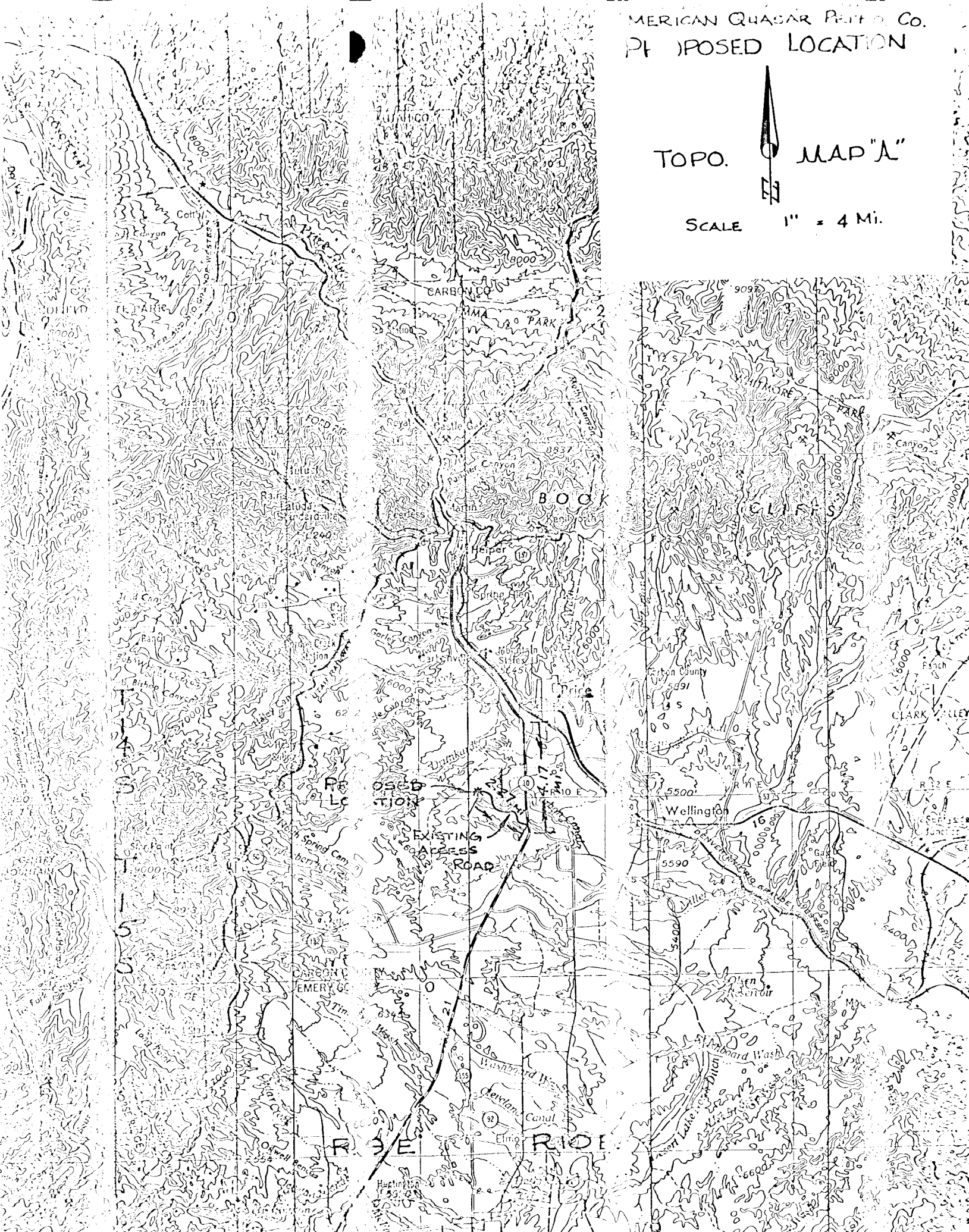
John Sindelar
Drilling Superintendent.

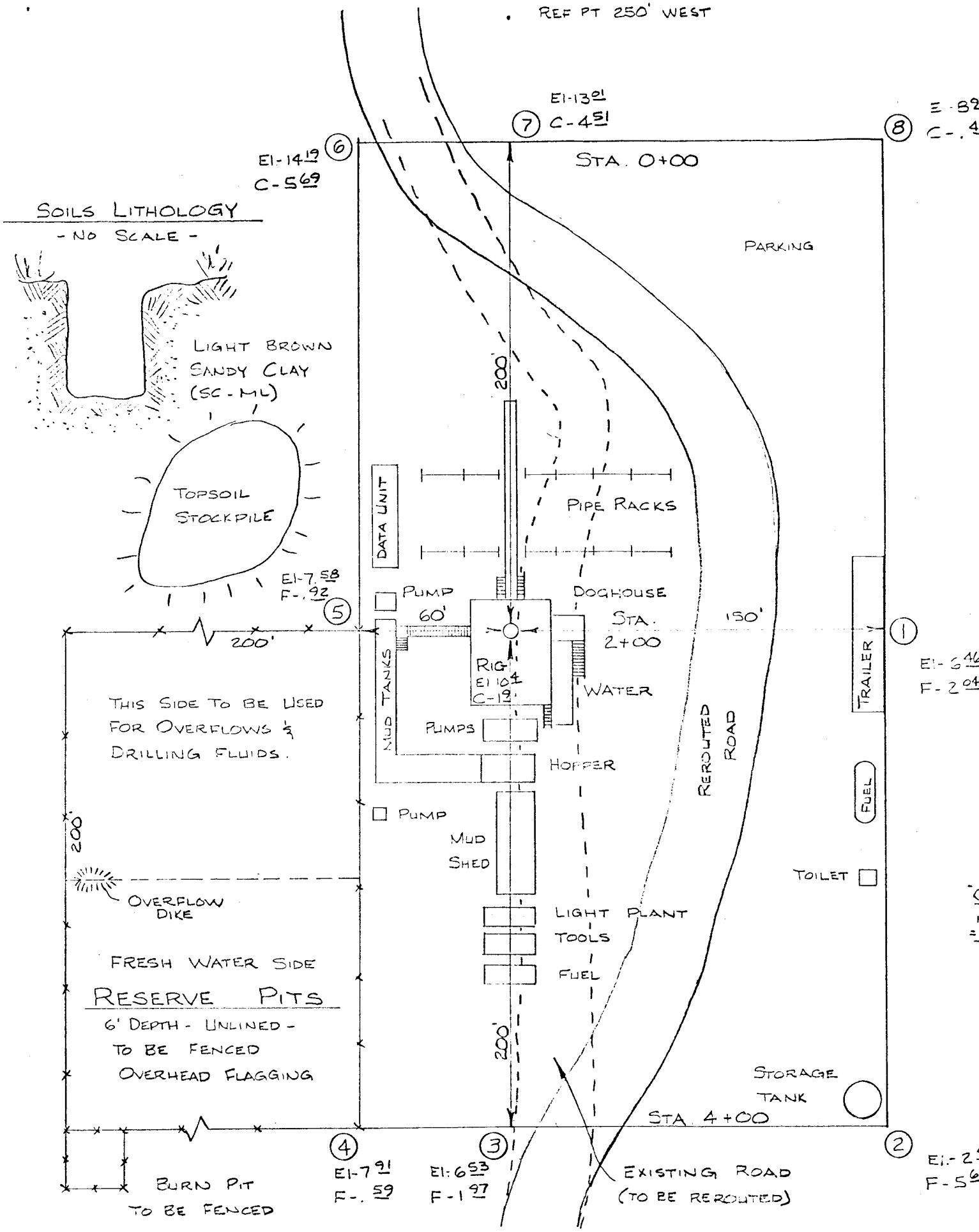
MERICAN QUASAR PETR. CO.

PROPOSED LOCATION

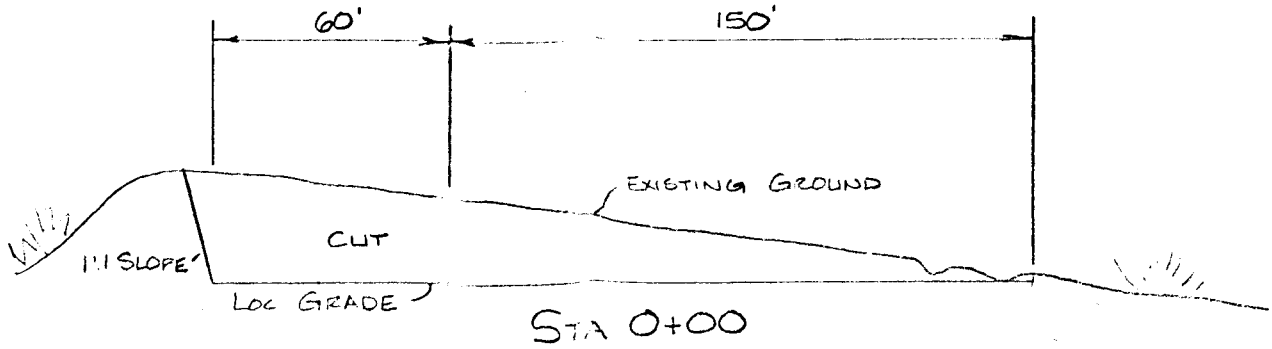
TOPO. MAP "A"

SCALE 1" = 4 Mi.



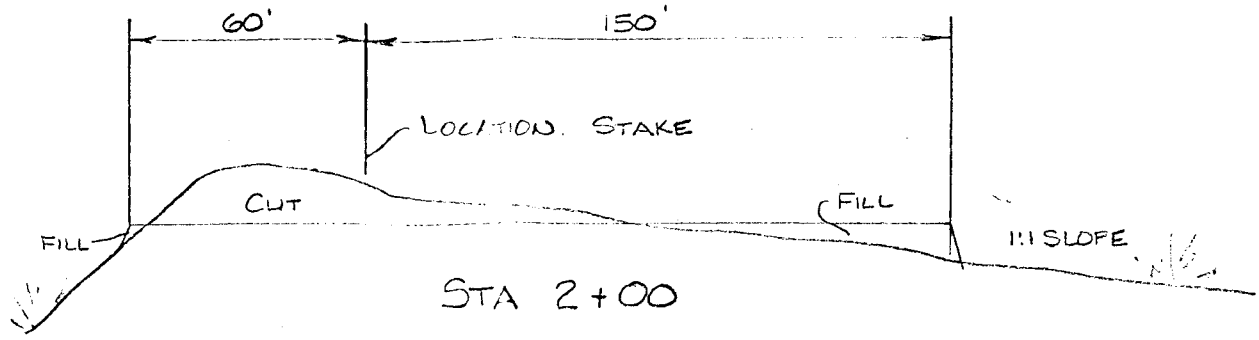


REF PT 250' WEST
El-13.01
C-4.51
7
8
E-8.9
C-.4
6
El-14.19
C-5.69
STA. 0+00
SOILS LITHOLOGY
- NO SCALE -
PARKING
LIGHT BROWN
SANDY CLAY
(SC-ML)
200'
TOPSOIL
STOCKPILE
DATA UNIT
PIPE RACKS
El-7.58
F-.92
5
PUMP
60'
DOGHOUSE
STA.
2+00
150'
1
200'
RIG
El 10.4
C-1.9
WATER
TRAILER
El-6.46
F-2.04
MUD TANKS
THIS SIDE TO BE USED
FOR OVERFLOWS &
DRILLING FLUIDS.
PUMPS
HOPPER
REROUTED
ROAD
FUEL
PUMP
MUD
SHED
200'
TOILET
OVERFLOW
DIKE
LIGHT PLANT
TOOLS
FUEL
FRESH WATER SIDE
RESERVE PITS
6' DEPTH - UNLINED -
TO BE FENCED
OVERHEAD FLAGGING
200'
STORAGE
TANK
STA. 4+00
4
3
2
El-7.91
F-.59
El-6.53
F-1.97
EXISTING ROAD
(TO BE REROUTED)
BURN PIT
TO BE FENCED



STA 0+00

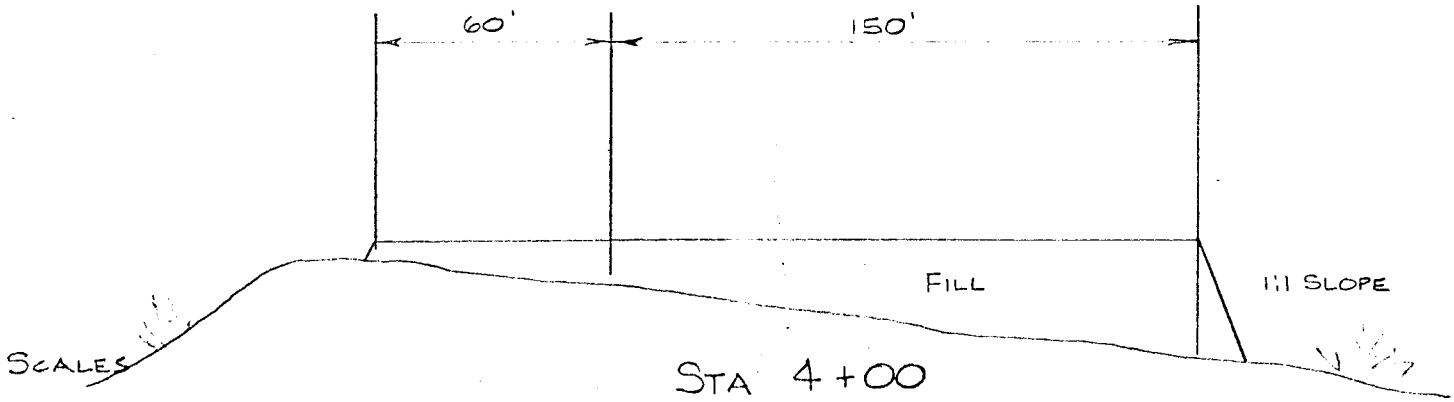
CROSS SECTIONS



STA 2+00

REF. PT 200' NORTH

REF PT 250' NORTH



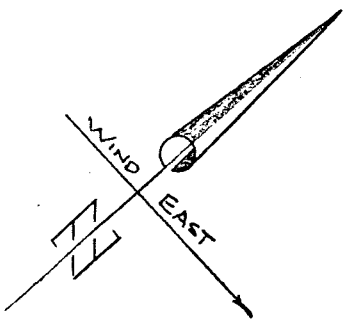
SCALES

STA 4+00

1" = 50'

APPROXIMATE YARDAGE

CUT: 3,883 CU. YDS.
FILL: 3,072 CU. YDS.



AMERICAN QUASAR PETROLEUM CO.

LOCATION LAYOUT

SECTION 31, T 14 S, R 10 E, S.L.B. & M.

BFW

AMERICAN QUASAR PETRO. CO.

TOPO. MAP "B"

Confidential

SCALE 1" = 2000'

ROAD CLASSIFICATION

Secondary highway, all weather, hard surface

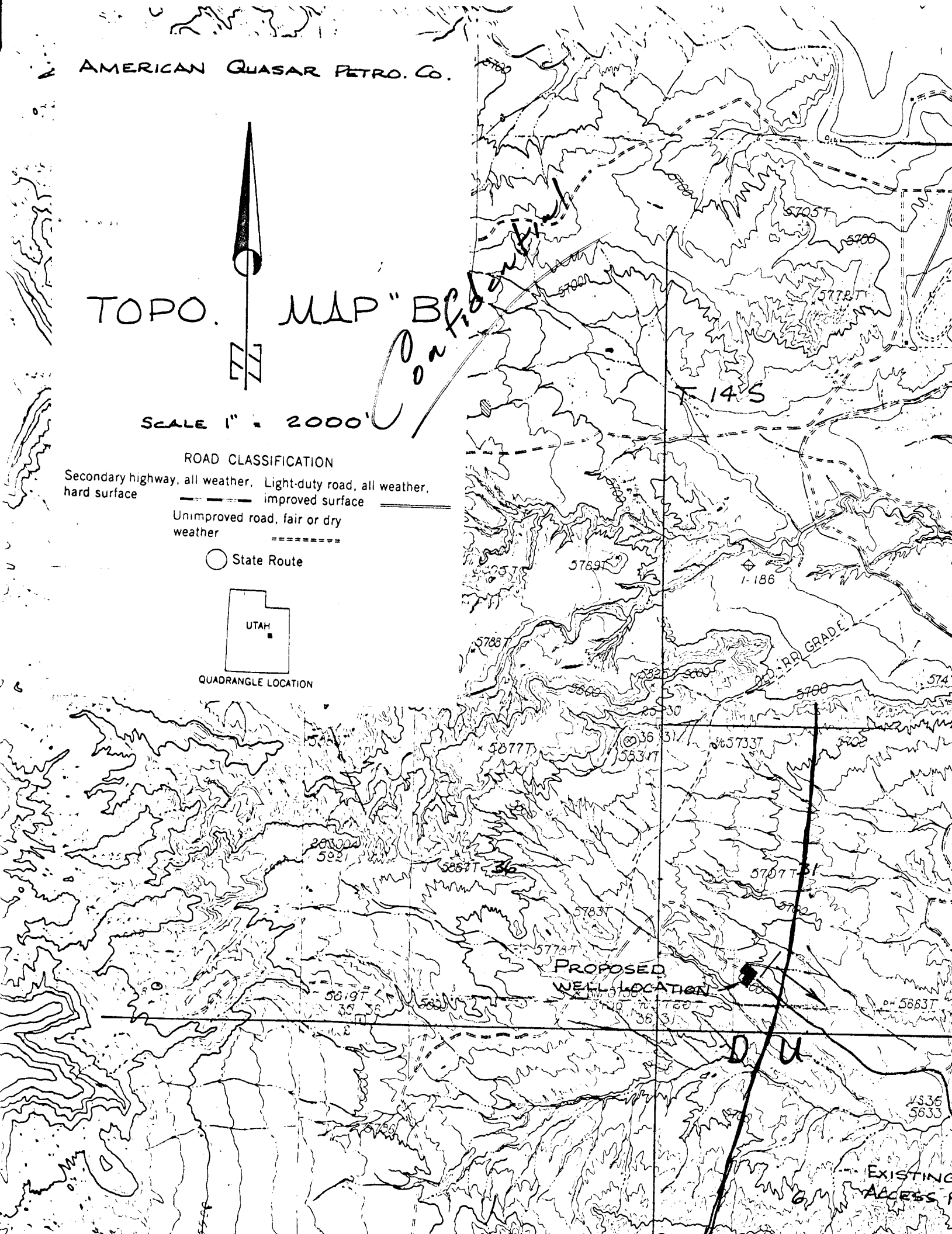
Light-duty road, all weather, improved surface

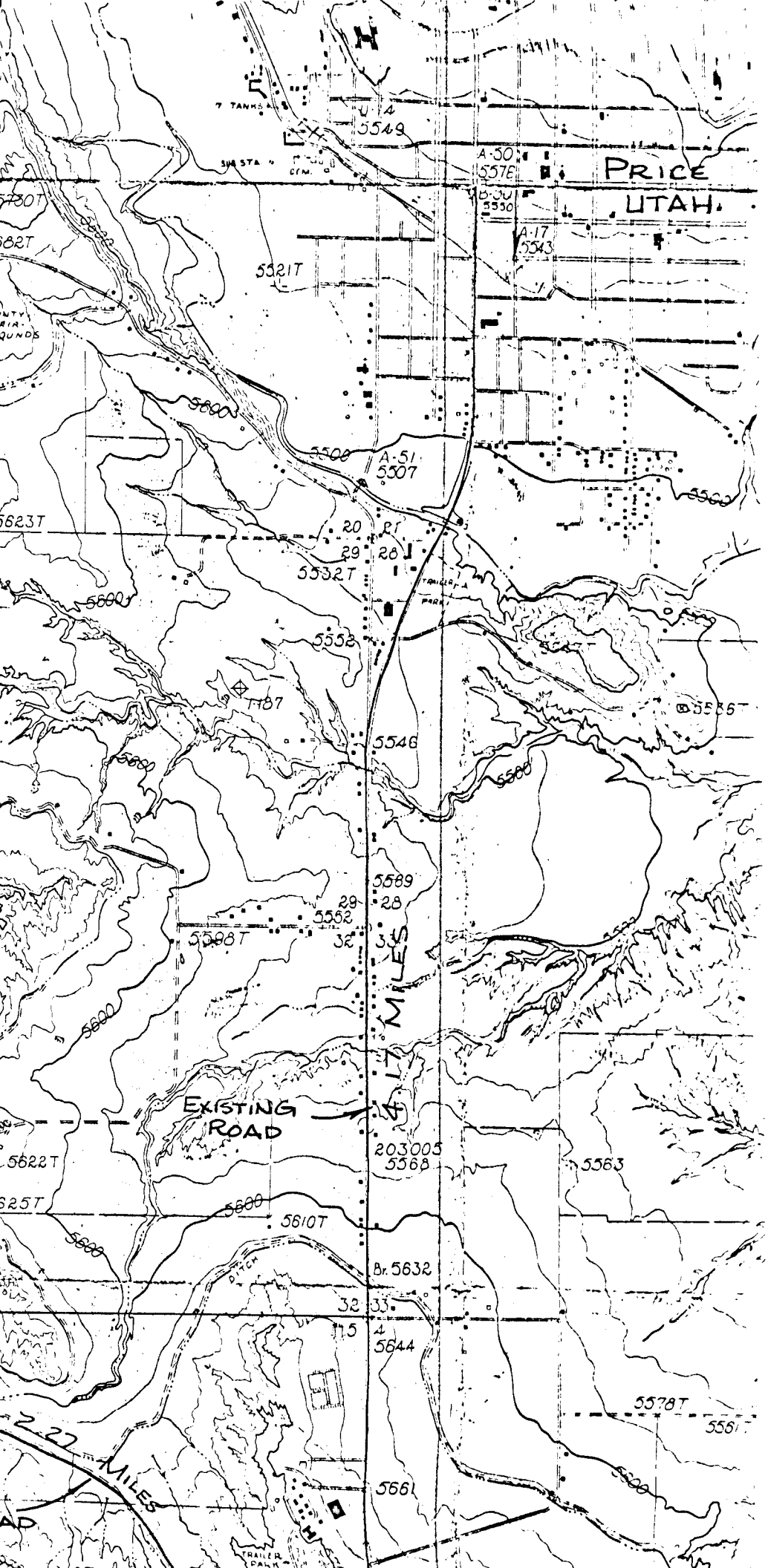
Unimproved road, fair or dry weather

State Route

UTAH

QUADRANGLE LOCATION





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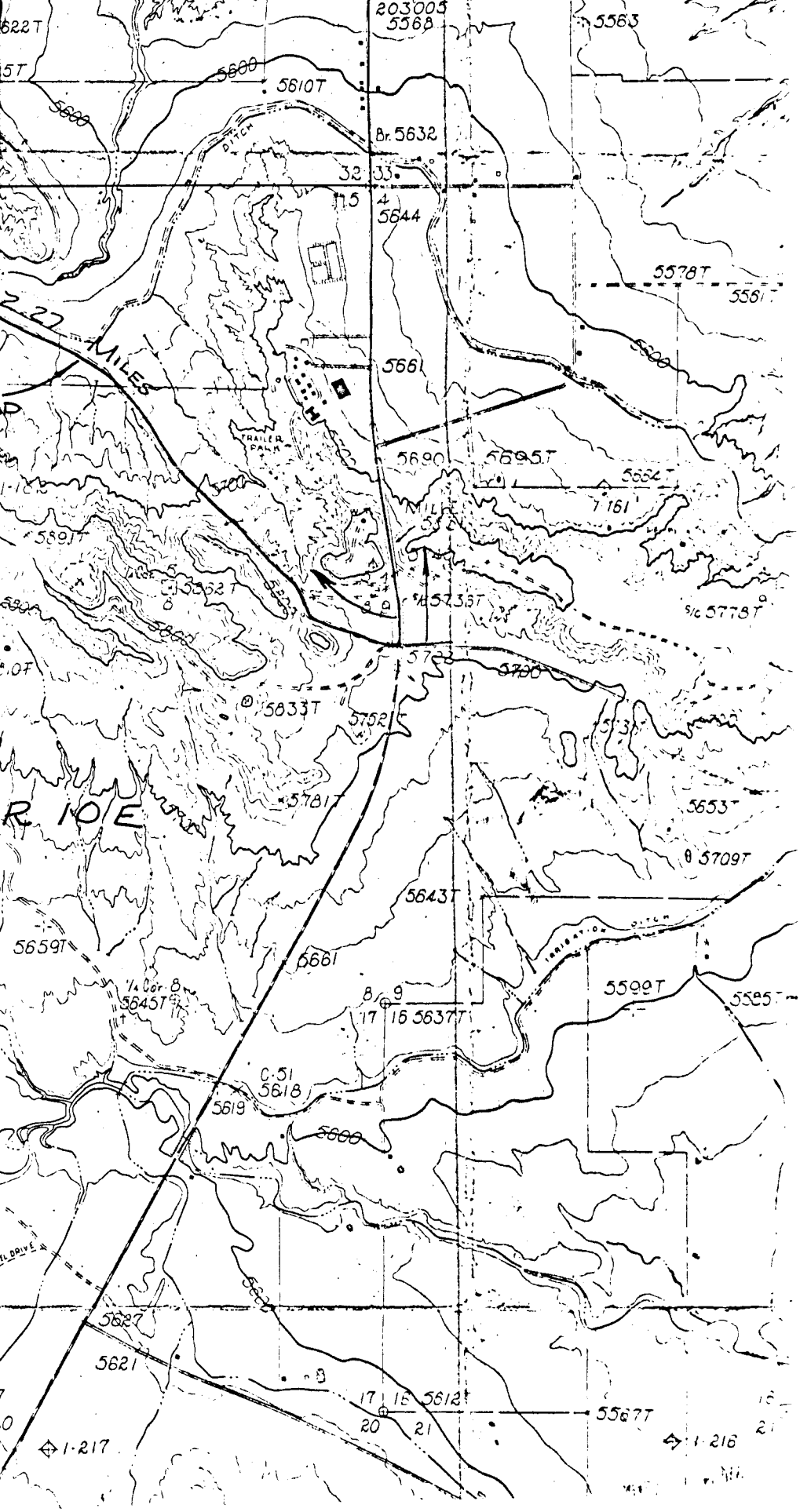
SEP 22 1977
DIVISION OF OIL
GAS, & MINING



203005
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5610T
Br. 5632
DITCH
32
33
5644
5578T
5561T
MILES
5661
TRAILER PARK
5690
5695T
5664T
7161
5891T
5862T
5733T
5778T
5700
5833T
5752T
5781T
R 10 E
5653T
5709T
5643T
5659T
5661
IRRIGATION DITCH
5645T
5637T
5599T
5585T
C-51
5618
5619
5600
5627
5621
5612T
5567T
1-217
1-216

ENVIRONMENTAL ASSESSMENT
for

AMERICAN QUASAR PETROLEUM COMPANY

DRUNKARDS WASH-STATE #31-1

WILDCAT OIL AND/OR GAS WELL

on

STATE OF UTAH ML 29223

SE SW, SECTION 31,

TOWNSHIP 14 SOUTH RANGE 10 EAST

SLBM

CARBON COUNTY, UTAH

October 5, 1977

Prepared by:
UTAH DIVISION OF OIL, GAS, AND MINING
PATRICK L. DRISCOLL, CHIEF PETROLEUM ENGINEER
BRIAN W. BUCK, ENGINEERING GEOLOGIST

I. DESCRIPTION OF PROPOSED ACTION:

American Quasar Petroleum Company proposes to drill a wildcat well on an existing State Lease in Section 31, Township 14 South, Range 10 East, Carbon County, Utah. This will be a rank wildcat and is projected to test potential Hydrocarbon bearing formations from the surface down to and including the sequence of Upper Mississippian Sandstones as they abut against the hingline. The other major area of interest is the Pennsylvanian Limestones. The estimated total depth will be approximately 12,500'.

The surface geology indicates that it is composed of weathered Blue Gate Shale Member of the Mancos Shale Formation. A surface pad measuring approximately 400' x 400' (3.7 acres) will be needed to accommodate the drilling rig and associated equipment. If a successful well is encountered, all necessary production equipment can be located on this pad.

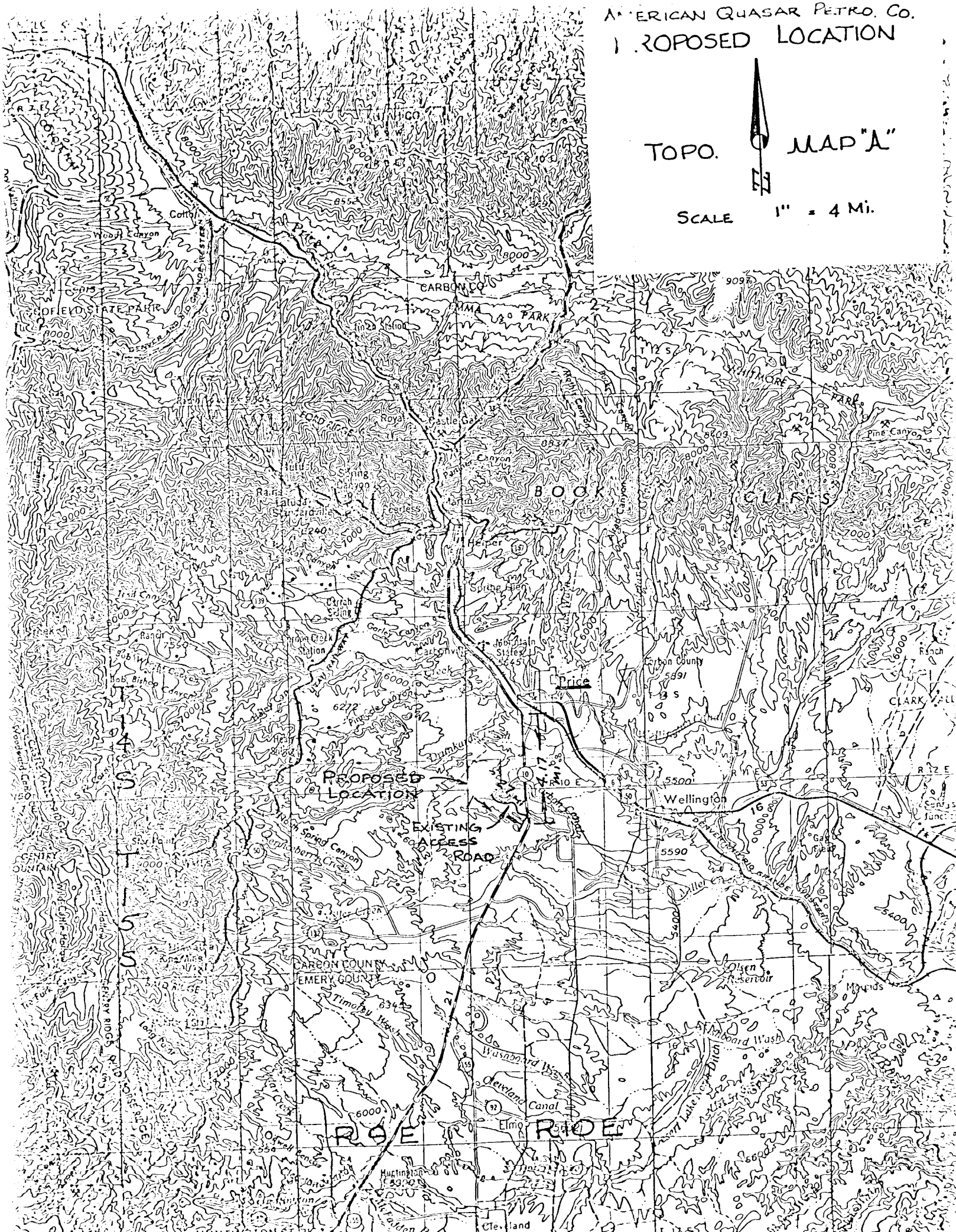
The access to the proposed drilling site commences at the Main Street of Price and the intersection of Utah State Highway #10 for a distance of 4.0 miles from this point, or, to the edge of Price's Industrial Development. At this point, the State Highway raises through a small hill and thence drops drastically toward a dry wash. Before reaching the wash, a well noted dirt road turns north. The dirt road is followed for about 2.2 miles. The proposed drilling location is on the left, or westerly, shoulder of the road. It will be necessary to relocate this existing road by following a curvature around the edge of the drilling pad. This should not entail more than an additional 5 to 6 hundred feet of road. In this respect, there will not be any additional access road than that which now exists. No significant fill nor cuts will be required.

AMERICAN QUASAR PETRO. CO.

PROPOSED LOCATION

TOPO. MAP "A"

SCALE 1" = 4 Mi.



II. DESCRIPTION OF THE ENVIRONMENT POTENTIALLY AFFECTED:

A. General-

The majority of the environment affected will be at the well site proper, and generally can be considered insignificant due to the flatness and other physical characteristics of the terrain. It will be unneccessary to stockpile top soil as there is none present.

B. Topography and Drainage-

The topography of the general area is characterized by a large valley area formed by the Price River Drainage. This drainage area is bounded on the North and on the West by the Wasatch Plateau; on the East by the Book Cliff escarpment and on the South by the San Rafael swell. The valley area is generally flat and quite arid. Vegetative cover is normally less than 20% and consists primarily of Russian Thistle. In some areas, the land is irrigated and this land generally consists of a narrow strip adjacent to natural water courses or to man made irrigation canals. In the immediate vicinity of the well site, the soil and vegetation is practically nonexistant.

A road is already in the area, and as a matter of fact, the location lies on the west shoulder of the road. A very minor amount of road work will be necessary prior to bringing in a rig.

C. Climate-

Precipitation in this area is variable by season. A check of the normal annual precipitation indicates it to be less than 8", with the majority of this occuring in early spring and early fall. The drainages in the area are non-perennial, with the exception of the Price River which lies approximately 3½ miles due east.

D. Soils-

The surface is covered with weathered shale from the Mancos Shale Formation, and as such, is not classified as a soil.

E. Livestock Grazing -

The vegetative cover in the area is unsatisfactory for any livestock grazing.

F. Wildlife Resources-

Due to two principal reasons, namely (1) The drilling locations proximity to industrial and residential areas preclude any wildlife except for an occasional rabbit and ground rodents. (2) Lack of forage and water would again limit wildlife to the above mentioned. There are probably a minor amount of raptors, as well as finches and ground sparrows in the immediate vicinity.

G. Recreation-

The area is unsuitable for any type of outdoor recreational activity.

H. Vegetation-

As noted before, the only apparent vegetation is Russian Thistle and this does not exceed 20% ground cover.

I. Historical/Archeological-

As this site lies on the shoulder of an existing road, and as it is in close proximity to a well travelled highway and industrial area, it is felt there is no significant archeological or historical sites that have not been undisturbed.

J. Socio-Economics-

The drilling of this well and the crews needed for this drilling will be absorbed by the city of Price with no evident nor recognizable changes.

K. General Impact-

The impact that will be caused by the drilling of this well will be at an absolute minimum in all respects.

III. ALTERNATIVES TO THE PROPOSED ACTION:

The only alternative to this proposed action would be to deny the drilling of this well. This would be counterproductive to the resolution of our Nations energy demands, and further, as the proposed environmental impact reflects the most minimal that could occur, no viable alternative is present.

IV. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES INVOLVED IN THE PROPOSED ACTION:

The only irreversible and irretrievable action would be the depletion of an oil and/or gas reservoir if it should be found that one exits. This is a normal condition for any exploitation of fossil fuels for energy purposes.

V. RECOMMENDATIONS:

It is recommended to allow this project as applied for.

AMERICAN QUASAR PETROLEUM CO.
OF NEW MEXICO

707 UNITED BANK TOWER, 1700 BROADWAY, DENVER, COLORADO 80290, U.S.A.
TELEPHONE (303) 861-8437

Confidential

CIRCULATE TO:
DIRECTOR
PETROLEUM ENGINEER
MINE COORDINATOR
ADMINISTRATIVE ASSISTANT
FILE
RETURN TO: Scherie

September 20, 1977

State of Utah
Division of Oil, Gas & Mining
1588 West North Temple
Salt Lake City, UT 84116

Attn: Mr. Patrick Driscoll

Gentlemen:

Subject: Application for Permit to Drill Drunkards' Wash State 31-1, SE SW Section 31, 14S, 10E, Carbon County, Utah

We hereby request that you allow the captioned well to be drilled outside of normal spacing pattern as shown on our application (i.e. 1000' FSL, 1552' FWL).

Reasons for the exception are both geological and geographical.

Geologically, a fault runs through this ¼ ¼ in the subsurface at the approximate position shown on the accompanying "Topo Map B". Bedding to the west of this fault dips to the northwest. The possible result of drilling too near this fault would be to cause the hole to drift easterly into and possibly across the fault. This would be undesirable for testing our geologic play.

Topographical features of the immediate vicinity are not shown to good advantage by any of the available topo maps. The attached Surface Use Plan describes the area rather thoroughly, however. As brought out in Item 11, the ground to the south of the surveyed location falls off rather sharply into a large wash, making relocation to the south highly undesirable.

Since we intend to test two separate and independent geological features, which coincide to best advantage in this immediate area, relocation to another ¼ ¼ would also be highly undesirable.

American Quasar controls the SW ¼ of Section 31 under Utah State Lease ML-29223.

We hope this is sufficient justification for permitting the captioned test as surveyed. If you should need any further information, please do not hesitate to call.

We anticipate having a rig available for this well in the very near future, so we would appreciate any help in expediting approval of this application.

Sincerely,

R. F. Reiner
Division Engineer

RFR:ld

Enc.

CONFIDENTIAL

AMERICAN QUASAR PETROLEUM CO.
OF NEW MEXICO

707 UNITED BANK TOWER, 1700 BROADWAY, DENVER, COLORADO 80290, U.S.A.
TELEPHONE (303) 861-8437

September 26, 1977

Utah State Division of Oil, Gas & Mining
1588 West, North Temple
Salt Lake City, Utah 84116

Attention: Ms. Sheree Wilcox

Re: NOTICE OF INTENT TO DRILL
Drunkards Wash State #31-1
Section 31 - T14S-R10E
Carbon County, Utah
AQP #1112

Gentlemen:

In accordance with your telephone conversation with our Mr. Bud Hurley last week, American Quasar requests your cooperation in the delay of any public announcement of our Intent to Drill the captioned well. We will inform you at such time as this need for confidentiality has passed.

Thank you for your cooperation in this matter.

Sincerely,

Bob Gerber
Landman

BG/nfh

CIRCULATE TO:

DIRECTOR ☒
PETROLEUM ENGINEER ☒
MINE COORDINATOR ☐
ADMINISTRATIVE ASSISTANT ☒
ALL ☐

RETURN TO Scheree
FOR FILING

October 5, 1977

CONFIDENTIAL ...

Re: American Quasar Petroleum Co.
Drunkards Wash-State 31-1
Sec. 31, T. 14S, R. 10E
Carbon County, Utah

This proposed drilling site was visited by Mr. Driscoll and Mr. Buck for the purpose of preparing an Environmental Assessment Report. This is a wildcat well located on State acreage.

PATRICK L. DRISCOLL
CHIEF PETROLEUM ENGINEER

PLD/ko

Scott M. Matheson
Governor

James Edwin Kee
State Planning Coordinator

Joseph L. Platt
Deputy, State Planning Coordinator

STATE OF UTAH

Office of the
STATE PLANNING COORDINATOR

118 State Capitol
Salt Lake City, Utah 84114
(801) 533-5246

P

November 1, 1977

File

Brian Buck, Engineering Geologist
Division of Oil, Gas, and Mining
1596 North Temple
Salt Lake City, Utah 84116

Dear Mr. Buck:

The Utah State Environmental Coordinating Committee has reviewed the environmental assessment for American Quasar Petroleum Company, Drunkards Wash-State #31-1. The Committee offers no comment.

Thank you for the opportunity to comment.

Sincerely,

Joseph L Platt

Joseph L. Platt
Deputy, State Planning Coordinator

JLP/jl

November 2, 1977

American Quasar Petroleum Co.
707 United Bank Tower
1700 Broadway
Denver, Colorado 80290

RE: Well No. Drunkard's Wash 31-1
Sec. 31, T. 14 S, R. 10 E,
Carbon County, Utah

Gentlemen:

No adverse comments having been received from the Environmental Coordinating Committee, approval to drill the above referred to well is hereby granted in accordance with Rule C-3(c), General Rules and Regulations and Rules of Practice and Procedure. Said approval, however, shall be contingent upon filing the necessary drilling and plugging bond with the Division of State Lands.

Should you determine that it will be necessary to plug and abandon this well, you are hereby requested to immediately notify the following:

PATRICK L. DRISCOLL - Chief Petroleum Engineer
HOME: 582-7247
OFFICE: 533-5771

Enclosed please find Form OGC-8-X, which is to be completed whether or not water sands (aquifers) are encountered during drilling.

The API number assigned to this well is 43-007-30040.

Very truly yours,

DIVISION OF OIL, GAS, AND MINING

CLEON B. FEIGHT
Director

cc: Division of State Lands

M 29225

CONFIDENTIAL

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

** FILE NOTATIONS **

Date: Sept. 23, 1977

Operator: American - Quasar Petroleum

Well No: Drunkards Wash 31-1

Location: Sec. 31 T. 14S R. 10E County: Carbon

File Prepared: / / *Entered on N.I.D.:* / /

Card Indexed: / / *Completion Sheet:* / /

API NUMBER: 43-007-3[illegible]

CHECKED BY:

Administrative Assistant [illegible]

Remarks: [illegible]

Petroleum Engineer Ok. Pat.

Remarks:

Director

Remarks: 10/28 Verbal to Rig-up by CBF

This unorthodox location is approved due to combination Topographical + Geological Conditions:

INCLUDE WITHIN APPROVAL LETTER:

Bond Required: OK State / / *Survey Plat Required:* / /

Order No. / / *Surface Casing Change to* / /

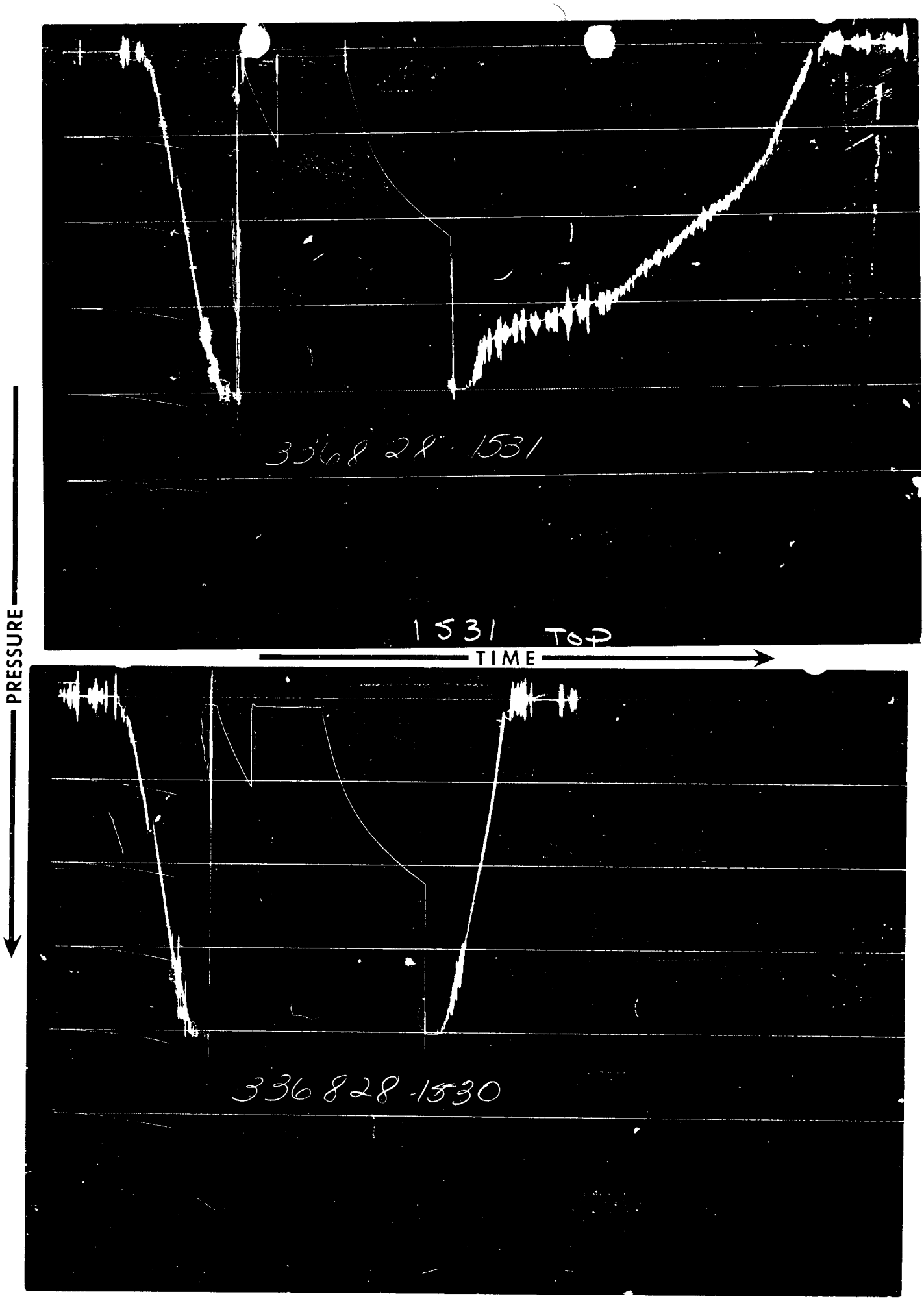
Rule C-3(c), Topographic exception/company owns or controls acreage within a 660' radius of proposed site / ✓ /

O.K. Rule C-3 / / *O.K. In* _____ *Unit* / /

Other:

Ok - ECC approval Rec'd.

/ ✓ / Letter Written/~~Approved~~



Each Horizontal Line Equal to 1000 p.s.i.

FLUID SAMPLE DATA

Sampler Pressure 600 P.S.I.G. at Surface
Recovery: Cu. Ft. Gas 4.01
cc. Oil
cc. Water
cc. Mud
Tot. Liquid cc.
Gravity ° API @ °F.
Gas/Oil Ratio cu. ft./bbl.

	RESISTIVITY		CHLORIDE CONTENT
Recovery Water	@ °F.		ppm
Recovery Mud	@ °F.		ppm
Recovery Mud Filtrate	@ °F.		ppm
Mud Pit Sample	.76 @ 62 °F.		1600 ppm
Mud Pit Sample Filtrate	@ °F.		ppm

Mud Weight 9.2 vis 51 sec

Date 4-16-78 Ticket Number 336890
Kind of Job OPEN HOLE Halliburton District VERNAL
Tester R. RIPPLE C. BARNEY Witness B. LYNCH
Drilling Contractor CIRCLE "A" DRILLING RIG # 10 DR

EQUIPMENT & HOLE DATA

Formation Tested Manning Canyon
Elevation 5726' KB Ft.
Net Productive Interval - Ft.
All Depths Measured From Kelly Bushing
Total Depth 12,310' Ft.
Main Hole/Casing Size 8 3/4"
Drill Collar Length 752' I.D. 2 3/8"
Drill Pipe Length 11,262' I.D. 3.826'
Packer Depth(s) 12,045'-12,051' Ft.
Depth Tester Valve 12,031' Ft.

Cushion TYPE AMOUNT 2500' Water Ft. Depth Back Pres. Valve Surface Choke 1/8-1" Bottom Choke 3/4"

Recovered 270 Feet of mud, slightly gas cut and water cut
Recovered Feet of
Recovered Feet of
Recovered Feet of
Recovered Feet of

Mea. From Tester Valve

Remarks SEE PRODUCTION TEST DATA SHEET

Q-Questionable

Charts indicate bottom gauge case qpparently plugged.

TEMPERATURE	Gauge No. 498 Depth: 12,034 Ft.	Gauge No. 242 Depth: 12,307 Ft.	Gauge No. Depth: Ft.	TIME
	24 Hour Clock	24 Hour Clock	Hour Clock	Tool Opened 0513 A.M. P.M.
Est. °F.	Blanked Off No	Blanked Off Yes	Blanked Off	Opened A.M.
Actual 190 °F.	Pressures	Pressures	Pressures	Bypass 0923 P.M.

		Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic		5922.5	5974		6052 Q				
First Period Flow	Initial	1212.7	1261					—	—
	Final	1155.2	1181	PLUGGED				10	9
	Closed in	1787.4	1782					60	60
Second Period Flow	Initial	1155.2	1164					—	—
	Final	1155.2	1198					60	61
	Closed in	1672.5	1701					120	121
Third Period Flow	Initial							—	—
	Final								
	Closed in								
Final Hydrostatic		5979.9	5969		6023 Q			—	—

Legal Location Sec. - Twp. - Rng. 31-14S-10E
Lease Name DRUNKARDS WASH
Well No. 31-1
Test No. 11
Tested Interval 12,051-12,310'
Field Area WILDCAT
County CARBON
State UTAH
Lease Owner/Company Name AMERICAN QUASAR PETROLEUM COMPANY

FORM 181-R2—PRINTED IN U.S.A.

FORMATION TEST DATA

LITTLE'S 102548 5M 9/76

11

Casing perfs. _____ Bottom choke _____ Surf. temp _____ °F Ticket No. 336890

Gas gravity _____ Oil gravity _____ GOR _____

Spec. gravity _____ Chlorides _____ ppm Res. _____ @ _____ °F

INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED 1/8" Bubble hose

Date Time a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks
4-16-78 2000					On location
2300					Made up tools
4-17-78 0005					Went in hole with 5" test tools
0513	1/8"				Opened tool with 2" blow in water
					increasing to 6"
0523	1/8"				Closed tool
0623	1/8"				Opened tool with 2" in water, increasing
					to 16" in 12 minutes.
0723	1/8"				Closed tool
0733	1/8"	2#	3		Gas to surface
0923					Pulled tool loose, stuck in anchor
1000					Pulled tool loose, came out of hole.
1405					Dropped bar to reverse
1600					Broke down tools
1730					Loaded tools
1800					Read charts

FORM 182-R1—PRINTED IN U.S.A.

PRODUCTION TEST DATA

LITTLE'S 96672 5M 8/74

11

AMERICAN QUASAR PETROLEUM COMPANY
Lease Owner/Company Name

336890
Ticket Number

B.T. 498 B.T. 242 B.T.

Depth 12,034' Depth 12,307' Depth

PAGE 1

	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
				FIRST FLOW					
P-0	.000		1261						
1	.0067		1230						
2	.0133		1230						
3	.0200		1218	PLUGGED					
4	.0267		1204						
	2 minute intervals		1207						
5	.030								
	1 minute interval		1181						
				FIRST CLOSED IN					
P-0	.000		1181						
1	.0034		1213						
2	.0067		1239						
3	.0101		1264						
4	.0134		1287						
5	.0168		1307						
6	.0201		1328						
7	.0235		1345						
8	.0268		1359						
9	.0302		1376						
10	.0335		1394						
	1 minute intervals								
11	.0402		1420						
12	.0469		1440						
13	.0536		1468						
14	.0603		1489						
15	.0670		1506						
	2 minute intervals								
16	.0838		1552						
17	.1005		1595						
18	.1173		1635						
19	.1340		1670						
20	.1508		1698						
21	.1675		1730						
22	.1843		1759						
23	.2010		1782						
	5 minute intervals								

REMARKS:

SPECIAL PRESSURE DATA

AMERICAN QUASAR PETROLEUM COMPANY
Lease Owner/Company Name

336890
Ticket Number

B.T. 498 B.T. 242 B.T.

Depth 12,034' Depth 12,307' Depth

	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
			SECOND FLOW						
P-0	.000		1164						
1	.0334		1147						
2	.0669		1151						
3	.1003		1170						
4	.1338		1181						
5	.1672		1198		PLUGGED				
	10 minute intervals								
6	.204								
	11 minute intervals								
			SECOND CIP						
P-0	.000		1198						
1	.0034		1201						
2	.0067		1204						
3	.0101		1213						
4	.0134		1218						
5	.0168		1224						
6	.0202		1233						
7	.0235		1239						
8	.0269		1244						
9	.0302		1252						
10	.0336		1259						
	1 minute intervals								
11	.0403		1267						
12	.0470		1279						
13	.0537		1290						
14	.0604		1302						
15	.0672		1313						
	2 minute intervals								
16	.0839		1336						
17	.1007		1362						
18	.1175		1371						
19	.1343		1405						
20	.1510		1428						
21	.1678		1448						
22	.1846		1468						
23	.2014		1489						
	5 minute intervals								
24	.2349		1529						
25	.2685		1563						
26	.3020		1598						
27	.3356		1632						
	10 minute intervals								
			CONTINUED ON PAGE 3						

REMARKS:

SPECIAL PRESSURE DATA

11

AMERICAN QUASAR PETROLEUM COMPANY
Lease Owner/Company Name

336890
Ticket Number

B.T. 498 B.T. 242 B.T.

Depth 12,034' Depth 12,307' Depth

PAGE 3

	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
			CONTINUED FROM PAGE 2						
P-28	.4027		1698						
	20 minute intervals								
29	.406		1701						
	1 minute interval								
				PLUGGED					

REMARKS:

SPECIAL PRESSURE DATA

11

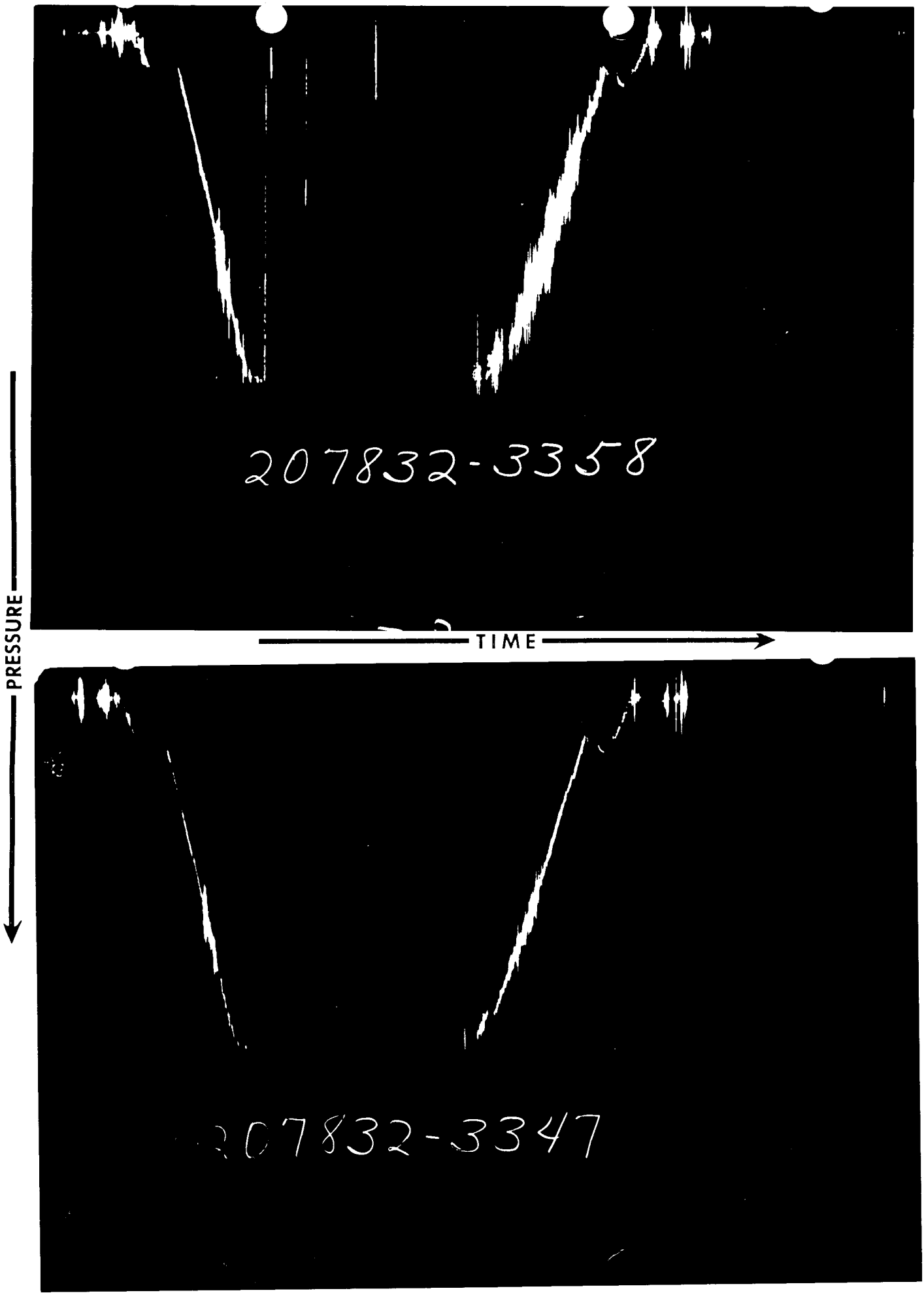
TICKET NO. 336890

	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing				
Reversing Sub	6 1/2"	3"	.92'	
	6 1/8"	2 7/8"	.84' X over	
Water Cushion Valve				
Drill Pipe	4 1/2"	3.826"	11,262.72'	
Drill Collars	7"	2 3/8"	752'	
Handling Sub & Choke Assembly				
Dual CIP ~~Valve~~ Sampler	5"	.87"	6.75'	12,026'
~~Dual CIP Sampler~~ Hydrospring	5"	.75"	5'	12,031'
~~Hydro-Spring Tester~~ Pos. choke	4 7/8"	.50"	.95'	
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	4'	12,034'
Hydraulic Jar	5"	1.75"	5'	
VR Safety Joint	5"	1.00"	3'	
Pressure Equalizing Crossover				
Packer Assembly	7 3/4"	1.53"	5.75'	12,045'
Distributor				
Packer Assembly	7 3/4"	1.53"	5.75'	12,051'
Flush Joint Anchor	5 3/4"	2.87"	20'	
Pressure Equalizing Tube				
	6 1/4"	3 1/4"	.65' X over	
Blanked-Off B.T. Running Case				
Drill Collars	7"	2 3/8"	217'	
Anchor Pipe Safety Joint	5 7/8"	3 1/4"	.67' X over	
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor	5 3/4"	2.87"	15'	
Blanked-Off B.T. Running Case	5 3/4"	2.44"	4'	12,307'
Total Depth	HOWCO TOOLS 78.28			12,310'

FORM 187-R1—PRINTED IN U.S.A.

EQUIPMENT DATA

LITTLE'S 96676 75C 8/74



Each Horizontal Line Equal to 1000 p.s.i.

FLUID SAMPLE DATA

Sampler Pressure 285 P.S.I.G. at Surface

Recovery: Cu. Ft. Gas 1.06
cc. Oil 0
cc. Water 0
cc. Mud 1000
Tot. Liquid cc. 1000

Gravity ____ ° API @ ____ °F.

Gas/Oil Ratio ____ cu. ft./bbl.

		RESISTIVITY		CHLORIDE CONTENT
Recovery Water		@	°F.	ppm
Recovery Mud		@	°F.	6,800 ppm
Recovery Mud Filtrate		@	°F.	ppm
Mud Pit Sample	.80	@ 86	°F.	8,000 ppm
Mud Pit Sample Filtrate	.60	@ 180	°F.	4,700 ppm

Mud Weight 9.1 vis 20 sec

Date 3-25-78 Ticket Number 207832

Kind of Job OPEN HOLE Halliburton District VERNAL

Tester MR. BARNEY Witness ~~MR. CANTRELL~~

Drilling Contractor CIRCLE "A" DRILLING COMPANY BC S

EQUIPMENT & HOLE DATA

Formation Tested Lower Pennsylvania
Elevation 5726' KB Ft.
Net Productive Interval 20' Ft.
All Depths Measured From Kelly Bushing
Total Depth 11223' Ft.
Main Hole/Casing Size 8.75"
Drill Collar Length 565' I.D. 2.25"
Drill Pipe Length 306'WP-10211' I.D 2.764" - 3.826"
Packer Depth(s) 11112' - 11119' Ft.
Depth Tester Valve 11095' Ft.

Cushion TYPE Water AMOUNT 2050' Ft. Depth Back Pres. Valve Surface Choke 1/8" X 1" Bottom Choke .75"

Recovered 150 Feet of Gas cut mud
Recovered Feet of
Recovered Feet of
Recovered Feet of
Recovered Feet of

Mea. From Tester Valve

Remarks SEE PRODUCTION TEST DATA SHEET.

TEMPERATURE	Gauge No. 3358 Depth: 11096' Ft.	Gauge No. 3347 Depth: 11219' Ft.	Gauge No. Depth: Ft.	TIME
Est. °F.	24 Hour Clock Blanked Off No	24 Hour Clock Blanked Off Yes	Hour Clock Blanked Off	Tool Opened 0152 A.M. P.M.
Actual 182 °F.	Pressures	Pressures	Pressures	Opened Bypass 0802 A.M. P.M.

		Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic		5459	5447	5498	5501				
First Period Flow	Initial	512	515	567	568			—	—
	Final	485	488	540	538			10	10
	Closed in	2789	2576	2663	2663			60	60
Second Period Flow	Initial	458	429	540	514			—	—
	Final	458	426	459	473			120	122
	Closed in	4256	4273	4295	4314			180	179
Third Period Flow	Initial							—	—
	Final								
	Closed in								
Final Hydrostatic		5438	5420	5472	5472			—	—

Legal Location Sec. - Twp. - Rng. 31 - 14S - 10E
Lease Name DRUNKARD WASH
Well No. 31-1
Test No. 7
Tested Interval 11119' - 11223'
Field Area WILDCAT
County CARBON
State UTAH
Lease Owner/Company Name AMERICAN QUASAR PETROLEUM COMPANY

FORM 181-R2—PRINTED IN U.S.A.

FORMATION TEST DATA

LITTLE'S 102548 5M 9/76

11

Casing perfs. _____ Bottom choke _____ Surf. temp _____ °F Ticket No. 207832

Gas gravity _____ Oil gravity _____ GOR _____

Spec. gravity _____ Chlorides _____ ppm Res. _____ @ _____ °F

INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED _____

Date Time a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks
1700					On location
					Rig tripping out of hole
2045					Made up tools
2200					Trip in hole
0152					Opened tool, 2" in water bucket
0202					Closed tool, blow increasing to strong,
					12" in water.
0302					Opened tool, blow increasing to 2#
					through 1/8" bubble hose. Flow line to
					pit plugged, blew out with water
0349					Gas to surface
0432	1/8"	2#	4		
0447	"	2#	4		
0455	"	10#	9.4		
0502	"	10#	9.4		Closed tool
0802					Closed hydrospring, tripped out of hole
1210					Reversed out water cushion
1500					Out of hole
1630					End of job

PRODUCTION TEST DATA

AMERICAN QUASAR PETROLEUM COMPANY — 207832

Lease Owner/Company Name — Ticket Number

B.T. 3358 B.T. 3347 B.T. _____

Depth 11096' Depth 11219' Depth _____

INITIAL FLOW

	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
0.	.0000		515	.0000		568			
1.	.0064		501	.0064		546			
2.	.0128		496	.0128		541			
3.	.0192		491	.0192		538			
4.	.0256		488	.0256		538			
5.	.0320		488	.0320		538			
	2 minute intervals								
	10 TOTAL MINUTES								
	INITIAL CLOSED IN PRESSURE								
0.	.0000		488	.0000		538			
1.	.0033		507	.0033		581			
2.	.0067		536	.0066		608			
3.	.0100		561	.0098		630			
4.	.0133		590	.0131		657			
5.	.0167		612	.0164		676			
6.	.0200		631	.0197		700			
7.	.0233		655	.0230		722			
8.	.0267		677	.0263		743			
9.	.0300		698	.0295		762			
10.	.0333		720	.0328		781			
11.	.0400		763	.0394		824			
12.	.0467		803	.0460		868			
13.	.0533		846	.0525		905			
14.	.0600		881	.0591		948			
15.	.0667		919	.0657		986			
16.	.0833		1043	.0821		1113			
17.	.1000		1182	.0985		1255			
18.	.1167		1362	.1149		1438			
19.	.1333		1579	.1313		1664			
20.	.1500		1826	.1477		1901			
21.	.1667		2083	.1642		2158			
22.	.1833		2349	.1806		2417			
23.	.2000		2576	.1970		2663			
	First 10 intervals = 1 minute each; next 5 intervals = 2 minutes each; last 8 intervals = 5 minutes each.								
	60 TOTAL MINUTES								

REMARKS: _____

SPECIAL PRESSURE DATA

11

AMERICAN QUASAR PETROLEUM COMPANY — Lease Owner/Company Name

207832 — Ticket Number

B.T. 3358 B.T. 3347 B.T.

Depth 11096' Depth 11219' Depth

SECOND FLOW

	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
0.	.0000		429	.0000		514			
1.	.0738		437*	.0728		484*			
2.	.1408		415	.1387		462			
3.	.2079		412	.2048		459			
4.	.2749		410	.2709		457			
5.	.3420		418	.3369		465			
6.	.4090		426	.4030		473			
	20 minute intervals			*Interval = 22 minutes					
	122 TOTAL MINUTES								
	SECOND CLOSED IN PRESSURE								
0.	.0000		426	.0000		473			
1.	.0033		687	.0033		678			
2.	.0067		976	.0066		954			
3.	.0100		1201	.0099		1169			
4.	.0133		1442	.0132		1417			
5.	.0166		1622	.0165		1586			
6.	.0199		1764	.0198		1761			
7.	.0232		1971	.0231		1952			
8.	.0265		2136	.0264		2072			
9.	.0299		2259	.0297		2219			
10.	.0332		2424	.0330		2348			
11.	.0398		2664	.0396		2591			
12.	.0465		2883	.0462		2826			
13.	.0531		3093	.0528		3024			
14.	.0597		3256	.0594		3203			
15.	.0664		3403	.0660		3369			
16.	.0830		3656	.0825		3639			
17.	.0996		3813	.0991		3818			
18.	.1161		3915	.1156		3930			
19.	.1327		3987	.1321		4013			
20.	.1493		4040	.1486		4070			
21.	.1659		4075	.1651		4110			
22.	.1825		4102	.1816		4137			
23.	.1991		4126	.1981		4161			
24.	.2323		4155	.2311		4196			
25.	.2655		4179	.2641		4220			
26.	.2987		4201	.2972		4239			
27.	.3318		4214	.3302		4252			
28.	.3982		4235	.3962		4273			
29.	.4646		4251	.4622		4292			
30.	.5309		4265	.5283		4306			
31.	.5940		4273	.5910		4314			

REMARKS: First 10 intervals = 1 minute each; next 5 intervals = 2 minutes each; next 8 intervals = 5 minutes each; next 4 intervals = 10 minutes each; next 3 intervals = 20 minutes each; last interval = 19 minutes

179 TOTAL MINUTES

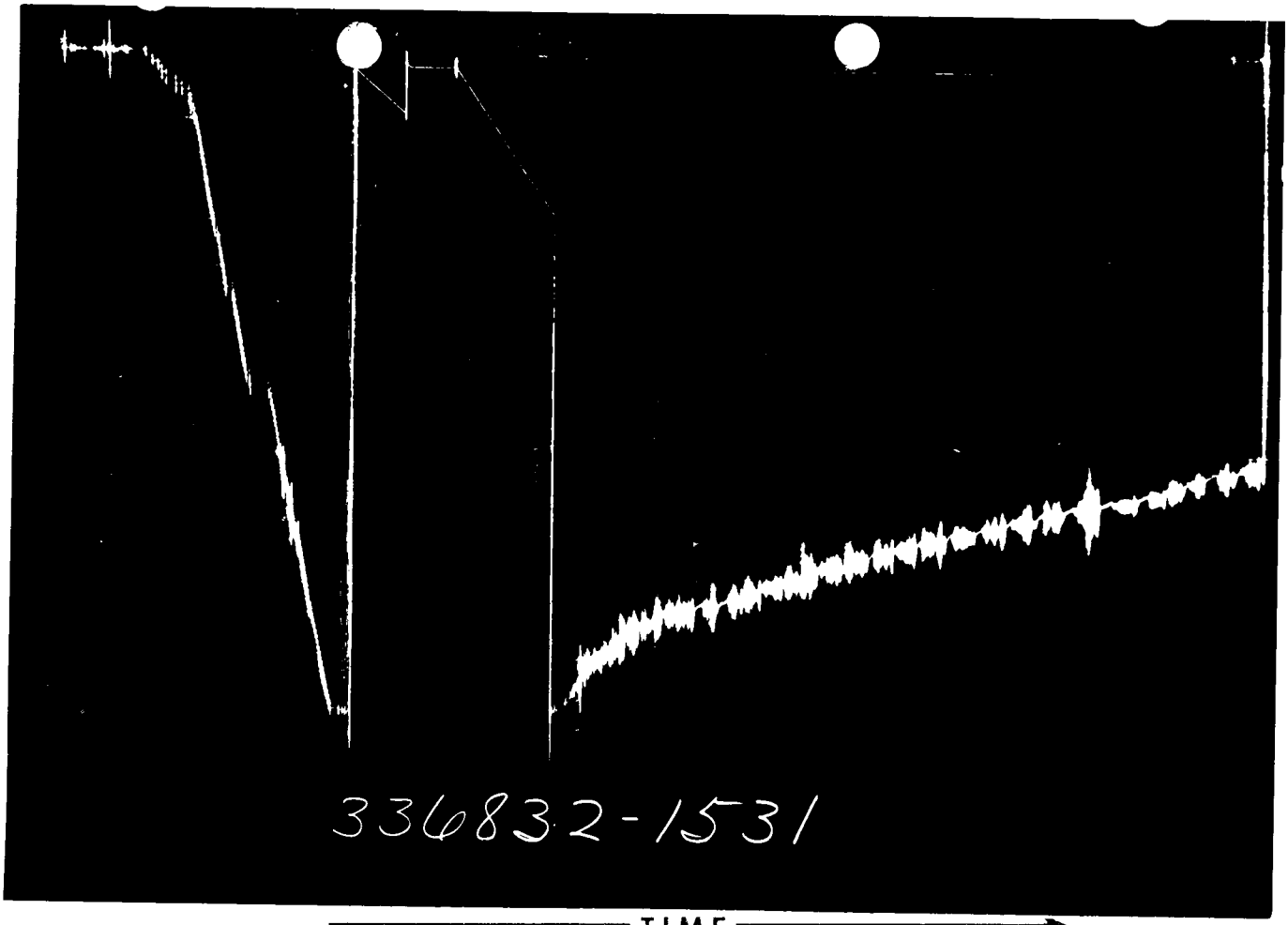
SPECIAL PRESSURE DATA

11

TICKET NO. 207832

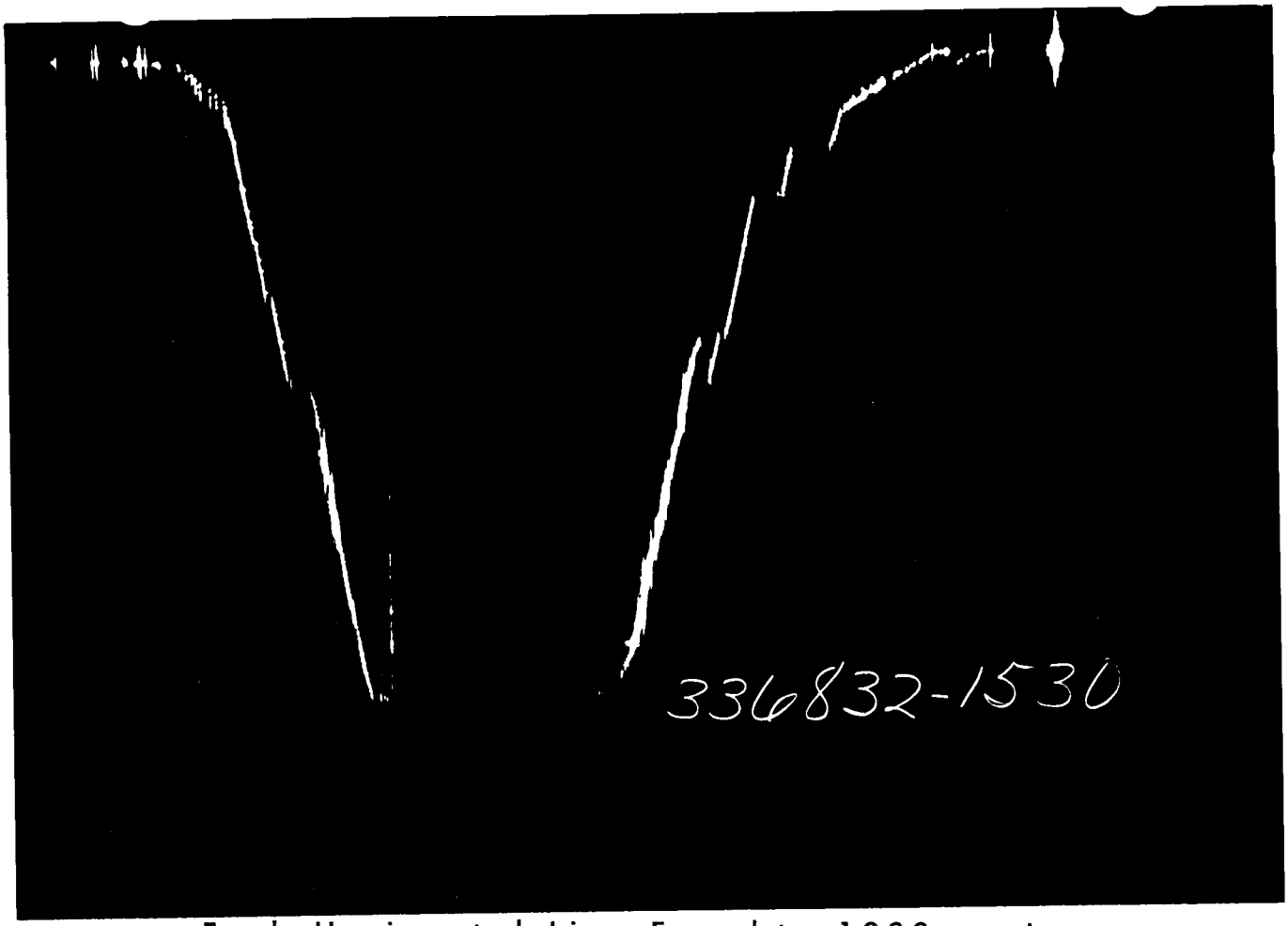
	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing				
Reversing Sub	6.5"	2.75"	.92'	
Water Cushion Valve	4.5" WP	2.764"	306'	
Drill Pipe	4.5"	3.826"	10211'	
Drill Collars	7"	2.25"	565'	
Handling Sub & Choke Assembly				
Dual CIP Valve				
Dual CIP Sampler	5"	.89"	7.61'	11090'
Hydro-Spring Tester	5"	.75"	5'	11095'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	-	4.12'	11096'
Hydraulic Jar	5"	1.75"	5'	
VR Safety Joint	5"	1"	2.50'	
Pressure Equalizing Crossover				
Packer Assembly	7.75"	-	5.80'	11112'
Distributor 3000#	5"	-	2'	
Packer Assembly	7.75"	-	5.80'	11119'
Flush Joint Anchor	5.75"	4.75"	22'	
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars	7"	2.25"	61.50'	
Flush Joint Anchor	5.75"	4.75"	15.50'	
Blanked-Off B.T. Running Case	5.75"	2.50"	4.50'	11219'
Total Depth				11223'

EQUIPMENT DATA



PRESSURE

TIME



Each Horizontal Line Equal to 1000 p.s.i.

FLUID SAMPLE DATA

Sampler Pressure	35 P.S.I.G. at Surface
Recovery: Cu. Ft. Gas	.32
cc. Oil	0
cc. Water	0
cc. Mud	0
Tot. Liquid cc.	0
Gravity	0 ° API @ 0 °F.
Gas/Oil Ratio	0 cu. ft./bbl.

		RESISTIVITY		CHLORIDE CONTENT
Recovery Water	@	°F.		ppm
Recovery Mud	@	°F.	2200	ppm
Recovery Mud Filtrate	@	°F.		ppm
Mud Pit Sample	@	°F.	1500	ppm
Mud Pit Sample Filtrate	@	°F.		ppm

Mud Weight 9.1 vis 49 sec

Date	3-21-78	Ticket Number	336832
Kind of Job	OPEN HOLE	Halliburton District	VERNAL
Tester	MR. BARNEY	Witness	MR. STOCKMAN
Drilling Contractor	CIRCLE "A" DRILLING COMPANY BC		

EQUIPMENT & HOLE DATA

Formation Tested	Mississippian
Elevation	5726' KB Ft.
Net Productive Interval	11032' - 11045' Ft.
All Depths Measured From	Kelly Bushing
Total Depth	11046' Ft.
Main Hole/Casing Size	8 3/4"
Drill Collar Length	630' I.D. 2 3/4"
Drill Pipe Length	10340' I.D. 3.826"
Packer Depth(s)	10998' - 11006' Ft.
Depth Tester Valve	10981' Ft.

Cushion TYPE AMOUNT Ft. Depth Back Pres. Valve Surface Choke 1/8" Bottom Choke .75"

Recovered 250 Feet of Slightly gas cut drilling mud

Recovered Feet of

Recovered Feet of

Recovered Feet of

Recovered Feet of

Remarks SEE PRODUCTION TEST DATA SHEET.

Meas. From Tester Valve

TEMPERATURE	Gauge No. 1531 Depth: 10983' Ft.	Gauge No. 1530 Depth: 11042' Ft.	Gauge No. Depth: Ft.	TIME
	24 Hour Clock	24 Hour Clock	Hour Clock	Tool Opened 1240 A.M. P.M.
Est. °F.	Blanked Off No	Blanked Off Yes	Blanked Off	Opened A.M. Bypass 1650 P.M.
Actual 177 °F.	Pressures	Pressures	Pressures	

		Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic		5389	5386	5412	5402				
First Period	Flow Initial	143	143	146	146			—	—
	Flow Final	143	211	146	146			10	
	Closed in	511	515	523	515			60	
Second Period	Flow Initial	102	117	146	121			—	—
	Flow Final	143	137	146	140			60	
	Closed in	1324	1345	1356	1342			120	
Third Period	Flow Initial							—	—
	Flow Final								
	Closed in								
Final Hydrostatic		5389	5384	5412	5396			—	—

Legal Location Sec. - Twp. - Rng. 31 - 14S - 10E

Lease Name DRUNKARD WASH

Well No. 31-1

Test No. 6

Tested Interval 11006' - 11046'

Field Area WILDCAT

County CARBON

State UTAH

Lease Owner/Company Name AMERICAN QUASAR PETROLEUM COMPANY

FORM 181-R2—PRINTED IN U.S.A.

FORMATION TEST DATA

LITTLE'S 102548 3M 9/76

11

Casing perfs.____ Bottom choke____ Surf. temp____ °F Ticket No. 336832
Gas gravity____ Oil gravity____ GOR____
Spec. gravity____ Chlorides____ ppm Res.____ @ ____ °F
INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED____

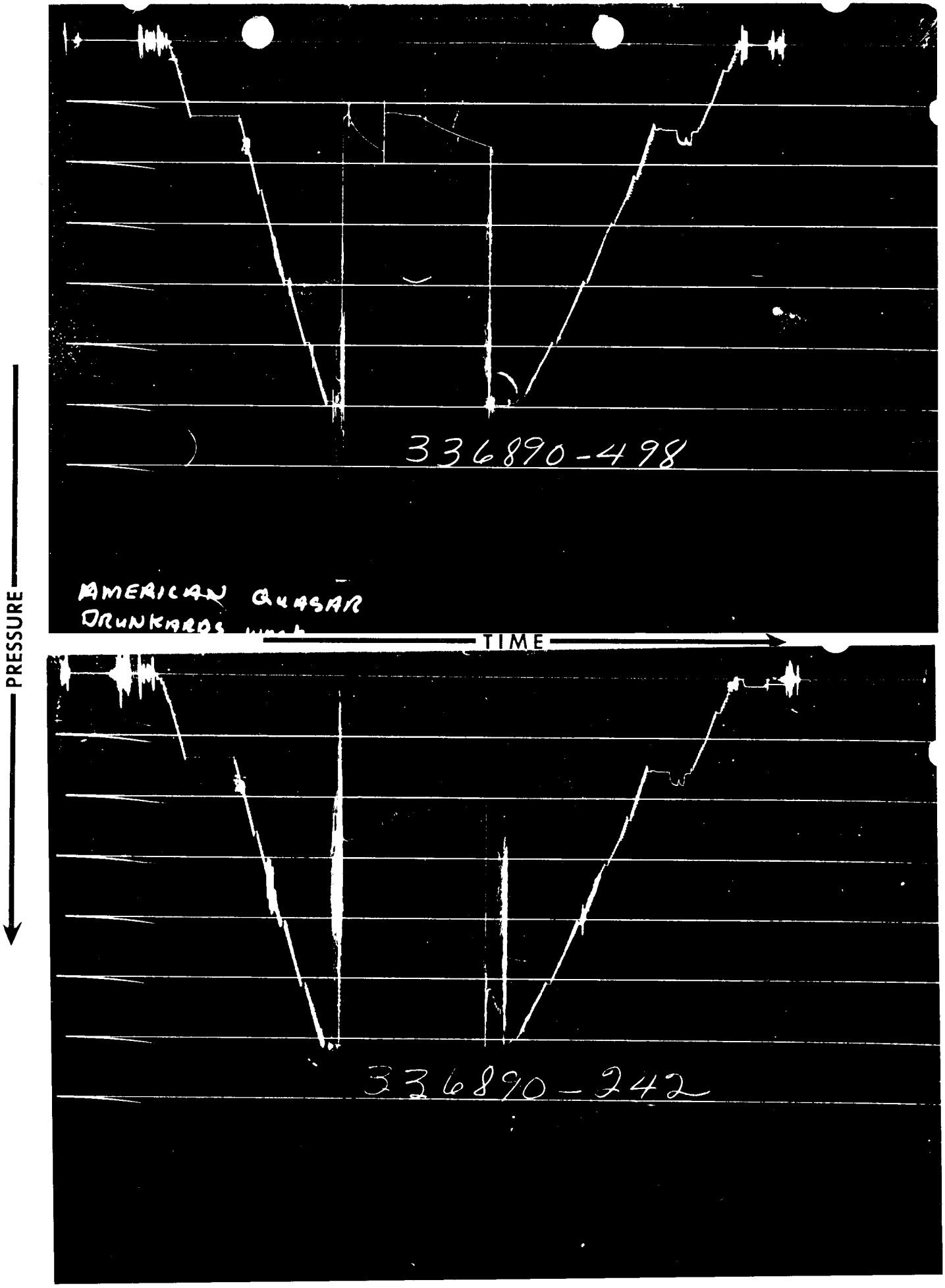
Date 3-21-78 Time a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks
0600					On location
0700					Picked up tools
0900					Started in hole
1240					Tool opened, 2" blow in water
1245					7½" blow in water
1248					To bottom of bucket, 10" blow in water
1250					Closed tool
1350					Opened tool, 3" blow in water
1355					10" blow in water
1445					10" blow in water, to bottom of bucket
					No gas to surface
1450					Closed tool
1650					Started out of hole
2130					Reversed out drill pipe
2145					Started to magnaflux drill collars
3-22-78 0300					Out of hole, loaded tools
0500					Job completed

PRODUCTION TEST DATA

TICKET NO. 336832

	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing				
Reversing Sub	5½"	1½"	.91'	
Water Cushion Valve				
Drill Pipe	4½"	3.826"	10340'	
Drill Collars	7"	2 3/4"	630'	
Handling Sub & Choke Assembly				
~~Dual CIP Valve~~ 4½" FH X 4½" IF	4 7/8"	1.75"	.68'	
Dual CIP Sampler	5"	.87"	6.75'	10976'
Hydro-Spring Tester	5"	.75"	5'	10981'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	4'	10983'
Hydraulic Jar Big John	5"	1.75"	5'	
VR Safety Joint	5"	1"	3'	
Pressure Equalizing Crossover				
Packer Assembly				
Distributor				
Packer Assembly				
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly	7 3/4"	1.53"	5.75'	10998'
Distributor	5"	1.68"	2'	
Packer Assembly	7 3/4"	1.53"	5.75'	11006'
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor	5 3/4"	2.78"	34'	
Blanked-Off B.T. Running Case	5 3/4"	2.50"	4'	11042'
Total Depth				11046'

EQUIPMENT DATA



Each Horizontal Line Equal to 1000 p.s.i.

FLUID SAMPLE DATA

Sampler Pressure 120 P.S.I.G. at Surface

Recovery: Cu. Ft. Gas .8048

cc. Oil

cc. Water

cc. Mud

Tot. Liquid cc.

Gravity ____ ° API @ ____ °F.

Gas/Oil Ratio ____ cu. ft./bbl.

	RESISTIVITY			CHLORIDE CONTENT
Recovery Water	Too low to check	@	°F.	ppm
Recovery Mud		@	°F.	100 ppm
Recovery Mud Filtrate		@	°F.	ppm
Mud Pit Sample		@	°F.	100 ppm
Mud Pit Sample Filtrate		@	°F.	100 ppm

Mud Weight 9.3 vis 55 sec

Date 1-23-78 Ticket Number 336828

Kind of Job OPEN HOLE Halliburton District VERNAL

Tester MR. BARNEY Witness MR. STOCKMAN

Drilling Contractor CIRCLE "A" DRILLING COMAPNY SM

EQUIPMENT & HOLE DATA

Formation Tested Kiabab

Elevation 5727' Kelly bushing Ft.

Net Productive Interval 9' Ft.

All Depths Measured From Kelly bushing

Total Depth 8343' Ft.

Main Hole/Casing Size 8 3/4"

Drill Collar Length 836' I.D. 2.5"

Drill Pipe Length 7283-335' WP I.D. 3.826"-2.764" WP

Packer Depth(s) 8246-8254' Ft.

Depth Tester Valve 8221' Ft.

Cushion TYPE AMOUNT Ft. Depth Back Pres. Valve Surface Choke 1/8" Bottom Choke .75"

Recovered 140 Feet of drilling mud (possible trace of H_2S)

Recovered Feet of

Recovered Feet of

Recovered Feet of

Recovered Feet of

Remarks SEE PRODUCTION TEST DATA SHEET...TIGHT HOLE.

Meas. From Tester Valve

TEMPERATURE	Gauge No. 1531 Depth: 8231 Ft.	Gauge No. 1530 Depth: 8340 Ft.	Gauge No. Depth: Ft.	TIME
	24 Hour Clock	24 Hour Clock	Hour Clock	Tool Opened 0843 A.M. P.M.
Est. 150 °F.	Blanked Off no	Blanked Off yes	Blanked Off	Opened A.M.
Actual °F.	Pressures	Pressures	Pressures	Bypass 1454 P.M.

		Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic		4002	4008	4047	4027				
First Period	Flow Initial	61	84	83	142			—	—
	Flow Final	81	84	104	103			10	10
	Closed in	1102	1082	1107	1082			60	60
Second Period	Flow Initial	61	61	62	90			—	—
	Flow Final	102	88	104	111			120	119
	Closed in	2209	2216	-	2230			181	182
Third Period	Flow Initial							—	—
	Flow Final								
	Closed in								
Final Hydrostatic		3981	4008	4027	4027			—	—

Legal Location Sec. - Twp. - Rng. 31, 14S 10 E

Lease Name DRUNKARD WASH

Well No. 31-1

Test No. 5

Tested Interval 8254 - 8343'

Field Area WILDCAT

County CARBON

State UTAH

Lease Owner/Company Name AMERICAN QUASAR PETROLEUM COMPANY

FORM 181-R2—PRINTED IN U.S.A.

FORMATION TEST DATA

LITTLE'S 102548 5M 9/76

Casing perfs. _____ Bottom choke _____ Surf. temp _____ °F Ticket No. 336828

Gas gravity _____ Oil gravity _____ GOR _____

Spec. gravity _____ Chlorides _____ ppm Res. _____ @ _____ °F

INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED _____

Date Time a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks
0030 1-23-78					On location, came out of the hole.
0400					Started to pick up tools
0843					Tool opened, bottom of bucket in
					30 seconds, 18" of water, steady blow.
0853					Closed tool and blow decreased but
					did not stop.
0953					Reopened tool, blow to bottom of
					bucket in 30 seconds, 18" of water
1010	1/8"	2			Gauge on bubble hose
1014					Opened well to flow line and orifice
					tester
1020	1/8"	5½	6.72		
1030	"	5½	6.72		
1040	"	5½	6.72		
1050	"	5½	6.72		
1100	"	5½	6.72		
1110	"	6	7.06		
1120	"	6	7.06		
1127					Ran small amount of gas thru
					bubble hose to logger for sample
1140	1/8"	6	7.06		
1145					Caught gas sample at bubble hose
1153					Closed tool-gas to the surface for 2 hrs. and 45 minutes of CIP period.
1454					Opened bypass & started out of hole
1800					Out of hole, gas appears to be CO^2
					with 2000 ppm C_1

FORM 182-R1—PRINTED IN U.S.A.

PRODUCTION TEST DATA

LITTLE'S 96672 5M 8/74

AMERICAN QUASAR PETROLEUM COMPANY
Lease Owner/Company Name

336828
Ticket Number

B.T. 1531 B.T. 1530 B.T.

Depth 8231' Depth 8340' Depth

	24 Hour clock			24 Hour clock					
	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
	FIRST FLOW PERIOD			FIRST FLOW PERIOD					
0	.0000		84	.0000		142			
1	.0072		65	.0064		92			
2	.0144		74	.0128		92			
3	.0216		80	.0192		100			
4	.0288		82	.0256		103			
5	.0360		84	.0320		103			
	2 minute intervals			2 minute intervals					
	FIRST CIP PERIOD			FIRST CIP PERIOD					
0	.0000		84	.0000		103			
1	.0033		182	.0033		134			
2	.0066		205	.0067		159			
3	.0098		231	.0101		192			
4	.0131		251	.0135		213			
5	.0164		276	.0168		236			
6	.0197		299	.0202		264			
7	.0230		317	.0236		284			
8	.0263		337	.0269		303			
9	.0295		358	.0303		326			
10	.0328		376	.0337		345			
	1 minute intervals			1 minute intervals					
11	.0394		409	.0404		387			
12	.0460		444	.0471		425			
13	.0525		479	.0539		458			
14	.0591		511	.0606		490			
15	.0657		538	.0673		525			
	2 minute intervals			2 minute intervals					
16	.0821		618	.0842		607			
17	.0985		693	.1010		678			
18	.1149		768	.1178		751			
19	.1313		847	.1347		826			
20	.1477		918	.1515		895			
21	.1642		984	.1684		962			
22	.1806		1044	.1852		1025			
23	.1970		1082	.2020		1082			
	5 minute intervals			5 minute intervals					
	SECOND FLOW PERIOD			SECOND FLOW PERIOD					
0	.0000		61	.0000		90			
1	.0634*		90	.0636*		111			
2	.1301		90	.1304		111			
3	.1968		90	.1973		111			
4	.2636		90	.2642		113			
	(Cont. on page 2)			(Cont on page 2)					

REMARKS:

*First interval is equal to 19 minutes

SPECIAL PRESSURE DATA

AMERICAN QUASAR PETROLEUM COMPANY
Lease Owner/Company Name

336828 Page 2
Ticket Number

B.T. 1531 B.T. 1530 B.T. _____

Depth 8231' Depth 8340' Depth _____

	24 Hour clock			24 Hour clock					
	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
	SECOND FLOW (CONT.)			SECOND FLOW (CONT.)					
P-5	.3303		88	.3311		113			
6	.3970		88	.3980		111			
	20 minute intervals			20 minute intervals					
	SECOND CIP PERIOD			SECOND CIP PERIOD					
0	.0000		88	.0000		111			
1	.0033		235	.0033		151			
2	.0066		264	.0067		182			
3	.0099		301	.0101		222			
4	.0131		335	.0134		251			
5	.0164		362	.0168		289			
6	.0197		393	.0201		324			
7	.0230		415	.0235		356			
8	.0263		448	.0269		383			
9	.0296		474	.0302		416			
10	.0329		497	.0336		444			
	1 minute intervals			1 minute intervals					
11	.0394		546	.0403		502			
12	.0460		599	.0470		556			
13	.0526		650	.0537		611			
14	.0591		699	.0604		657			
15	.0657		744	.0671		705			
	2 minute intervals			2 minute intervals					
16	.0821		851	.0839		820			
17	.0986		953	.1007		927			
18	.1150		1044	.1175		1019			
19	.1314		1129	.1343		1106			
20	.1479		1203	.1511		1184			
21	.1643		1274	.1679		1259			
22	.1807		1334	.1845		1319			
23	.1971		1390	.2014		1379			
	5 minute intervals			5 minute intervals					
24	.2300		1501	.2350		1484			
25	.2629		1594	.2686		1580			
26	.2957		1670	.3021		1665			
27	.3286		1744	.3357		1741			
	10 minute intervals			10 minute intervals					
28	.3943		1877	.4029		1880			
29	.4600		1993	.4700		2004			
30	.5257		2105	.5371		2116			
31	.5914		2212	.6043		2219			
	20 minute intervals			20 minute intervals					
32	.5980		2216	.6110		2230			
	2 minute interval			2 minute interval					

REMARKS:

SPECIAL PRESSURE DATA

TICKET NO. 336828 TIGHT HOLE

	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing	4½"	3.826"	7382'	
Reversing Sub				
Water Cushion Valve				
Drill Pipe Weight Pipe	4½"	2.774"	335'	
Drill Collars	7"	2.5"	836'	
Handling Sub & Choke Assembly				
Dual CIP Valve				
Dual CIP Sampler	5"	.87"	6.75'	8224'
Hydro-Spring Tester	5"	.75"	5'	8221'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	4'	8231'
Hydraulic Jar	5"	1.75"	5'	
VR Safety Joint	5"	1"	3'	
Pressure Equalizing Crossover				
Packer Assembly	7 3/4"	1.53"	5.75'	8246'
Distributor	5"	1.68"	2'	
Packer Assembly	7 3/4"	1.53"	5.75'	8254'
Flush Joint Anchor	5 3/4"	2.50"	10'	
Pressure Equalizing Tube				
4½" FH x 4½" IF Blanked-Off B.T. Running Case	5 3/4"	2 3/4"	.65'	
Drill Collars	7"	2½"	62'	
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
4½" IF x 4½" FH	5 3/4"	2 7/8"	.69'	
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor	5 3/4"	2.50"	10'	
Blanked-Off B.T. Running Case	5 3/4"	2.50"	4'	8340'
Total Depth				8343'

FORM 187-R1—PRINTED IN U.S.A.

EQUIPMENT DATA

LITTLE'S 96676 75C 8/74

JOHNSTON

Schlumberger

technical report

RECEIVED
DEC 5 1977

COMPANY AMERICAN QUASAR PETROLEUM COMPANY WELL DRUNKARD WASH #31-1 TEST NO. 1 COUNTY CARBON STATE UTAH

F. R. #09524 D

JOHNSTON
Schlumberger

SURFACE INFORMATION

Description (Rate of Flow)	Time	Pressure (P.S.I.G.)	Surface Choke
Opened Tool	1125	-	1/8"
STRONG BLOW			
BLOW OFF BOTTOM OF BUCKET			
IMMEDIATELY			
CLOSED FOR INITIAL SHUT-IN	1135	-	"
BLOW OFF BOTTOM OF BUCKET			
FINISHED SHUT-IN	1150	-	"
RE-OPENED TOOL	1157	-	"
CLOSED FOR SECOND SHUT-IN	1200	-	"
FINISHED SHUT-IN	1300	-	"
RE-OPENED TOOL	1305	-	"
BLOW, 7" IN WATER			
BLOW OFF BOTTOM OF BUCKET	1308		
(WEAK)			
GAS TO SURFACE	1309	-	"
SWITCH TO ORIFICE TESTER	1313	-	"
NOT ENOUGH TO MEASURE	1320	-	"
NOT ENOUGH TO MEASURE BUT	1340	-	"
SLACKING OFF IN FLOW			
NOT ENOUGH TO MEASURE	1355	-	"
CLOSED FOR FINAL SHUT-IN	1355	-	"
FINISHED SHUT-IN	1555	-	"
PULLED PACKER LOOSE	1556	-	-

Cushion Type	Amount	Pressure	Bottom Choke
	-		Size 15/16"

MUD DATA

Mud Type: DISPERSED Wt.: 9.2
Viscosity: 52 Water Loss: 7.0 C.C.
Resist: of Mud 2.6 @ 60 °F; of Filtrate 2.1 @ 60 °F
Chloride Content: 400 PPM

EQUIPMENT & HOLE DATA

Type Test: M.F.E. OPEN HOLE
Formation Tested: FERRON
Elevation: 5730 K.B. Ft.
Net Productive Interval: - Ft.
Estimated Porosity: - %
All Depths Measured From: KELLY BUSHING
Total Depth: 1709 Ft.
Main Hole/Casing Size: 12¼"
Rat Hole/Liner Size: -
Drill Collar Length: 367' I.D. 2.4"
Drill Pipe Length: 1194' I.D. 3.5"
Packer Depth(s): 1598 & 1602 Ft.

MULTI-FLOW EVALUATOR FLUID SAMPLE DATA

Sampler Pressure: 540 P.S.I.G. at Surface
Recovery: Cu. Ft. Gas: .71
cc. Oil: -
cc. Water: 2100
cc. Mud: -
Tot. Liquid cc.: 2100
Gravity: - °API @ - °F.
Gas/Oil Ratio: - cu. ft./bbl.

	RESISTIVITY	CHLORIDE CONTENT
Recovery Water	1.8 @ 64 °F.	2,600 ppm
Recovery Mud	- @ - °F.	
Recovery Mud Filtrate	- @ - °F.	- ppm
Mud Pit Sample	2.6 @ 60 °F.	
Mud Pit Sample Filtrate	2.1 @ 60 °F.	400 ppm

RECOVERY DESCRIPTION	FEET	BARRELS	% OIL	% WATER	% OTHERS	API GRAVITY	RESISTIVITY	CHL. PPM
SLIGHTLY MUD CUT SALTY WATER	1612	16.94				@ °F.	1.8 @ 64 °F.	2,600
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	

Remarks:

Address: SUITE 330; PACIFIC WESTERN LIFE BUILDING; CASPER, WYOMING 82601

Company: AMERICAN QUASAR PETROLEUM COMPANY Field: WILD CAT
Well: DRUNKARD WASH #31-1 Location: SEC. 31, T-14S, R-10E
Test Interval: 1602' TO 1709' Test #: 1 Date: 11-16-77

County: CARBON State: UTAH
Technician: WHEELER (ROCK SPRINGS) Test Approved By: MR. C.W. STOCKMAN

Field Report No.: 09524 D
No. Reports Requested: 12 (6x)

JOHNSTON
Schlumberger

PAGE NO. 2

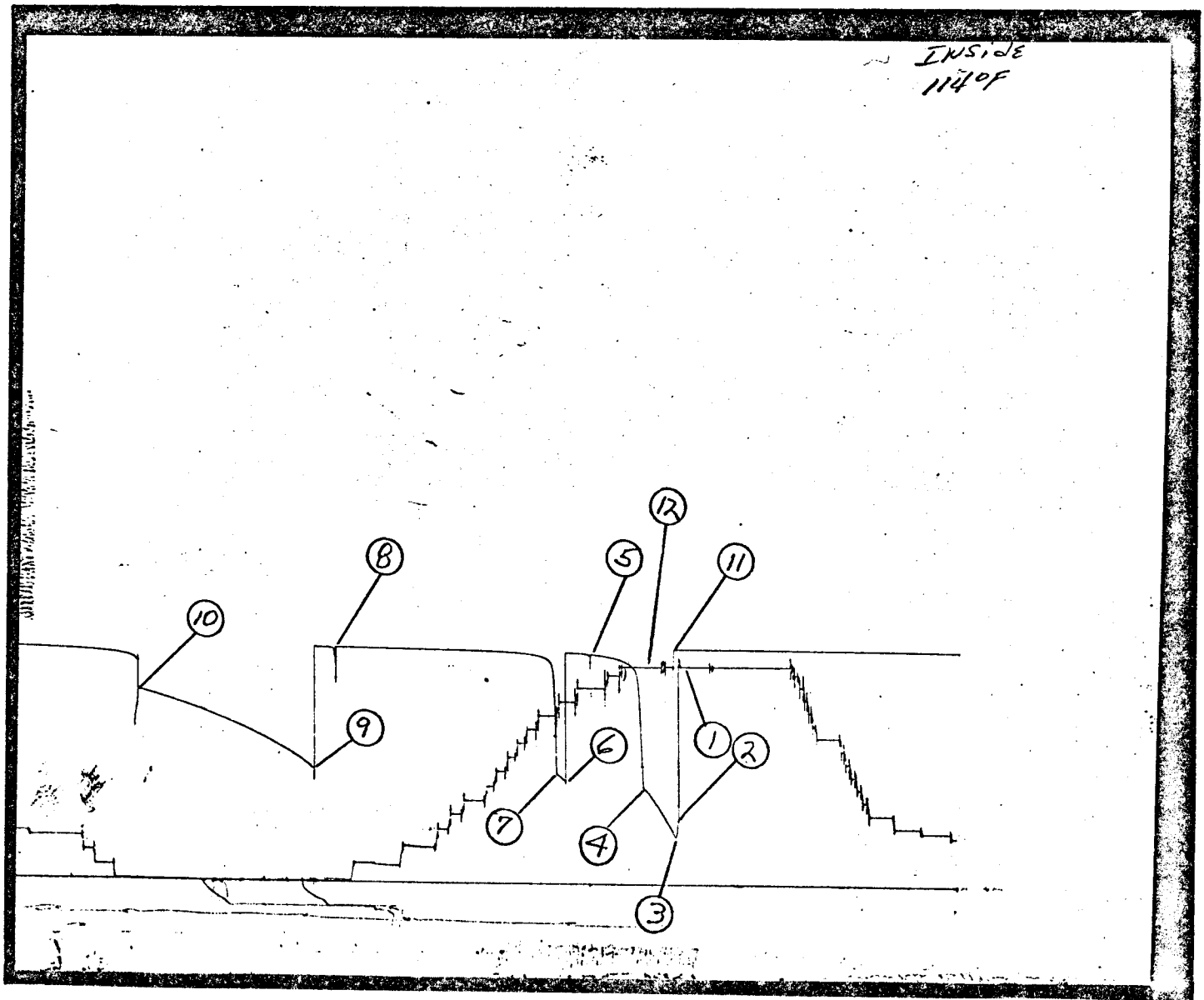
FIELD REPORT NO.: 09524 D

INSTRUMENT NO.: J-401

CAPACITY: 2800#

NO. OF REPORTS: 12+

PRESSURE DATA FROM THIS CHART IS PRESENTED ON NEXT PAGE



BOTTOM HOLE PRESSURE AND TIME . TA

JOHNSTON Schlumberger

INSTRUMENT NO.: J-401 CAPACITY(P.S.I.): 2800 DEPTH: 1604 FT.

PORT OPENING: INSIDE BOTTOM HOLE TEMP.: 114 PAGE 1 OF 2

DESCRIPTION	LABELED POINTS	PRESSURE (P.S.I.)	GIVEN TIME	COMPUTED TIME
INITIAL HYDROSTATIC MUD	1	755.5		
INITIAL FLOW(1)	2	228.7		
INITIAL FLOW(2)	4	332.4	10	10
INITIAL SHUT-IN	5	794.7	15	15
SECOND FLOW(1)	6	355.3		
SECOND FLOW(2)	7	377.8	3	3
SECOND SHUT-IN	8	813.2	60	62
FINAL FLOW(1)	9	392.3		
FINAL FLOW(2)	10	664.7	50	50
FINAL SHUT-IN	11	815.4	120	117
FINAL HYDROSTATIC MUD	12	753.8		

INCREMENTAL READINGS

LABEL POINT	DELTA TIME	PRESSURE (P.S.I.)	T + DT/DT	LOG	PW - PF (P.S.I.)	COMMENTS
1		755.5				HYDROSTATIC MUD
2	0	228.7				INITIAL FLOW(1)
3	1	164.2				FLOW POINT
	5	252.8				
4	10	332.4				INITIAL FLOW(2)
4	0	332.4				STARTED SHUT-IN
	2	700.0	6.000	0.778	367.6	
	4	757.7	3.500	0.544	425.3	
	6	772.3	2.667	0.426	439.9	
	8	780.7	2.250	0.352	448.3	
	10	785.7	2.000	0.301	453.4	
	12	789.7	1.833	0.263	457.3	
	14	793.0	1.714	0.234	460.6	
5	15	794.7	1.667	0.222	462.3	INITIAL SHUT-IN
6	0	355.3				SECOND FLOW(1)
7	3	377.8				SECOND FLOW(2)
7	0	377.8				STARTED SHUT-IN
	5	787.4	3.600	0.556	409.7	
	10	797.5	2.300	0.362	419.7	
	15	802.0	1.867	0.271	424.2	
	20	804.2	1.650	0.217	426.5	
	25	806.5	1.520	0.182	428.7	
	30	808.1	1.433	0.156	430.4	
	35	809.3	1.371	0.137	431.5	
	40	809.8	1.325	0.122	432.1	
	45	811.0	1.289	0.110	433.2	
	50	811.5	1.260	0.100	433.7	
	55	812.1	1.236	0.092	434.3	
	60	812.6	1.217	0.085	434.9	
8	62	813.2	1.210	0.083	435.4	SECOND SHUT-IN
9	0	392.3				FINAL FLOW(1)
	5	435.5				

LABEL POINT	DELTA TIME	PRESSURE (P.S.I.)	T + DT/DT	LOG	PW - PF (P.S.I.)	COMMENTS
	10	471.9				
	15	505.5				
	20	535.2				
	25	561.6				
	30	586.2				
	35	608.6				
	40	629.4				
	45	648.4				
10	50	664.7				FINAL FLOW(2)
10	0	664.7				STARTED SHUT-IN
	1	770.6	64.000	1.806	105.9	
	2	778.4	32.500	1.512	113.8	
	3	782.9	22.000	1.342	118.2	
	4	785.7	16.750	1.224	121.0	
	5	788.5	13.600	1.134	123.8	
	6	790.2	11.500	1.061	125.5	
	7	792.5	10.000	1.000	127.8	
	8	793.6	8.875	0.948	128.9	
	9	794.7	8.000	0.903	130.0	
	10	795.8	7.300	0.863	131.1	
	12	798.1	6.250	0.796	133.4	
	14	799.7	5.500	0.740	135.1	
	16	800.9	4.937	0.694	136.2	
	18	802.0	4.500	0.653	137.3	
	20	803.1	4.150	0.618	138.4	
	22	804.2	3.864	0.587	139.5	
	24	804.8	3.625	0.559	140.1	
	26	805.3	3.423	0.534	140.7	
	28	806.5	3.250	0.512	141.8	
	30	807.0	3.100	0.491	142.3	
	35	808.1	2.800	0.447	143.5	
	40	808.7	2.575	0.411	144.0	
	45	809.8	2.400	0.380	145.1	
	50	811.0	2.260	0.354	146.3	
	55	811.5	2.145	0.332	146.8	
	60	812.1	2.050	0.312	147.4	
	65	812.6	1.969	0.294	147.9	
	70	813.2	1.900	0.279	148.5	
	75	813.8	1.840	0.265	149.1	
	80	814.3	1.787	0.252	149.6	
	85	814.3	1.741	0.241	149.6	
	90	814.3	1.700	0.230	149.6	
	95	814.9	1.663	0.221	150.2	
	100	814.9	1.630	0.212	150.2	
	105	815.4	1.600	0.204	150.7	
	110	815.4	1.573	0.197	150.7	
	115	815.4	1.548	0.190	150.7	
11	117	815.4	1.538	0.187	150.7	FINAL SHUT-IN
12		753.8				HYDROSTATIC MUD

JOHNSTON

P.O. BOX 36369 • HOUSTON, TEXAS

CONFIRMATION OF TECHNICAL REPORT DISTRIBUTION

CUSTOMER AMERICAN QUASAR PETROLEUM COMPANY **FIELD REPORT NO.** 09524 D **DATE** 11-16-77

COMPANY SAME AS ABOVE **LEASE** DRUNKARD WASH **WELL NO.** 31-1

COUNTY CARBON **STATE** UTAH **FIELD** WILD CAT

JOHNSTON TESTERS HAS BEEN REQUESTED TO FURNISH THE FOLLOWING COMPANIES WITH TECHNICAL REPORTS. THIS DISTRIBUTION OF TECHNICAL REPORTS WILL BE USED FOR: ☒ **ALL TESTS ON THIS WELL,** ☐ **THIS ONE TEST ONLY, UNLESS OTHERWISE NOTIFIED.**

1 **TECHNICAL REPORT (S)**
AMERICAN QUASAR PETROLEUM COMPANY
707 UNITED BANK TOWER
1700 BROADWAY
DENVER, COLORADO 80290
ATTN: CLARE GREGG

1 **TECHNICAL REPORT (S)**
AMERICAN QUASAR PETROLEUM COMPANY
1000 MIDLAND NATIONAL BANK BUILDING
MIDLAND, TEXAS 79701
ATTN: HERB WARE

3 **TECHNICAL REPORT (S)**
AMERICAN QUASAR PETROLEUM COMPANY
2500 FORT WORTH NATIONAL BANK BLDG.
FORT WORTH, TEXAS 76102
ATTN: MR. BILL BOGERT

2 **TECHNICAL REPORT (S)**
DEVON CORPORATION
ONE PARK CENTRAL; SUITE 405
1515 ARAPAHOE STREET
DENVER, COLORADO 80202
ATTN: BILL MOORE

2 **TECHNICAL REPORT (S)**
U.S.G.S.
8426 FEDERAL BUILDING
125 S. STATE STREET
SALT LAKE CITY, UTAH 84111

2 **TECHNICAL REPORT (S)**
STATE OF UTAH
DIVISION OF OIL, GAS, AND MINING
1588 WEST NORTH TEMPLE
SALT LAKE CITY, UTAH 84116

1 **TECHNICAL REPORT (S)**
MR. JIMMY HARRINGTON
CAWLEY, HARRINGTON, & GILLESPIE
302 FORT WORTH CLUB BUILDING
FORT WORTH, TEXAS 76102

_____ **TECHNICAL REPORT (S)**

_____ **TECHNICAL REPORT (S)**

_____ **TECHNICAL REPORT (S)**

It is our pleasure to be of service.

JOHNSTON

NOV 1977

CONFIDENTIAL

JOHNSTON

P.O. BOX 36369 • HOUSTON, TEXAS

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TECHNICAL REPORT (S)

It is our pleasure to be of service.

JOHNSTON

RECEIVED DEC 5 1977

JOHNSTON Schlumberger

BOTTOM HOLE PRESSURE AND TIME DATA

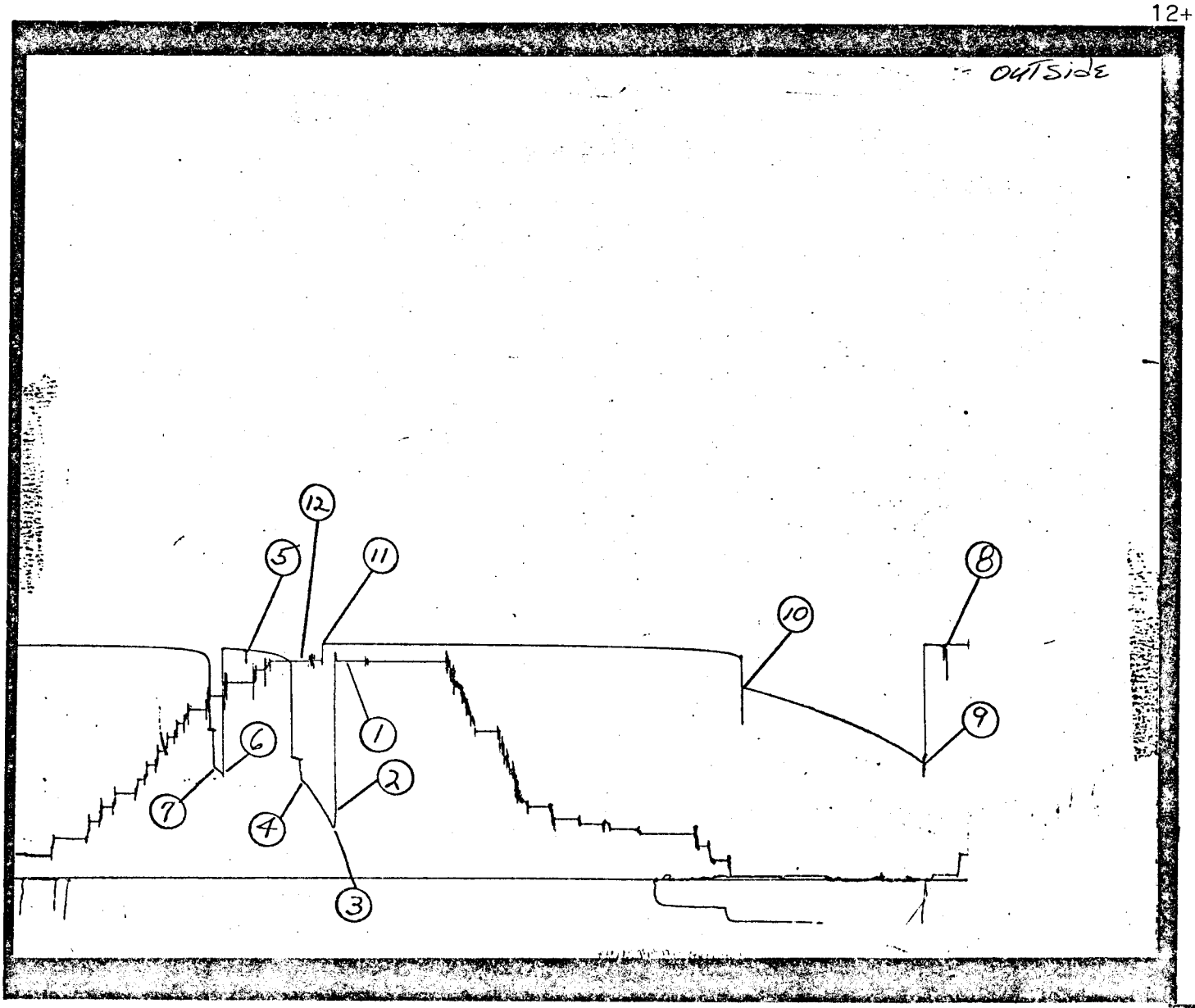
INSTRUMENT NO.: J-452 CAPACITY (P.S.I.): 2800# DEPTH 1615 FT.

PORT OPENING: OUTSIDE BOTTOM HOLE TEMP.: 114°F. FIELD REPORT NO. 09524 D

DESCRIPTION	LABELED POINTS	PRESSURE (P.S.I.)	GIVEN TIME	COMPUTED TIME
INITIAL HYDROSTATIC MUD	1	769.8		
INITIAL FLOW (1)	2	241.5		
INITIAL FLOW (2)	4	345.2	10	10
INITIAL SHUT-IN	5	808.2	15	15
SECOND FLOW (1)	6	369.5		
SECOND FLOW (2)	7	390.3	3	3
SECOND SHUT-IN	8	826.2	60	62
FINAL FLOW (1)	9	405.0		
FINAL FLOW (2)	10	674.5	50	50
FINAL SHUT-IN	11	830.7	120	117
FINAL HYDROSTATIC MUD	12	768.1		
	3	177.2		

REMARKS:

12+



Form DOGC-4

STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL & GAS CONSERVATION

1588 WEST NORTH TEMPLE
SALT LAKE CITY, UTAH 84116
328-5771

State Lease No.
Federal Lease No.
Indian Lease No.
Fee & Pat. X

REPORT OF OPERATIONS AND WELL STATUS REPORT

STATE Utah COUNTY Carbon ~~FIELD~~/LEASE Drunkard's Wash

The following is a correct report of operations and production (including drilling and producing wells) for the month of: November, 1977.

Agent's Address 707 United Bank Tower
1700 Broadway
Denver, Colorado 80290
Phone No. 303/861-8437

Company American Quasar Petroleum Co. of New Mexico
Signed A. H. Hurley Jr (ld)
Title Division Operations Manager

Sec. and ¼ of ¼	Twp.	Range	Well No.	Days Produced	Barrels of Oil	Gravity	Cu. Ft. of Gas (In thousands)	Gallons of Gasoline Recovered	Barrels of Water (if none, so state)	REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas)
DRUNKARD"S WASH										
Sec 31 SE SW	14S	10E	31-1	0	0		0	0	0	Spudded 10-31-77 Ran & cmtd 13 3/8" surface csg CS 615' DST #1 1602-1709' DST #2 2419-2436' Drlg @ 3696'

Gas Sold
Flared/Vented
Used on/off Lease

NOTE: There were _____ runs or sales of oil; _____ M. cu. ft. of gas sold; _____ runs or sales of gasoline during the month.

DRILLING/PRODUCING WELLS: This report must be filed on or before the sixteenth day of the succeeding month following production for each well. Where a well is temporarily shut-in, a negative report must be filed. *THIS REPORT MUST BE FILED IN DUPLICATE.*

LYNES, INC.

Distribution of Final Reports

Operator American Quasar Petroleum Co. Well Name and No. Drunkard's Wash #31-1

Original: American Quasar Petroleum Co., 204 Superior Bldg., Casper, Wyoming 82601 Attn: John Sindelar

1 copy: American Quasar Petroleum Co., 707 United Bank Tower, 1700 Broadway, Denver, Colorado 80290 Attn: Clare Gregg

3 copies: American Quasar Petroleum Co., 2500 Fort Worth National Bank Bldg., Fort Worth, Texas 76102

2 copies: Devon Corporation, 400 Market Center Bldg., 1624 Market St., Denver, Colorado 80202 Attn: Jim Robinson

1 copy: American Quasar Petroleum Co., 1000 Midland National Bank Bldg., Midland, Texas 79701 Attn: Herb Ware

2 copies: Utah Oil & Gas Comm., 1588 West North Temple, Salt Lake City, Utah 84116

Form 6

CIRCULATE TO:

DIREC
PETRO NGINEER ☒
MINE CO NATOR ☐
ADMINIS VE ASSISTANT ☒
ALL ☐

RETURN TO Kathy Wells
FOR FILING

November 8, 1977

Memo To File:

Re: American Quasar Petroleum Company
Drunkards Wash #31-1
Sec. 31, T. 14S, R. 10E,
Carbon County, Utah

CONFIDENTIAL

American Quasar notified this office on above date, that they have spudded the Drunkards Wash #1 well on November 3, 1977.

PATRICK L. DRISCOLL
CHIEF PETROLEUM ENGINEER

PLD/ko

JOHNSTON

PRESSURE LOG*

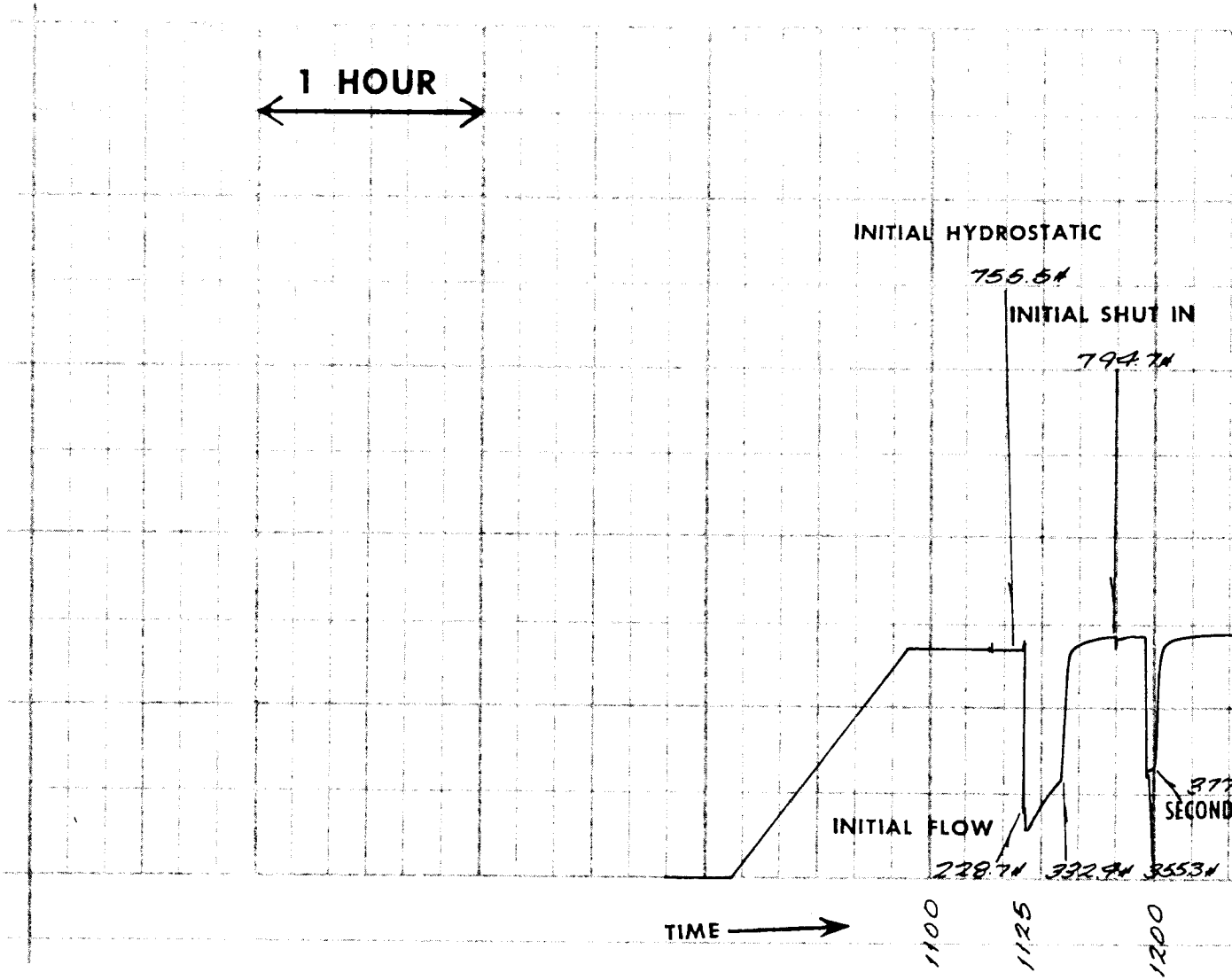
Field Report No. 09524 D

Instrument:
Number J-401

Capacity 2800 p.s.i.

Depth 1604 ft.

*a continuous tracing of the original chart



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RECEIVED
APR 24 1978
GAS, & MINING

P

P.O. Box 118 Fort Duchesne, Utah 84026 (801) 722-2224

CHEMICAL ANALYSIS REPORT

FILE NUMBER: GC-5034
DATE: 4-20-78

American Quasar

SAMPLE DATA

31-1

SUBMITTED BY	MONTH	DAY	HOUR	YEAR	ACTUAL TEMP
Randy Ripple	4	17		78	VOLUME, MCF D 0 15.000 PSI 80°F

Received 4-18-78

ANALYSIS

	MOLE [%]	G.P.M.	LIQUID [%]
HYDROGEN-SULFIDE			
HELIUM			
CARBON-DIOXIDE	0		
NITROGEN	1.76		
METHANE	97.19		
ETHANE	.95		
PROPANE	.07	.019	65.52
ISO-BUTANE	.02	.007	24.14
N-BUTANE	.01	.003	10.34
ISO-PENTANE	0	0	
N-PENTANE	0	0	
HEXANES	0	0	
HEXANES & HIGHER	0	0	
H2O	.01		
TOTAL	100.0	.029	100.00

HEATING VALUE
B.T.U. CU. FT. 30 IN. HG. 60°F. DRY

CALCULATED 1002

OBSERVED

SPECIFIC GRAVITY

CALCULATED .567

OBSERVED

COPIES TO

ANALYST

APPROVED

ADDITIONAL REMARKS AND DATA

P.O. Box [illegible] Fort Duchesne, Utah 84026 (801) 722-2054

CHROMATOGRAPHIC ANALYSIS REPORT

REPORT NO. GC--5033
DATE 4-20-78

American Quasar

SAMPLE DATA

31-1

	31-1				
SUBMITTED BY: Randy Ripple	MONTH: 4	DAY: 17	HOUR:	YEAR: 78	VOLUME: MCF D @ 15.025 PSI 80°F.

REMARKS

ANALYSIS

	MOLE [%]	G.P.M.	WEIGHT [%]
HYDROGEN SULFIDE			
HELIUM			
CARBON DIOXIDE	.01		
NITROGEN	.96		
METHANE	96.72		
ETHANE	.98		
PROPANE	.02	.006	27.27
ISO BUTANE	.04	.013	59.09
N BUTANE	.01	.003	13.64
ISO PENTANE	0	0	0
N PENTANE	0	0	0
HEXANES	0	0	0
HEPTANES & HIGHER	0	0	0
H2O	1.27		
TOTAL	100.0	.022	100.00

HEATING VALUE
B.T.U. CU. FT. 60 IN. HG. 60°F. DRY

CALCULATED 997

OBSERVED

SPECIFIC GRAVITY

CALCULATED .565

OBSERVED

COMPLETE

ANALYST

APPROVED

ADDITIONAL REMARKS AND DATA

PROVO, UTAH

JOHNSTON

PRESSURE LOG*

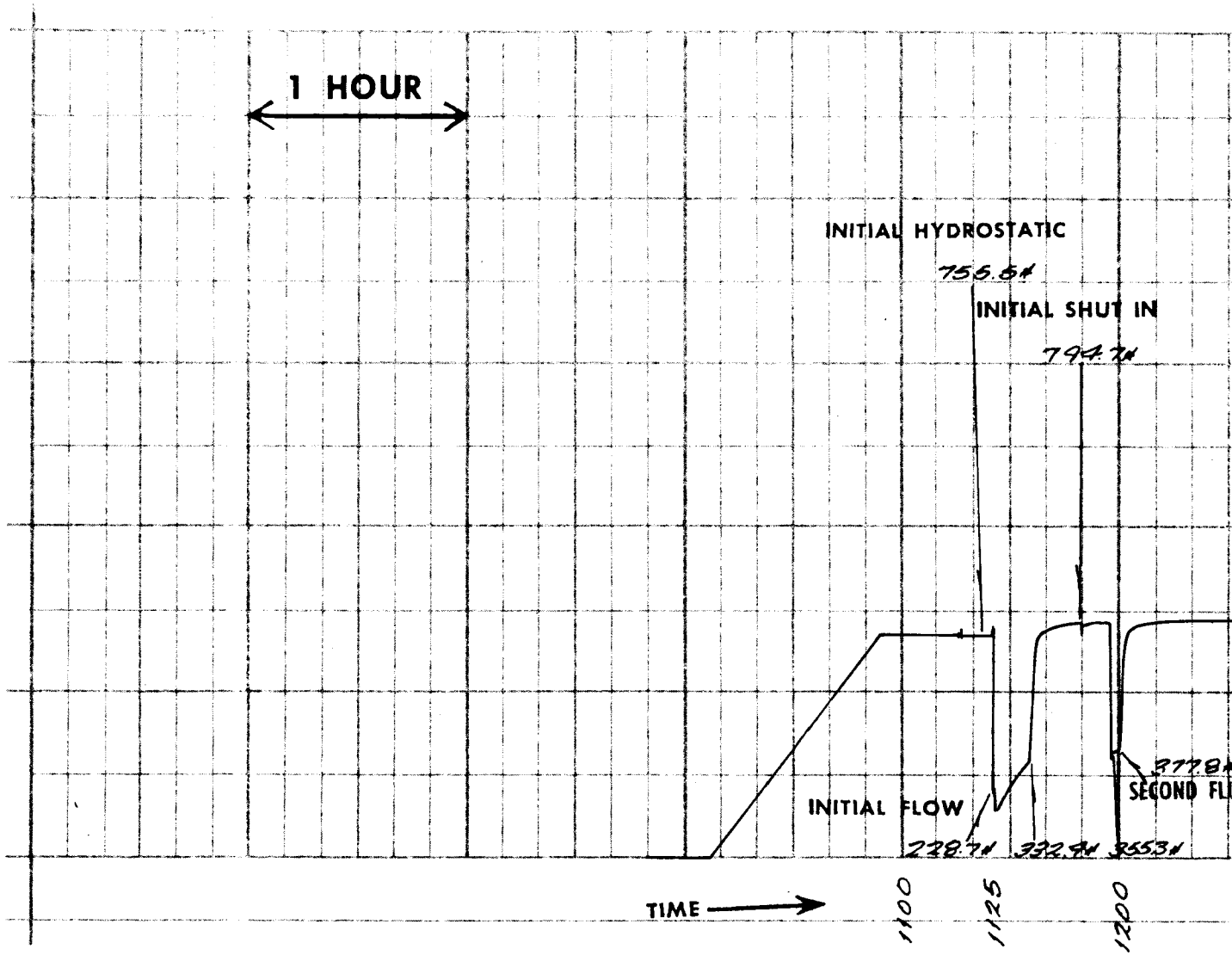
Field Report No. 09524 D

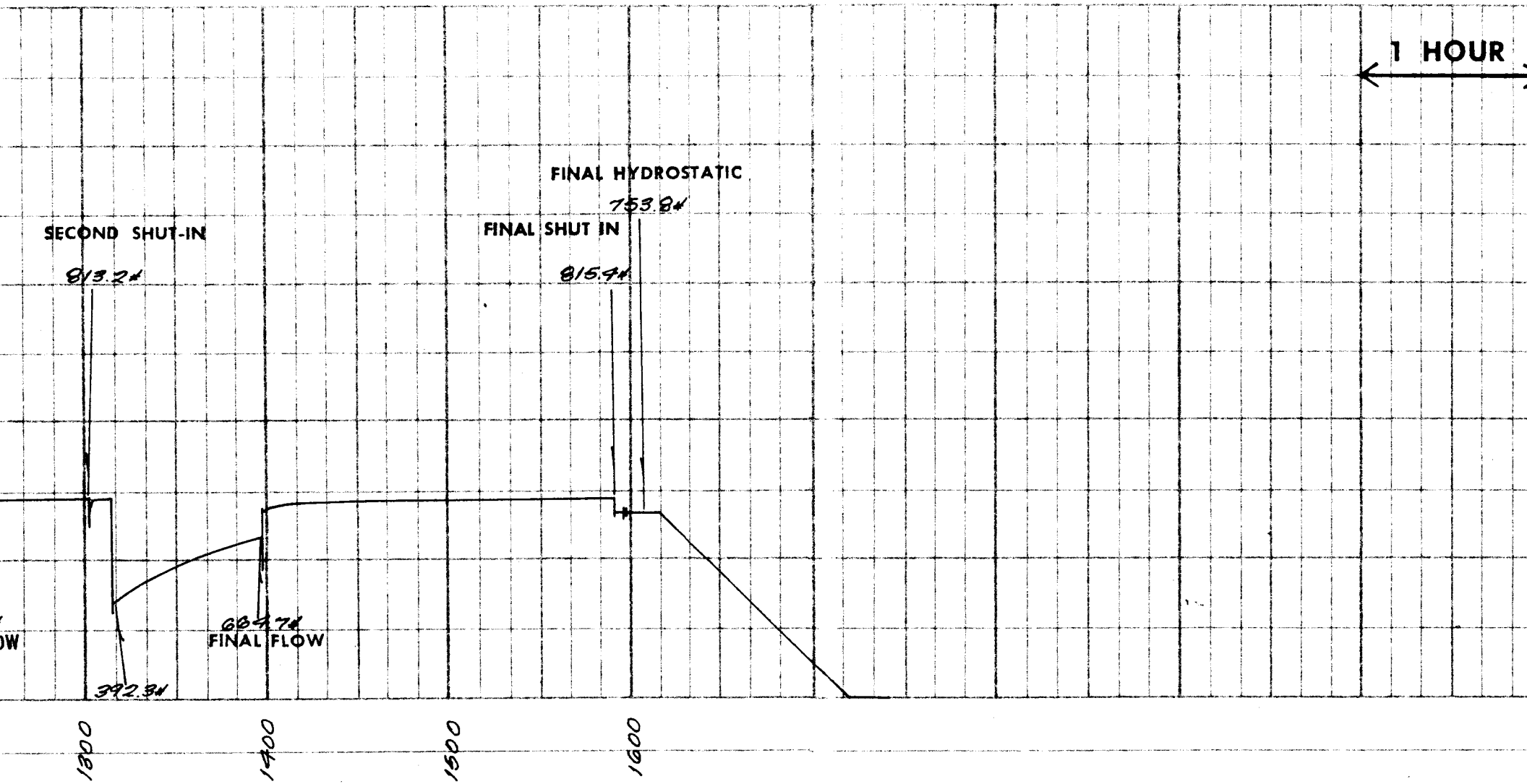
Instrument:
Number J-401

Capacity 2800 p.s.i.

Depth 1604 ft.

*a continuous tracing of the original chart




1 HOUR
FINAL HYDROSTATIC
753.8#
SECOND SHUT-IN
FINAL SHUT IN
813.2#
815.4#
684.7#
FINAL FLOW
392.3#
1300
1400
1500
1600

Form DOGC-4

STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL & GAS CONSERVATION

1588 WEST NORTH TEMPLE
SALT LAKE CITY, UTAH 84116
328-5771

State Lease No. _____
Federal Lease No. _____
Indian Lease No. _____
Fee & Pat. X

REPORT OF OPERATIONS AND WELL STATUS REPORT

STATE Utah COUNTY Carbon ~~FIELD~~/LEASE Drunkard's Wash

The following is a correct report of operations and production (including drilling and producing wells) for the month of: December, 19 77.

Agent's Address 707 United Bank Tower
1700 Broadway
Denver, Colorado 80290
Phone No. 303/861-8437

Company American Quasar Petroleum Co. of New Mexico
Signed A. W. Hurley, Jr. Vice
Title Division Operations Manager

Sec. and ¼ of ¼	Twp.	Range	Well No.	Days Produced	Barrels of Oil	Gravity	Cu. Ft. of Gas (In thousands)	Gallons of Gasoline Recovered	Barrels of Water (if none, so state)	REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas)
DRUNKARD"S WASH										
Sec 31 SE SW	14S	10E	31-1							Ran logs Ran & cmtd 9 5/8" csg CS-5740' Drlg @ 7504'

RECEIVED FEB 3 1978 DIVISION OF OIL, GAS, & MINING

Gas Sold _____
Flared/Vented _____
Used on/off Lease _____

NOTE: There were _____ runs or sales of oil; _____ M. cu. ft. of gas sold; _____ runs or sales of gasoline during the month.

DRILLING/PRODUCING WELLS: This report must be filed on or before the sixteenth day of the succeeding month following production for each well. Where a well is temporarily shut-in, a negative report must be filed. *THIS REPORT MUST BE FILED IN DUPLICATE.*

Form DOGC-4

STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS CONSERVATION

1588 WEST NORTH TEMPLE
SALT LAKE CITY, UTAH 84116
328-5771

State Lease No. _____
Federal Lease No. _____
Indian Lease No. _____
Fee & Pat. X

CONFIDENTIAL

REPORT OF OPERATIONS AND WELL STATUS REPORT

STATE Utah COUNTY Carbon ~~FIELD~~/LEASE Drunkard's Wash

The following is a correct report of operations and production (including drilling and producing wells) for the month of: February, 19 78.

Agent's Address 707 United Bank Tower
1700 Broadway
Denver, Colorado 80290
Phone No. 303/861-8437

Company American Quasar Petroleum Co. of New Mexico
Signed [signature]
Title Division Operations Manager

Sec. and ¼ of ¼	Twp.	Range	Well No.	Days Produced	Barrels of Oil	Gravity	Cu. Ft. of Gas (In thousands)	Gallons of Gasoline Recovered	Barrels of Water (if none, so state)	REMARKS (If drilling, depth; if shut down, cause, date and result of test for gasoline content of gas)
DRUNKARD"S WASH										
Sec 31 SE SW	14S	10E	31-1							Drlg @ 10,207'

Gas Sold _____
Flared/Vented _____
Used on/off Lease _____

NOTE: There were _____ runs or sales of oil; _____ M. cu. ft. of gas sold; _____ runs or sales of gasoline during the month.

DRILLING/PRODUCING WELLS: This report must be filed on or before the sixteenth day of the succeeding month following production for each well. Where a well is temporarily shut-in, a negative report must be filed. *THIS REPORT MUST BE FILED IN DUPLICATE.*

February 10, 1978

MEMO TO FILE:

Re: American Quasar

This week is Fishing week for Ameican Quasar. Fishing operations are being conducted on American Quasar Drunkards Wash 31-1; American Quasar 11-1 in Pineview; American Quasar Hogback Ridge at 11,570' in the phosphoria and American Quasar Bear lake south of Mont Pielier, Idaho.

PATRICK L. DRISCOLL
CHIEF PETROLEUM ENGINEER
DIVISION OF OIL, GAS, AND MINING

PLD/ksw

Form DOGC-4

STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS CONSERVATION

1588 WEST NORTH TEMPLE
SALT LAKE CITY, UTAH 84116
328-5771

State Lease No. _____
Federal Lease No. _____
Indian Lease No. _____
Fee & Pat. X

REPORT OF OPERATIONS AND WELL STATUS REPORT

STATE Utah COUNTY Carbon FIELD/LEASE Drunkard's Wash

The following is a correct report of operations and production (including drilling and producing wells) for the month of: March, 19 78.

Agent's Address 707 United Bank Tower
1700 Broadway
Denver, Colorado 80290
Phone No. (303) 861-8437

Company American Quasar Petroleum Co. of N.M.
Signed A. J. Hurley Field
Title Division Operations Manager

Sec. and ¼ of ¼	Twp.	Range	Well No.	Days Produced	Barrels of Oil	Gravity	Cu. Ft. of Gas (In thousands)	Gallons of Gasoline Recovered	Barrels of Water (if none, so state)	REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas)
DRUNKARD'S WASH										
Sec. 31										
SE SW	14S	10E	31-1							Drlg @ 11,663' DST #6 11006/46' DST #7 11119/223' DST #8 11568/620'

CONFIDENTIAL

Gas Sold _____
Flared/Vented _____
Used on/off Lease _____

NOTE: There were _____ runs or sales of oil; _____ M. cu. ft. of gas sold; _____ runs or sales of gasoline during the month.

DRILLING/PRODUCING WELLS: This report must be filed on or before the sixteenth day of the succeeding month following production for each well. Where a well is temporarily shut-in, a negative report must be filed. *THIS REPORT MUST BE FILED IN DUPLICATE.*

Eastman Whipstock

A PETROLANE COMPANY

RECEIVED
MAR 16 1978
DIVISION OF OIL, GAS, & MINING

REPORT of SUB-SURFACE DIRECTIONAL SURVEY

CONFIDENTIAL

American Quasar Petroleum
COMPANY

Drunkards Wash #31-1
WELL NAME

Carbon County, Utah
LOCATION

JOB NUMBER	TYPE OF SURVEY	DATE
RM378-S0659	Multi-Shot	3-10-78

SURVEY BY	OFFICE
Steve Thurston	Rocky Mountain

FORM D-302 R2

AMERICAN QUASAR PETROLEUM
JOB: RM378-S0659
DRUNKARDS WASH £31-1

DATE:

RECORD OF SURVEY

RADIUS OF CURVATURE METHOD

Oil-Tronix Ltd.

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	TRUE VERTICAL DEPTH FEET	RECTANGULAR COORDINATES FEET		DOG LEG SEVERITY DEG/100FT
5739.	0 0	0	5739.00	0.00	0.00	0.0
5816.	2 15	N 88 E	5815.98	0.05 N	1.51 E	2.9
5909.	2 15	S 85 E	5908.90	0.04 S	5.16 E	0.3
6002.	2 30	N 89 E	6001.82	0.18 S	9.01 E	0.4
6095.	2 15	S 86 E	6094.74	0.28 S	12.86 E	0.3
6188.	2 30	N 85 E	6187.66	0.24 S	16.72 E	0.5
6281.	2 15	N 86 E	6280.57	0.06 N	20.56 E	0.3
6374.	2 15	N 82 E	6373.50	0.44 N	24.19 E	0.2
6467.	2 15	N 86 E	6466.43	0.82 N	27.82 E	0.2
6560.	2 15	N 78 E	6559.35	1.33 N	31.44 E	0.3
6653.	2 30	S 89 E	6652.27	1.70 N	35.27 E	0.6
6746.	2 0	S 85 E	6745.20	1.51 N	38.91 E	0.6
6839.	2 45	S 85 E	6838.11	1.17 N	42.75 E	0.8
6932.	3 0	S 87 E	6931.00	0.85 N	47.41 E	0.3
7025.	3 30	S 87 E	7023.84	0.57 N	52.67 E	0.5
7118.	3 0	S 82 E	7116.69	0.06 N	57.92 E	0.6
7211.	3 15	S 81 E	7209.55	0.68 S	62.92 E	0.3
7304.	3 15	S 78 E	7302.40	1.64 S	68.10 E	0.2
7397.	3 30	S 78 E	7395.23	2.79 S	73.47 E	0.3
7490.	3 45	S 77 E	7488.05	4.06 S	79.20 E	0.3
7583.	3 45	S 70 E	7580.85	5.78 S	85.03 E	0.5
7676.	4 0	S 68 E	7673.63	8.03 S	90.90 E	0.3
7769.	3 45	S 74 E	7766.42	10.08 S	96.84 E	0.5
7863.	4 0	S 72 E	7860.20	11.94 S	102.92 E	0.3
7957.	3 45	S 70 E	7953.98	14.01 S	108.93 E	0.3
8051.	3 45	S 69 E	8047.78	16.16 S	114.69 E	0.1
8145.	3 45	S 68 E	8141.57	18.41 S	120.41 E	0.1
8239.	3 30	S 70 E	8235.38	20.54 S	125.94 E	0.3
8333.	3 30	S 79 E	8329.21	22.07 S	131.47 E	0.6
8427.	3 30	S 70 E	8423.03	23.60 S	136.99 E	0.6

Oil-Tronix Ltd.

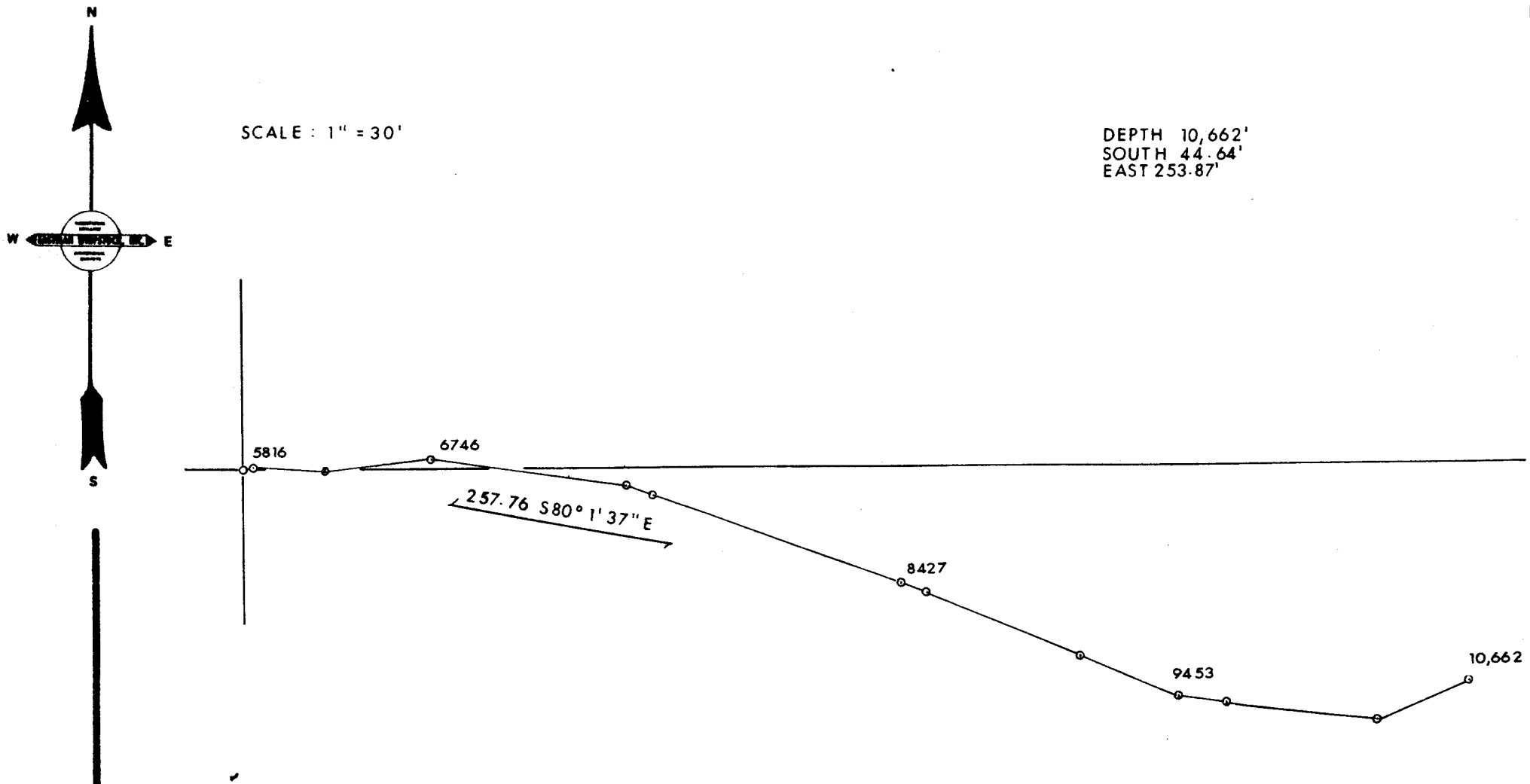
MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	TRUE VERTICAL DEPTH FEET	RECTANGULAR COORDINATES FEET		DOG LEG SEVERITY DEG/100FT
8521.	3 45	S 66 E	8516.84	25.82 S	142.49 E	0.4
8615.	3 30	S 68 E	8610.65	28.14 S	147.95 E	0.3
8709.	3 30	S 69 E	8704.47	30.24 S	153.29 E	0.1
8802.	3 30	S 68 E	8797.30	32.33 S	158.57 E	0.1
8895.	3 30	S 63 E	8890.12	34.68 S	163.73 E	0.3
8988.	3 30	S 69 E	8982.95	36.99 S	168.92 E	0.4
9081.	3 30	S 62 E	9075.77	39.34 S	174.08 E	0.5
9174.	3 30	S 65 E	9168.59	41.87 S	179.16 E	0.2
9267.	3 15	S 64 E	9261.43	44.24 S	184.12 E	0.3
9360.	3 15	S 69 E	9354.28	46.34 S	188.95 E	0.3
9453.	3 30	S 79 E	9447.11	47.85 S	194.23 E	0.7
9546.	3 15	S 79 E	9539.95	48.90 S	199.62 E	0.3
9639.	2 30	S 87 E	9632.83	49.47 S	204.24 E	0.9
9732.	2 45	S 89 E	9725.73	49.62 S	208.49 E	0.3
9825.	2 45	N 84 E	9818.62	49.42 S	212.95 E	0.4
9918.	2 30	S 87 E	9911.52	49.31 S	217.20 E	0.5
10011.	2 45	S 89 E	10004.43	49.46 S	221.45 E	0.3
10104.	2 45	N 83 E	10097.32	49.22 S	225.91 E	0.4
10197.	2 30	N 87 E	10190.22	48.85 S	230.15 E	0.3
10290.	3 15	N 82 E	10283.10	48.41 S	234.79 E	0.8
10383.	3 15	N 77 E	10375.95	47.45 S	239.97 E	0.3
10476.	3 0	N 77 E	10468.80	46.31 S	244.89 E	0.3
10569.	2 45	N 79 E	10561.69	45.34 S	249.46 E	0.3
10662.	2 45	N 83 E	10654.58	44.64 S	253.87 E	0.2

FINAL CLOSURE - DIRECTION: S 80 DEGS 1 MINS 37 SECS E
DISTANCE: 257.76 FEET

OIL-TRONIX

PLAN

EASTMAN WHIPSTOCK, INC.



JOB NO. RM 378 - SO 659

Form DOGC-4

STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL & GAS CONSERVATION

1588 WEST NORTH TEMPLE
SALT LAKE CITY, UTAH 84116
328-5771

State Lease No. ____
Federal Lease No. ____
Indian Lease No. ____
Fee & Pat. X

REPORT OF OPERATIONS AND WELL STATUS REPORT

STATE Utah COUNTY Carbon FIELD/LEASE Drunkard's Wash

The following is a correct report of operations and production (including drilling and producing wells) for the month of: April, 19 78.

Agent's Address 707 United Bank Tower
1700 Broadway
Denver, Colorado 80290
Phone No. (303) 861-8437

Company American Quasar Petroleum Co. of N.M.
Signed A H Hurley Jr
Title Division Operations Manager

Sec. and ¼ of ¼	Twp.	Range	Well No.	Days Produced	Barrels of Oil	Gravity	Cu. Ft. of Gas (in thousands)	Gallons of Gasoline Recovered	Barrels of Water (if none, so state)	REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas)
DRUNKARD'S WASH										
Sec. 31										
SE SW	14S	10E	31-1							Drlg @ 13,230' DST #9 11850-12040' DST #10 12050-176' DST #11 12051-310' DST #12 12720-820' Pkr failed DST #13 12749-820' Pkr failed

Gas Sold ____
Flared/Vented ____
Used on/off Lease ____

NOTE: There were ____ runs or sales of oil; ____ M. cu. ft. of gas sold; ____ runs or sales of gasoline during the month.

DRILLING/PRODUCING WELLS: This report must be filed on or before the sixteenth day of the succeeding month following production for each well. Where a well is temporarily shut-in, a negative report must be filed. *THIS REPORT MUST BE FILED IN DUPLICATE.*

Phone
522-1206 Area 303

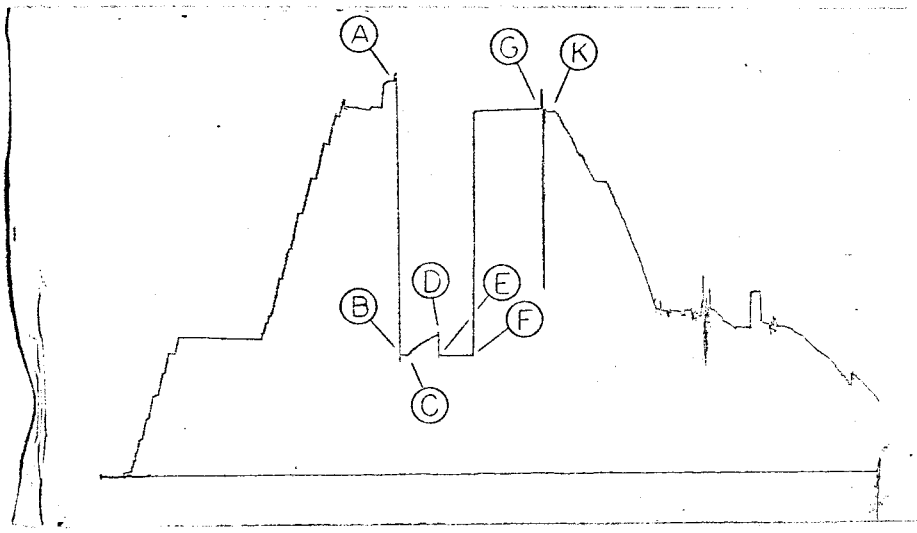
LYNES, INC

Box 712
Sterling, Colo. 80751

Operator: American Quasar Petroleum Co.
Address: See Distribution
Well Name and No.: Drunkard's Wash #31-1
Ticket No.: 10188
Date: 5-10-78
DST No.: 14
No. Final Copies: 10

Contractor	Circle A Drlg. Co.	Top Choke	1/4"	Flow No. 1	10 Min.
Rig No.	10	Bottom Choke	1"	Shut-in No. 1	60 Min.
Spot	SE-SW	Size Hole	8 3/4"	Flow No. 2	60 Min.
Sec.	31	Size Rat Hole	--	Shut-in No. 2	120 Min.
Twp.	14 S	Size & Wt. D. P.	4 1/2" 16.60	Flow No. 3	-- Min.
Rng.	10 E	Size Wt. Pipe	4 1/2" 26.60	Shut-in No. 3	-- Min.
Field	Wildcat	I. D. of D. C.	2 1/4"		
County	Carbon	Length of D. C.	375'		
State	Utah	Total Depth	12915'	Bottom Hole Temp.	250°F
Elevation	5727' "K.B."	Interval Tested	12775-12900'	Mud Weight	9.7
Formation	Cambrian	Type of Test	Inflate Straddle	Gravity	--
				Viscosity	85

Tool opened @ 12:47 AM.



Outside Recorder

PRD Make Kuster K-3
No. 4868 Cap. 8200 @ 12785

Press		Corrected
Initial Hydrostatic	A	6481
Final Hydrostatic	K	6420
Initial Flow	B	2135
Final Initial Flow	C	2132
Initial Shut-in	D	2483
Second Initial Flow	E	2132
Second Final Flow	F	2118
Second Shut-in	G	6471*
Third Initial Flow	H	--
Third Final Flow	I	--
Third Shut-in	J	--

Lynes Dist.: Rock Springs, Wy.
Our Tester: Herman Coomer
Witnessed By: Ray Sparks

Did Well Flow -- Gas No Oil No Water No

RECOVERY IN PIPE: 180' Drilling mud = .88 bbl. (Ran 50 gal. ammonia, 15 gal. GDF-50, 15 gal. diesel fuel and 5000' water.)

1st Flow - Tool opened with a very weak blow and remained thru flow period.

2nd Flow - Tool opened with no blow and remained thru flow period.

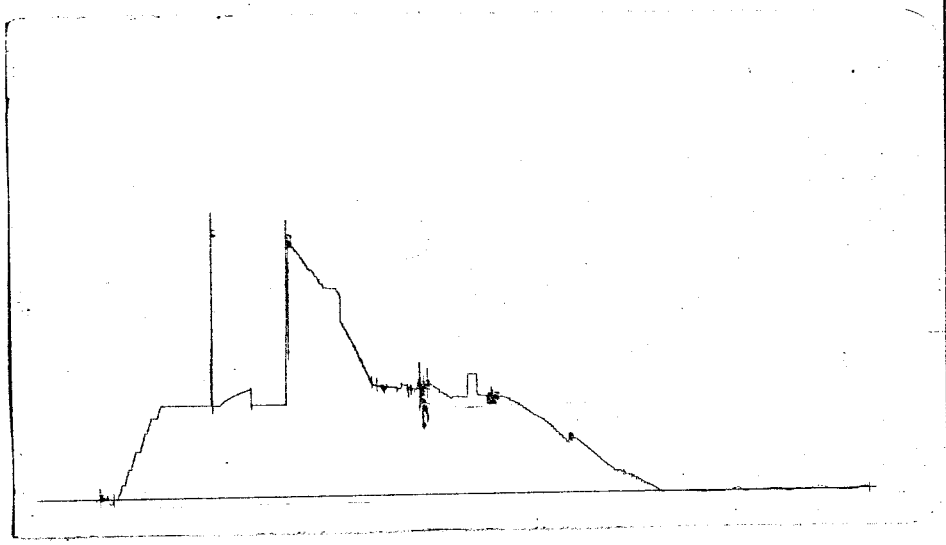
REMARKS:

MISRUN - * Charts indicate possible communications during the final shut-in period, therefore, that pressure is considered false.

Form 1

LYNES, INC.

Operator American Quasar Petroleum Co. Lease & No. Drunkard's Wash #31-1 DST No. 14



Outside Recorder

PRD Make Kuster K-3

No. 4621 Cap. 11000 @ 12785

Press		Corrected
Initial Hydrostatic	A	6471
Final Hydrostatic	K	6395
Initial Flow	B	2158
Final Initial Flow	C	2157
Initial Shut-in	D	2476
Second Initial Flow	E	2157
Second Final Flow	F	2156
Second Shut-in	G	**
Third Initial Flow	H	--
Third Final Flow	I	--
Third Shut-in	J	--
Pressure Below Bottom Packer Bled To		

** Clock was stopped during the second shut-in period

PRD Make

No. Cap. @

Press		Corrected
Initial Hydrostatic	A	
Final Hydrostatic	K	
Initial Flow	B	
Final Initial Flow	C	
Initial Shut-in	D	
Second Initial Flow	E	
Second Final Flow	F	
Second Shut-in	G	
Third Initial Flow	H	
Third Final Flow	I	
Third Shut-in	J	
Pressure Below Bottom Packer Bled To		

Form 3

LYNES, INC.

Operator American Quasar Petroleum Co Lease & No. Drunkard's Wash #31-1 DST No. 14

Recorder No. 4868 @ 12785'

Initial Shut-In

0	min.	2132	psig.
6	"	2194	"
12	"	2240	"
18	"	2281	"
24	"	2316	"
30	"	2351	"
36	"	2379	"
42	"	2406	"
48	"	2438	"
54	"	2458	"
60	"	2483	"

Final Shut-In

0	min.	2118	psig.
12	"	6444	"
24	"	6457	"
36	"	6465	"
48	"	6469	"
60	"	6471	"
72	"	6471	"
84	"	6471	"
96	"	6471	"
108	"	6471	"
120	"	6471	"

Form 2

LYNES, INC.

Fluid Sample Report

Date 5-10-78 Ticket No. 10188

Company American Quasar Petroelum Co. DST No. 14

Well Name & No. Drunkard's Wash #31-1 State Utah

County Carbon Test Interval 12775-12900'

Pressure in Sampler 0 PSIG BHT 250 °F

Total Volume of Sampler: 2500 cc.

Total Volume of Sample: 2300 cc.

Oil: None cc.

Water: None cc.

Mud: 2300 cc.

Gas: None cu. ft.

Other: None

R.W. .29 @ 62°F = 25,000 ppm. chl.

Resistivity

Make Up Water 10.0 @ 65°F of Chloride Content 575 ppm.

Mud Pit Sample .8 @ 80°F of Chloride Content 6800 ppm.

Gas/Oil Ratio Gravity °API @ °F

Where was sample drained

Remarks: Recovery - Top Sample - R.W. .65 @ 70°F = 9400 ppm. chl.

Bottom Sample - R.W. .5 @ 75°F = 11,000 ppm. chl.

Form 5

GC-5033
4-20-78

American Quasar

31-1

SUBMITTED BY	MONTH	DAY	HOUR	YEAR	VOLUME MCF D @ 15.025 PSI 60°F
Randy Ripple	4	17		78	

ANALYSIS

	VOLE [ ]	[illegible]	[illegible]
[illegible]			
[illegible]			
CARBON DIOXIDE	.01		
NITROGEN	.96		
METHANE	96.72		
ETHANE	.98		
PROPANE	.02	.006	27.27
[illegible]	.04	.013	59.09
NIBUTANE	.01	.003	13.64
[illegible]	0	0	0
[illegible]	0	0	0
[illegible]	0	0	0
HEXANES & HIGHER	0	0	0
H2O	1.27		
TOTAL	100.0	.022	100.00

CALCULATED 997

OBSERVED

SPECIFIC GRAVITY

CALCULATED .565

OBSERVED

COPIED

ANALYST

APPROVED

ADDITIONAL REMARKS AND DATA

Eastman Whipstock
A PETROLANE COMPANY

REPORT of SUB-SURFACE DIRECTIONAL SURVEY

CONFIDENTIAL

RECEIVED
APR 10 1978
DIVISION OF OIL, GAS, & MINING

American Quasar Petroleum
COMPANY

Drunkards Wash #31-1
WELL NAME

Price, Utah
LOCATION

JOB NUMBER	TYPE OF SURVEY	DATE
RM478-S0708	Multi-shot	4/3/78

SURVEY BY	OFFICE
Steve Thurston	Rocky Mountain District

FORM D-302 R2

AMERICAN QUASAR PETROLEUM
JOB: RM478-S0708
DRUNKARDS WASH £31-1

DATE:

RECORD OF SURVEY

RADIUS OF CURVATURE METHOD

Oil-Tronix Ltd.

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	TRUE VERTICAL DEPTH FEET	RECTANGULAR COORDINATES FEET		DOG LEG SEVERITY DEG/100FT
0.	0 0	0	0.00	0.00	0.00	0.0
100.	0 15	N 62 W	100.00	0.09 N	0.18 W	0.2
200.	0 15	S 61 W	200.00	0.09 N	0.60 W	0.2
300.	0 15	N 88 W	300.00	0.01 S	1.02 W	0.1
400.	0 15	S 76 W	400.00	0.05 S	1.45 W	0.1
500.	0 0	0	500.00	0.10 S	1.64 W	0.2
600.	0 15	S 25 E	600.00	0.29 S	1.56 W	0.2
700.	0 15	S 68 E	699.99	0.58 S	1.25 W	0.2
800.	0 30	S 58 E	799.99	0.88 S	0.67 W	0.3
900.	0 30	S 57 E	899.99	1.35 S	0.07 E	0.0
1000.	0 45	S 60 E	999.98	1.92 S	1.01 E	0.3
1100.	0 45	S 54 E	1099.97	2.64 S	2.11 E	0.1
1200.	0 45	S 48 E	1199.96	3.46 S	3.12 E	0.1
1300.	0 45	S 42 E	1299.96	4.38 S	4.05 E	0.1
1400.	1 0	S 50 E	1399.94	5.43 S	5.14 E	0.3
1500.	1 15	S 50 E	1499.92	6.69 S	6.64 E	0.2
1600.	1 15	S 48 E	1599.90	8.13 S	8.28 E	0.0
1700.	1 30	S 50 E	1699.87	9.71 S	10.10 E	0.3
1800.	1 30	S 56 E	1799.84	11.28 S	12.19 E	0.2
1900.	1 0	S 62 E	1899.81	12.41 S	14.07 E	0.5
2000.	1 0	S 79 E	1999.80	12.99 S	15.71 E	0.3
2100.	1 0	S 76 E	2099.78	13.37 S	17.41 E	0.1
2200.	1 15	S 83 E	2199.76	13.72 S	19.34 E	0.3
2300.	1 15	S 87 E	2299.74	13.91 S	21.51 E	0.1
2400.	1 15	S 82 E	2399.71	14.12 S	23.68 E	0.1
2500.	1 30	S 77 E	2499.69	14.56 S	26.05 E	0.3
2600.	1 30	S 77 E	2599.65	15.15 S	28.60 E	0.0
2700.	1 30	S 83 E	2699.62	15.61 S	31.18 E	0.2
2800.	1 30	S 85 E	2799.58	15.88 S	33.78 E	0.1
2900.	1 15	S 85 E	2899.55	16.09 S	36.19 E	0.2

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	TRUE VERTICAL DEPTH FEET	RECTANGULAR COORDINATES FEET		DOG LEG SEVERITY DEG/100FT
3000.	1 15	S 86 E	2999.53	16.26 S	38.36 E	0.0
3100.	1 0	N 85 E	3099.51	16.24 S	40.32 E	0.3
3200.	1 0	S 88 E	3199.49	16.20 S	42.07 E	0.1
3300.	1 0	N 83 E	3299.48	16.12 S	43.81 E	0.2
3400.	1 15	N 83 E	3399.46	15.88 S	45.75 E	0.2
3500.	1 15	N 77 E	3499.44	15.50 S	47.90 E	0.1
3600.	1 15	N 79 E	3599.41	15.05 S	50.03 E	0.0
3700.	1 15	N 83 E	3699.39	14.71 S	52.19 E	0.1
3800.	1 15	N 76 E	3799.36	14.31 S	54.33 E	0.2
3900.	1 15	N 70 E	3899.34	13.67 S	56.42 E	0.1
4000.	1 0	N 83 E	3999.32	13.22 S	58.32 E	0.4
4100.	1 15	N 83 E	4099.30	12.98 S	60.27 E	0.2
4200.	1 15	N 77 E	4199.27	12.60 S	62.42 E	0.1
4300.	1 30	N 85 E	4299.24	12.22 S	64.80 E	0.3
4400.	1 45	N 86 E	4399.20	12.00 S	67.63 E	0.3
4500.	1 45	N 83 E	4499.15	11.71 S	70.67 E	0.1
4600.	1 30	S 88 E	4599.11	11.58 S	73.50 E	0.4
4700.	1 45	S 88 E	4699.06	11.68 S	76.34 E	0.2
4800.	1 45	N 89 E	4799.02	11.71 S	79.40 E	0.1
4900.	2 0	S 89 E	4898.96	11.71 S	82.67 E	0.3
5000.	2 0	N 87 E	4998.90	11.65 S	86.16 E	0.1
5100.	2 0	N 83 E	5098.84	11.34 S	89.63 E	0.1
5200.	2 0	N 87 E	5198.77	11.04 S	93.11 E	0.1
5300.	2 0	N 82 E	5298.71	10.71 S	96.58 E	0.2
5400.	2 0	N 81 E	5398.65	10.19 S	100.03 E	0.0
5500.	2 15	N 81 E	5498.58	9.61 S	103.68 E	0.2
5600.	2 30	N 83 E	5598.49	9.03 S	107.79 E	0.3
5700.	2 30	N 82 E	5698.39	8.46 S	112.12 E	0.0
5739.	2 45	N 82 E	5737.35	8.22 S	113.88 E	0.6
5816.	2 15	N 88 E	5814.28	7.92 S	117.23 E	0.7

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	TRUE VERTICAL DEPTH FEET	RECTANGULAR COORDINATES FEET		DOG LEG SEVERITY DEG/100FT
5909.	2 15	S 85 E	5907.20	8.02 S	120.88 E	0.3
6002.	2 30	N 89 E	6000.12	8.15 S	124.73 E	0.4
6095.	2 15	S 86 E	6093.04	8.25 S	128.58 E	0.3
6188.	2 30	N 85 E	6185.96	8.22 S	132.44 E	0.5
6281.	2 15	N 86 E	6278.88	7.92 S	136.28 E	0.3
6374.	2 15	N 82 E	6371.80	7.54 S	139.91 E	0.2
6467.	2 15	N 86 E	6464.73	7.16 S	143.54 E	0.2
6560.	2 15	N 78 E	6557.65	6.65 S	147.15 E	0.3
6653.	2 30	S 89 E	6650.57	6.28 S	150.99 E	0.6
6746.	2 0	S 85 E	6743.50	6.47 S	154.63 E	0.6
6839.	2 45	S 85 E	6836.41	6.81 S	158.46 E	0.8
6932.	3 0	S 87 E	6929.30	7.13 S	163.13 E	0.3
7025.	3 30	S 87 E	7022.14	7.41 S	168.39 E	0.5
7118.	3 0	S 82 E	7114.99	7.91 S	173.64 E	0.6
7211.	3 15	S 81 E	7207.85	8.66 S	178.64 E	0.3
7304.	3 15	S 78 E	7300.70	9.62 S	183.82 E	0.2
7397.	3 30	S 78 E	7393.54	10.76 S	189.19 E	0.3
7490.	3 45	S 77 E	7486.35	12.03 S	194.92 E	0.3
7583.	3 45	S 70 E	7579.15	13.76 S	200.75 E	0.5
7676.	4 0	S 68 E	7671.93	16.01 S	206.62 E	0.3
7769.	3 45	S 74 E	7764.72	18.06 S	212.56 E	0.5
7863.	4 0	S 72 E	7858.50	19.92 S	218.64 E	0.3
7957.	3 45	S 70 E	7952.28	21.98 S	224.65 E	0.3
8051.	3 45	S 69 E	8046.08	24.14 S	230.40 E	0.1
8145.	3 45	S 68 E	8139.88	26.39 S	236.12 E	0.1
8239.	3 30	S 70 E	8233.68	28.52 S	241.66 E	0.3
8333.	3 30	S 79 E	8327.51	30.05 S	247.19 E	0.6
8427.	3 30	S 70 E	8421.33	31.58 S	252.71 E	0.6
8521.	3 45	S 66 E	8515.14	33.80 S	258.21 E	0.4
8615.	3 30	S 68 E	8608.95	36.12 S	263.67 E	0.3

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	TRUE VERTICAL DEPTH FEET	RECTANGULAR COORDINATES FEET		DOG LEG SEVERITY DEG/100FT
8709.	3 30	S 69 E	8702.77	38.22 S	269.01 E	0.1
8802.	3 30	S 68 E	8795.60	40.30 S	274.29 E	0.1
8895.	3 30	S 63 E	8888.42	42.66 S	279.45 E	0.3
8988.	3 30	S 69 E	8981.25	44.96 S	284.64 E	0.4
9081.	3 30	S 62 E	9074.07	47.32 S	289.80 E	0.5
9174.	3 30	S 65 E	9166.89	49.85 S	294.88 E	0.2
9267.	3 15	S 64 E	9259.73	52.21 S	299.84 E	0.3
9360.	3 15	S 69 E	9352.58	54.32 S	304.67 E	0.3
9453.	3 30	S 79 E	9445.41	55.83 S	309.94 E	0.7
9546.	3 15	S 79 E	9538.25	56.88 S	315.33 E	0.3
9639.	2 30	S 87 E	9631.13	57.44 S	319.96 E	0.9
9732.	2 45	S 89 E	9724.03	57.59 S	324.21 E	0.3
9825.	2 45	N 84 E	9816.92	57.40 S	328.67 E	0.4
9918.	2 30	S 87 E	9909.82	57.29 S	332.92 E	0.5
10011.	2 45	S 89 E	10002.73	57.43 S	337.17 E	0.3
10104.	2 45	N 83 E	10095.62	57.20 S	341.62 E	0.4
10197.	2 30	N 87 E	10188.52	56.83 S	345.86 E	0.3
10290.	3 15	N 82 E	10281.40	56.38 S	350.50 E	0.8
10383.	3 15	N 77 E	10374.25	55.42 S	355.68 E	0.3
10476.	3 0	N 77 E	10467.11	54.29 S	360.61 E	093
10569.	2 45	N 79 E	10559.99	53.31 S	365.18 E	0.3
10662.	2 45	N 83 E	10652.88	52.62 S	369.59 E	0.2
10727.	3 0	N 77 E	10717.80	52.05 S	372.80 E	0.6
10821.	2 45	N 77 E	10811.68	50.99 S	377.41 E	0.3
10914.	3 15	N 78 E	10904.55	49.93 S	382.15 E	0.5
11007.	3 30	N 78 E	10997.38	48.79 S	387.53 E	0.3
11100.	3 45	N 78 E	11090.20	47.57 S	393.27 E	0.3
11193.	3 45	N 78 E	11183.00	46.31 S	399.22 E	0.0
11286.	3 45	N 77 E	11275.80	44.99 S	405.15 E	0.1
11380.	3 30	N 82 E	11369.61	43.91 S	410.98 E	0.4

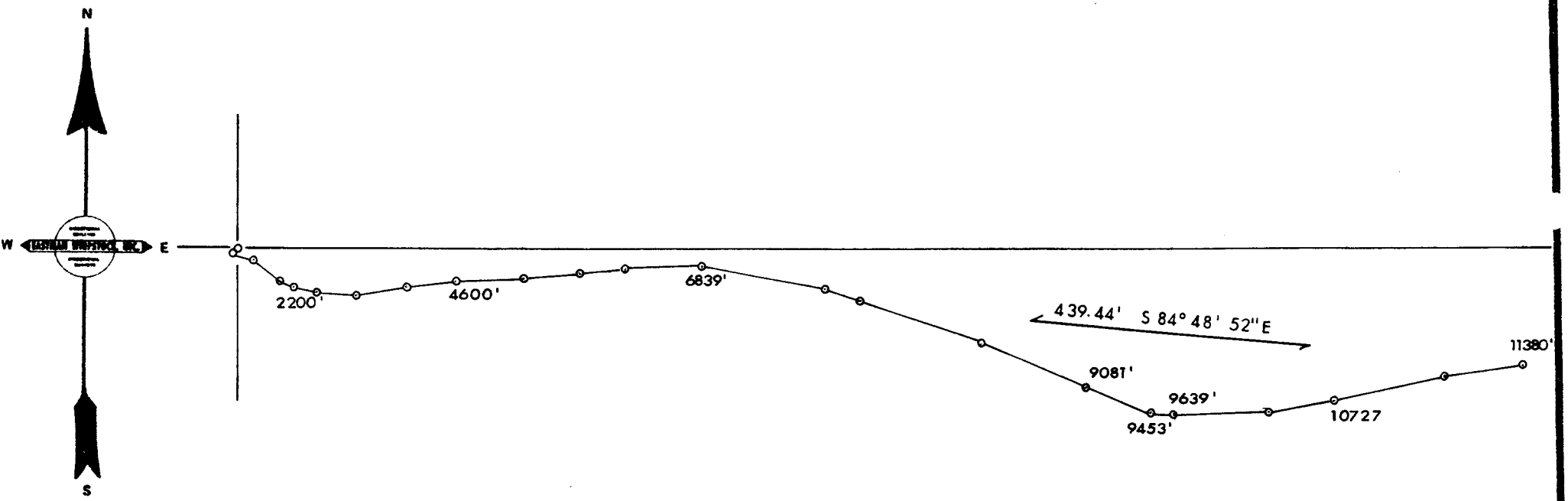
MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	TRUE VERTICAL DEPTH FEET	RECTANGULAR COORDINATES FEET		DOG LEG SEVERITY DEG/100FT
11474.	3 30	N 84 E	11463.43	43.21 S	416.68 E	0.1
11568.	3 15	N 81 E	11557.26	42.49 S	422.18 E	0.3
11662.	3 15	N 80 E	11651.11	41.61 S	427.44 E	0.1
11756.	3 15	N 80 E	11744.96	40.68 S	432.69 E	0.0
11849.	3 0	N 78 E	11837.82	39.72 S	437.64 E	0.3

FINAL CLOSURE - DIRECTION: S 84 DEGS 48 MINS 52 SECS E
DISTANCE: 439.44 FEET

Oil-Tronix Ltd.

PLAN

EASTMAN WHIPSTOCK, INC.



SCALE : 1" = 50'

DEPTH 11849
SOUTH 39.72'
EAST 437.64'

JOB NO. RM478 - SO708

May 12, 1978

MEMO TO FILE

43-007-30040

Re: American Quasar Petroleum Company
Well No. Drunkards Wash # 31-1
Sec. 31, T. 14S., R. 10E.
Carbon County, Utah

Verbal permission was given to Mr. Hohn Sidlar to plug and abandon this well. The plugging program has been outlined by the U.S.G.S. and this office is in accordance with their proposal.

P

PATRICK L. DRISCOLL
CHIEF PETROLEUM ENGINEER
DIVISION OF OIL, GAS, & MINING

PLD/ksw

Form OGC-1b

SUBMIT TRIPLICATE*
(Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: Utah State ML-29223

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1. OIL WELL ☐ GAS WELL ☐ OTHER Dry

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: American Quasar Petroleum Co. of New Mexico

8. FARM OR LEASE NAME: Drunkard's Wash

3. ADDRESS OF OPERATOR: 204 Superior Bldg., 201 N. Wolcott, Casper, Wyo. 82601

9. WELL NO.: 31-1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface 1000' FSL & 1552' FWL Sec. 31 (SE¼ SW¼)

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 31-14S-10E

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5726' KB; 5710' GR

12. COUNTY OR PARISH: Carbon

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☒
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			☐
(Other)			☐	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Plugs have been set as follows:

85 sx - 12,914-13,076'
75 sx - 9425-9575'
75 sx - 6425-6575'
25 sx above
Bridge plug @ 5700'
50 sx below
Could not pull any 9-5/8" csg.
Cemented annulus between 9-5/8" & 13-3/8" csg. w/100 sx
20 sx - surf.
½" steel plate welded on surf.

Job complete 5/13/78.

RECEIVED
MAY 19 1978
DIVISION OF OIL, GAS, & MINING

18. I hereby certify that the foregoing is true and correct

SIGNED John F. Sindelar TITLE Div. Drlg. Supt. DATE 5/17/78

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form OGC-1b

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

ATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

5. LEASE DESIGNATION AND SERIAL NO.: Utah State ML-29223

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1. OIL WELL ☐ GAS WELL ☐ OTHER Dry

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: American Quasar Petroleum Co. of New Mexico

8. FARM OR LEASE NAME: Drunkard's Wash

3. ADDRESS OF OPERATOR: 204 Superior Bldg., 201 N. Wolcott, Casper, Wyo. 82601

9. WELL NO.: 31-1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1000' FSL & 1552' FWL Sec. 31 (SE¼ SW¼)

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 31-14S-10E

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5726' KB; 5710' GR

12. COUNTY OR PARISH: Carbon

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☒	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			☐
(Other)			☐	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

20" csg. set @ 40' - cmt. to surf.
13-3/8" csg. set @ 615' - cmt. to surf.
9-5/8" csg. set @ 5740' - cmt. w/750 sx; could not recover any 9-5/8" csg.

Per verbal approval from Pat Driscoll, plugs will be set as follows:
85 sx - 12,914-13,076'
75 sx - 9,425-9,575'
75 sx - 6,425-6,575'
25 sx above
Bridge Plug @ 5700'
50 sx below
Could not pull any 9-5/8" csg.
Cemented annulus between 9-5/8" & 13-3/8" csg. w/100 sx.
20 sx - surf.
½" steel plate welded on surf.

APPROVED BY THE DIVISION OF OIL, GAS, AND MINING
DATE: May 18, 1978
BY: [illegible]

Electric Log Tops

Mancos	surf.
Ferron sd	1,600'
Curtis	4,184'
Navajo	5,687'
Chinle	6,522'
Kaibab	8,258'
Pennsylvanian	9,526'
Humbug	12,850'
Deseret	13,225'

18. I hereby certify that the foregoing is true and correct

SIGNED John F. Sindelar TITLE Div. Drlg. Supt. DATE 5/16/78

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form OGC-3

SUBMIT IN DUPLICATE*
(See other instructions on reverse side)

14

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☒ Other

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: American Quasar Petroleum Co. of New Mexico

3. ADDRESS OF OPERATOR: 707 United Bank Tower, 1700 Broadway, Denver, CO 80290

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 3750' FEL, 1000' FSL (SE SW)
At top prod. interval reported below
At total depth

5. LEASE DESIGNATION AND SERIAL NO.: Utah St. ML-29223
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:
8. FARM OR LEASE NAME: Drunkards' Wash
9. WELL NO.: 31-1
10. FIELD AND POOL, OR WILDCAT: Wildcat
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: 31-14S-10E

14. PERMIT NO. API 43-007-30040 | DATE ISSUED 11-2-77 | 12. COUNTY OR PARISH: Carbon | 13. STATE: Utah

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (~~DF, RKB, RT~~, GR, ~~ETC.~~)*	19. ELEV. CASINGHEAD
10-31-77	5-4-78	P&A 5-13-78	5710'	-----

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
13,500'	12,914'	----	→	0-TD	----

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: None

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: DLL, Sonic GR-Caliper, Neutron Density, Dipmeter

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13 3/8"	54.5#	615'	17½"	350 sx	None
9 5/8"	40#	5,740'	12¼"	750 sx	None

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (*Interval, size and number*): None

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
None	

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED [signature] TITLE Division Production Superintendent DATE 5-23-78

*(See Instructions and Spaces for Additional Data on Reverse Side)

DRUNKARDS' WASH 31-1

COMPLETION REPORT

ATTACHMENT

37. DST #1 1602/1709' w/no WC; TO 10" w/strong blow, remaining strong thruout, SI 60", TO 60" w/med strong blow, decr to wk @ end of period, SI 120", GTS 2" into 2nd open, tstm; rec 1612' G/C/muddy wtr; IHP-673, IFP-168/337, ISIP-803, FFP-393/662, FSIP-820, FHP-763

DST #2 2419/2436' TO 15" w/wk blow, incr to good in 3" & remaining good thruout period, SI 60", TO 120" w/wk blow, incr to good blow in 15", started decr after 35", dead in 105", SI 60"; rec 279' drlg mud & 93' sl G/C/drlg mud; IHP-1131, IFP-53/53, ISIP-1131, FFP-134/161, FSIP-1131, FHP-1131. (SI press not logical; believe this test to be misrun)

DST #3 7659/7698' TO 10" w/immed blow & 3" wtr remaining thruout, SI 60", TO 60", no blow, pulled pkr, reopened tool 32", no blow, SI 120"; rec 220' drlg mud; IHP-3682, IFP-124/124, ISIP-285, FFP-110/124, FSIP-358, FHP-3696

DST #4 7922/8002' TO 10" w/wk blow, SI 60", TO 75" w/v/wk blow, decr to no blow, SI 150"; rec 180' drlg mud, NS; IHP-3780, IFP-55/82, ISIP-220, FFP-82/82, FSIP-137, FHP-3780

DST #5 8254-8343' (Kiabad) w/no WC; TO 10" w/strong blow, SI 60", TO 120" w/strong blow, GTS in 15" into 2nd open, max blow 120", 706 MCFD, SI 181"; rec 140' G/C/drlg mud; IHP-4002, IFP-61/81, ISIP-1102, FFP-61/102, FSIP-2209, FHP-3981

DST #6 11006/11046' w/no WC; TO 10" w/wk blow, SI 60", TO 60" w/wk blow incr to fair & remaining fair thruout period, SI 120"; rec 250' sli G/C/M; IHP-5412, IFP-146/146, ISIP-523, FFP-146/146, FSIP-1356, FHP-5412

DST #7 11119/11223' (Lower Pennsylvanian) w/1000' WC; TO 10" w/wk blow, incr to good blow in 3", SI 60" TO 120" w/fair blow incr to good blow in 4", GTS in 47" into 2nd interval, after 60" had 10 psi on 1/8" ck; 9.4 MCF remaining steady thruout, SI 180"; rec 150' G/C/drlg mud & 1000' WC; IHP-5498, IFP-567/540, ISIP-2663, FFP-540/459, FSIP-4295, FHP-5472

DST #8 11568/11620' w/2000' ammonia WC; TO 10" w/no blow, SI 60", TO 60" w/no blow, SI 120"; rec 2040' WC & G/C/drlg mud; IHP-5685, IFP-919/919, ISIP-1833, FFP-919/919, FSIP-2262, FHP-5685

DST #9 11850/12040' w/1900' WC TO 10" w/wk blow, SI 60;, TO 60" dead thruout open period, SI 120"; rec 1900' WC + 120' sli G/C/M; IHP-5834, IFP-1024/916, ISIP-1399, FFP-943/943, FSIP-1158, FHP-5807

DST #10 12050/12176' w/2000' WC; TO 10" w/few bubbles thruout; SI 60", TO 60", dead thruout; SI 120" (Misrun)

DST #11 12051/12310' w/2500' WC & ½" btm hole ck; TO 10" w/fair blow, incr to good in 8"; SI 60"; TO 60: w/good blow, incr to strong in 12" & remaining strong thruout; SI 120", GTS 10" into SI period; rec 2500' WC + 270' sli gas & ammonia wtr, cut, mud. IHP-5922, IFP-1212/1155, ISIP-1787, FFP-1155/1155, FSIP-1672, FHP-5974

DST #12 12720/12820' w/2500' WC; pkrs failed immed

DST #13 12749-12820'; pkrs failed immed

DST #14 12775-12900' w/5000' WC; TO 10" w/v/wk blow, remaining wk thruout; SI 60"; TO 60" dead thruout open period; SI 120"; rec 5000' WC + 180' drlg mud, NS; IHP-7033, IFP-2135/2135, ISIP-2568, FFP-2135/2135, FSIP-6488, FHP-6863

38.

FORMATION	LOG TOP
Mancos	Surface
Ferron	1598
Tanunk	2008
Dakota	2365
Cedar Mountain	2402
Buckhorn	3120
Morrison	3225
Summerville	3770
Curtis	4182
Entrada	4360
Carmel	5014
Navajo	5687
Kayenta	6060
Wingate	6150
Chinle	6535
Shinarump	6960
Moenkopi	6990
Sinbad	7680
Kaibab	8260
Coconino	8425
Pennsylvanian	9526
Manning Canyon	11620
Humbug	12850
Deseret	13325
TD	13500

Form OGC-1b

SUBMIT TRIPLICATE*
(Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

5. LEASE DESIGNATION AND SERIAL NO.: Utah State ML-29223

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1. OIL WELL ☐ GAS WELL ☐ OTHER (P & A on 5/13/78)

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: American Quasar Petroleum Co.

8. FARM OR LEASE NAME: Drunkard's Wash

3. ADDRESS OF OPERATOR: 204 Superior Bldg., Casper, Wyoming 82601

9. WELL NO.: 31-1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1000' FSL & 1552' FWL Sec. 31 (SE¼ SW¼)

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 31-14S-10E

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5726' KB; 5710' GR

12. COUNTY OR PARISH: Carbon

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Monthly Report of Operations			X
(Other)			☐	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Pursuant to your recent request to our Denver office, attached is a chronological report of operations on this well from May 1 through 16, 1978--well plugged & abandoned as a dry hole on May 13, 1978.

RECEIVED
SEP 1 1978
DIVISION OF OIL, GAS, & MINING

18. I hereby certify that the foregoing is true and correct

SIGNED John F. Sindelar TITLE Division Drlg. Supt. DATE 8/30/78

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

DRUNKARD'S WASH
#31-1
Carbon Co., Utah
Drunkard's Wash
Prospect

5/9/78 190 days - PBTD 12,914'. POH for DST #14. MW 9.3; vis 85; WL 4.8; pH 11.0. Cond. hole & drld. cmt. to 12,914'. Made short trip. Hole appears to be in good condition. Circ. bottoms up. Now POH to PU test tools.

DRUNKARD'S WASH
#31-1
Carbon Co., Utah
Drunkard's Wash
Prospect

5/10/78 191 days - PBTD 12,914'. POH w/DST #14. MW 9.3; vis 85; WL 4.8; pH 11.0. Finished TIH w/DST #14 to test interval 12,775-12,900'. Now POH w/DST.

DRUNKARD'S WASH
#31-1
Carbon Co., Utah
Drunkard's Wash
Prospect

5/11/78 192 days - PBTD 12,914'. Circ. & cond. mud on bottom. MW 9.2; vis 100; WL 4.8; pH 10.5. Ran DST #14 - 12,775-12,900' - w/5000' WC. TO 10 min--w/very wk blow, remaining wk thruout; SI 60 min; TO 60 min--dead thruout open period; SI 120 min. Pulled DST #14 to rec. 5000' WC + 180' drlg. mud--no show. Bomb depth 12,785'. IHP 7033; IFP 2135/2135; ISIP 2568; FFP 2135/2135; FSIP 6488; FHP 6863. Smplr. cap: 2500 cc's; rec. @ 0 psi, 2300 cc's drlg. mud. Lost pkr. rubbers while POH w/DST. PU bit #RR13 (8-3/4" Smith F3 - SN 982KK). Encountered pkrs. @ base of csg. Pushed pkrs. to bottom. Now circ. & cond. mud @ 12,914'.

DRUNKARD'S WASH
#31-1
Carbon Co., Utah
Drunkard's Wash
Prospect

5/12/78 193 days - PBTD 12,914'. Laying down DP. MW 9.2; vis 100; WL 4.8; pH 10.5. POH w/bit #RR13. LD DC's & BHA. TIH open-ended. WO Halliburton. Now LD DP & plugging to abandon.

DRUNKARD'S WASH
#31-1
Carbon Co., Utah
Drunkard's Wash
Prospect

5/13/78 194 days - PBTD 12,914'. WOC & cleaning pits. Rig released 6:00 AM 5/13/78. Set Class "G" plugs as follows:

85 sx - 13,076-12,914'
75 sx - 9575-9425'
75 sx - 6575-6425'
EZ Drill BP @ 5700'--50 sx below & 25 sx above
Had no free csg. Squeezed 100 sx in annulus between 9-5/8" & 13-3/8" csg.
Removed wellhead.
Plugged surf. w/20 sx.

5/14 195 days - RDRT.
5/15 196 days - RDRT.

DRUNKARD'S WASH
#31-1
Carbon Co., Utah
Drunkard's Wash
Prospect

5/16/78 RDRT. (Drop from report.)

DRUNKARD'S WASH
#31-1
Carbon Co., Utah
Drunkard's Wash
Prospect

4/29/78 180 days - Drlg. in dolomite & sh @ 12,996'. Drld. 55' in 14 hrs. MW 9.2; vis 55; WL 5.4; pH 10.5. Finished pulling bit #RR41 @ 12,941'. Dull grade 8-7-½". Ran bit #42 (8-3/4" Smith F4 - SN 056NK). Bit has drld. 55' in 14 hrs. Drlg. wt 45,000#; RPM 40.

4/30 181 days - Drlg. in dolomite & sh @ 13,108'. Drld. 112' in 23½ hrs. MW 9.1; vis 55; WL 5.4; pH 10.5. Bit #42 has drld. 167' in 37½ hrs. Drlg. wt 45,000#; RPM 40.

5/1 182 days - Drlg. in dolomite & sh @ 13,230'. Drld. 122' in 24 hrs. MW 9.1; vis 52; WL 5.4; pH 10.5. Bit #42 has drld. 289' in 61½ hrs. Drlg. wt 45,000#; RPM 40.

DRUNKARD'S WASH
#31-1
Carbon Co., Utah
Drunkard's Wash
Prospect

5/2/78 183 days - Drlg. in dolomite @ 13,355'. Drld. 125' in 23½ hrs. MW 9.2; vis 49; WL 6.0; pH 10.5. Bit #42 has drld. 414' in 85 hrs. Drlg. wt 45,000#; RPM 40.

DRUNKARD'S WASH
#31-1
Carbon Co., Utah
Drunkard's Wash
Prospect

5/3/78 184 days - Drlg. in dolomite & ss w/sh stringers @ 13,474'. Drld. 119' in 23½ hrs. MW 9.2; vis 54; WL 4.8; pH 10.5. Bit #42 has drld. 533' in 108½ hrs. Drlg. wt 45,000#; RPM 40.

DRUNKARD'S WASH
#31-1
Carbon Co., Utah
Drunkard's Wash
Prospect

5/4/78 185 days - Logging w/Schlumberger @ 13,500'. Drld. 26' of dolomite, sd & sh strks in 4 hrs. MW 9.2; vis 80; WL 5.4; pH 11.5. Survey: 1¼° N 67° E @ 13,500'. Pulled bit #42 @ 13,500'. Bit drld. 539' in 112½ hrs. Dull grade 4-4-1/8". Now running wireline logs.

DRUNKARD'S WASH
#31-1
Carbon Co., Utah
Drunkard's Wash
Prospect

5/5/78 186 days - TD 13,500'. WO velocity tools. MW 9.2; vis 80; WL 5.4; pH 11.5. Finished running elec. logs. Now WO veloc. tools.

DRUNKARD'S WASH
#31-1
Carbon Co., Utah
Drunkard's Wash
Prospect

5/6/78 187 days - TD 13,500'. Circ. to plug back. MW 9.2; vis 80; WL 5.4; pH 11.0. Finished running veloc. surveys. TIH open-ended. Now circ. @ 13,058' prep to PB.

5/7 188 days - TD 13,500'. PBTD 12,887'. Washing & reaming @ 12,700'. MW 9.3; vis 80; WL 5.4; pH 11.0. Set 85-sk Class G plug 12,887-13,076'. POH. WOC & TIH. Now washing & reaming tight hole @ 12,700'.

5/8 189 days - Washing & reaming tight hole @ 12,828'. MW 9.3; vis 75; WL 5.4; pH 10.5. Had extreme tight hole & sluffing conditions after running cmt. plug. Have now washed & reamed 148' in 24 hrs. Will wash & ream to 12,900' & cond. hole prior to running DST.

SCOTT M. MATHESON
Governor

GORDON E. HARMSTON
Executive Director,
NATURAL RESOURCES

CLEON B. FEIGHT
Director

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING
1588 West North Temple
Salt Lake City, Utah 84116
(801) 533-5771

OIL, GAS, AND MINING BOARD

I. DANIEL STEWART
Chairman

CHARLES R. HENDERSON
JOHN L. BELL
THADIS W. BOX
C. RAY JUVELIN

August 23, 1978

American Quasar Petroleum Co.
707 United Bank Tower
1700 Broadway
Denver, Colorado 80290

Re: Well No. Drunkards Wash 31-1
Sec. 31, T. 14S, R. 10E,
Carbon County, Utah
May 1978 thru' July 1978

Gentlemen:

Our records indicate that you have not filed a Monthly Report of Operations for the months indicated above on the subject well.

Rule C-22, General Rules and Regulations and Rules of Practice and Procedure, requires that said reports be filed on or before the sixteenth (16) day of the succeeding month. This report may be filed on Form OGC-1b, (U.S. Geological Survey Form 9-331) "Sundry Notices and Reports on Wells", or on company forms containing substantially the same information. We are enclosing forms for your convenience.

Your prompt attention to the above will be greatly appreciated.

Very truly yours,

DIVISION OF OIL, GAS, AND MINING

Kathy Avila

KATHY AVILA
RECORDS CLERK

SCOTT M. MATHESON
Governor

GORDON E. HARMSTON
Executive Director,
NATURAL RESOURCES

CLEON B. FEIGHT
Director

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING
1588 West North Temple
Salt Lake City, Utah 84116
(801) 533-5771

OIL, GAS, AND MINING BOARD

I. DANIEL STEWART
Chairman

CHARLES R. HENDERSON
JOHN L. BELL
THADIS W. BOX
C. RAY JUVELIN

December 13, 1978

American Quasar Petroleum
204 Superior Bldg.
Casper, Wyoming 82601

Re: Well No. Drunkards Wash 31-1
Sec. 31, T. 14S, R. 10E,
Carbon County, Utah

Gentlemen:

According to our records, a "Well Completion Report" filed with this office ~~5-23-78~~ from above referred to well(s) indicates the following electric logs were run: **DIL, Sonic GR-Caliper, neutron Density, Dipmeter**

Rule C-5, General Rules and Regulations and Rules of Practice and Procedure, requires that a well log shall be filed with the Commission together with a copy of the electric and radioactivity logs.

Your prompt attention to the above will be greatly appreciated.

Sincerely,

DIVISION OF OIL, GAS & MINING

Kathy Ostler

KATHY OSTLER
RECORDS CLERK

October 2, 1979

American Quasar Petroleum Company
204 Superior Building
Casper, Wyoming 82601

Re: Well No. Drunkards Wash 31-1
Sec. 31, T. 14S, R. 10E.,
Carbon County, Utah

Dear Mr. Sindlar;

As we discussed in our telephone conversation on September 14, 1979, a problem exists on the above referenced well site.

It was reported that the fence surrounding your reserve pond had been removed and a child had wandered into the pond sinking past his waist before being recovered.

Would you please notify our office of what is being done by your company to rectify this situation.

Sincerely,

DIVISION OF OIL, GAS AND MINING

Michael T. Minder
Geological Engineer

MTM:btm

cc: Donald Prince, State
Land Board

Form OGC-1b

SUBMIT TRIPLICATE*
(Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: Utah State ML-29223

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1. OIL WELL ☐ GAS WELL ☐ OTHER: DRY

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: American Quasar Petroleum Co.

8. FARM OR LEASE NAME: Drunkards Wash

3. ADDRESS OF OPERATOR: 204 Superior Bldg., Casper, Wyoming 82601

9. WELL NO.: 31-1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 3750' FEL & 1000' FSL (SE¼ SW¼)

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 31-14S-10E

14. PERMIT NO.: API 43-007-30040

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5710' GR

12. COUNTY OR PARISH: Carbon

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	X
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			☐
(Other)	☐			(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Immediately following my telephone conversation with Michael Minder on September 14, 1979, rehabilitation operations were commenced on this location.

The rehabilitation was completed on October 5, 1979, location has been reseeded, and is now ready for inspection.

RECEIVED OCT 15 1979 DIVISION OF OIL, GAS, & MINING

18. I hereby certify that the foregoing is true and correct

SIGNED John F. Sindelar TITLE Division Drlg. Supt. DATE 10/11/79

John F. Sindelar

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

FORM 3

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work
DRILL [X] RE-ENTER DEEPEN [ ] PLUG BACK [ ]

b. Type of Well
Oil Well [ ] Gas Well [ ] Other DISPOSAL WELL Single Zone [ ] Multiple Zone [ ]

2. Name of Operator
RIVER GAS OF UTAH, INC. (205-759-3282)

3. Address of Operator
3600 WATERMELON RD, STE 204, NORTHPORT, AL 35476

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface
1552' FWL & 999' FSL (SE/4 OF SW/4)
At proposed prod. zone
SAME

5. Lease Designation and Serial No.
ML 40521

6. If Indian, Allottee or Tribe Name
N/A

7. Unit Agreement Name
DRUNKARDS WASH UTU67921X

8. Farm or Lease Name
~~UTAH~~ Drunkards Wash

9. Well No.
~~D-1~~ 31-1, (D-1)

10. Field and Pool, or Wildcat
WILDCAT

11. QQ, Sec., T., R., M., or Blk. and Survey or Area
SEC. 31, T14S, R10E S.L.B. & M.

12. County or Parrish
CARBON

13. State
UTAH

14. Distance in miles and direction from nearest town or post office*
THREE (3) MILES SOUTHWEST OF PRICE, UTAH

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. line, if any) 999'

16. No. of acres in lease 766.48'

17. No. of acres assigned to this well 160

18. Distance from proposed location* to nearest well, drilling, completed, or applied for, on this lease, ft. 1275'

19. Proposed depth 6200'

20. Rotary or cable tools ROTARY

21. Elevations (Show whether DF, RT, GR, etc.) 5716'

22. Approx. date work will start* ASAP

23. PROPOSED CASING AND CEMENTING PROGRAM

Size of Hole	Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
8 3/4"	7 5/8"	26.40	6200'	500 SACKS

API # 43-007-30040

RECEIVED
JUL 22 1993
DIVISION OF OIL GAS & MINING

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. I hereby certify that this report is true and complete to the best of my knowledge.

Signed Michael G. Ferris Title VICE PRESIDENT Date 7/19/93

(This space for Federal or State office use)

API NO. 43-007-30040 Approval Date

Approved by Title Date

Conditions of approval, if any:

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS AND MINING
DATE: 7/29/93
BY: J.R. Matthews
WELL SPACING: 649-2-3

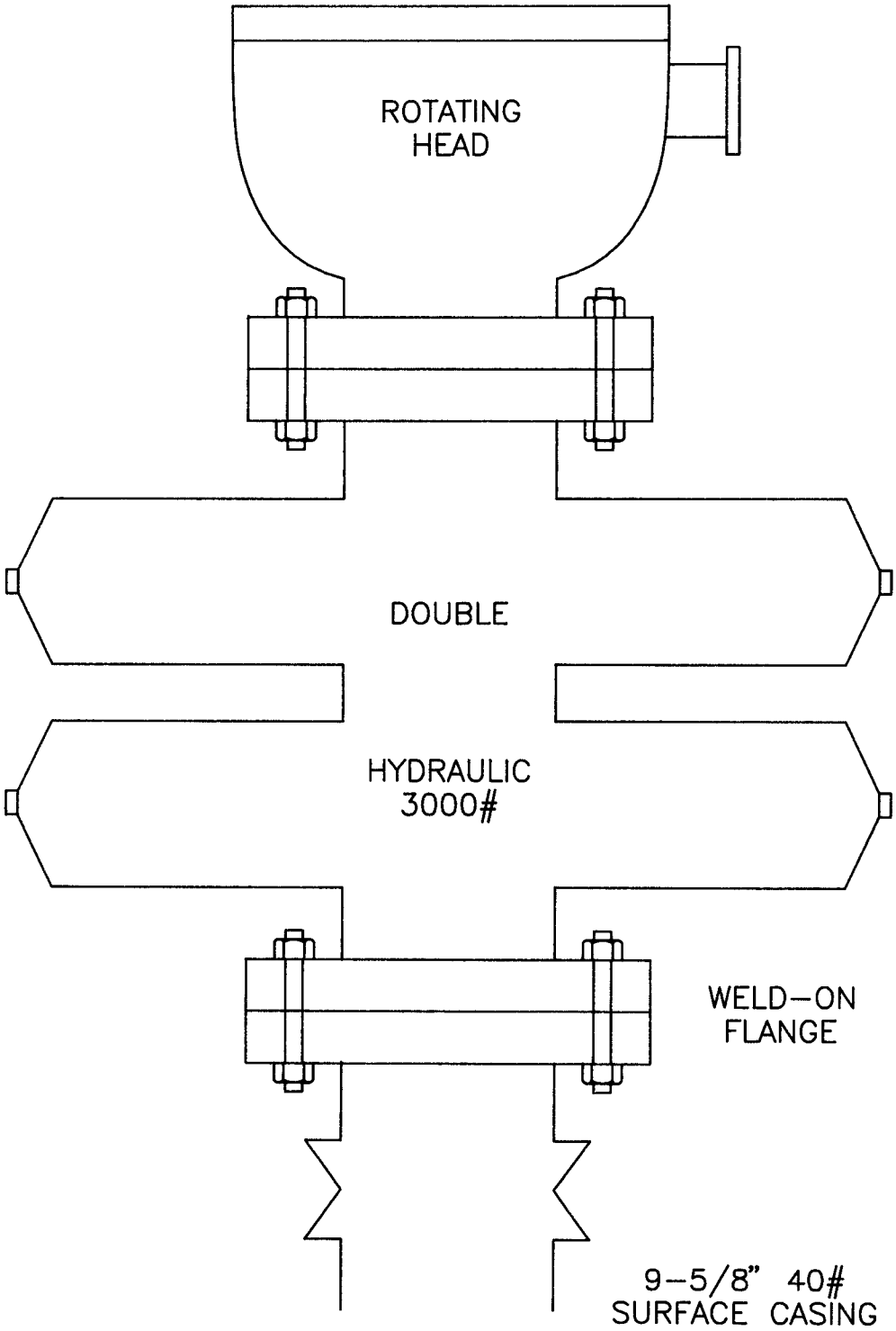
*See Instructions On Reverse Side

(3/89)

RIVER GAS OF UTAH, INC.
ATTACHMENT #2

RE: Use of Water During Drilling Operations

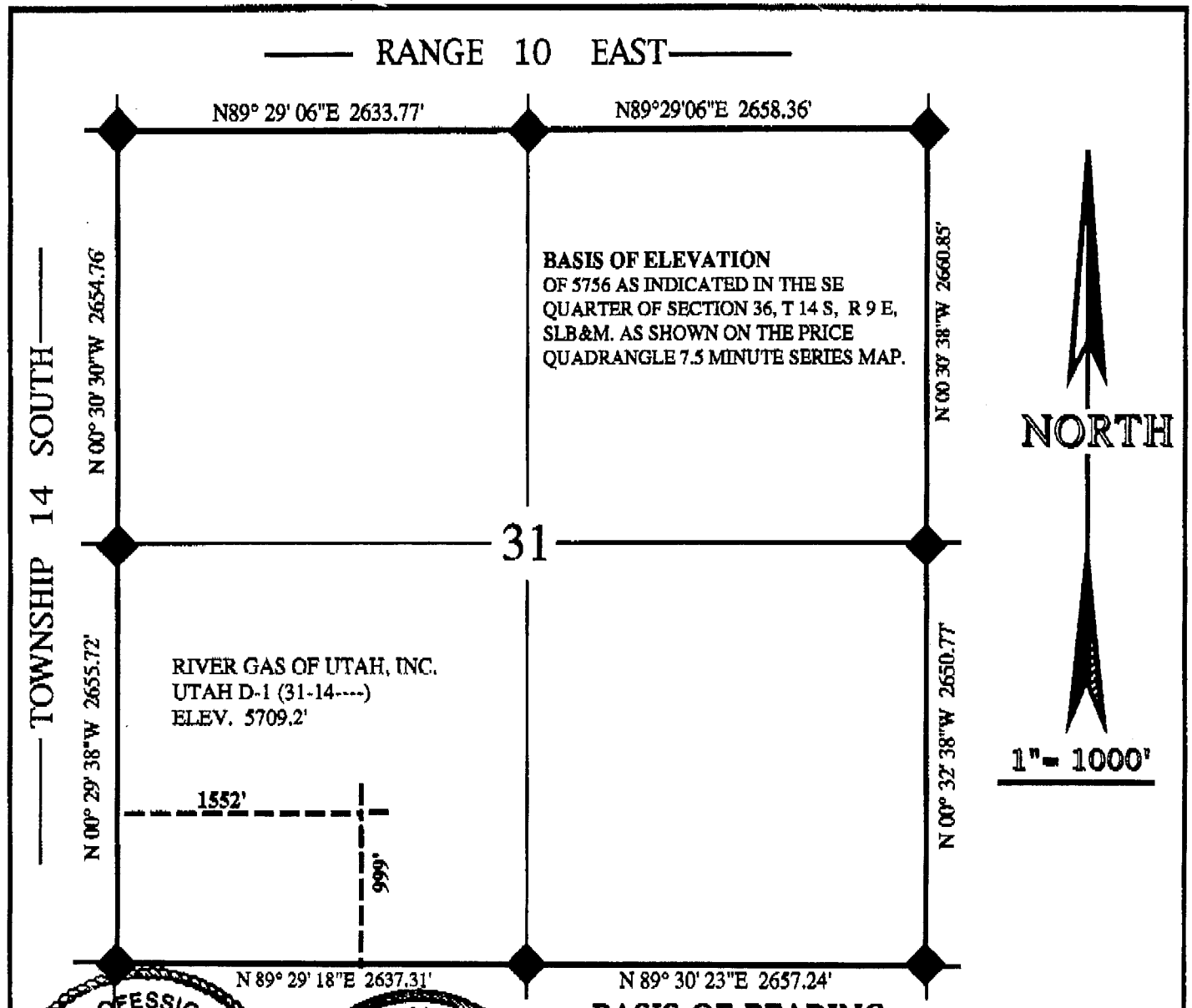
As stated, water which we will be using is to be purchased from the Price River Water Improvement District (Tel. 801-637-6350). This has been arranged by Mr. Michael J. Farrens, Drilling Supervisor for River Gas of Utah, Inc. He has been in contact with Mr. Phillip Palmer. Mr. Farrens has discussed this arrangement with Mark Page of the Division of Water Rights (Tel. 801-637-1303) over the telephone. The Division of Water Rights is to furnish the Oil & Gas Division with a letter of approval concerning this matter.



7/20/93

ATTACHMENT #3

RIVER GAS OF UTAH



BASIS OF BEARING

BASIS OF BEARING N 0• 30' 30" W RECORDED BETWEEN THE WEST QUARTER CORNER AND THE NORTHWEST CORNER OF SECTION 31, TOWNSHIP 14 SOUTH, RANGE 10 EAST, SALT LAKE BASE AND MERIDIAN AND IS THE UTAH STATE PLANE COORDINATE SYSTEM AS ESTABLISHED BY THE CARBON COUNTY SURVEYOR'S OFFICE.

LEGEND

- FOUND BRASS CAP
- SEARCHED FOR BUT NOT FOUND
- FOUND ROCK CORNER

NW1/4 SEC. 31 T 14 S. R 10 E. S.L.B.& M.

REGISTERED PROFESSIONAL ENGINEER
No. 3354
EVAN E. HANSEN
STATE OF UTAH

REGISTERED LAND SURVEYOR
NO. 3115
EVAN E. HANSEN
STATE OF UTAH

ENGINEER'S CERTIFICATE

I, EVAN E. HANSEN, DO HEREBY CERTIFY THAT I AM A REGISTERED LAND SURVEYOR AND PROFESSIONAL ENGINEER HOLDING CERTIFICATES NO. 3115 AND NO. 3354 AS PRESCRIBED UNDER THE LAWS OF THE STATE OF UTAH. I FURTHER CERTIFY THAT I HAVE MADE A SURVEY OF THE TRACT OF GROUND SHOWN AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

Evan E. Hansen — JULY 21, 1993

EVAN E. HANSEN — DATE

EMPIRE ENGINEERING
1665 E. SAGEWOOD RD. PRICE, UTAH 84501

RIVER GAS OF UTAH, INC.
UTAH D-1 (31-14---)

DRAWN BY: NH	APPROVED BY: EEH	DRAWING NO.
DATE: 7-20-93	SCALE: 1"= 1000"	EEOG-151

Form 9

ST : OF UTAH
DEPARTMENT O. NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number
ML 40521

7. Indian Allottee or Tribe Name
N/A

8. Unit or Communitization Agreement
UTU67921X
DRUNKARDS WASH UNIT

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.
Use APPLICATION FOR PERMIT— for such proposals

1. Type of Well
☐ Oil Well ☐ Gas Well ☒ Other (specify) Disposal Well

Drunkards Wash 31-1 (D-1)

2. Name of Operator
RIVER GAS OF UTAH, INC.

10. API Well Number
43-007-30040

3. Address of Operator
3600 WATERMELON RD, STE 204, NORTHPORT, AL 35476

4. Telephone Number
205-759-3282

11. Field and Pool, or Wildcat
WILDCAT

5. Location of Well
Footage : 1552' FWL & 999' FSL
QQ, Sec, T., R., M. : SE/4 OF SE/4 SEC. 31, T14S, R10E
County : CARBON
State : UTAH

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT
(Submit in Duplicate)

- ☐ Abandonment
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Multiple Completion
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Recompletion
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off
- ☒ Other RE-ENTER TO CONVERT TO A DISPOSAL WELL

Approximate Date Work Will Start _____

SUBSEQUENT REPORT
(Submit Original Form Only)

- ☐ Abandonment *
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Other _____
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Date of Work Completion _____

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.

* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

RGU proposes to re-enter the Utah D-1 well. We plan to clean out to 6200' (t.d.). We will install a 9 5/8" casing head on the 9 5/8" casing. We will use 3000 psi BOP's and choke manifold. These will be tested by an outside testing company. When total depth (6200') is reached we will run open hole logs: Induction, Porosity, Gamma Ray, Caliper, SD and a CBL across the 9 5/8" csg. A string of 7 5/8" csg w/flush jt. vam FJL connctions will be run. Cement volume will be calculated on open hole logs, 30% excess is required to bring cement to surface. Well will be perforated thru the Navajo sands and formation water will be tested to check salinity (TDS) content. Once this information is determined we will apply for disposal well permit.

14. I hereby certify that the foregoing is true and correct

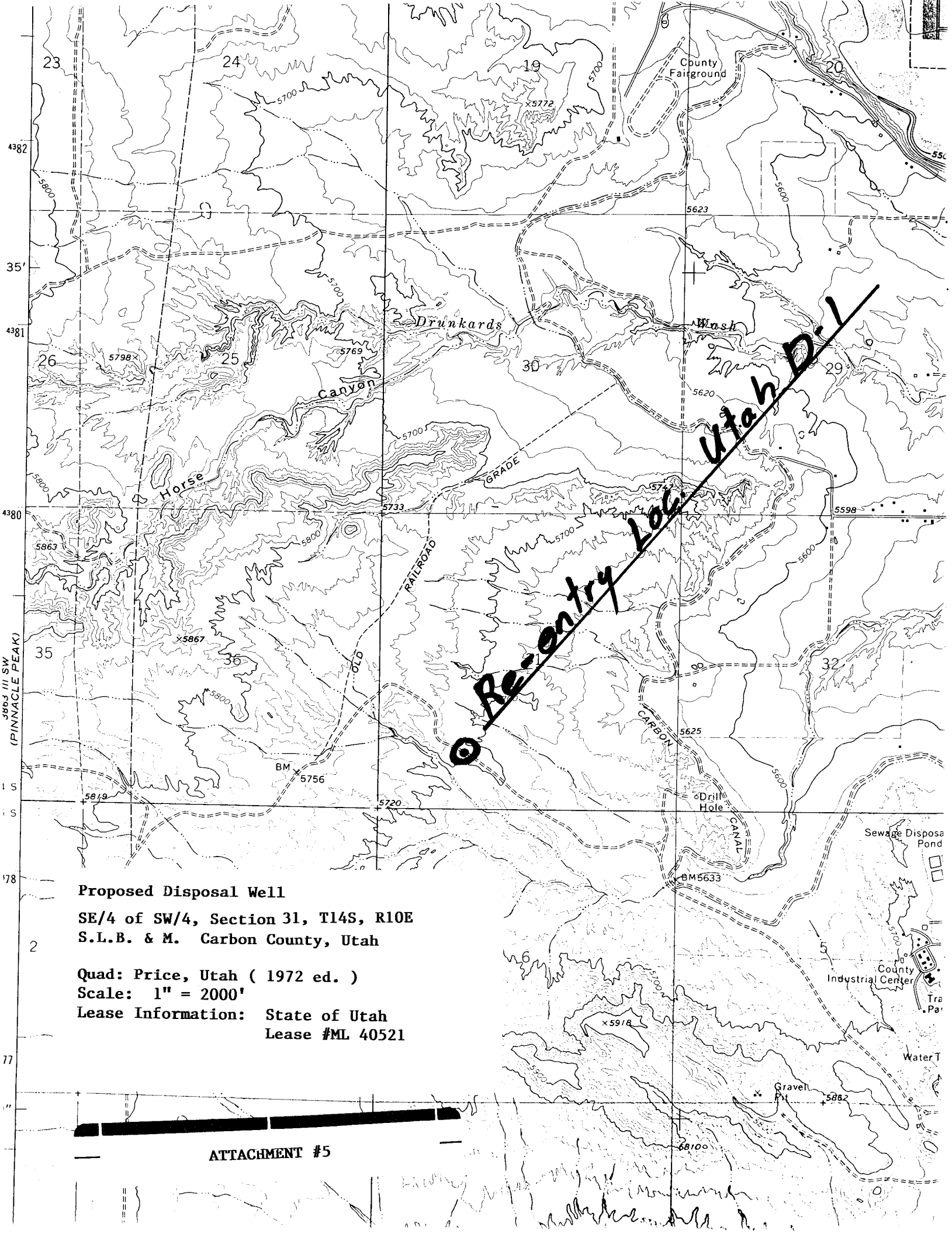
Name & Signature Michael J. Farrens *Michael J. Farrens* Title Vice President Date 7/16/93

(State Use Only)

RECEIVED
JUL 2 2 1993
DIVISION OF OIL GAS & MINING

(8/90)

See Instructions on Reverse Side



Proposed Disposal Well

SE/4 of SW/4, Section 31, T14S, R10E
S.L.B. & M. Carbon County, Utah

Quad: Price, Utah (1972 ed.)
Scale: 1" = 2000'
Lease Information: State of Utah
Lease #ML 40521

ATTACHMENT #5

RIVER GAS OF UTAH, INC.
ATTACHMENT #6
PREPARED MICHAEL J. FARRENS

Additional Drilling Information

-Drunkards Wash 31-1 (D-1)-

1552' FWL & 999' FSL (SE/4 of SW/4)

Section 31, Township 14 South, Range 10 East, Carbon County, Utah

R615-3-4 Permitting of Wells to be Drilled, Deepened or Plugged Back

2.1 Telephone numbers for additional information:

Michael J. Farrens Vice President	(205) 759-3282 Office (205) 758-8535 Home (801) 650-1162 Mobile
Joseph L. Stephenson Land Manager	(205) 759-3282 Office
David M. Chambers President	(205) 759-3282 Office

2.2 State Lease: Serial No. **40521**

2.3 This well will be drilled in a Federal Unit. The Unit name is Drunkards Wash Unit. The Unit No. is UTU 67921X.

2.4 Survey Plat: See Attachment #1

2.5 Water will be purchased from Price River Water Improvement District : See Attachment #2

2.6 Drilling Program.

2.6.1 The following geologic units are expected to be penetrated in the well.

Formation/Unit	Depth (ft)
9 5/8" csg set @	5729'
Navajo Sand	5729'-6200'
TD	6200'

2.6.2 The Navajo will be the only water bearing formations. Casing will be run and cemented with 300 sacks light cement and tail-in with 200 sacks class "A".

2.6.3 A double gate 3000 psi BOPE will be used with a rotating head. This equipment will be tested to 3000 psi. All test will be recorded in a Driller Report Book. Physical operation of BOP's will be checked on each trip. See Attachment #3 for Schematic.

2.6.4 None.

2.6.5 Mud Program:

0-6200	8 3/4" hole	Drill with water and Bentonite

2.6.6 Logging Program:

0-6200	Gamma Ray, Density, Neutron porosity, Sonic, Caliper and Induction
0-5700	Cement Bond Log

2.6.7 No hazards are expected.

RIVER GAS OF UTAH, INC.
ATTACHMENT # 7

AMENDMENT NUMBER: 002
TO LETTER OF CREDIT NUMBER: S304606
DATE: JANUARY 15, 1993

BENEFICIARY:
STATE OF UTAH, DEPARTMENT OF
NATURAL RESOURCES, DIVISION OF
STATE LANDS AND FORESTRY
#3 TRIAD CENTER SUITE 400
355 WEST TEMPLE
SALT LAKE CITY, UTAH 84180-1204

AT THE REQUEST OF RIVER GAS OF UTAH, INC. 12031 LAKE NICOL ROAD
TUSCALOOSA, AL 35406
AND FOR THE ACCOUNT OF SAME
WE HEREBY AMEND OUR LETTER OF CREDIT NUMBER S304606
DATED DECEMBER 14, 1990
OPENED IN YOUR FAVOR AS FOLLOWS:

-LATEST NEGOTIATION DATE IS EXTENDED TO DECEMBER 13, 1993

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.
THIS AMENDMENT BECOMES AN INTEGRAL PART OF THE ORIGINAL LETTER OF CREDIT AND IS TO BE ATTACHED THERETO.

AUTHORIZED SIGNATURE

AUTHORIZED SIGNATURE

dl\dw\permit

RGU

RIVER GAS OF UTAH, INC.

3600 Watermelon Road, Suite 204
Northport, Alabama 35476
Phone (205) 759-3282
Fax (205) 759-3188

RECEIVED
JUL 2 2 1993
DIVISION OF
OIL GAS & MINING

July 19, 1993

Mr. Brad Hill
Utah Board of Oil, Gas and Mining
Suite 350, 3 Triad Center
355 West North Temple
Salt Lake City, Utah 84180-1203

RE: Coalbed Methane Well Permit Application -
Drunkards Wash ~~Utah #B-1~~ (DISPOSAL WELL), SE/4 of SW/4, Section 31, T14S,R10E
31-1 (D1) S.L.B. & M., Carbon County, Utah

Dear Mr. Hill:

Enclosed is an original and one copy of an "Application for Permit to Drill" (APD) as described above. Attached to the APD is the following information:

Attachment #1 - Copy of survey plat of proposed well site

Attachment #2 - Information regarding use of water at the site

Attachment #3 - Schematic of BOP

Attachment #4 - Sundry Notice

Attachment #5 - Portion of topographical map indicating proposed well site

Attachment #6 - Additional drilling information furnished according to State regulations.

Attachment #7 - Evidence of bond sent to State Lands and Forestry Division

Also, please accept this letter as our request that all information be kept confidential that is eligible for such consideration regarding this permit. This request is made in accordance with your regulation R615-2-11.

Thank you for your assistance and if you have questions, please feel free to call.

Thank you.

Sincerely,

Michael J. Farrens/djl

Michael J. Farrens
Vice President
Utah Operations

MJF/djl

Enclosures

cc: Mr. Edward W. Bonner, State Lands Division
Mr. Eric Jones, BLM @ Moab
Mr. Dean Nyffler, BLM @ Price
Mr. Robert A. Hendricks, BLM @ Salt Lake City
Mr. J. R. French, JR., Texaco

RECEIVED
JUL 2 2 1993
DIVISION OF
OIL GAS & MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

July 29, 1993

River Gas of Utah, Inc.
3600 Watermelon Road, Suite 204
Northport, Alabama 35476

Gentlemen:

Re: Re-entry Drunkards Wash 31-1, (D-1) Well, 999' FSL, 1552' FWL, SE SW, Sec. 31, T. 14 S., R. 10 E., Carbon County, Utah

Pursuant to Utah Admin. R. 649-3-2, Location and Siting of Wells and Utah Admin. R. 649-3-4, Permitting of Wells to be Drilled, Deepened or Plugged-Back, approval to drill the referenced well is hereby granted.

In addition, the following specific actions are necessary to fully comply with this approval:

1. Compliance with the requirements of Utah Admin. R. 649-1 et seq., Oil and Gas Conservation General Rules.

2. Notification within 24 hours after commencing drilling operations.

3. Submittal of Entity Action Form, Form 6, within five working days following commencement of drilling operations and whenever a change in operations or interests necessitates an entity status change.

4. Submittal of the Report of Water Encountered During Drilling, Form 7.

5. Prompt notification prior to commencing operations, if necessary, to plug and abandon the well. Notify Frank R. Matthews, Petroleum Engineer, (Office) (801)538-5340, (Home) (801)476-8613, or R.J. Firth, Associate Director, (Home) (801)571-6068.

6. Compliance with the requirements of Utah Admin. R. 649-3-20, Gas Flaring or Venting, if the well is completed for production.

Trash and sanitary waste should be properly contained and transported to approved disposal locations, not retained in or disposed of in pits on location or downhole. Prior to the commencement of drilling operations, the operator should consult the local/county sanitarian and/or the Department of Environmental Quality, Division of Drinking Water/Sanitation, regarding appropriate disposal of sanitary waste.

This approval shall expire one year after date of issuance unless substantial and continuous operation is underway or a request for an extension is made prior to the approval expiration date. The API number assigned to this well is 43-007-30040.

Sincerely,

R.J. Firth
Associate Director, Oil and Gas

ldc
Enclosures
cc: Bureau of Land Management
Carbon County Assessor
State Lands and Forestry
J.L. Thompson
WOI1

Form 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

CONFIDENTIAL

6. Lease Designation and Serial Number	ML 40521
7. Indian Allottee or Tribe Name	N/A
8. Unit or Communitization Agreement	DRUNKARDS WASH UTU 67921X
9. Well Name and Number	DRUNKARDS WASH 31-1 (D-1)
10. API Well Number	43-007-30040
11. Field and Pool, or Wildcat	WILDCAT

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells. Use APPLICATION FOR PERMIT— for such proposals

1. Type of Well: ☐ Oil Well ☐ Gas Well ☒ Other (specify) DISPOSAL

2. Name of Operator: RIVER GAS OF UTAH, INC.

3. Address of Operator: 3600 WATERMELON RD, STE 204, NORTHPORT, AL 35476

4. Telephone Number: 205-759-3282

5. Location of Well
Footage : 1552' FWL & 999' FSL
QQ, Sec, T., R., M. : (SE/4 OF SW/4) SEC. 31, T14S, R10E
County : CARBON
State : UTAH

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT (Submit in Duplicate)		SUBSEQUENT REPORT (Submit Original Form Only)	
☐ Abandonment	☐ New Construction	☐ Abandonment *	☐ New Construction
☐ Casing Repair	☐ Pull or Alter Casing	☐ Casing Repair	☐ Pull or Alter Casing
☐ Change of Plans	☐ Recompletion	☐ Change of Plans	☐ Shoot or Acidize
☐ Conversion to Injection	☐ Shoot or Acidize	☐ Conversion to Injection	☐ Vent or Flare
☐ Fracture Treat	☐ Vent or Flare	☐ Fracture Treat	☐ Water Shut-Off
☐ Multiple Completion	☐ Water Shut-Off	☐ Other	
☒ Other CHANGE SIZE OF CASING & RUN A "STEP-RATE" INJECTION TEST			
Approximate Date Work Will Start		Date of Work Completion	

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.

* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

WE HAD INITIALLY PROPOSED TO USE 7 5/8", 26.40#/FT CASING ON THIS WELL AS STATED ON THE "APD". WE HAVE DECIDED TO CHANGE THE SIZE TO 7", 26.00#/FT. FOR A BETTER CEMENT BOND.

(SEE ATTACHED NOTICE OUTLINING PLANS FOR INJECTION TEST)

RECEIVED
AUG 13 1993
DIVISION OF OIL GAS & MINING

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS AND MINING
8-16-93
Joe Matthews

14. I hereby certify that the foregoing is true and correct

Name & Signature MICHAEL J. FARRENS Michael J. Farrens Title VICE PRESIDENT Date 8/10/93

(State Use Only)

(8/90)

See Instructions on Reverse Side

Sundry Notice

Utah 31-1 D-1
Disposal Well

Plans to test well prior to running casing

Current plans are to clean out the wellbore to 6425'. Run back in hole with a perforated sub, packer, and X-nipple on 2-7/8" tubing. Swab well to obtain representative fluid sample from the Navajo sand. Fluid sample will be chemically analyzed prior to additional operations. Results will be reported to the State of Utah, Oil, Gas and Mining Division. Upon approval of additional operations, RGU plans to run a step-rate injection test to determine fracture pressure utilizing downhole pressure bombs. Upon completion of this test and depending upon the observed results, RGU plans to then inject at a constant rate to be determined during the step-rate test for up to 48 hours and then perform a pressure fall-off test utilizing the downhole pressure bombs. A downhole shut-off tool will be set in the X-nipple to limit wellbore storage effects. This test will be performed in an attempt to obtain permeability information, reservoir pressure, and reservoir limits.

CONFIDENTIAL

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

NAME OF COMPANY: RIVER GAS OF UTAH 43-007-30040

WELL NAME: DRUNKARDS WASH 31-1 (D-1)

Section 31 Township 14S Range 10E County CARBON

Drilling Contractor GLEN ROSS

Rig # WORKOVER

SPUDDED: Date 9/14/93

Time 3:30 PM

How ROTARY

Drilling will commence

Reported by MIKE FARRENS

Telephone # 1-650-1162

Date 9/15/93 SIGNED FRM

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

DATE RECEIVED: 07/22/93

OPERATOR: RIVER GAS OF UTAH INC OPERATOR ACCT NO: N- 1600
WELL NAME: DRUNKARDS WASH 31-1,D-1REENTRY

API NO. ASSIGNED: 43-007-30040

LEASE TYPE: STA LEASE NO: ML-40501
LOCATION: SESW 31 - T14S - R10E CARBON COUNTY
FIELD: WILDCAT (001) FIELD CODE: 001

RECEIVED AND/OR REVIEWED:

- ✓ Plat
- ✓ Bond
  (Number statewide)
- ✓ Potash (Y/N)
- ✓ Oil shale (Y/N)
- ✓ Water permit
  (Number Duchesne)
- ✓ RDCC Review (Y/N)
  (Date:)

LOCATION AND SITING:

- ✓ R649-2-3. Unit: Drunkards Wash
- ✓ R649-3-2. General ✓
- ___ R649-3-3. Exception.
- ___ Drilling Unit.
  Board Cause no: ___
  Date: ___

COMMENTS: ✓ Old unit Mickey BOM
Re-entry - Formerly American Quasar Petroleum Co. Drunkards Wash 31-1.

STIPULATIONS:

CC: Carlos assistant State Lands

CONFIDENTIAL PERIOD EXPIRED ON 9-17-95

Form 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number

7. Indian Allottee or Tribe Name

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.
Use APPLICATION FOR PERMIT— for such proposals

8. Unit or Communitization Agreement: Drunkards wash UTU 67921 X

1. Type of Well: ☐ Oil Well ☐ Gas Well ☒ Other (specify) Disposal Well

9. Well Name and Number: 31-01 (D-1)

2. Name of Operator: River Gas of Utah, Inc.

10. API Well Number: 43-007-30040

3. Address of Operator: 3600 Watermelon Road, Northport, AL 35476

4. Telephone Number: (205) 759-3282

11. Field and Pool, or Wildcat:

5. Location of Well
Footage : 1552' FWL and 999' FSL
QQ, Sec, T., R., M. : SE/SW Section 31, T14S, R10E
County : Carbon
State : UTAH

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT (Submit in Duplicate)

- ☐ Abandonment
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Multiple Completion
- ☐ Other
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Recompletion
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Approximate Date Work Will Start _____

SUBSEQUENT REPORT (Submit Original Form Only)

- ☐ Abandonment *
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Other
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Date of Work Completion _____

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.

* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

* See attached report.

AUG 30 1993

14. I hereby certify that the foregoing is true and correct

Name & Signature: Terry D. Burns — Terry D. Burns — Title: Geologist — Date: 08/27/93

(State Use Only)

(8/90)

See Instructions on Reverse Side

DAILY WELL REPORTS

RIVER GAS OF UTAH, INC.
D-1 (DISPOSAL WELL)
1552' FWL & 999' FSL
SE 1/4 OF SW 1/4 Section 31, T14S, R10E
Carbon County, Utah
API NO. : 43-007-30040
Drilling Contractor: Pense Bros. Drlg Co.

Page One

08/22/93	Welder cut wellhead off. Welded hanger on.
08/23/93	Moving back hole. Dug down 18' beside casing. Cut off conductor and surface; left 9-5/8." Waiting on 18' joint of 9-5/8."

AUG 30 1993

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
DRILLING INSPECTION FORM

COMPANY: RIVER GAS OF UTAH COMPANY REP: MIKE FARRENS

WELL NAME: D-1 RE-ENTRY API NO: 43-007-30040

QTR/QTR: SE/SW SECTION: 31 TWP: 14S RANGE: 10E

CONTRACTOR: PENSE BROS RIG NUMBER: 11

INSPECTOR: C. KIERST TIME: _____ AM DATE: 9/1/93

OPERATIONS: LOCATION BUILT DEPTH: _____

SPUD DATE: DRY: _____ ROTARY: _____ PROJECTED T.D.: _____

==========

WELL SIGN: _____ SANITATION: _____ BOPE: _____ BLOOIE LINE: _____

H2S POTENTIAL: _____ ENVIRONMENTAL: _____ FLARE PIT: _____

RESERVE PIT: _____ FENCED: _____ LINED: _____ PLASTIC: _____

RUBBER: _____ BENTONITE: _____ OTHER: _____ MUD WEIGHT _____ LBS/GAL

BOPE TEST RECORDED IN THE RIG DAILY TOUR BOOK: _____

BOPE TRAINING RECORDED IN THE RIG DAILY TOUR BOOK: _____

==========

LEGEND: (Y)=YES (U)=UNKNOWN (NA)=NOT APPLICABLE

==========

REMARKS:

THE HOLE AROUND OLD CASING IS FILLED AND A NEW CASING HEAD HAS BEEN INSTALLED. PROBABLY MOVE ON RIG 9/2 OR 9/3.

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
WORKOVER AND COMPLETION FORM

COMPANY: River Gas of Utah COMPANY REP: Mike Farnes

WELL NAME: D-1 (re-entry) API NO: 43-007-30040

SECTION: 31 TWP: 14s RANGE: 10e

CONTRACTOR: Ross RIG NUMBER:

INSPECTOR: CJ Kierst TIME: 11:30 AM/PM DATE: 9/22/93

OPERATIONS AT THE TIME OF INSPECTION: Injectivity test

==========

WELL SIGN: N TYPE OF WELL: WDW (if tests positive) STATUS PRIOR TO WORKOVER: P+A

H2S: N ENVIRONMENTAL: OK PIT: Y BOPE: Y

DISPOSITION OF FLUIDS USED: pit

DOES THIS WORKOVER QUALIFY FOR STATE TAX CREDITS: (Y/N) N

PERFORATED: N STIMULATED: N SAND CONTROL: N

WATER SHUT OFF: N WELLBORE CLEANOUT: N WELL DEEPENED: N

CASING OR LINER REPAIR: N ENHANCED RECOVERY: N THIEF ZONE: N

CHANGE OF LIFT SYSTEM: N TUBING CHANGE: N OTHER CEMENT SQUEEZE: N

SURFACE EQUIPMENT CHANGES OR ASSOCIATED COSTS DO NOT QUALIFY FOR CREDITS.

==========

REMARKS:

Test Broke Back below 400# for some reason but is building back up above 500# (11:45 AM). Pressure building back up. Had to leave - pressure @ 140# w/ rate @ 2 bpm. They will probably have to bring in another truck to increase the rate because no clear cut break has been observed.

7 5/8"

HALLIBURTON

RIVER GAS OF UTAH, INC.

Drunkards Wash Federal Unit
Utah Disposal Well No. 1

Drunkards Wash Field

Carbon County, UT

Step-Rate Test

Prepared for: Mr. Mike Farrens

10/25/93

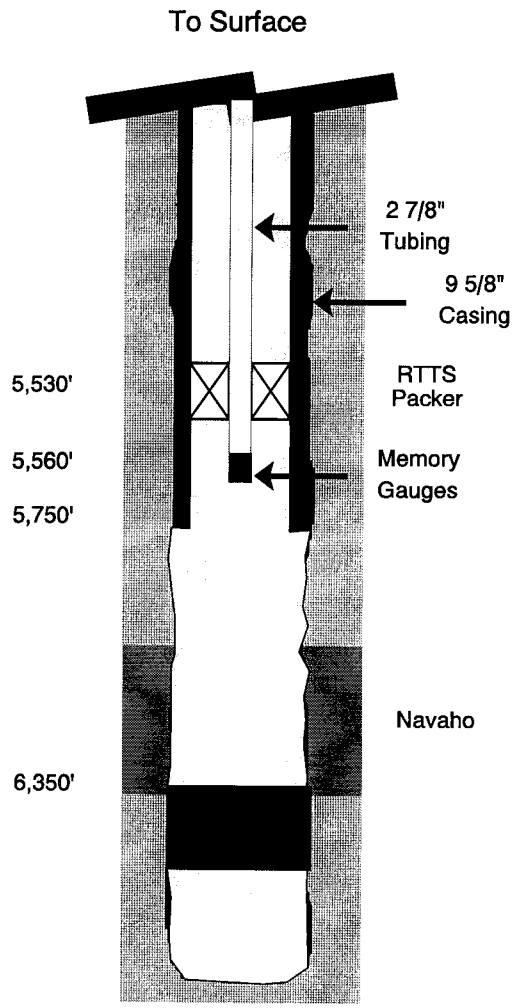
Prepared by:
Rusty Lockman
Halliburton Energy Services
P. O. Box 339
1085 East Main Street
Vernal, Utah 84078
(800) 874-2550

Halliburton Wants a Safer World

HALLIBURTON

Well Information

Tubing Size	2 7/8 in
Tubing Weight	6.5 lb/ft
Casing Size	9 5/8 in
Casing Weight	40 lb/ft
Casing Depth	5,750 ft
Total Depth	6,350 ft
RTTS	5,530 ft
Memory Gauges (2 ea)	5,560 ft



Job Schematic

HALLIBURTON ENERGY SERVICES

JOB LOG FORM 2013 R-3

DATE	PAGE NO.
9-22-93	1

CUSTOMER	WELL NO.	LEASE	JOB TYPE	TICKET NO.
River Gas of Utah	#1	Utah Disposal	Step RAte Test	

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
	0630							Arrive on Location
	0930							Safety Meeting
	0950							Press Test Lines -n OK
	0957	1	0			10		Start Test
1	1001	1.9	10			9		Rate & Press
	1002	2	14			350		Rate & Press
	1020	2				500		Rate & Press
2	1031	2.5	74			595		Pick up Rate
3	1045	2.5				605		Break
	1054	2.5				390		Rate & Press
4	1100	3	148			475		Pick Up Rate
5	1142	4	236			625		Rate & Press
6	1200	5	368			862		Pick Up Rate
	1224	5.2	482			857		Rate & Press
7	1228	7	508			1270		Pick Up Rate
	1242	7	605			1225		Rate & Pressure
8	1250	9.7	678			1660		Pick Up Rate
9	1315	11.5	924			1470		Shut Down
10						450		ISIP
11	1352	.5	924			51		Start Pump
	1401	.5	930			35		RAte & Press
12	1401	1	930			62		Pick Up Rate
	1416	1	944			63		Rate & Press
13	1416	1.5	944			102		Pick Up Rate
	1428	1.4	964			90		Rate & Press
	1431	2	966			132		Pick Up Rate
	1444	2	996			170		Rate & Press
14	1444	2.5	996			217		Pick Up Rate
	1501	2.5	1036			241		Rate & Press
15	1501	3	1036			275		Pick Up Rate
	1511	3	1067			310		Rate & Press
	1516	3	1083			394		Rate & Press
16	1516	3.5	1083			358		Pick Up Rate
	1528	3.5	1123			385		Rate & Press
17	1528	4	1123			420		Pick Up Rate

HALLIBURTON ENERGY SERVICES

JOB LOG FORM 2013 R-3

DATE	PAGE NO.
9-22-93	2

CUSTOMER	WELL NO.	LEASE	JOB TYPE	TICKET NO.
River Gas	1	Utah Disposal	Step Rate Test	

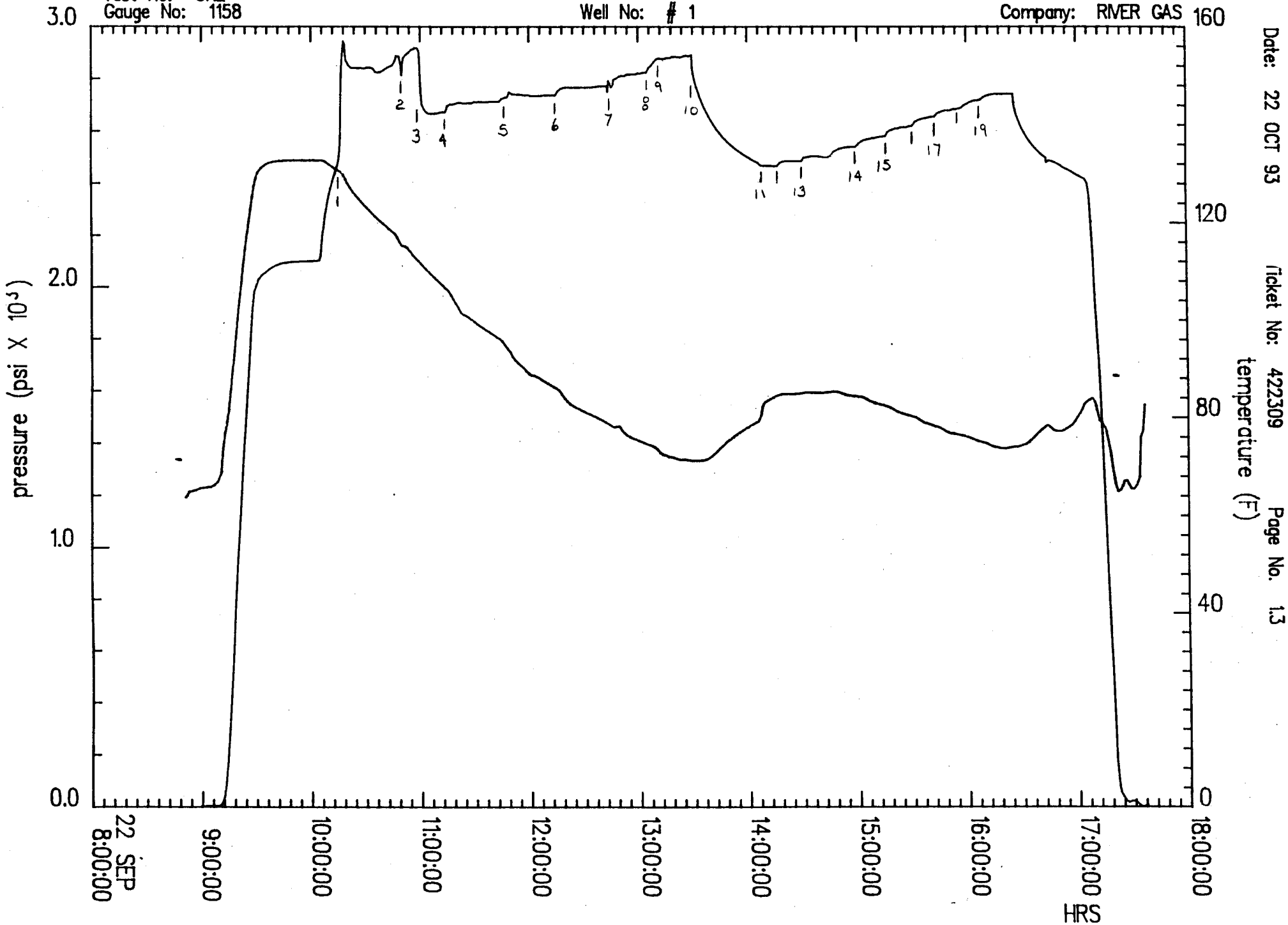
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE(PSI) TUBING	PRESSURE(PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
18	1543	4.5	1180			495		Pick Up Rate
	1554	4.5	1234			521		Rate & Press
19	1554	5	1234			572		Pick Up Rate
	1556	5	1242			575		End Gelled Fluid Start H2O
	1608	5	1304			760		Rate & Press
	1611	5	1320			774		Shut Down
						250		ISIP
								Job Complete
								Thank You Mike
								Richard, Jeff & Don

Pressure/Temperature History

Test No: ONE
Gauge No: 1158

Well No: # 1

Company: RIVER GAS



Date: 22 OCT 93

Ticket No: 422309

Page No. 1.3

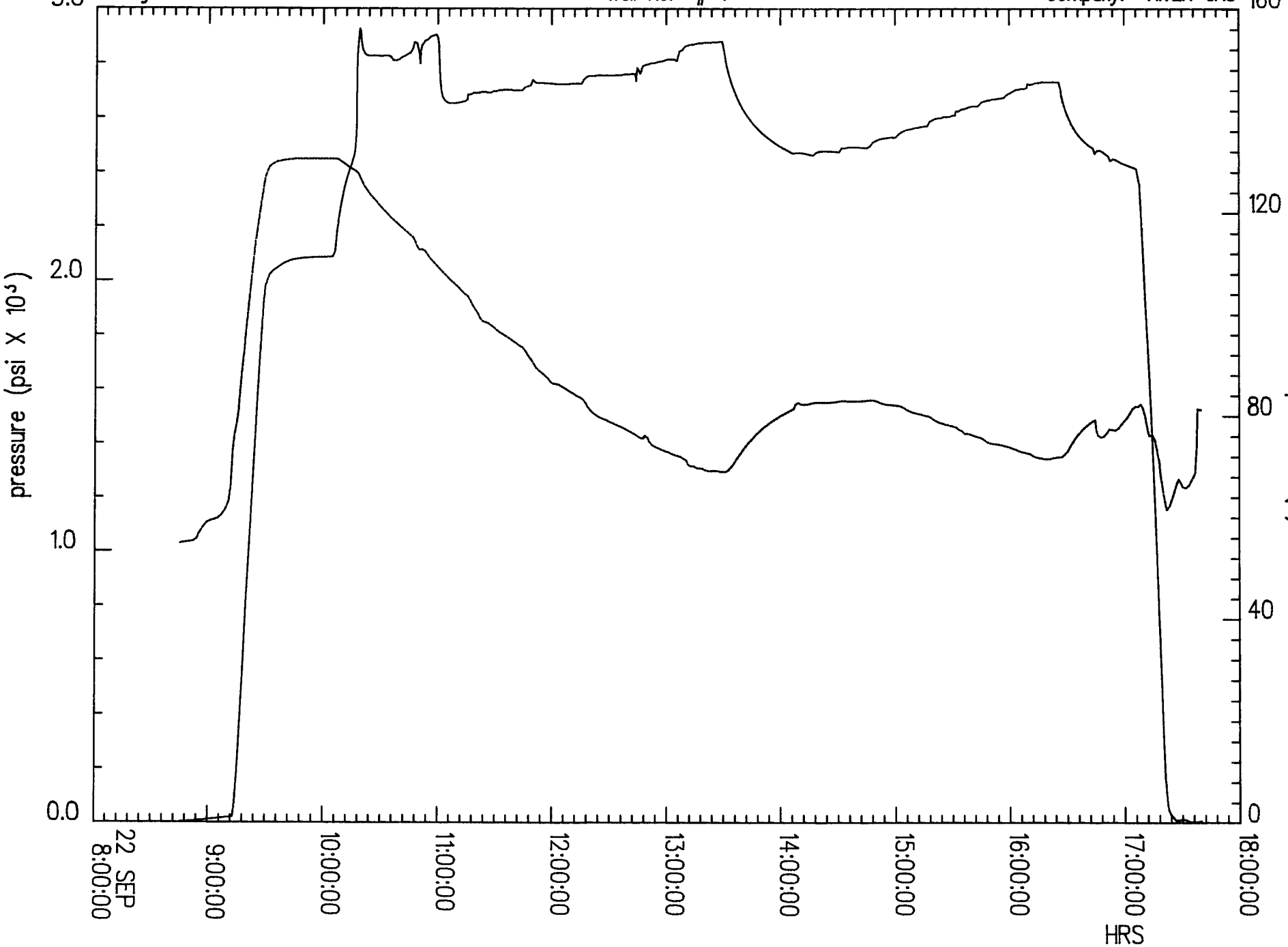
1ST TEST SEPT [redacted] 22, 93

Pressure/Temperature History

Test No: ONE
Gauge No: 1343

Well No: # 1

Company: RIVER GAS



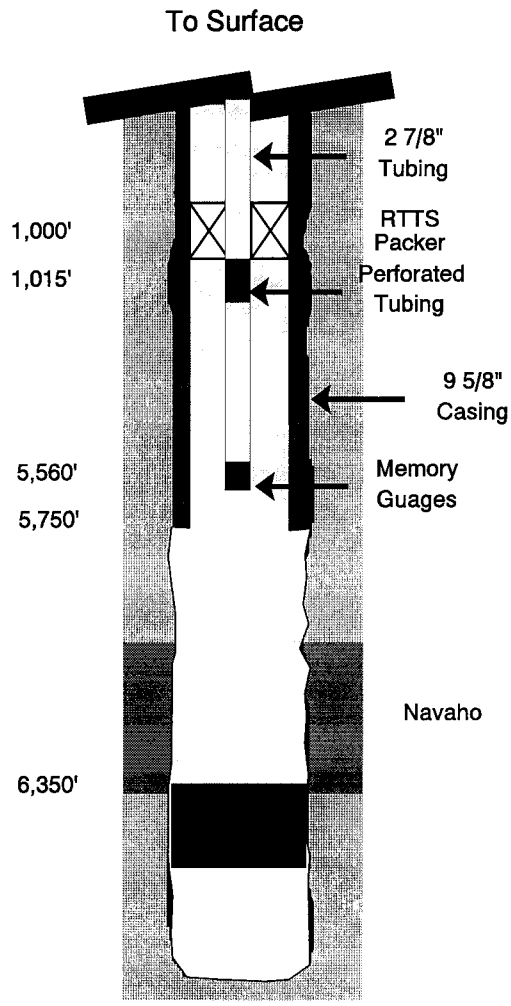
Date: 22 OCT 93

Ticket No: 422309

Page No: 1.3

Well Information

Tubing Size	2 7/8 in
Tubing Weight	6.5 lb/ft
Casing Size	9 5/8 in
Casing Weight	40 lb/ft
Casing Depth	5,750 ft
Total Depth	6,350 ft
RTTS	1,000 ft
Memory Gauges (2 ea)	5,560 ft



Job Schematic

HALLIBURTON ENERGY SERVICES

JOB LOG FORM 2013 R-3

DATE	PAGE NO.
9-24-93	1

CUSTOMER	WELL NO.	LEASE	JOB TYPE	TICKET NO.
River Gas	#1	Utah Disposal	Step Rate	488545

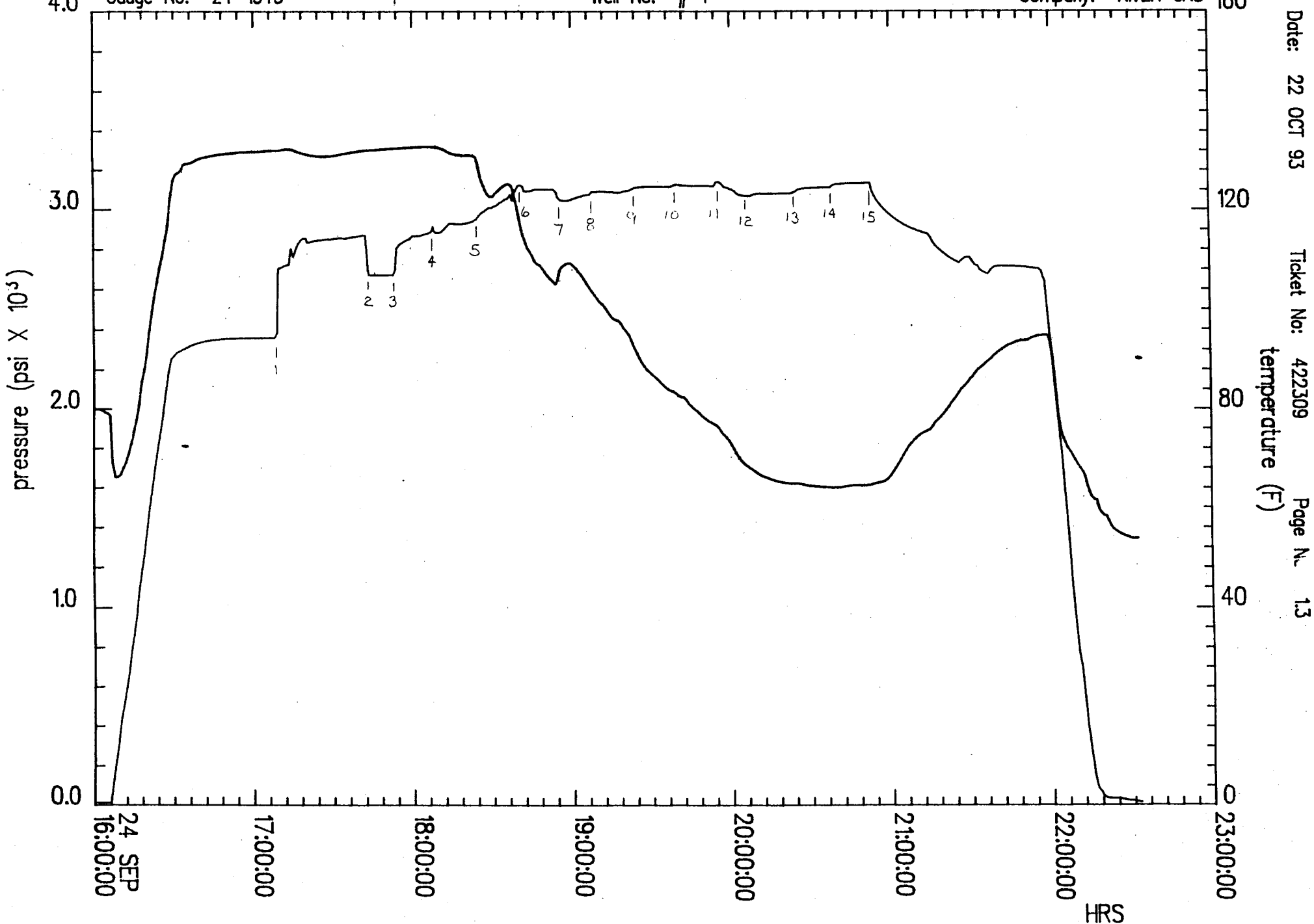
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE(PSI) TUBING	PRESSURE(PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
	0900							ARRIVE ON LOCATION
	1647							Pressure Test Lines - OK
	1656	2.2	0			70		Start Pump - Fill Hole
1	1703	1.5	165			134		Rate & Press
2	1730	1.5	68					Shut Down
								ISIP
3	1741	1.7	68			170		Start Pump
4	1757	2.5	93			248		Step Rate Up
	1811	2.5	127			306		Rate & Press
5	1811	3.5	127			350		Step Rate Up
	1825	3.5	181			450		Rate & Press
6	1825	5.0	181			500		Step Rate Up
	1840	5.0	260			507		Rate & Press
7	1840	6.5	260					Step Rate Up
	1840	6.5	344			645		Rate & Press
8	1855	8	344			760		Step Rate Up
	1910	8	471			658		Rate & Press
9	1910	9.5	471			695		Step Rate Up
	1925	9.5	650					Rate & Press
10	1925	11.5	650			746		Step Rate Up
	1940	11.5	805			730		Rate & Press
11	1940	15.5	805			935		Step Rate Up
	1955	15.5	1030			856		Rate & Press
12	1955	20	1030			1025		Step Rate Up
	2010	20	1351			1020		Rate & Press
13	2010	25	1351			1390		Step Rate Up
	2025	25	1680			1376		Rate & Press
14	2025	30	1680			1750		Step Rate Up
	2040	30	2120			1728		Shut Down
15						560		ISIP
	2045					410		5 Min Shut In
	2050					359		10 Min Shut In
	2055					320		15 MIN Shut In
								Thank You Mike,
								Richard and Crew

Pressure/Temperature History

Test No: ONE
Gauge No: 24-1343

Well No: # 1

Company: RIVER GAS



Date: 22 OCT 93

Ticket No: 422309

Page No. 1.3

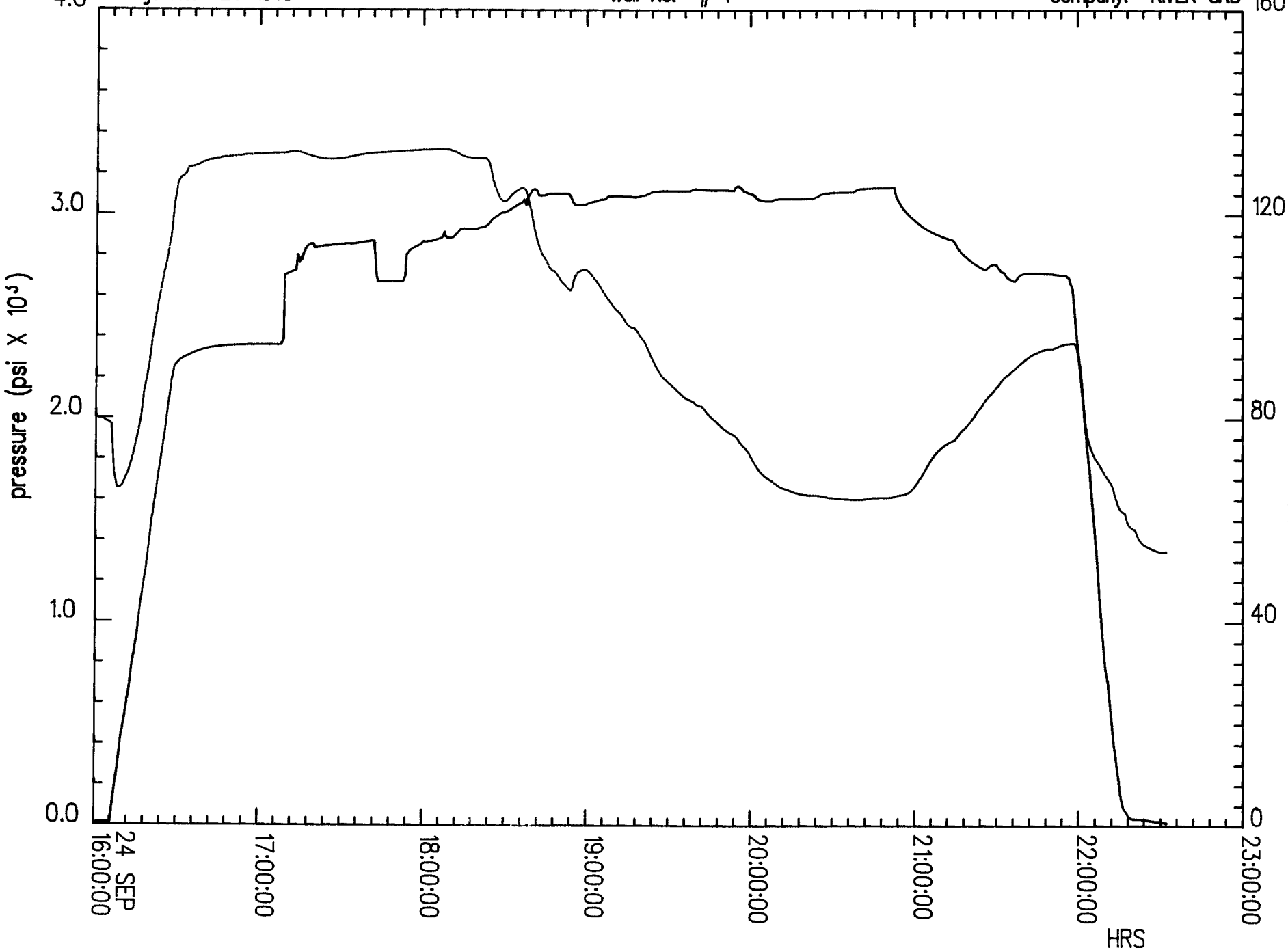
#2 NO TEST SEPT 24, 93

Pressure/Temperature History

Test No: ONE
Gauge No: 24-1343

Well No: # 1

Company: RIVER GAS



Date: 22 OCT 93

Ticket No: 422309

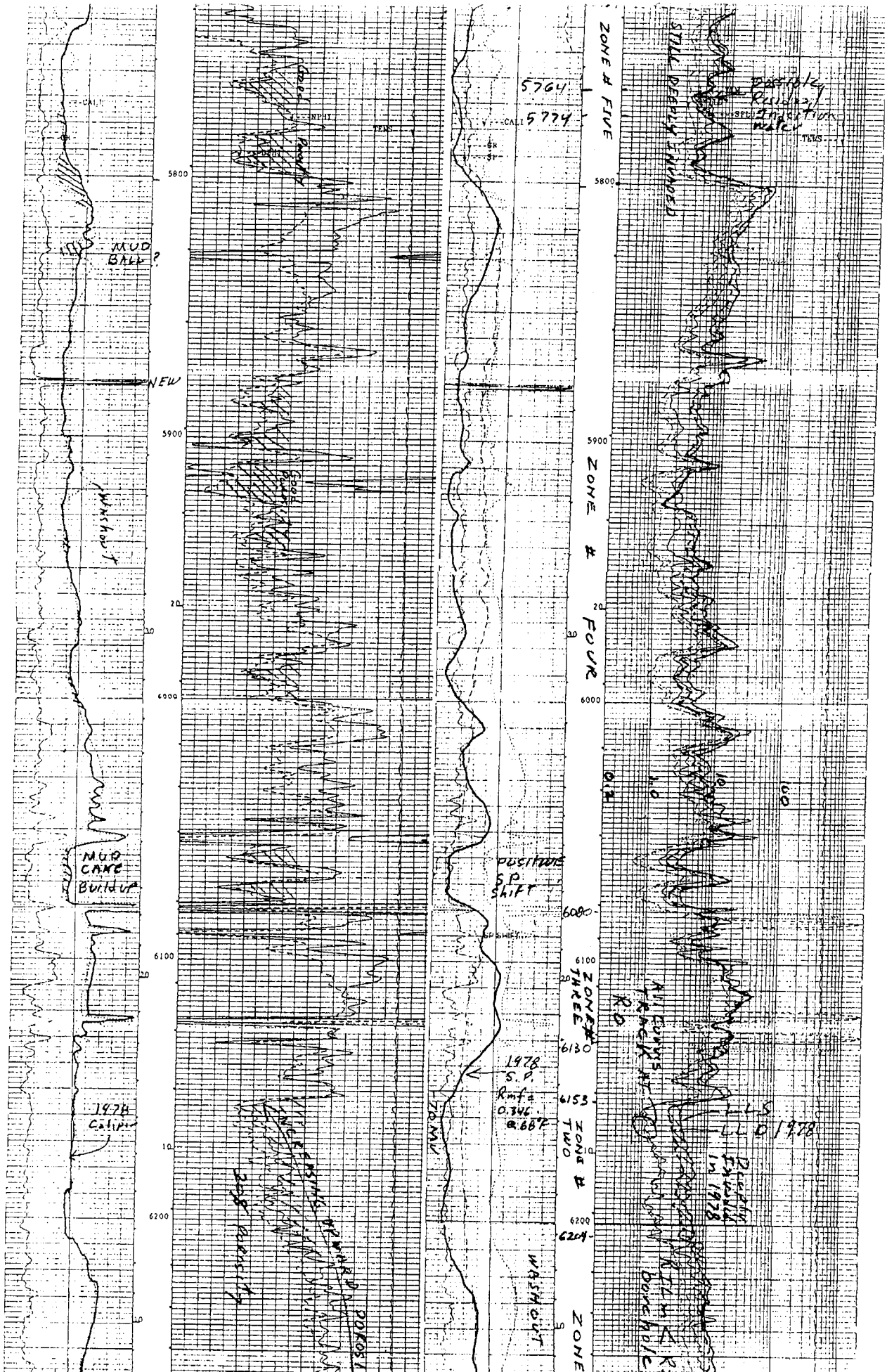
Page No: 1.3

HALLIBURTON

Conditions

NOTE

This report is for information only and the content is limited to the testing described. Halliburton Energy Services makes no warranty, express or implied, as to the accuracy of the contents or results. Any user of this report agrees that Halliburton Energy Services shall not be liable for any loss or damage, regardless of cause, resulting from the use thereof.



MUD BALL?
NEW
Washout
MUD CAKE Buildup
1978 Caliper
5800
5900
6000
6100
6200
5764
5774
ZONE # FIVE
ZONE # FOUR
ZONE # THREE
ZONE # TWO
ZONE
6130
6153
6204
POSITIVE SP SHIFT
1978 S.P.
Rmf = 0.346 @ 68°F
70 MV
WASHOUT
STILL DEEPLY INVADED
Possible Residual Injection Water
LLS
LLD 1978
Deeply Invaded in 1978

November 5, 1993

Preliminary Report on
Drunkard's Wash 31-1 D#1
Section 31, T 14S-R10E
for Charles Willis & Mike Farrons
River Gas of Utah, Inc.

ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM SAMPLES AND LOGS WHICH WERE SUPPLIED. WE CANNOT, AND DO NOT, GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATIONS, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE.

TR 2222

LOG INTERPRETATION

Background

Dual Induction-SFL, and Compensated Neutron-Formation Density logs were run on September 25, 1993 from 5,729 (casing) to 6,366 feet, in open hole portions of an old hole now operated by River Gas of Utah, Inc. A Cement bond log was run over the cased hole portion from 5,729 feet to surface. The well is the Drunkard's Wash 31-1 (D#1) in SW of Section 31, T14S R10E of Carbon Co., Utah. This well was originally drilled to 13,512 feet by American Quasar in 1978. Dual Laterolog, Compensated Neutron, Density and Sonic logs were available as Run Number 2 and covered the openhole portion. These logs were ordered from Riley Electric Logs to allow comparison of the original logs to those recently made in the reentry portion of the original hole.

The September 25, 1993 logs were made after injectivity tests on September 23 and 24, 1993 where injection rates during three-hour tests reached 30 BPM at very modest pressures. An estimated total of 3,000 bbls of fresh water were injected. It is the objective of this analysis to determine if these rates were possible due to preexisting open fractures, hydraulically or mechanically induced fractures or natural formation properties. Since the well had been plugged using drilling mud which had been in the hole for some 15 years, extensive formation damage was expected. The conclusions reached and recommendation are given at the end of the report.

Fluid and Pressures

Low formation pressures are indicated by a standing fluid level 537 feet found on the CBL. Good cement bond was indicated from 5,400 feet nearly continuously up to at least 5,060 feet with scattered intervals of good bond found both above and below. Some loss of bond is indicated below 5,600 feet, probably due to the damage during deeper drilling on the original well, but overall, there appears to be no reason to suspect flow in the annulus up between the 9-5/8" casing and the 12- 1/4" borehole wall. Thus, the injected fluid flow must be entering the open hole below.

Log headings indicate the fluid in the hole during the September 25, 1993 logs was "produced water" with a density of 8.35#/gal and a resistivity of 1.15 ohm-meters at 46° F. This is inconsistent with fluid swabbed from the hole, which was reported to have a density of 9.5#/gal and T.D.S of 193,000 PPM and chlorides of 113,000 PPM. Since the fluid level was below the surface, it is unlikely the logging company could have obtained a sample of the actual borehole fluid. The "produced water" probably corresponds to water produced during coal-gas production, which is reported to be about 5,000 PPM T.D.S. Water corresponding to a resistivity of 1.15 @ 46° F would have a T.D.S of about 7,000 PPM. Thus, the logging company could have obtained

a surface sample of the produced fluid. The swabbed fluid with chlorides at 113,000 PPM would correspond to sodium+ chlorides of 220,000 PPM or a water resistivity (R_w) of 0.023 at a BHT of 145° F. This is higher that the reported T.D.S. If sodium+ chlorides were 113,000 PPM, R_W= 0.036 @ 145° F. This is consistent with indicated formation waters. It is possible the swabbed fluid is essentially salty natural formation fluids.

Comparison of Old and New Logs

The 1978 Laterologs, S.P. and Caliper were traced on 50% reduced copies of the 1993 logs to help in making a time-lapse comparison. This comparison helped define five zones discussed below. The attached copy has been labeled as to these zones and some additional important features. It can be seen at a glance that the deep induction log matches both Latrologs over much of Zones One and Three, inidicating their general low permeability by lack of invasion, both in 1978 and in 1993 after the injection tests. Zone Two is unique in showing deep invasion in 1978 but, in 1993 the resistivities uniformly decrease by a factor of four and any sign of invasion has dissapeared. Zones Four and Five have simular resistivity profiles, invaded both in 1978 and 1993, but Zone Four is less invaded than Zone Five. The same factor of about four decreases in resistivity from the 1978 LLs, as found in Zone Two, to the 1993 ILd, generally is shown over Zone Four. This resistivity decrease is significantly less in Zone Five. The deeper invasion present here is deep enough to increase the ILd reading from the non-invaded value. Deep invasion is also shown by the 1993 SFL approaching the LLs values. The SFL actually exceeds both 1978 Laterolog values from 5,764 to 5,774 feet, indicating some possible residual injected fresh water - this is the only indication of such.

Of particular interest is the unique Zone Two between 6,153 and 6,204 feet on the 1993 Dual Induction -SFL log. All resistivity curves track, which indicates: 1) that no invasion has taken place (unlikely in view of porosity up to 20% and invasion on the 1978 logs) or 2) the resistivity of the borehole fluid equals that of the formation water, ($R_{mf} = R_w$), or 3) that the zone is very permeable and extensively invaded so deep that the invasion front is beyond the depth of investigation of even the deep induction (200+ inches). We can tell which is the case and what is the resistivity of the water by comparing log resistivity and porosity values.

On the 1978 logs, Dual Laterologs were run. The consistently uniform separation between the deep and shallow Laterologs indicate a formation homogeneity uncharacteristic of fractures, but typical of invaded porous zones. At 6,160 feet, LLd = 2.5 and LLs = 4 or LLd/LLs = 0.625. Assuming 20% porosity as shown on the density-neutron log and R_{mf} = 0.20, R_{xo} = 5 or nearly

equal to the LLs, indicating deep invasion from over five months of exposure between drilling and logging. Plotting these data on Schlumberger chart Rint-02 indicates a diameter of invasion exceeding 100 inches and a R_t/R_{xo} of 0.2 or R_t= 1.0. This R_t equals the reading of all the resistivity curves on the 1993 log. This value for R_o gives R_w = 0.04 at formation conditions. This R_w value is an agreement with that of the 113,000 sodium+ chlorides reported for the swabbed fluid. Thus, we conclude the 6,153 to 6,204 foot zone, while deeply invaded in 1978 with fresher filtrate, has been flushed by 0.04 ohm-meter formation waters.

Another check on formation water resistivity can be made using the S.P. from the 1978 logs. The S.P. baseline is well established between 6,600 and 7,400 feet. The S.P. deflects -70MV at 6,115 feet. This gives a R_{mfe}/R_{we} ratio of 7.2. Using R_{mf} = 0.2, R_{mfe} = 0.18 so R_{we} = 0.025 and R_w = 0.04, essentially an exact check. Since all resistivities track over the 6,153- 6,204 zone on the 1993 logs, and these resistivities correspond to R_0, this zone must have been flushed by formation water prior to the 1993 logging. Since we know it was deeply invaded in 1978 confirming permeability characteristic of up to 20% porosity, this invasion and all invasion of fresh injection water must have been flushed to bring saline formation water back to the borehole wall. Some incite is provided by the DIL-SFL log run in September.

Formation Characteristics

Overall, the 1993 DIL-SFL can be split into five zones. A basal zone 1) from T.D. up to 6,204 feet which shows modest to no invasion in relatively low porosity. The Laterologs on the 1978 log are above 5, average 10 and reach 15 ohm-meters. This zone is the middle of a very thick sand that begins below T.D. at 6,535 and extends upward through the second zone, the unique 6,153-6,204 zone already discussed, and its cap below 6,130 feet.

The second or unique zone appears to have been swept of any prior invasion, and the DIL-SFL readings all represent Ro, the 100% formation water (R_w=0.04) saturated values. For this no-invasion condition to exist at the time of logging, the formation pressure must be in balance with the 537 feet of fluid in the hole. The third zone extends from 6,130 up to 6,080 feet, and is a carbonate-rich tight zone. No invasion is indicated on both 1978 and 1993 logs and a low S.P. on the 1978 logs indicates a lack of permeability. This 6,080-6,130 third zone apparently functions as a seal between the first and second zones below and a fourth zone above.

The fourth zone extends from 6,080 up to 5,800 feet and is generally both porous and permeable, except for some tight intervals up to 20 feet thick. This fourth zone appears invaded on both logging runs. On the 1978 log, filtrate at Rmf = 0.2 is invading more saline formation waters. The well-developed S.P. indicates formation waters of the same or higher salinity as the 6,160 zone previously analyzed, e.g., about 113,000 PPM.

The fifth zone extends from 5,800 feet up the casing shoe at 5,729 feet. It is the most porous zone in the openhole portion, with porosity averaging 20% for almost 30 feet. It was deeply invaded in 1978 and exhibits the deepest invasion indicated in 1993, so deep even the deep induction does not approach R_t. Certainly this zone took some portion of the injected water, but this invasion does not extend beyond the depth of investigation of the induction logs. Note the SFL reads higher than both 1978 Laterologs between 5,764 and 5,774 feet. This is interpreted as residual fresh injection water. The ILm reads about half-way between the ILd and the SFL so the diameter of invasion is about 100 inches and R_t equals about 75% of the ILd reading. Using the porosity shown, R_w again equals 0.04.

Overall, the SFL readings on the 1993 log are uniformly less than either LLs or LLd on the 1978 log, indicating invasion of water less than the 0.2 ohm-meter filtrate used then. The deep induction drops to the 0.6-0.7 range where porosity exceeds 20%, which requires formation waters in the 0.04 range (very salty). All this indicates the permeable parts of the uppermost (fifth) zone has

been invaded prior to September 25, 1993 logs with water which is somewhat fresher than formation water but much saltier than the water used in the injection tests. This water probably is comparable to that swabbed with a standing water level of 1,500 feet before these tests and probably corresponds to 0.04 ohm-meter formation water. Thus no zone shows deep fresh water invasion that would be expected from injection of 3,000 bbls of 300 to 5,000 PPM water. The 5,746-74 foot residual zone indicates esesntially all the fresh injection water entering this part of the openhole has been flushed by very salty formation water.

Injection Tests

As we understand the injection test, produced water of about 5,000 PPM (the 1.15 @ 46° F "produced water" noted on the log 1993 headings) from coal gas-production was initially injected on September 23. Then, very fresh drinking water of about 300 PPM was injected on September 24, for a total of about 3,000 bbls. Injection pressures were very low, never reaching the equivalent of 0.47 Psi./Ft. frac gradient at rates up to 30 BPM. The standing water level was 537 feet at the time of logging one to two days later. Tubing had been pulled which would have required some fill but these formations are permeable enough to have provided equalizing fill between the pulling of tubing and completion of the CBL. This leaves two questions unanswered: 1) What was the source of the relatively salty water that appears to now be in the borehole and 2) where did 3,000 bbls of the relatively fresh injection water go? Only a small portion is possibly obvious on the logs.

The source of the relatively salty water is apparently the unique Zone Number Two from 6,153 to 6,204 which appears to be completely flushed of any water fresher than its salty formation water of R_w=0.04. A sharp S.P. deflection (complicated by a mechanical S.P. shift below) to the positive at 6,080 feet above Zone Number Three, the apparent seal, indicates either a cross flow uphole during logging or an unlikely sharp change in salinity of the borehole fluid. A S.P. "sand" baseline forms above 6,050 feet. This indicates fluid is leaving the borehole and is generating a filtration potential between 6,050 and 6,080 feet. Note there is little other character to the S.P. implying that the water in this part of the borehole is saline formation water. The medium induction reading less than deep induction in even modest washouts also implies the borehole fluid is very salty.

Cross Flow After Tests

The interpretation which most logically answers question Number 1 indicates the source of the salty water in the borehole is Zone Two - the high porosity 6,153-6,204 foot interval. The water appears to be flowing uphole into Zone Four and possibly Zone Five. Note mudcake buildup from 6,048-64, feet perhaps from fluid entry there. This implies that the formation pressure in Zones Four and Five is less than in Zone Two. One possible cause of this pressure difference is that Zone Two was charged by taking water during injection. If this is the case, all of the fresh injection water has been dissipated in Zone Two or flushed out by backflow into the hole, as it is clear that only salty formation water was present in Zone Two during logging. No hint of fresher water is indicated from the borehole wall to as deep as logs can investigate i.e. several hundred inches.

As to question Number 2, it is implied that permeable Zones Two, Four and Five took some water during injection. Probably Zone One also took water. These zones showed evidence of invasion on the 1978 logs with 9.2 #/gal mud. This mud would be equivalent to a frac gradient of 0.477 which certainly did not breakdown or frac the formation or the mud would have been lost. Pressures during injection probably approached this pressure and since this pressure was sufficient to have caused invasion of mud filtrate through mudcake in 1978, it surely caused water entry during the injection tests in all zones showing invasion in 1978. Over 300 feet of Zones Four and Five was invaded in 1978. All 51 feet of Zone Two was invaded and 70 feet of the upper portion of Zone One was at least modestly invaded. Thus, about 420 feet of formation probably took some injected water.

However, since the injected water (produced water) was at least twice as resistive as the mud filtrate used in 1978, very little of this fresh water appears to remain two days later, at least very little appears to remain near the borehole. The log profile is strongly suggesting that three of the four the permeable zones have been only modestly invaded by fresh water. Flushing 3,000 bbls of fresh water beyond the log depth of investigation in two days would require an impressive cross flow. It is more probable that a large portion of the injection water went elsewhere.

The bond log assures that uphole flow is improbable. Downhole flow below T.D. and a cement plug reportedly at 6,400 feet is much more likely. It is most probable that the injected water bypassed this plug. It is not clear what caused T.D. at 6,366 to be called by Schlumberger. There is no "pickup" on the tension curves at this point. There are deeper zones apparent below 6,400 that should be capable of taking large quantities of water if access to downhole was possible. These deeper zones should also be considered for injection.

Downhole Zones

The Dual Laterolog, Compensated Neutron, Formation Density and Sonic logs run in 1978 indicate a possible injection zone below the base of Zone One (Zones One and Two are parts of a continuous sand based at 6,530 feet and extending up to 6,131 feet). The zone below is apparently a fractured limestone extending down to 7,010 feet. While occasionally argillaceous, this carbonate section is also porous with porosity generally increasing with depth to at least 10% in the 6,956 to 6,984 foot interval, which has a well-developed S.P. LLd resistivities rarely exceed 20 ohm-meters, and drop to the 2-3 range in part, due to extreme washouts, presumably fracture induced.

Below 7,010 feet, a massive carbonate extends down to 7,625 feet. This is mostly limestone, very argillaceous and somewhat fractured, but with little actual porosity. Below 7,625, this carbonate becomes less argillaceous but appears neither fractured or porous down to 7,940 feet. Modest porosity develops in the less argillaceous zone between 7,950 and 7,980 feet. No deeper potential injection zones are apparent.

The carbonate becomes more dolomitic below 8,200 feet but no associated porosity or fractures are apparent. Below 8,800, the zone becomes more quartz-rich and tight downwardly to about 9,464 feet where evaporites become apparent. Resistivities generally exceed 100 and approach 1,000 ohm-meters down to 11,130 feet where some porosity develops for a few feet. The tight carbonate-evaporite interval becomes increasingly shaley down to 12,880 feet. Only minor porosity develops in the cleaner carbonates below. Thus, there appears to be little to be gained opening the hole below 8,000 feet.

CONCLUSIONS

There are several hundred feet of permeable sandstones below the casing shoe at 5,729 feet to T.D. near 6,400 feet. The permeability was demonstrated by invasion and S.P. shown in the 1978 logs on the original hole. All these permeable zones show some evidence of invasion on the 1993 logs made after injection, except on unique zone between 6,153 and 6,204 feet. The invasion is by a relatively salty filtrate, not by flushing with the relatively very fresh injection water. The unique zone shows no evidence of injection water. Only formation water in excess of 100,000 PPM is apparent. This obviously permeable zone must have accepted some injection water and then flowed formation water back into the borehole which flushed out the fresher injected fluid. This zone must also have the highest formation pressure equal to fluid level of 587 feet, the fluid level on the CBL. Two also permeable zones above still show some invasion by fresher waters. The

5,880-6,000 foot zone is more modestly invaded than the casingshoe to 5,800 zone. The 5,880-6,000 foot zone probably has the highest injectivity potential and may communicate with additional porosity above 6,080 feet. The 6,080-6,153 foot zone probably isolates zones above and below.

No zone clearly indicates acceptance of large amounts of the 3,000 bbls injected. It can be assumed all zones shown to be invaded on the 1978 logs took some injected water as the mud weight then was 9.2#/gal or about equal to the maximum injection pressure. The resistivity of the filtrate in 1978 was about 1/2 the saltiest injected water, yet the 1993 SFL is almost always less than the Laterologs run in 1978. This indicates the water near the borehole is very salty, mostly formation water. Only the casing shoe to 5,800 foot zone indicates invasion of water approaching the 1978 filtrate salinity which is much less than the injected water. Thus, the location of the injected water is not apparent on the logs. Good cement is apparent on the CBL, so it is improbable that flow up behind casing occurred. It is more probably that the injected fluids went downhole below T.D., by passing a cement plug reportedly placed at 6,400 feet during the 1978 plugging.

RECOMMENDATIONS

It is recommended that a CBL/GR be run over the liner now cemented in the redrilled hole. If good cement is indicated, drill out and through the reported cement at 6,400 feet Test this interval for injectivity rates, perhaps using an acid breakdown to reach maximum rates. The formations below are carbonates in contrast to sandstones behind the liner, and should stimulate at pressures less than the 0.477 frac gradient equivalent of the mud used to drill the hole in 1978. Obviously the actual frac gradient exceeds 0.477 or this mud would have broken down the formations and lost.

A retrievable bridge plug can then be set below 6,300 and near the bottom of the liner. Frac gradient can be established if still required by perforating the 6,153-6,204 zone and testing this well-defined unique zone. Additional disposal zones may be added later as required by perforating zones between 5,910-6,000 feet and 5,730-5,800 feet, but the retrieval bridge plug could be pulled first and openhole below the liner utilized.

HALLIBURTON

HALLIBURTON ENERGY SERVICES
Duncan Technology Center / P. O. Drawer 1431 / Duncan, OK 73536-0416 / 405-251-3590 / Fax: 405-251-3218

Kent Ostroot
Group Tech Manager,
Stimulation

December 7, 1993

Mr. Charles Willis
River Gas Corporation
3600 Watermelon Rd.
Suite 204
Northport, Alabama 35476

Re: Step rate test for River Gas Corporation well American Quasar 31-1-D1, performed November 20, 1993.

Dear Mr. Willis:

The step rate test bottomhole pressure data were analyzed using the Felsenthal method. From this analysis the fracture extension pressure was determined to be 3240 psi. The rate at which the fracture began extending was 3.0 bpm. The perforation depth was 6156-66 ft and the gauge was positioned at 6155 ft. The fracturing gradient, based on the results of the step rate test is 0.526 psi/ft.

The test was of good quality and no problems with perforations or near wellbore tortuosity were observed from the pressure response.

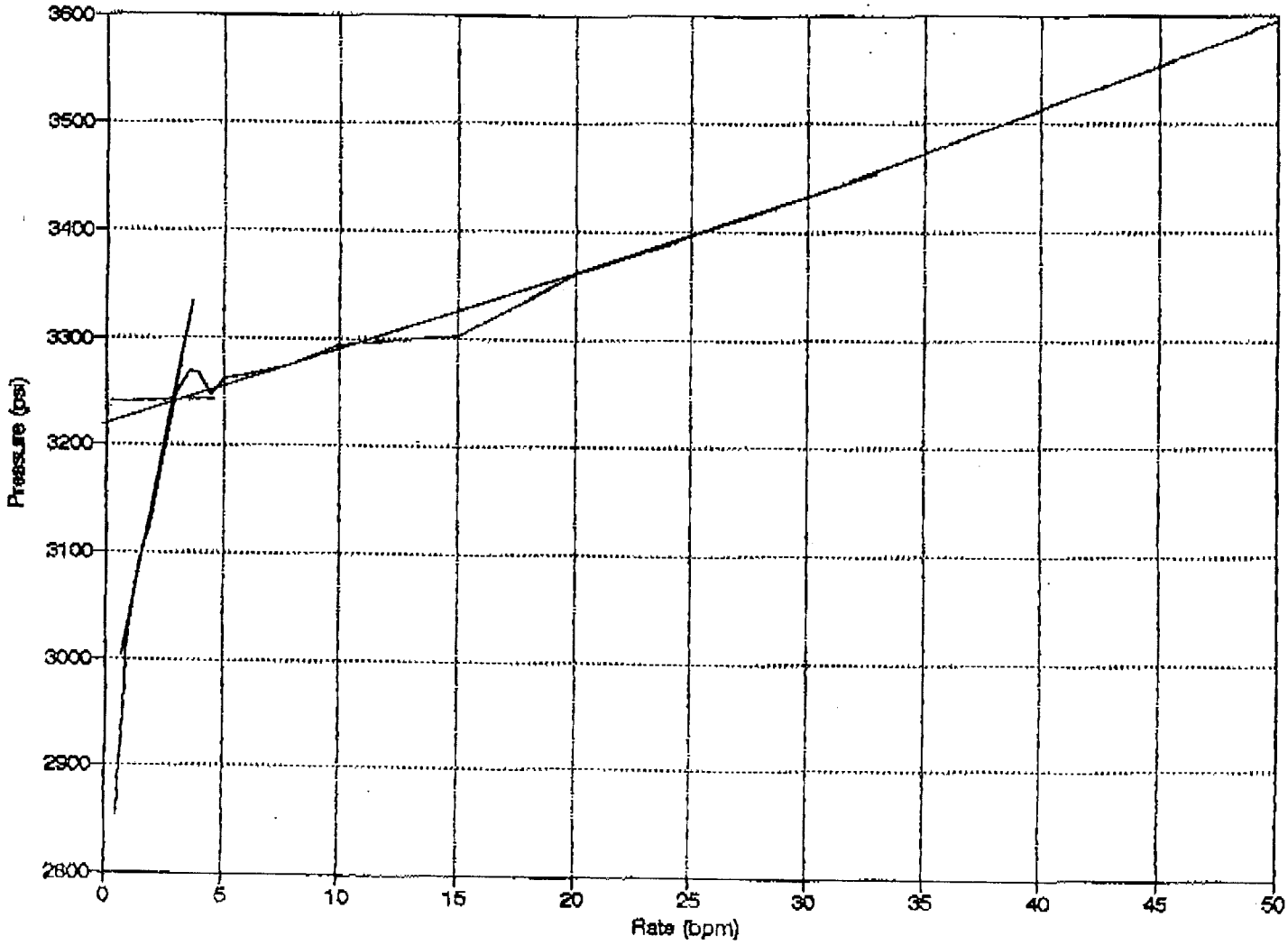
Sincerely,

R D Kuhlman

Robert Kuhlman, P. E.
Stimulation Methods Dept.

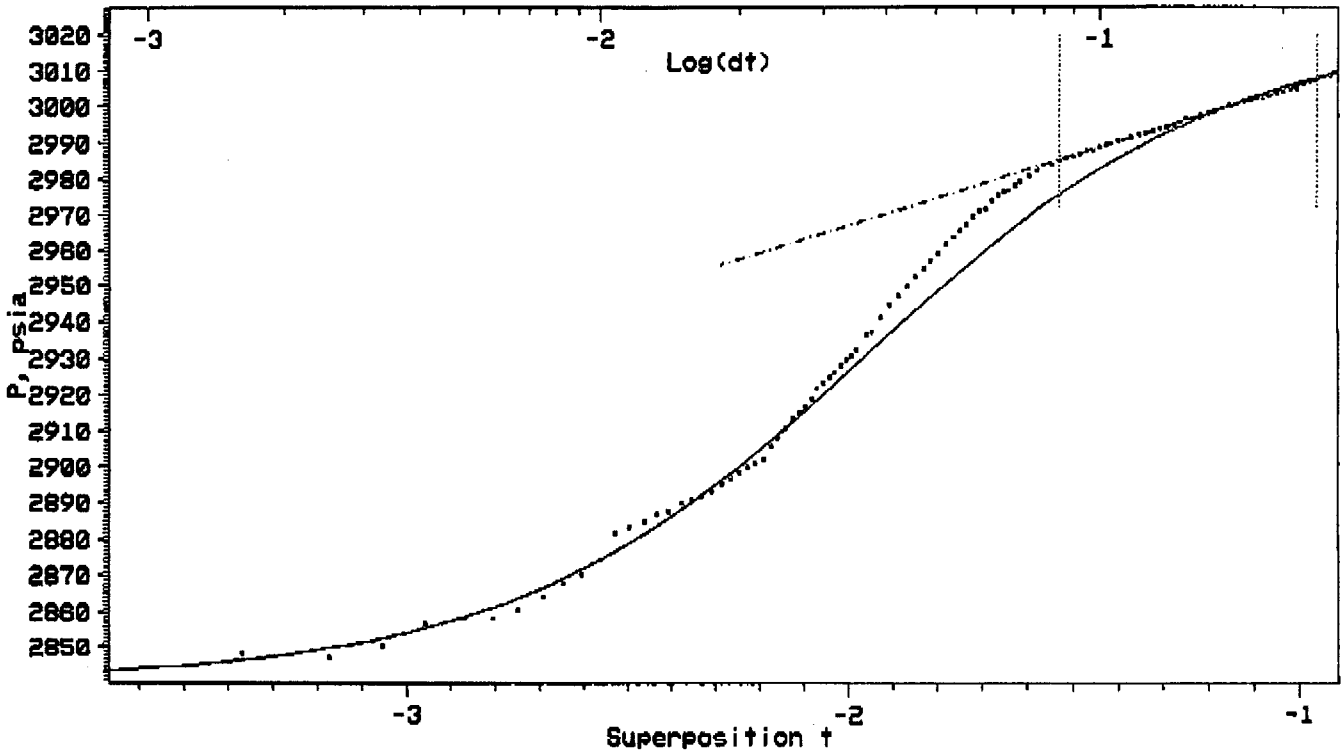
RDK:bh
/enclosure

cc: T.D. Womack
H.H. Abass


3600
3500
3400
3300
3200
3100
3000
2900
2800
Pressure (psi)
0
5
10
15
20
25
30
35
40
45
50
Rate (bpm)

HALLIBURTON	Semi-Log plot	RIVER

Company	RIVER GAS	Test	INJECTION TEST
Field	DRUNKARDS WASH	Date	NOVEMBER 20, 1093
Well	DISPOSAL #1	Gauge	HMR #20370



Flow Period #	3	Time Match	209.1 hr-1
Rate	-1440 STB/day	Pressure Match	.53518E-1 psia-1
Rate Change	720 STB/day		
P @ dt=0	2840.2 psia	RESERVOIR	Homogeneous
pi	2877.8 psia	WELL	Storage & Skin
		BOUNDARY	Infinite
STRAIGHT	LINE	Storage C	.7676E-2 STB/psi
		CD	8600.
from	.85016E-1 hr	Skin factor	1.9755
to	.22582 hr		
Slope	38.843 psi	k.h	5440.8 md.ft
value @ dt=1hr	3048.5 psia	k	544.08 md
		Mobility k/mu	544.08
-> PMatch	.29632E-1 psia-1		
-> k.h	3013.4 md.ft		
-> k	301.34 md		
-> Skin	-1.1362		

PRELIMINARY RESULTS

REPORT: ☐ PENDING ☑ NOT PENDING

STIM-LAB Inc.

7406 N. 81 HIGHWAY • P. O. BOX1644 • DUNCAN, OKLAHOMA 73534
TELEPHONE 405/252-4309 • FAX NUMBER 405/252-6979

GLENN PENNY
President

Date: November 5, 1993

PLEASE DELIVER THE FOLLOWING PAGES TO:

PAGE: 1 of 4

TO: NAME: Mr. Charles Willis

COMPANY/FIRM: River Gas

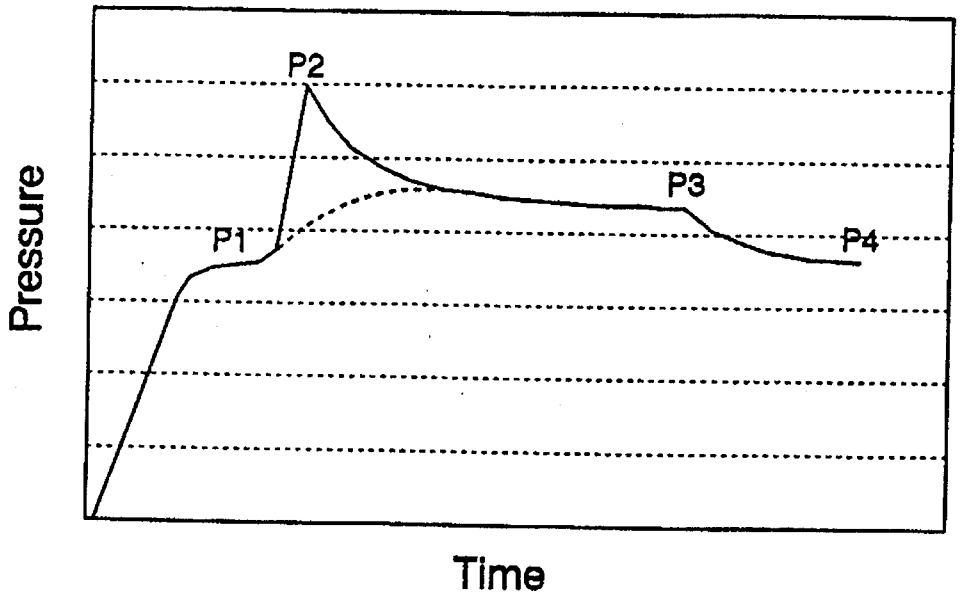
TELECOPY NUMBER: 205-759-3188

FROM: NAME: Mike Conway/kr

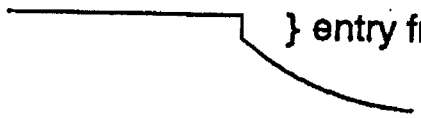
STIM-LAB, INC.
P. O. BOX 1644
7406 North HWY 81
DUNCAN, OK 73534
FAX NUMBER: 405-252-6979

COMMENTS:

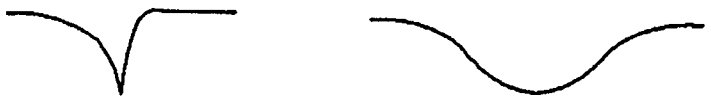
PROPOSED INJECTION PROFILE



1. Measure static pressure = P1
2. Breakdown may be seen = P2
3. Shut-in may have entry friction = P3 & P4



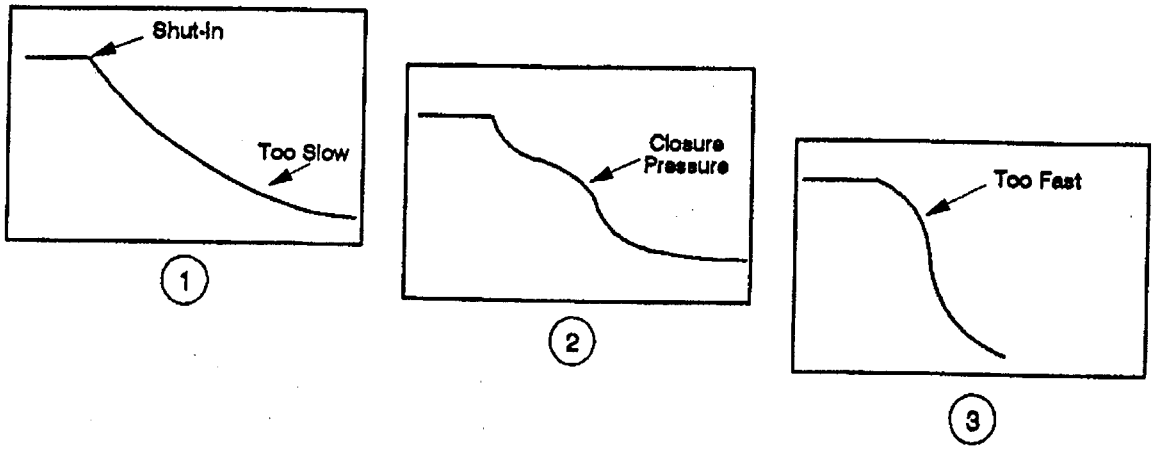
4. It would be desirable to let pressure decline close to P1. After 1 hour, slowly declinary but significantly above P1, flow back below P1 and shut-in.



Fracture No fracture

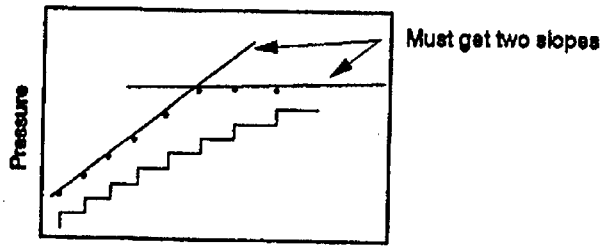
If there is any question about a fracture being open or closure pressure inject 10,000 gal at 20 BPM and shut-in and flow back at a constant rate suggested by the previous test flow back until pressure is below P1 if closure is not obvious long before that.

This will be of less concern if the injection pressure is much higher than seen in previous tests:

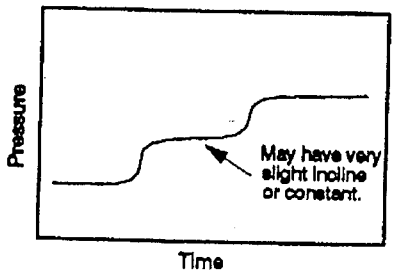


If any question, inject 5000 gal at 20 BPM and flow back at faster or slower rate as per above.

Step rate test must start with pressure close to P1. You can flow back to reduce pressure if you need to before starting the step rate test.



I think the injection rate should start at 0.5 BPM. Stay at each rate long enough to see equilibrium pressure often 2-3 minutes is enough.



If any thing funny happens on a rate change, shut-in for 30 seconds and then start up at previous rate and get stabilized pressure and then go to the next step. Step sizes are selected based on anticipated opening pressure rate. If for example you were at frac rates at 5 BPM, then use 0.5 BPM increments in the step rate test so you can get at least 2-3 points before the fracture extension pressure is reached. If frac rate is going to be much higher, then use 1 BPM increments at the maximum step rate, may want to inject for ~30 minutes and then shut-in for 2 hours for permeability assessment.

WATER INJECTION TEST

Issues

- *Recommendations:*

1. Perforating:

   - the zones to test will be recommended by Bruce Carpenter.
   - swab down casing
   - load hole with "perforating acid"; recommend double strength iron control 7 1/2% Fe Acid and load enough acid to cover 100 ft above area to be perforated
   - load enough water to give maximum underbalance that perforating company feels comfortable with and use 2100 psi BHP for calculational purposes.
   - perforate 10 ft at 4 spf, 0.5 in. holes with casing gun on wireline in center of zone.
   - swab back to determine in-flow and then let water level stabilize; and determine initial pressure.

2. Pressure During Injection:

   - wireline / lubricator and quartz gauge
   - need injection head and blast joint; Terry Logan 801-584-2474 has information.

3. Injection Test:

   - load hole and inject 5000 gal filtered water at 5 BPM and shut-in.

TARGET RESERVOIR ANALYSIS
A Division of STIM-LAB, INC.

TO: River Gas of Utah, Inc.

ATTN: Charles Wilkes / Mike Farrens

FAX: (205) 759-3188

FROM: Bruce Carpenter

DATE: Nov. 6, 1993

PAGE 1 OF 10

PLEASE CALL (405) 843-1430 IF YOU SHOULD HAVE ANY PROBLEMS WITH THIS TRANSMISSION. THANK YOU.

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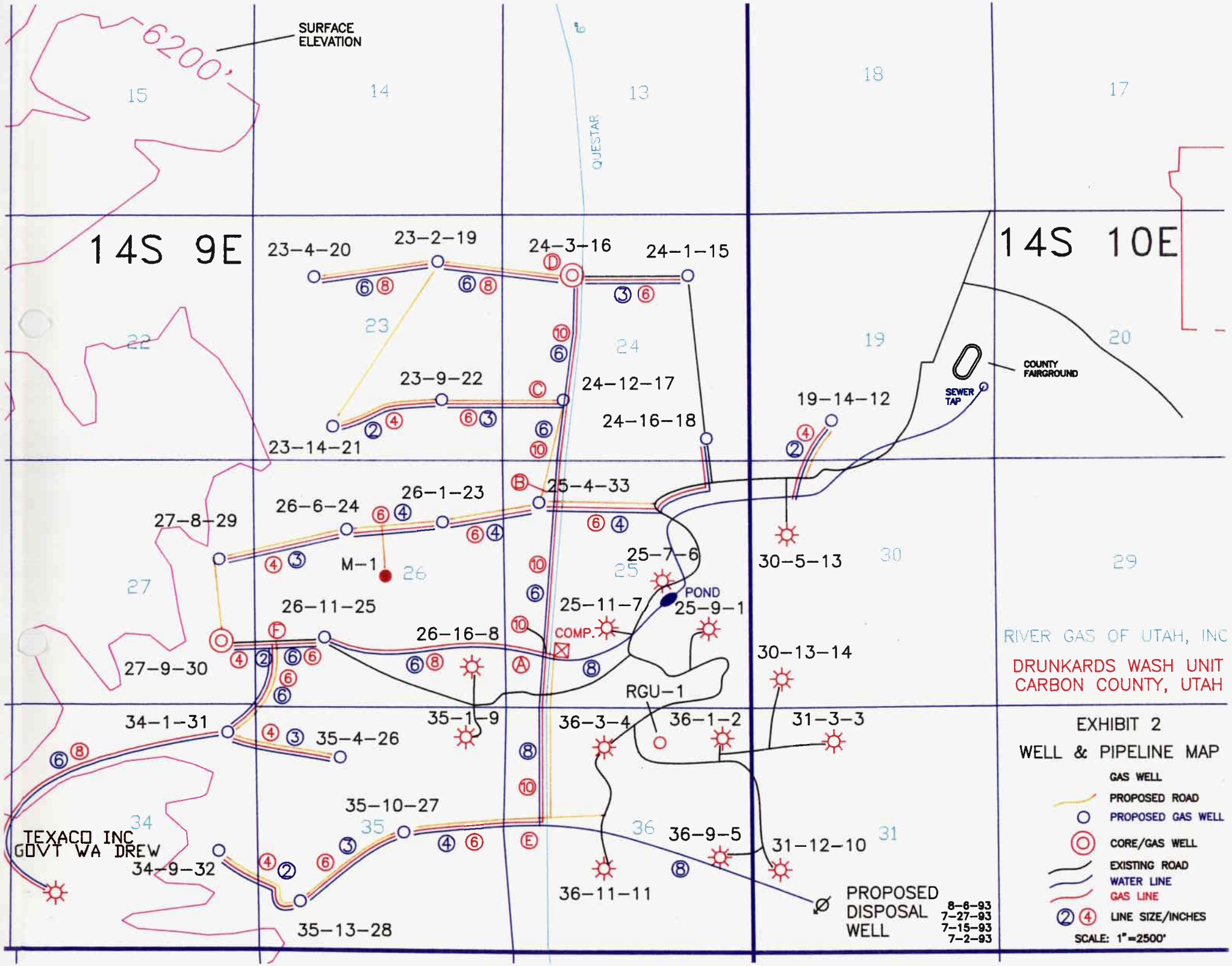
6901 N. ROBINSON
OKLAHOMA CITY, OK 73116
405.843.1430


SURFACE ELEVATION
6200'
15
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23-2-19
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RIVER GAS OF UTAH, INC
DRUNKARDS WASH UNIT
CARBON COUNTY, UTAH
EXHIBIT 2
WELL & PIPELINE MAP
GAS WELL
PROPOSED ROAD
PROPOSED GAS WELL
CORE/GAS WELL
EXISTING ROAD
WATER LINE
GAS LINE
LINE SIZE/INCHES
SCALE: 1"=2500'

AFFIDAVIT OF PUBLICATION

STATE OF UTAH)
ss.
County of Carbon,)

I, Kevin Ashby, on oath, say that I am the Publisher of the Sun Advocate, a twice-weekly newspaper of general circulation, published at Price, State and County aforesaid, and that a certain notice, a true copy of which is hereto attached, was published in the full issue of such newspaper for One (1) consecutive issues, and that the first publication was on the

4th day of January, 19 94

and that the last publication of such notice was in the issue of such newspaper dated the

.....day of.....,19.....

Kevin Ashby

Subscribed and sworn to before me this

4th day of January, 19 94

Notary Public

My Commission expires January 10, 1995

Residing at Price, Utah

Publication fee, $ 57.20

NOTICE OF AGENCY ACTION
CAUSE NO. UIC-144

BEFORE THE DIVISION OF OIL, GAS AND MINING
DEPARTMENT OF NATURAL RESOURCES
STATE OF UTAH

IN THE MATTER OF THE APPLICATION OF RIVER GAS OF UTAH INC. FOR ADMINISTRATIVE APPROVAL OF THE AMERICAN QUASAR 31-1(D-1) WELL LOCATED IN SECTION 31, TOWNSHIP 14 SOUTH, RANGE 10 EAST, S.L.M. CARBON COUNTY, UTAH, AS A CLASS II INJECTION WELL

THE STATE OF UTAH TO ALL PERSONS INTERESTED IN THE ABOVE ENTITLED MATTER.

Notice is hereby given that the Division of Oil, Gas and Mining (the "Division") is commencing an informal adjudicative proceeding to consider for administrative approval, the application of River Gas of Utah, Inc. for conversion of the American Quasar 31-1(D-1) Well, located in Section 31, Township 14 South, Range 10 East, Carbon County, Utah, to a Class II injection well. The proceeding will be conducted in accordance with Utah Admin. R.649-10, Administrative Procedures.

The interval from 5726 feet to 6210 feet (Navajo Formation) will be selectively perforated for water injection. The maximum authorized injection pressure will be 572 psig and the estimated injection volume will be 20,000 bbls of water per day.

Any person desiring to object to the application or otherwise intervene in the proceeding, must file a written protest or notice of intervention with the Division within fifteen days following publication of this notice. If such a protest or notice of intervention is received, a hearing will be scheduled before the Board of Oil, Gas and Mining. Protestants and/or intervenors should be prepared to demonstrate at the hearing how this matter affects their interests.

DATED this 28th day of December, 1993.

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
-s-R.J. Firth
Associate Director

Published in the Sun Advocate January 4, 1994.

OFFICE COPY

5502 NMC-RDM

LOGIN CHAIN OF CUSTODY REPORT (ln01)
Nov 19 1993, 03:50 pm

Login Number: L16742
Account: WALKIN Walk-in clients
Site :

Laboratory Sample Number		Client Sample Number	Method Description	Collect Date	Receive Date	Due PR Date	
L16742-1		DWU 31-1-D #1		19-NOV-93	19-NOV-93	03-DEC-93	
CAUTION: Sample may contain HCl; State of Utah/Division of Oil, Gas & Mining; Contact: Dan Jarvis; PO# 584194							
Water	S	BA	Barium	Expires:18-MAY-94			
Water	S	CA	Calcium	Expires:18-MAY-94			
Water	S	CL	Chloride	Expires:17-DEC-93	nov 19		1 Contain
Water	S	DIG-MET	Total Metal Digestion	Expires:18-MAY-94			
Water	S	MG	Magnesium	Expires:18-MAY-94			
Water	S	NA	Sodium	Expires:18-MAY-94			
Water	S	NO3	Nitrate (as N)	Expires:17-DEC-93			
Water	S	PH	pH	Expires:20-NOV-93			
Water	S	SO4	Sulfate	Expires:17-DEC-93			
Water	S	TDS	Total dissolved solids	Expires:17-DEC-93			

Signature:

Date:

CHAIN OF CUSTODY

CLIENT: State of Utah, Division of Oil, Gas & Mining
ADDRESS: 3 Triad Center, Ste 350
PHONE/FAX: 538 5340
CONTACT: Dan Jarvis
QUOTE#/P.O.#: 584194
SITE:

SAMPLER'S SIGNATURE:

AMERICAN WEST ANALYTICAL LABORATORIES
463 West 3600 South
Salt Lake City, Utah 84115
(801) 263-8686
Fax (801) 263-8687

LAB # 16742

TURN AROUND TIMES
I = Priority I
II = Priority II
III = 5 Day Rush
S = Standard

SAMPLE ID	SAMPLE DATE/TIME	MATRIX	# OF CONTAINERS	BTX/TPH	VOLATILES (624)	SEMIVOLATILES (625)	D LIST METALS	Pb	Barium	Na	Cl	SO_4	Mg	Ca	Nitrate	TDS	TURN AROUND TIME	COMMENTS
DWU 31-1 D #1	11/19/93 12:40 PM	WATER (Ross Reid)						✓	✓	✓	✓	✓	✓	✓	✓	✓		

Special Instructions:
May contain HCl

Relinquished By: Signature	Date/Time	Received By: Signature	Date/Time
Christopher J. Kierst	11/19/93 3:10 PM		
PRINT NAME Christopher J. Kierst		PRINT NAME	
Relinquished By: Signature	Date/Time	Received By: Signature	Date/Time
PRINT NAME		PRINT NAME	
Dispatched By: Signature	Date/Time	Received for Laboratory By: Jennifer Hales	Date/Time 11/19/93 1510
PRINT NAME		PRINT NAME Jennifer Hales	

AMERICAN
WEST
ANALYTICAL
LABORATORIES

463 West 3600 South
Salt Lake City, Utah
84115

(801) 263-8686
Fax (801) 263-8687

INORGANIC ANALYSIS REPORT

Client: State of Utah, Division of Oil, Gas & Mining
Date Received: November 19, 1993
Lab Sample ID Number: 16742-01
Field Sample ID: DWU 31-1-D #1

Contact: Dan Jarvis
Received By: Jennifer Habel

Analytical Results

TOTAL METALS	Method Used:	Detection Limit: mg/L	Amount Detected: mg/L
Barium	6010	0.002	**0.23**
Calcium	6010	0.05	**1,100.**
Magnesium	6010	0.05	**300.**
Sodium	6010	0.1	**48,000.**
OTHER CHEMISTRIES			
Chloride	4500 CLB	0.5	**110,000.**
Nitrate (as N)	353.2	0.01	<0.01
pH	150.1	0.1	**5.8**
Sulfate	375.4	5.0	**3,600.**
TDS	160.1	1.0	**220,000.**

Released by: _____
Laboratory Supervisor

Report Date 12/1/93

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STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

RECEIVED
DEC 1 7 1993
DIVISION OF
OIL, GAS & MINING

APPLICATION FOR INJECTION WELL - UIC FORM 1

OPERATOR River Gas of Utah, Inc.
ADDRESS 3600 Watermelon Road, Suite 204
Northport, AL 35476

Well name and number: American Quasar 31-01-D1

Field or Unit name: Drunkards Wash Lease no. UT-001-0038FO

Well location: QQ SESW section 31 township 14S range 10E county Carbon

Is this application for expansion of an existing project? . . Yes [] No [X]

Will the proposed well be used for: Enhanced Recovery? . . Yes [] No [X]
Disposal? . . . . . Yes [X] No []
Storage? . . . . . Yes [] No [X]

Is this application for a new well to be drilled? . . . . . Yes [] No [X]

If this application is for an existing well,
has a casing test been performed on the well? . . . . . Yes [X] No []
Date of test: 12/11/93
API number: 43-007-30040

Proposed injection interval: from 5,726' to 6,210'

Proposed maximum injection: rate 20,000 BPD pressure 572 psig

Proposed injection zone contains [] oil, [] gas, and/or [] fresh water within ½ mile of the well.

IMPORTANT: Additional information as required by R615-5-2 should accompany this form. 649-5-2

List of Attachments:

I certify that this report is true and complete to the best of my knowledge.

Name Charles P. Willis Signature Charles Willis
Title Reservoir/Exploration Div.Mgr. Date 12/16/93
Phone No. (205) 759-3282

(State use only)
Application approved by _____ Title _____
Approval Date _____

Comments:

(3/89)

INJECTION WELL APPLICATION

REVIEW SUMMARY

Applicant: River Gas of Utah Well: Drunkards Wash 31-1-D1

Location: section 31 township 14S range 10E

API #: 43-007-30040 Well Type: disp. X enhanced recov. ___

If enhanced recovery has project been approved by the Board ? N/A

Lease Type: State Surface Ownership: State

Field: Drunkards Wash Unit: Drunkards Wash Indian Country: N

UIC Form 1: Yes Plat: Yes. Wells in AOR: 2 P 1 PA 1 core hole.

Logs Available: Yes Bond Log: Yes.

Casing Program: 13 3/8" @ 615 cmt to surface. 9 5/8" @ 5740', TOC ≈ 3800 7" liner to 63[illegible] TOC 4600 3860-0 with D[illegible]

Integrity Test: To be run prior to conversion. - Already running.

Injection Fluid: H_2O

Geologic Information: Navajo Injection Zone (5726-6210)

Analyses of Injection Fluid: Yes Formation Fluid: Yes Compat. No

Fracture Gradient Information: Yes. Parting Pressure 570 psi.

Affidavit of Notice to Owners: Yes

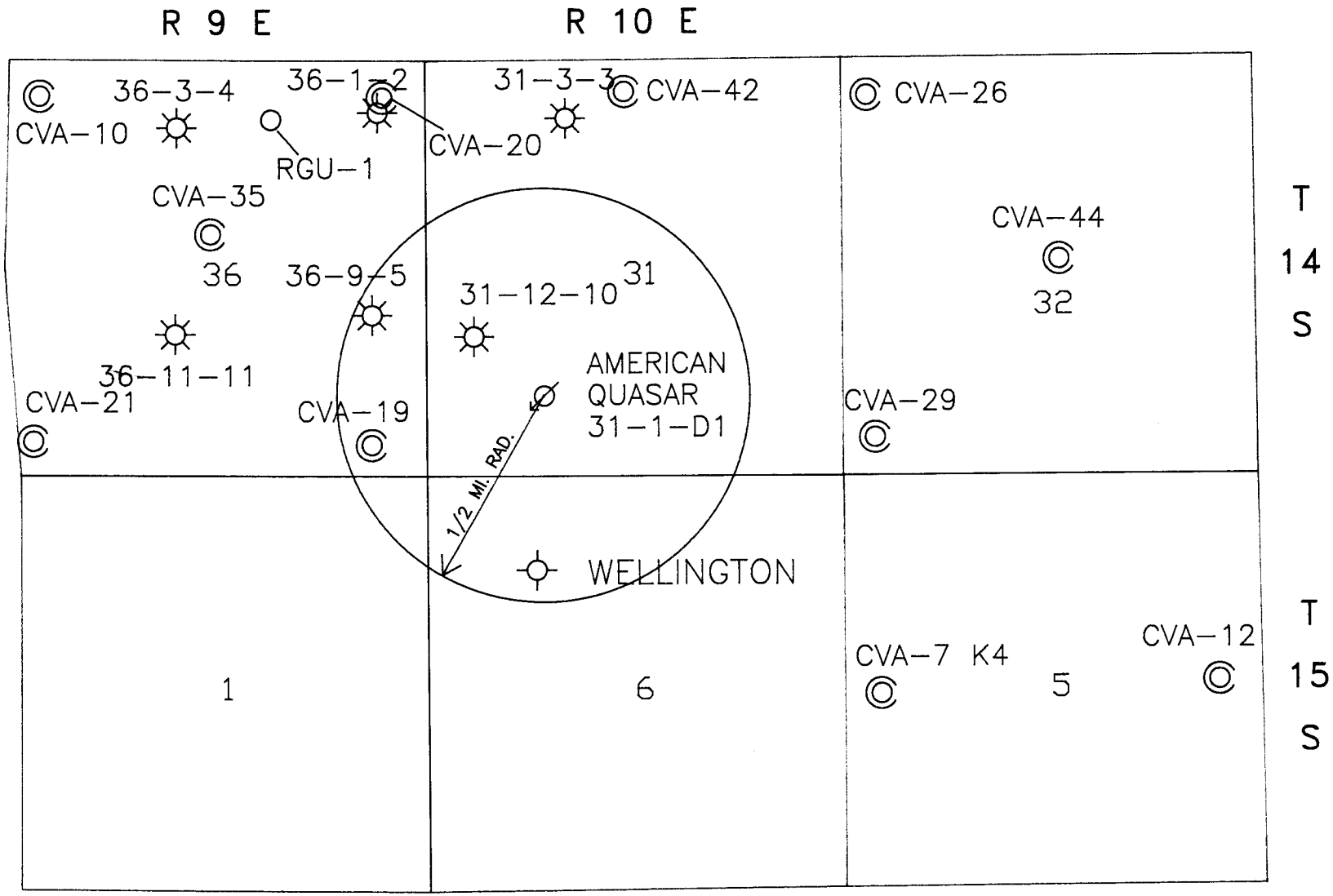
Fresh Water Aquifers in Area: Ferron sands

Depth Base of Moderately Saline Water: ≈2000

Confining Interval: shales silts & Limestones of Carmel Formation.

Reviewer: ___ Date: ___

Comments & Recommendation ___



PRODUCING WELL

CVA-X USX CORE HOLE

P/A WELL

DISPOSAL WELL

River Gas of Utah, Inc. is the only operator within 1/2 mile of proposed disposal well.

State of Utah owns all mineral and surface within 1/2 mile of proposed disposal well.

RIVER GAS OF UTAH

SCHEMATIC OF D-1 DISPOSAL WELL

SCALE: 1"=2000'

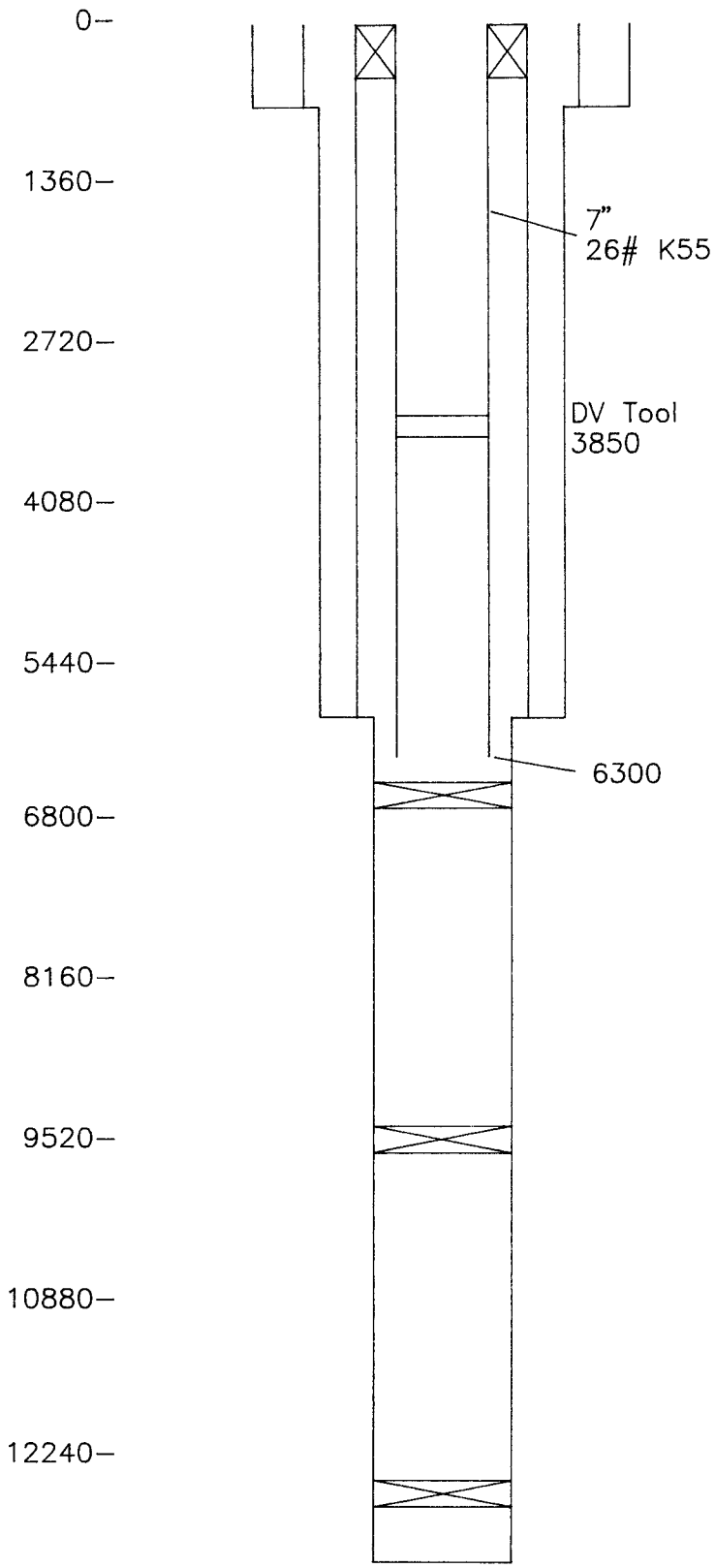
DECEMBER 10, 1993

Lease: State
Well #: American Quasar 31-1 D-1

Spud Date: 9-14-93
KB: 0
TD: 13500

Comp. Date:
Elev.: 5710
PBTD: 12914

API #: 43-007-30040-
Location: Sec. 31, T 14 S, R 10 E
County: Carbon
State: Utah
Field: Drunkards Wash
Operator: River Gas of Utah



Start End	Size Length	Description
0.0 615.0	17.500 615.0	Hole:
0.0 615.0	13.375 615.0	Casing: Surface
615.0 5740.0	12.250 5125.0	Hole:
0.0 5740.0	9.625 5740.0	Casing: Intermediate
0.0 6300.0	7.000 6300.0	Liner:
6425.0 6575.0	8.750 150.0	Plug: 75 sx
		7" Casing Test: 12/11/93 Packer set @ 5012 Pressure: 2000 psi Held for 15 min. Test performed by Halliburton
9425.0 9575.0	8.750 150.0	Plug: 75 sx
12914.0 13076.0	8.750 162.0	Plug: 85 sx
5740.0 13500	8.750 7760.0	Hole:

RGU

RIVER GAS OF UTAH, INC.

3600 Watermelon Road, Suite 204
Northport, Alabama 35476
Phone (205) 759-3282
Fax (205) 759-3188

I, Charles Willis, P.E., hereby certify the following:

The State of Utah owns all surface and mineral within one-half mile of the American Quasar 31-01-D1.

River Gas of Utah, Inc. is the operator of all leases within one-half mile of the American Quasar 31-01-D1.

Charles P. Willis, P.E.
Reservoir/Exploration Division Manager
River Gas of Utah, Inc.

Subscibed and sworn to before me this 17th day of December, 1993.

Witness my hand and official seal.

Notary Public Residing at:
2177 Shadybrook Lane
Birmingham, AL 35226

(SEAL)

My Commission expires 5/18/96

RGU

RIVER GAS UTAH, INC.
3600 Watermelon Road Suite 204
Northport, AL 35476
(205) 759-3282

American Quasar 31-01-D1

Requirement R649-5-2.2.6

The fluid to be injected into the above referenced well is water extracted from the Ferron coal seams produced in the Drunkards Wash Federal Unit. At present the estimated amount of water to be injected daily is 20,000 barrels per day.

RGU

RIVER GAS UTAH, INC.
3600 Watermelon Road Suite 204
Northport, AL 35476
(205) 759-3282

American Quasar 31-01-D1

Requirement R649-5-2.2.8

The average injection pressure for the above referenced well is 500 psi. The maximum injection pressure is calculated to be 572 psig.

ATTEN charles willis
11 pages

HALLIBURTON ENERGY SERVICES

DUNCAN TECHNOLOGY CENTER - DUNCAN, OKLAHOMA
A HALLIBURTON COMPANY

STIMULATION TECHNOLOGY - METHODS

PROJECT REPORT

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To: Mr. R. R. Lockman
Halliburton Energy Services
P. O. Box 339
Vernal, UT 84078

K11-C010-93

December 9, 1993

Title: **River Gas Corp. well American Quasar 31-1-D1 Pressure Analysis**

Prepared by: Robert Kuhlman, P. E.
Saeed Hedayati

River Gas Corporation

Purpose

This project is for the analysis of a step rate test and the subsequent shut-in pressure decline data acquired from a test performed November 20, 1993 on River Gas Corporation well American Quasar 31-1-D1, Navajo Formation at 6156-6166 ft, Carbon Co., Utah.

Conclusions

1. The step rate test yielded fracture extension at 3240 psi at an injection rate of 3 bpm. Using an average depth to the perforations of 6161 ft, the fracturing gradient (based on the fracture extension pressure) is 0.526 psi/ft.

2. The fracture closure pressure was determined to be 3025 psi from analysis of the shut-in pressure decline after the step rate injection test. The pressure decline data was analyzed using the loss dominated dimensionless pressure decline function.

3. The pre-fracture radial flow data was analyzed by Kim Thornton and Saeed Hedayati. A skin factor of 0.13 and permeability of 777 md were calculated from the multiple rate test.

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Discussion

Step Rate Test

The step rate test was performed and analyzed using a method presented by Felsenthal[1]. The tests were performed by injecting into the well, starting with low matrix flow rates (0.5 bpm for this case). The injection rate is increased at increments ranging from 0.5 bpm to 10 bpm. This method requires that the stabilized pressure at each rate step be plotted versus its corresponding injection rate step. Table 1 shows the rates, pressures and pumping times for each rate step.

The entire test is shown in Figure 1. The analysis plot, showing a fracture extension pressure at 3240 psi at the 3 bpm step is shown in Figure 2.

Pressure Decline Analysis (Fracture Closure Pressure)

The fracture closure pressure may often be determined from analysis of a post fracture injection shut-in pressure decline. There are a variety of techniques used for determining fracture closure pressure. For smaller fractures, the pressure decline may be successfully analyzed using the pressure versus square root of time plots. For large scale hydraulic fracture pressure declines, the most accurate analysis vehicle is the pressure versus dimensionless pressure decline function[2]:

$$G(\delta,\delta_0) = \frac{4}{\pi}\,[g(\delta) - g(\delta_0)] \tag{1}$$

For the storage dominated case:

$$g(\delta) = \frac{4}{3}\,[(1 + \delta)^{1.5} - \delta^{1.5}] \tag{2}$$

For the loss dominated case:

$$g(\delta) = (1 + \delta)\,\sin^{-1}(1 + \delta)^{-0.5} + \delta^{0.5} \tag{3}$$

where:

δ = dimensionless shut-in time = (time since shut-in)/(pumping time)

Since the dimensionless pressure decline functions were developed based on fracture propagation using a constant injection rate, the use of the graphical methods for determination of fracture closure pressure for this case becomes complicated by the fact that the rate is not constant.

For this disposal well, the low reservoir pressure, the higher permeability and the fact that the rate at fracture extension was 3.0 bpm, dictates the use of the loss dominated dimensionless pressure decline function. Half of the total pumping time from fracture extension to shut-in was used for the denominator for dimensionless time (95 minutes).

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Substituting equation 3 into equation 1, and setting δ_0 equal to zero, yields:

$$G(\delta, \delta_0) = \frac{4}{\pi}\left[(1 + \delta)\sin^{-1}(1 + \delta)^{-0.5} + \delta^{0.5} - \frac{\pi}{2}\right] \quad (4)$$

The shut-in pressure decline versus this dimensionless pressure decline function was plotted (Figure 3) and fracture closure pressure was determined to 3025 psi.

Transient Pressure Testing

Pressure transient testing was performed on the injection test data prior to fracture opening. The multiple rate test was analyzed using log-log and derivative analysis. The analysis plot is shown in Figure 4. From the log-log derivative analysis, homer data is indicated. Homer analysis yields the following results:

Permeability	777 md
Skin Factor	0.134

The permeability value is evaluated with the injection rate as one of the input parameters. Any error in permeability evaluation is mainly due to error in flow measurement. Flow rates are measured in units of bpm. The flow rates used in the permeability calculations are in bpd. Any errors in measuring the rates in bpm are amplified when bpm is converted to bpd.

The following items are noted about the transient pressure analysis:

1. The analysis was performed using SSI's INTERPRET II software.

2. Efforts were made to analyze the pressure decline after fracture closure. The results of this analysis were poor.

3. The test analyses can be performed because the injected fluid is water. When gelled fluids are used the analysis becomes complicated because of filter cake build up and variation in fluid viscosity flowing in the formation in the near wellbore vicinity.

4. The transient pressure analysis was performed by Mr. Kim Thornton with consultation of Dr. Saeed Hedayati.

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References

1. Felsenthal, Martin: "Step-Rate Tests Determine Safe Injection Pressures in Floods," Oil and Gas Journal, Oct. 28, 1974, pp 49-54.

2. Nolte, K. G.: "A General Analysis of Fracturing Pressure Decline with Application to Three Models," SPE Formation Evaluation, Dec. 1986, pp. 571-583.

LIMITATION OF LIABILITY:

APPENDIX

Table of Contents

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Table 1	Step Rate Test Data	6
Figure 1	Step rate test	7
Figure 2	Step Rate Analysis Plot	8
Figure 3	Pressure versus low efficiency dimensionless pressure decline function	9
Figure 4	Multiple rate test log-log derivative analysis	10

Table 1

Step Rate Test Data

Rate (bpm)	Pressure (psi)	Pumping time (min)
0.5	2852	16.2
1.0	3026	14.9
1.5	3093	15.7
2.0	3137	15.4
2.5	3191	15.0
3.0	3248	11.6
3.5	3267	12.6
4.0	3265	8.8
4.5	3246	12.1
5.0	3260	15.0
6.0	3263	14.8
8.0	3275	15.3
10.0	3294	15.5
15.0	3302	15.0
20.0	3360	15.1
30.0	3430	14.6
50.0	3594	31.2
49.5	3590	9.3

Figure 1 Step rate test

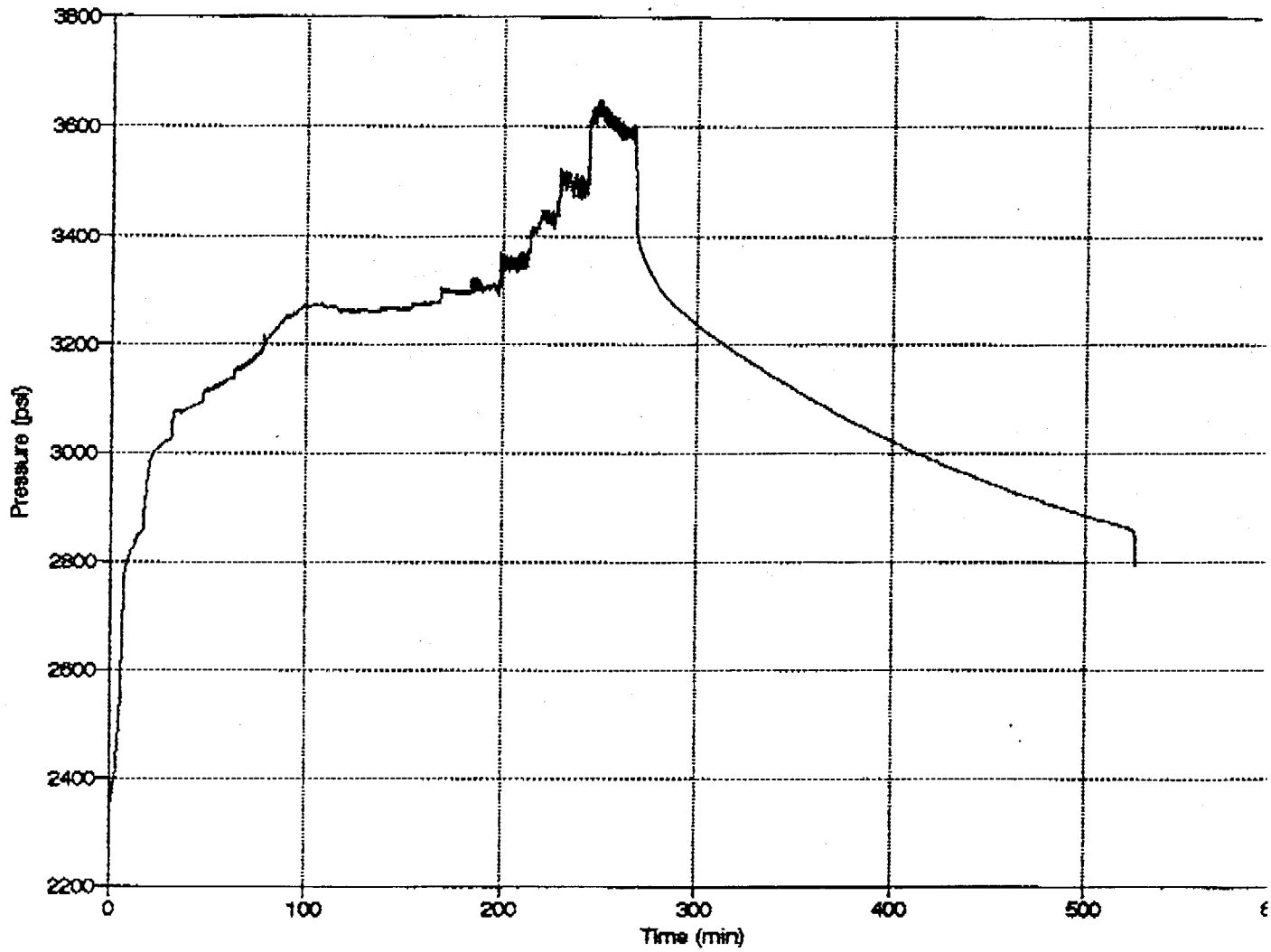

Figure 2 Step Rate Analysis Plot

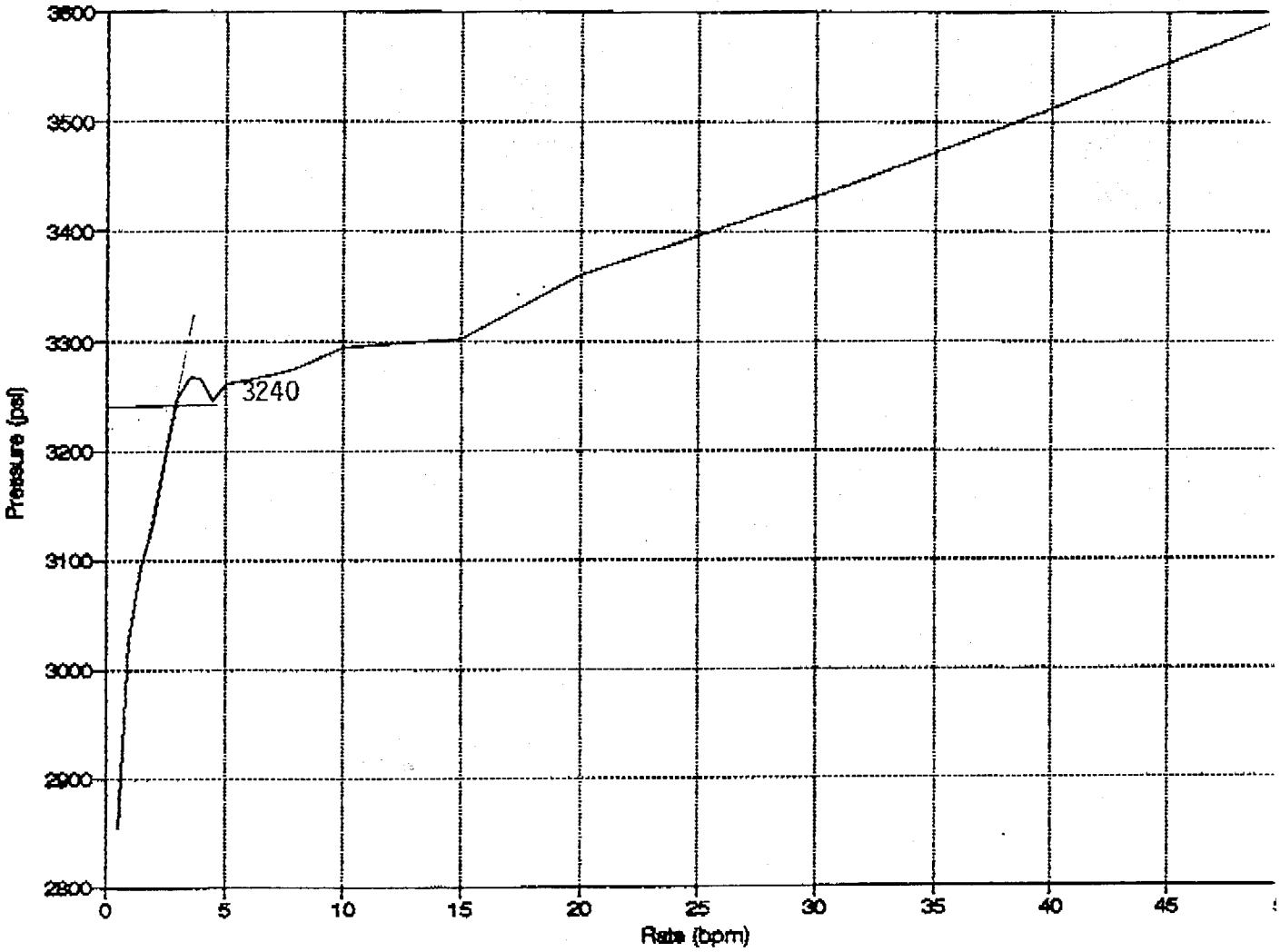

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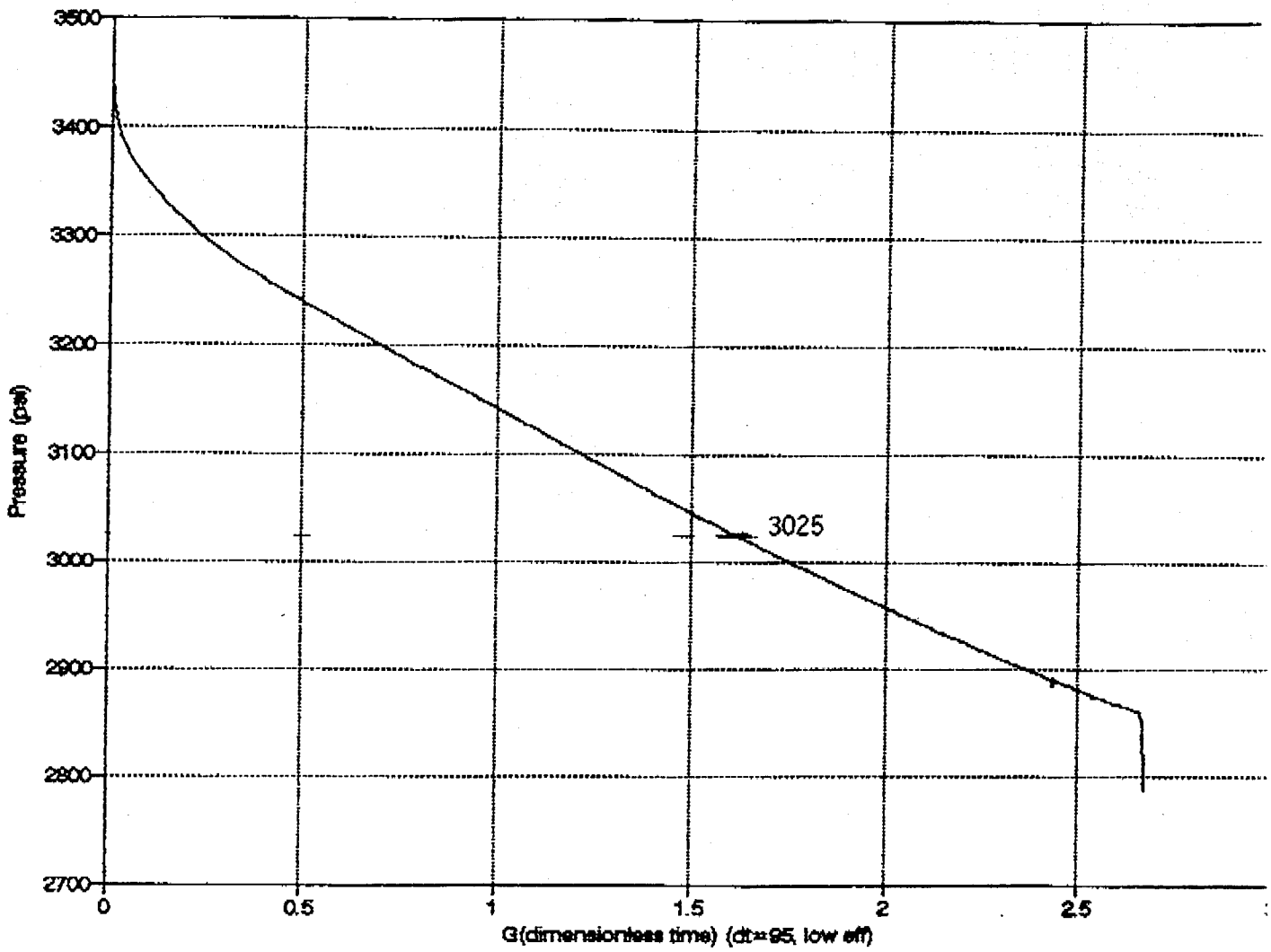
Figure 3 Pressure versus low efficiency dimensionless pressure decline function



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RGU

RIVER GAS UTAH, INC.
3600 Watermelon Road Suite 204
Northport, AL 35476
(205) 759-3282

American Quasar 31-01-D1

Requirement R649-5-2.2.11

Review of mechanical integrity of surrounding wells

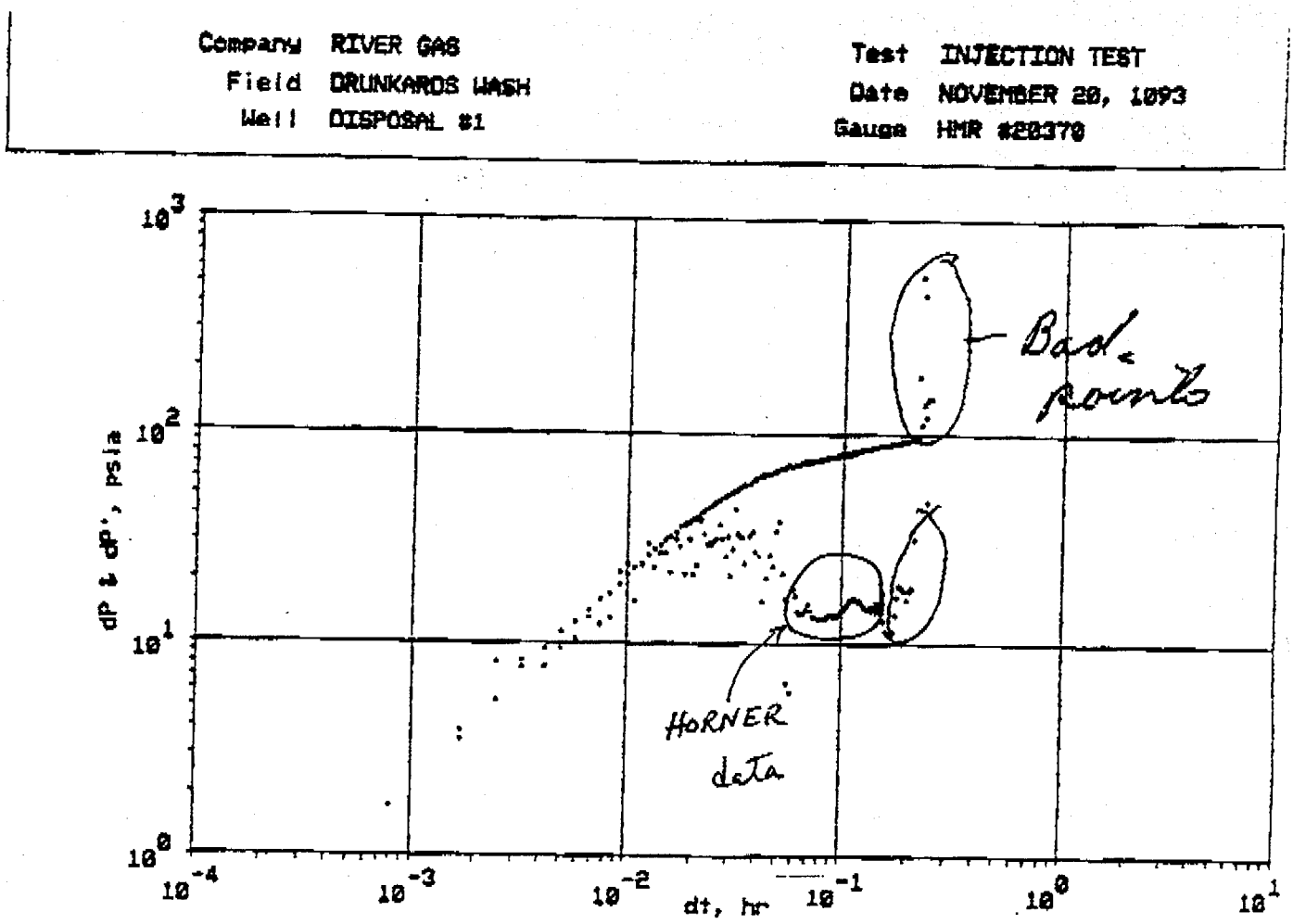
Wellington State #4 (P & A) - T.D. - 2,000'. 8-5/8" casing set at 168'. Cemented to surface. Plug #1 at 1,875' to 1,675'. Plug #2 at 219' to 119'. 3 sack plug at surface.

Utah 31-12-10 (RGU) - T.D. - 2,020'. 5-1/2" casing set at 2,010.10'. Circulated cement to surface.

Utah 36-09-05 (RGU) - T.D. - 2,020'. 5-1/2" casing set at 2,004.00'. Circulated cement to surface.

CVA-19 (USX) - T.D. - 1,835'. Only information available to RGU regarding borehole. Vertical separation of +/- 3,800' between this corehole and the upper injection zone on the American Quasar 31-01-D1 should mitigate possible communication.

Figure 4 Multiple rate test log-log derivative analysis



LIMITATION OF LIABILITY:

Keywords

River Gas Corp.	Step Rate Test	Minifrac
Carbon Co., UT	Navajo Formation	Disposal well
American Quasar 31-1-D1	Fracture Extension Pressure	Closure Pressure

Abstract

This report contains and describes the analysis of a step rate test and subsequent shut-in pressure decline for River Gas Corp. well American Quasar 31-1-D1, Navajo Formation, 6156-6166 ft, November 20, 1993..

cc: Kim Thornton
Kent Ostroot
Terry Womack
Hazim Abass
Stimulation PSL - Houston
Stimulation PSL - Duncan

Respectfully submitted,

Laboratory Analyst
Kuhlman - Hedayati
bh

HALLIBURTON SERVICES

By R D Kuhlman Saeed Hedayati
R. D. Kuhlman, P. E. and Saeed Hedayati

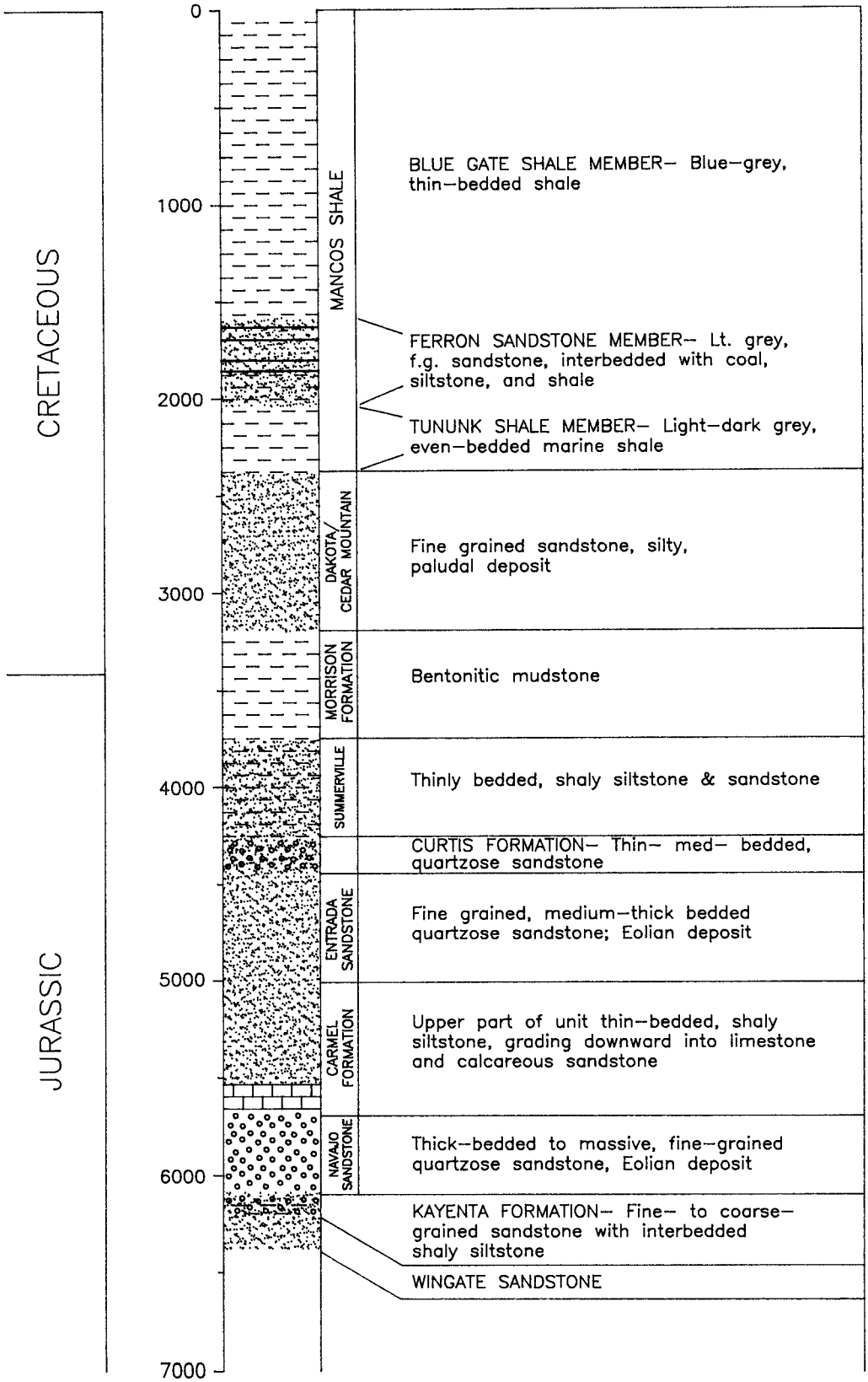
LIMITATION OF LIABILITY:

REQUIREMENT R649-5-2.2.10

RGU INJECTION WELL D-1

INJECTION ZONE: NAVAJO SANDSTONE, KAYENTA FORMATION

PERFS: 5726-5800, 5870-5970, 5980-6002, 6004-6092, 6122-6132, 6156-6210



0.6" =500'

12/14/93

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

ENTITY ACTION FORM - FORM 6

OPERATOR River Gas of Utah

ADDRESS 3600 Watermelon Road, Suite 204
Northport, AL 35476

OPERATOR ACCT. NO. N 1600

ACTION CODE	CURRENT ENTITY NO.	NEW ENTITY NO.	API NUMBER	WELL NAME	WELL LOCATION QQ	SC	TP	RG	COUNTY	SPUD DATE	EFFECTIVE DATE
B	11256	→	43-007-30040	D-1	SE/SW	31	14S	10E	Carbon	08/23/93	

WELL 1 COMMENTS:
(Drunkards Wash Unit)
This well was re-entered on 08/23/93 to convert to a disposal well. Entity added 11-18-93. Lec

WELL 2 COMMENTS:

RECEIVED
NOV 12 1993
DIVISION OF
OIL, GAS & MINING

WELL 3 COMMENTS:

WELL 4 COMMENTS:

WELL 5 COMMENTS:

ACTION CODES (See instructions on back of form)
A - Establish new entity for new well (single well only)
B - Add new well to existing entity (group or unit well)
C - Re-assign well from one existing entity to another existing entity
D - Re-assign well from one existing entity to a new entity
E - Other (explain in comments section)

NOTE: Use COMMENT section to explain why each Action Code was selected.

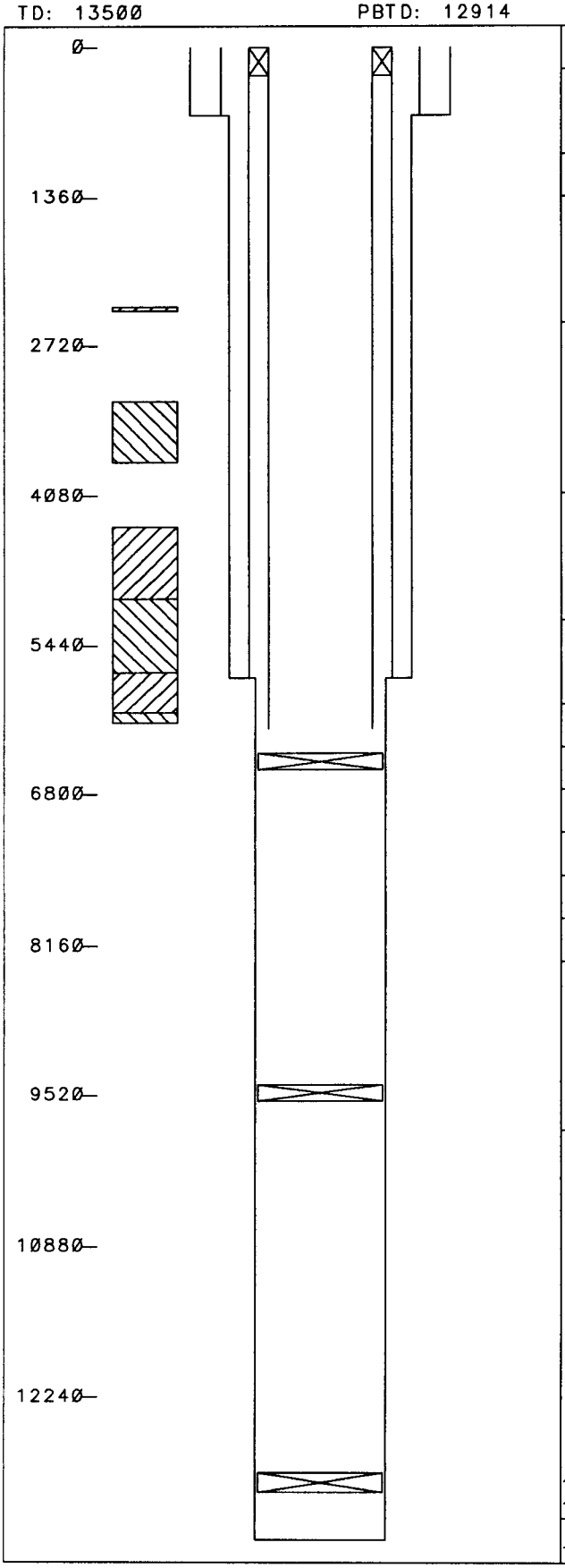
(3/89)

Terry Burns
Signature
Geologist
Title
11/09/93
Date
Phone No. (205) 759-3282

Lease:State
Well #:31-1(D-1)

Spud Date:09/14/1993 Comp Date: / /
KB: 0 ELEV: 5710
TD: 13500 PBTD: 12914

API #: 43-007-30040-
Location: Sec 31 Twn 14S Rng 10E
County: Carbon
State: Utah
Field: Drunkards Wash
Operator: River Gas of Utah



Start / End	Size / Length	Description
0.0	17.500	Hole:
615.0	615.0	
0.0	13.375	Casing: Surface
615.0	615.0	
2365.0		Formation: Dakota
2402.0	37.0	
3225.0		Formation: Morrison
3770.0	545.0	
4360.0		Formation: Entrada
5014.0	654.0	
5014.0		Formation: Carmel
5687.0	673.0	
615.0	12.250	Hole:
5740.0	5125.0	
0.0	9.625	Casing: Intermediate
5740.0	5740.0	
5687.0		Formation: Navajo SS
6060.0	373.0	
6060.0		Formation: Kayenta
6150.0	90.0	
0.0	7.000	Liner: Depth ? 6300
6200.0	6200.0	
6425.0	8.750	Plug: 75 sx
6575.0	150.0	
9425.0	8.750	Plug: 75 sx
9575.0	150.0	
12914.0	8.750	Plug: 85 sx
13076.0	162.0	
5740.0	8.750	Hole:
13500.0	7760.0	

UNICHEM INTERNATIONAL

P.O. Box 217
Roosevelt Utah 84066

Office (801) 722-5066
Fax (801) 722-5727

WATER ANALYSIS REPORT

COMPANY RIVER GAS ADDRESS _____ DATE: 10-22-93

SOURCE Dunkards Wash 31-1 D1 DATE SAMPLED _____ ANALYSIS NO. _____

	Analysis	Mg/l (ppm)		*Meq/l
1. PH	6.6			
2. H_2S (Qualitative)	1.0			
3. Specific Gravity	1.126			
4. Dissolved [illegible]		193,843		
5. Suspended Solids				
6. Anaerobic Bacterial Count	CI C/MI			
7 Methyl Orange Alkalinity ($CaCO_3$)				
8 Bicarbonate (HCO_3)		HCO_3 1,830	÷61	30 HCO_3
9 Chlorides (Cl)		Cl 113,990	÷35.5	3,211 Cl
10 Sulfates (SO_4)		SO_4 2,500	÷48	52 SO_4
11. Calcium (Ca)		Ca 1,440	÷20	72 Ca
12. Magnesium (Mg)		Mg 0	÷12.2	0 Mg
13. Total Hardness ($CaCO_3$)		3,600		
14 Iron (Fe)		38		
15. Barium (Qualitative)				
16. Phosphate Residuals				

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

72	Ca	HCO_3	30
0	Mg	SO_4	52
3,221	Na	Cl	3,211

Compound	Equiv. Wt.	X	Meq/l	=
$Ca(HCO_3)_2$	81.04		30	[illegible]
$CaSO_4$	68.07		42	[illegible]
$CaCl_2$	55.50			
$Mg(HCO_3)_2$	73.17			
$MgSO_4$	60.19			
$MgCl_2$	47.62			
$NaHCO_3$	84.00			
Na_2SO_4	71.03		10	[illegible]
NaCl	58.46		3,211	187,7[illegible]

Saturation Values	Distilled Water 20°C
$CaCO_3$	13 Mg/l
$CaSO_4 \cdot 2H_2O$	2,090 Mg/l
$MgCO_3$	103 Mg/l

REMARKS _____

Form 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number: ML 40521

7. Indian Allottee or Tribe Name: N/A

8. Unit or Communitization Agreement: DRUNKARDS WASH UTU 67921X

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells. Use APPLICATION FOR PERMIT— for such proposals

1. Type of Well: ☐ Oil Well ☐ Gas Well ☒ Other (specify) DISPOSAL WELL

9. Well Name and Number: D-1 (DISPOSAL WELL)

2. Name of Operator: RIVER GAS OF UTAH, INC.

10. API Well Number: 43-007-30040

3. Address of Operator: 3600 WATERMELON ROAD, NORTHPORT, AL 35476

4. Telephone Number: (205) 759-3282

11. Field and Pool, or Wildcat: WILDCAT

5. Location of Well

Footage: 1552' FWL & FSL (SE/4 OF SW/4)
QQ, Sec, T., R., M.: SEC. 31, T14S, R10E S. L. B. & M.
County: CARBON
State: UTAH

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT (Submit in Duplicate)

- ☐ Abandonment
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Multiple Completion
- ☐ Other
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Recompletion
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Approximate Date Work Will Start _____

SUBSEQUENT REPORT (Submit Original Form Only)

- ☐ Abandonment *
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Other
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Date of Work Completion _____

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.

* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

PERFORATED THE ~~5-1/2~~ 7" CASING AT THE FOLLOWING DEPTHS: 5726-5800', 5870-5970', 5980-6002', 6044-6092', 6122-6132', AND 6156-6210.' SHOTS WERE 4SPF, 0.45" DIAMETER, AND 19.49" PENETRATION.

DEC 2 1 1993

14. I hereby certify that the foregoing is true and correct

Name & Signature: Terry Burns TERRY BURNS Title: GEOLOGIST Date: 12-14-93

(State Use Only)

(8/90)

See Instructions on Reverse Side

BEFORE THE DIVISION OF OIL, GAS AND MINING
DEPARTMENT OF NATURAL RESOURCES
STATE OF UTAH

---ooOoo---

IN THE MATTER OF THE APPLICATION OF RIVER GAS OF UTAH INC. FOR ADMINISTRATIVE APPROVAL OF THE AMERICAN QUASAR 31-1(D-1) WELL LOCATED IN SECTION 31, TOWNSHIP 14 SOUTH, RANGE 10 EAST, S.L.M., CARBON COUNTY, UTAH, AS A CLASS II INJECTION WELL	:	NOTICE OF AGENCY ACTION CAUSE NO. UIC-144

---ooOoo---

THE STATE OF UTAH TO ALL PERSONS INTERESTED IN THE ABOVE ENTITLED MATTER.

Notice is hereby given that the Division of Oil, Gas and Mining (the "Division") is commencing an informal adjudicative proceeding to consider for administrative approval, the application of River Gas of Utah, Inc. for conversion of the American Quasar 31-1(D-1) Well, located in Section 31, Township 14 South, Range 10 East, Carbon County, Utah, to a Class II injection well. The proceeding will be conducted in accordance with Utah Admin. R.649-10, Administrative Procedures.

The interval from 5726 feet to 6210 feet (Navajo Formation) will be selectively perforated for water injection. The maximum authorized injection pressure will be 572 psig and the estimated injection volume will be 20,000 bbls of water per day.

Any person desiring to object to the application or otherwise intervene in the proceeding, must file a written protest or notice of intervention with the Division within fifteen days following publication of this notice. If such a protest or notice of intervention is received, a hearing will be scheduled before the Board of Oil, Gas and Mining. Protestants and/or intervenors should be prepared to demonstrate at the hearing how this matter affects their interests.

DATED this 28th day of December, 1993.

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

R.J. Firth
Associate Director

WUI101

River Gas of Utah, Inc.
American Quasar 31-1(D-1) Well
Cause No. UIC-144

Publication Notices were sent to the following:

Newspaper Agency Corporation
Legal Advertising
157 Regent Street
Salt Lake City, Utah 84110

Sun Advocate
Box 1870
76 West Main
Price, Utah 84501

Bureau of Land Management
Price District Office
900 North 700 East
Price, Utah 84501

Charles Willis
River Gas of Utah, Inc.
3600 Watermelon Road, #204
Northport, Alabama 35476

Dan Jackson
U.S. Environmental Protection Agency
Region VIII
999 18th Street
Denver, Colorado 80202-2466

Ed Bonner
State Lands and Forestry
3 Triad Center, Suite 400
Salt Lake City, Utah 84180-1204

Lisa D. Clement

Lisa D. Clement
Administrative Secretary
December 28, 1993

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Ted Stewart
Executive Director

James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

December 28, 1993

Newspaper Agency Corporation
Legal Advertising
157 Regent Street
Salt Lake City, Utah 84110

Re: Notice of Agency Action - Cause No. UIC-144

Gentlemen:

Enclosed is a copy of the referenced Notice of Agency Action. Please publish the Notice, once only, as soon as possible. Please send proof of publication and billing to the Division of Oil, Gas and Mining, 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah 84180-1203.

Sincerely,

Lisa D. Clement

Lisa D. Clement
Administrative Secretary

Enclosure
WOI168

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Ted Stewart
Executive Director

James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

December 28, 1993

Sun Advocate
Box 1870
76 West Main
Price, Utah 84501

Re: Notice of Agency Action - Cause No. UIC-144

Gentlemen:

Enclosed is a copy of the referenced Notice of Agency Action. Please publish the Notice, once only, as soon as possible. Please send proof of publication and billing to the Division of Oil, Gas and Mining, 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah 84180-1203.

Sincerely,

Lisa D. Clement

Lisa D. Clement
Administrative Secretary

Enclosure
WOI168

DIVISION OF OIL, GAS AND MINING
UNDERGROUND INJECTION CONTROL PROGRAM

PERMIT
DECISION DOCUMENT

Applicant: River Gas of Utah **Well:** Drunkards Wash 31-1-D1

Location: Sec. 31, T.14 S., R.10 E., Carbon County

Ownership Issues:
The proposed well is located in section 31, township 14 south, range 10 east, Carbon County, Utah. The surface location is owned by The State of Utah. Minerals are also owned by the State, River Gas is the operator of all leases in the 1/2 mile radius. An affidavit has been filed stating that State Lands and Forestry was noticed.

Well Integrity:
The well proposed for injection is the Drunkards Wash 31-1-D1. This well has a 13 3/8" surface casing set at 615 feet and is cemented to surface. A 9 5/8" intermediate casing was set from surface to 5740 feet and cemented with 750 sacks of cement. The cement top is at approximately 3800 feet and was verified with a cement bond log. A 7" liner was set from surface to 6300 feet and cemented in two stages. The first stage brought cement back to 4600 feet and the second stage placed cement from 3860 back to surface. The proposed zone of injection lies within the Navajo Sandstone Formation at a depth of 5726-6210 feet. A 5" tubing will be set in a packer no more than 100 feet above the top perforations. There are 2 producing wells, 1 abandoned well and an abandoned core hole in the 1/2 mile area of review. All the wells in the area of review have sufficient casing and cement or proper plug placement to adequately protect any usdw's. A casing test should be performed at the time of conversion and a casing/tubing pressure test should be performed prior to injection.

Ground Water Protection:
The base of moderately saline water is probably at a depth of approximately 2000 feet located in the Ferron sands in the area of the proposed well. There are no water wells in the immediate area. The upper confining zone consists of impermeable shale and limestone beds of the Carmel, Curtis and Morrison Formations. The lower confining zone consists of shale, limestone, and sand stringers of the Chinle Formation. Any shallow fresh water zones will be adequately protected by the existing construction. No corrective action is needed on any of the offset wells.

Oil/Gas & Other Mineral Resources Protection:
Injection into this well should have no adverse affects on any offsetting production. There are no other known mineral interests of concern. Coals located in the Mancos are

the source of the gas being extracted.

Bonding:
River Gas a statewide bond in the amount of $80,000 dollars.

Actions Taken and Further Approvals Needed:
A public notice for the injection well was published in both the Salt Lake Tribune and the Carbon County newspaper. The permittee needs to submit a compatibility analysis and additional water quality data as the information is obtained. Step rate data indicates that the Navajo has a low fracture gradient and the maximum allowable surface pressure must remain below 570 psig until further information is obtained. Approval should be granted if no objections are received.

DJJ
Reviewers

01-10-94
Date

143 SOUTH MAIN ST
P.O. BOX 45838
SALT LAKE CITY, UTAH 84145
FED. TAX I.D. # 87-0217663

Newspaper Agency Corporation

The Salt Lake Tribune (NA) DESERET VS

LEGAL ADVERTISING INVOICE

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CUSTOMER NAME AND ADDRESS	ACCOUNT NUMBER	BILLING DATE
DIV OF OIL, GAS & MINING 355 W NO TEMPLE, #350 SALT LAKE CITY, UT 84180	LE-5385340	01/04/94
	FOR BILLING INFORMATION CALL (801) 237-2822	

AFFIDAVIT OF PUBLICATION

AS NEWSPAPER AGENCY CORPORATION LEGAL BOOKKEEPER, I CERTIFY THAT THE ATTACHED ADVERTISEMENT OF NOTICE OF AGENCY ACTIONCAUSE NO. UIC-144BEFOR FOR DIV OF OIL, GAS & MINING WAS PUBLISHED BY THE NEWSPAPER AGENCY CORPORATION, AGENT FOR THE SALT LAKE TRIBUNE AND DESERET NEWS, DAILY NEWSPAPERS PRINTED IN THE ENGLISH LANGUAGE WITH GENERAL CIRCURATION IN UTAH, AND PUBLISHED IN SALT LAKE CITY, SALT LAKE COUNTY IN THE STATE OF UTAH.

PUBLISHED ON JAN 04 1994

SIGNATURE

DATE 01/04/94

ACCOUNT NAME				TELEPHONE
V OF OIL, GAS & MINING				801-538-5340
SCHEDULE				AD NUMBER
AN 04 1994				CU820060
UST. REF. NO.	CAPTION			MISC. CHARGES
E #UIC-144	NOTICE OF AGENCY ACTIONCAUSE NO. UIC-144BEFOR			.00
SIZE		TIMES	RATE	AD CHARGE
2 LINES 1 COLUMN		1	1.64	118.08
AND PAYABLE ON RECEIPT OF THIS INVOICE			TOTAL AMOUNT DUE	118.08

THANK YOU FOR USING LEGAL ADVERTISING.

NOTICE OF AGENCY ACTION CAUSE NO. UIC-144 BEFORE THE DIVISION OF OIL, GAS AND MINING DEPARTMENT OF NATURAL RESOURCES, STATE OF UTAH

IN THE MATTER OF THE APPLICATION OF RIVER GAS OF UTAH INC. FOR ADMINISTRATIVE APPROVAL OF THE AMERICAN QUASAR 31-1(D-1) WELL LOCATED IN SECTION 31, TOWNSHIP 14 SOUTH, RANGE 10 EAST, S.L.M., CARBON COUNTY, UTAH, AS A CLASS II INJECTION WELL.

THE STATE OF UTAH TO ALL PERSONS INTERESTED IN THE ABOVE ENTITLED MATTER.

Notice is hereby given that the Division of Oil, Gas and Mining (the "Division") is commencing an informal adjudicative proceeding to consider for administrative approval, the application of River Gas of Utah, Inc. for conversion of the American Quasar 31-1(D-1) Well, located in Section 31, Township 4 South, Range 10 East, Carbon County, Utah, to a Class II injection well. The proceeding will be conducted in accordance with Utah Admin. R.649-10, Administrative Procedures.

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Any person desiring to object to the application or otherwise intervene in the proceeding, must file a written protest or notice of intervention with the Division within fifteen days following publication of this notice. If such protest or notice of intervention is received, a hearing will be scheduled before the Board of Oil, Gas and Mining. Protestants and/or intervenors should be prepared to demonstrate at the hearing how this matter affects their interests.

DATED this 28th day of December, 1993.

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
/s/ R. J. Firth
Associated Director
CU820060

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DIV OF OIL, GAS & MINING
355 W NO TEMPLE, #350
SALT LAKE CITY, UT 84180

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P.O. BOX 45838
SALT LAKE CITY, UTAH 84145
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CUSTOMER'S COPY

LEGAL ADVERTISING INVOICE

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FOR BILLING INFORMATION
CALL (801) 237-2822

AFFIDAVIT OF PUBLICATION

AS NEWSPAPER AGENCY CORPORATION LEGAL BOOKKEEPER, I CERTIFY THAT THE ATTACHED ADVERTISEMENT OF NOTICE OF AGENCY ACTIONCAUSE NO. UIC-144BEFOR FOR DIV OF OIL, GAS & MINING WAS PUBLISHED BY THE NEWSPAPER AGENCY CORPORATION, AGENT FOR THE SALT LAKE TRIBUNE AND DESERET NEWS, DAILY NEWSPAPERS PRINTED IN THE ENGLISH LANGUAGE WITH GENERAL CIRCURATION IN UTAH, AND PUBLISHED IN SALT LAKE CITY, SALT LAKE COUNTY, IN THE STATE OF UTAH.

PUBLISHED ON JAN 06 1994

SIGNATURE

DATE 01/06/94

NOTICE OF AGENCY ACTION CAUSE NO. UIC-144 BEFORE THE DIVISION OF OIL, GAS AND MINING DEPARTMENT OF NATURAL RESOURCES, STATE OF UTAH

IN THE MATTER OF THE APPLICATION OF RIVER GAS OF UTAH INC. FOR ADMINISTRATIVE APPROVAL OF THE AMERICAN QUASAR 31-1(D-1) WELL LOCATED IN SECTION 31, TOWNSHIP 14 SOUTH, RANGE 10 EAST, S.L.M., CARBON COUNTY, UTAH, AS A CLASS II INJECTION WELL.

THE STATE OF UTAH TO ALL PERSONS INTERESTED IN THE ABOVE ENTITLED MATTER.

Notice is hereby given that the Division of Oil, Gas and Mining (the "Division") is commencing an informal adjudicative proceeding to consider for administrative approval, the application of River Gas of Utah, Inc. for conversion of the American Quasar 31-1(D-1) Well, located in Section 31, Township 14 South, Range 10 East, Carbon County, Utah, to a Class II injection well. The proceeding will be conducted in accordance with Utah Admin. R.649-10, Administrative Procedures.

The interval from 5726 feet to 6210 feet (Navajo Formation) will be selectively perforated for water injection. The maximum authorized injection pressure will be 572 psig and the estimated injection volume will be 20,000 bbls of water per day.

Any person desiring to object to the application or otherwise intervene in the proceeding, must file a written protest or notice of intervention with the Division within fifteen days following publication of this notice. If such protest or notice of intervention is received, a hearing will be scheduled before the Board of Oil, Gas and Mining. Protestants and/or intervenors should be prepared to demonstrate at the hearing how this matter affects their interests.

DATED this 28th day of December, 1993.

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
/s/ R. J. Firth
Associate Director
15820070

ACCOUNT NAME				TELEPHONE
IV OF OIL, GAS & MINING				801-538-5340
SCHEDULE				AD NUMBER
JAN 06 1994				15820070
CUST. REF. NO.	CAPTION			MISC.CHARGES
SE #UIC-144	NOTICE OF AGENCY ACTIONCAUSE NO. UIC-144BEFOR			.00
SIZE		TIMES	RATE	AD CHARGE
72 LINES 1 COLUMN		1	.00	.00
E AND PAYABLE ON RECEIPT OF THIS INVOICE			TOTAL AMOUNT DUE	.00

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PLEASE

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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

February 2, 1994

River Gas of Utah, Inc.
3600 Watermelon Road, Suite 204
Northport, Alabama 35476

Re: Drunkards Wash 31-1(D-1) Well, Section 31, Township 14 South, Range 10 East, Carbon County, Utah

Gentlemen:

Pursuant to Utah Admin. Code R.649-5-3-3, the Division of Oil, Gas and Mining (the "Division") issues its administrative approval for conversion of the referenced well to a Class II injection well.

Accordingly, the following stipulations shall apply for full compliance with this approval:

1. Compliance with all applicable requirements regarding operation, maintenance and reporting for Underground Injection Control ("UIC") Class II injection wells pursuant to Utah Admin. Code R.649-1 et seq.

2. Conformance with all conditions and requirements of the complete application submitted by River Gas of Utah, Inc.

3. Submit water compatibility testing results and notify the Division prior to commencement of injection operations.

Following completion of the well conversion work, testing, and other operations and submittal of the required documents to the Division; a final UIC permit will be issued. If you have any questions regarding this approval or the necessary requirements, please contact Dan Jarvis at this office.

Sincerely,

R.J. Firth
Associate Director

ldc
cc: Dan Jackson, Environmental Protection Agency
Bureau of Land Management, Price
W602

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

UNDERGROUND INJECTION CONTROL PERMIT

Cause No. UIC-144

Operator: River Gas Of Utah Inc.

Well: Drunkards Wash 31-1 (D1)

Location: Section 31, Township 14 South, Range 10 East, Carbon County, Utah

API No.: 43-007-30040

Well Type: Disposal

Stipulations of Permit Approval

1. Approval for conversion to a Class II injection well issued on February 2, 1994.
2. Maximum Allowable Injection Pressure: 572 psig
3. Maximum Allowable Injection Rate: 4320 barrels per day

Approved by: R.J. Firth — 5/31/94

R.J. Firth
Associate Director, Oil and Gas

Date

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

June 14, 1994

River Gas of Utah, Inc.
3600 Watermelon Road
Northport, Alabama 35476

Re: Maximum Injection Rate and Pressure, Drunkards Wash 31-1 (D-1) Well, Section 31, Township 14 South, Range 10 East, Carbon County, Utah

Gentlemen:

An Underground Injection Control Permit was issued by this office for the referenced well on May 31, 1994. That permit stipulated the maximum allowable injection rate and pressure for the well in accordance with data which had been provided. Since issuing the permit River Gas of Utah, Inc. has provided the Division with additional data which supports different maximum rate and pressure limitations. The new maximum allowable injection rate and pressure approved for this well are:

Maximum Allowable Injection Pressure: 470 psig

Maximum Allowable Injection Rate: 20,000 barrels per day

If you have questions concerning this approved change, please contact this office.

Sincerely,

Gil Hunt
UIC Program Manager

lec
cc: Well File
Correspondence File/ldc

RIVER GAS CORPORATION
1305 South 100 East
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DATE: November 10, 1995 Business: (801)538-5340
Fax: (801)359-3940

TIME: 10:08 pm
PAGES: 22 (includes cover sheet)

TO: Frank Matthews

FROM: Billy Stacy

SUBJECT: **STIMULATION OF DISPOSAL WELL**

Good Evening! If you have any questions regarding the contents of this fax please forward them to or contact Charles Willis @ 1-205-556-1143 or Bob Singleton @ 1-205-556-0522. Thank you for taking this opportunity on your time.

/rc

If an incomplete transaction is received, please contact the sender at (801) 637-8876. Thank you.

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The River Gas Company
511 Energy Center Blvd
Northport, AL 35476

Drunkard's Wash 31-1 D1
Drunkard's Wash

Carbon County, UT

Stimulation Cost Proposal

Prepared for: Bob Singleton

10/19/95

Version
1

Prepared by:
Joseph E. Legenza
Halliburton Energy Services
9002 Energy Lane
Northport, Alabama 35476

1-800-654-6926

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The Future Is Working Together.

G-0270

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Halliburton appreciates the opportunity to present this proposal and looks forward to being of service to you.

Foreword

Please find attached the Cost Proposal you requested for stimulating the Drunkard's Wash 31-1 D1 Well in Carbon County, UT. The DTTS Packer requires 4 weeks lead time for delivery to UT.

Bob, thank you for calling Halliburton Energy Services and if we can be of further assistance in any way pleas do not hesitate to call.

Thank You,

Joe Legenza
Technical Advisor
Halliburton Energy Services

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20/40 Sand w/ Hybor Frac Service

Engineering Program Results

FLUIDS
Fracturing Fluids Analysis

Fluid parameters for
Hybor Gel w/ WG-11 H3295
at 125 deg F

Time	n'	Ka'	Viscosity
0.0	0.395	3.539E-01	757.32
1.0	0.399	3.335E-01	727.24
2.0	0.402	3.142E-01	698.36
3.0	0.406	2.960E-01	670.62
4.0	0.410	2.789E-01	643.98
5.0	0.413	2.628E-01	618.40
6.0	0.417	2.476E-01	593.84

Cw . . . . . 0.0034 ft/sqrt(min)

Spurt loss . . . . . 0.2360 gal/sq ft

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20/40 Sand w/ Hybor Frac Service

Engineering Program Results

FRICT
Halliburton Energy Services' Friction Loss Program

Friction Loss Values for Hybor
Prepared from 30 lb WG-11
and 2.25 gal CL-28
per 1000 gal 2% KCl
Fluid Temperature - 80 deg. F.
Fluid pH - 9.3

Diameter(in) 2.992 2½"
Length (ft) 6000

Flow Rate (bpm)	Friction Pressure (psi)	Total (psi)
10.0	587.7	587.7
11.0	636.4	636.4
12.0	689.1	689.1
13.0	745.8	745.8
14.0	805.3	805.3
15.0	867.1	867.1
16.0	932.9	932.9
17.0	1001.0	1001.0
18.0	1071.5	1071.5
19.0	1146.3	1146.3
20.0	1223.6	1223.6
21.0	1301.2	1301.2
22.0	1380.6	1380.6
23.0	1458.7	1458.7
24.0	1537.5	1537.5
25.0	1621.6	1621.6

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20/40 Sand w/ Hybor Frac Service

FRICT
Halliburton Energy Services' Friction Loss Program

Friction Loss Values for Hybor
Prepared from 30 lb WG-11
and 2.25 gal CL-28
per 1000 gal 2% KCl
Fluid Temperature - 80 deg. F.
Fluid pH - 9.3
Sand Concentration - 2.0 lb/gal

Diameter(in) 2.992
Length (ft) 6000

Flow Rate (bpm)	Friction Pressure (psi)	Total (psi)
10.0	622.3	622.3
11.0	673.9	673.9
12.0	729.7	729.7
13.0	789.8	789.8
14.0	852.7	852.7
15.0	918.2	918.2
16.0	987.8	987.8
17.0	1060.0	1060.0
18.0	1134.7	1134.7
19.0	1213.9	1213.9
20.0	1295.7	1295.7
21.0	1377.8	1377.8
22.0	1462.0	1462.0
23.0	1544.7	1544.7
24.0	1628.1	1628.1
25.0	1717.2	1717.2

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20/40 Sand w/ Hybor Frac Service

FRICT
Halliburton Energy Services' Friction Loss Program

Friction Loss Values for Hybor
Prepared from 30 lb WG-11
and 2.25 gal CL-28
per 1000 gal 2% KCl
Fluid Temperature - 80 deg. F.
Fluid pH - 9.3
Sand Concentration - 4.0 lb/gal

Diameter (in) 2.992
Length (ft) 6000

Flow Rate (bpm)	Friction Pressure (psi)	Total (psi)
10.0	659.0	659.0
11.0	713.6	713.6
12.0	772.7	772.7
13.0	836.3	836.3
14.0	903.0	903.0
15.0	972.3	972.3
16.0	1046.0	1046.0
17.0	1122.5	1122.5
18.0	1201.5	1201.5
19.0	1285.4	1285.4
20.0	1372.0	1372.0
21.0	1459.0	1459.0
22.0	1548.1	1548.1
23.0	1635.7	1635.7
24.0	1724.0	1724.0
25.0	1818.3	1818.3

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20/40 Sand w/ Hybor Frac Service

FRICT
Halliburton Energy Services' Friction Loss Program

Friction Loss Values for Hybor
Prepared from 30 lb WG-11
and 2.25 gal CL-28
per 1000 gal 2% KCl
Fluid Temperature - 80 deg. F.
Fluid pH - 9.3
Sand Concentration - 6.0 lb/gal

Diameter(in) 2.992
Length (ft) 6000

Flow Rate (bpm)	Friction Pressure (psi)	Total (psi)
10.0	697.8	697.8
11.0	755.6	755.6
12.0	818.2	818.2
13.0	885.6	885.6
14.0	956.2	956.2
15.0	1029.6	1029.6
16.0	1107.7	1107.7
17.0	1188.6	1188.6
18.0	1272.3	1272.3
19.0	1361.2	1361.2
20.0	1452.9	1452.9
21.0	1545.0	1545.0
22.0	1639.3	1639.3
23.0	1732.1	1732.1
24.0	1825.6	1825.6
25.0	1925.5	1925.5

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20/40 Sand w/ Hybor Frac Service

FRICT
Halliburton Energy Services' Friction Loss Program

Friction Loss Values for Hybor
Prepared from 30 lb WG-11
and 2.25 gal CL-28
per 1000 gal 2% KCl
Fluid Temperature - 80 deg. F.
Fluid pH - 9.3
Sand Concentration - 8.0 lb/gal

Diameter(in) 2.992
Length (ft) 6000

Flow Rate (bpm)	Friction Pressure (psi)	Total (psi)
10.0	738.9	738.9
11.0	800.1	800.1
12.0	866.5	866.5
13.0	937.8	937.8
14.0	1012.5	1012.5
15.0	1090.2	1090.2
16.0	1172.9	1172.9
17.0	1258.6	1258.6
18.0	1347.3	1347.3
19.0	1441.4	1441.4
20.0	1538.5	1538.5
21.0	1636.0	1636.0
22.0	1735.9	1735.9
23.0	1834.1	1834.1
24.0	1933.2	1933.2
25.0	2038.9	2038.9

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20/40 Sand w/ Hybor Frac Service

FRICT
Halliburton Energy Services' Friction Loss Program

Friction Loss Values for Hybor
Prepared from 30 lb WG-11
and 2.25 gal CL-28
per 1000 gal 2% KCl
Fluid Temperature - 80 deg. F.
Fluid pH - 9.3
Sand Concentration - 10.0 lb/gal

Diameter(in) 2.992
Length (ft) 6000

Flow Rate (bpm)	Friction Pressure (psi)	Total (psi)
10.0	782.5	782.5
11.0	847.3	847.3
12.0	917.5	917.5
13.0	993.1	993.1
14.0	1072.2	1072.2
15.0	1154.5	1154.5
16.0	1242.0	1242.0
17.0	1332.8	1332.8
18.0	1426.7	1426.7
19.0	1526.3	1526.3
20.0	1629.1	1629.1
21.0	1732.4	1732.4
22.0	1838.2	1838.2
23.0	1942.2	1942.2
24.0	2047.1	2047.1
25.0	2159.1	2159.1

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20/40 Sand w/ Hybor Frac Service

FRICT
Halliburton Energy Services' Friction Loss Program

Friction Loss Values for Hybor
Prepared from 30 lb WG-11
and 2.25 gal CL-28
per 1000 gal 2% KCl
Fluid Temperature - 80 deg. F.
Fluid pH - 9.3
Sand Concentration - 12.0 lb/gal

Diameter (in) 2.992
Length (ft) 6000

Flow Rate (bpm)	Friction Pressure (psi)	Total (psi)
10.0	828.6	828.6
11.0	897.2	897.2
12.0	971.6	971.6
13.0	1051.6	1051.6
14.0	1135.3	1135.3
15.0	1222.5	1222.5
16.0	1315.2	1315.2
17.0	1411.3	1411.3
18.0	1510.7	1510.7
19.0	1616.2	1616.2
20.0	1725.1	1725.1
21.0	1834.5	1834.5
22.0	1946.5	1946.5
23.0	2056.6	2056.6
24.0	2167.7	2167.7
25.0	2286.3	2286.3

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20/40 Sand w/ Hybor Frac Service

Engineering Program Results

PROP
Halliburton Energy Services' Fracture Design Program

River Gas of UT, Inc.\Drunkards Wash 31-1 D1
First Stage

Treatment Summary

Job Type - Hybor Fracturing Service
Daneshy Fracture Geometry

Treatment Data

Gel type	WG-11	
Gel concentration	30	
Injection rate	25.0	bpm
Treatment fluid sp gr	1.020	
n'	.3990	n'
K' (slot)	.333500	lbf-sec /sq-ft
Cw (1000. psi)	.00340	ft/SQRT(min)
Cw (608. psi)	.00265	ft/SQRT(min)
Spurt volume	.2360	gal/sq ft
Cvc	.00077	ft/SQRT(min)
Spurt time	418.34	min
C-overall (pay)	.00073	ft/SQRT(min)
Ceff (non-producing zones)	.00340	ft/SQRT(min)
Apparent viscosity	1644.	cp at .5" width
Friction pressure loss	2440.	psi

Tubular Goods

Measured Depth (ft) Top	Bottom	Tubing ID (in.)	Tubing OD (in.)	Casing ID (in.)	Casing OD (in.)	Friction Pressure (psi)
0.	6100.	2.992	3.500	6.276	7.000	2440.00

How?

Design No.	Volume Total (1000 gal)	Pad	Created Length (ft)	Wid. (in.)	Pad Width (in.)	Propped Length (ft)	Ht. (ft)	Total Prop (sx)	Prod Incr	Fluid Eff (pct)
1	26.8	10.0	321.6	.45	.32	206.8	113.0	845.	2.8	76.2
2	26.8	10.0	321.6	.45	.32	206.8	113.0	845.	3.1	76.2

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20/40 Sand w/ Hybor Frac Service

PROP

Halliburton Energy Services' Fracture Design Program

River Gas of UT, Inc.\Drunkards Wash 31-1 D1
First Stage

Treatment Summary (Cont.)

Well & Formation Data

Young's modulus	5.60E+06	psi
Permeability.	10.0000	md
Porosity.	14.0	pct
Reservoir fluid compressibility .	3.10E-06	1/psi
Reservoir fluid viscosity	.62	cp
BHTP.	3660.	psi
Reservoir fluid pressure. . . .	3052.	psi
Closure stress.	608.	psi
Gross fracture height	113.	ft
Net fracture height	110.	ft
Wellbore diameter	6.27	in.
Drainage radius	1044.	ft
Well spacing.	100.	acres
Skin factor	.0	
Bottom-hole temperature	110.	deg F

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20/40 Sand w/ Hybor Frac Service

PROP
Halliburton Energy Services' Fracture Design Program

River Gas of UT, Inc.\Drunkards Wash 31-1 D1
First Stage

Proppant Schedule for Design No. 1

Pumping Schedule

10000. gal of pad volume
1000. gal with .50 lb/gal of 20/40 Ottawa sand
2000. gal with 2.00 lb/gal of 20/40 Ottawa sand
2000. gal with 4.00 lb/gal of 20/40 Ottawa sand
2000. gal with 6.00 lb/gal of 20/40 Ottawa sand
2000. gal with 8.00 lb/gal of 20/40 Ottawa sand
2000. gal with 10.00 lb/gal of 20/40 Ottawa sand
2000. gal with 12.00 lb/gal of 20/40 Ottawa sand
23000. gal total fluid
845. sacks total proppant

Friction Pressures for Design No. 1

Stage No.	Proppant Concentration Initial (lb/gal)	Final (lb/gal)	Friction Pressure* (psi)	Hydrostatic Pressure* (psi)	WHTP* (psi)
PAD	.00	.00	2440	2692	3407
1	.50	.50	2531	2787	3403
2	2.00	2.00	2806	3049	3416
3	4.00	4.00	3172	3352	3479
4	6.00	6.00	3489	3612	3537
5	8.00	8.00	3757	3837	3580
6	10.00	10.00	4026	4034	3651
7	12.00	12.00	4294	4207	3746

* Pressures are calculated for Final Proppant Concentration

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20/40 Sand w/ Hybor Frac Service

PROP
Halliburton Energy Services' Fracture Design Program

River Gas of UT, Inc.\Drunkards Wash 31-1 D1
First Stage

Bed Deposition for Design No. 1

Deposition Profiles

At the end of pumping:

Carry distance	206.8 ft
Max bed height	.0 ft
Avg bed height	.0 ft
Pct prop deposited	.0 pct

Distance From Well (ft)	Deposited Height (ft)	Suspended Proppant Height (ft)	Concentration (lb/gal)	Concentration (lb/sq ft)
4.0	.0	113.0	12.1	2.80
16.0	.0	113.0	12.1	2.80
28.0	.0	113.0	12.3	2.82
40.0	.0	113.0	10.4	2.52
52.0	.0	113.0	10.4	2.50
64.0	.0	113.0	10.6	2.52
76.0	.0	113.0	8.6	2.16
88.0	.0	113.0	8.6	2.14
100.0	.0	113.0	8.8	2.14
112.0	.0	113.0	6.7	1.72
124.0	.0	113.0	6.8	1.72
136.0	.0	113.0	6.8	1.69
148.0	.0	113.0	4.6	1.21
160.0	.0	113.0	4.7	1.21
172.0	.0	113.0	2.4	.65
184.0	.0	113.0	2.4	.64
196.0	.0	113.0	.6	.17

Fracture depth: 6019. - 6132. ft

Producing Interval (ft)	Propped Length (ft)	Propped Height in Zone (ft)	Proppant Conc. (lb/sq ft)	Flow Capacity (md-ft)	Dim'less Capacity	Cr
6020.- 6130.	207.	110.	1.812	3792.	2.42	.58

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20/40 Sand w/ Hybor Frac Service

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Halliburton Energy Services' Fracture Design Program

River Gas of UT, Inc.\Drunkards Wash 31-1 D1
First Stage

Proppant Schedule for Design No. 2

Pumping Schedule

10000. gal of pad volume
1000. gal with .50 lb/gal of 16/30 Ottawa sand
2000. gal with 2.00 lb/gal of 16/30 Ottawa sand
2000. gal with 4.00 lb/gal of 16/30 Ottawa sand
2000. gal with 6.00 lb/gal of 16/30 Ottawa sand
2000. gal with 8.00 lb/gal of 16/30 Ottawa sand
2000. gal with 10.00 lb/gal of 16/30 Ottawa sand
2000. gal with 12.00 lb/gal of 16/30 Ottawa sand
23000. gal total fluid
845. sacks total proppant

Friction Pressures for Design No. 2

Stage No.	Proppant Concentration Initial (lb/gal)	Final (lb/gal)	Friction Pressure* (psi)	Hydrostatic Pressure* (psi)	WHTP* (psi)
PAD	.00	.00	2440	2692	3407
1	.50	.50	2531	2787	3403
2	2.00	2.00	2806	3049	3416
3	4.00	4.00	3172	3352	3479
4	6.00	6.00	3489	3612	3537
5	8.00	8.00	3757	3837	3580
6	10.00	10.00	4026	4034	3651
7	12.00	12.00	4294	4207	3746

* Pressures are calculated for Final Proppant Concentration

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20/40 Sand w/ Hybor Frac Service

PROP
Halliburton Energy Services' Fracture Design Program

River Gas of UT, Inc.\Drunkards Wash 31-1 D1
First Stage

Bed Deposition for Design No. 2

Deposition Profiles

At the end of pumping:

Carry distance	206.8 ft
Max bed height	.0 ft
Avg bed height	.0 ft
Pct prop deposited	.0 pct

Distance From Well (ft)	Deposited Height (ft)	Suspended Proppant Height (ft)	Concentration (lb/gal)	Concentration (lb/sq ft)
4.0	.0	113.0	12.1	2.80
16.0	.0	113.0	12.1	2.80
28.0	.0	113.0	12.3	2.82
40.0	.0	113.0	10.4	2.52
52.0	.0	113.0	10.4	2.50
64.0	.0	113.0	10.6	2.52
76.0	.0	113.0	8.6	2.16
88.0	.0	113.0	8.6	2.14
100.0	.0	113.0	8.8	2.14
112.0	.0	113.0	6.7	1.72
124.0	.0	113.0	6.8	1.72
136.0	.0	113.0	6.8	1.69
148.0	.0	113.0	4.6	1.21
160.0	.0	113.0	4.7	1.21
172.0	.0	113.0	2.4	.65
184.0	.0	113.0	2.4	.64
196.0	.0	113.0	.6	.17

Fracture depth: 6019. - 6132. ft

Producing Interval (ft)	Propped Length (ft)	Propped Height in Zone (ft)	Proppant Conc. (lb/sq ft)	Flow Capacity (md-ft)	Dim'less Capacity	Cr
6020.- 6130.	207.	110.	1.812	6617.	4.22	1.02

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20/40 Sand w/ Hybor Frac Service

PROP
Halliburton Energy Services' Fracture Design Program

River Gas of UT, Inc.\Drunkards Wash 31-1 D1
First Stage

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20/40 Sand w/ Hybor Frac Service

Cost Estimate

Price Ref	Description	Qty	U/M	Unit Price	Total
300-111	MILEAGE FOR STIMULATION EQUIP	120	MI	$ 2.85	$ 2,394.00
		14	UNT		
300-131	DELIVERY CHARGE (LARGE UNIT)	120	MI	2.85	171.00
		1	UNT		
301-085	MINIMUM PUMP CHG HT-400 V-12	4	HR	2,490.00	7,470.00
	(PER 4 HR)	6	PMP		
301-200	PROPORTIONER	25	BPM	3,000.00	4,500.00
		3	EA		
307-785	FRACVAN II	1	JOB	1,650.00	825.00
390-740	GROUND MANIF OR FRAC MANIF TRL	1	JOB	800.00	400.00
307-962	MOBILE LAB VAN W/TECH	1	DAY	1,925.00	962.50
307-621	CASING CONTROL VALVE	1	DAY	635.00	317.50
		1	EA		
307-220	MOUNTAIN MOVER SAND SYSTEM	3	DAY	835.00	417.50
	(PER 3 DAY)	1	EA		
301-197	PROPPANT PUMP CHARGE	2	PPG	0.04	40.00
		2000	GAL		
301-197	PROPPANT PUMP CHARGE	4	PPG	0.04	40.00
		2000	GAL		
301-197	PROPPANT PUMP CHARGE	6	PPG	0.10	100.00
		2000	GAL		
301-197	PROPPANT PUMP CHARGE	8	PPG	0.17	170.00
		2000	GAL		
301-197	PROPPANT PUMP CHARGE	10	PPG	0.23	230.00
		2000	GAL		
301-197	PROPPANT PUMP CHARGE	12	PPG	0.23	230.00
		2000	GAL		
313-394	BE-5	24	LB	40.00	480.00
311-050	SP BREAKER	100	LB	5.40	270.00
218-016	FE-1A	20	GAL	9.45	94.50
310-363	HYG-3	100	LB	2.05	102.50
310-365	K-35	200	LB	0.35	35.00
310-376	CL-22	130	GAL	31.00	2,015.00
310-628	LGC-V- CONCENTRATE	400	GAL	31.00	6,200.00
510-198	SAND 20/40 WHITE BULK	169000	LB	9.47	8,002.15
	(PER 100 LB)				
500-340	MILEAGE FOR STIMULATION MATER	10140	TMI	0.95	4,816.50

DISCOUNTED TOTAL $ 40,283.15

NOTE: Service Location - Vernal

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16/30 Sand w/ Hybor Frac Service

Cost Estimate

Price Ref	Description	Qty	U/M	Unit Price	Total
300-111	MILEAGE FOR STIMULATION EQUIP	120	MI	$ 2.85	$ 2,394.00
		14	UNT		
300-131	DELIVERY CHARGE (LARGE UNIT)	120	MI	2.85	171.00
		1	UNT		
301-085	MINIMUM PUMP CHG HT-400 V-12	4	HR	2,490.00	7,470.00
	(PER 4 HR)	6	PMP		
301-200	PROPORTIONER	25	BPM	3,000.00	4,500.00
		3	EA		
307-785	FRACVAN II	1	JOB	1,650.00	825.00
390-740	GROUND MANIF OR FRAC MANIF TRL	1	JOB	800.00	400.00
307-962	MOBILE LAB VAN W/TECH	1	DAY	1,925.00	962.50
307-621	CASING CONTROL VALVE	1	DAY	635.00	317.50
		1	EA		
307-220	MOUNTAIN MOVER SAND SYSTEM	3	DAY	835.00	417.50
	(PER 3 DAY)	1	EA		
301-197	PROPPANT PUMP CHARGE	2	PPG	0.04	40.00
		2000	GAL		
301-197	PROPPANT PUMP CHARGE	4	PPG	0.04	40.00
		2000	GAL		
301-197	PROPPANT PUMP CHARGE	6	PPG	0.10	100.00
		2000	GAL		
301-197	PROPPANT PUMP CHARGE	8	PPG	0.17	170.00
		2000	GAL		
301-197	PROPPANT PUMP CHARGE	10	PPG	0.23	230.00
		2000	GAL		
301-197	PROPPANT PUMP CHARGE	12	PPG	0.23	230.00
		2000	GAL		
313-394	BE-5	24	LB	40.00	480.00
311-050	SP BREAKER	100	LB	5.40	270.00
218-016	FE-1A	20	GAL	9.45	94.50
310-363	HYG-3	100	LB	2.05	102.50
310-365	K-35	200	LB	0.35	35.00
310-376	CL-22	130	GAL	31.00	2,015.00
310-628	LGC-V- CONCENTRATE	400	GAL	31.00	6,200.00
510-203	SAND 16/30 WHITE BULK	1690	SK	12.50	10,562.50
	(PER 100 SK)				
500-340	MILEAGE FOR STIMULATION MATER	10140	TMI	0.95	4,816.50

DISCOUNTED TOTAL $ 42,843.50

NOTE: Service Location - Vernal

9217

HALLIBURTON

Additional Day Hybor Frac Service

Cost Estimate

Price Ref	Description	Qty	U/M	Unit Price	Total
301-085	MINIMUM PUMP CHG HT-400 V-12 (PER 4 HR)	4	HR	$ 2,490.00	$ 7,470.00
301-200	PROPORTIONER	6	PMP		
		25	BPM	3,000.00	4,500.00
307-785	FRACVAN II	3	EA		
390-740	GROUND MANIF OR FRAC MANIF TRL	1	JOB	1,650.00	825.00
307-962	MOBILE LAB VAN W/TECH	1	JOB	800.00	400.00
307-621	CASING CONTROL VALVE	1	DAY	1,925.00	962.50
		1	DAY	635.00	317.50
300-200	FOOD AND LODGING	1	EA		
		1	DAY	100.00	800.00
		16	MAN		

DISCOUNTED TOTAL $ 15,275.00

NOTE: Service Location - Vernal

HALLIBURTON

Conditions

NOTE

The cost in this analysis is good for the materials and/or services outlined within. These prices are based on Halliburton being awarded the work on a first call basis. Prices will be reviewed for adjustments if awarded on 2nd or 3rd call basis and/or after 30 days of this written analysis. This is in an effort to schedule our work and maintain a high quality of performance for our customers.

The unit prices stated in the proposal are based on our current published prices. The projected equipment, personnel, and material needs are only estimates based on information about the work presently available to us. At the time the work is actually performed, conditions then existing may require an increase or decrease in the equipment, personnel, and/or material needs. Charges will be based upon unit prices in effect at the time the work is performed and the amount of equipment, personnel, and/or material actually utilized in the work. Taxes, if any, are not included. Applicable taxes, if any, will be added to the actual invoice.

It is understood and agreed between the parties that with exception of the subject discounts, all said services and materials will be furnished in accordance with the terms and conditions of Halliburton's regular work orders applicable to the particular item. In this connection, it is also understood and agreed that Customer will continue to execute Halliburton usual field work orders and/or tickets customarily required by Halliburton in connection with the furnishing of said services and materials.

All services performed and equipment and materials sold are provided subject to Halliburton's General Terms and Conditions (which include LIMITATION OF LIABILITY and WARRANTY provisions), and pursuant to the applicable Halliburton Work Order Contract (whether or not executed by you), unless a signed Master Service and/or Sales Contract exists between your company and Halliburton, in which case the negotiated Master Contract shall govern the relationship between the parties. We enclose a copy of the General Terms and Conditions, for your convenient review, and we would appreciate receiving any questions you may have about them. Should your company be interested in negotiating a Master Contract with Halliburton, our Legal Department would be pleased to work with you to finalize a mutually agreeable contract.

RECEIVED
MAY 3 1994
DIVISION OF
OIL GAS & MINING

Determination of Proper Filtration Level Of Injection Water From Drunkards Wash Field River Gas of Utah Carbon County, Utah

Prepared For:
Mr. Charles Willis
River Gas Corp.
3600 Watermelon Rd.
Suite 205
Northport, AL 35476

Prepared by:
STIM-LAB Inc.
P. O. Box 1644
Duncan, OK 73534

P. O. Number: Verbal/Charles Willis
Project Number: SL 3488

March 1994

STIM-LAB Inc.

STIM-LAB Inc.

7406 N. 81 HIGHWAY • P. O. BOX1644 • DUNCAN, OKLAHOMA 73534
TELEPHONE 405/252-4309 • FAX NUMBER 405/252-6979

GLENN PENNY
President

March 4, 1994

Mr. Charles Willis
River Gas Corp.
3600 Watermelon Road, Suite 205
Northport, Al. 35476

Dear Mr. Willis:

Following is our report after analysis and testing of the submitted connate and proposed injection samples for the Drunkards Wash 31-1 D-1 well. Related figures and tables are also included.

We appreciate your selection of STIM-LAB to perform this testing for you. If we may be of further assistance, please contact us.

Sincerely,

Gary D. Hurst

Gary D. Hurst, Group Leader
Core Flow Department

/jmc
Attachments

DISCUSSION

The purpose of this project is to analyze submitted connate and proposed injection water samples, and determine their scaling tendency prior to injection into the Drunkards Wash 31-1 D-1 well. Filtration level suitable for injection is also to be determined by core flow study using injection water filtered to various levels.

RESULTS

Water Analysis and Scaling Tendency

Two samples of water were submitted from the Drunkards Wash Field; one sample of connate water and a sample of proposed injection water for well 31-1 D-1. Only an initial water analysis was performed on these samples. A second set of water samples were submitted because the first connate water sample was suspect of having spent acid contamination, and there was an insufficient quantity of the initial injection water to perform the filtration studies requested. The second injection water sample was submitted with a CO_2 gas blanket on the surface such that an accurate carbonate/bicarbonate analysis could be obtained. Water analysis and scaling tendency was performed on these samples as given in Table 1. Water analysis showed the connate water to be a moderately high salinity mixed salt brine. In contrast, the injection water was found to be a fairly fresh, primarily sodium brine with a relatively high bicarbonate content.

The connate and injection water were mixed at room temperature at ratios of 75:25, 50:50, and 25:75. They were then filtered and the amount of precipitant weighed. The precipitant was analyzed by x-ray diffraction analysis. Other than trace halite, no crystalline material was identified. The sample was then observed under SEM and EDX used to determine the primary ions present. Of those tested (Ca, Sr, Si, Fe, Al, S, Ba), only calcium was present in significant quantity. This would indicate (based on the high bicarbonate content of the injection water) that amorphous calcium carbonate ($CaCO_3$) was the primary precipitant. Since calcium carbonate solubility is proportional to ionic strength of the solution, a scaling tendency was run with deionized water and the submitted connate water at the ratios given above. This test indicated that some calcium carbonate did precipitate. This and a visual observation of reaction with HCl acid confirmed $CaCO_3$ as the precipitant.

Core Flow Study

A core flow study was performed to determine the proper level of filtration necessary for the proposed injection water to prevent or limit pressure build-up upon injection. A Berea core of approximately 500 md was used to simulate the formation under injection. Injection water was filtered to various levels and sequentially injected into the core. Permeability change was observed with injection of each fluid stage. The permeability was monitored for the face (first 1" of injection end) of the core and the remainder of the core (production end). The permeability response for the injection end, production end and overall core are given in Figures 1, 2, and 3, respectively.

The low cationic strength of the injection brine made it necessary to initially treat the Berea core with a low molecular weight cationic clay stabilizer prior to injection of the brine. This would prevent clay reaction from interfering with the permeability responses observed. Following the clay stabilizer treatment, a synthetic injection brine filtered to 0.5 μm was injected to establish an initial permeability. Injection brine filtered to 0.5 μm, 5 μm, 20 μm, 50 μm and unfiltered was injected into the core in that order. No significant decrease in permeability was observed during injection of the 0.5 μm and 5 μm filtered fluid. The 20 μm filtered fluid showed a decline in permeability on the injection end of the core proportional to volume injected. This damage continued for the 50 μm filtered fluid and the unfiltered fluid. The production end of the core showed no change in permeability through the 50 μm filtered fluid. A slight decrease in permeability was observed with the unfiltered fluid.

Reverse flow with filtered synthetic brine immediately removed a large amount of the face damage from the core. Subsequent flow in the original direction measured the final permeability and extent of in-depth damage. This value was a 42% loss in permeability for the injection end of the core and 8.7% for the production end. The overall loss in permeability was 20%.

RECOMMENDATION

It is recommended that air be bubbled through the injection water holding tanks to remove CO_2 and bicarbonate from solution prior to filtration and injection into the formation. Sampling of the injection water at the wellhead should be performed routinely and tested for bicarbonate content. Alternatively, CO_2 can be injected into the injection water at the wellhead to maintain the pH low and prevent precipitation. The corrosion aspects of the latter would need to be evaluated prior to selecting this method. The injection water would need to be filtered to a maximum of 5 μm level prior to injection. The flow tests showed that face plugging and infiltration into the first 1" of core was primarily responsible for the damage observed in the core test. Therefore, if pressure build-up does occur, removal of the damage should be obtained with small volume treatments of HCl acid.

LABORATORY PROCEDURE

Water Analysis and Scaling Tendency

Standard elemental water analysis was performed with extended analysis for phosphate, aluminum, strontium and barium. Analysis for barium in the initial two samples submitted were inconclusive and were not repeated once the second set of samples were submitted. TDS was not performed on these samples.

Scaling tendency was performed by mixing the connate water with injection water, and connate water with D.I. water at ratios of 25:75, 50:50, and 75:25 by volume. These were mixed at room temperature and allowed to stand overnight. They were then tested for total solids. Both the water analysis and total solids determination were performed using procedures set forth in **Standard Methods for Examination of Water and Waste Water**, 18th edition.

Core Flow Study

A volume of the submitted injection water was retained and the remainder filtered through a 50 μm filter. A sample of this fluid was retained. This was repeated for filter sizes of 20 μm, 5 μm and 0.5 μm. Fluids were filtered using a laboratory scale pod/cartridge filter system based on commercial units used in the field.

A Berea core was cut and trimmed to a length of 20 cm. The core was vacuum saturated with 2% NH_4Cl brine and mounted in a multi-tap Hassler sleeve. Confining pressure of 1500 psi, a system pressure of 400 psi and a temperature of 120 °F were used for this test. The core was mounted to give a pressure tap at one inch from the injection end of the core (end into which the various filtered fluids would be injected). Pressure drop was monitored over the first one inch of core and the remainder of the core.

The core was first treated with a solution of 2% NH_4Cl brine containing 0.4% by volume of a poly cationic, low molecular weight clay stabilizer. The treatment was followed by injection of synthetic brine passing through an in-line 0.5 μm filter. A constant injection rate of 2 ml/min was maintained throughout the test. The filtered brine samples were then sequentially injected starting with the smallest filtered fluid of 0.5 μm. This was followed by the 5 μm, 20 μm, 50 μm fluid and finally the unfiltered brine. The in-line filter was replaced and synthetic injection brine was flowed into the core in the opposite direction to determine if the damage observed could be removed with production. A final permeability measurement was made in the original direction using synthetic brine.

TABLE 1

River Gas of Utah
Connate & Injection Water Analysis

Parameter	Connate 1 Original	Connate 2 Re-Submitted	Injection 1 Original	Injection 2 Re-Submitte
Temperature	71F	71F	71F	71F
pH	3.64	5.96	8.52	7.93
Carbonate	0.0	0.0	100 mg/L	0.0
Bicarbonate	0.0	855 mg/L	2805 mg/L	3180 mg/L
Chloride	73,700 mg/L	93,130 mg/L	1970 mg/L	1778 mg/L
Phosphate	<0.02 mg/L	<0.02 mg/L	<0.02 mg/L	<0.02 mg/L
Sulfate	1720 mg/L	2602 mg/L	1.2 mg/L	1.2 mg/L
TDS	-----	152,428 mg/L	-----	6459 mg/L
Hardness	19,168 mg/L	10,356 mg/L	237 mg/L	124 mg/L
Calcium	6080 mg/L	3115 mg/L	65 mg/L	30.9 mg/L
Magnesium	968 mg/L	626 mg/L	18 mg/L	11.4 mg/L
Iron	274 mg/L	67 mg/L	2.8 mg/L	1.76 mg/L
Aluminum	205 mg/L	<10.0 mg/L	0.6 mg/L	0.38 mg/L
Potassium	722 mg/L	1200 mg/L	47 mg/L	41.7 mg/L
Sodium	61,600 mg/L	41,100 mg/L	1410 mg/L	1770 mg/L
Strontium	64 mg/L	13 mg/L	14.4 mg/L	2.9 mg/L
Barium	---- mg/L	0.2 mg/L	---- mg/L	6.2 mg/L

Examination of Injection and Connate Water Compatibility

Mixing Ratio Connate & Injection	CaCO3 (mg/L)
75/25	231
50/50	169
25/75	215

Mixing Ratio Connate & DI Water	CaCO3 (mg/L)
75/25	30
50/50	16
25/75	26

Figure 1

Amount Filtration Needed to Minimize Permeability Damage with Injection Water

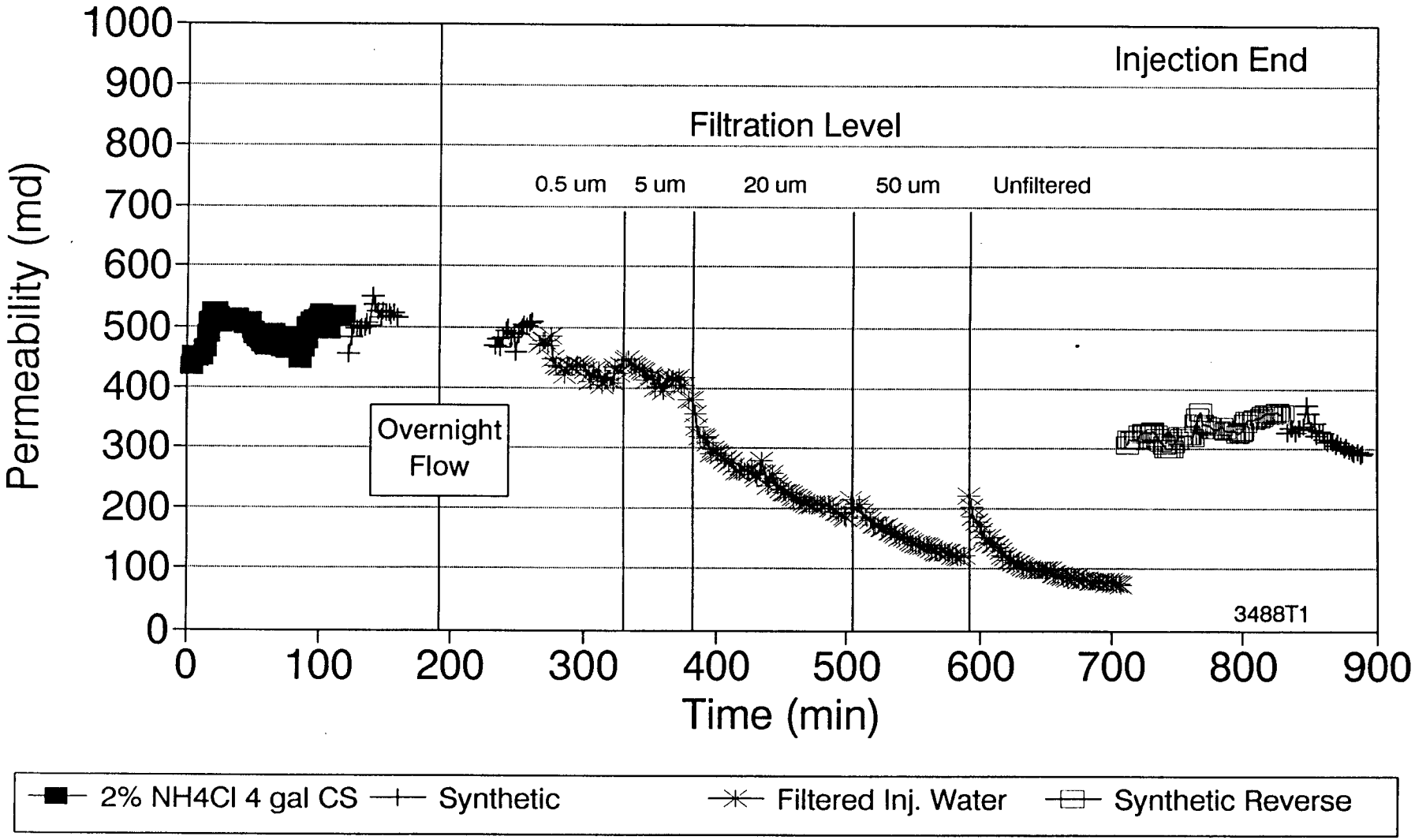


Figure 2

Amount Filtration Needed to Minimize Permeability Damage with Injection Water

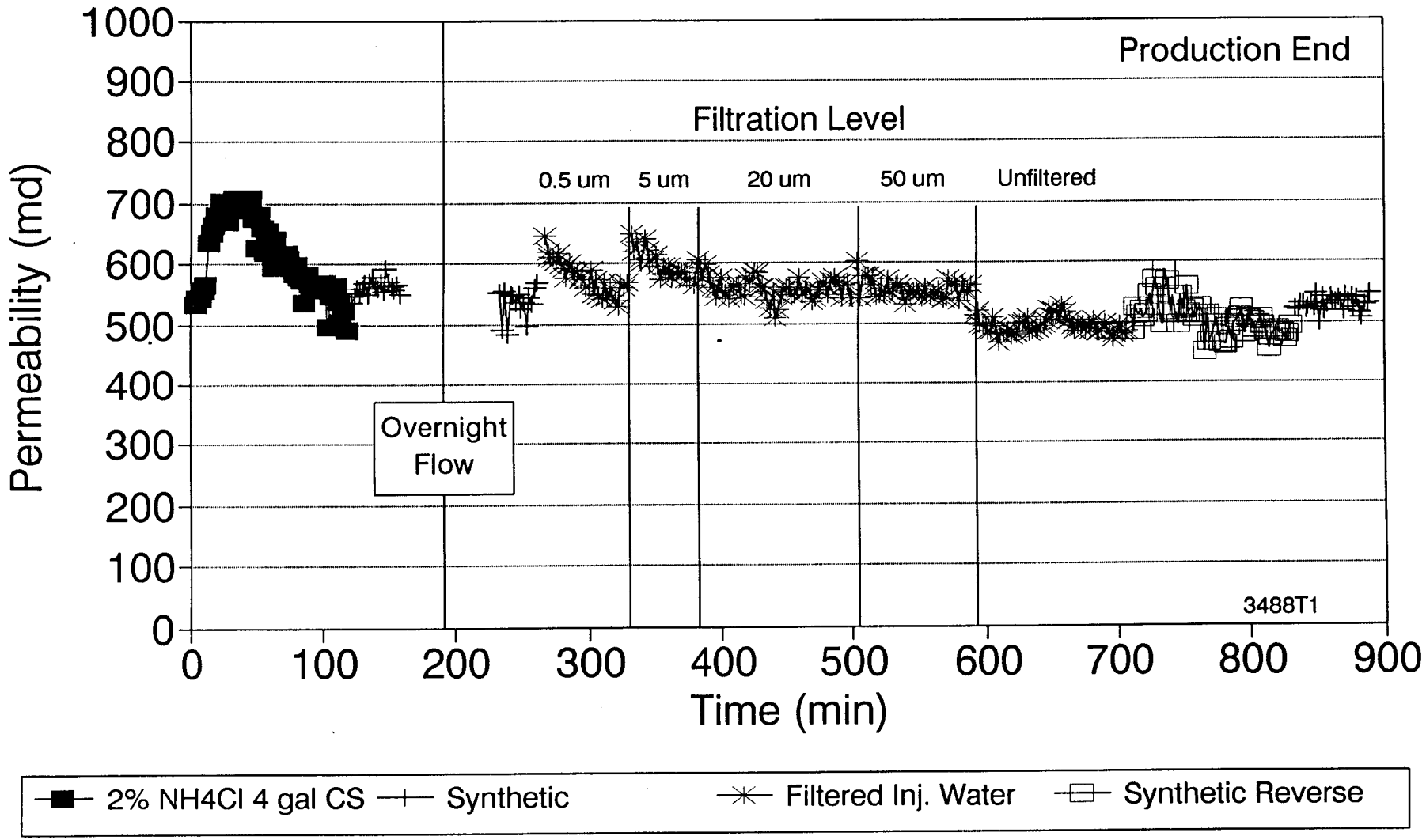
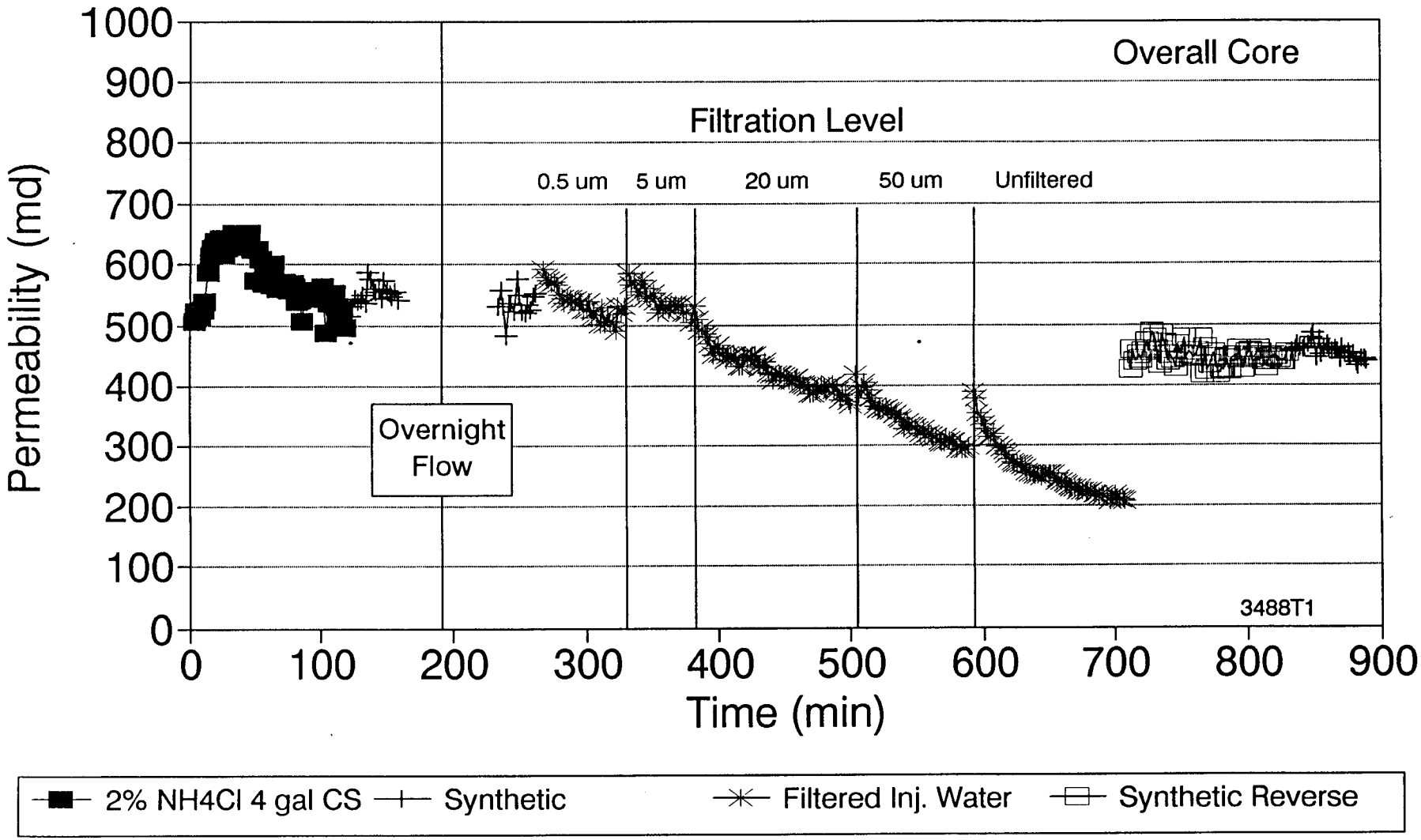


Figure 3

Amount Filtration Needed to Minimize Permeability Damage with Injection Water



Form 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number	ML40521
7. Indian Allottee or Tribe Name	N/A
8. Unit or Communitization Agreement	Drunkards Wash UTU67921X

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.
Use APPLICATION FOR PERMIT— for such proposals

1. Type of Well: ☐ Oil Well ☐ Gas Well ☒ Other (specify) Disposal Well	9. Well Name and Number: American Quasar 31-01-D1
2. Name of Operator: River Gas of Utah, Inc.	10. API Well Number: 43-007-30040
3. Address of Operator: 511 Energy Center Blvd., Northport, AL 35476 / 4. Telephone Number: (205) 759-3282	11. Field and Pool, or Wildcat: Wildcat

5. Location of Well
Footage : 1552' FWL & 999' FSL
QQ, Sec, T., R., M. : (SE/4 of SW/4) SEC 31, T14S, R10E
County : Carbon
State : UTAH

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT (Submit in Duplicate)

- ☐ Abandonment
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Multiple Completion
- ☒ Other request change in UIC Rate
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Recompletion
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Approximate Date Work Will Start _____

SUBSEQUENT REPORT (Submit Original Form Only)

- ☐ Abandonment *
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Other _____
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Date of Work Completion _____

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.

* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

River Gas of Utah, Inc. requests that the UIC permit for the American Questar 31-01-D1 be amended to allow a rate of 36,000 barrels per day at a maximum surface pressure of 572 psig. The pressure information was gathered separately and is enclosed along with the rate test indicating a peak rate of 25 bpm (36,000 bpd) pumped at a surface pressure of 557 psig. Also attached is a summary of friction pressure calculations for the casing in the wellbore indicating that at 25 bpm 172.8 psig of the surface pressure is dedicated to overcoming friction. Therefore, at high rates this well will be operated well below the parting pressure of the formation.

14. I hereby certify that the foregoing is true and correct

Name & Signature Charles P. Willis — Title Vice President — Date 9-12-94

(State Use Only)

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 9-29-94
BY: [illegible]
Attached Conditions

(8/90)

See Instructions on Reverse Side

Utah Division of Oil, Gas and Mining

Attachment to **Sundry Notice and Report on Wells**
dated September 12, 1994.

Subject: Request of River Gas of Utah, Inc. for increase in maximum allowable injection pressure and rate. **Drunkards Wash 31-1(D1)** well, sec. 31, T14S, R10E, Carbon, County.

API = 43-007-30040

Conditions of Approval:

- The maximum surface pressure of 572 psig is approved for a test period **6 months**. The maximum injection rate is not defined or limited, other than by the pressure limit during this period. At the end of 6 months the information gathered will be reviewed with the Division, and if necessary, another step-rate test will be performed which will be designed to determine the formation parting pressure.

PRESSURE TEST

HALLIBURTON

HALLIBURTON ENERGY SERVICES

Duncan Technology Center / P. O. Drawer 1431 / Duncan, OK 73536-0416 / 405-251-3590 / Fax: 405-251-3218

Kent Ostroot
Group Tech Manager,
Stimulation

December 7, 1993

Mr. Charles Willis
River Gas Corporation
3600 Watermelon Rd.
Suite 204
Northport, Alabama 35476

Re: Step rate test for River Gas Corporation well American Quasar 31-1-D1, performed November 20, 1993.

Dear Mr. Willis:

The step rate test bottomhole pressure data were analyzed using the Felsenthal method. From this analysis the fracture extension pressure was determined to be 3240 psi. The rate at which the fracture began extending was 3.0 bpm. The perforation depth was 6156-66 ft and the gauge was positioned at 6155 ft. The fracturing gradient, based on the results of the step rate test is 0.526 psi/ft.

The test was of good quality and no problems with perforations or near wellbore tortuosity were observed from the pressure response.

Sincerely,

$P_s = (.526 - .433)\,6156' = 572$ psig

R D Kuhlman

Robert Kuhlman, P. E.
Stimulation Methods Dept.

RDK:bh
/enclosure

cc: T.D. Womack
H.H. Abass

HALLIBURTON

RATE TEST

CUSTOMER: RIVER GAS OF UTAH
WELL DESCRIPTION: STATE D-1
JOB TYPE: INJECTION TEST
DATE: 12-17-93

EVENT	TIME	FLUID VOLS. (BBLS)	CASING PRESS.	DESCRIPTION OF OPERATIONS
1	06:30			On location rig up to well head.
2	09:00	-0-	30	Fill Casing.
3	09:05	43	80	Start Injection Test @ 5 BPM.
4	09:19	118	115	Increase rate to 10 BPM.
5	09:36	288	330	Increase rate to 12 BPM.
6	09:40	325	355	Increase rate to 15 BPM.
7	09:57	590	470	Increase rate to 20 BPM.
8	10:13	912	510	Increase rate to 25 BPM.
9	10:15	962	557	Decrease rate to 24 BPM.
10	10:25	1,191	560	Shut down.
11	10:25		410	ISIP
12	10:30		255	5 MIN.
13	10:35		165	10 MIN.

HALLIBURTON

RATE TEST

CUSTOMER: RIVER GAS OF UTAH
WELL DESCRIPTION: STATE D-1
JOB TYPE: INJECTION TEST
DATE: 12-17-93

EVENT	TIME	FLUID VOLS. (BBLS)	CASING PRESS.	DESCRIPTION OF OPERATIONS
14	10:40		105	15 MIN.
15	10:41			RELEASE PRESSURE.
16	10:45			END JOB.
17				Time is to the nearest minute.
18				Volumes listed are slurry fluid volumes

DIAMETER (INCH) 6.276
LENGTH (FT) 6000

RATE TEST

FLOW RATE (BPM)	FRICTION PRESSURE (PSI)	TOTAL (PSI)
		9.5
5.0	9.5	13.2
6.0	13.2	17.5
7.0	17.5	22.2
8.0	22.2	27.5
9.0	27.5	33.2
10.0	33.2	39.4
11.0	39.4	46.1
12.0	46.1	53.3
13.0	53.3	60.9
14.0	60.9	68.9
15.0	68.9	77.4
16.0	77.4	86.3
17.0	86.3	95.7
18.0	95.7	105.4
19.0	105.4	115.6
20.0	115.6	126.3
21.0	126.3	137.3
22.0	137.3	148.7
23.0	148.7	160.6
24.0	160.6	172.8
25.0	172.8	185.4
26.0	185.4	198.5
27.0	198.5	211.9
28.0	211.9	225.7
29.0	225.7	239.9
30.0	239.9	

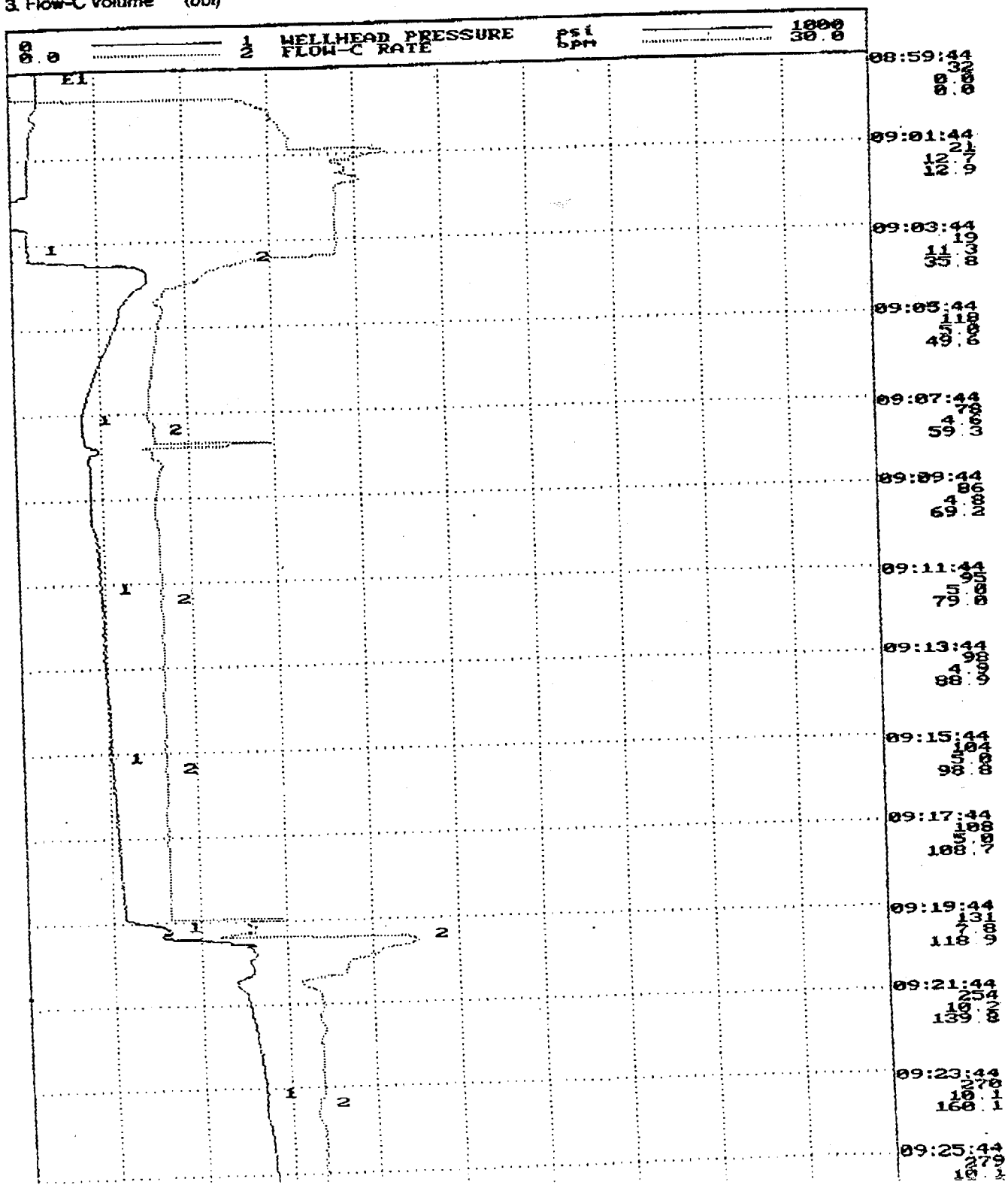
RATE TEST

S3

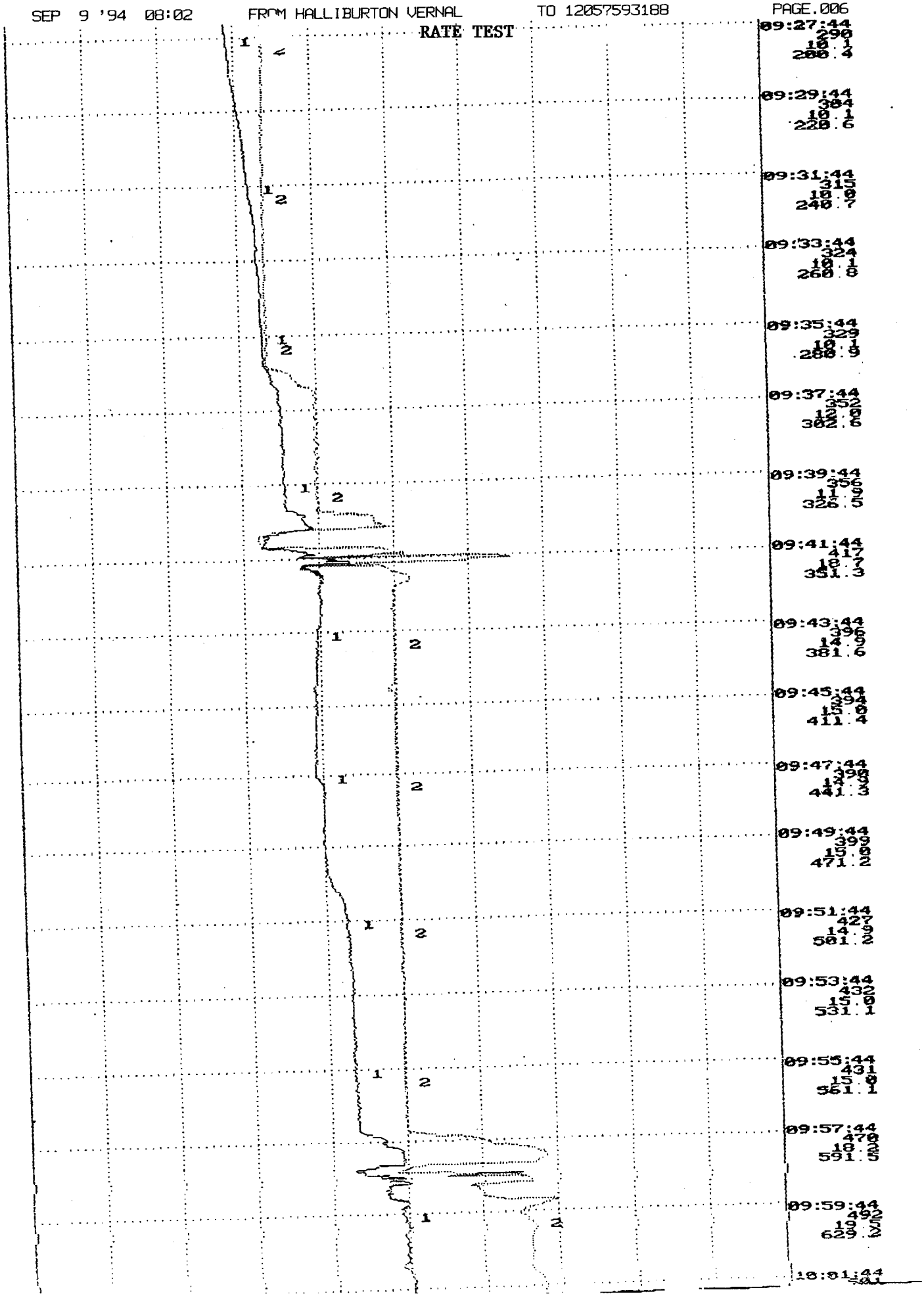
PAUSE

REALTIME STRIP CHART

1. Wellhead Pressure (psi)
2. Flow-C Rate (bpm)
3. Flow-C Volume (bbl)



RATE TEST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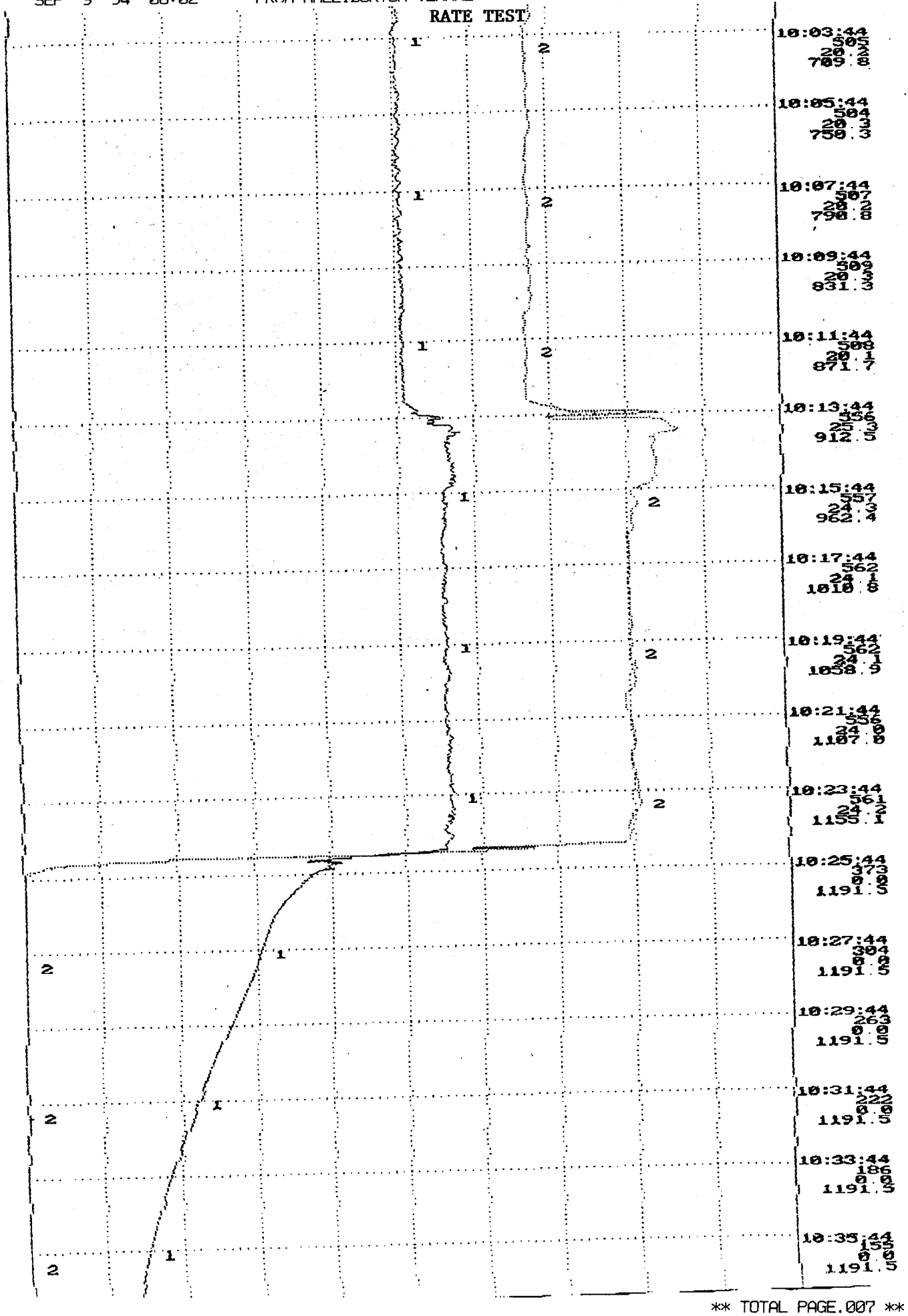
RATE TEST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912.5
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557
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562
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1010.8
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1107.0
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561
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186
0.0
1191.5
10:35:44
155
0.0
1191.5

RGU
RIVER GAS OF UTAH, INC.
511 Energy Center Blvd.
Northport, AL 35476
(205) 759-3282

September 12, 1994

Mr. Gil Hunt
State of Utah
Department of Natural Resources
Division of Oil, Gas, and Mining
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Dear Mr. Hunt:

As we discussed on the phone, I am submitting a sundry notice for the American Quasar 31-01-D1 requesting a higher injection rate at the previously established maximum pressure. Our fracture pressure was determined with only 10' of the formation open for injection. We determined this pressure to be 572 psig at the surface. We later opened up the entire interval to test for the maximum rate that could be injected staying below this pressure. That rate was 25 bpm. Therefore, we are requesting that our UIC permit be adjusted to reflect the maximum rate and pressure.

If I can be of any assistance in this matter, please contact me at your convenience.

Best regards,

Charles P. Willis, P.E.
Vice President, Special Projects

cc: Mike Chambers
Mike Farrens

encl.

UNICHEM INTERNATIONAL

P.O. Box 217
Roosevelt, Utah 84066

Office (801) 722-5066
Fax (801) 722-5727

WATER ANALYSIS REPORT

COMPANY RIVER GAS ADDRESS _____ DATE 11-18-93

SOURCE American Quasar 31-1-D1 DATE SAMPLED 11-18-93 ANALYSIS NO. _____

	Analysis		Mg/l (ppm)		*Meq/l	
1. PH	6.1					
2. H_2S (Qualitative)	0					
3. Specific Gravity	1.117					
4. Dissolved Solids			172,386			
5. Suspended Solids						
6. Anaerobic Bacterial Count		C/Ml				
7. Methyl Orange Alkalinity ($CaCO_3$)						
8. Bicarbonate (HCO_3)		HCO_3	9150	÷61	150	HCO_3
9. Chlorides (Cl)		Cl	103,000	÷35.5	2901	Cl
10. Sulfates (SO_4)		SO_4	800	÷48	17	SO_4
11. Calcium (Ca)		Ca	2160	÷20	108	Ca
12. Magnesium (Mg)		Mg	2818	÷12.2	231	Mg
13. Total Hardness ($CaCO_3$)			17,060			
14. Total Iron (Fe)			83.			
15. Barium (Qualitative)						
16. Phosphate Residuals						

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

108	Ca	HCO_3	150
231	Mg	SO_4	17
2729	Na	Cl	2901

Saturation Values	Distilled Water 20°C
$CaCO_3$	13 Mg/l
$CaSO_4 \cdot 2H_2O$	2,090 Mg/l
$MgCO_3$	103 Mg/l

Compound	Equiv. Wt.	X Meq/l	= Mg/l
$Ca(HCO_3)_2$	81.04	108	8752
$CaSO_4$	68.07		
$CaCl_2$	55.50		
$Mg(HCO_3)_2$	73.17	42	3073
$MgSO_4$	60.19	17	1023
$MgCl_2$	47.62	172	8191
$NaHCO_3$	84.00		
Na_2SO_4	71.03		
NaCl	58.46	2729	159,537

REMARKS _____

UNICHEM INTERNATIONAL

P.O. Box 217
Roosevelt, Utah 84066

Office (801) 722-5066
Fax (801) 722-5727

WATER ANALYSIS REPORT

COMPANY RIVER GAS ADDRESS _____ DATE: 12-14-93

SOURCE Pond Water DATE SAMPLED 12-13-93 ANALYSIS NO. _____

	Analysis	Mg/l (ppm)		*Meq/l
1. PH	8.0			
2. H_2S (Qualitative)	0			
3. Specific Gravity	1.005			
4. Dissolved Solids		8,280		
5. Suspended Solids				
6. Anaerobic Bacterial Count	C/Ml			
7. Methyl Orange Alkalinity ($CaCO_3$)				
8. Bicarbonate (HCO_3)	HCO_3	3,050	÷61	50 HC
9. Chlorides (Cl)	Cl	2,500	÷35.5	70
10. Sulfates (SO_4)	SO_4	0	÷48	0 S
11. Calcium (Ca)	Ca	80	÷20	4
12. Magnesium (Mg)	Mg	5	÷12.2	0
13. Total Hardness ($CaCO_3$)		220		
14. Total Iron (Fe)		2.2		
15. Barium (Qualitative)				
16. Phosphate Residuals				

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

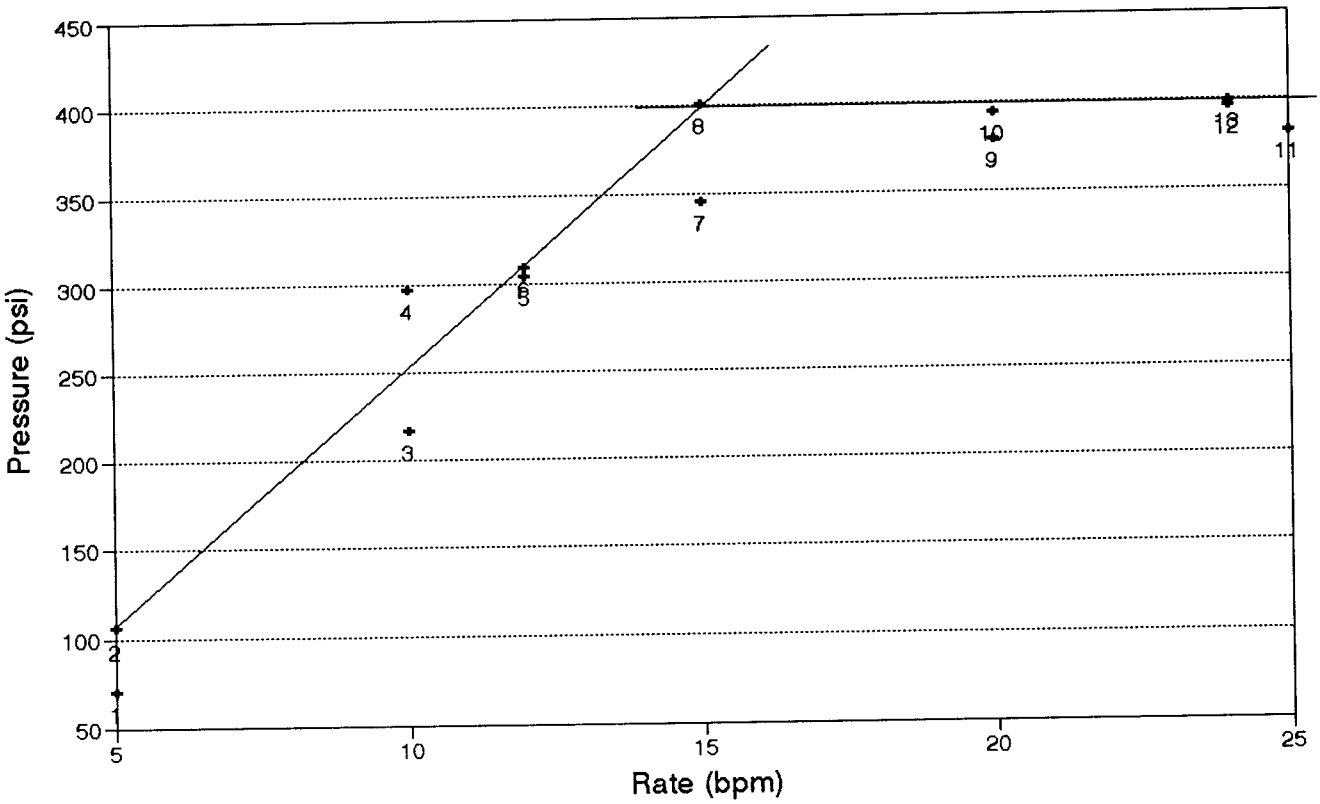
4	Ca	HCO_3	50
0	Mg	SO_4	0
116	Na	Cl	70

Compound	Equiv. Wt.	X Meq/l	= Mg/l
$Ca(HCO_3)_2$	81.04	4	324
$CaSO_4$	68.07		
$CaCl_2$	55.50		
$Mg(HCO_3)_2$	73.17		
$MgSO_4$	60.19		
$MgCl_2$	47.62		
$NaHCO_3$	84.00	46	1,864
Na_2SO_4	71.03		
NaCl	58.46	70	4,092

Saturation Values	Distilled Water 20°C
$CaCO_3$	13 Mg/l
$CaSO_4 \cdot 2H_2O$	2,090 Mg/l
$MgCO_3$	103 Mg/l

REMARKS _____

River Gas of Utah
Drunkards Wash 31-1 (D1)



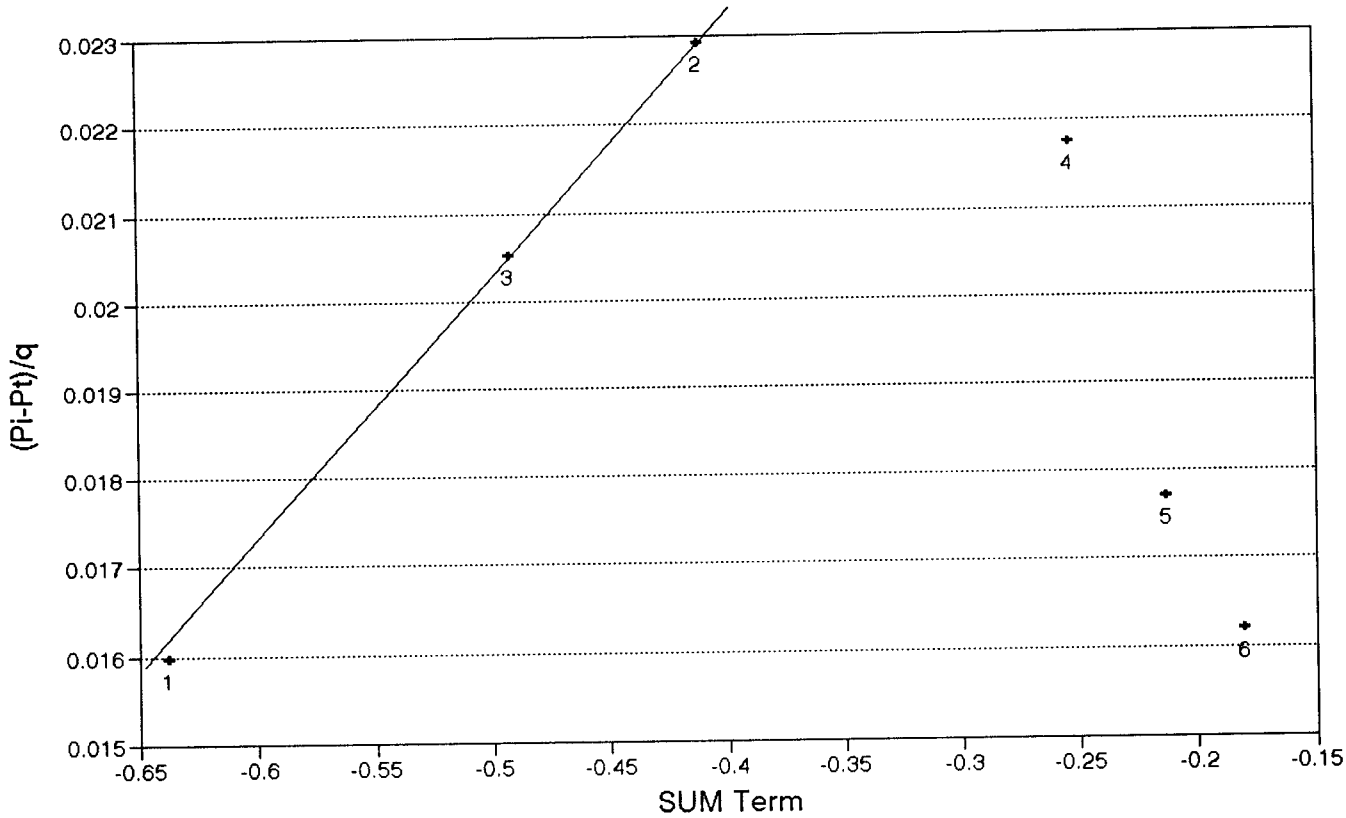
ISIP = 410

Pressure is less friction loss

Test Date 12-17-93

DOGM

River Gas of Utah
Drunkards Wash 31-1 (D1)



Multiple-rate type data plot
after Felsenthal(SPE Monograph Vol. 5)

ISIP = 410

Test Date 12-17-93

DOGM

NUMBER	TIME	Q	Ptf(psi)	Σ TERM	DELTA PSI
0	0.00	0	0		
1	0.23	-7200	115	-0.63816	0.01597
2	0.52	-14400	330	-0.41073	0.02292
3	0.58	-17280	355	-0.49210	0.02054
4	0.87	-21600	470	-0.25303	0.02176
5	1.12	-28800	510	-0.21315	0.01771
6	1.32	-34560	560	-0.18021	0.01620

Press Enter to continue ?

NUMBER	TIME	Q	Ptf(psi)	Σ TERM	DELTA PSI
0	0.00	0	0		
1	0.23	-7200	115	-0.63816	0.01597
2	0.52	-14400	330	-0.41073	0.02292
3	0.58	-17280	355	-0.49210	0.02054
4	0.87	-21600	470	-0.25303	0.02176
5	1.12	-28800	510	-0.21315	0.01771
6	1.32	-34560	560	-0.18021	0.01620

Press Enter to continue ?

HALLIBURTON ENERGY SERVICES

JOB LOG FORM 2013 R-3

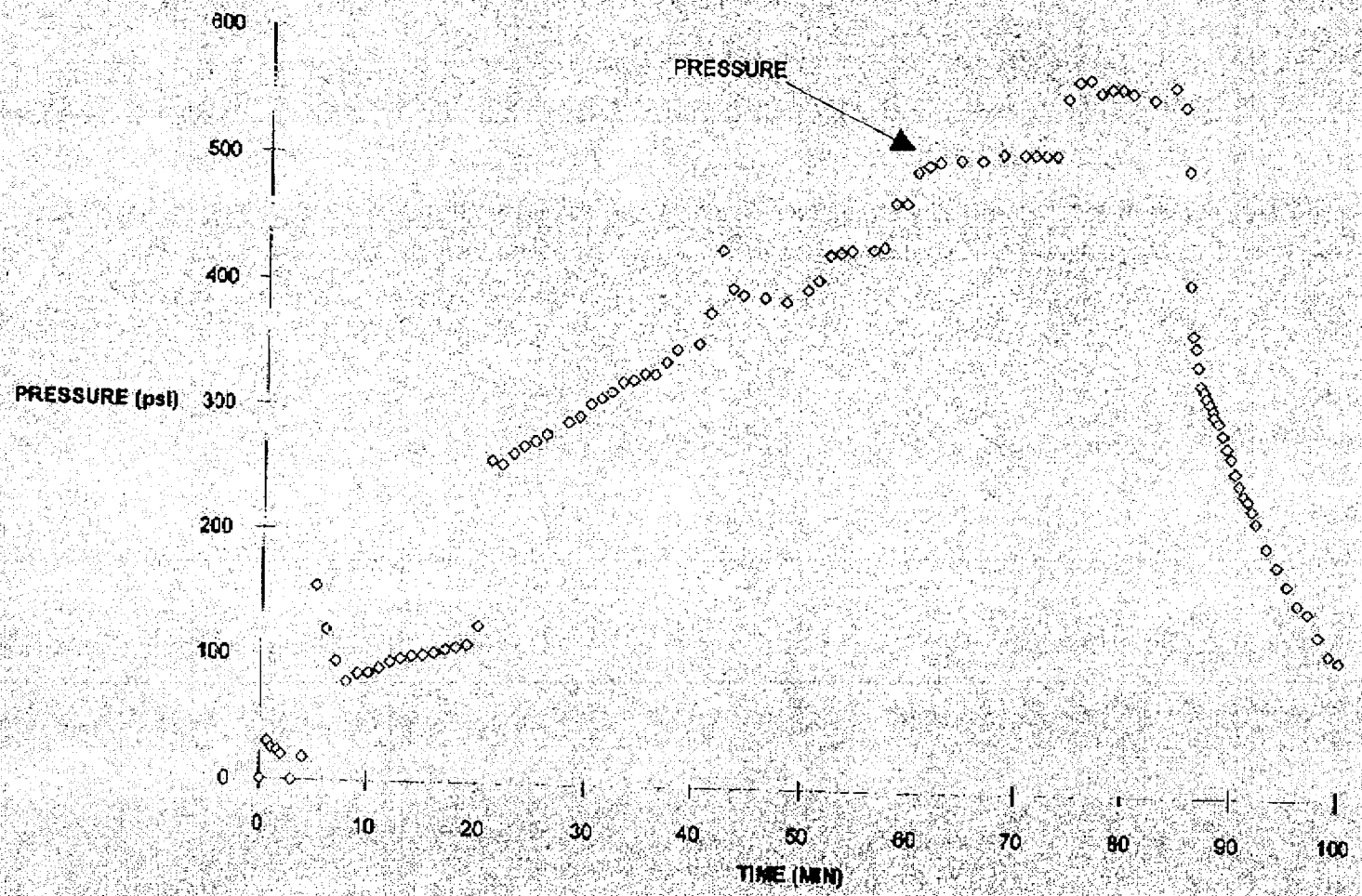
CUSTOMER	WELL NO.	LEASE	JOB TYPE	TICKET NO.	DATE	PAGE NO.
River Gas	D-1	STATE	INJ TEST	568499	12-17-93	1

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
	0200							CALLED OUT
	0630							ON LOC - RIG UP
	0830							SAFETY & PRESSURE MTG
	0900	10	0				30	FILL CSG
	0904	6	43				120	CSG FULL
1	0905	5	43				80	BEGIN TEST
2	0919	5	118				115	END 5 BPM STAGE
3	0920	10	118				250	BEGIN 10 BPM STAGE
4	0936	10	288				330	END 10 BPM STAGE
5	0937	12	288				350	BEGIN 12 BPM STAGE
6	0940	12	325				355	END 12 BPM STAGE
7	0940	15	325				415	BEGIN 15 BPM STAGE
8	0957	15	590				470	END 15 BPM STAGE
9	0958	20	590				495	BEGIN 20 BPM STAGE
10	1013	20	912				510	END 20 BPM STAGE
11	1013	25	912				555	BEGIN 25 BPM STAGE
12	1015	24	962				557	REDUCE RATE TO 24 BPM
13	1025	24	1191				560	END 24 BPM STAGE
	1025						410	ISIP
	1030						255	5 MIN PRESS
	1035						165	10 MIN PRESS
	1040						105	15 MIN PRESS
	1041							RELEASE PRESS
	1045							END JOB

HANX
JOHN
&
CREW

RIVER GAS

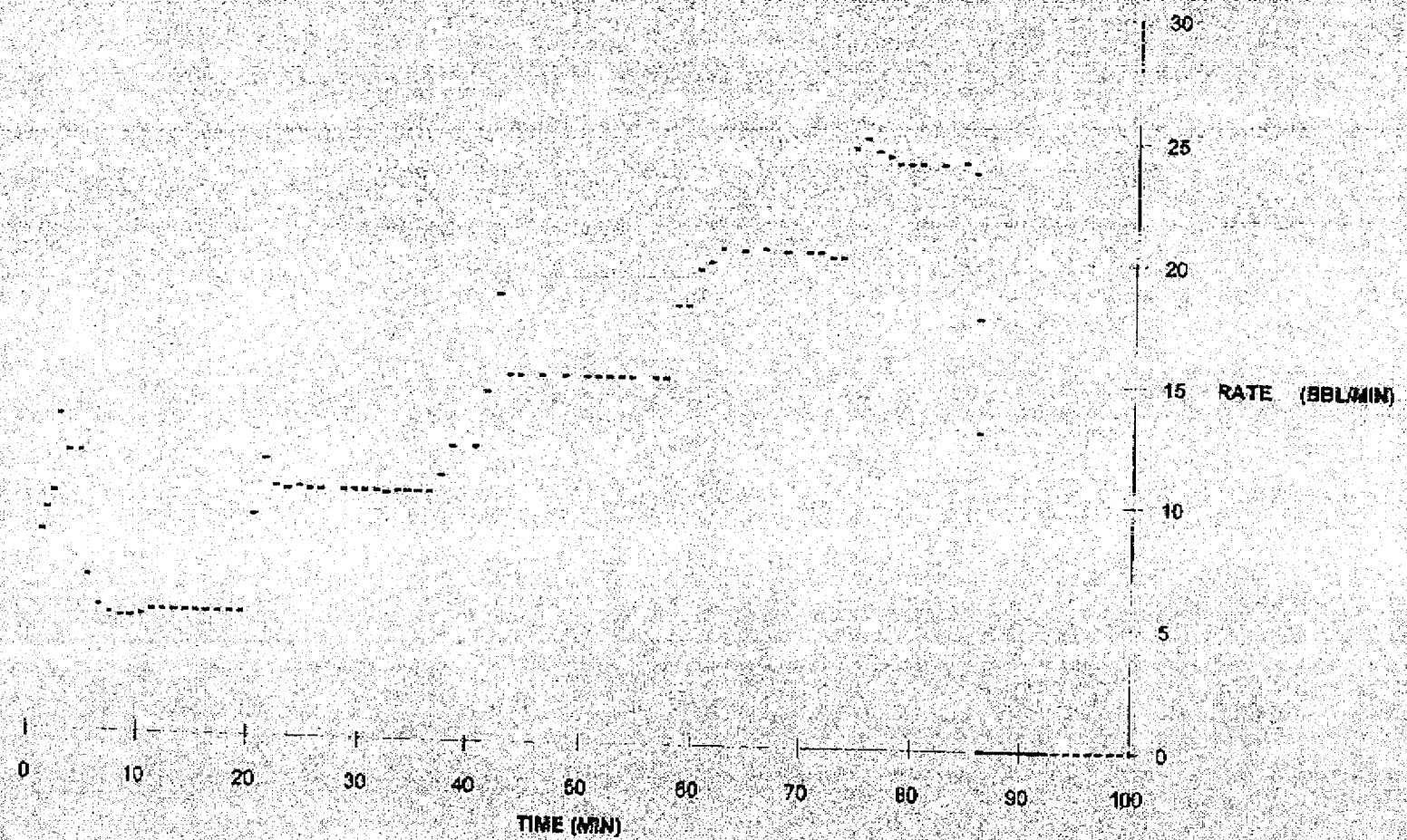
STEP RATE INJECTION TEST



Well #: State D-1

RIVER GAS

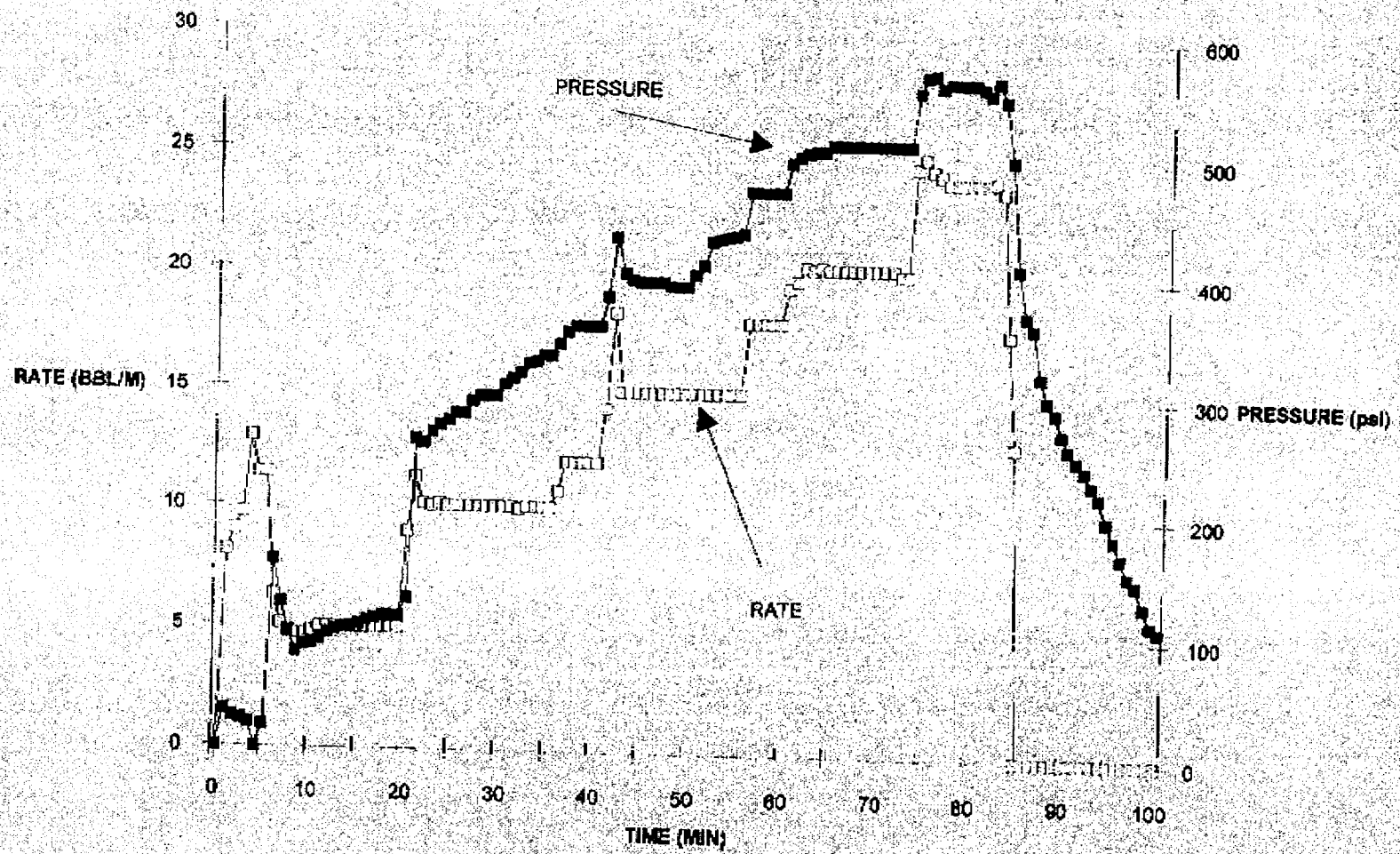
STEP RATE INJECTION TEST



Well # State D-1

RIVER GAS

STEP RATE INJECTION TEST

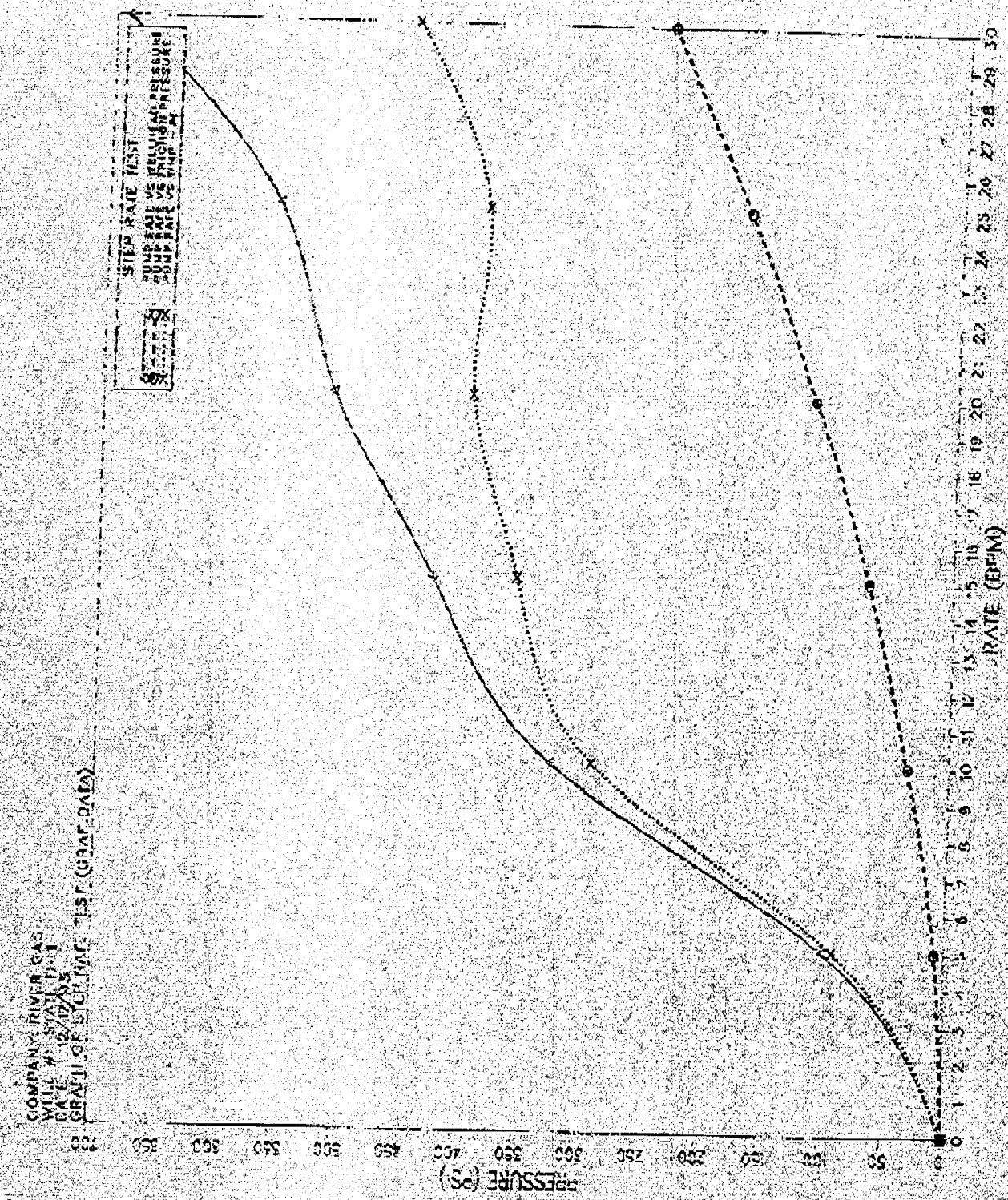


Well # State D-1

Friction Loss Values for Fresh Water

DIAMETER (INCH) 6.276
LENGTH (FT) 6000

FLOW RATE (BPM)	FRICTION PRESSURE (PSI)	TOTAL (PSI)
5.0	9.5	9.5
6.0	13.2	13.2
7.0	17.5	17.5
8.0	22.2	22.2
9.0	27.5	27.5
10.0	33.2	33.2
11.0	39.4	39.4
12.0	46.1	46.1
13.0	53.3	53.3
14.0	60.9	60.9
15.0	68.9	68.9
16.0	77.4	77.4
17.0	86.3	86.3
18.0	95.7	95.7
19.0	105.4	105.4
20.0	115.6	115.6
21.0	126.3	126.3
22.0	137.3	137.3
23.0	148.7	148.7
24.0	160.6	160.6
25.0	172.8	172.8
26.0	185.4	185.4
27.0	198.5	198.5
28.0	211.9	211.9
29.0	225.7	225.7
30.0	239.9	239.9


COMPANY: RIVER GAS
WELL #: STATE 11-1
DATE: 2/10/93
GRAPH OF STEP RATE TEST (GRAF DATA)
STEP RATE TEST
PUMP RATE VS PRESSURE
PUMP RATE VS PRESSURE
PUMP RATE VS PRESSURE
PRESSURE (PSI)
RATE (BPM)
STEP RATE TEST

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
WORKOVER AND COMPLETION RECORD

OPERATOR: RIVER GAS CORP. COMPANY REP: MIKE FARNSWORTH

WELL NAME: WELL #31-1 D-1 API NO: 43-007-30040

SECTION: 31 TWP: 14S RANGE: 10E COUNTY: CARBON

TYPE OF WELL: OIL: _____ GAS: _____ WATER INJECTION: YES

STATUS PRIOR TO WORKOVER: _____

INSPECTOR: DENNIS L. INGRAM TIME: 1:28 PM DATE: 11/14/95

REASON FOR WORKOVER:

CHANGE OF LIFT SYSTEM: ____ PUMP CHANGE: ____ PARTED RODS: _____

CASING OR LINER REPAIR: _____ ACIDIZE: _____ RECOMPLETION: _____

TUBING CHANGE: _____ WELLBORE CLEANOUT: _____ WELL DEEPENED: ____

ENHANCED RECOVERY: ____ THIEF ZONE: _____ CHANGE ZONE: _____

ENVIRONMENTAL/DISPOSITION OF FLUIDS USED:

PIT: LINED N UNLINED ___ FRAC TANK N BOPE: Y H2S PRESENT: N

OPERATIONS AT THE TIME OF INSPECTION: OPERATOR HAS DUG UNLINED PIT FOR WATER DISPOSAL. JUST SET PACK AND IT FAILED, WILL POOH TO REPLACE SAME.

REMARKS:

HAVE PERFED AT 6044 TO 6132 (WILL SET PACKER AT 6000 FEET). OTHER PERFS AT 5870 TO 6002 (SECOND PACKER AT 5820). WILL RUN A DTTS PACKER (CAST IRON) AND TRY AGAIN.

FORM 8

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. LEASE DESIGNATION AND SERIAL NO.: ML40521

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

7. UNIT AGREEMENT NAME: Drunkards Wash UTU67921X

8. FARM OR LEASE NAME: American Quasar

9. WELL NO.: 31-01-D1

10. FIELD AND POOL, OR WILDCAT: wildcat

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: (SE/SW) Sec 31, T14S, R10E

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other Disposal Well

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other Re-entry

2. NAME OF OPERATOR: River Gas of Utah (205) 759-3282

3. ADDRESS OF OPERATOR: 511 Energy Center Blvd., Northport, AL 35476

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)
At surface: 1552' FWL & 999' FSL (SE/4 of SW/4)
At top prod. interval reported below
At total depth

Re-entered Plug-back TD

14. API NO.: 43-007-30040 | DATE ISSUED: 7-29-93 | 12. COUNTY: Carbon | 13. STATE: Utah

15. DATE SPUDDED: 8-23-93 | 16. DATE T.D. REACHED: 9-19-93 | 17. DATE COMPL. (Ready to prod.) or (Plug & Abd.): 8-17-94 | 18. ELEVATIONS (DF, RKB, RT, GR, ETC.): 5716' Gr surveyed | 19. ELEV. CASINGHEAD: ---

20. TOTAL DEPTH, MD & TVD: 13,514' | 21. PLUG BACK T.D., MD & TVD: 6420' | 22. IF MULTIPLE COMPL., HOW MANY: --- | 23. INTERVALS DRILLED BY: → | ROTARY TOOLS: to Plug-back TD | CABLE TOOLS: ---

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD): N/A

25. WAS DIRECTIONAL SURVEY MADE: NO

26. TYPE ELECTRIC AND OTHER LOGS RUN: Cement bond, gamma ray, dual induction, var. density

27. WAS WELL CORED YES ☐ NO ☒ (Submit analysis)
DRILL STEM TEST YES ☐ NO ☒ (See reverse side)

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9-5/8"		5740'	12-1/4"	cemented by original operator	
7"		6300'		365 sx H brand AG-250, 450 sx H brand AG-250	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (Interval, size and number)
5726-5800, 5870-5970, 5980-6002, 6044-6092, 6122-6132, 6156-6132
4 SPF, 0.45" diameter
(NAVA) [illegible]

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

33. PRODUCTION

DATE FIRST PRODUCTION | PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) | WELL STATUS (Producing or shut-in)

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)	

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED Dennis Plowman Dennis Plowman TITLE Reservoir Technician DATE 11/17/94

See Spaces for Additional Data on Reverse Side

(3/89)

INSTRUCTIONS

This form should be completed in compliance with the Utah Oil and Gas Conservation General Rules. If not filed prior to this time, all logs, tests, and directional surveys as required by Utah Rules should be attached and submitted with this report.

ITEM 18: Indicate which elevation is used as reference for depth measurements given in other spaces on this form and on any attachments.

ITEMS 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producinginterval, or intervals, top(s), bottom(s) and name(s) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

ITEM 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

ITEM 33: Submit a separate completion report on this form for each interval to be separately produced (see instruction for items 22 and 24 above).

37. SUMMARY OF POROUS ZONES:
Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

Formation	Top	Bottom	Description, contents, etc.

38. GEOLOGIC MARKERS

Name	Top	
	Meas. Depth	True Vert.Depth

A pressure test was performed by Halliburton on the 7" casing on 12/11/93. A packer was set at 5012' and pressured up to 2000 psi. Held for 15 minutes.

RGU

RIVER GAS OF UTAH, INC.
511 Energy Center Blvd.
Northport, AL 35476
(205) 759-3282
Fax (205) 759-3188

November 28, 1994

Mr. Gil Hunt
State of Utah
Department of Natural Resources
Division of Oil, Gas, and Mining
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Dear Mr. Hunt:

As we discussed on the phone, I am submitting a sundry notice for the American Quasar 31-01-D1 requesting increasing the maximum injection pressure to 850 psig based upon the attached log interpretation. The report indicates that we have excellent containment for the injection zone because of the overlying strata.

If I can be of any assistance in this matter, please contact me at your convenience.

Best regards,

Charles P. Willis, P.E.
Vice President, Special Projects

cc: Mike Chambers
Mike Farrens

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encl.

Form 9

STATE OF UTAH
DEPARTMEN F NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number: ML40521

7. Indian Allottee or Tribe Name: N/A

8. Unit or Communitization Agreement: Drunkards Wash UTU67921X

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells. Use APPLICATION FOR PERMIT— for such proposals

1. Type of Well: ☐ Oil Well ☐ Gas Well ☒ Other (specify) Disposal Well

9. Well Name and Number: American Quasar 31-01-D1

2. Name of Operator: River Gas of Utah, Inc.

10. API Well Number: 43-007-30040

3. Address of Operator: 511 Energy Center Blvd., Northport, AL 35476

4. Telephone Number: (205) 759-3282

11. Field and Pool, or Wildcat: Wildcat

5. Location of Well
Footage : 1552' FWL & 999' FSL
QQ, Sec, T., R., M. : (SE/4 of SW/4) SEC 31, T14S, R10E
County : Carbon
State : UTAH

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT (Submit in Duplicate)

- ☐ Abandonment
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Multiple Completion
- ☒ Other Request change in UIC pressure
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Recompletion
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Approximate Date Work Will Start _____

SUBSEQUENT REPORT (Submit Original Form Only)

- ☐ Abandonment *
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Other
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Date of Work Completion _____

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.

* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

River Gas of Utah, Inc. requests that the UIC permit for the American Quasar 31-01-D1 be amended to allow a rate of 36,000 barrels per day at a maximum surface pressure of 850 psig. The attached report indicates that the overlying strata should provide excellent containment.

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DIV OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Charles P. Willis
Name & Signature _____ Title Vice President Date 11/28/94

(State Use Only)

To be reviewed in 6 months. for possible changes or additional testing.

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 12-2-94
BY: _____

(8/90) See Instructions on Reverse Side

BRUCE N. CARPENTER
LOG EXPERTS
300 NORTH BROADWAY - SUITE D
EDMOND, OKLAHOMA 73034

(405) 359-6911

(405) 359-8925 - FAX
(405) 630-5298 - MOBILE

(405) 558-8097 - PAGER
(405) 341-7955 - HOME

November 21, 1994

RECEIVED
2 1994
DIV OF OIL, GAS & MINING

Charles Willis
The River Gas Of Utah, Inc.
511 Energy Center Blvd.
Northport, Alabama 35476

Re: American Quasar Petroleum Co.
Drunkards Wash #31-1
Section 31, T. 14 S., R. 10 E.
Carbon County, Utah
Now an injection well for River Gas of Utah

Dear Charles:

I have examined the original logs on the above well to determine the type formations and their approximate thicknesses between the perforations in the injection zone and the surface. More than adequate confinement and containment zones are present.

WELL HISTORY

A compensated neutron/formation density, gamma ray, caliper and borehole compensated sonic log were run on 12/13/77 to a depth of 5739 feet in the original hole. Nine and five/eight-inch diameter casing was run to 5731 feet and the well drilled and logged to 13,514 feet, at which time the well was P&A with the casing left in place.

The well was reentered by River Gas of Utah and cleaned out to 6400 feet. The open hole was logged on 9/25/93 from 6366 to 5729 feet with Dual Induction - SFL and Compensated Neutron/Formation Density logs. A cement bond log was run in the 9 5/8-inch casing. The top of the cement was found at about 3800 feet. Seven-inch casing was run to T.D., cemented to the surface in two stages (DVT at 3865 feet) and cleaned out to 6276 feet. A second cement bond log run inside the 7 inch on 11/16/93.

LOG EXPERTS

PHONE (405) 359-6911

FORMATION DESCRIPTION

The formations interpreted from logs above the injection zone below 5729 feet and the surface are as follows:

DEPTHS	THICKNESS	FORMATION DESCRIPTION
5696-5739	43	Limestone; argillaceous,modest porosity
5614-5696	82	Limestone; very argillaceous, tight
5610-5614	4	Shale; tight
5574-5610	36	Limestone; very argillaceous, tight
5464-5574	110	Limestone; argillaceous, tight
5456-5464	8	Shale; tight
5403-5456	53	Limestone; relatively clean, dense, no porosity
5360-5403	43	Limey shale; tight
5325-5360	35	Limestone; relatively clean, some porosity, possible fractures
5300-5325	25	Limestone; argillaceous, dense and tight
5266-5300	34	Limey shale; tight
5245-5266	12	Shale lime; tight
5240-5254	14	Limestone; relatively clean, dense and tight
5012-5240	228	Shales and shaly limes; tight
4360-5012	652	Limestone; very argillaceous, tight
4330-4360	30	Shale; very argillaceous, tight
4188-4330	142	Limestone; very argillaceous, tight
4096-4188	92	Limey shale; tight
3760-4096	336	Alternating shaly limestone, shales and tight limestones
3720-3060	40	Lime/coal sequences; tight
3600-3720	120	Limestones; very argillaceous, tight
3226-3600	374	Shales and limey shales, tight
3210-3226	16	Sandstone; modest porosity
3186-3210	24	Shale; tight
3150-3186	36	Sand; very limey, tight
3116-3150	34	Limestone; relatively clean, dense and tight
3110-3116	6	Limey shale; tight
2754-3110	356	Alternating shales and tight limes
2740-2754	14	Limestone; argillaceous, tight
2680-2740	60	Alternating shales and tight limes
2648-2680	32	Limestone; argillaceous, tight
2436-2648	212	Alternating shales and tight limes, occasional coal
2418-2436	18	Sandstone; shaley, tight
2406-2418	12	Shale; tight
2054-2406	352	Alternating shales and tight limes, occasional coal
1930-2054	124	Limestone; argillaceous, tight

PHONE (405) 359-6911

LOG EXPERTS

DEPTHS	THICKNESS	FORMATION DESCRIPTION
1918-1930	12	Sandstone; clean, modest porosity
1885-1918	33	Limes and coals
1855-1885	30	Limes and thin tight sands
1844-1855	11	Shales and coaly shales, tight
1762-1844	82	Shales, limes and tight sands
1752-1762	10	Sandstone; clean, tight
1616-1752	136	Coals, limes, shales and tight sands
1598-1616	18	Limestone; argillaceous, tight
622-1598	976	Shale (Mancos) with occasional limes

Sincerely,

Bruce N. Carpenter

December 1, 1994

To: Charles Willis, River Gas of Utah, Inc.

From: Gil Hunt, Utah Oil, Gas & Mining

Subject: Request for Injection Pressure Increase for the 31-01-D1 Well

Please supply the following in writing to attach and support your sundry requesting increased injection pressure.

1. Reasons for needing increase (additional prod. wells, skin damage in well?)

2. Expected results of increase (cleanup, eliminate barrier, fracturing contained in zone?)

3. Future plans, is this permanent, options, etc.?

I need this information to justify injection pressure possibly above parting pressure. If you have any questions, please call.

Thank you.

RGU

RIVER GAS OF UTAH, INC.
511 Energy Center Blvd.
Northport, AL 35476
(205) 759-3282
Fax (205) 759-3188

December 1, 1994

Mr. Gil Hunt
State of Utah
Department of Natural Resources
Division of Oil, Gas, and Mining
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

RECEIVED
2 1994
DIV OF OIL, GAS & MINING

Dear Mr. Hunt:

In response to your memo requesting additional information regarding our sundry notice requesting a higher injection pressure, I have compiled the following responses to your questions.

1. *Reasons for needing increase?* Increased water production due to additional producing wells and possible skin damage caused by the mud in the wellbore for approximately 15 years prior to RGU's converting the well to an injection well.

2. *Expected results of increase?* We believe that the increased pressure and rate will assist with cleaning up some of the skin damage. Our geological information also leads us to believe that if fracturing does occur it will be contained in the injection zone.

3. *Future plans?* This depends on actual water production and potential mitigation of the near wellbore damage. Our desire is to run the well at as low a pressure as possible as this will lower operating expenses.

If I can be of any further assistance in this matter, please contact me at your convenience.

Best regards,

Charles P. Willis, P.E.
Vice President, Special Projects

cc: Mike Chambers
Mike Farrens

RECEIVED
AUG 07 1995
DIV. OF OIL, GAS & MINING

RGC
RIVER GAS CORPORATION
511 Energy Center Blvd.
Northport, Alabama 35476
Phone (205) 759-3282
Fax (205) 759-3188

August 1, 1995

Mr. Gil Hunt
State of Utah
Department of Natural Resources
Division of Oil, Gas, and Mining
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Dear Mr. Hunt:

We are planning to run a step-rate test on the American Quasar 31-01-D1 to verify the maximum injection pressure within the next two months. You will be notified prior to running the test so that you or a representative of the Division can be present if you so desire.

In the past three months RGC has not been using the well continuously and have not injected at the maximum pressure since May 7th.

If I can be of any further assistance in this matter, please contact me at your convenience.

Best regards,

Charles P. Willis, P.E.
Vice President, Special Projects

cc: Mike Chambers
Mike Farrens
Bob Singleton

Division of Oil, Gas and Mining
OPERATOR CHANGE WORKSHEET

Routing:

1-~~LEC~~ / GIL
2-LWP 7-~~PL~~
3-~~DTS~~ 8-SJ
4-VLC 9-FILE
5-RJF ✓
6-LWP ✓

Attach all documentation received by the division regarding this change.
Initial each listed item when completed. Write N/A if item is not applicable.

XXX Change of Operator ☐ Designation of Agent
☐ Designation of Operator XXX Operator Name Change ~~Only~~

The operator of the well(s) listed below has changed (EFFECTIVE DATE: 1-1-95)

TO (new operator) RIVER GAS CORPORATION
(address) 511 ENERGY CENTER BLVD
NORTHPORT AL 35476

phone (205) 759-3282
account no. N 1605 (2-1-95)

FROM (former operator) RIVER GAS OF UTAH INC
(address) 511 ENERGY CENTER BLVD
NORTHPORT AL 35476

phone (205) 759-3282
account no. N 1600

Well(s) (attach additional page if needed): *DRUNKARDS WASH UNIT

Name	API	Entity	Sec	Twp	Rng	Lease Type
SEE ATTACHED						

OPERATOR CHANGE DOCUMENTATION

Yes 1. (Rule R615-8-10) Sundry or other legal documentation has been received from former operator (Attach to this form). (Reg. 2-1-95) (Rec'd 2-17-95)

N/A 2. (Rule R615-8-10) Sundry or other legal documentation has been received from new operator (Attach to this form).

Yes 3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is company registered with the state? (yes/no) ____ If yes, show company file number: #171151. (eff. 12/94)

Yes 4. **(For Indian and Federal Wells ONLY)** The BLM has been contacted regarding this change (attach Telephone Documentation Form to this report). Make note of BLM status in comments section of this form. Management review of **Federal and Indian** well operator changes should take place prior to completion of steps 5 through 9 below.

Yes 5. Changes have been entered in the Oil and Gas Information System (Wang/IBM) for each well listed above. (3-7-95)

LWP 6. Cardex file has been updated for each well listed above. 3-8-95

LWP 7. Well file labels have been updated for each well listed above. 3-9-95

Yes 8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to State Lands and the Tax Commission. (3.6-95)

Yes 9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

- OVER -

43-007-30256	Utah 24-81	15 South, 9 East, 24	Carbon
43-007-30257	Utah 32-82	15 South, 9 East, 32	Carbon
43-007-30259	Utah 21-83	15 South, 10 East, 21	Carbon
43-007-30258	Helper 07-84	15 South, 9 East, 7	Carbon
43-007-30261	Utah 27-85	14 South, 8 East, 27	Carbon
43-007-30040	Utah 31-01-D1	14 South, 10 East, 31	Carbon
43-007-30107	E.G. Telonis #1	14 South, 9 East, 20	Carbon
43-007-30093	Arcadia-Telonis	14 South, 9 East, 19	Carbon
43-007-30100	Drew #1	14 South, 9 East, 34	Carbon
43-007-30114	Drew #2	14 South, 9 East, 34	Carbon
43-007-30116	Stella-Hamaker	15 South, 8 East, 10	Carbon
43-007-30117	Pinnacle Peak Unit #2	14 South, 9 East, 19	Carbon

Speed Letter®

To Ed Bonner
~~State Lands~~ SCHOOL & INSTITUTIONAL TRUST LANDS ADMIN.

From Don Staley
Oil, Gas and Mining

Subject Operator Change

— No. 9 & 10 FOLD

MESSAGE

Date 3/10 19 95

Ed,

For your information, attached are copies of documents regarding an operator change on a state lease(s). These companies have complied with our requirements. Our records have been updated. Bonding should be reviewed by State Lands ASAP.

Former Operator: River Gas of Utah Inc (N1600)

New Operator : River Gas Corporation (N1605)

Well: API: Entity: S-T-R:

See Attachments

— No. 9 FOLD

— No. 10 FOLD

CC: Operator File

Signed Don Staley

REPLY

Date 19

— No. 9 & 10 FOLD

Signed

Wilson Jones Company
GRATURE FORM 44-912 3-PART

RECIPIENT—RETAIN WHITE COPY, RETURN PINK COPY.

LAW OFFICES
PRUITT, GUSHEE & BACHTELL
SUITE 1850 BENEFICIAL LIFE TOWER
SALT LAKE CITY, UTAH 84111-1495
(801) 531-8446

ROBERT G. PRUITT, JR.
OLIVER W. GUSHEE, JR.
THOMAS W. BACHTELL
A. JOHN DAVIS, III
JOHN W. ANDERSON
FREDERICK M. MacDONALD
ANGELA L. FRANKLIN

TELECOPIER (801) 531-8468

OF COUNSEL
JOHN F. WALDO
BRENT A. BOHMAN

February 17, 1995

Utah Division of Oil, Gas and Mining
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Attn: Lisha Cordova

Re: *River Gas Corporation Merger*

Dear Ms. Cordova:

As you may recall, this office serves as Utah legal counsel for River Gas Corporation ("RGC"). Effective January 1, 1995, River Gas of Utah, Inc. ("RGU") merged into RGC as evidenced by the enclosed Certification of Articles of Merger issued by the Utah Department of Commerce. I have also enclosed a listing of all wells which, to the best of RGC's knowledge, RGU operated and an amendment to the Letter of Credit from RGU's surety recognizing the merger and confirming bond coverage for RGC.

Based on the enclosed documentation, please change your records to reflect that RGC is the current operator of all wells formerly operated by RGU. If a formal decision letter recognizing the merger is to be executed, please send the original to RGC at the following address:

River Gas Corporation
Attention: Joseph L. Stephenson, Vice President-Land
511 Energy Center Blvd.
Northport, Alabama 35476,

with a copy to me at the letterhead address.

RECEIVED
FEB 17 1995
DIVISION OF
OIL GAS & MINING

I thank you in advance for your time and cooperation and, should there be any questions or problems, please do not hesitate to contact me.

Very truly yours,

Frederick M. MacDonald

FMM:sp
1526.39
Enclosures
cc: Joseph L. Stephenson

STATE OF UTAH

Department of Commerce

CERTIFICATION
OF ARTICLES OF MERGER

THE UTAH DIVISION OF CORPORATIONS AND COMMERCIAL CODE HEREBY CERTIFIES THAT Articles of Merger were filed with this office on January 1, 1995, merging RIVER GAS OF UTAH, INC., a corporation of the State of Utah, into RIVER GAS CORPORATION, the surviving corporation which is of the State of Alabama,

AS APPEARS OF RECORD IN THE OFFICES OF THE DIVISION.

File Number: *CO 171151*

DIVISION OF CORPORATIONS AND COMMERCIAL CODE
STATE OF UTAH

Dated this 16th *day*
of February *19* 95.

Korla T. Woods

Korla T. Woods
Director, Division of
Corporations and Commercial Code

Form 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

RECEIVED OCT 1 1995 DIV. OF OIL GAS & MINING

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells. Use APPLICATION FOR PERMIT— for such proposals.

6. Lease Designation and Serial Number: ML40521

7. Indian Allottee or Tribe Name: N/A

8. Unit or Communitization Agreement: Drunkards Wash UTU67921X

1. Type of Well: ☐ Oil Well ☐ Gas Well ☒ Other (specify) Disposal Well

9. Well Name and Number: American Quasar 31-01-D1

2. Name of Operator: River Gas of Utah, Inc.

10. API Well Number: 43-007-30040

3. Address of Operator: 511 Energy Center Blvd., Northport, AL 35476

4. Telephone Number: (205) 759-3282

11. Field and Pool, or Wildcat: Wildcat

5. Location of Well
Footage : 1552' FWL & 999' FSL
QQ, Sec, T., R., M. : (SE/4 of SW/4) SEC 31, T14S, R10E
County : Carbon
State : UTAH

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT (Submit in Duplicate)

- ☐ Abandonment
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Multiple Completion
- ☐ Other
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Recompletion
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Approximate Date Work Will Start _____

SUBSEQUENT REPORT (Submit Original Form Only)

- ☐ Abandonment *
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☒ Other Step-Rate Test Results
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Date of Work Completion 9/15/95

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.

* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

As requested by the Division of Oil, Gas, and Mining, a step-rate test was performed on this well to verify fracture pressure. The attached graph shows the results of that test. We believe that two interpretations of the data are plausible.

1) The formation parted at 3,165 psi. This would be a pressure gradient of 0.53 psi/ft. This would be the same result as the test run on 11/20/93.

2) Flow meters were changed at 4 bpm to improve data resolution. This change in flow meters could explain the apparent shift in the data since the slopes of the straight-line data are parallel. This would mean the formation did not fracture up to 3,440 psi, the highest pressure achieved in the test. This would be a tested pressure gradient of 0.58 psi/ft.

The test shows that either the frac gradient is the same as determining previously when testing 10 feet of the formation, or that with more of the formation open to take fluid the effective fracture gradient is higher.

14. I hereby certify that the foregoing is true and correct

Name & Signature Charles Willis Title Vice President Date 10/5/95

(State Use Only)

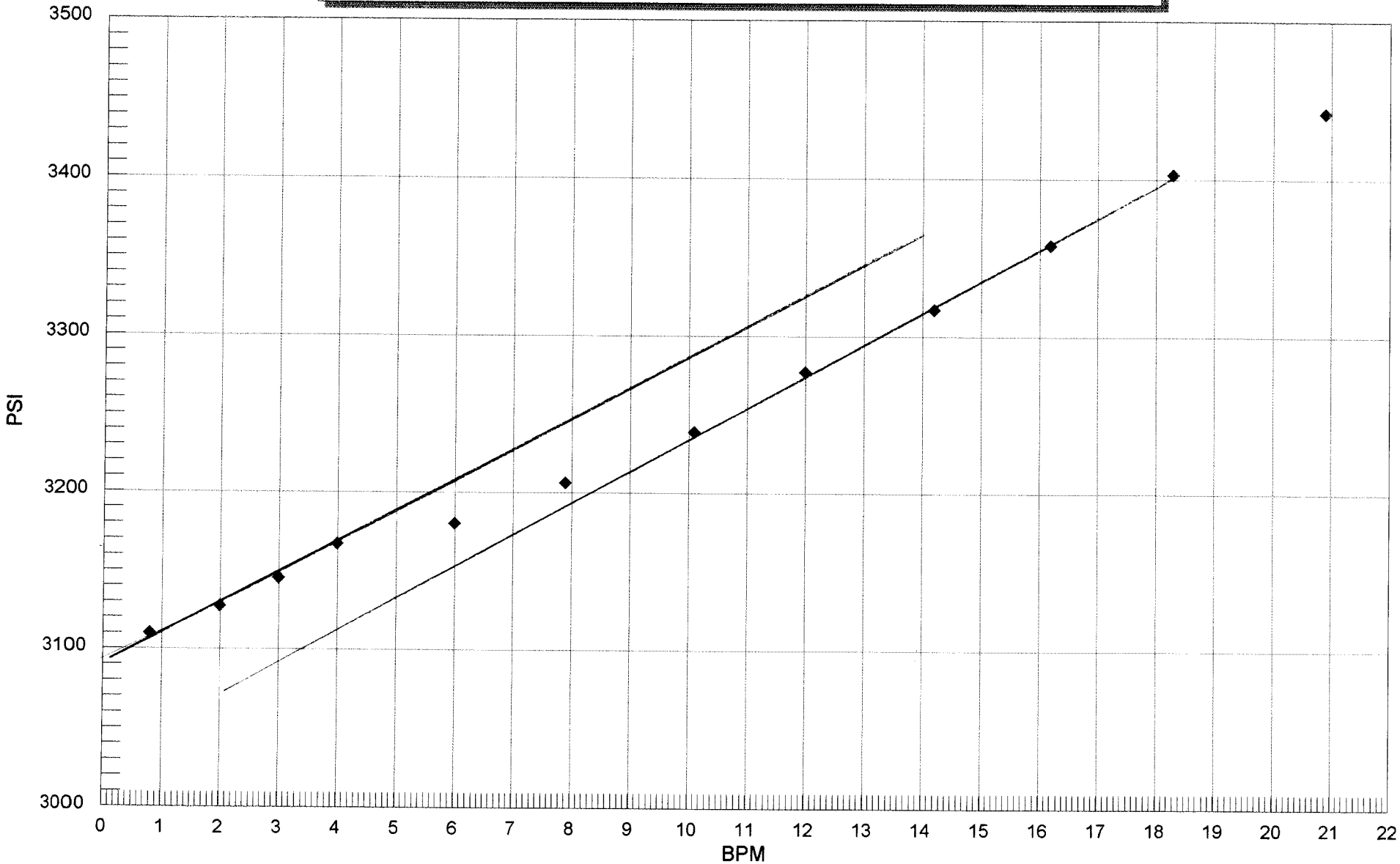
(8/90)

1800792 0903

See Instructions on Reverse Side

RIVER GAS CORPORATION

American Quasar 31-01-D1 Step-Rate Test



Performed 09/15/95

River Gas 31-1-D1 SWD

DATE	AVG WHIP (PSI)	MAX WHIP (PSI)	VOLUME (BBLS)	CUMM VOL (BBLS)	ON LINE (HOURS)	PSI-DAYS	CUM PSI-DAYS	NOTES	PSI-DAYS PER BBL
18-Aug-94	135	450	2,973	2,973	20.50	115	115		
19-Aug-94	135	150	3,480	6,453	24.00	135	250		0.039
20-Aug-94	135	150	3,550	10,003	24.00	135	385		0.038
21-Aug-94	135	150	3,555	13,558	24.00	135	520		0.038
22-Aug-94	135	150	3,263	16,821	22.50	127	647		0.039
23-Aug-94	135	150	2[illegible]	19,437	10.00	56	703		0.022
24-Aug-94	135	150	2[illegible]	21,966	24.00	135	838		0.053
25-Aug-94	135	150	4,6[illegible]	26,658	24.00	135	973		0.029
26-Aug-94	120	150	2,90[illegible]	29,564	24.00	120	1,093		0.041
27-Aug-94	120	150	3,388	32,952	24.00	120	1,213		0.035
28-Aug-94	120	150	2,588	35,540	24.00	120	1,333		0.046
29-Aug-94	120	150	2,152	37,692	17.00	85	1,418		0.039
30-Aug-94	120	150	3,466	41,158	20.00	100	1,518		0.029
31-Aug-94	120	150	3,173	44,331	24.00	120	1,638		0.038
01-Sep-94	120	150	2,410	46,741	22.00	110	1,748		0.046
02-Sep-94	300	340	3,117	49,858	24.00	300	2,048		0.096
03-Sep-94	130	150	2,568	52,426	12.00	65	2,113		0.025
04-Sep-94	340	500	1,466	53,892	4.00	57	2,170		0.039
05-Sep-94	280	250	3,229	57,121	6.00	70	2,240		0.022
06-Sep-94	280	350	3,287	60,408	11.00	128	2,368		0.039
07-Sep-94	120	340	2,618	63,026	7.00	35	2,403		0.013
08-Sep-94	120	340	4,500	67,526	10.00	50	2,453		0.011
09-Sep-94	225	350	7,795	75,321	10.00	94	2,547		0.012
10-Sep-94	200	460	7,016	82,337	11.00	92	2,639		0.013
11-Sep-94	200	460	6,429	88,766	10.00	83	2,722		0.013
12-Sep-94	200	460	5,603	94,369	10.00	83	2,805		0.015
13-Sep-94	220	480	5,910	100,279	12.00	110	2,915		0.019
14-Sep-94	220	460	5,550	105,829	12.00	110	3,025		0.020
15-Sep-94	340	460	4,509	110,338	16.00	227	3,252		0.050
16-Sep-94	380	480	6,068	116,406	16.00	253	3,505		0.042
17-Sep-94	390	490	6,138	122,544	16.00	260	3,765		0.042
18-Sep-94	300	520	7,425	129,969	16.00	200	3,965		0.027
19-Sep-94	200	400	2,103	132,072	16.00	133	4,099		0.063
20-Sep-94	100	400	884	132,956	3.50	15	4,113		0.016
21-Sep-94	0	0	0	132,956	0.00	0	4,113		0.000
22-Sep-94	0	0	0	132,956	0.00	0	4,113		0.000
23-Sep-94	0	0	0	132,956	0.00	0	4,113		0.000
24-Sep-94	0	0	0	132,956	0.00	0	4,113		[illegible]
25-Sep-94	0	0	0	132,956	0.00	0	4,113		[illegible]
26-Sep-94	0	[illegible]	0	132,956	0.00	0	4,113		[illegible]
27-Sep-94	0		0	132,956	0.00	0	4,113		0.000
28-Sep-94	0		0	132,956	0.00	0	4,113		0.000
29-Sep-94	0		0	132,956	0.00	0	4,113		0.000
30-Sep-94	0		0	132,956	0.00	0	4,113		0.000
01-Oct-94	0		0	132,956	0.00	0	4,113		0.000
02-Oct-94	0		0	132,956	0.00	0	4,113		0.000
03-Oct-94	0	0	0	132,956	0.00	0	4,113		0.000
04-Oct-94	0	0	0	132,956	0.00	0	4,113		0.000
05-Oct-94	0	0	0	132,956	0.00	0	4,113		0.000
06-Oct-94	0	0	0	132,956	0.00	0	4,113		0.000
07-Oct-94	0	0	0	132,956	0.00	0	4,113		0.000
[illegible]-Oct-94	0	0	0	132,956	0.00	0	4,113		0.000
[illegible]-Oct-94	0	0	0	132,956	0.00	0	4,113		0.000
[illegible]-94	0	0	0	132,956	0.00	0	4,113		0.000
[illegible]-94	0	0	0	132,956	0.00	0	4,113		0.000
[illegible]	0	0	0	132,956	0.00	0	4,113		0.000
[illegible]	0	0	0	132,956	0.00	0	4,113		0.000
[illegible]	90	90	1,617	134,573	16.00	60	4,173	START BACTERIACIDE	0.037
[illegible]	90	90	2,964	137,537	24.00	90	4,263		0.030
[illegible]	90	90	2,555	140,092	24.00	90	4,353		0.035
[illegible]	90	90	2,672	142,764	24.00	90	4,443		0.034
[illegible]	90	90	3,954	146,718	24.00	90	4,533		0.023
[illegible]-94	90	90	1,303	148,021	24.00	90	4,623		0.069
[illegible]-94	90	100	3,803	151,824	24.00	90	4,713		0.024
[illegible]-Oct-94	185	185	3,323	155,147	24.00	185	4,898		0.056
[illegible]-Oct-94	100	100	5,370	160,517	20.00	83	4,981		0.016
23-Oct-94	0	0	0	160,517	0.00	0	4,981		0.000
24-Oct-94	0	0	0	160,517	0.00	0	4,981		0.000
25-Oct-94	0	0	0	160,517	0.00	0	4,981		0.000
26-Oct-94	40	40	2,941	163,458	22.00	37	5,018		0.012
27-Oct-94	40	100	3,762	167,220	24.00	40	5,058		0.011
28-Oct-94	360	360	1,765	174,985	24.00	360	5,418		0.048
29-Oct-94	420	420	434	174,419	24.00	420	5,838		0.145
30-Oct-94	480	480	541	174,060	24.00	480	6,318		[illegible]
31-Oct-94	380	380	1,099	200,159	24.00	380	6,698		[illegible]
01-Nov-94	0	0	0	200,159	0.00	0	6,698		[illegible]
02-Nov-94	0	0	0	200,159	0.00	0	6,698		[illegible]
03-Nov-94	0	0	0	200,159	0.00	0	6,698		[illegible]
04-Nov-94	560	560	13,055	213,214	24.00	560	7,258		0.04
05-Nov-94	540	550	10,341	223,555	24.00	540	7,798		[illegible]

DATE	AVG WHIP (PSI)	MAX WHIP (PSI)	VOLUME (BBLS)	CUMM VOL (BBLS)	ON LINE (HOURS)	PSI-DAYS	CUM PSI-DAYS	NOTES	PSI-DAYS PER BBL
06-Nov-94	550	570	10,563	234,118	24.00	550	8,348		0.052
07-Nov-94	560	560	4,661	238,779	16.00	373	8,721		0.080
08-Nov-94	560	560	3,508	242,287	5.00	117	8,838		0.033
09-Nov-94	0	0	0	242,287	0.00	0	8,838		0.000
10-Nov-94	540	540	2,761	245,048	7.00	158	8,996		0.057
11-Nov-94	560	560	10,055	255,103	23.50	548	9,544	8,000 GALS 15% HCL	0.055
12-Nov-94	550	550	10,103	265,206	23.00	527	10,071		0.052
13-Nov-94	400	570	3,767	268,973	24.00	400	10,471		0.106
14-Nov-94	560	560	1,190	270,163	7.00	163	10,634		0.137
15-Nov-94	0	0	0	270,163	0.00	0	10,634		0.000
16-Nov-94	500	570	12,889	283,052	17.00	354	10,989		0.027
17-Nov-94	500	570	5,482	288,534	16.00	333	11,322		0.061
18-Nov-94	0	0	0	288,534	0.00	0	11,322		0.000
19-Nov-94	420	550	4,102	292,636	20.00	350	11,672		0.085
20-Nov-94	500	570	8,575	301,211	12.00	250	11,922		0.029
21-Nov-94	520	570	5,725	306,936	10.00	217	12,139		0.038
22-Nov-94	340	570	8,332	315,268	19.00	269	12,408		0.032
23-Nov-94	450	570	11,508	326,776	16.00	300	12,708		0.026
24-Nov-94	500	560	9,500	336,276	17.00	354	13,062		0.037
25-Nov-94	500	560	9,222	345,498	17.00	354	13,416		0.038
26-Nov-94	500	570	8,375	353,873	17.00	354	13,770		0.042
27-Nov-94	500	570	9,147	363,020	24.00	500	14,270		0.055
28-Nov-94	560	560	10,257	373,277	18.00	420	14,690		0.041
29-Nov-94	560	560	5,433	378,710	12.00	280	14,970		0.052
30-Nov-94	560	560	9,341	388,051	14.00	327	15,297		0.035
01-Dec-94	560	560	10,392	398,443	18.00	420	15,717		0.040
02-Dec-94	560	560	5,229	403,672	14.00	327	16,044		0.062
03-Dec-94	560	560	10,319	413,991	19.00	443	16,487		0.043
04-Dec-94	560	560	10,106	424,097	20.00	467	16,954		0.046
05-Dec-94	560	560	3,608	427,705	8.00	187	17,140		0.052
06-Dec-94	560	560	1,947	429,652	10.00	233	17,374		0.120
07-Dec-94	0	0	0	429,652	0.00	0	17,374		0.000
08-Dec-94	560	560	9,094	438,746	20.00	467	17,840		0.051
09-Dec-94	560	560	8,250	446,996	22.00	513	18,354		0.062
10-Dec-94	750	780	10,298	457,294	22.00	688	19,041		0.067
11-Dec-94	550	560	11,339	468,633	24.00	550	19,591	4,000 GALS 28% HCL	0.049
12-Dec-94	840	850	10,654	479,287	24.00	840	20,431		0.079
13-Dec-94	840	840	10,509	489,796	24.00	840	21,271		0.080
14-Dec-94	820	820	8,886	498,682	24.00	820	22,091		0.092
15-Dec-94	810	820	9,247	507,929	24.00	810	22,901		0.088
16-Dec-94	815	820	9,475	517,404	24.00	815	23,716		0.086
17-Dec-94	820	825	9,488	526,892	24.00	820	24,536		0.086
18-Dec-94	800	800	6,509	533,401	12.00	400	24,936		0.061
19-Dec-94	800	800	7,421	540,822	17.00	567	25,503		0.076
20-Dec-94	0	0	0	540,822	0.00	0	25,503		0.000
21-Dec-94	725	725	4,480	545,302	8.00	242	25,744		0.054
22-Dec-94	560	560	5,892	551,194	10.00	233	25,978		0.040
23-Dec-94	570	570	2,291	553,485	5.00	119	26,096		0.052
24-Dec-94	0	0	0	553,485	0.00	0	26,096		0.000
25-Dec-94	0	0	0	553,485	0.00	0	26,096		0.000
26-Dec-94	0	0	0	553,485	0.00	0	26,096		0.000
27-Dec-94	600	630	9,247	562,732	10.00	250	26,346		0.027
28-Dec-94	650	660	9,431	572,163	24.00	650	26,996		0.069
29-Dec-94	680	700	9,270	581,433	24.00	680	27,676		0.073
30-Dec-94	570	570	9,224	590,657	24.00	570	28,246		0.062
31-Dec-94	570	570	6,316	596,973	6.00	143	28,389		0.023
01-Jan-95	570	570	5,211	602,184	15.00	356	28,745		0.068
02-Jan-95	640	660	3,425	605,609	9.00	240	28,985		0.070
03-Jan-95	660	680	7,977	613,586	22.00	605	29,590		0.076
04-Jan-95	705	725	8,398	621,984	21.00	617	30,207		0.073
05-Jan-95	710	720	6,978	628,962	17.00	503	30,710		0.072
06-Jan-95	650	680	8,053	637,015	24.00	650	31,360		0.081
07-Jan-95	720	725	6,403	643,418	24.00	720	32,080		0.112
08-Jan-95	725	735	8,885	652,303	24.00	725	32,805		0.082
09-Jan-95	730	740	8,039	660,342	21.00	639	33,444		0.079
10-Jan-95	710	720	6,369	666,711	19.00	562	34,006		0.088
11-Jan-95	725	740	5,951	672,662	18.00	544	34,550		0.091
12-Jan-95	725	740	0	672,662	0.00	0	34,550		0.000
13-Jan-95	725	740	0	672,662	0.00	0	34,550		0.000
14-Jan-95	570	570	8,669	681,331	10.00	238	34,787		0.027
15-Jan-95	690	700	8,874	690,205	22.00	633	35,420		0.071
16-Jan-95	700	725	8,570	698,775	22.00	642	36,061		0.075
17-Jan-95	730	750	8,829	707,604	23.00	700	36,761		0.079
18-Jan-95	760	775	10,233	717,837	24.00	760	37,521		0.074
19-Jan-95	680	700	2,285	720,122	12.00	340	37,861		0.149
20-Jan-95	720	740	9,022	729,144	17.00	510	38,371		0.057
21-Jan-95	630	660	8,689	737,833	10.00	263	38,633		0.030
22-Jan-95	540	600	0	737,833	0.00	0	38,633		0.000
23-Jan-95	715	755	10,655	748,488	24.00	715	39,348		0.067
24-Jan-95	770	775	9,471	757,959	24.00	770	40,118		0.081

DATE	AVG WHIP (PSI)	MAX WHIP (PSI)	VOLUME (BBLS)	CUMM VOL (BBLS)	ON LINE (HOURS)	PSI-DAYS	CUM PSI-DAYS	NOTES	PSI-DAYS PER BBL
25-Jan-95	780	780	9,639	767,598	24.00	780	40,898		0.081
26-Jan-95	780	800	8,040	775,638	24.00	780	41,678		0.097
27-Jan-95	790	800	9,264	784,902	24.00	790	42,468		0.085
28-Jan-95	800	800	8,998	793,900	23.00	767	43,235		0.085
29-Jan-95	800	800	5,973	799,873	12.00	400	43,635		0.067
30-Jan-95	0	0	0	799,873	0.00	0	43,635		0.000
31-Jan-95	0	0	0	799,873	0.00	0	43,635		0.000
01-Feb-95	0	0	0	799,873	0.00	0	43,635		0.000
02-Feb-95	720	730	9,000	808,873	24.00	720	44,355		0.080
03-Feb-95	720	730	8,990	817,863	24.00	720	45,075		0.080
04-Feb-95	770	775	9,098	826,961	19.00	610	45,685		0.067
05-Feb-95	750	750	9,341	836,302	24.00	750	46,435		0.080
06-Feb-95	760	760	8,045	844,347	24.00	760	47,195		0.094
07-Feb-95	770	770	6,188	850,535	12.00	385	47,580		0.062
08-Feb-95	798	800	10,163	860,698	24.00	798	48,378		0.079
09-Feb-95	790	798	8,631	869,329	24.00	790	49,168		0.092
10-Feb-95	805	810	7,883	877,212	24.00	805	49,973		0.102
11-Feb-95	810	816	9,318	886,530	24.00	810	50,783		0.087
12-Feb-95	799	802	6,179	892,709	24.00	799	51,582		0.129
13-Feb-95	780	800	9,273	901,982	24.00	780	52,362		0.084
14-Feb-95	815	820	9,695	911,677	24.00	815	53,177		0.084
15-Feb-95	820	822	8,335	920,012	24.00	820	53,997		0.098
16-Feb-95	0	0	0	920,012	0.00	0	53,997		0.000
17-Feb-95	705	720	2,478	922,490	5.00	147	54,143		0.059
18-Feb-95	740	760	6,603	929,093	7.00	216	54,359		0.033
19-Feb-95	740	760	3,763	932,856	7.00	216	54,575		0.057
20-Feb-95	760	765	9,489	942,345	24.00	760	55,335		0.080
21-Feb-95	760	765	5,758	948,103	14.00	443	55,778		0.077
22-Feb-95	790	800	9,558	957,661	24.00	790	56,568		0.083
23-Feb-95	780	790	7,398	965,059	22.00	715	57,283		0.097
24-Feb-95	700	790	3,522	968,581	7.00	204	57,488		0.058
25-Feb-95	760	760	9,929	978,510	24.00	760	58,248		0.077
26-Feb-95	775	790	9,834	988,344	24.00	775	59,023		0.079
27-Feb-95	790	790	9,624	997,968	24.00	790	59,813		0.082
28-Feb-95	800	800	6,168	1,004,136	24.00	800	60,613		0.130
01-Mar-95	800	800	9,204	1,013,340	24.00	800	61,413		0.087
02-Mar-95	800	800	5,408	1,018,748	24.00	800	62,213		0.148
03-Mar-95	800	800	8,126	1,026,874	24.00	800	63,013		0.098
04-Mar-95	800	800	5,824	1,032,698	24.00	800	63,813		0.137
05-Mar-95	800	800	5,687	1,038,385	12.00	400	64,213		0.070
06-Mar-95	0	0	0	1,038,385	0.00	0	64,213		0.000
07-Mar-95	760	770	7,216	1,045,601	12.00	380	64,593		0.053
08-Mar-95	700	720	400	1,046,001	1.00	29	64,622		0.073
09-Mar-95	740	760	7,587	1,053,588	15.00	463	65,084		0.061
10-Mar-95	780	780	4,134	1,057,722	8.00	260	65,344		0.063
11-Mar-95	0	0	0	1,057,722	0.00	0	65,344		0.000
12-Mar-95	0	0	0	1,057,722	0.00	0	65,344		0.000
13-Mar-95	0	0	0	1,057,722	0.00	0	65,344		0.000
14-Mar-95	0	0	0	1,057,722	0.00	0	65,344		0.000
15-Mar-95	670	680	8,396	1,066,118	17.00	475	65,819		0.057
16-Mar-95	740	750	10,525	1,076,643	19.00	586	66,405		0.056
17-Mar-95	760	780	10,139	1,086,782	24.00	760	67,165		0.075
18-Mar-95	800	820	10,069	1,096,851	24.00	800	67,965		0.079
19-Mar-95	760	775	6,515	1,103,366	20.00	633	68,598		0.097
20-Mar-95	780	790	7,336	1,110,702	21.00	683	69,281		0.093
21-Mar-95	820	830	9,606	1,120,308	24.00	820	70,101		0.085
22-Mar-95	810	820	7,678	1,127,986	21.00	709	70,809		0.092
23-Mar-95	800	800	8,513	1,136,499	24.00	800	71,609		0.094
24-Mar-95	0	0	0	1,136,499	0.00	0	71,609		0.000
25-Mar-95	0	0	0	1,136,499	0.00	0	71,609		0.000
26-Mar-95	0	0	0	1,136,499	0.00	0	71,609		0.000
27-Mar-95	0	0	0	1,136,499	0.00	0	71,609		0.000
28-Mar-95	730	740	11,030	1,147,529	20.00	608	72,218		0.055
29-Mar-95	800	800	11,602	1,159,131	24.00	800	73,018		0.069
30-Mar-95	820	820	10,437	1,169,568	24.00	820	73,838		0.079
31-Mar-95	840	850	9,907	1,179,475	24.00	840	74,678		0.085
01-Apr-95	0	0	0	1,179,475	0.00	0	74,678		0.000
02-Apr-95	800	800	10,447	1,189,922	24.00	800	75,478		0.077
03-Apr-95	840	840	9,187	1,199,109	24.00	840	76,318		0.091
04-Apr-95	840	850	7,438	1,206,547	20.00	700	77,018		0.094
05-Apr-95	840	840	4,481	1,211,028	10.00	350	77,368		0.078
06-Apr-95	0	0	0	1,211,028	0.00	0	77,368		0.000
07-Apr-95	800	800	902	1,211,930	1.00	33	77,401		0.037
08-Apr-95	700	800	3,641	1,215,571	9.00	263	77,663		0.072
09-Apr-95	680	700	3,388	1,218,959	4.00	113	77,777		0.033
10-Apr-95	690	705	3,056	1,222,015	6.00	173	77,949		0.056
11-Apr-95	700	720	3,924	1,225,939	6.00	175	78,124		0.045
12-Apr-95	720	750	8,960	1,234,899	12.00	360	78,484		0.040
13-Apr-95	800	820	10,598	1,245,497	24.00	800	79,284		0.075
14-Apr-95	800	800	8,242	1,253,739	24.00	800	80,084		0.097

DATE	AVG WHIP (PSI)	MAX WHIP (PSI)	VOLUME (BBLS)	CUMM VOL (BBLS)	ON LINE (HOURS)	PSI-DAYS	CUM PSI-DAYS	NOTES	PSI-DAYS PER BBL
15-Apr-95	765	790	8,632	1,262,371	24.00	765	80,849		0.089
16-Apr-95	750	800	4,726	1,267,097	12.00	375	81,224		0.079
17-Apr-95	750	780	5,530	1,272,627	14.00	438	81,662		0.079
18-Apr-95	800	810	6,755	1,279,382	11.00	367	82,028		0.054
19-Apr-95	820	820	7,330	1,286,712	14.00	478	82,507		0.065
20-Apr-95	780	780	8,823	1,295,535	18.00	585	83,092		0.066
21-Apr-95	740	780	4,123	1,299,658	11.00	339	83,431		0.082
22-Apr-95	640	750	1,516	1,301,174	3.00	80	83,511		0.053
23-Apr-95	710	725	1,231	1,302,405	8.00	237	83,748		0.192
24-Apr-95	720	740	6,776	1,309,181	14.00	420	84,168		0.062
25-Apr-95	740	760	8,121	1,317,302	17.00	524	84,692		0.065
26-Apr-95	720	740	3,412	1,320,714	12.00	360	85,052		0.106
27-Apr-95	800	800	4,109	1,324,823	8.00	267	85,318		0.065
28-Apr-95	700	710	1,991	1,326,814	2.00	58	85,377		0.029
29-Apr-95	700	720	3,179	1,329,993	8.00	233	85,610		0.073
30-Apr-95	700	720	2,067	1,332,060	13.00	379	85,989		0.183
01-May-95	700	720	2,018	1,334,078	16.00	467	86,456		0.231
02-May-95	680	680	1,725	1,335,803	2.00	57	86,513		0.033
03-May-95	780	800	6,757	1,342,560	10.00	325	86,838		0.048
04-May-95	680	740	8,493	1,351,053	14.00	397	87,234		0.047
05-May-95	850	850	7,638	1,358,691	17.00	602	87,836		0.079
06-May-95	860	860	7,763	1,366,454	16.00	573	88,410		0.074
07-May-95	850	850	8,124	1,374,578	20.00	708	89,118		0.087
08-May-95	760	780	6,574	1,381,152	16.00	507	89,625		0.077
09-May-95	770	780	8,151	1,389,303	21.00	674	90,298		0.083
10-May-95	0	0	0	1,389,303	0.00	0	90,298		0.000
11-May-95	690	720	5,646	1,394,949	6.00	173	90,471		0.031
12-May-95	700	760	7,566	1,402,515	21.00	613	91,083		0.081
13-May-95	650	750	6,660	1,409,175	20.00	542	91,625		0.081
14-May-95	750	750	6,475	1,415,650	12.00	375	92,000		0.058
15-May-95	750	770	6,474	1,422,124	17.00	531	92,531		0.082
16-May-95	775	780	9,774	1,431,898	18.00	581	93,113		0.059
17-May-95	760	780	4,325	1,436,223	20.00	633	93,746		0.146
18-May-95	730	750	4,309	1,440,532	10.00	304	94,050		0.071
19-May-95	720	710	4,309	1,444,841	9.00	270	94,320		0.063
20-May-95	740	760	3,563	1,448,404	6.00	185	94,505		0.052
21-May-95	740	710	4,499	1,452,903	9.00	278	94,783		0.062
22-May-95	740	760	4,508	1,457,411	10.00	308	95,091		0.068
23-May-95	725	740	951	1,458,362	2.00	60	95,151		0.064
24-May-95	720	740	5,182	1,463,544	7.00	210	95,361		0.041
25-May-95	550	740	1,421	1,464,965	3.00	69	95,430		0.048
26-May-95	480	740	6,646	1,471,611	4.00	80	95,510		0.012
27-May-95	0	0	0	1,471,611	0.00	0	95,510		0.000
28-May-95	0	0	0	1,471,611	0.00	0	95,510		0.000
29-May-95	0	0	0	1,471,611	0.00	0	95,510		0.000
30-May-95	580	600	1,729	1,473,340	3.00	73	95,583		0.042
31-May-95	680	700	10,793	1,484,133	22.00	623	96,206		0.058
01-Jun-95	500	760	5,813	1,489,946	9.00	188	96,393		0.032
02-Jun-95	0	0	0	1,489,946	0.00	0	96,393		0.000
03-Jun-95	550	680	6,242	1,496,188	8.00	183	96,577		0.029
04-Jun-95	760	780	5,064	1,501,252	8.00	253	96,830		0.050
05-Jun-95	760	780	2,422	1,503,674	5.00	158	96,988		0.065
06-Jun-95	700	720	7,950	1,511,624	15.00	438	97,426		0.055
07-Jun-95	700	740	6,230	1,517,854	14.00	408	97,834		0.066
08-Jun-95	720	740	6,364	1,524,218	18.00	540	98,374		0.085
09-Jun-95	620	760	7,287	1,531,505	16.00	413	98,788		0.057
10-Jun-95	600	760	7,880	1,539,385	17.00	425	99,213		0.054
11-Jun-95	760	780	8,554	1,547,939	21.00	665	99,878		0.078
12-Jun-95	760	780	7,525	1,555,464	17.00	538	100,416		0.072
13-Jun-95	0	0	0	1,555,464	0.00	0	100,416		0.000
14-Jun-95	0	0	0	1,555,464	0.00	0	100,416		0.000
15-Jun-95	0	0	0	1,555,464	0.00	0	100,416		0.000
16-Jun-95	0	0	0	1,555,464	0.00	0	100,416		0.000
17-Jun-95	620	640	1,221	1,556,685	5.00	129	100,545		0.106
18-Jun-95	690	700	7,110	1,563,795	17.00	489	101,034		0.069
19-Jun-95	700	720	7,110	1,570,905	18.00	525	101,559		0.074
20-Jun-95	690	700	4,725	1,575,630	8.00	230	101,789		0.049
21-Jun-95	520	600	719	1,576,349	1.00	22	101,811		0.030
22-Jun-95	0	0	0	1,576,349	0.00	0	101,811		0.000
23-Jun-95	600	620	1,232	1,577,581	2.00	50	101,861		0.041
24-Jun-95	720	740	4,040	1,581,621	10.00	300	102,161		0.074
25-Jun-95	640	660	1,601	1,583,222	3.00	80	102,241		0.050
26-Jun-95	0	0	0	1,583,222	0.00	0	102,241		0.000
27-Jun-95	0	0	0	1,583,222	0.00	0	102,241		0.000
28-Jun-95	650	680	8,905	1,592,127	14.00	379	102,620		0.043
29-Jun-95	685	700	7,013	1,599,140	13.00	371	102,991		0.053
30-Jun-95	740	760	10,612	1,609,752	24.00	740	103,731		0.070
01-Jul-95	500	780	10,647	1,620,399	24.00	500	104,231		0.047
02-Jul-95	0	0	0	1,620,399	0.00	0	104,231		0.000
03-Jul-95	520	660	174	1,620,573	1.00	22	104,252		0.125

DATE	AVG WHIP (PSI)	MAX WHIP (PSI)	VOLUME (BBLS)	CUMM VOL (BBLS)	ON LINE (HOURS)	PSI-DAYS	CUM PSI-DAYS	NOTES	PSI-DAYS PER BBL
04-Jul-95	600	670	1,477	1,622,050	4.00	100	104,352		0.068
05-Jul-95	640	680	4,738	1,626,788	8.00	213	104,566		0.045
06-Jul-95	640	680	4,738	1,631,526	8.00	213	104,779		0.045
07-Jul-95	0	0	0	1,631,526	0.00	0	104,779		0.000
08-Jul-95	460	680	1,465	1,632,991	3.00	58	104,837		0.039
09-Jul-95	680	700	9,096	1,642,087	24.00	680	105,517		0.075
10-Jul-95	720	760	9,574	1,651,661	23.00	690	106,207		0.072
11-Jul-95	760	780	9,127	1,660,788	24.00	760	106,967		0.083
12-Jul-95	783	785	10,512	1,671,300	24.00	783	107,750		0.074
13-Jul-95	750	760	1,173	1,672,473	2.00	63	107,812		0.053
14-Jul-95	0	0	0	1,672,473	0.00	0	107,812		0.000
15-Jul-95	0	0	0	1,672,473	0.00	0	107,812		0.000
16-Jul-95	665	680	0	1,672,473	0.00	0	107,812		0.000
17-Jul-95	700	720	10,421	1,682,894	21.00	613	108,425		0.059
18-Jul-95	800	820	11,438	1,694,332	24.00	800	109,225		0.070
19-Jul-95	800	820	7,182	1,701,514	16.00	533	109,758		0.074
20-Jul-95	0	0	0	1,701,514	0.00	0	109,758		0.000
21-Jul-95	0	0	0	1,701,514	0.00	0	109,758		0.000
22-Jul-95	0	0	0	1,701,514	0.00	0	109,758		0.000
23-Jul-95	390	580	378	1,701,892	1.00	16	109,774		0.043
24-Jul-95	780	790	12,738	1,714,630	24.00	780	110,554		0.061
25-Jul-95	800	800	5,524	1,720,154	12.00	400	110,954		0.072
26-Jul-95	810	820	10,807	1,730,961	24.00	810	111,764		0.075
27-Jul-95	790	800	8,901	1,739,862	21.00	691	112,455		0.078

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF 'L, GAS AND MINING

RECEIVED
OCT 30 1995
DIV. OF OIL, GAS & MINING

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.
Use APPLICATION FOR PERMIT— for such proposals.

6. Lease Designation and Serial Number: ML 40521
7. Indian Allottee or Tribe Name: N/A
8. Unit or Communitization Agreement: Drunkards Wash UTU 67921X

1. Type of Well: ☐ Oil Well ☐ Gas Well ☒ Other (specify) Disposal Well
9. Well Name and Number: American Quasar 31-01-D1
2. Name of Operator: River Gas Corporation
10. API Well Number: 43-007-30040
3. Address of Operator: 511 Energy Center Blvd. Northport, AL 35476
4. Telephone Number: (205) 759-3282
11. Field and Pool, or Wildcat: Wildcat
5. Location of Well
Footage : 1552' FWL & 999' FSL
County : Carbon
QQ, Sec, T., R., M. : (SE/4 of SW/4) Sec 31, T14S, R10E
State : UTAH

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT (Submit in Duplicate)

- ☐ Abandonment
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☒ Fracture Treat
- ☐ Multiple Completion
- ☐ Other
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Recompletion
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Approximate Date Work Will Start: Nov. 13, 1995

SUBSEQUENT REPORT (Submit Original Form Only)

- ☐ Abandonment *
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Other
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Date of Work Completion

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.
* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

RGC is planning to stimulate in the Navajo in order to improve injection. With respect to our meeting with The Division of Oil, Gas, and Mining; we will not be stimulating the top portion of the Navajo.

Casing pressure will be monitored throughout the job to ensure containment within the Navajo.

The Division of Oil, Gas, and Mining will be notified at least 24 hours in advance of the stimulation.

Attached is a summary of the procedure.

14. I hereby certify that the foregoing is true and correct

Name & Signature: Charles Willis Title: Vice President Date: 10/26/95

(State Use Only)

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 10-31-95
BY:

(3/90)

See Instructions on Reverse Side

American Quasar 31-01-D1
Fracture Stimulation Procedure
Carbon County, Utah

Well Information:

Location	1,552' FWL & 999' FSL
Elevation	5,716'
Intermediate Casing	9 5/8 set @ 5,740'
Injection Casing	7" 26# K55 Set @ 6,300'
PBTD	+/- 6,270'
Perf Specs	0.45", 4 spf
Perfs	5,726-5,800'
	5,870-5,970'
	5,980-6,002'
	6,044-6,092'
	6,122-6,132'
	6,156-6,210'

Procedure:

Day 1

1. Move in and fill (4) 400 bbl frac tanks with clean fresh water.

2. Move in and rig up service rig.

3. Kill well to remove full opening injection valve and replace with BOP stack.

4. RIH with 3 1/2" injection tubing to plug well back to 6,190' with sand plug.

5. Plug well back from PBTD to 6,190' with sand plug.

6. POOH with tubing, pick up 7" DTTS packer dressed with full opening flapper valve.

7. RIH and set 7" DTTS packer with tubing at 6,030'.

Day 2

8. Rig up frac equipment and pump the following job:

Stage Type	Fluid Type	Rate (bpm)	Volume (gals)	Sand Conc (#/gal)	Sand Vol (#'s)
PAD	30 # XL	25	10,000	0	0
SLF	30 # XL	25	1,000	1	1,000
SLF	30 # XL	25	2,000	2	4,000
SLF	30 # XL	25	2,000	4	8,000
SLF	30 # XL	25	2,000	6	12,000
SLF	30 # XL	25	2,000	8	16,000
SLF	30 # XL	25	2,000	10	20,000
SLF	30 # XL	25	2,000	12	24,000

Frac Summary

Fluid Type	30 #/Mgal HPG Hybor
Fluid Volume	23,000 gals
Sand Type	16/30 Ottawa Sand
Sand Volume	85,000 lbs
Anticipated WHTP	3,800 psi

9. Unsting tubing from packer and POOH.

10. Drop ball to seal DTTS packer from above.

11. Pick up 2nd 7" DTTS packer, RIH and set at 5,820'.

Day 3

12. Rig up frac equipment and pump the 2nd frac as described in #8 above.

13. At shutdown, monitor pressure and remain stung into packer.

Day 4, 5, & 6

14. If well is dead, unsting from packer and POOH with tubing and stinger. If well is still pressured up, calculate require kill weight fluid and load hole to maintain control while drilling out packers.

15. Rig up power swivel, pick up bit and RIH to drill out DTTS packers.

16. After DTTS packers are drilled out, remove sand plug by circulating well.

17. POOH with tubing to return well to injection service.

18. Rig down BOP's and rig up permanent injection valve.

19. Rig down and remove service rig.

20. Rig up surface injection lines and return well to service.

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

RECEIVED
NOV 21 1995
DIV. OF OIL, GAS & MINING

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.
Use APPLICATION FOR PERMIT— for such proposals.

6. Lease Designation and Serial Number: ML 40521

7. Indian Allottee or Tribe Name:

8. Unit or Communitization Agreement: Drunkards Wash UTU67921X

1. Type of Well: ☐ Oil Well ☐ Gas Well ☒ Other (specify) Disposal Well

9. Well Name and Number: American Quasar 31-01-D1

2. Name of Operator: River Gas Corporation

10. API Well Number: 43-007-30040

3. Address of Operator: 511 Energy Center Blvd. Northport, AL 35476

4. Telephone Number: (205) 759-3282

11. Field and Pool, or Wildcat:

5. Location of Well
Footage : 1552' FWL & 999' FSL
QQ, Sec, T., R., M. : SE/SW, Sec 31, T14S,R10E
County : Carbon
State : UTAH

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT (Submit in Duplicate)

- ☐ Abandonment
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Multiple Completion
- ☐ Other
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Recompletion
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Approximate Date Work Will Start _____

SUBSEQUENT REPORT (Submit Original Form Only)

- ☐ Abandonment *
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☒ Fracture Treat
- ☐ Other
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Date of Work Completion 11/16/95 thru 11/17/95

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.

* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

On 11/16/95 the interval (6044-92,6122-36) was fraced in the American Quasar 31-01-D1. 71,700# of 16/30 sand and 38,335 gallons of fluid was used. The average rate was about 31 BPM and the average pressure was 3400 psi. On 11/17/95 the interval (5870-5970) was fraced. 78,000# of 16/30 sand and 30,282 gallons of fluid was used. The average rate was 35 BPM and the average pressure was 2900 psi. A summary of the job is attached.

14. I hereby certify that the foregoing is true and correct

Name & Signature Dennis Plowman
Dennis Plowman

Title Reservoir Technician Date 11/21/95

(State Use Only)

(3/90)

See Instructions on Reverse Side

DTTS PKR @ 6010'

PERFS @: 6044'-92',6122'-32' FLUSH: 2300 Gal.

BREAKDOWN: PIPE WT. & SIZE: 9.3# 3 1/2

JOB TYPE: 30# Linear Gel CONTRACTOR: HALLIBURTON

STAGE	FLUID RATE BPM	N2 RATE CfPM	FOAM BPM	PSI	SAND #/GAL.	SAND SIZE	FLUID PER/STAGE
Pad	30.0			4400			
Pad	29.0			3210			10000 Gal
Frac	28.0			3155	1#	16/30	1000 Gal
Frac	27.9			3000	2#	16/30	2000 Gal
Frac	28.0			2850	4#	16/30	2000 Gal
Frac	26.7			2870	6#	16/30	2000 Gal
Frac	25.8			3525	8#	16/30	2000 Gal
Frac	25.0			5500	10#	16/30	141 Gal

PRE PRE TOTAL SAND: 31,700 16/30-13,000 16/30

ISIP: FG: N2 VOL.: 5 MIN ISIP:

FLUID VOLUME: 19,173 Gal. 10 MIN ISIP:

15 MIN ISIP:

FOAM VOLUME:

AVG RATE: 27 BPM AVG PSI: 3100 PSI

COMMENTS: SCREENED OUT!!!!! 31,700 in zone & 13,000 in pipe!!

WELL NAME & #: Disposal Well 31-0 DATE: 11/16/95

ZONE: Navajo Sandstone-Lower PLUG SET: Sand Plug @ 6140'

DTTS PKR @ 6015'

PERFS @: 6044'-92',6122'-36' FLUSH: 2400 Gal.

BREAKDOWN: PIPE WT. & SIZE: 9.3# 3 1/2

JOB TYPE: 30# Linear Gel CONTRACTOR: HALLIBURTON

STAGE	FLUID RATE BPM	N2 RATE CfPM	FOAM BPM	PSI	SAND #/GAL.	SAND SIZE	FLUID PER/STAGE
Pad	35.8			3900			6300 Gal
Frac	35.4			3780	1#	16/30	2000 Gal
Frac	35.5			3690	2#	16/30	2000 Gal
Frac	35.3			3620	4#	16/30	2000 Gal
Frac	34.3			4260	6#	16/30	4300 Gal
Flush	26.5			5000			2400 Gal

PRE PRE TOTAL SAND: 40,000 16/30

ISIP: 1177 FG: N2 VOL.: 5 MIN ISIP: 625

FLUID VOLUME: 19,162 Gal. 10 MIN ISIP: 575

15 MIN ISIP: 526

FOAM VOLUME: 30 MIN ISIP: 444

AVG RATE: 35 BPM AVG PSI: 3700 PSI 1 HR. ISIP: 400

1.5 HR. ISIP: 378

COMMENTS: GOOD JOB!!!!!!!! 2 HR. ISIP: 370

365 when opened!

WELL NAME & #: Disposal Well 31-0 DATE: 11/17/95
ZONE: Navajo Sandstone-Upper PLUG SET: 5973'
PKR SET @ 5817'
PERFS @: 5870'-5970' FLUSH: 2210 Gal.

BREAKDOWN: 4300# PIPE WT. & SIZE: 9.3# 3 1/2

JOB TYPE: 30# Linear Gel CONTRACTOR: HALLIBURTON

STAGE	FLUID RATE BPM	N2 RATE CfPM	FOAM BPM	PSI	SAND #/GAL.	SAND SIZE	FLUID PER/STAGE
Pad	31.5			2710			10000Gal.
Frac	30.7			2645	1#	16/30	1000 Gal.
Frac	33.2			2725	2#	16/30	2000 Gal.
Frac	31.8			2400	4#	16/30	2000 Gal.
Frac	35.0			2880	5#	16/30	6600 Gal.
Frac	39.0			3550	6#	16/30	4400 Gal.
Flush	39.8			4100			2210 Gal.

PRE PRE .598 TOTAL SAND: 78,000# 16/30
ISIP: 1232 FG: .64 N2 VOL.: 5 MIN ISIP: 822
FLUID VOLUME: 30,282 Gal. 10 MIN ISIP: 717
15 MIN ISIP: 643

FOAM VOLUME:
AVG RATE: 35 BPM AVG PSI: 2900 PSI

COMMENTS: GOOD JOB!!!!!

Form 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number: ML40521

7. Indian Allottee or Tribe Name: N/A

8. Unit or Communitization Agreement: Drunkards Wash UTU67921X

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.
Use APPLICATION FOR PERMIT— for such proposals

1. Type of Well: ☐ Oil Well ☐ Gas Well ☒ Other (specify) Disposal Well

9. Well Name and Number: American Quasar 31-01-D1

2. Name of Operator: River Gas of Utah, Inc.

10. API Well Number: 43-007-30040

3. Address of Operator: 511 Energy Center Blvd., Northport, AL 35476

4. Telephone Number: (205) 759-3282

11. Field and Pool, or Wildcat: Wildcat

5. Location of Well
Footage : 1552' FWL & 999' FSL
QQ, Sec, T., R., M. : (SE/4 of SW/4) SEC 31, T14S, R10E
County : Carbon
State : UTAH

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT (Submit in Duplicate)

- ☐ Abandonment
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Multiple Completion
- ☐ Other
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Recompletion
- ☒ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Approximate Date Work Will Start: ASAP

SUBSEQUENT REPORT (Submit Original Form Only)

- ☐ Abandonment *
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
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- ☐ New Construction
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- ☐ Water Shut-Off

Date of Work Completion

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.
* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

River Gas plans to perforate the following intervals on the American Quasar 31-01-D1: 5840-5870', 6002-6006', 6018-6044'. A 4" casing gun will be used to perforate at 4 spf with a 0.6" entry hole.

RECEIVED
JUL 15 1996
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct

Name & Signature: Dennis P. Lowerman Title: Reservoir Tech. Date: 07/09/96

(State Use Only)

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 7-25-96
BY:

(8/90)

See Instructions on Reverse Side

Form 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number: ML40521

7. Indian Allottee or Tribe Name: N/A

8. Unit or Communitization Agreement: Drunkards Wash UTU67921X

SUNDRY NOTICES AND REPORTS ON WELLS

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Use APPLICATION FOR PERMIT — for such proposals.

1. Type of Well: ☐ Oil Well ☐ Gas Well ☒ Other (specify) Disposal Well

9. Well Name and Number: American Quasar 31-01-D1

2. Name of Operator: River Gas of Utah, Inc.

10. API Well Number: 43-007-30040

3. Address of Operator: 511 Energy Center Blvd., Northport, AL 35476

4. Telephone Number: (205) 759-3282

11. Field and Pool, or Wildcat: Wildcat

5. Location of Well
Footage : 1552' FWL & 999' FSL
QQ, Sec, T., R., M. : (SE/4 of SW/4) SEC 31, T14S, R10E
County : Carbon
State : UTAH

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NOTICE OF INTENT (Submit in Duplicate)

- ☐ Abandonment
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- ☐ Pull or Alter Casing
- ☐ Recompletion
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Approximate Date Work Will Start _____

SUBSEQUENT REPORT (Submit Original Form Only)

- ☐ Abandonment *
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
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- ☐ Water Shut-Off

Date of Work Completion 07/26/96

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.

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13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

On July 26, 1996 the following intervals were perforated on the American Quasar 31-01-D1 at 4 spf: 5840-70', 6002-06', 6018-44'.

RECEIVED
AUG 0 8 1996
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct

Name & Signature Dennis Plowman *Dennis Plowman* Title Reservoir Technicia Date 08/02/96

(State Use Only)

(8/90)

See Instructions on Reverse Side

Form 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number: ML40521

7. Indian Allottee or Tribe Name:

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.
Use APPLICATION FOR PERMIT— for such proposals

8. Unit or Communitization Agreement: Drunkards Wash UTU67921X

1. Type of Well: ☐ Oil Well ☐ Gas Well ☒ Other (specify) Disposal Well

9. Well Name and Number: American Quasar 31-01-D1

2. Name of Operator: River Gas Corporation

10. API Well Number: 43-007-30040

3. Address of Operator: 511 Energy Center Blvd. Northport, AL 35476

4. Telephone Number: (205) 759-3282

11. Field and Pool, or Wildcat:

5. Location of Well
Footage : 1552' FWL & 999' FSL
QQ, Sec, T., R., M. : SE/SW Sec 31, T14S, R10E
County : Carbon
State : UTAH

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- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Recompletion
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off
- ☒ Other Request change in UIC pressure

Approximate Date Work Will Start _____

SUBSEQUENT REPORT (Submit Original Form Only)

- ☐ Abandonment *
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Other _____
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- ☐ Pull or Alter Casing
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- ☐ Water Shut-Off

Date of Work Completion _____

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13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

River Gas requests that the UIC permit for the American Quasar 31-01-D1 be amended to allow an increase in the Maximum Allowable Surface Pressure from 850 psig to 1350 psig. The data supporting this request is included in the attached Stim-Lab report.

RECEIVED
SEP 24 1996
DIV OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct

Name & Signature: Dennis Plowman *Dennis Plowman* Title: Reservoir Technician Date: 09/23/96

(State Use Only)

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 10-1-96
BY: [illegible]

(3/90) See Instructions on Reverse Side

ANALYSIS OF STRESS PROFILE IN THE INJECTION WELLS AT DRUNKARD'S WASH

PREPARED FOR:

RIVER GAS CORPORATION
3600 WATERMELON ROAD
NORTHPORT, ALABAMA 35476

PREPARED BY:

STIM-LAB, INC.
7406 NORTH HWY 81
DUNCAN, OKLAHOMA 73534

P.O. NUMBER: VERBAL/JOHN HOLLINGSHEAD
FILE NUMBER: SL 4503

SEPTEMBER 20, 1996

ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM SAMPLES AND LOGS WHICH WERE SUPPLIED. WE CANNOT, AND DO NOT, GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATIONS, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE.

STIM-LAB Inc.

ANALYSIS OF STRESS PROFILE IN THE INJECTION WELLS AT DRUNKARDS WASH

Well D-3 was completed in late May ,1996 and an extensive logging and testing program was conducted to identify the stress conditions present in the reservoir. The dipole sonic log is the principal log used to identify the rock properties which lead to the stress condition present in the reservoir. There are a number of factors which contribute to the total stress present in the reservoir. The most important are the lithostatic stress, tectonic stress and pore pressure. A clear understanding of the role of each is needed to understand the *in-situ* stresses. Unfortunately, the normal procedures used in the industry to calibrate stress logs is so far removed from first principals that it is difficult to apply reported results from one well to another. If carefully conducted and interpreted injection stress measurements are made in all lithologies present in the wellbore, then local correlations could be made with some log parameters to apply to other wells in the near vicinity of the research well. Unfortunately, the injection stress tests are prohibitively expensive and practically there is never enough test data available to apply this approach. Using first principals, injection tests in the primary zone, and 3-D hydraulic fracture modeling studies, the stress state in well D-3 can be described with adequate understanding to apply to other wells.

Currently 3 wells have been completed and tested in the Navajo Sandstone. The surface pressure required to extend a fracture in the upper part of the Navajo Sandstone ranges from approximately 500 to 1500 psi. The stress model must honor this information as well as the analytical data collected on well D-3.

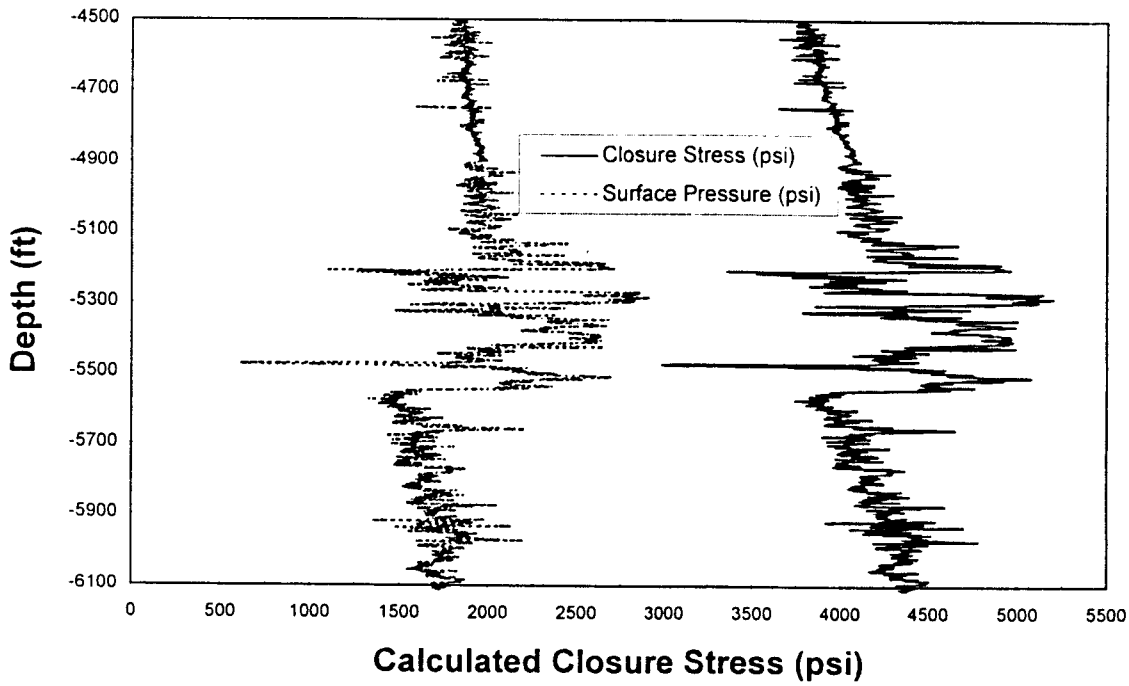
There are two key pressures related to fracturing. The easiest to measure is the fracture parting pressure (fracture extension pressure). This is the value obtained from analysis of the step-rate test and often approximated by the instantaneous shut-in pressure after injecting into the reservoir. The second in the fracture closure pressure. This is much more difficult to determine accurately and is determined from the analysis of the decline pressure observed during the fall-off after injecting fluid. This is also the value calculated from logs and needed for the 3-D hydraulic fracturing simulations. Fortunately, the computer simulations and pressure fall-off tests show that the closure pressure is reasonably predictable and is 300-400 psi below the fracture extension pressure.

Tectonic Strain:

The area has been tectonically active and is confirmed by the presence of a thrust fault in the vicinity of the Navajo Sandstone in D-3 at about 5200 ft. When a horizontal strain is placed on heterogeneous, layered rock mass; the stiffer rocks (measured as higher Young's Modulus) will bear the majority of the load because they deform less. This is in fact the definition of Young's Modulus where strain = change in length divided by the total length and Young's modulus is the slope of the stress-strain curve. The result is higher *in-situ* stress in the high modulus rocks. This is particularly important in siltstone-sandstone sequences such as are present in the gross Navajo Sand interval. The total closure stress shown in figure 1 is computed from the lithostatic stress + pore pressure + linear tectonic strain. Since the fluid enters the reservoir from perforations starting at the first permeable section in the Navajo Sand, the pressure applied at any depth is basically the surface pressure + the hydrostatic pressure. Therefore the second curve is computed to show the surface pressure that would be required (with fluid entry through the perforations at 5560 ft and deeper) to exceed the calculated closure stress.

STIM-LAB Inc.

Figure 1: Injection Test Calibrated - Log Derived Stress Profile for D3



The fracture parting pressure calculated at a reference depth of 5560 ft in 4106 psi (1475 psi surface). The stress components required to give this pressure are:

1. Lithostatic Stress = 803.7 psi
2. Pore Pressure = 2170.2 psi
3. Tectonic Stress = 853.0 psi
4. Net Closure Stress = 279.0 psi (fracture extension - fracture closure pressure)

The strongest rock in the wellbore is the two major anhydrite stringers at 5184-5207 and 5270-5304 ft. followed by the highly cemented siltstones at 5350-5420 and 5500-5550 ft. All these zones have significant areas where the closure stress value is easily 1000 psi or more greater than the closure stress in the permeable area.

Lithostatic Stress:

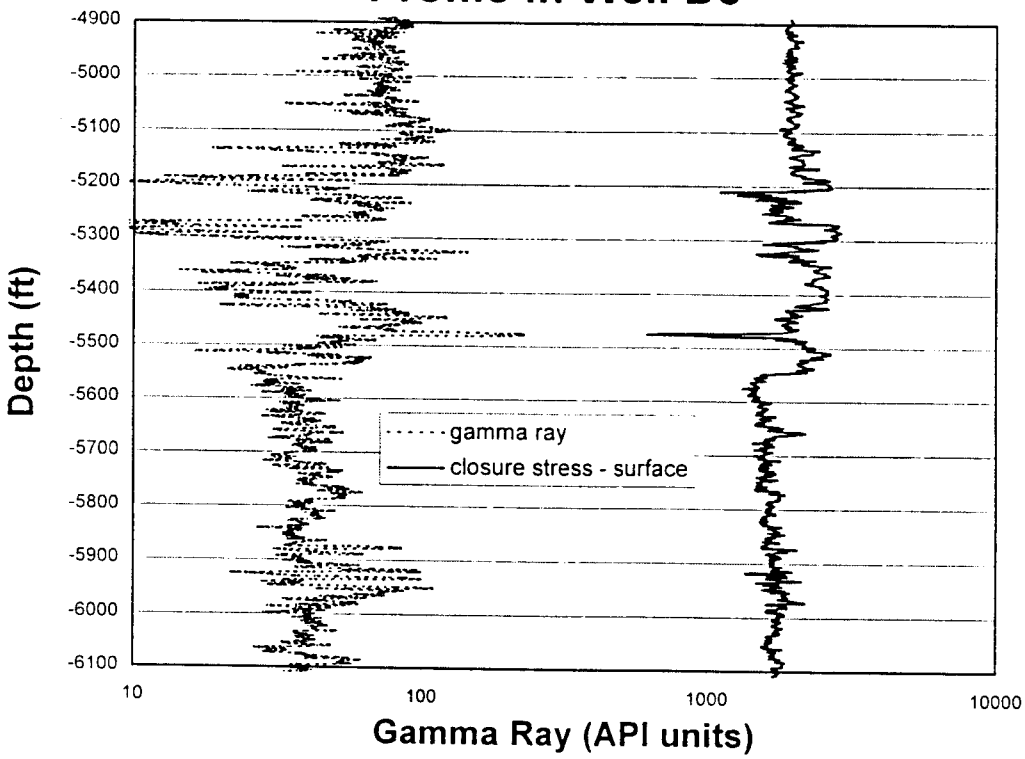
There is a second mechanism that creates higher stress that is not included in the calculated stresses in figure 1. The load placed on a particular rock layer by the weight of the overburden creates a horizontal stress. Poisson's ratio is a measure of the amount of horizontal stress created by the load. The lithostatic stress is equal to Poisson's ratio divided by (1 - Poisson's ratio) multiplied by the vertical stress. The Poisson's ratio measured by logs and in the laboratory is due to the elastic nature of rock. However, certain rock types, namely shales, coal and limestone behave like a plastic and there is some permanent deformation that creates addition horizontal stress.

STIM-LAB Inc.

This behavior has been confirmed in the shales in this area. When the Wingate (perfs at 6030-6040 ft) pre-frac step rate test was conducted, the pressure analysis showed that the fracture did not breach the barriers at approximately 5950 ft. This same barrier was not breached during the fracturing treatment and the shales in this area are believed to be the additional higher stress layer responsible for the fracture containment.

The data collected at the GRI/DOE multiwell research site, shows some shales have stresses equal to the overburden stress. This corresponds to a Poisson's ratio equal to 0.5 rather than the 0.35 value measured by the logs. Stimulation treatments conducted in the shaley parts of the Ferron sand interval confirm that the stresses must be equal to the overburden in the coals and shales to create the high fracturing treating pressures observed. The gamma ray spectrum is shown in figure 2 and shows that there are a large number of shale layers above 5550 ft which create even higher stress barriers than those previously calculated for the siltstones and anhydrite and shown in figure 2 for comparison. Therefore we have concluded that there are a number of barriers which would prevent upward fracture growth when the injection pressure is 1000 psi above the fracture extension pressure measured in the upper Navajo sand.

Figure 2: Gamma Ray and Surface Pressure Profile in Well D3



STIM-LAB Inc.

Recommendation

This would suggest that the surface injection pressure maximums in the injection wells could safely be increased to 1500 psi in D-1, 1600 psi in D-2 and 2500 psi in D-3. This in based on considering that the lower fracturing gradient in the Navajo Sand in D-1 and D-2 is due to a reduced tectonic stress in these wells. The reduction in stress in the Navajo Sand due to lower tectonic stress is more than would be observed in the anhydrites and siltstones but we do not have adequate information to predict how much higher they would be over the minimum used to make these recommendations.

The stress in the shales is not very sensitive to tectonic stress and therefore we know we are significantly underestimating the strength of the barriers in both D-1 and D-2. A surface pressure of 1500 psi at 5000 ft is equivalent to a stress gradient of 0.73 and is significantly less than the stresses normally measured in shales.

Form 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

AUG 25 1997

DIV. OF OIL, GAS & MINING

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.
Use APPLICATION FOR PERMIT— for such proposals

6. Lease Designation and Serial Number: ML40521

7. Indian Allottee or Tribe Name: N/A

8. Unit or Communitization Agreement: Drunkards Wash UTU67921X

1. Type of Well: ☐ Oil Well ☐ Gas Well ☒ Other (specify) Disposal Well

9. Well Name and Number: American Quasar 31-01-D1

2. Name of Operator: River Gas of Utah, Inc.

10. API Well Number: 43-007-30040

3. Address of Operator: 511 Energy Center Blvd., Northport, AL 35476

4. Telephone Number: (205) 759-3282

11. Field and Pool, or Wildcat: Wildcat

5. Location of Well
Footage : 1552' FWL & 999' FSL
QQ, Sec, T., R., M. : (SE/4 of SW/4) SEC 31, T14S, R10E
County : Carbon
State : UTAH

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT (Submit in Duplicate)

- ☐ Abandonment
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Multiple Completion
- ☐ Other
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Recompletion
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Approximate Date Work Will Start _____

SUBSEQUENT REPORT (Submit Original Form Only)

- ☐ Abandonment *
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☒ Other Tracer/Temperature Log
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Date of Work Completion 8-7-1997

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.

* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

On 8-7-97, Production Logging Services of Vernal, Ut conducted a tracer/temperature log on the above well. Small amounts of Iodine tracer were injected above the perf's as the well was under normal operating conditions. A gamma tool was utilized to record the locations where the tracer material entered the wellbore. The temperature tool was also used to ascertain water entry into the wellbore. The approximate water injection rate during this test was 8400 bwpd at 1350 psi. The results of the test indicates that no behindpipe channeling occurred. Also, a copy of the log is enclosed for your review.

14. I hereby certify that the foregoing is true and correct

Name & Signature John Hollingshead Title Reservoir Engr. Date 8-18-1997

(State Use Only)

(8/90)

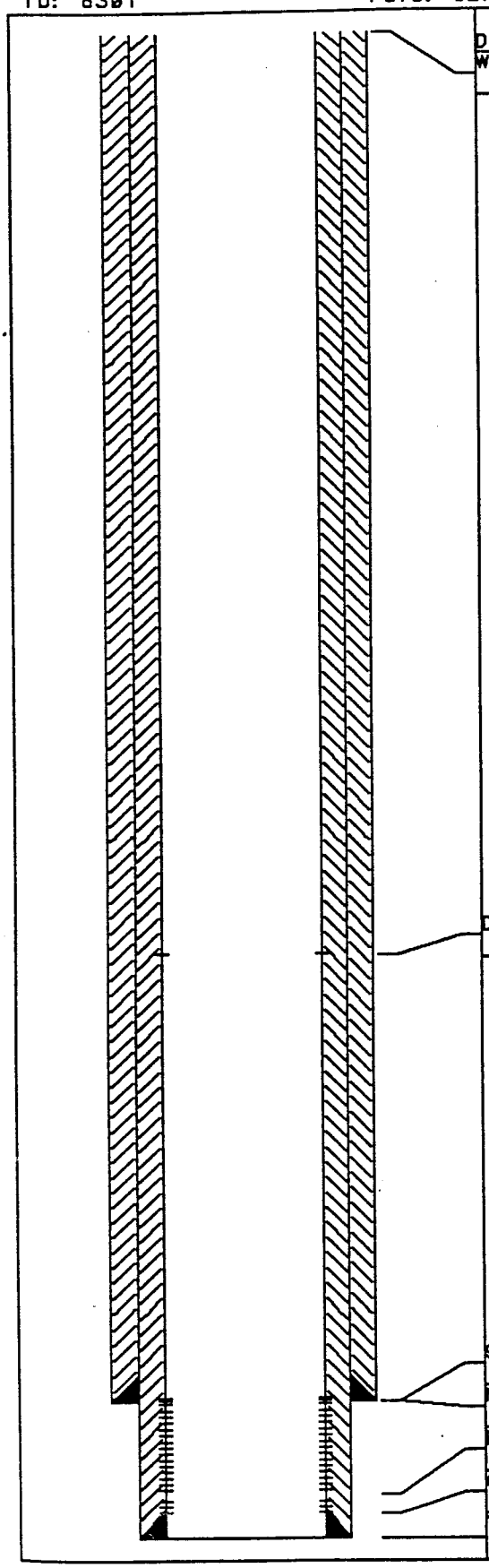
See Instructions on Reverse Side

Lease: Utah
Well #: 31-01-D1

Drilled: 08/23/1993
KB: 11
TD: 6301

Completed: 08/17/1994
ELEV: 5718
PBTD: 6271

API #: 43-[illegible]-30040
Location: SE/4 SW/4 Sec 31, T14S, R10E
Cnty/St: Carbon/Utah
Footages: 1552' FWL & 999' FSL
Field: Drunkards Wash
Operator: River Gas Corporation



Description

Well Reviewed: 7/26/96 (Well Was A Re-Entry For Disposal)

DV-Tool @ 3860'

9 5/8" Casing Set @ 5740' (From Original Completion)

Note: Perfs Added 7/26/96 5840-70, 6002-06, 6018-44

Perfs: 5726-5800, 5840-70, 5870-5970, 5980-6002, 6002-6006, 6018-6044, 6044-6092, 6122-6132, 6156-6210

7", 26# Casing Set @ 6301', PBTD @ 6271', DV Tool @ 3798'

WELL: UTAH 31-01-D1 **DATE: 04/21/99**

CASING.....: 7" 26# SURFACE-6291'

PBTD.....: 6271.00

PERFORATIONS:
5726'-5800'
5840'-5870'
5870'-5970'
5980'-6002'
6002.5'-6006'
6018'-6044'
6044.5'-6092'
6122'-6132'
6156'-6210'

43-007-30077
T14S R10E S. 31

RGC

FIELD..: DRUNKARDS WASH
WELL NO: UTAH #31-01-D1

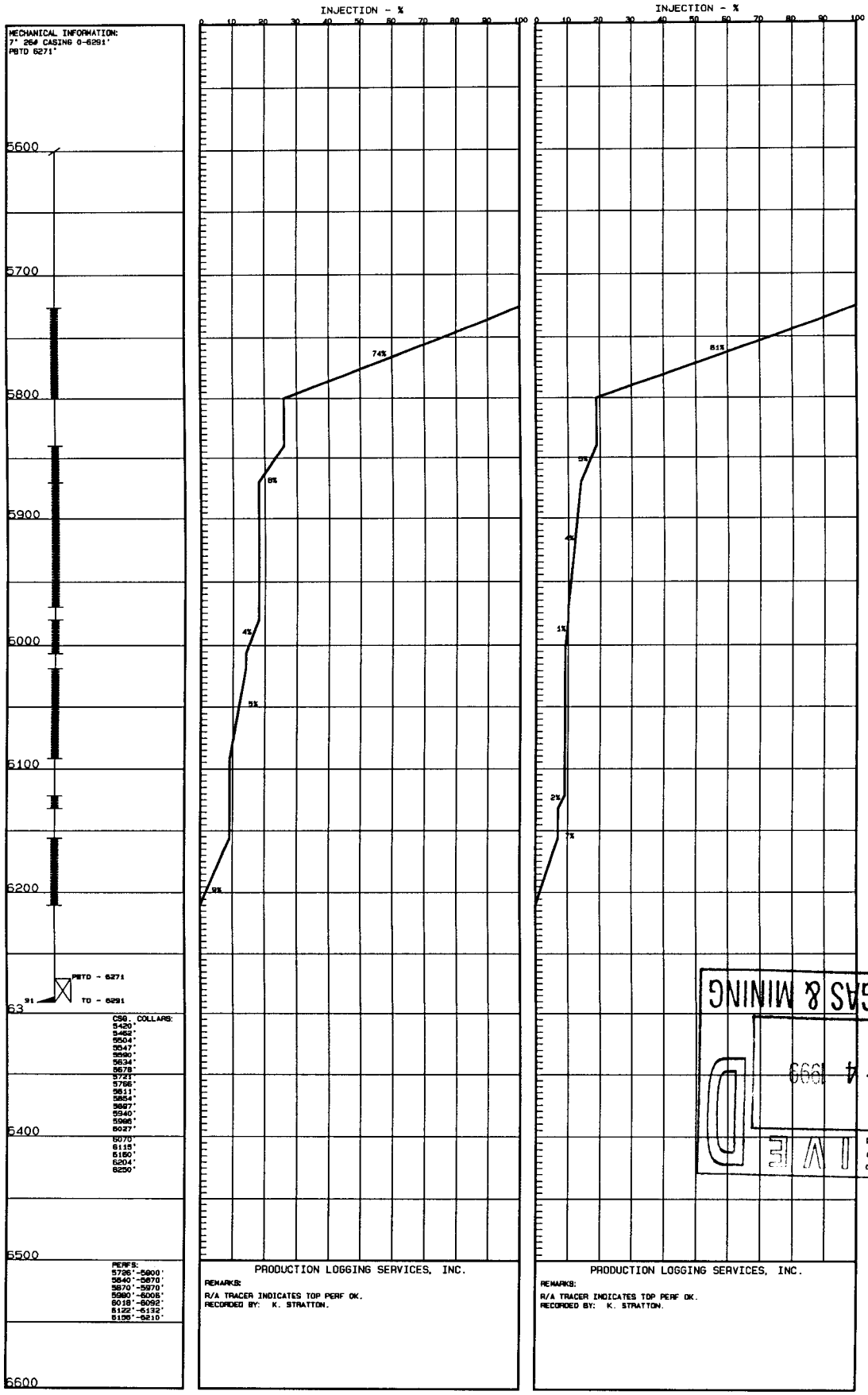
SURVEY DATA
RUN No: 1

SURVEY TYPE.:	T-S-T	SURFACE TEMP:	70.9 F.
DATE.....:	08/07/97	BHT.....:	102.0 F.
METERED RATE:	8400 B/D	TBG PRESSURE:	1350 PSI
MEASRED RATE:	8550 B/D	CSG PRESSURE:	N/A
DESIRED RATE:	8400 B/D	PICK-UP.....:	6265'
SERVICE CO..:	PLS		

SURVEY DATA
RUN No: 2

SURVEY TYPE.:	T-S-T	SURFACE TEMP:	55.7 F.
DATE.....:	04/21/99	BHT.....:	103.0 F.
METERED RATE:	8000 B/D	TBG PRESSURE:	1300 PSI
MEASRED RATE:	7980 B/D	CSG PRESSURE:	N/A
DESIRED RATE:	8000 B/D	PICK-UP.....:	6261'
SERVICE CO..:	PLS		

MECHANICAL INFORMATION:
7" 26# CASING 0-6291'
PBTD 6271'



PRODUCTION LOGGING SERVICES, INC.

REMARKS:
R/A TRACER INDICATES TOP PERF OK.
RECORDED BY: K. STRATTON.

PRODUCTION LOGGING SERVICES, INC.

REMARKS:
R/A TRACER INDICATES TOP PERF OK.
RECORDED BY: K. STRATTON.

RECEIVED
MAY - 4 1999
DIV. OF OIL, GAS & MINING

INSPECTION FORM 6

STATE OF UTAH
DIVISION OF OIL GAS AND MINING

INJECTION WELL - PRESSURE TEST

Well Name: WELL No. 31-1 D-1 API Number: 43-007-30040

Qtr/Qtr: SE/SW Section: 31 Township: 14S Range: 10E

Company Name: RIVER GAS CORPORATION

Lease: State ____ Fee ____ Federal ____ Indian ____

Inspector: Dennis Ingram Date: 11-8-2000

Initial Conditions:

Tubing - Rate: ____ Pressure: — psi

Casing/Tubing Annulus - Pressure: 1150 psi

Conditions During Test:

Time (Minutes)	Annulus Pressure	Tubing Pressure
0	1370 PSI	—
5	1370 PSI	
10	1370 PSI	
15	1370 PSI	
20	1370 PSI	
25	1370 PSI	
30	1370 PSI	

Results: Pass/Fail

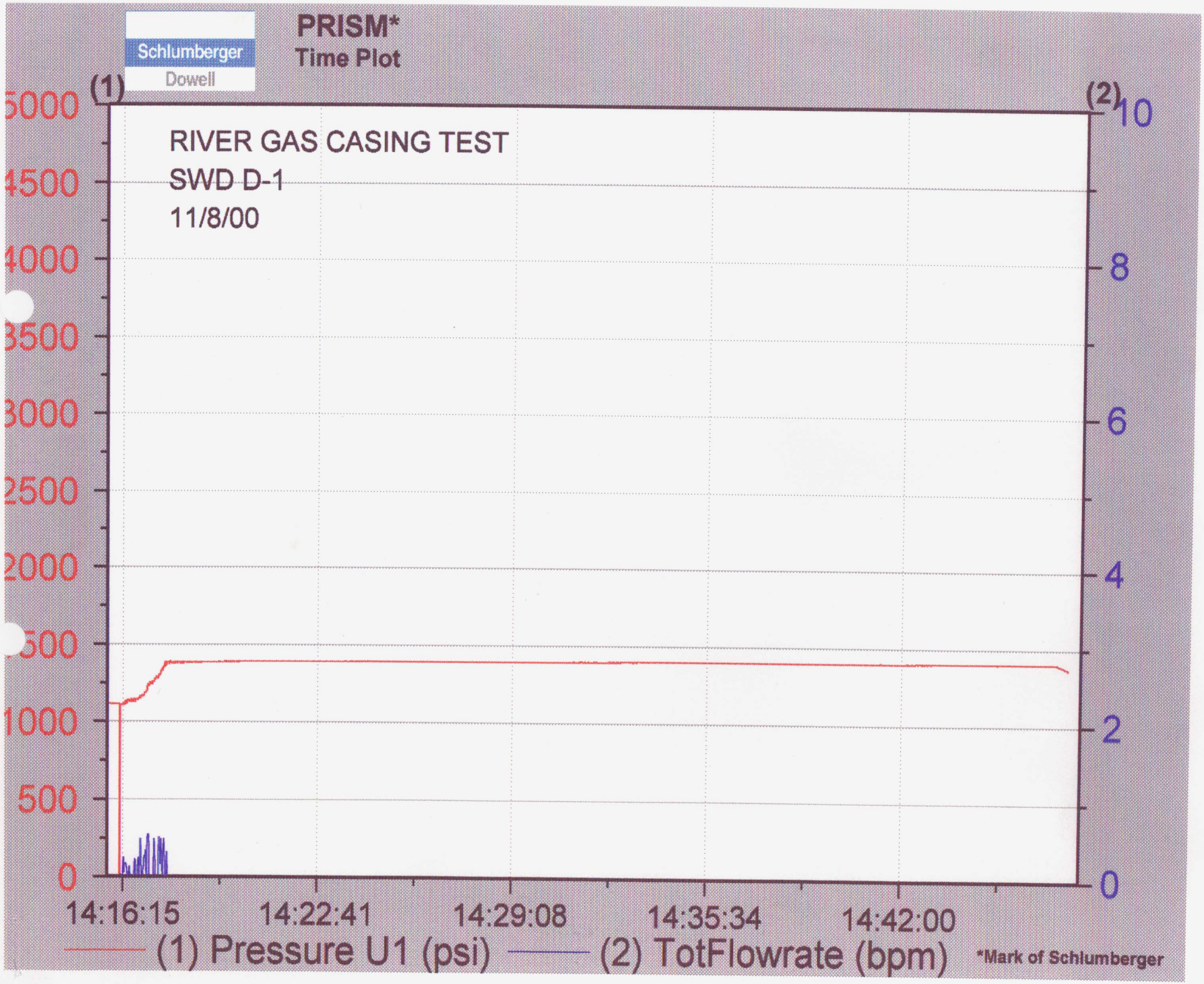
Conditions After Test:

Tubing Pressure: — psi

Casing/Tubing Annulus Pressure: 1150 psi

COMMENTS: Tested for 5 year rule. Tested @ 2:15 to 2:45 PM no leak off

Operator Representative


Schlumberger
Dowell
PRISM*
Time Plot
RIVER GAS CASING TEST
SWD D-1
11/8/00
(1)
(2)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
10
8
6
4
2
0
14:16:15
14:22:41
14:29:08
14:35:34
14:42:00
(1) Pressure U1 (psi)
(2) TotFlowrate (bpm)
*Mark of Schlumberger

Schlumberger
Dowell
PRISM*
Time Plot
RIVER GAS CASING TEST
SWD D-1
11/8/00
(1)
(2)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
10
8
6
4
2
0
14:16:15
14:22:41
14:29:08
14:35:34
14:42:00
(1) Pressure U1 (psi)
(2) TotFlowrate (bpm)
*Mark of Schlumberger

INSPECTION FORM 5

STATE OF UTAH
DIVISION OF OIL GAS AND MINING

INJECTION WELL - INSPECTION RECORD

Well Name: D-1 API Number: 43-007-30040
Qtr/Qtr: SE/SW Section: 31 Township: 14S Range: 10E
Company Name: River Gas Corporation

Lease: State ____ Fee ____ Federal X Indian ____
Inspector: Dennis L. Ingram Date: 04/06/00

Injection Type:

Disposal: WDW Enhanced Recovery: ____ Other: ____

Injecting: Yes Shut-In: ____

Rate: 7176 (bpd) Totalizer: 912757 (bbls)

Gauges: Tubing: Yes

Casing: Yes Casing Pressure: 0 (psig)

Tubing Pressure: 1375 (psig) Housekeeping: Good, clean

Equipment Condition: Good

COMMENTS: Barton recorder with chart is inking. Tanks are bermed, looks good. Lined evaporation pit, pump is not running. Pit has 6' freeboard.

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING		
1. GLH ✓		4-KAS ✓
2. CDW		5-~~SJ~~ ✓
3. JLT		6-FILE

Enter date after each listed item is completed

Change of Operator (Well Sold) — Designation of Agent

Operator Name Change (Only) — **X Merger**

The operator of the well(s) listed below has changed, effective: **12-31-2000**

FROM: (Old Operator):	**TO:** (New Operator):
RIVER GAS CORPORATION	PHILLIPS PETROLEUM COMPANY
Address: 6825 S. 5300 W. P. O. BOX 851	Address: P. O. BOX 3368
PRICE, UT 84501	ENGLEWOOD, CO 80155-3368
Phone: 1-(435)-613-9777	Phone: 1-(720)-344-4984
Account N1605	Account N1475

CA No. **Unit: DRUNKARDS WASH**

WELL(S)

NAME	API NO.	ENTITY NO.	SEC. TWN RNG	LEASE TYPE	WELL TYPE	WELL STATUS
FAUSETT D5	43-007-30351	12165	16-14S-09E	Fee	SWD	A
ARCADIA-TELONIS 1 (D-2)	43-007-30093	99990	19-14S-09E	Fee	SWD	A
UTAH D-4	43-007-30314	11256	24-14S-09E	State	SWD	A
UTAH M-1	43-007-30199	11256	26-14S-09E	State	SWD	A
UTAH D-9	43-007-30438	12771	32-14S-09E	State	SWD	A
USA D6	43-007-30100	12466	34-14S-09E	Federal	SWD	A
DRUNKARDS WASH 31-1 (D-1)	43-007-30040	11256	31-14S-10E	State	SWD	A
UTAH D8	43-007-30431	11256	12-15S-09E	State	SWD	A
RGC D-10	43-007-30520	12545	28-15S-09E	Fee	SWD	A
UTAH M-2	43-007-30066	2889	34-15S-09E	Federal	TW	A
SAMPINOS D-14	43-007-30567	12729	16-15S-10E	Fee	SWD	A
UTAH D-3	43-007-30290	11256	18-15S-10E	State	SWD	A
UTAH D7	43-015-30338	12404	02-16S-09E	State	SWD	A
D-11	43-015-30356	12572	13-16S-09E	Federal	SWD	A

OPERATOR CHANGES DOCUMENTATION

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 01/29/2001
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 01/29/2001
3. The new company has been checked through the **Department of Commerce, Division of Corporations Database on:** 02/15/2001

4. Is the new operator registered in the State of Utah: YES Business Number: 562960-0143

5. If **NO**, the operator was contacted contacted on: _____

6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the (merger, name change, or operator change for all wells listed on Federal or Indian leases on: 01/30/2001

7. **Federal and Indian Units:** The BLM or BIA has approved the successor of unit operator for wells listed on: N/A

8. **Federal and Indian Communization Agreements ("CA"):** The BLM or the BIA has approved the operator change for all wells listed involved in a CA on: N/A

9. **Underground Injection Control ("UIC") Pro** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: 02/22/2001

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 02/20/2001

2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 02/20/2001

3. Bond information entered in RBDMS on: N/A

4. Fee wells attached to bond in RBDMS on: N/A

STATE BOND VERIFICATION:

1. State well(s) covered by Bond No.: 5952189

FEE WELLS - BOND VERIFICATION/LEASE INTEREST OWNER NOTIFICATION:

1. (R649-3-1) The **NEW** operator of any fee well(s) listed has furnished a bond: P-207328

2. The **FORMER** operator has requested a release of liability from their bond on: N/A
   The Division sent response by letter on: N/A

3. (R649-2-10) The **FORMER** operator of the Fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: N/A

FILMING:

1. All attachments to this form have been **MICROFILMED** on: 2·22·01

FILING:

1. **ORIGINALS/COPIES** of all attachments pertaining to each individual well have been filled in each well file on: _____

COMMENTS:

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155

In Reply Refer To:
3106
UTU-47157 et al
(UT-932)

JAN 30 2001

NOTICE

Phillips Petroleum Company Attn: W. H. Rainbolt, Rocky Mtn. Region-Land Box 1967 Houston, TX 77251-1967	: : : :	Oil and Gas

Merger Recognized

Acceptable evidence has been filed in this office concerning the merger of River Gas Corporation into Phillips Petroleum Company with Phillips Petroleum Company being the surviving entity.

The oil and gas lease files and rights-of-way files identified on the enclosed exhibit have been noted as to the merger. The exhibit is the list supplied by the representative of the companies, and verified by our computerized records. We have not adjudicated the case files to determine if the entity affected by the merger holds an interest in the leases identified, nor have we attempted to identify leases where the entity is the operator on the ground, maintaining no vested record title or operating rights interest. We are notifying the Minerals Management Service and all applicable BLM offices of the merger by a copy of this notice. If additional documentation for a change of operator is required by our Field Offices, you will be contacted by them.

By recognition of the merger the obligor is automatically changed by operation of law from River Gas Corporation to Phillips Petroleum Company on Letter of Credit No. P-207337 (BLM Bond No. UT0829). A rider to BLM Bond No. ES0048 assuming any and all liabilities of BLM Bond No. UT0829 must be submitted for approval to the Eastern States Office, Attn: Bill Forbes, 7450 Boston Boulevard, Springfield, VA 22153. After the rider is approved, the Letter of Credit will be returned to the financial institution that issued it.

ROBERT LOPEZ

Robert Lopez
Chief, Branch of
Minerals Adjudication

Enclosure
Exhibit of Leases

RECEIVED
FEB 02 2001
DIVISION OF
OIL, GAS AND MINING

cc: Moab Field Office
Vernal Field Office
Price Field Office
MMS–Reference Data Branch, MS 3130, P.O. Box 5860, Denver, CO 80217
State of Utah, DOGM, Attn: Jim Thompson (Ste. 1210), Box 145801, SLC, UT 84114
The Chase Manhattan Bank, Attn: Standby Letter of Credit Dept., 4 Chase Metrotech Center, 8th Floor
Brooklyn, NY 11245
Teresa Thompson (UT-931)
LaVerne Steah (UT-942)
Pruitt, Gushee & Bachtell, Attn: Frederick M. MacDonald, Suite 1850 Beneficial Life Tower,
Salt Lake City, Utah 84111-1495
BLM, Eastern States Office (Attn: Bill Forbes)

LAW OFFICES
PRUITT, GUSHEE & BACHTELL
SUITE 1850 BENEFICIAL LIFE TOWER
SALT LAKE CITY, UTAH 84111-1495
(801) 531-8446
TELECOPIER (801) 531-8468
E-MAIL: mail@pgblaw.com

THOMAS W. BACHTELL
A. JOHN DAVIS, III
JOHN W. ANDERSON
FREDERICK M. MACDONALD
GEORGE S. YOUNG
ANGELA L. FRANKLIN
JOHN S. FLITTON
MICHAEL S. JOHNSON
WILLIAM E. WARD

SENIOR COUNSEL:
ROBERT G. PRUITT, JR.
OLIVER W. GUSHEE, JR.

OF COUNSEL:
ROBERT G. PRUITT, III
BRENT A. BOHMAN

January 29, 2001

HAND DELIVERED

Mr. Jim Thompson
Utah Division of Oil, Gas & Mining
1594 W. North Temple
Salt Lake City, UT 84116

Re: River Gas/Phillips Merger

Dear Mr. Thompson:

As you may know, River Gas Corporation ("RGC") merged into Phillips Petroleum Company ("Phillips") effective December 31, 2000 at 11:59 p.m. I have enclosed a Certificate of Articles of Merger issued by the Utah Department of Commerce and, although duplicative, a sundry notice formally evidencing the merger for your records, and a list of all wells, including injection wells, formerly operated by RGC.

Please change the Division's records to reflect the change in operator of these wells from RGC to Phillips. All operational questions should be directed to Phillips at the following address:

Phillips Petroleum Company
Attn: Billy Stacy, Operations Manager
P.O. Box 3368
Englewood, CO 80155-3368
Telephone No.: (720) 344-4984

Phillips currently has a bond on file with the Division (a copy of which is enclosed for your reference), but I understand an $80,000 Letter of Credit is in the process of being substituted.

On behalf of Phillips, I thank you for your cooperation. Should you have any further questions or concerns, please do not hesitate to contact me.

Yours very truly,

Frederick M. MacDonald

FMM:cs
2078.16
Enclosures
cc: W. H. Rainbolt
Billy Stacy

Utah Department of Commerce
Division of Corporations & Commercial Code
160 East 300 South, 2nd Floor, Box 146705
Salt Lake City, UT 84114-6705
Phone: (801) 530-4849
Toll Free: (877) 526-3994 Utah Residents
Fax: (801) 530-6438
Web site: http://www.commerce.state.ut.us

Registration Number: 562960-0143 01/12/01
Business Name: PHILLIPS PETROLEUM COMPANY
Registered Date: JUNE 14, 1946

CERTIFICATE OF ARTICLES OF MERGER

THE UTAH DIVISION OF CORPORATIONS AND COMMERCIAL CODE ("DIVISION") HEREBY CERTIFIES THAT

ARTICLES OF MERGER WERE FILED WITH THIS OFFICE ON DECEMBER 12, 2000 MERGING RIVER GAS CORPORATION, A CORPORATION OF THE STATE OF ALABAMA, INTO PHILLIPS PETROLEUM COMPANY, THE SURVIVING CORPORATION WHICH IS OF THE STATE OF DELAWARE, AS APPEARS OF RECORD IN THE OFFICE OF THE DIVISION.

Ric Campbell
Acting Division Director of
Corporations and Commercial Code

GSN 00 171151

State of Delaware

PAGE 1

Office of the Secretary of State

Date: 12/13/2000
Receipt Number: 188532
Amount Paid: $145.00

I, EDWARD J. FREEL, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF OWNERSHIP, WHICH MERGES:

"RIVER GAS CORPORATION", A ALABAMA CORPORATION,

WITH AND INTO "PHILLIPS PETROLEUM COMPANY" UNDER THE NAME OF "PHILLIPS PETROLEUM COMPANY", A CORPORATION ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF DELAWARE, AS RECEIVED AND FILED IN THIS OFFICE THE SIXTH DAY OF DECEMBER, A.D. 2000, AT 10 O'CLOCK A.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE EFFECTIVE DATE OF THE AFORESAID CERTIFICATE OF OWNERSHIP IS THE THIRTY-FIRST DAY OF DECEMBER, A.D. 2000, AT 11:59 O'CLOCK A.M.

A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS.

12-12-00P04:02 RCVD

State of Utah
Department of Commerce
Division of Corporations and Commercial Code
I Hereby certify that the foregoing has been filed and approved on this 12 day of Dec 20 00 in the office of this Division and hereby issue this Certificate thereof.

Examiner _____ Date 12/28/00

RIC CAMPBELL
ACTING DIRECTOR

TAB
FILED
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Utah Div. Of Corp. & Comm. Code

Edward J. Freel, Secretary of State

0064324 8100M

AUTHENTICATION: 0837738

001609453

DATE: 12-07-00

STATE OF DELAWARE
SECRETARY OF STATE
DIVISION OF CORPORATIONS
FILED 10:00 AM 12/06/2000
001609453 - 0064324

CERTIFICATE OF OWNERSHIP AND MERGER

OF

RIVER GAS CORPORATION

(an Alabama corporation)

into

Phillips Petroleum Company

(a Delaware corporation)

It is hereby certified that:

1. Phillips Petroleum Company [hereinafter sometimes referred to as the "Corporation"] is a business corporation of the State of Delaware.

2. The Corporation is the owner of all of the outstanding shares of each class of stock of River Gas Corporation, which is a business corporation of the State of Alabama.

3. The laws of the jurisdiction of organization of River Gas Corporation permit the merger of a business corporation of that jurisdiction with a business corporation of another jurisdiction.

4. The Corporation hereby merges River Gas Corporation into the Corporation.

5. The following is a copy of the resolutions adopted on November 21, 2000 by the Board of Directors of the Corporation to merge the said River Gas Corporation into the Corporation:

> "1. Phillips Petroleum Company, which is a business corporation of the State of Delaware and is the owner of all of the outstanding shares of River Gas Corporation, which is a business corporation of the State of Alabama, hereby merges River Gas Corporation into Phillips Petroleum Company pursuant to the provisions of the Alabama Business Corporation Act and pursuant to the

12-12-00P04:02 RCVD

provisions of Section 253 of the General Corporation Law of Delaware.

"2. The separate existence of River Gas Corporation shall cease at the effective time and date of the merger pursuant to the provisions of the Alabama Business Corporation Act; and Phillips Petroleum Company shall continue its existence as the surviving corporation pursuant to the provisions of Section 253 of the General Corporation Law of Delaware.

"3. The Articles of Incorporation of Phillips Petroleum Company are not amended in any respect by this Plan of Merger.

"4. The issued shares of River Gas Corporation shall not be converted or exchanged in any manner, but each said share which is issued immediately prior to the effective time and date of the merger shall be surrendered and extinguished.

"5. Each share of Phillips Petroleum Company outstanding immediately prior to the effective time and date of the merger is to be an identical outstanding share of Phillips Petroleum Company at the effective time and date of the merger.

"6. No shares of Phillips Petroleum Company and no shares, securities, or obligations convertible into such shares are to be issued or delivered under this Plan of Merger.

"7. The Board of Directors and the proper officers of Phillips Petroleum Company are hereby authorized, empowered, and directed to do any and all acts and things, and to make, execute, deliver, file, and/or record any and all instruments, papers, and documents which shall be or become necessary, proper, or convenient to carry out or put into effect any of the provisions of this Plan of Merger or of the merger herein provided for. "

" This Company approves that the effective time and date of the merger herein provided for in the State of Alabama shall be 11:59 p.m. on December 31, 2000."

"Any Vice President, the Treasurer, any Assistant Treasurer, the Secretary, any Assistant Secretary, and each of them severally, be and hereby is authorized to make, execute,

deliver, file, and/or record any and all instruments, papers, and documents which shall be or become necessary, proper, or convenient to carry out or put into effect any of the provisions of these resolutions and to do or cause to be done all such acts as are necessary to give effect to the purpose and intent of the approval herein set forth."

6. This Certificate of Ownership and Merger shall be effective at 11:59 p.m. on December 31, 2000.

Executed on November 27, 2000

Phillips Petroleum Company

N. A. Loftis

N. A. Loftis, Assistant Secretary

FORM 9

STATE OF UTAH

DIVISION OF OIL, GAS AND MINING

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.
Use APPLICATION FOR PERMIT TO DRILL OR DEEPEN form for such proposals.

5. Lease Designation and Serial Number:

6. If Indian, Allottee or Tribe Name:

7. Unit Agreement Name:

8. Well Name and Number:

9. API Well Number:

10. Field or Pool, or Wildcat:

1. Type of Well: OIL ☐ GAS ☒ OTHER:

2. Name of Operator: River Gas Corporation

3. Address and Telephone Number: 6825 S. 5300 W. P.O. Box 851 Price, Utah 84501 (435) 613-9777

4. Location of Well Footages:

QQ, Sec., T., R., M.: SLB & M

County: Carbon County

State: Utah

11. **CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

NOTICE OF INTENT
(Submit in Duplicate)

- ☐ Abandon
- ☐ Repair Casing
- ☐ Change of Plans
- ☐ Convert to Injection
- ☐ Fracture Treat or Acidize
- ☐ Multiple Completion
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Recomplete
- ☐ Reperforate
- ☐ Vent or Flare
- ☐ Water Shut-Off
- ☒ Other Change of Operator

Approximate date work will start _____

SUBSEQUENT REPORT
(Submit Original Form Only)

- ☐ Abandon *
- ☐ Repair Casing
- ☐ Change of Plans
- ☐ Convert to Injection
- ☐ Fracture Treat or Acidize
- ☐ Other _____
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Reperforate
- ☐ Vent or Flare
- ☐ Water Shut-Off

Date of work completion _____

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION REPORT AND LOG form.

* Must be accompanied by a cement verification report.

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Please be advised that River Gas Corporation is transferring ownership of the attached list of wells to Phillips Petroleum Company 9780 Mt. Pyramid Court, Englewood, CO 80112.
Please direct all correspondence and reports to: Phillips Petroleum Company P.O. Box 3368, Englewood, CO 80155-3368.
Effective 1/1/01.

13.

Name & Signature: Cal Hurtt *Cal Hurtt* Title: Development Manager Date: 12/19/00

(This space for state use only)

(4/94)

(See Instructions on Reverse Side)

RGC/Phillips Merger

List of Affected BLM Leases and Rights-of-Way

A. Oil & Gas Leases

UTU-47157	UTU-70219	UTU-75016
UTU-49631	UTU-70400	UTU-75019
UTU-50645	UTU-71390	UTU-75021
UTU-51584	UTU-72003	UTU-75022
UTU-53872	UTU-72004	UTU-76332
UTU-57821	UTU-72350	UTU-76334
UTU-60402	UTU-72355	UTU-77351
UTU-60925	UTU-72358	UTU-77353
UTU-61154	UTU-72377	UTU-77354
UTU-61155	UTU-72470	UTU-78408
UTU-61158	UTU-72477	UTU-78409
UTU-61547	UTU-72624	UTU-78410
UTU-61548	UTU-72723	UTU-78411
UTU-62145	UTU-72724	UTU-78412
UTU-62276	UTU-72746	UTU-78413
UTU-65298	UTU-73004	UTU-78782
UTU-65300	UTU-73075	UTU-78783
UTU-65302	UTU-73330	UTU-79150
UTU-65303	UTU-73331	UTU-79151
UTU-67621	UTU-73523	UTU-79152
UTU-67839	UTU-73752	UTU-79153
UTU-67906	UTU-73884	UTU-79154
UTU-68314	UTU-74376	UTU-79155
UTU-69449	UTU-75015	UTU-79159

B. Rights-of-Way

UTU-73226	UTU-77141	UTU-77976
UTU-74319	UTU-77141-01	UTU-77989
UTU-74320	UTU-77151	UTU-77989-01
UTU-76610	UTU-77151-01	
UTU-76629	UTU-77154	

UIC FORM 5

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

TRANSFER OF AUTHORITY TO INJECT

Well Name and Number: See Attached	API Number
Location of Well	Field or Unit Name
Footage : County :	Lease Designation and Number
QQ, Section, Township, Range: State : UTAH	

EFFECTIVE DATE OF TRANSFER: 1/1/01

CURRENT OPERATOR

Company: River Gas Corporation
Name: Cal Hurtt
Address: 1300 McFarland Blvd. NE, Suite 300
Signature: Cal Hurtt
city Tuscaloosa state AL zip 35406
Title: Development Supervisor
Phone: (205) 759-3282
Date: 12/19/00

Comments:
Change in operatorship due to merger of River Gas Corporation into Phillips Petroleum Company effective 12/31/00 at 11:59 p.m.

NEW OPERATOR

Company: Phillips Petroleum Company
Name: X Billy Stacy
Address: 9780 Mt. Pyramid Court
Signature: Billy Stacy
city Englewood state CO zip 80112
Title: Asset Manager
Phone: (720) 344-4984
Date: 2-6-01

Comments: Please send all reports and correspondence to:
Phillips Petroleum Company
P.O. Box 3368
Englewood, CO 80155-3368

(This space for State use only)

Transfer approved by: G. Hunt
Title: Field Services Manager
Approval Date: 2-21-01

Comments:

(5/2000)

Disposal Wells to be transferred from RGC to Phillips Petroleum Company

Well #	API #	Location	Section	Township	Range
American Quasar D1	4300730040	999FSL, 1552 FWL	31	14S	10E
Arcadia-Telonis D2	4300730093	465 FSL, 560 FEL	19	14S	09E
Utah D3	4300730290	1600 FSL, 1530 FEL	18	15S	10E
Utah D4	4300730314	600 FNL, 500 FWL	24	14S	09E
Fausett D5	4300730351	467 FNL, 1461 FWL	16	14S	09E
Drew D6	4300730100	1300 FSL, 830 FWL	34	14S	09E
Utah D7	4301530338	1371 FSL, 1530 FEL	2	14S	09E
Utah D8	4300730431	1342 FNL, 350 FWL	12	15S	09E
Utah D9	4300730438	1960 FNL, 1487 FWL	32	14S	09E
RGC D10	4300730520	162 FNL, 1557 FEL	28	15S	09E
USA D11	4301530356	1513 FNL, 2437 FEL	13	16S	09E
Sampinos D14	4300730567	1695 FSL, 2133 FEL	16	15S	10E

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING
1. GLH ✓
2. CDW
3. FILE

Change of Operator (Well Sold)

Operator Name Change

Designation of Agent/Operator

X Merger

The operator of the well(s) listed below has changed, effective: **12-31-02**

FROM: (Old Operator):	**TO:** (New Operator):
PHILLIPS PETROLEUM COMPANY	CONOCOPHILLIPS COMPANY
Address: 980 Plaza Office	Address: P O BOX 2197, WL3 4066
Bartlesville, OK 74004	HOUSTON, TX 77252
Phone: 1-(918)-661-4415	Phone: 1-(832)-486-2329
Account No. N1475	Account No. N2335

CA No. **Unit:**

WELL(S)

NAME	SEC TWN RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
UTAH D-15	34-13S-09E	43-007-30819	99999	STATE	SWD	APD
FAUSETT D-5	16-14S-09E	43-007-30351	12165	FEE	SWD	A
ARCADIA-TELONIS 1 (D-2)	19-14S-09E	43-007-30093	99990	FEE	SWD	A
UTAH D-4	24-14S-09E	43-007-30314	11256	STATE	SWD	A
UTAH M-1	26-14S-09E	43-007-30199	11256	STATE	TW	A
UTAH D-9	32-14S-09E	43-007-30438	12771	STATE	SWD	A
USA D-6	34-14S-09E	43-007-30100	12466	FEDERAL	SWD	A
UTAH D-8	12-15S-09E	43-007-30431	11256	STATE	SWD	A
RGC D-10	28-15S-09E	43-007-30520	12545	FEE	SWD	A
UTAH M-2	34-15S-09E	43-007-30066	2889	FEDERAL	TW	A
DRUNKARDS WASH 31-1 (D-1)	31-14S-10E	43-007-30040	11256	STATE	SWD	A
SAMPINOS D-14	16-15S-10E	43-007-30567	12729	FEE	SWD	A
UTAH D-3	18-15S-10E	43-007-30290	11256	STATE	SWD	A
UTAH D-7	02-16S-09E	43-015-30338	12404	STATE	SWD	A
D-11	13-16S-09E	43-015-30356	12572	FEDERAL	SWD	A
PPCO D13	30-16S-09E	43-015-30531	99999	FEE	SWD	DRL

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 01/08/2003
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 01/08/2003
3. The new company has been checked through the **Department of Commerce, Division of Corporations Database on:** 02/03/2003
4. Is the new operator registered in the State of Utah: YES Business Number: 562960-0143
5. If **NO**, the operator was contacted contacted on: _____

6. (R649-9-2)Waste Management Plan has been received on: IN PLACE

7. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: 01/14/2003

8. **Federal and Indian Units:**
The BLM or BIA has approved the successor of unit operator for wells listed on: 01/14/2003

9. **Federal and Indian Communization Agreements ("CA"):**
The BLM or BIA has approved the operator for all wells listed within a CA on: 01/14/2003

10. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: 02/04/2003

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 02/03/2003
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 02/03/2003
3. Bond information entered in RBDMS on: N/A
4. Fee wells attached to bond in RBDMS on: N/A

STATE WELL(S) BOND VERIFICATION:

1. State well(s) covered by Bond Number: 8140-60-24

FEDERAL WELL(S) BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: 8015-16-69

INDIAN WELL(S) BOND VERIFICATION:

1. Indian well(s) covered by Bond Number: N/A

FEE WELL(S) BOND VERIFICATION:

1. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number 6196922
2. The **FORMER** operator has requested a release of liability from their bond on: N/A
The Division sent response by letter on: N/A

LEASE INTEREST OWNER NOTIFICATION:

3. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: N/A

COMMENTS:

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Eastern States Office
7450 Boston Boulevard
Springfield, Virginia 22153

IN REPLY REFER TO
3106.8(932.34)WF

January 16, 2003

NOTICE

ConocoPhillips Company P.O. Box 7500 Bartlesville, Oklahoma 74005	: : :	Oil & Gas Leases

Merger/Name Change Recognized

Acceptable evidence was received in this office on January 14, 2003, concerning the change of name of Phillips Petroleum Company to **ConocoPhillips Company** and the merger of **Conoco Incorporated** into **ConocoPhillips Company** on Federal oil and gas leases, with **ConocoPhillips Company being the surviving entity.**

The Secretary of the State of Delaware certified the effective date of this merger effective December 31, 2002.

The oil and gas lease files identified on the enclosed exhibit have been noted to the merger. The exhibit was compiled from a list of leases obtained from your list of leases. Eastern States has not abstracted the lease files to determine if the entities affected by this merger hold an interest in the leases identified nor have we attempted to identify leases where the entities are the operator on the ground maintaining no vested record title or operating rights interest. We are notifying the Minerals Management Service and all applicable Bureau of Land Management offices of this merger and name change by a copy of this notice. If additional documentation for changes of operator are required by our Field Offices, you will be contacted by them.

If you identify other leases in which the merging entity maintain an interest, please contact this office and we will appropriately document those files with a copy of this Notice.

By Operation of law the name of the principal on Nationwide Oil and Gas Bond held by Conoco Incorporated (ES0085) has been changed to ConocoPhillips Company.

If you have any questions, please contact Bill Forbes at 703-440-1536.

S/ Wilbert B. Forbes

Wilbert B. Forbes
Land Law Examiner
Branch of Use Authorization
Division of Resources Planning, Use
and Protection

bc: JFO, BLM State Offices, MMS, ES RF, 930 RF, ES-932:
Bforbes:wbf:01/16/03:440-1536/ConocoPhillips Co

UIC FORM 5

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

TRANSFER OF AUTHORITY TO INJECT

Well Name and Number See Attached List	API Number See List
Location of Well Footage : See Attached List QQ, Section, Township, Range:	County : State : UTAH
	Field or Unit Name
	Lease Designation and Number

EFFECTIVE DATE OF TRANSFER: 1/1/2003

CURRENT OPERATOR

Company: Phillips Petroleum Company
Address: 980 Plaza Office
city Bartlesville state OK zip 74004
Phone: (918) 661-4415

Name: Steve de Albuquerque
Signature: Steve Alby
Title: HSE & Regulatory Supervisor
Date: 12/30/2002

Comments: Conoco Inc. and Phillips Petroleum Company merged to form ConocoPhillips Company. Please see attached list of wells effected by name change.

NEW OPERATOR

Company: ConocoPhillips Company
Address: P. O. Box 2197, WL3 4066
city Houston state TX zip 77252
Phone: (832) 486-2329

Name: Yolanda Perez
Signature: Yolanda Perez
Title: Sr. Regulatory Analyst
Date: 12/30/2002

Comments: Conoco Inc. and Phillips Petroleum Company merged to form ConocoPhillips Company. Please see attached list of wells effected by name change.

(This space for State use only)

Transfer approved by: [illegible]
Title: Tech. Services Manager

Approval Date: 2-3-03

Comments: D5, D2 + D3 are due for MIT.

RECEIVED
JAN 0 8 2003
DIV. OF OIL, GAS & MINING

(5/2000)

UIC Well List

SWD WELLS							
api	**well_name**	**section**	**township**	**range**	**well_type**	**well_status**	**lease_type**
4300730093	ARCADIA-TELONIS 1 (D-2)	19	140S	090E	WD	A	FEE
4301530356	D-11	13	160S	090E	WD	A	FEDERAL
4300730040	DRUNKARDS WASH 31-1 (D-1)	31	140S	100E	WD	A	STATE
4300730351	FAUSETT D5	16	140S	090E	WD	A	FEE
4301530531	PPCO D13	30	160S	090E	WD	DRL	FEE
4300730520	RGC D-10	28	150S	090E	WD	A	FEE
4300730567	SAMPINOS D-14	16	150S	100E	WD	A	FEE
4300730100	USA D6	34	140S	090E	WD	A	FEDERAL
4300730819	UTAH D15	34	130S	090E	WD	APD	STATE
4300730290	UTAH D-3	18	150S	100E	WD	A	STATE
4300730314	UTAH D-4	24	140S	090E	WD	A	STATE
4301530338	UTAH D7	02	160S	090E	WD	A	STATE
4300730431	UTAH D8	12	150S	090E	WD	A	STATE
4300730438	UTAH D-9	32	140S	090E	WD	A	STATE
4300730199	UTAH M-1	26	140S	090E	TW	A	STATE
4300730066	UTAH M-2	34	150S	090E	TW	A	FEDERAL

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JAN 0 8 2003
DIV. OF OIL, GAS & MINING

List of Produced Water Ponds/Pits

	Permit/ License No.	State/Federal		Immediate Name Change Required		Other Immediate Actions Required*		Agency	Agency Contact Name	Agency Contact Number
		S	F	Y	N	Y	N			
1	EVAPORATION POND	X		X				Utah Dept of Natural Resources, Dept. of Oil Gas and Mining	Gil Hunt	(801) 538-5340
2	D-1 POND	X		X				Utah Dept of Natural Resources, Dept. of Oil Gas and Mining	Gil Hunt	(801) 538-5340
3	D-2 (C-2) POND	X		X				Utah Dept of Natural Resources, Dept. of Oil Gas and Mining	Gil Hunt	(801) 538-5340
4	D-3 POND	X		X				Utah Dept of Natural Resources, Dept. of Oil Gas and Mining	Gil Hunt	(801) 538-5340

*** Describe: OPERATIONAL PERMITS FOR PRODUCED WATER PONDS**

RECEIVED
JAN 0 8 2003
DIV. OF OIL, GAS & MINING

ConocoPhillips

Divisions of Oil, Gas, and Mining
Attn: Mr. John Baza
1594 West North Temple,
Suite 1210, P. O. Box 145801
Salt Lake City, UT 84114-5801

Re: Notice of Address Change, Merger and Name Change
Address Change effective **December 2, 2002**
Merger and Name Change effective **December 31, 2002**

Gentlemen:

1. Effective December 2, 2002, Phillips Petroleum Company will close its Englewood, Colorado Rocky Mountain Region office. After that time, all correspondence, notices and invoice for Land related matters should be directed to the address(es) noted below. Note that until December 31, 2002, all properties in which Phillips held an interest will continue to be operated by Phillips Petroleum Company, a wholly-owned subsidiary of ConocoPhillips.

2. On December 31, 2002, Phillips Petroleum Company and Conoco Inc. will merge, and the surviving corporation will be renamed "ConocoPhillips Company".

In accordance with the notice provisions of the Operating Agreements and other agreements, if any, between our companies, please adjust your company/organization records, effective for address purposes as of December 2, 2002, and for company name purposes, as of January 1, 2003, to reflect the following information for addressing and delivery of notices, invoicing and payment, and communications with ConocoPhillips Company. This will also apply to Lease Sale notices and other lease-related correspondence and notifications.

U.S. Mail Address:

ConocoPhillips Company
P.O. Box 2197
Houston, Texas 77252
Attn: Chief Landman,
San Juan/Rockies

Physical Address & Overnight Delivery:

ConocoPhillips Company
550 Westlake Park Blvd.
Three Westlake Park
3WL, Room WL 9000
Houston, Texas 77079
Attn: Chief Landman,
San Juan/Rockies

All ballots and official notices/responses sent by facsimile transmission should be sent to the following contact:

Attn: Chief Landman,
San Juan/Rockies

Fax No.: 832-486-2688 or
832-486-2687

Please contact the undersigned immediately if you have any questions. This notice does not apply to royalty inquiries, joint interest billings, or revenue remittances. Please continue to use the same addresses you are currently using for these matters

Sincerely, William Rainbolt

RECEIVED
DEC 0 2 2002
DIVISION OF
OIL, GAS AND MINING

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER:

SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME:

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER All

8. WELL NAME and NUMBER: See Attached List

2. NAME OF OPERATOR: Phillips Petroleum Company

9. API NUMBER: See List

3. ADDRESS OF OPERATOR: 980 Plaza Office CITY Bartlesville STATE OK ZIP 74004 PHONE NUMBER: (918) 661-4415

10. FIELD AND POOL, OR WILDCAT:

4. LOCATION OF WELL

FOOTAGES AT SURFACE: See Attached List

COUNTY:

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start:	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☑ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☑ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Conoco Inc. was merged into Phillips Petroleum Company, the surviving corporation, on December 31, 2002. In connection with this merger and effective on the same date, the name of the surviving corporation was changed to "ConocoPhillips Company". We are requesting that a new Operator Number be assigned to ConocoPhillips Company.

Please send production reporting forms to Herb Henderson at ConocoPhillips Company, 315 S. Johnstone, 980 Plaza Office, Bartlesville, OK 74004. Herb's phone number is 918-661-4415.

Current Operator
Phillips Petroleum Company
Steve de Albuquerque

New Operator
ConocoPhillips Company
Yolanda Perez

RECEIVED
JAN 0 8 2003
DIV. OF OIL, GAS & MINING

NAME (PLEASE PRINT) Yolanda Perez TITLE Sr. Regulatory Analyst

SIGNATURE Yolanda Perez DATE 12/30/2002

(This space for State use only)

(5/2000)

(See Instructions on Reverse Side)

ConocoPhillips

SECRETARY'S CERTIFICATE

I, the undersigned, Jennifer M. Garcia, Assistant Secretary of ConocoPhillips Company, formerly Phillips Petroleum Company, organized and existing under and by virtue of the laws of the State of Delaware (the "Corporation"), hereby certify that:

1. As Assistant Secretary I am authorized to execute this certificate on behalf of the Corporation.

2. The attached photocopy of the Certificate of Amendment to the Restated Certificate of Incorporation of Phillips Petroleum Company (to be renamed ConocoPhillips Company) is a true and correct copy as filed in the office of the Secretary of State of Delaware on the 12th day of December 2002, with an effective date of January 1, 2003 and such Certificate of Amendment has not been modified, amended, rescinded or revoked and is in full force and effect as of the date hereof.

3. The attached photocopy of the Certificate of Merger of Conoco Inc. with and into ConocoPhillips Company is a true and correct copy as filed in the office of the Secretary of State of Delaware on the 12th day of December 2002, with an effective date of December 31, 2002 and such Certificate of Merger has not been modified, amended, rescinded or revoked and is in full force and effect as of the date hereof.

IN WITNESS WHEREOF, I have hereunto set my hand as Assistant Secretary and affixed the corporate seal of the Corporation this 7th day of January 2003.

Assistant Secretary
ConocoPhillips Company

STATE OF TEXAS §
§
COUNTY OF HARRIS §

This instrument was acknowledged before me on January 7, 2003, by Jennifer M. Garcia, Assistant Secretary of ConocoPhillips Company, a Delaware corporation, on behalf of said Corporation.

SUSAN F. SHORT
NOTARY PUBLIC
STATE OF TEXAS
EXPIRES
11-12-2005

Notary Public

RECEIVED
JAN 0 8 2003
DIV. OF OIL, GAS & MINING

Delaware

The First State

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "PHILLIPS PETROLEUM COMPANY", CHANGING ITS NAME FROM "PHILLIPS PETROLEUM COMPANY" TO "CONOCOPHILLIPS COMPANY", FILED IN THIS OFFICE ON THE TWELFTH DAY OF DECEMBER, A.D. 2002, AT 1:41 O'CLOCK P.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE EFFECTIVE DATE OF THE AFORESAID CERTIFICATE OF AMENDMENT IS THE THIRTY-FIRST DAY OF DECEMBER, A.D. 2002, AT 11 O'CLOCK P.M.

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JAN 0 8 2003
DIV. OF OIL, GAS & MINING

Harriet Smith Windsor

Harriet Smith Windsor, Secretary of State

0064324 8100

AUTHENTICATION: 2183360

030002793

DATE: 01-02-03

STATE OF DELAWARE
SECRETARY OF STATE
DIVISION OF CORPORATIONS
FILED 01:41 PM 12/12/2002
020763238 - 0064324

CERTIFICATE OF AMENDMENT

to the

RESTATED CERTIFICATE OF INCORPORATION

of

PHILLIPS PETROLEUM COMPANY
(to be renamed ConocoPhillips Company)

Phillips Petroleum Company ("Phillips"), a corporation organized and existing under the General Corporation Law of the State of Delaware (the "DGCL"), hereby certifies that:

1. The amendments to Phillips' Restated Certificate of Incorporation set forth below were duly adopted in accordance with the provisions of Section 242 of the DGCL and have been consented to in writing by the sole stockholder of Phillips in accordance with Section 228 of the DGCL.

2. Phillips' Restated Certificate of Incorporation is hereby amended by deleting Article I thereof and replacing in lieu thereof a new Article I reading in its entirety as follows:

"The name of the corporation (which is hereinafter referred to as the "Corporation") is ConocoPhillips Company."

3. Phillips' Restated Certificate of Incorporation is hereby amended by deleting Section 1 of Article IV thereof and replacing in lieu thereof a new Section 1 reading in its entirety as follows:

"Section 1. The Corporation shall be authorized to issue 2,100 shares of capital stock, of which 2,100 shares shall be shares of Common Stock, $.01 par value ("Common Stock")."

4. Pursuant to Section 103(d) of the DGCL, this amendment will become effective at 11:00 p.m., Eastern time, on December 31, 2002.

RECEIVED
JAN 0 8 2003
DIV. OF OIL, GAS & MINING

IN WITNESS WHEREOF, Phillips has caused this certificate to be executed this 12th day of December, 2002.

PHILLIPS PETROLEUM COMPANY

By: _____
Name: Rick A. Harrington
Title: Senior Vice President, Legal, and General Counsel

HOU03:884504.1

RECEIVED
JAN 0 8 2003
DIV. OF OIL, GAS & MINING

Delaware

The First State

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF MERGER, WHICH MERGES:

"CONOCO INC.", A DELAWARE CORPORATION,

WITH AND INTO "CONOCOPHILLIPS COMPANY" UNDER THE NAME OF "CONOCOPHILLIPS COMPANY", A CORPORATION ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF DELAWARE, AS RECEIVED AND FILED IN THIS OFFICE THE TWELFTH DAY OF DECEMBER, A.D. 2002, AT 1:44 O'CLOCK P.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE EFFECTIVE DATE OF THE AFORESAID CERTIFICATE OF MERGER IS THE THIRTY-FIRST DAY OF DECEMBER, A.D. 2002, AT 11:59 O'CLOCK P.M.

RECEIVED
JAN 0 8 2003
DIV. OF OIL, GAS & MINING

Harriet Smith Windsor

Harriet Smith Windsor, Secretary of State

0064324 8100M

AUTHENTICATION: 2183370

030002793

DATE: 01-02-03

STATE OF DELAWARE
SECRETARY OF STATE
DIVISION OF CORPORATIONS
FILED 01:44 PM 12/12/2002
020763253 - 0064324

CERTIFICATE OF MERGER

of

Conoco Inc.
(a Delaware corporation)

with and into

ConocoPhillips Company
(a Delaware corporation)

Phillips Petroleum Company, a Delaware corporation to be renamed ConocoPhillips Company prior to the effective time of this certificate of merger (the "Surviving Corporation"), in compliance with the requirements of the General Corporation Law of the State of Delaware (the "DGCL") and desiring to effect a merger of Conoco Inc., a Delaware corporation formerly incorporated under the name Du Pont Holdings, Inc. (the "Merging Corporation," and together with the Surviving Corporation, the "Constituent Corporations"), with and into the Surviving Corporation, and acting by its duly authorized officer, DOES HEREBY CERTIFY that:

First: As of the date hereof, the name and state of incorporation of each of the Constituent Corporations of the merger are as follows:

NAME	STATE OF INCORPORATION
PHILLIPS PETROLEUM COMPANY	Delaware
CONOCO INC.	Delaware

Second: An agreement and plan of merger has been approved, adopted, certified, executed and acknowledged by each of the Constituent Corporations in accordance with the requirements of Section 251 of the DGCL;

Third: The name of the Surviving Corporation will be ConocoPhillips Company;

Fourth: The Certificate of Incorporation of ConocoPhillips Company immediately prior to the merger shall be the Certificate of Incorporation of the Surviving Corporation until such time as it may be amended in accordance with applicable law and the provisions thereof;

Fifth: The executed agreement and plan of merger is on file at an office of the Surviving Corporation, the address of which is 600 North Dairy Ashford, Houston, Texas 77079;

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DIV. OF OIL, GAS & MINING

Sixth: A copy of the agreement and plan of merger will be furnished by the Surviving Corporation, on request and without cost, to any stockholder of any Constituent Corporation; and

Seventh: Pursuant to Section 103(d) of the DGCL, this certificate of merger will become effective at 11:59 p.m., Eastern time, on December 31, 2002.

Dated: December 12, 2002

PHILLIPS PETROLEUM COMPANY
(a Delaware corporation)

By:_____
Name: Rick A. Harrington
Title: Senior Vice President, Legal, and General Counsel

RECEIVED
JAN 0 8 2003
DIV. OF OIL, GAS & MINING

STATE OF UTAH
ARTMENT OF COMMERCE
REGISTRATION

CONOCOPHILLIPS COMPANY

EFFECTIVE
06/14/1946

EXPIRATION
*RENEWAL

REFERENCE NUMBER(S), CLASSIFICATION(S) & DETAIL(S)

Corporation - Foreign - Profit
562960-0143

UNITED STATES CORP CO
CONOCOPHILLIPS COMPANY
GATEWAY TOWER EAST STE 900
10 EAST SOUTH TEMPLE
SLC UT 84133

RECEIVED
JAN 0 8 2003
DIV. OF OIL, GAS & MINING

STATE OF UTAH
DEPARTMENT OF COMMERCE
DIVISION OF CORPORATIONS & COMMERCIAL CODE

REGISTRATION

EFFECTIVE DATE: 06/14/1946

EXPIRATION DATE: *RENEWAL

ISSUED TO: CONOCOPHILLIPS COMPANY

THE GREAT SEAL OF THE STATE OF UTAH
INDUSTRY
1847
1896

REFERENCE NUMBER(S), CLASSIFICATION(S) & DETAIL(S)
562960-0143 Corporation - Foreign - Profit
*RENEWAL
You will need to renew your registration each anniversary date of the effective date.
Exceptions: DBAs and Business Trusts renew every three (3) years from the effective date.

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER: ML-40521

SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NA

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

7. UNIT or CA AGREEMENT NAME: Drunkards Wash UTU-67921X

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER Water Disposal Well

8. WELL NAME and NUMBER: DRUNKARDS WASH ~~American Quasar~~ 31-01-D1

2. NAME OF OPERATOR: ConocoPhillips Company

9. API NUMBER: 4300730040

3. ADDRESS OF OPERATOR: P.O. Box 851 CITY Price STATE UT ZIP 84501

PHONE NUMBER: (435) 613-9777

10. FIELD AND POOL, OR WILDCAT: Drunkards Wash

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 1552' FWL, 999' FSL

COUNTY: Carbon

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESW 31 14S 10E S

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start:	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☑ OTHER: Add tubing and packer
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

ConocoPhillips Company would like to request approval to install tubing and packer in the 31-01-D-1 salt water disposal well. This well was first put into operation in late 1994. A packer and tubing will be installed to improve the long term integrity of this well for disposal capabilities. The procedure for installation is presented on the attached page.

Approved by the Utah Division of Oil, Gas and Mining

Date: 07-26-05

By: [signature]

COPY SENT TO OPERATOR
Date: 7-28-05
Initials: CHD

NAME (PLEASE PRINT) Jean Semborski TITLE Construction Supervisor

SIGNATURE [signature] DATE 7/20/2005

(This space for State use only)

RECEIVED
JUL 21 2005
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

ConocoPhillips

Drunkard's Wash Workover Procedure

'Our work is never so urgent or important that we cannot take the time to do it safely.'

AMERICAN QUASAR 31-1-D1 Disposal Well

PROCEDURE:

Ensure that well is shut in, energy isolated, locked and tagged out; Cathodic protection disconnected. Record SI tbg; SI csg; Braidenhead : pressures. NOTE : This well will have positive pressure.

Notify the State of Utah representatives a minimum of 24 hours prior to moving in to inform them of ConocoPhillips plans and timing.

1. Have wireline set a 2.75" X plug in XN seating nipple @ 5720', top of packer @ 5696'.
2. Hold pre-job Safety Meeting. Lock out tag out energy sources, bleed pressure from flowline to wellhead, remove flow line from wellhead, cover end of line so debris will not get into it.
3. MI & RU WO rig.
4. ND 5M# wellhead valve, NU BOP.
5. Change pipe rams to 4.5".
6. PU & RIH Weatherford (Arrow) THD seal assembly on bottom of 4.5", 11.6# tubing to 5680' circulate packer fluid around backside, sting into packer @ 5696'. Land string as per Weatherford's recommendations for weight.
7. Perform packer test by pressure testing back side.
8. RD BOP's, pick up on tubing pup joint, set slips on top of tubing spool, break out pup make up tubing hanger, space out to hang with specified weight, make up pup to hanger, pick up remove slips, land hanger, record landing weight, remove landing pup joint.
9. RU tree,
10. RU wireline and have them retrieve X plug from seating nipple, RD wireline.
11. Rig up surface line to tree to inject down tubing.
12. Turn well over to production. Notify Operations Supervisors Steve Lessar or Jeff Sandoval.

INSPECTION FORM 6

STATE OF UTAH
DIVISION OF OIL GAS AND MINING

INJECTION WELL - PRESSURE TEST

Well Name: Drunkards Wash 31-1 (D-1) API Number: 43-007-30040
Qtr/Qtr: SESW Section: 31 Township: ~~15S~~ 14S Range: 9E 10E
Company Name: Conocophillips

Lease: State X Fee ____ Federal ____ Indian ____
Inspector: Mark J. Jones Date: 9/21/2005

Initial Conditions:

Tubing - Rate: 0 Pressure: 0 psi

Casing/Tubing Annulus - Pressure: 0 psi

Conditions During Test:

Time (Minutes)	Annulus Pressure	Tubing Pressure
0	1000 #	0 #
5		
10		
15		
20		
25		
30	1000 #	0 #

Results: Pass/Fail

Conditions After Test:

Tubing Pressure: 0 psi

Casing/Tubing Annulus Pressure: 0 psi

COMMENTS:

JJ Kantor & Jim Weaver
Operator Representative

RECEIVED
SEP 26 2005

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

ORIGINAL

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT--" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.
ML-40521

6. If Indian, Allottee or Tribe Name
N/A

7. If Unit or CA, Agreement Designation
Drunkards Wash UTU-67921X

1. Type of Well
☐ Oil ~~☒ Gas~~ ☒ WD

8. Well Name and No.
Drunkards Wash 31-01-D1

2. Name of Operator
ConocoPhillips

9. API Well No.
43-007-30040

3. Address and Telephone No.
6825 South 5300 West, P.O. Box 851, Price, Utah 84501 (435) 613-9777

10. Field and Pool, or Exploratory Area
Drunkards Wash

4. Location of Well (Footage, Sec.,T., R:, M., or Survey Description)
1552' FWL, 999' FSL
SE/SW, SEC. 31, T14S, R10E, SLB&M

11. County or Parish, State
Carbon County, Utah

12. **CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Online Notice	☐ Change of Plans
☐ Subsequent Report	☐ Change of Name	☐ New Construction
☐ Final Abandonment Notice	☐ Recompletion	☐ Non-Routine Fracturing
	☐ Plugging Back	☐ Water Shut-Off
	☐ Casing Repair	☐ Conversion to Injection
	☐ Altering Casing	☐ Dispose Water
	☒ Other Plug & Packer	(Note: Report results of multiple completion on Well Completion or

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

9-21-05: RAN 5690 FEET OF 4 ½" 11.6# N-80 TUBING AND SEAL ASSEMBLY AND LATCHED INTO PACKER AT 5696'. PERFORMED MIT, PRESSURED TESTED TUBING/CASING TO 1000# FOR 30 MINUTES. MIT WITNESSED BY MARK JONES WITH DOGM.

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NOV 01 2005
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct

Signed Lynnette Allred *L. Allred* Title Sr. Operations Assistant Date Ocotber 25, 2005

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*** See Instructions on Reverse Side**

API Well No: 43007300400000

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER: ML-40521

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7.UNIT or CA AGREEMENT NAME: DRUNKARDS WASH

1. TYPE OF WELL: Water Disposal Well

8. WELL NAME and NUMBER: DRUNKARDS WASH 31-1 (D-1)

2. NAME OF OPERATOR: CONOCOPHILLIPS COMPANY

9. API NUMBER: 43007300400000

3. ADDRESS OF OPERATOR: P.O. Box 51810 , Midland, TX, 79710 1810
PHONE NUMBER: 432 688-6943 Ext

9. FIELD and POOL or WILDCAT: DRUNKARDS WASH

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 0999 FSL 1552 FWL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SESW Section: 31 Township: 14.0S Range: 10.0E Meridian: S

COUNTY: CARBON

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT Approximate date work will start:	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
✓ SUBSEQUENT REPORT Date of Work Completion: 2/22/2011	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
☐ SPUD REPORT Date of Spud:	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	✓ OTHER	OTHER: MIT

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

A successful mechanical integrity test was performed on the above disposal well on February 22, 2011. The test was witnessed by a representative of DOGM.

Accepted by the Utah Division of Oil, Gas and Mining

Date: 03/09/2011

By: [signature]

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Donna Williams	432 688-6943	Sr. Regulatory Specialist

SIGNATURE	DATE
N/A	3/8/2011

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER: ML-40521

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7.UNIT or CA AGREEMENT NAME: DRUNKARDS WASH

1. TYPE OF WELL Water Disposal Well

8. WELL NAME and NUMBER: DRUNKARDS WASH 31-1 (D-1)

2. NAME OF OPERATOR: CONOCOPHILLIPS COMPANY

9. API NUMBER: 43007300400000

3. ADDRESS OF OPERATOR: P.O. Box 51810 , Midland, TX, 79710 1810
PHONE NUMBER: 432 688-6943 Ext

9. FIELD and POOL or WILDCAT: DRUNKARDS WASH

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 0999 FSL 1552 FWL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SESW Section: 31 Township: 14.0S Range: 10.0E Meridian: S

COUNTY: CARBON

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☐ NOTICE OF INTENT — Approximate date work will start:
- ✓ SUBSEQUENT REPORT — Date of Work Completion: 4/21/2016
- ☐ SPUD REPORT — Date of Spud:
- ☐ DRILLING REPORT — Report Date:

TYPE OF ACTION

☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
☐ WILDCAT WELL DETERMINATION	✓ OTHER	OTHER: MIT

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

On 4/21/2016, MIRU. Pressure tested casing to 1020# and held good. Chart is attached.

Accepted by the Utah Division of Oil, Gas and Mining

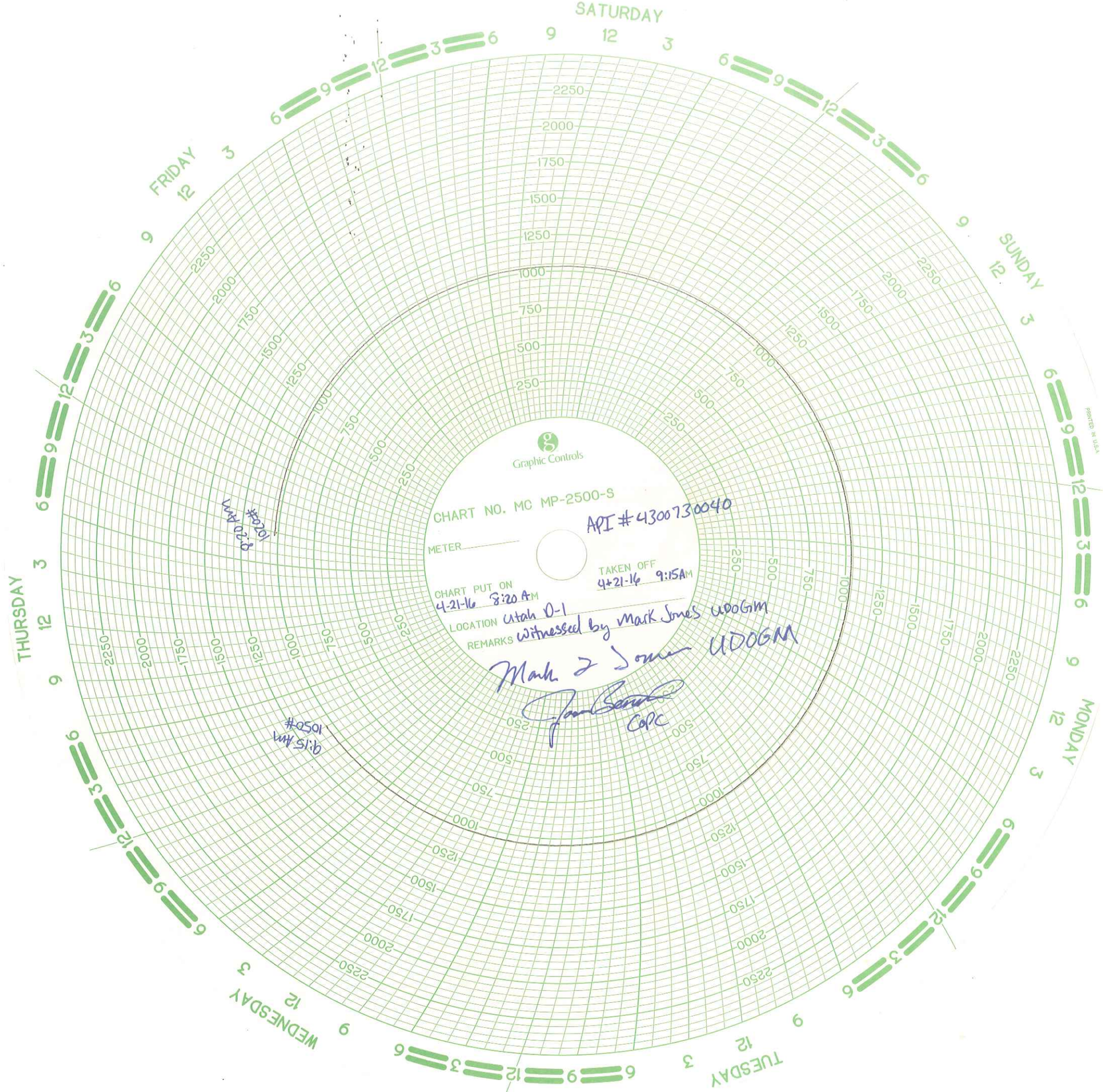
Date: June 01, 2016

By:

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Donna Williams	432 688-6943	Sr. Regulatory Specialist

SIGNATURE	DATE
N/A	5/26/2016

RECEIVED: May. 26, 2016


SATURDAY
FRIDAY
SUNDAY
THURSDAY
MONDAY
WEDNESDAY
TUESDAY
Graphic Controls
CHART NO. MC MP-2500-S
API #4300730040
METER
TAKEN OFF
4-21-16 9:15AM
CHART PUT ON
4-21-16 8:20AM
LOCATION Utah D-1
REMARKS Witnessed by Mark Jones UDOGM
Mark Jones UDOGM
COPC
#0201
8:20 AM
#0501
9:15 AM